

AUXIER & ASSOCIATES, INC.

PAP/KAN

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #16-06038-OR

July 22, 2016

**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 # 16-06038

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

Date for Partial	Initials	Date	Initials	Checklist Items
		6-9-16	JEB	Sample Log-In
		6/21/16	KBS	Data Compilation
		6-27-16	MLZ	First Technical Data Review
		6/28/16	MLZ	Second Technical Data Review
		7/20/16	[Signature]	Data Entry/Electronic Deliverable
		7/20/16	[Signature]	Case Narrative
		7/21/16	KBS	Electronic Deliverable Proof
		7/22/16	MLZ	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		7/22/16	MLZ	QA/QC Review
		06/21/16	EJT	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: [Signature] Laboratory Manager

7/22/16 Date

SECTION I
CHAIN OF CUSTODY

Auxier & Associates, Inc.
 9821 Cogdill Road
 Suite 1
 Knoxville, TN 37932
 (423) 675-3669

16-06038
 REC'D JUN 09 2016



Radiochemical Health, Safety and Environmental Services
 A BSI Environmental, LLC Company

CHAIN OF CUSTODY FORM

Project Name:	PAP/KAN	Project Manager:	Cecilia Greene
Location:	Kansas City, MO	Telephone No.:	865-675-3669
Sample Custodian:	Marsha Joseph	Fax No.:	865-675-3677

SAMPLE IDENTIFICATION	DATE OF COLLECTION	SAMPLE DESCRIPTION	SAMPLE IDENTIFICATION	DATE OF COLLECTION	SAMPLE DESCRIPTION
4- CP-5018.00-02	6/2/16	Soil in Plastic Bag	CP-5023.00-02	6/2/16	Soil in Plastic Bag
5- CP-5018.02-05		Soil in Plastic Bag	CP-5023.02-05		Soil in Plastic Bag
6- CP-5018.05-10		Soil in Plastic Bag	CP-5023.05-10		Soil in Plastic Bag
7- CP-5018.10-15		Soil in Plastic Bag	CP-5023.10-15		Soil in Plastic Bag
8- CP-5019.00-02		Soil in Plastic Bag	CP-5024.00-02		Soil in Plastic Bag
9- CP-5019.02-05		Soil in Plastic Bag	CP-5024.02-05		Soil in Plastic Bag
10- CP-5019.05-10		Soil in Plastic Bag	CP-5024.05-10		Soil in Plastic Bag
11- CP-5019.10-15		Soil in Plastic Bag	CP-5024.10-15		Soil in Plastic Bag
12- CP-5022.00-02	6/2/16	Soil in Plastic Bag	CP-5025.00-02		Soil in Plastic Bag
13- CP-5022.02-05		Soil in Plastic Bag	CP-5025.02-05		Soil in Plastic Bag
14- CP-5022.05-10		Soil in Plastic Bag	CP-5025.05-10		Soil in Plastic Bag
15- CP-5022.10-15		Soil in Plastic Bag	CP-5025.10-15		Soil in Plastic Bag

Relinquished By:	Marsha Joseph	Date Shipped:	6/1/16
Method Of Shipment & Tracking #:	8003371789 Fed Ex	Received In Good Condition By:	James E. [Signature]
		Date Received:	6-9-16 @ 6915



EBERLINE
SERVICES

Oak Ridge Laboratory

Internal Chain of Custody

Work Order #

16-06038

Lab Deadline

6/29/2016

Analysis

UISO - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location	
REPORT ON DRY WEIGHT BASIS	04	45	G1.4	
	05	43	G1.4	
	06	53	G1.4	
	07	42	G1.4	
	08	48	G1.4	
	09	57	G1.4	
	10	50	G1.4	
	11	34	G1.4	
	12	39	G1.4	
	13	55	G1.4	
	14	43	G1.4	
	15	39	G1.4	

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1240 Keyser	6-13-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0805 Keyser	6-14-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	805 J. Pacheco	6-14-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	040 J. Pacheco	6-14-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	SPD	6/14/16 1500
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	SPD	6/14/16 081
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		6/16/16 1731
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 #

16-06038

Lab Deadline

6/29/2016

Analysis

ThISO - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location	
REPORT ON DRY WEIGHT BASIS	04	45	G1.4	
	05	43	G1.4	
	06	53	G1.4	
	07	42	G1.4	
	08	48	G1.4	
	09	57	G1.4	
	10	50	G1.4	
	11	34	G1.4	
	12	39	G1.4	
	13	55	G1.4	
	14	43	G1.4	
	15	39	G1.4	

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1280 Very Sec	6-13-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0805 Very Sec	6-14-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	8:05 J. Pahele	6-14-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0800 J. Pahele	6-14-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	HPD 6/14/16 1500	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	SW 146 6-20-16 0800	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	AG 6/20/16	0800
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB 6/20/16	1530
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 #

16-06038

Lab Deadline

6/29/2016

Analysis

Gamma - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location	
REPORT ON DRY WEIGHT BASIS	04	45	G1.4	
	05	43	G1.4	
	06	53	G1.4	
	07	42	G1.4	
	08	48	G1.4	
	09	57	G1.4	
	10	50	G1.4	
	11	34	G1.4	
	12	39	G1.4	
	Report Ac228, Bi214, Pb210/214, Pa231, K40 & positives.	13	55	G1.4
		14	43	G1.4
		15	39	G1.4

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1240 Keyser	6-13-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0805 Keyser	6-14-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0805 Keyser	6-14-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	6/14/16 134
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



Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 16-06038

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

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

WERE SAMPLES:

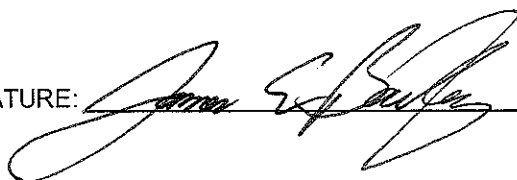
Received in good condition?	<input checked="" type="radio"/>	N	
If aqueous, properly preserved	Y	N	<input checked="" type="radio"/>

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<input checked="" type="radio"/>	N
Unbroken on outside of package?	<input checked="" type="radio"/>	N
Present on samples?	<input checked="" type="radio"/>	N
Unbroken on samples?	<input checked="" type="radio"/>	N
Was chain of custody present upon sample receipt?	<input checked="" type="radio"/>	N

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

REMARKS: _____

SIGNATURE:  DATE: 6-9-16

SECTION III
CASE NARRATIVE



EBERLINE SERVICES

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

EBS-OR-41002

July 22, 2016

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

CASE NARRATIVE Work Order # 16-06038-OR

SAMPLE RECEIPT

This work order contains twelve soil samples received 06/09/2016. These samples were analyzed for Isotopic Uranium, Isotopic Thorium and Gamma Spectroscopy.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
CP-5018 00-02	16-06038-04	CP-5019 05-10	16-06038-10
CP-5018 02-05	16-06038-05	CP-5019 10-15	16-06038-11
CP-5018 05-10	16-06038-06	CP-5022 00-02	16-06038-12
CP-5018 10-15	16-06038-07	CP 5022 02-05	16-06038-13
CP-5019 00-02	16-06038-08	CP 5022 05-10	16-06038-14
CP-5019 02-05	16-06038-09	CP 5022 10-15	16-06038-15

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.

SPECIAL CIRCUMSTANCES

Results are reported on a "dry weight" basis.

ANALYTICAL RESULTS CONTINUED

ISOTOPIC URANIUM

Samples were prepared by removing representative aliquots 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 and Uranium-238 method blank demonstrated results slightly greater than the method detection limits. The Uranium-235 method blank demonstrated an acceptable result. 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-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-230 and Thorium-232 method blank demonstrated acceptable results. Results for the Thorium-230 and Thorium-232 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Thorium-230 and Thorium-232 laboratory control sample demonstrated an acceptable percent recovery.

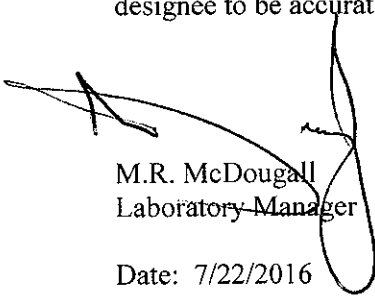
GAMMA SPECTROSCOPY

Samples for Gamma Spectroscopy analysis were prepared by transferring a volumetric aliquot of each sample to a standard geometry container. Samples were counted on High Purity Germanium (HPGe) gamma ray detectors.

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

CERTIFICATION OF ACCURACY

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



M.R. McDougall
Laboratory Manager

Date: 7/22/2016

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

SECTION IV
ANALYTICAL RESULTS SUMMARY

Eberline Analytical

Final Report of Analysis

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

SDG: 16-06038
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06038-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Cobalt-60	LANL ER-130 Modified	1.37E+02	5.48E+00				pCi/g
16-06038-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Cesium-137	LANL ER-130 Modified	8.69E+01	3.48E+00				pCi/g
16-06038-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Cobalt-60	LANL ER-130 Modified	1.50E+02	1.04E+01	1.29E+01	1.38E+00	1.26E+00	pCi/g
16-06038-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Cesium-137	LANL ER-130 Modified	9.29E+01	8.93E+00	1.01E+01	2.24E+00	1.11E+00	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	-7.04E-02	1.71E-01	1.71E-01	2.67E-01	1.15E-01	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	6.56E-02	8.17E-02	8.17E-02	1.53E-01	6.92E-02	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	1.04E-01	4.30E-01	4.30E-01	8.01E-01	3.28E-01	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	-7.56E-02	9.19E-01	9.19E-01	1.99E+00	9.19E-01	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	1.54E-01	3.00E-01	3.00E-01	4.90E-01	2.35E-01	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	-3.22E-02	6.78E-02	6.78E-02	1.03E-01	4.84E-02	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	9.26E-02	8.69E-02	8.70E-02	1.41E-01	6.53E-02	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	-3.41E-02	1.11E-01	1.11E-01	1.76E-01	7.73E-02	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	1.05E+00	1.93E-01	2.00E-01	3.44E-01	1.64E-01	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	8.96E-01	1.27E-01	1.35E-01	1.41E-01	6.74E-02	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	1.52E+01	1.77E+00	1.98E+00	2.78E+00	1.36E+00	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	-1.04E-02	5.91E-01	5.91E-01	2.03E+00	9.75E-01	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	1.37E+00	1.15E+00	1.16E+00	1.59E+00	7.76E-01	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	9.56E-01	1.37E-01	1.46E-01	2.17E-01	1.07E-01	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	9.99E-01	1.31E-01	1.41E-01	2.49E-01	1.22E-01	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.03E+00	1.28E-01	1.38E-01	9.94E-02	2.62E-01	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	1.30E+00	1.63E-01	1.76E-01	4.64E-01	2.24E-01	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	7.88E-01	1.27E-01	1.33E-01	2.28E-01	1.11E-01	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	1.61E+01	1.86E+00	2.04E+00	9.65E-01	4.54E-01	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	1.61E+00	1.22E+00	1.22E+00	2.07E+00	9.94E-01	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	1.13E+00	1.33E+00	1.33E+00	2.22E+00	1.09E+00	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	1.26E+00	1.49E-01	1.63E-01	2.09E-01	1.03E-01	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	9.24E-01	1.14E-01	1.24E-01	1.75E-01	8.47E-02	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.00E+00	1.41E-01	1.50E-01	2.22E-02	1.13E-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



EBERLINE
SERVICES

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

16-06038
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
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	1.37E+00	1.97E-01	2.09E-01	4.69E-01	2.28E-01	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	8.19E-01	1.37E-01	1.49E-01	1.98E-01	9.59E-02	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	1.85E+01	2.04E+00	2.25E+00	1.27E+00	6.09E-01	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	5.06E-01	1.32E+00	1.32E+00	2.18E+00	1.05E+00	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	1.30E+00	1.46E+00	1.46E+00	2.44E+00	1.20E+00	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	1.67E+00	2.10E-01	2.27E-01	2.22E-01	1.09E-01	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	9.69E-01	1.26E-01	1.36E-01	2.01E-01	9.72E-02	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.27E+00	1.68E-01	1.81E-01	2.48E-02	1.37E-01	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	1.97E+00	3.59E-01	3.73E-01	1.10E+00	5.33E-01	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	1.27E+00	2.25E-01	2.35E-01	2.79E-01	1.32E-01	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	2.54E+01	3.19E+00	3.44E+00	1.66E+00	7.63E-01	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	-4.11E+00	3.26E+00	3.28E+00	3.51E+00	1.67E+00	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	2.30E+00	1.47E+00	1.47E+00	2.39E+00	1.87E+00	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	2.55E+00	4.35E-01	4.54E-01	3.62E-01	1.77E-01	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	1.45E+00	2.41E-01	2.53E-01	3.03E-01	1.45E-01	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.66E+00	2.69E-01	2.82E-01	1.75E-01	1.87E-01	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	2.63E+00	4.46E-01	4.66E-01	8.60E-01	4.03E-01	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	1.83E+00	3.23E-01	3.34E-01	4.36E-01	2.07E-01	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	3.42E+01	4.38E+00	4.72E+00	2.02E+00	9.06E-01	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	1.26E+00	3.51E+00	3.51E+00	5.37E+00	2.58E+00	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	3.16E+00	2.56E+00	2.56E+00	4.20E+00	2.04E+00	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	2.85E+00	3.94E-01	4.21E-01	4.39E-01	2.14E-01	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	1.60E+00	3.13E-01	3.24E-01	5.36E-01	2.59E-01	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.79E+00	3.86E-01	3.97E-01	3.05E-01	3.87E-01	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	8.82E-01	1.94E-01	1.99E-01	4.12E-01	1.96E-01	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	9.01E-01	1.58E-01	1.65E-01	1.73E-01	8.18E-02	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	1.74E+01	2.16E+00	2.33E+00	1.31E+00	6.16E-01	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	1.63E+00	1.33E+00	1.33E+00	2.34E+00	1.12E+00	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	3.13E+00	1.35E+00	1.36E+00	1.99E+00	9.67E-01	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	4.83E-01	1.26E-01	1.28E-01	2.14E-01	1.05E-01	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	9.81E-01	1.44E-01	1.52E-01	2.59E-01	1.26E-01	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	6.98E-01	1.41E-01	1.45E-01	1.31E-01	1.41E-01	pCi/g

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



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EBERLINE ANALYTICAL CORPORATION

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

Eberline Analytical

Final Report of Analysis

Cecilia Greene
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16-06038
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
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	1.09E+00	2.38E-01	2.44E-01	4.27E-01	2.02E-01	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	1.00E+00	1.57E-01	1.65E-01	2.02E-01	9.64E-02	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	1.82E+01	2.17E+00	2.37E+00	9.28E-01	4.22E-01	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	7.89E-01	8.15E-01	8.16E-01	2.30E+00	1.09E+00	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	1.24E+00	9.19E-01	9.21E-01	1.46E+00	7.03E-01	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	1.34E+00	2.37E-01	2.47E-01	2.06E-01	1.00E-01	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	9.79E-01	1.60E-01	1.68E-01	2.08E-01	9.93E-02	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.02E+00	1.65E-01	1.73E-01	1.07E-01	1.28E-01	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	2.13E+00	3.88E-01	4.03E-01	7.79E-01	3.68E-01	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	1.21E+00	2.45E-01	2.53E-01	3.53E-01	1.67E-01	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	2.64E+01	3.34E+00	3.60E+00	1.94E+00	8.87E-01	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	8.00E-01	1.52E+00	1.52E+00	4.70E+00	2.29E+00	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	2.20E+00	2.16E+00	2.16E+00	3.58E+00	1.74E+00	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	2.00E+00	2.57E-01	2.77E-01	4.19E-01	2.05E-01	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	1.47E+00	2.32E-01	2.44E-01	4.04E-01	1.95E-01	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.85E+00	3.17E-01	3.30E-01	2.40E-01	2.48E-01	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	2.52E+00	4.69E-01	4.86E-01	5.44E-01	2.49E-01	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	1.41E+00	2.77E-01	2.86E-01	3.97E-01	1.89E-01	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	3.31E+01	4.14E+00	4.47E+00	1.38E+00	6.08E-01	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	-4.85E-01	1.55E+00	1.55E+00	4.28E+00	2.02E+00	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	3.93E+00	1.92E+00	1.93E+00	3.14E+00	1.52E+00	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	2.59E+00	4.69E-01	4.87E-01	4.31E-01	2.10E-01	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	1.84E+00	2.87E-01	3.03E-01	3.99E-01	1.91E-01	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.54E+00	3.14E-01	3.23E-01	2.26E-01	3.08E-01	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	1.54E+00	2.56E-01	2.68E-01	4.06E-01	1.87E-01	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	1.11E+00	1.77E-01	1.86E-01	9.23E-02	1.86E-01	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	1.94E+01	2.49E+00	2.68E+00	1.12E+00	5.02E-01	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	1.65E+00	2.26E+00	2.26E+00	3.50E+00	1.68E+00	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	2.80E+00	1.58E+00	1.58E+00	2.54E+00	1.24E+00	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	1.51E+00	1.84E-01	1.99E-01	3.37E-01	1.66E-01	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	1.21E+00	2.03E-01	2.12E-01	3.21E-01	1.56E-01	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.15E+00	1.93E-01	2.02E-01	1.75E-01	2.24E-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: 16-06038
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
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	1.48E+00	2.80E-01	2.90E-01	3.10E-01	1.42E-01	pCi/g
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	1.02E+00	1.63E-01	1.71E-01	1.95E-01	9.24E-02	pCi/g
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	2.16E+01	2.59E+00	2.81E+00	8.60E-01	3.84E-01	pCi/g
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	-1.79E-01	1.06E+00	1.06E+00	2.66E+00	1.27E+00	pCi/g
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	2.08E+00	1.05E+00	1.06E+00	1.74E+00	8.42E-01	pCi/g
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	1.20E+00	2.46E-01	2.54E-01	3.08E-01	1.51E-01	pCi/g
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	1.15E+00	2.10E-01	2.18E-01	2.50E-01	1.21E-01	pCi/g
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.36E+00	2.01E-01	2.12E-01	2.57E-01	1.30E-01	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	2.59E+00	4.62E-01	4.81E-01	5.87E-01	2.68E-01	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	1.53E+00	2.85E-01	2.96E-01	4.22E-01	2.00E-01	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	2.74E+01	3.85E+00	4.10E+00	2.71E+00	1.28E+00	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	-9.49E-01	1.96E+00	1.96E+00	5.37E+00	2.57E+00	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	4.01E+00	3.38E+00	3.38E+00	5.58E+00	2.74E+00	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	2.53E+00	2.99E-01	3.26E-01	4.14E-01	2.02E-01	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	1.88E+00	2.61E-01	2.75E-01	4.13E-01	1.98E-01	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	2.06E+00	3.45E-01	3.60E-01	2.85E-01	4.18E-01	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Actinium-228	LANL ER-130 Modified	1.98E+00	3.59E-01	3.73E-01	4.75E-01	2.18E-01	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Bismuth-214	LANL ER-130 Modified	1.89E+00	2.84E-01	2.97E-01	3.73E-01	1.78E-01	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Potassium-40	LANL ER-130 Modified	2.84E+01	3.59E+00	3.87E+00	1.50E+00	6.75E-01	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Protactinium-231	LANL ER-130 Modified	1.17E+00	1.35E+00	1.35E+00	3.86E+00	1.83E+00	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-210	LANL ER-130 Modified	2.20E+00	2.22E+00	2.23E+00	3.70E+00	1.80E+00	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-212	LANL ER-130 Modified	1.84E+00	3.07E-01	3.22E-01	3.29E-01	1.60E-01	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Lead-214	LANL ER-130 Modified	2.00E+00	3.31E-01	3.46E-01	3.47E-01	1.67E-01	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/14/2016	16-06038	Thallium-208	LANL ER-130 Modified	1.75E+00	2.78E-01	2.92E-01	3.09E-01	3.14E-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

16-06038
PAP-KAN
ENVIRONMENTAL

SDG:
Project:
Analysis Category:
Sample Matrix:

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
16-06038-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	5.34E+00	1.44E-01				pCi/g
16-06038-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	6.51E+00	1.04E+00	1.32E+00	9.54E-02	9.34E-02	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	7.90E-02	6.85E-02	6.92E-02	7.69E-02	7.70E-02	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/09/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.27E+00	3.26E-01	3.62E-01	7.73E-02	7.73E-02	pCi/g
16-06038-04	DO	CP-5018 00-02	06/09/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.47E+00	3.72E-01	4.14E-01	7.87E-02	8.12E-02	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.60E+00	3.96E-01	4.43E-01	5.93E-02	7.57E-02	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.34E+00	3.39E-01	3.77E-01	7.04E-02	7.59E-02	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.25E+00	3.05E-01	3.43E-01	9.30E-02	8.53E-02	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	9.95E-01	2.74E-01	3.01E-01	6.82E-02	7.37E-02	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.34E+00	3.51E-01	3.88E-01	7.58E-02	8.15E-02	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.11E+00	2.85E-01	2.99E-01	5.84E-02	6.04E-02	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.02E+00	2.96E-01	3.22E-01	1.07E-01	9.94E-02	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.41E+00	3.75E-01	4.14E-01	8.63E-02	8.90E-02	pCi/g
16-06038-13	TRG	CP-5022 02-05	06/02/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	9.96E-01	2.68E-01	2.86E-01	8.38E-02	7.79E-02	pCi/g
16-06038-14	TRG	CP-5022 05-10	06/02/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.61E+00	4.17E-01	4.62E-01	9.69E-02	9.49E-02	pCi/g
16-06038-15	TRG	CP-5022 10-15	06/02/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-230	EML Th-01 Modified	1.14E+00	3.22E-01	3.52E-01	1.09E-01	1.02E-01	pCi/g
16-06038-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	4.84E+00	1.67E-01				pCi/g
16-06038-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	5.61E+00	9.21E-01	1.05E+00	1.14E-01	2.97E-02	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	-3.49E-02	3.09E-02	3.11E-02	1.10E-01	3.60E-02	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	1.09E+00	2.93E-01	3.08E-01	7.27E-02	9.93E-03	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	1.10E+00	3.03E-01	3.18E-01	6.66E-02	6.00E-03	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	1.28E+00	3.38E-01	3.56E-01	8.51E-02	1.30E-03	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	1.33E+00	3.40E-01	3.60E-01	1.15E-01	3.77E-02	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	1.29E+00	3.12E-01	3.32E-01	9.96E-02	3.26E-02	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	5.00E-01	1.78E-01	1.83E-01	6.81E-02	7.82E-03	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	9.54E-01	2.80E-01	2.92E-01	8.64E-02	1.35E-02	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	1.02E+00	2.49E-01	2.65E-01	5.83E-02	7.98E-03	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	1.26E+00	3.36E-01	3.56E-01	8.20E-02	1.12E-02	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	1.17E+00	3.29E-01	3.45E-01	7.30E-02	6.58E-03	pCi/g
16-06038-13	TRG	CP-5022 02-05	06/02/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	1.21E+00	2.93E-01	3.12E-01	6.82E-02	1.07E-02	pCi/g
16-06038-14	TRG	CP-5022 05-10	06/02/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	9.28E-01	2.84E-01	2.96E-01	8.05E-02	9.24E-03	pCi/g
16-06038-15	TRG	CP-5022 10-15	06/02/16 00:00	6/9/2016	6/20/2016	16-06038	Thorium-232	EML Th-01 Modified	1.26E+00	3.42E-01	3.59E-01	8.34E-02	1.14E-02	pCi/g

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Eberline Analytical Final Report of Analysis

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

SDG: 16-06038
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06038-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	8.12E+00	2.92E-01				pCi/g
16-06038-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	7.21E+00	9.67E-01	1.10E+00	7.78E-02	7.66E-03	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	8.97E-01	2.25E-01	3.34E-01	5.07E-02	9.22E-03	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.42E+00	2.97E-01	3.14E-01	6.84E-02	1.53E-02	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.53E+00	3.17E-01	3.35E-01	6.54E-02	1.37E-02	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.61E+00	3.16E-01	3.36E-01	6.95E-02	6.81E-03	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.58E+00	3.19E-01	3.38E-01	7.34E-02	7.21E-03	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.66E+00	3.45E-01	3.65E-01	9.50E-02	2.89E-02	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.19E+00	2.73E-01	2.86E-01	7.50E-02	1.80E-02	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.63E+00	3.40E-01	3.60E-01	9.74E-02	3.03E-02	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.42E+00	3.30E-01	3.36E-01	7.93E-02	1.78E-02	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.61E+00	3.93E-01	4.09E-01	9.67E-02	2.02E-02	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.29E+00	2.95E-01	3.09E-01	7.62E-02	1.72E-02	pCi/g
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.41E+00	2.95E-01	3.12E-01	5.78E-02	1.12E-02	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.57E+00	3.17E-01	3.36E-01	7.26E-02	1.74E-02	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-234	EML U-02 Modified	1.53E+00	3.24E-01	3.42E-01	6.33E-02	1.23E-02	pCi/g
16-06038-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	3.79E-01	1.59E-01	1.61E-01	7.65E-02	5.89E-03	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	1.72E-02	4.30E-02	4.31E-02	8.97E-02	1.17E-02	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	8.98E-02	7.82E-02	7.84E-02	8.97E-02	1.39E-03	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	5.10E-02	6.13E-02	6.14E-02	8.67E-02	9.88E-03	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	1.64E-01	9.89E-02	9.96E-02	7.51E-02	7.21E-03	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	9.06E-02	7.88E-02	7.91E-02	9.05E-02	1.40E-03	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	2.14E-01	1.24E-01	1.25E-01	1.04E-01	1.52E-02	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	2.56E-02	4.36E-02	4.36E-02	7.39E-02	5.67E-03	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	6.51E-02	7.33E-02	7.34E-02	1.03E-01	1.50E-02	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	1.30E-01	9.77E-02	9.82E-02	9.10E-02	8.76E-03	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	1.25E-01	1.11E-01	1.11E-01	1.19E-01	1.15E-02	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	1.67E-01	1.10E-01	1.10E-01	1.00E-01	1.55E-03	pCi/g
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	8.70E-02	7.24E-02	7.26E-02	6.23E-02	3.44E-03	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	6.97E-02	6.64E-02	6.65E-02	7.15E-02	5.49E-03	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-235	EML U-02 Modified	1.28E-01	9.18E-02	9.23E-02	6.82E-02	3.78E-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



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

Eberline Analytical

Final Report of Analysis

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

SDG: 16-06038
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
16-06038-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	7.86E+00	2.83E-01	1.20E+00	5.39E-02	8.87E-03	pCi/g
16-06038-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	7.99E+00	1.09E+00	2.21E-01	5.78E-02	1.04E-02	pCi/g
16-06038-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	8.18E-01	2.19E-01	3.38E-01	6.34E-02	1.24E-02	pCi/g
16-06038-03	DUP	CP-5018 00-02	06/09/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.59E+00	3.18E-01	2.98E-01	6.51E-02	1.27E-02	pCi/g
16-06038-04	DO	CP-5018 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.28E+00	3.00E-01	3.18E-01	6.92E-02	5.94E-03	pCi/g
16-06038-05	TRG	CP-5018 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.49E+00	3.16E-01	3.35E-01	5.08E-02	8.37E-03	pCi/g
16-06038-06	TRG	CP-5018 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.57E+00	3.06E-01	3.21E-01	1.04E-01	3.41E-02	pCi/g
16-06038-07	TRG	CP-5018 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.37E+00	3.06E-01	2.89E-01	5.20E-02	8.54E-03	pCi/g
16-06038-08	TRG	CP-5019 00-02	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.18E+00	2.70E-01	2.89E-01	1.22E-01	5.18E-02	pCi/g
16-06038-09	TRG	CP-5019 02-05	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.92E+00	3.78E-01	4.02E-01	1.22E-01	5.18E-02	pCi/g
16-06038-10	TRG	CP-5019 05-10	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.36E+00	3.11E-01	3.25E-01	8.38E-02	1.91E-02	pCi/g
16-06038-11	TRG	CP-5019 10-15	06/06/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.70E+00	4.05E-01	4.23E-01	9.63E-02	1.89E-02	pCi/g
16-06038-12	TRG	CP-5022 00-02	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.68E+00	3.46E-01	3.66E-01	5.62E-02	9.26E-03	pCi/g
16-06038-13	TRG	CP 5022 02-05	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.43E+00	2.97E-01	3.14E-01	6.32E-02	1.24E-02	pCi/g
16-06038-14	TRG	CP 5022 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.64E+00	3.26E-01	3.47E-01	7.23E-02	1.65E-02	pCi/g
16-06038-15	TRG	CP 5022 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06038	Uranium-238	EML U-02 Modified	1.40E+00	3.05E-01	3.21E-01	5.51E-02	9.08E-03	pCi/g

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



EBERLINE
SERVICES

EBERLINE ANALYTICAL CORPORATION

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

SECTION V
ANALYTICAL STANDARD

U-8

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

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

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

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

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

Radioimpurities Refer to attached technical data sheet

Radioactive Daughters Refer to attached technical data sheet

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

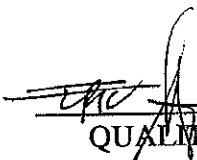
Method of Calibration
Activity calculations are based upon known specific activity and mass.

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

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

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

Notes
1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).


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

CURRENT DATE 10/1/2015 0:00

SOLUTION REFERENCE # IPL 479-50

SOLUTION # U-8

Principal Radionuclide

Half Life, Years

Half Life, Days

^{234, 235, 238}U

4.468E+09

1.632E+12

Radionuclide ^{234, 235, 238}U

Reference Date 1/1/1995 0:00

Certified Activity 8.016E+00 µCi

Certified Concentration µCi 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

Date: 10/1/2015 0:00

QC Approval

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

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

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

Chemical Composition of Standard Solution
Uranly Nitrate in 1M HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃

SECONDARY VOLUMETRIC DILUTION

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

NOTES:

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

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

Isotopic ratios from manufacturer's data sheet

Expiration Date: July 27, 2016

Verified & Approved By [Signature]

Date: 10/1/2015 0:00

QC Approval [Signature]

Date: 10/1/15

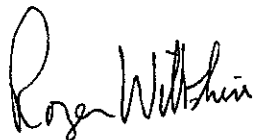
RECORD COPY

Tracer Solution for Environmental Analysis & Disequilibrium Studies

Product Description & Measurement Certificate

<i>Description</i>	Principal radionuclide: uranium 232 (U-232) Daughter Nuclide: Th-228	Product code: UDP10050 Batch Number: 92/232/67
<i>Measurement</i>	Reference date: Radioactive concentration U-232 which is equivalent to Mass of solution Volume of solution Total activity of U-232 which is equivalent to	01 March 2000 6.739E+03 becquerels per gram of solution 1.821E-01 microcuries per gram of solution 5.356 grams 5.035 millilitres 3.61E+04 becquerels 9.76E-01 microcuries
<i>Accuracy</i>	Method of measurement (see reverse of this certificate) Random uncertainty is: $\pm 0.7\%$ Systematic uncertainty: $\pm 0.5\%$ Overall uncertainty in the radioactive concentration quoted above: $\pm 1.7\%$ Overall uncertainty is defined on the reverse of this certificate.	
<i>Radionuclidic Purity</i>	Any radioactive impurities measured are listed below, expressed as percentages of the activity of the principle radionuclide at the reference date. Th-228 and daughter activity removed 2 Feb 2000 U-232 daughters activity will increase with time. By alpha 88% U-232, 12% daughters on 1/3/00	
<i>Isotopic Purity</i>	The isotopic composition, expressed as atom per cent at the reference date. Not measured	
<i>Chemical Composition</i>	Calculated weight of U-232, 4.42E-08 grams, as 2M HNO ₃ solution in a flame sealed glass vial. This Tracer solution has been produced 'carrier free'.	
<i>Physical Data</i>	Recommended half life of uranium 232: 6.980E+01 years Principle energies of alpha emissions (MeV): 5.263 31.7%, 5.320 68.0% Branching ratio for alpha emission: 100% Calculated specific activity of uranium 232: 8.167E+05 Bq per microgram U-232.	
<i>Remarks</i>	For safety information and notes to ensure correct usage by all persons handling this radioactive Tracer solution please read the instructions accompanying the package. AEA Technology operates a quality management system which has been independently audited and approved to ISO 9001.	

Approved
Signatory



Roger Wiltshire

Project Ref. AE2315

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



QUALITY CONTROL PROGRAM
MP-009

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

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

SOLUTION REFERENCE # AEA/Amersham 92/232/67 CURRENT DATE 10/27/2015 0:00
SOLUTION # U-10

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

Radionuclide ²³²U Reference Date 3/1/2000 0:00
Certified Activity 9.760E-01 μCi
Certified Concentration $\mu\text{Ci per gram}$

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

Chemical Composition of Standard Solution
²³²U(NO₃)₆ in 2M HNO₃

Dilution Instructions: Dilution Solvent Used 2M HNO₃

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.9760 μCi Which Equals 2.167E+06 dpm at the date listed above

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

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

Expiration Date: October 26, 2016

Verified & Approved By [Signature]
QC Approval [Signature]

Date: 10/27/2015 0:00
Date: 10/28/15




QUALITY CONTROL PROGRAM
MP-009

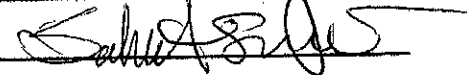
Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

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.	Reference Date		
^{232}U	2.167E+03 dpm/ml	3/1/2000 0:00		
Chemical Composition of Standard Solution				
$^{232}\text{U}(\text{NO}_3)_6$ in 2M HNO_3				

Dilution Instructions:	Dilution Solvent Used		
	2M HNO_3		
SECONDARY VOLUMETRIC DILUTION			
Vol. Parent Solution:	10.0000 ml	Final Activity Concentration:	2.1670E+01 dpm/ml
Total Activity:	2.1670E+04 dpm		
Final Volume:	1000.00 ml		
NOTES:	This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.		
	Expiration Date:	October 26, 2016	

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

QC Approval:  Date: 10/28/15

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(NO ₃) ₄ in water
c. Carrier content:	None added
d. Density:	Approx. 1.21 g/ml @ 20°C.

Radioimpurities: None detected (other than daughters).

Radioactive Daughters

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

Radionuclide Concentration

(Th-232) 0.00779 μ Ci/g.

Method of Calibration

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement

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

NIST Traceability

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

Leak Test(s)

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

Notes

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

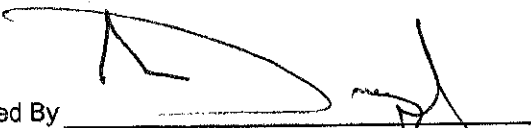
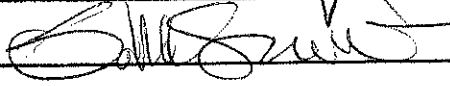
Chemical Composition of Standard Solution
Th(NO₃)₄ in H₂O

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



QUALITY CONTROL PROGRAM
MP-009

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

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

Solution Reference # MP-009 Date 9/29/2015 0:00
IPL 435-104-2 Solution # Th-8b

Principal Radionuclide ^{228 & 232}Th Half Life, Years 1.405E+10 Half Life, Days 5.132E+12

Radionuclide of Interest ^{228 & 232}Th 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)



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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 1.036 $\mu\text{Ci per gram}$

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

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

Dilution Instructions: Dilution Solvent Used 0.1N HNO₃

Dilute to a volume of 1000.00 milliliters

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

And after dilution the activity of this solution is 2.300E+03 dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: February 12, 2016

Recertified By [Signature]
QC Approval [Signature]

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



QUALITY CONTROL PROGRAM
MP-009

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

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

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

Principal Radionuclide	Half Life, Years	Half Life, Days
<u>²³⁰Th</u>	<u>7.540E+04</u>	<u>2.754E+07</u>

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: 4/15/15



**Isotope Products
Laboratories**

An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

Th-18

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

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

Physical Description:

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

Radioimpurities:

None detected (daughters in equilibrium)

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

Method of Calibration:

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

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

Uncertainty of Measurement:

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

Notes:

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

Alan H. 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

: 00037



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

Radionuclide ²²⁹Th Reference Date 1/15/2002 0:00
Certified Activity 1.013E+00 μCi
Certified Concentration $\mu\text{Ci per gram}$

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

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

Dilution Instructions: Dilution Solvent Used 0.1 M HNO₃

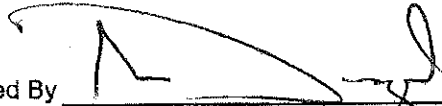
Dilute to a volume of 1000.00 milliliters

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

And after dilution the activity of this solution is 2.249E+03 dpm/ml

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

Expiration Date: August 24, 2016

Verified & Approved By 

Date: 9/29/2015 0:00

QC Approval 

Date: 9/30/15



QUALITY CONTROL PROGRAM
MP-009

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

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

Solution Reference #		MP-009	Date	9/29/2015 0:00
IPL 867-54			Solution #	Th-18a
Principal Radionuclide	Half Life, Years	Half Life, Days		
²²⁸ Th	7.340E+03	2.681E+06		
Radionuclide of Interest	²²⁸ Th	Reference Date	1/15/2002 0:00	
Parent Solution Conc.	2.25E+03 dpm/ml			
Chemical Composition of Standard Solution				
Th(NO ₃) ₄ in 0.1M HNO ₃				

Dilution Instructions: Dilution Solvent Used 0.1M HNO₃

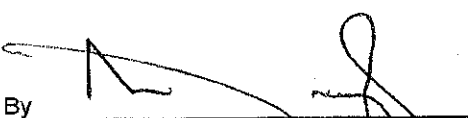
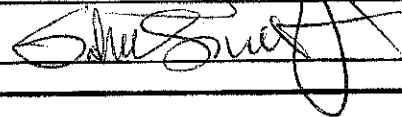
SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution:	10.0000 ml	Final Activity Concentration:	2.2490E+01 dpm/ml
Total Activity:	2.2490E+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: 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* $\mu\text{ps}/\text{gram}$	This Source μps	Uncertainty*, %			Calibration Method*
					u_A	u_B	U	
Am-241	59.5	1.580E+05	—	2.030E+03	0.1	1.8	3.6	4 π LS
Cd-109	88.0	4.614E+02	1.663E+05	2.929E+03	0.5	2.0	4.1	HPGe
Co-57	122.1	2.717E+02	8.913E+04	1.569E+03	0.4	1.7	3.5	HPGe
Ce-139	165.9	1.376E+02	1.241E+05	2.185E+03	0.4	1.7	3.5	HPGe
Hg-203	279.2	4.659E+01	2.675E+05	4.710E+03	0.3	1.7	3.5	HPGe
Sn-113	391.7	1.151E+02	1.796E+05	3.163E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.099E+04	1.111E+05	1.956E+03	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.223E+05	7.435E+03	0.7	1.7	3.7	HPGe
Co-60	1173.2	1.925E+03	2.091E+05	3.683E+03	0.7	1.8	3.9	HPGe
Co-60	1332.5	1.925E+03	2.094E+05	3.687E+03	0.7	1.8	3.9	HPGe
Y-88	1836.1	1.066E+02	4.471E+05	7.872E+03	0.7	1.7	3.7	HPGe

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

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

(Certificate continued on reverse side)



SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06038	UUIISO	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	88.85%	15.19%	100.00%	3.60%	8.12E+00	2.92E-01	7.21E+00	1.10E+00	U-8a	3.20E+01	3.60E+00	5.63E-01
U-238	101.64%	14.96%	100.00%	3.60%	7.86E+00	2.83E-01	7.99E+00	1.20E+00	U-8a	3.10E+01	3.60E+00	5.63E-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)

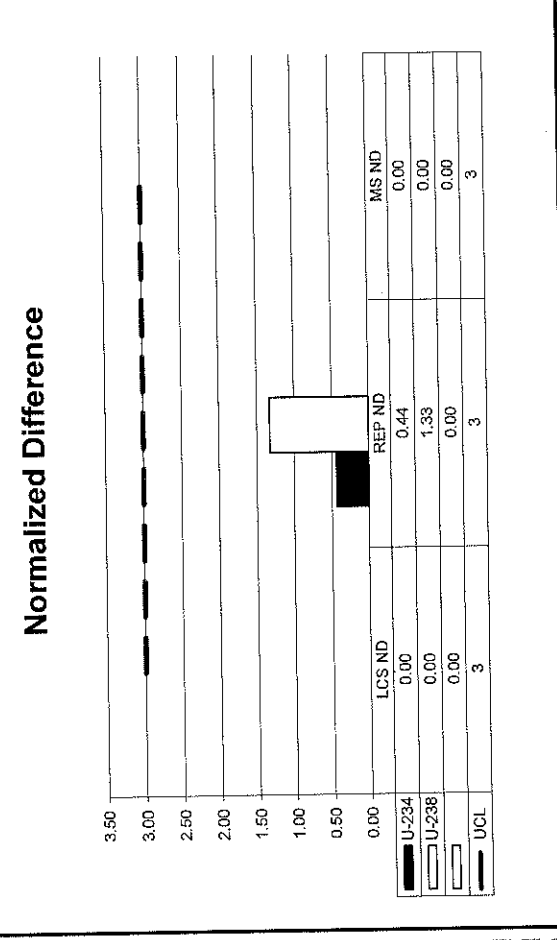
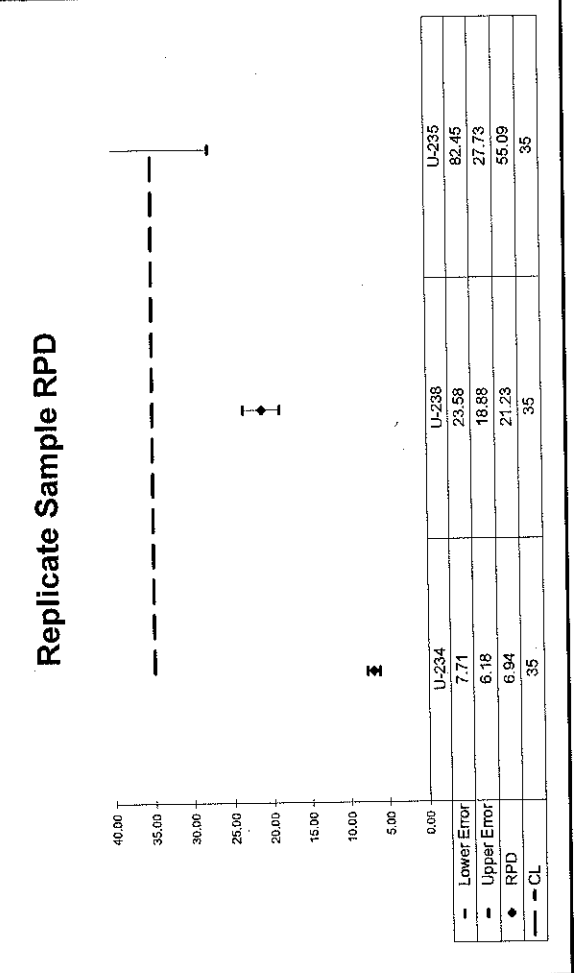
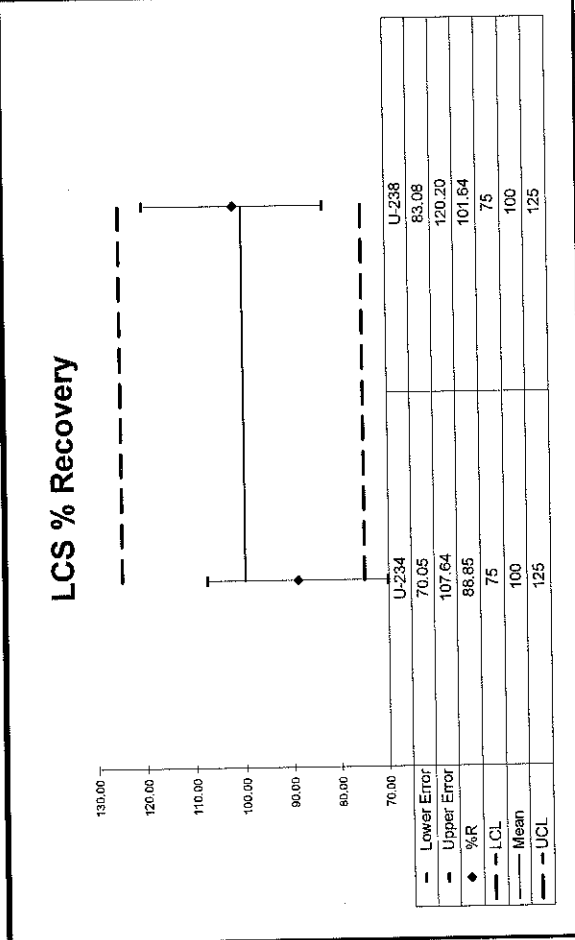
Replicate Sample

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	0.44	6.94	1.53E+00	3.35E-01	1.42E+00	3.14E-01	0.89	OK			OK	OK
U-238	1.33	21.23	1.28E+00	2.98E-01	1.59E+00	3.38E-01	1.02	OK			OK	OK
U-235	0.76	55.09	5.10E-02	6.14E-02	8.98E-02	7.84E-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	0.44	6.94	1.53E+00	3.35E-01	1.42E+00	3.14E-01	0.89	OK			OK	OK
U-238	1.33	21.23	1.28E+00	2.98E-01	1.59E+00	3.38E-01	1.02	OK			OK	OK
U-235	0.76	55.09	5.10E-02	6.14E-02	8.98E-02	7.84E-02		OK			NA	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06038	UUISO	1	pCi	g	Auxier & Associates, Inc.



No Matrix Spike

W/O	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06038	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	123.81%	18.87%	100.00%	3.60%	4.64E+00	1.67E-01	5.74E+00	1.08E+00	Th-8b	1.04E+02	3.60E+00	9.94E-02
TH-230	122.05%	20.20%	100.00%	2.70%	5.34E+00	1.44E-01	6.51E+00	1.32E+00	Th-1b	2.35E+01	2.70E+00	5.04E-01
TH-232	121.00%	18.64%	100.00%	3.60%	4.64E+00	1.67E-01	5.61E+00	1.09E+00	Th-8b	1.04E+02	3.60E+00	9.94E-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

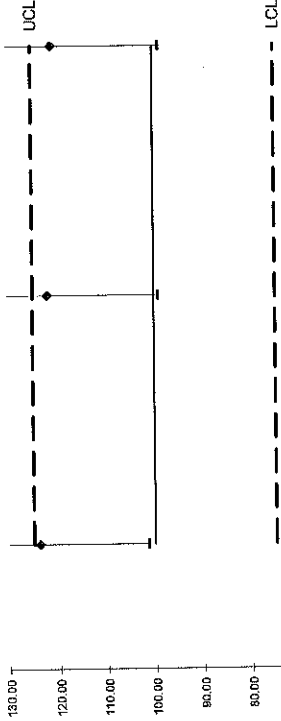
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
TH-228	0.36	7.32	1.24E+00	3.52E-01	1.15E+00	3.25E-01	1.24	OK			OK	OK
TH-230	0.72	14.73	1.47E+00	4.14E-01	1.27E+00	3.62E-01	1.22	OK			OK	OK
TH-232	0.04	0.76	1.10E+00	3.18E-01	1.09E+00	3.08E-01	1.21	OK			OK	OK

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
TH-228	0.36	7.32	1.24E+00	3.52E-01	1.15E+00	3.25E-01	1.24	OK			OK	OK
TH-230	0.72	14.73	1.47E+00	4.14E-01	1.27E+00	3.62E-01	1.22	OK			OK	OK
TH-232	0.04	0.76	1.10E+00	3.18E-01	1.09E+00	3.08E-01	1.21	OK			OK	OK

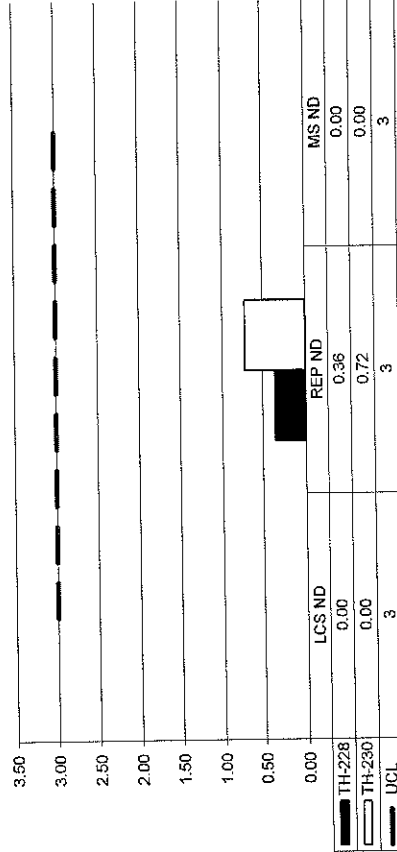
WD	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06038	ThISO	1	pCi	9	Auxier & Associates, Inc.

LCS % Recovery

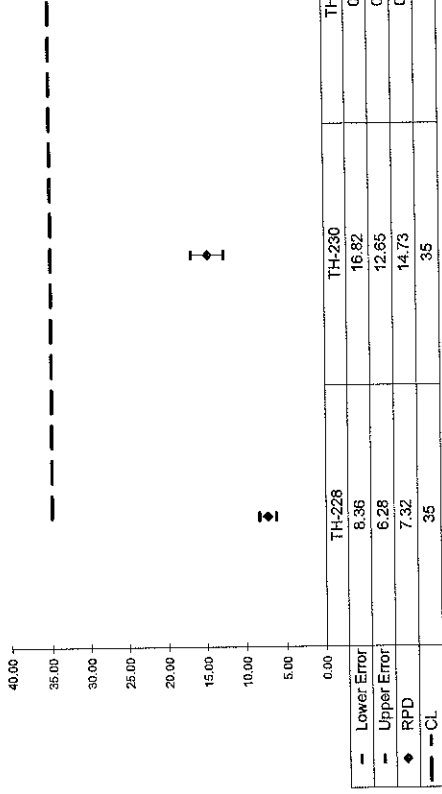


Lower Error	101.34	TH-228	96.77	TH-232
Upper Error	146.28	TH-230	143.24	TH-230
%R	123.81		121.00	16.82
LCL	75		75	12.65
Mean	100		100	14.73
UCL	125		125	7.32

Normalized Difference



Replicate Sample RPD



No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06038	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	109.50%	8.60%	100.00%	4.00%	1.37E+02	5.48E+00	1.50E+02	1.29E+01	GAS-1302	1.37E+02	5.48E+00	7.36E+02
CS-137	106.85%	10.90%	100.00%	4.00%	8.69E+01	3.48E+00	9.29E+01	1.01E+01	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

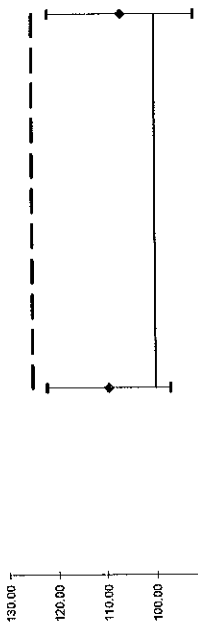
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
AC-228	1.85	21.42	1.30E+00	1.76E-01	1.05E+00	2.00E-01	1.10	OK	<CS-137	AC-228>	OK	
BI-214	1.12	12.83	7.88E-01	1.33E-01	8.96E-01	1.35E-01	1.07	OK	<CO-60	BI-214>	OK	OK
K-40	0.60	5.49	1.61E+01	2.04E+00	1.52E+01	1.93E+00				K-40>	OK	OK

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
AC-228	1.85	21.42	1.30E+00	1.76E-01	1.05E+00	2.00E-01	1.10	OK	<CS-137	AC-228>	OK	
BI-214	1.12	12.83	7.88E-01	1.33E-01	8.96E-01	1.35E-01	1.07	OK	<CO-60	BI-214>	OK	OK
K-40	0.60	5.49	1.61E+01	2.04E+00	1.52E+01	1.93E+00				K-40>	OK	OK

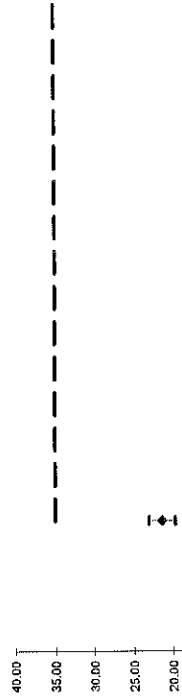
WO	Analysis	Run	Activity Units	Allquot Units	Client Name
16-06038	Gamma	1	pCi	g	Auxier & Associates, Inc.

LCS % Recovery



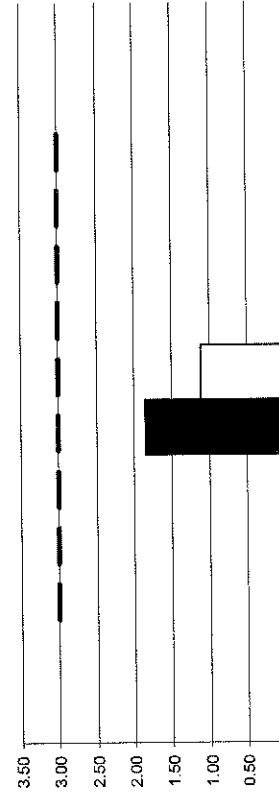
Lower Error	96.81	CS-137	91.94
Upper Error	122.10		121.75
%R	109.50		105.85
LCL	75		75
Mean	100		100
UCL	125		125

Replicate Sample RPD



Lower Error	23.14	BI-214	13.85
Upper Error	19.70		11.81
RPD	21.42		12.83
CL	35		35

Normalized Difference




LCS ND	1.85	REP ND	1.12
MS ND	0.00		0.00
UCL	3		3

No Matrix Spike

SECTION VII
LABORATORY TECHNICIAN'S NOTES
& RUN LOGS

ISO U NOTES

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06038
		Analysis Code	UUISO
		Run Number	1


#	Date	Dept	User	Notes
1	06/14/16 13:27	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.

6-14-16 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	16-06038
		Analysis Code	UUISO
		Run Number	1


#	Date	Dept	User	Notes
1	06/14/16 13:27	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.
2	06/15/16 16:28	CHEM	JDEMELAS	Added concentrated HCl to sample beakers and heated to dryness; Added 20 ml 8N HCl to samples and transferred to new, labeled C-Tubes, rinsing with 8N HCl to bring volume to ~35 ml; Preconditioned resin columns with 35 ml 8N HCl; Centrifuged samples and loaded onto columns; Rinsed C-Tubes with 20 ml 8N HCl, centrifuged as needed and loaded onto columns; Rinsed columns with 35 ml 8N HCl - 0.1N NH4I, 35 ml of 6.5N HCl - 0.04N HF, and 10 ml of 6.5N HCl; Eluted Uranium with 50 ml of 0.5N HCl into clean, labeled 100-ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with DI H2O. Set samples aside for later precipitation and filtering.

John [Signature]
6/15/16

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06038
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	06/14/16 13:27	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.
2	06/15/16 16:28	CHEM	JDEMELAS	Added concentrated HCl to sample beakers and heated to dryness; Added 20 ml 8N HCL to samples and transferred to new, labeled C-Tubes, rinsing with 8N HCl to bring volume to ~35 ml; Preconditioned resin columns with 35 ml 8N HCl; Centrifuged samples and loaded onto columns; Rinsed C-Tubes with 20 ml 8N HCl, centrifuged as needed and loaded onto columns; Rinsed columns with 35 ml 8N HCl - 0.1N NH4I, 35 ml of 6.5N HCl - 0.04N HF, and 10 ml of 6.5N HCl; Eluted Uranium with 50 ml of 0.5N HCl into clean, labeled 100-ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with DI H2O. Set samples aside for later precipitation and filtering.
3	06/16/16 04:55	CHEM	TSMITH	Followed steps 12.1.7 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Uranium)

6-16-16
JM

 EBERLINE SERVICES Reagents Used in an Analysis		Internal Work Order		
		16-06038		
		Analysis Code		Run
		UUISO		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
017559P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	6/14/2016
017533P	Nitric Acid	Reagent Grade	JPACHELLA	6/14/2016
017589P	Perchloric Acid	Reagent Grade	JPACHELLA	6/14/2016
017243P	Sulfuric Acid	Reagent Grade	JPACHELLA	6/14/2016
017344P	Anion Exchange Resin	Reagent Grade	JDEMELAS	6/15/2016
017696S	HCl - HF	6.5N - 0.04N	JDEMELAS	6/15/2016
017716S	HCl - NH4I	8N - 0.1M	JDEMELAS	6/15/2016
017638D01	Hydrochloric Acid	0.5N	JDEMELAS	6/15/2016
017645S	Hydrochloric Acid	6.5N	JDEMELAS	6/15/2016
017707S	Hydrochloric Acid	8N	JDEMELAS	6/15/2016
017518P	Hydrochloric Acid	Reagent Grade	JDEMELAS	6/15/2016
017659S	Carbon substrate	Solution	TSMITH	6/16/2016
017559P	Hydrofluoric Acid	Reagent Grade	TSMITH	6/16/2016
017340S	Neodymium Carrier	1 mg/ml	TSMITH	6/16/2016
017649P	Reagent Alcohol	Reagent Grade	TSMITH	6/16/2016
016606P	Titanous Chloride	Reagent Grade	TSMITH	6/16/2016

Alpha #1

Date	Account	Client	Meeting	C Time	Amount	Fee
6/14/16	1606034A(3)	ucon	0859	2.5-	7.750	-
6/14/16	1605122A(3)	ucon	0859	2.5-	7.750	-
6/14/16	1606034A(1-4)	ucon	0900	2.5-	7.750	-
6/14/16	1606044A(1)	ucon	0900	2.5-	4.750	-
6/14/16	1605123A(1-7)	Renova	1349	2.500-	Rate	105
6/15	Daily R	LAB	0522	1-	NA	-
6/15	1606025A(2-4)	ucon	0810	2.5-	7.750	-
6/15	Daily Pulser	LAB	0522	1-	NA	-
6/16	1606057A(1-4)	Parsons	0818	2.5-	7.750	-
6/16	1606057A(1-3)	Parsons	0819	2.5-	7.750	-
6/16/16	1606025A(2-4)	ucon	1127	2.500-	7.750	105
6/16/16	1606025A(1-4)	ucon	1128	2.500-	NA	105

Alphabet 3

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Photo	Sample #	Client	Location	Time	Method	Notes
6/14/16	1606003A(3-4)	Searcy	1154	2hr50+	ISO-Th	KB
6/14/16	1605128A(1-4)	UWOR	1156	2hr50+	Am241	KB
6/14/16	1605128A(1-4)	UWOR	1157	2hr50+	Am243	KB
6/14/16	1605139A(1-4)	UWOR	1157	2hr50+	Am241	KB
6/14/16	1605139A(1-4)	UWOR	1158	2hr50+	Am243	KB
6/14/16	1606044A(1-4)	USA	1159	2hr50+	Rule	KB
6/14/16	1605123A(8-12)	Renova	1350	2hr50+	Rule	KB
6/15	Daily	LAB	0522	1hr	MT	-
6/15	1606054A(1-4)	MCL	0807	2hr50+	Am241	-
6/15	1606054A(1-5)	MCL	0807	2hr50+	Pu250	-
6/15	1606053A(1-4)	Parsons	0807	2hr50+	UWISO	-
6/15	1606003A(1-4)	Searcy	0808	2hr50+	Am241	-
6/15	1606003A(1-4)	Searcy	0809	2hr50+	Pu250	-
6/15	1606025A(1-4)	UWOR	0809	2hr50+	UWISO	-
6/15	1606025A(1-4)	UWOR	0810	2hr50+	UWISO	-
6/15	1606025A(1)	UWOR	0810	2hr50+	UWISO	-
6/15/16	1606033A(1-10)	TEXCOM	1117	2hr50+	Rule	KB
6/15	1605099A(6)	Searcy	1145	2hr50+	Pu250	-
6/15/16	1606046A(1-11)	Texcom	1628	2hr50+	Rule	KB
6/16	Daily	LAB	0120	1hr	MT	-
6/16	1606053A(1-4)	Parsons	0819	2hr50+	Pu250	-
6/16	1606025A(1-4,7)	UWOR	0819	2hr50+	Pu250	-
6/16	1606025A(1-4)	UWOR	0819	2hr50+	Pu242	-
6/16	1606014A(1-5)	Miss. Rept	0820	2hr50+	UWISO	-
6/16	1606027A(1-6)	NW Autobody	0820	2hr50+	UWISO	-
6/16	1606014A(1-5)	Miss. Rept	0821	2hr50+	UWISO	-
6/16	1606025A(1-4)	UWOR	0821	2hr50+	UWISO	-
6/16/16	1606038A(1-15)	Auxair	1130	2hr50+	UU	KB
6/16/16	Regentst 29(1)	Lab	1130	2hr50+	PuNT	KB
6/16/16	1606027A(1-6)	NW Autobody	1132	2hr50+	ISO-Th	KB
6/16/16	1606025A(2)	UWOR	1156	2hr50+	Pu242	KB
6/16/16	1606047A(1-7)	Texcom	1438	2hr50+	Rule	KB
6/16/16	1606033A(8)	Auxair	1439	2hr50+	UU	KB

ISO-TH NOTES

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06038
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	06/14/16 13:27	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.

6-14-15 JPACHELLA

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06038
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	06/14/16 13:27	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.
2	06/17/16 16:05	CHEM	JDEMELAS	Added concentrated HNO ₃ to sample beakers and heated to dryness; Added 20 ml 8N HNO ₃ to samples and transferred to new, labeled C-Tubes, adding 8N HNO ₃ to bring volume to ~35 ml; Preconditioned resin columns with 50 ml 8N HNO ₃ ; Centrifuged samples as needed, and passed through columns; Rinsed C-Tubes with 20 ml 8N HNO ₃ ; Centrifuged rinsates and loaded onto columns; Rinsed columns with 40 ml 8N HNO ₃ ; 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.

[Handwritten Signature]
 6/17/16

 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	16-06038
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	06/14/16 13:27	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.
2	06/17/16 16:05	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	06/20/16 05:03	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Thorium)

*6-20-16
me*



Reagents Used in an Analysis

Internal Work Order

16-06038

Analysis Code

Run

ThISO

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
017559P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	6/14/2016
017533P	Nitric Acid	Reagent Grade	JPACHELLA	6/14/2016
017589P	Perchloric Acid	Reagent Grade	JPACHELLA	6/14/2016
017243P	Sulfuric Acid	Reagent Grade	JPACHELLA	6/14/2016
017344P	Anion Exchange Resin	Reagent Grade	JDEMELAS	6/17/2016
017719S	Hydrochloric Acid	8N	JDEMELAS	6/17/2016
017518P	Hydrochloric Acid	Reagent Grade	JDEMELAS	6/17/2016
017534P	Nitric Acid	Reagent Grade	JDEMELAS	6/17/2016
017721S	Nitric Acid	8N	JDEMELAS	6/17/2016
017659S	Carbon substrate	Solution	TSMITH	6/20/2016
017491S	Cerrium Carrier	0.1mg/ml	TSMITH	6/20/2016
017559P	Hydrofluoric Acid	Reagent Grade	TSMITH	6/20/2016
017649P	Reagent Alcohol	Reagent Grade	TSMITH	6/20/2016

Alpha #3

Date	Sample #	Client	Invoice #	CT Min	Analysis	Time
6/11/16	1606025A (1-4)	UCOR	1740	2hr50	Rate	KB
6/11/16	160507DB (1-4)	Auxin	1741	2hr50	Rate	KB
6/17/16	Daily Pulser	IAS	0759	1hr	NA	C
6/17	SEC CAL (3-4)	IAS	0519	2hr	NA	C
6/17	SEC CAL (42-60)	IAS	0806	2hr	NA	-
6/17	1606059A (8-16)	USA	0805	2hr5	2hr50	-
6/17	1606061A (1-7, 6-8)	USA	0806	2hr5	2hr50	-
6/17/16	1606061A (1-4)	USA	1039	2hr50	750-TH	KB
6/17/16	1606032A (3, 7, 13, 14)	US Dept of Health	1040	5hr35	UU	KB
6/17/16	1606061A (3, 4, 9, 14)	USA	1152	2hr50	Rate	KB
6/17/16	System Bkgnd	Lab	1619	16.40 hr	2	KB
6/18/16	Daily Pulser	Lab	0904	10 min	NA	KB
6/19/16	1606032A (1, 2, 4, 6, 8, 12, 15)	US Dept of Health	0921	16.40 hr	UU	KB
6/19/16	Daily Pulser	Lab	1027	10 min	NA	AG
6/19/16	1606059A (8-16)	USA	1058	2hr50 min	Rate 226	AG
6/20/16	Daily Pulser	Lab	0631	10 min	NA	AG
6/20/16	1606015A (3-4)	Mirion Tech	0853	2hr50	UU	KB
6/20/16	1606023A (1-4)	UCOR	0854	2hr50	UU	KB
6/20/16	1606023A (4)	UCOR	0855	2hr50	UU NT	KB
6/20/16	1606025A (1-4)	UCOR	0855	2hr50	Am 241	KB
6/20/16	1606025A (1-4)	UCOR	0856	2hr50	Am 243	KB
6/20/16	1606023A (1-4, 7)	UCOR	0856	2hr50	Pu 230	KB
6/20/16	1606023A (1-4)	UCOR	0857	2hr50	Pu 242	KB
6/20/16	1606023A (1-2)	UCOR	0858	2hr50	Iso-TH	KB
6/20/16	1606023A (3-4)	UCOR	1211	2hr50	Iso-TH	KB
6/20/16	1606023A (1-4)	UCOR	1211	2hr50	Np	KB
6/20/16	1606038A (1-15)	Auxin	1215	2hr50	Iso-TH	KB
6/20/16	1606025A (3)	UCOR	1216	2hr50	Am 241	KB

GAMMA NOTES

GE 1

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DATE	SAMPLE #	Client	Loadtime	CT. Time	Analysis	Tech
6/11/13	1605126-01	Remova	0709	15	Ben	-
6/11/13	1605126-05	Remova	0708	15	Ben	c
6/11/13	1605126-09	Remova	0742	15	Ben	c
6/11/13	1605126-13	Remova	0758	15	Ben	c
6/11/13	1606054-01	MCL	0820	7	✓	c
6/13/16	1606055-00	USA	0951	5mins	Rn22	KB
	04		0958			
	08		1005			
	13		1031			
	16		1019			
	20		1025			
	24		1031			
	28		1037			
6/13/16	1606054-03	MCL	1043	2 hr	✓	KB
6/17/16	1606054-04	MCL	1244	2h	✓	c
6/13/16	1606052-03	Searcy	1540	12 hr	✓	KB
6/11/14	GA714	US	0513	15-	✓	c
6/11/14	Parma	US	0546	15-	✓	c
6/11/14	GA714	US	0605	15	✓	c
6/11/14	1606038-05	Auxier	0820	2h	✓	c
6/11/14	1606038-08	Auxier	0936	2h	✓	c
6/11/14	1606038-03	Auxier	1078	2h	✓	c
6/11/14	1606038-04	Auxier	1138	2h	✓	c
6/11/14	1606038-14	Auxier		2h	✓	c

DATE	SAMPLE #	Client	Load Time	CT Time	Analysis	Tech
6/10/16	1606025-01	UCOR	1540	30min	✓	KB
6/10/16	1605079-06	Accutest	1612	15min	Ba	KB
6/10/16	1605079-03	Accutest	1629	15mins	Ba	KB
6/10/16	1605079-04	Accutest	1646	15min	Ba	KB
6/10/16	1606025-03	UCOR	1720	8hr	✓	KB
6/11/16	System Dk sel	Lab	0835	24 hr	✓	KB
6/13	CT8-1401	LAB	0621	15	✓	✓
6/13	Dialyzer	LAB	0541	15	✓	✓
6/13	1605126-02	Remcon	0709	15	Ba	-
6/13	1605126-06	Remcon	0724	15	Ba	-
6/13	1605126-10	Remcon	0742	15	Ba	-
6/13	1605126-14	Remcon	0758	15	Ba	-
6/13	1605126-09	Remcon	0814	15	Ba	-
6/13/16	1606055-01	USA	0952	5mins	Rn222	KB
	05		0958			
	09		1005			
	14		1013			
	17		1019			
	21		1025			
	25		1031			
	29		1037			
6/13/16	1606054-02	MCL	1043	2hr	✓	KB
6/13/16	1606025-04	UCOR	1543	8 hrs	✓	KB
6/14	CT8-1401	LAB	0519	15-	✓	✓
6/14	Dialyzer	LAB	0546	15	✓	✓
6/14	CT8-1401	LAB	0605	15	✓	✓
6/14	1606038-06	Ampier	0820	2h	✓	✓
6/14	1606038-09	Ampier	0926	2h	✓	✓
6/14	1606038-11	Ampier	1038	2h	✓	✓
6/14	1606038-13	Ampier	1138	2h	✓	✓
6/14	1606038-15	Ampier	1240	2h	✓	✓

DATE	SAMPLE #	Client	End Time	CT Time	Analysis	Tech
6/14	1606038-07	Aurora	0820	2h	✓	✓
6/14	1606038-10	Aurora	0936	2h	✓	✓
6/14	1606038-12	Aurora	1038	2h	✓	✓
6/14	1606038-14	Aurora	1139	2h	✓	✓

GE 4

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DATE	SAMPLE #	Client	LotTime	CTTime	Analysis	Tech
6/13	Edwin	USA	0524	15	✓	✓
6/13	Dwight	USA	0541	15	✓	✓
6/13	1605126-04	Renova	0709	15	Ben	—
6/13	1605126-08	Renova	0715	15	Ben	✓
6/13	1605126-12	Renova	0712	15	Ben	✓
6/13	1605126-16	Renova	0758	15	Ben	✓
6/13/16	1606055-03	USA	0952	5mins	Rn 222	ICB
	07		0959			
	11		1006			
	12		1013			
	19		1019			
	23		1026			
	27		1032			
	00		1037			
6/13/16	1605124-02	Renova	1059	15mins	Ben	ICB
6/13/16	1605124-04	Renova	1115	15mins	Ben	ICB
6/13/16	1605124-06	Renova	1131	15	Ben	ICB
6/13/16	1605124-08	Renova	1148	15	Ben	ICB
6/13	1605124-10	Renova	1211	15	Ben	✓
6/13	1605124-12	Renova	1229	15	Ben	✓
6/13/16	1606052-02	Searcy	1041	12 hrs	8	ICB
6/14	Edwin	USA	0528	15-	✓	✓
6/14	Dwight	USA	0546	15-	✓	✓
6/14	Edwin	USA	0605	15	✓	✓
6/14	1606044-01	USA	1016	15	Ben	—
6/14	1606044-02	USA	1031	15	Ben	—
6/14	1606044-03	USA	1047	15	Ben	—
6/14	1606044-04	USA	1102	15	Ben	—
6/14	1606038-02	Aurifer	1118	15	✓	✓
6/14	1606038-01	Aurifer	1219	15	✓	✓

SECTION VIII
ANALYTICAL DATA (ISOTOPIC URANIUM)

Work Order	16-06038
Analysis Code	UIISO
Run	1
Date Received	6/9/2016
Lab Deadline	6/29/2016
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)	18.53
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		06/09/16 00:00	1.0000E+00
02	MBL	BLANK		06/09/16 00:00	1.0000E+00
03	DUP	CP-5018 00-02	45	06/06/16 00:00	1.0156E+00
04	DO	CP-5018 00-02	45	06/06/16 00:00	1.0903E+00
05	TRG	CP-5018 02-05	43	06/06/16 00:00	1.0413E+00
06	TRG	CP-5018 05-10	53	06/06/16 00:00	1.0073E+00
07	TRG	CP-5018 10-15	42	06/06/16 00:00	1.0059E+00
08	TRG	CP-5019 00-02	48	06/06/16 00:00	1.0881E+00
09	TRG	CP-5019 02-05	57	06/06/16 00:00	1.0172E+00
10	TRG	CP-5019 05-10	50	06/06/16 00:00	1.0168E+00
11	TRG	CP-5019 10-15	34	06/06/16 00:00	1.0050E+00
12	TRG	CP-5022 00-02	39	06/02/16 00:00	1.0050E+00
13	TRG	CP 5022 02-05	55	06/02/16 00:00	1.0202E+00
14	TRG	CP 5022 05-10	43	06/02/16 00:00	1.0317E+00
15	TRG	CP 5022 10-15	39	06/02/16 00:00	1.0075E+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.

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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	0.6651	12.3		0.00								
02	MBL	0.6516	12.1		0.00								
03	DUP	0.6581	12.2		0.00								
04	DO	0.6561	12.2		0.00								
05	TRG	0.6566	12.2		0.00								
06	TRG	0.6565	12.2		0.00								
07	TRG	0.6555	12.1		0.00								
08	TRG	0.6545	12.1		0.00								
09	TRG	0.6547	12.1		0.00								
10	TRG	0.6546	12.1		0.00								
11	TRG	0.6563	12.2		0.00								
12	TRG	0.6537	12.1		0.00								
13	TRG	0.6538	12.1		0.00								
14	TRG	0.6549	12.1		0.00								
15	TRG	0.6535	12.1		0.00								

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

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16-06038
UJISO
Run 1

Eberline Services
Oak Ridge Laboratory
Analysis Sheet


Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep f0 Date/Time	Sep f0 By	Sep f1 Date/Time	Sep f1 By
01	LCS			06/14/16 11:40	JPACHELLA				
02	MBL			06/14/16 11:40	JPACHELLA				
03	DUP			06/14/16 11:40	JPACHELLA				
04	DO	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
05	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
06	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
07	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
08	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
09	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
10	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
11	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
12	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
13	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
14	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				
15	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:40	JPACHELLA				

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

Preliminary Data Report & Analytical Calculations
Work Order: 16-06038-UISO-1

Eberline Analytical
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-234	LCS	LCS	pCi/g	7.21E+00	9.67E-01	7.78E-02	8.12E+00	88.85	OK		OK	
02	U-234	MBL	BLANK	pCi/g	8.97E-01	2.25E-01	5.07E-02					OK	OK
03	U-234	DUP	CP-5018 00-02	pCi/g	1.42E+00	2.97E-01	6.84E-02				OK	OK	
04	U-234	DO	CP-5018 00-02	pCi/g	1.53E+00	3.17E-01	6.54E-02					OK	
05	U-234	TRG	CP-5018 02-05	pCi/g	1.61E+00	3.16E-01	6.95E-02					OK	
06	U-234	TRG	CP-5018 05-10	pCi/g	1.58E+00	3.19E-01	7.34E-02					OK	
07	U-234	TRG	CP-5018 10-15	pCi/g	1.66E+00	3.45E-01	9.50E-02					OK	
08	U-234	TRG	CP-5019 00-02	pCi/g	1.19E+00	2.73E-01	7.50E-02					OK	
09	U-234	TRG	CP-5019 02-05	pCi/g	1.63E+00	3.40E-01	9.74E-02					OK	
10	U-234	TRG	CP-5019 05-10	pCi/g	1.42E+00	3.20E-01	7.93E-02					OK	
11	U-234	TRG	CP-5019 10-15	pCi/g	1.61E+00	3.93E-01	9.67E-02					OK	
12	U-234	TRG	CP-5022 00-02	pCi/g	1.29E+00	2.95E-01	7.62E-02					OK	
13	U-234	TRG	CP 5022 02-05	pCi/g	1.41E+00	2.95E-01	5.78E-02					OK	
14	U-234	TRG	CP 5022 05-10	pCi/g	1.57E+00	3.17E-01	7.26E-02					OK	
15	U-234	TRG	CP 5022 10-15	pCi/g	1.53E+00	3.24E-01	6.33E-02					OK	

	Run	1
	Analysis Code	UISO
Eberline Analytical Work Order	16-06038	
Client	Auxier & Associates, Inc.	

Preliminary Data Report & Analytical Calculations
Work Order: 16-06038-UJISO-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-234	LCS	06/09/16 00:00	1.00E+00	116.22	0.00	0.00			
02	U-234	MBL	06/09/16 00:00	1.00E+00	123.39	0.00	0.00			
03	U-234	DUP	06/06/16 00:00	1.02E+00	136.79	0.00	0.00			
04	U-234	DO	06/06/16 00:00	1.09E+00	104.54	0.00	0.00			
05	U-234	TRG	06/06/16 00:00	1.04E+00	133.66	0.00	0.00			
06	U-234	TRG	06/06/16 00:00	1.01E+00	134.60	0.00	0.00			
07	U-234	TRG	06/06/16 00:00	1.01E+00	106.04	0.00	0.00			
08	U-234	TRG	06/06/16 00:00	1.09E+00	128.54	0.00	0.00			
09	U-234	TRG	06/06/16 00:00	1.02E+00	103.61	0.00	0.00			
10	U-234	TRG	06/06/16 00:00	1.02E+00	103.81	0.00	0.00			
11	U-234	TRG	06/06/16 00:00	1.01E+00	75.83	0.00	0.00			
12	U-234	TRG	06/02/16 00:00	1.01E+00	104.86	0.00	0.00			
13	U-234	TRG	06/02/16 00:00	1.02E+00	125.87	0.00	0.00			
14	U-234	TRG	06/02/16 00:00	1.03E+00	117.50	0.00	0.00			
15	U-234	TRG	06/02/16 00:00	1.01E+00	116.67	0.00	0.00			

Client
Auxier & Associates, Inc.

Eberline Analytical Work Order
16-06038

Analysis Code
UJISO

Run
1



Preliminary Data Report & Analytical Calculations
Work Order: 16-06038-UUISO-1

Eberline Analytical
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-234	LCS	06/16/16 11:28		A_Spec	Alpha_033	170	5.56 E+02	0.00 E+00	17.6
02	U-234	MBL	06/16/16 11:28		A_Spec	Alpha_034	170	7.38 E+01	1.00 E-03	17.7
03	U-234	DUP	06/16/16 11:28		A_Spec	Alpha_035	170	1.17 E+02	4.00 E-03	15.8
04	U-234	DO	06/16/16 11:29		A_Spec	Alpha_036	170	1.22 E+02	3.00 E-03	18.7
05	U-234	TRG	06/16/16 11:29		A_Spec	Alpha_037	170	1.39 E+02	0.00 E+00	16.5
06	U-234	TRG	06/16/16 11:29		A_Spec	Alpha_038	170	1.29 E+02	0.00 E+00	16
07	U-234	TRG	06/16/16 11:29		A_Spec	Alpha_039	170	1.24 E+02	9.00 E-03	18.6
08	U-234	TRG	06/16/16 14:39		A_Spec	Alpha_063	170	9.52 E+01	5.00 E-03	15.2
09	U-234	TRG	06/16/16 11:29		A_Spec	Alpha_041	170	1.23 E+02	1.00 E-02	19
10	U-234	TRG	06/16/16 11:29		A_Spec	Alpha_042	170	1.01 E+02	4.00 E-03	17.9
11	U-234	TRG	06/16/16 11:29		A_Spec	Alpha_043	170	8.75 E+01	3.00 E-03	18.9
12	U-234	TRG	06/16/16 11:29		A_Spec	Alpha_044	170	9.53 E+01	4.00 E-03	18.6
13	U-234	TRG	06/16/16 11:29		A_Spec	Alpha_045	170	1.17 E+02	2.00 E-03	17.1
14	U-234	TRG	06/16/16 11:29		A_Spec	Alpha_046	170	1.29 E+02	5.00 E-03	18.1
15	U-234	TRG	06/16/16 11:29		A_Spec	Alpha_047	170	1.16 E+02	2.00 E-03	17

	Run	1
	Analysis Code	UUISO
Client	Auxier & Associates, Inc.	
Eberline Analytical Work Order	16-06038	

37002

Preliminary Data Report & Analytical Calculations
Work Order: 16-06038-UJISO-1

Eberline Analytical
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-238	LCS	LCS	pCi/g	7.99E+00	1.05E+00	5.39E-02	7.86E+00	101.64	OK		OK	
02	U-238	MBL	BLANK	pCi/g	8.18E-01	2.13E-01	5.78E-02					OK	OK
03	U-238	DUP	CP-5018 00-02	pCi/g	1.59E+00	3.18E-01	6.34E-02				OK		
04	U-238	DO	CP-5018 00-02	pCi/g	1.28E+00	2.84E-01	6.51E-02					OK	
05	U-238	TRG	CP-5018 02-05	pCi/g	1.49E+00	3.00E-01	6.92E-02					OK	
06	U-238	TRG	CP-5018 05-10	pCi/g	1.57E+00	3.16E-01	5.08E-02					OK	
07	U-238	TRG	CP-5018 10-15	pCi/g	1.37E+00	3.06E-01	1.04E-01					OK	
08	U-238	TRG	CP-5019 00-02	pCi/g	1.18E+00	2.70E-01	5.20E-02					OK	
09	U-238	TRG	CP-5019 02-05	pCi/g	1.92E+00	3.78E-01	1.22E-01					OK	
10	U-238	TRG	CP-5019 05-10	pCi/g	1.36E+00	3.11E-01	8.38E-02					OK	
11	U-238	TRG	CP-5019 10-15	pCi/g	1.70E+00	4.05E-01	9.63E-02					OK	
12	U-238	TRG	CP-5022 00-02	pCi/g	1.68E+00	3.46E-01	5.62E-02					OK	
13	U-238	TRG	CP 5022 02-05	pCi/g	1.43E+00	2.97E-01	6.32E-02					OK	
14	U-238	TRG	CP 5022 05-10	pCi/g	1.64E+00	3.26E-01	7.23E-02					OK	
15	U-238	TRG	CP 5022 10-15	pCi/g	1.40E+00	3.05E-01	5.51E-02					OK	

Client
Auxier & Associates, Inc.

Eberline Analytical Work Order
16-06038


Analysis Code
UJISO

Run
1

Preliminary Data Report & Analytical Calculations
Work Order: 16-06038-UJISO-1

Eberline Analytical
Oak Ridge Laboratory


Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-238	LCS	06/16/16 11:28		A_Spec	Alpha_033	170	6.19 E+02	1.00 E-03	17.6
02	U-238	MBL	06/16/16 11:28		A_Spec	Alpha_034	170	6.77 E+01	2.00 E-03	17.7
03	U-238	DUP	06/16/16 11:28		A_Spec	Alpha_035	170	1.31 E+02	3.00 E-03	15.8
04	U-238	DO	06/16/16 11:29		A_Spec	Alpha_036	170	1.03 E+02	3.00 E-03	18.7
05	U-238	TRG	06/16/16 11:29		A_Spec	Alpha_037	170	1.29 E+02	0.00 E+00	16.5
06	U-238	TRG	06/16/16 11:29		A_Spec	Alpha_038	170	1.29 E+02	1.00 E-03	16
07	U-238	TRG	06/16/16 11:29		A_Spec	Alpha_039	170	1.03 E+02	1.20 E-02	18.6
08	U-238	TRG	06/16/16 14:39		A_Spec	Alpha_053	170	9.48 E+01	1.00 E-03	15.2
09	U-238	TRG	06/16/16 11:29		A_Spec	Alpha_041	170	1.46 E+02	2.00 E-02	19
10	U-238	TRG	06/16/16 11:29		A_Spec	Alpha_042	170	9.72 E+01	5.00 E-03	17.9
11	U-238	TRG	06/16/16 11:29		A_Spec	Alpha_043	170	9.25 E+01	3.00 E-03	18.9
12	U-238	TRG	06/16/16 11:29		A_Spec	Alpha_044	170	1.25 E+02	1.00 E-03	18.6
13	U-238	TRG	06/16/16 11:29		A_Spec	Alpha_045	170	1.18 E+02	3.00 E-03	17.1
14	U-238	TRG	06/16/16 11:29		A_Spec	Alpha_046	170	1.36 E+02	5.00 E-03	18.1
15	U-238	TRG	06/16/16 11:29		A_Spec	Alpha_047	170	1.06 E+02	1.00 E-03	17

	Run	1
	Analysis Code	UJISO
Client	Auxier & Associates, Inc.	
Eberline Analytical Work Order	16-06038	

Preliminary Data Report & Analytical Calculations
Work Order: 16-06038-UUISO-1

Eberline Analytical
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-235	LCS	LCS	pCi/g	3.79E-01	1.59E-01	7.65E-02					OK	
02	U-235	MBL	BLANK	pCi/g	1.72E-02	4.30E-02	8.97E-02					OK	OK
03	U-235	DUP	CP-5018 00-02	pCi/g	8.98E-02	7.82E-02	8.97E-02				NA	OK	
04	U-235	DO	CP-5018 00-02	pCi/g	5.10E-02	6.13E-02	8.67E-02					OK	
05	U-235	TRG	CP-5018 02-05	pCi/g	1.64E-01	9.89E-02	7.51E-02					OK	
06	U-235	TRG	CP-5018 05-10	pCi/g	9.06E-02	7.88E-02	9.05E-02					OK	
07	U-235	TRG	CP-5018 10-15	pCi/g	2.14E-01	1.24E-01	1.04E-01					OK	
08	U-235	TRG	CP-5019 00-02	pCi/g	2.58E-02	4.35E-02	7.39E-02					OK	
09	U-235	TRG	CP-5019 02-05	pCi/g	6.51E-02	7.33E-02	1.03E-01					OK	
10	U-235	TRG	CP-5019 05-10	pCi/g	1.30E-01	9.77E-02	9.10E-02					OK	
11	U-235	TRG	CP-5019 10-15	pCi/g	1.25E-01	1.11E-01	1.19E-01					OK	
12	U-235	TRG	CP-5022 00-02	pCi/g	1.67E-01	1.10E-01	1.00E-01					OK	
13	U-235	TRG	CP 5022 02-05	pCi/g	8.70E-02	7.24E-02	6.23E-02					OK	
14	U-235	TRG	CP 5022 05-10	pCi/g	6.97E-02	6.64E-02	7.15E-02					OK	
15	U-235	TRG	CP 5022 10-15	pCi/g	1.28E-01	9.18E-02	6.82E-02					OK	

	Run	1
	Analysis Code	UUISO
	Eberline Analytical Work Order	16-06038
Client	Auxier & Associates, Inc.	

72000

Preliminary Data Report & Analytical Calculations
Work Order: 16-06038-UISO-1

Eberline Analytical
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-235	LCS	06/16/16 11:28		A_Spec	Alpha_033	170	2.37 E+01	2.00 E-03	17.6
02	U-235	MBL	06/16/16 11:28		A_Spec	Alpha_034	170	1.15 E+00	5.00 E-03	17.7
03	U-235	DUP	06/16/16 11:28		A_Spec	Alpha_035	170	6.00 E+00	0.00 E+00	15.8
04	U-235	DO	06/16/16 11:29		A_Spec	Alpha_036	170	3.32 E+00	4.00 E-03	18.7
05	U-235	TRG	06/16/16 11:29		A_Spec	Alpha_037	170	1.15 E+01	3.00 E-03	16.5
06	U-235	TRG	06/16/16 11:29		A_Spec	Alpha_038	170	6.00 E+00	0.00 E+00	16
07	U-235	TRG	06/16/16 11:29		A_Spec	Alpha_039	170	1.30 E+01	6.00 E-03	18.6
08	U-235	TRG	06/16/16 14:39		A_Spec	Alpha_053	170	1.66 E+00	2.00 E-03	15.2
09	U-235	TRG	06/16/16 11:29		A_Spec	Alpha_041	170	3.98 E+00	6.00 E-03	19
10	U-235	TRG	06/16/16 11:29		A_Spec	Alpha_042	170	7.49 E+00	3.00 E-03	17.9
11	U-235	TRG	06/16/16 11:29		A_Spec	Alpha_043	170	5.49 E+00	3.00 E-03	18.9
12	U-235	TRG	06/16/16 11:29		A_Spec	Alpha_044	170	1.00 E+01	0.00 E+00	18.6
13	U-235	TRG	06/16/16 11:29		A_Spec	Alpha_045	170	5.83 E+00	1.00 E-03	17.1
14	U-235	TRG	06/16/16 11:29		A_Spec	Alpha_046	170	4.66 E+00	2.00 E-03	18.1
15	U-235	TRG	06/16/16 11:29		A_Spec	Alpha_047	170	7.83 E+00	1.00 E-03	17

	Run	1
Analysis Code	UISO	
Eberline Analytical Work Order	16-06038	
Client	Auxier & Associates, Inc.	

07000

Internal Work Order		Run	Analysis Code		Date	Technician		Technician Initials		Witness Initials			
16-06038		1	UIISO		6/14/2016 11:32	JPACHELLA		<i>JP</i>					
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS		MS		LCS		MSD		
					Volume Used (g)	MS Volume Used (g)	Known pCi	Error Estimate	Added pCi	Error Estimate	Known pCi	Error Estimate	Added pCi	Error Estimate
U-234	U-8a	32,000	6/14/2016	0.550	0.5630			8.12	0.292	0.00	0.000	0.00	0.000
U-238	U-8a	31,000	6/14/2016	0.550	0.5630			7.86	0.283	0.00	0.000	0.00	0.000
LC-99 MS LC-2a 22043636 7/5/2014 U-1 Tracers													
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Balance Printer Tapes						
01	U-232	U-10a	18,530	6/14/2016	0.6651	0.6500	Tracer						
02	U-232	U-10a	18,530	6/14/2016	0.6516	0.6500	LCS						
03	U-232	U-10a	18,530	6/14/2016	0.6581	0.6500	Matrix Spike						
04	U-232	U-10a	18,530	6/14/2016	0.6561	0.6500							
05	U-232	U-10a	18,530	6/14/2016	0.6566	0.6500							
06	U-232	U-10a	18,530	6/14/2016	0.6565	0.6500							
07	U-232	U-10a	18,530	6/14/2016	0.6555	0.6500							
08	U-232	U-10a	18,530	6/14/2016	0.6545	0.6500							
09	U-232	U-10a	18,530	6/14/2016	0.6547	0.6500							
10	U-232	U-10a	18,530	6/14/2016	0.6546	0.6500							
11	U-232	U-10a	18,530	6/14/2016	0.6553	0.6500							
12	U-232	U-10a	18,530	6/14/2016	0.6537	0.6500							
13	U-232	U-10a	18,530	6/14/2016	0.6538	0.6500							
14	U-232	U-10a	18,530	6/14/2016	0.6549	0.6500							
15	U-232	U-10a	18,530	6/14/2016	0.6535	0.6500							

Aliquot Worksheet

Work Order		Run	Analysis Code	Rpt Units	Lab Deadline	Technician	
16-06038		1	UJISO	grams	6/29/2016	JPACHELLA	

Lab Fraction	Auxier & Associates, Inc.		Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID	Sample Type	Ratio Post/Pre	No. of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS					1.0000E+00	1.0000E+00					
02	BLANK	MBL					1.0000E+00	1.0000E+00					
03	CP-5018 00-02	DUP					1.0156E+00	1.0156E+00					
04	CP-5018 00-02	DO					1.0903E+00	1.0903E+00					
05	CP-5018 02-05	TRG					1.0413E+00	1.0413E+00					
06	CP-5018 05-10	TRG					1.0073E+00	1.0073E+00					
07	CP-5018 10-15	TRG					1.0059E+00	1.0059E+00					
08	CP-5019 00-02	TRG					1.0881E+00	1.0881E+00					
09	CP-5019 02-05	TRG					1.0172E+00	1.0172E+00					
10	CP-5019 05-10	TRG					1.0168E+00	1.0168E+00					
11	CP-5019 10-15	TRG					1.0050E+00	1.0050E+00					
12	CP-5022 00-02	TRG					1.0050E+00	1.0050E+00					
13	CP 5022 02-05	TRG					1.0202E+00	1.0202E+00					
14	CP 5022 05-10	TRG					1.0317E+00	1.0317E+00					
15	CP 5022 10-15	TRG					1.0075E+00	1.0075E+00					

Comments

Technician: JPachella Date: 6/14/16

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
16-06038	6/29/2016	6/13/2016	6/14/2016	6/15/2016	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	CP-5018 00-02	14.5500	790.2300	969.7800	790.2300	955.2300	775.6800	18.80%	81.20%	0.0000	0.0000	
05	CP-5018 02-05	14.5100	698.9000	868.0400	698.9000	853.5300	684.3900	19.82%	80.18%	0.0000	0.0000	
06	CP-5018 05-10	14.5500	425.4700	527.5000	425.4700	512.9500	410.9200	19.39%	80.11%	0.0000	0.0000	
07	CP-5018 10-15	14.6100	355.0100	452.9700	355.0100	438.3600	340.4000	22.35%	77.65%	0.0000	0.0000	
08	CP-5019 00-02	14.6200	570.4900	640.3100	570.4900	625.6900	555.8700	11.16%	88.84%	0.0000	0.0000	
09	CP-5019 02-05	14.5200	636.4800	789.8900	636.4800	775.3700	621.9600	19.79%	80.21%	0.0000	0.0000	
10	CP-5019 05-10	14.5700	438.1600	544.5600	438.1600	529.9900	423.5900	20.08%	79.92%	0.0000	0.0000	
11	CP-5019 10-15	14.6000	342.7700	441.8400	342.7700	427.2400	328.1700	23.19%	76.81%	0.0000	0.0000	
12	CP-5022 00-02	14.6100	569.9700	675.0900	569.9700	660.4800	555.3600	15.92%	84.08%	0.0000	0.0000	
13	CP 5022 02-05	14.6000	571.6000	700.8100	571.6000	686.2100	557.0000	18.83%	81.17%	0.0000	0.0000	
14	CP 5022 05-10	14.6500	367.5100	458.2900	367.5100	443.6400	352.8600	20.46%	79.54%	0.0000	0.0000	
15	CP 5022 10-15	14.6400	380.8100	490.2300	380.8100	475.5900	366.1700	23.01%	76.99%	0.0000	0.0000	

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



165
6/16/16

Apex-Alpha™

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_033
 Chamber Serial Number: 04026479A
 Detector Serial Number: 91132
 Env. Background: System Bkgd 156072
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/16/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:28:54 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.665 mL
 Effective Efficiency: 0.2047 +/- 0.0110
 Counting Efficiency: 0.1762 +/- 0.0031 on 12/11/2015 8:20:59 AM
 Chem. Recovery Factor: 1.1622 +/- 0.0657

Control Certificate Name: NatU_U-8A
 Chem. Recov. of Control: U-238 0.894151 +/- 0.065681
 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 5.277	425.83	9.50	0.17	0.00E+000	7.5
U-234	4.733	556.00	8.32	0.00	0.00E+000	43.2
U-235	4.389	23.66	40.63	0.34	0.00E+000	6.0
U-238	4.156	618.83	7.88	0.17	0.00E+000	40.5

T = Tracer Peak used for Effective Efficiency

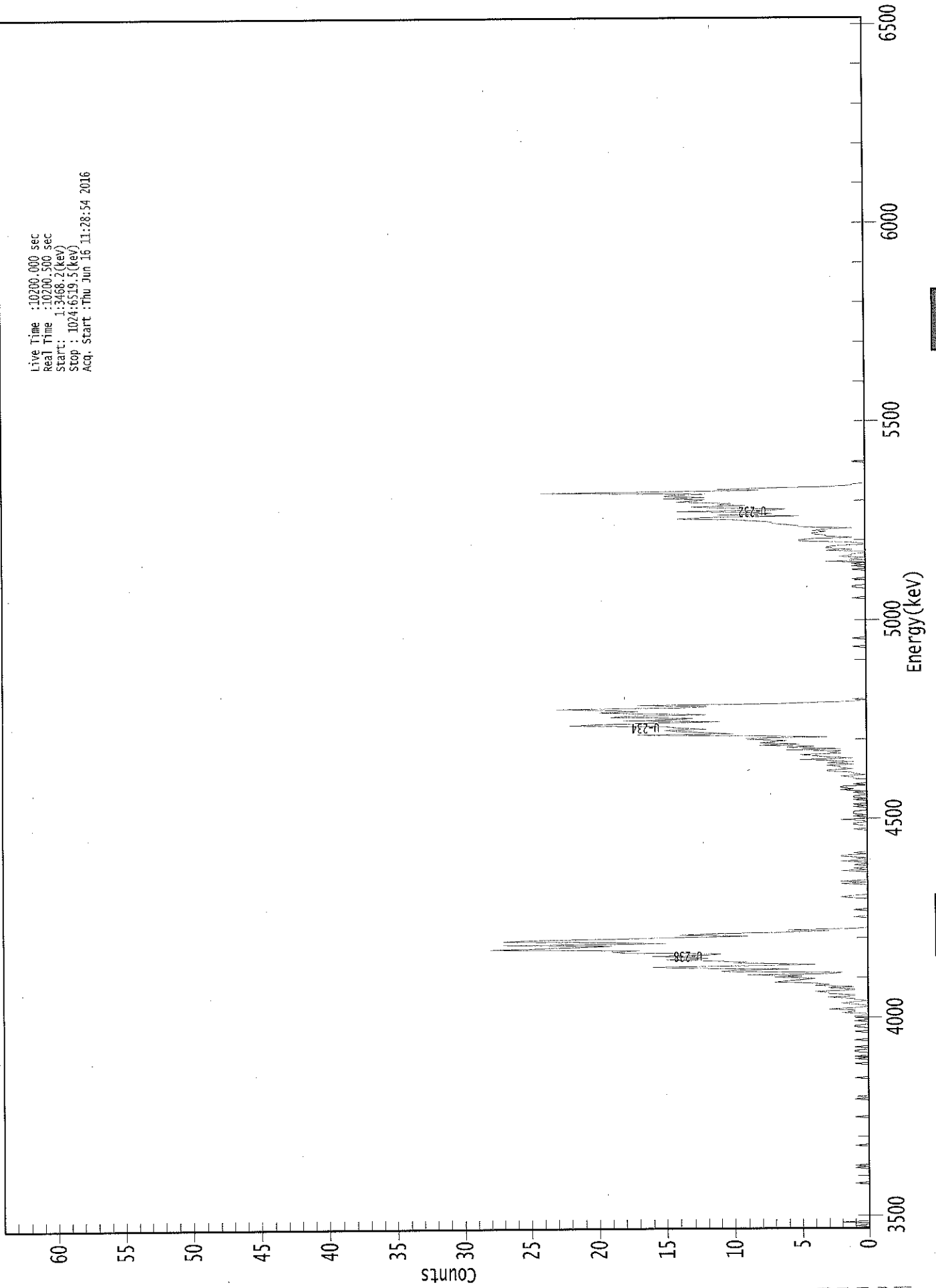
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	5.52E+000 +/- 5.81E-001	5.41E-002 +/- 5.69E-003
U-234	0.994	4761.50*	7.21E+000 +/- 9.67E-001	7.78E-002 +/- 8.18E-003
U-235	1.000	4385.50*	3.79E-001 +/- 1.59E-001	7.65E-002 +/- 8.04E-003
U-238	0.994	4184.40*	7.99E+000 +/- 1.05E+000	5.39E-002 +/- 5.67E-003

AG
6/17/16

0000154463.CNF

Live Time :10200.000 sec
Real Time :10200.500 sec
Start : 1:3468.2(kev)
Stop : 1024:6519.5(kev)
Acq. Start :Thu Jun 16 11:28:54 2016



ROI Type: 1

ROI Type: 3

000005

***** 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: 10201

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

369: 1 0 2 1 2 2 0 1

Sample Title: 01

Channel	1	2	3	4	5	6	7	8
377:	0	0	0	0	1	1	2	0
385:	1	1	3	3	1	2	2	3
393:	1	3	1	3	5	1	3	4
401:	5	2	3	2	6	2	6	4
409:	8	5	8	7	6	9	9	3
417:	8	17	10	12	14	15	12	14
425:	15	22	20	16	11	18	14	13
433:	19	18	12	16	20	17	19	23
441:	13	12	17	7	4	1	0	1
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	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	1	0	0	0
537:	0	0	0	0	0	1	1	0
545:	0	0	0	0	1	0	0	0
553:	0	0	0	0	1	0	0	1
561:	0	1	0	3	0	1	0	2
569:	1	1	0	0	3	1	3	3
577:	2	0	0	2	5	5	4	1
585:	3	3	4	4	3	4	3	1
593:	5	5	6	7	7	8	10	14
601:	12	5	11	7	8	14	7	6
609:	11	13	9	11	10	14	13	12
617:	15	12	15	14	12	24	16	8
625:	11	7	3	1	1	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	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 01

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

KB
6/16/16

Apex-Alpha™

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_034
 Chamber Serial Number: 04026479B
 Detector Serial Number: 91136
 Env. Background: System Bkgd 156073
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/16/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:28:56 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: 0.2186 +/- 0.0115
 Counting Efficiency: 0.1772 +/- 0.0031 on 12/11/2015 8:20:57 AM
 Chem. Recovery Factor: 1.2339 +/- 0.0685

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.284	445.49	9.29	0.51	0.00E+000	7.5
U-234	4.739	73.83	22.84	0.17	0.00E+000	3.5
U-235	4.478	1.15	249.59	0.85	0.00E+000	3.0
U-238	4.147	67.66	23.90	0.34	0.00E+000	6.0

T = Tracer Peak used for Effective Efficiency

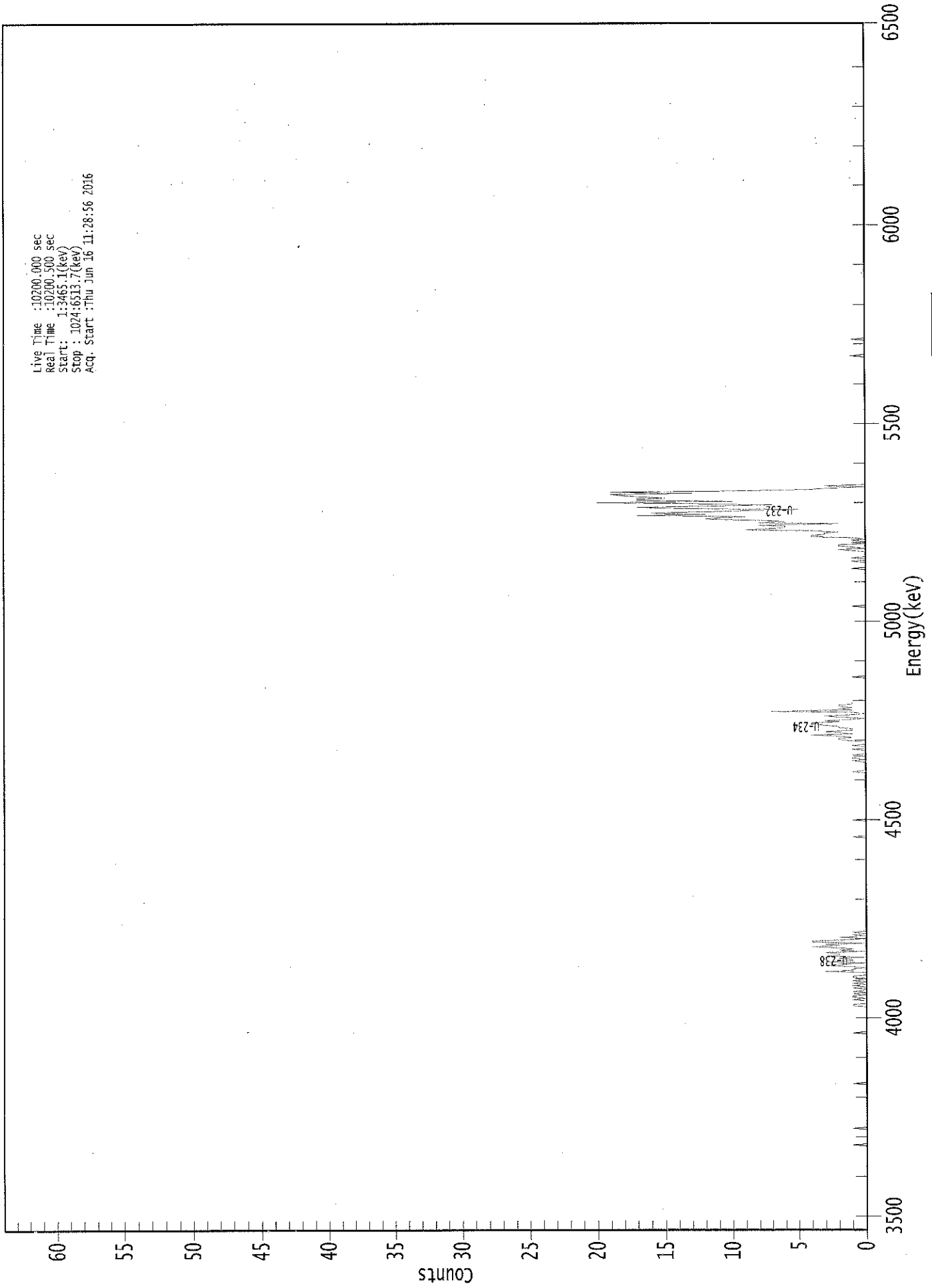
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	5.41E+000 +/- 5.59E-001	6.37E-002 +/- 6.58E-003
U-234	0.996	4761.50*	8.97E-001 +/- 2.25E-001	5.07E-002 +/- 5.24E-003
U-235	0.941	4385.50*	1.72E-002 +/- 4.30E-002	8.97E-002 +/- 9.27E-003
U-238	0.990	4184.40*	8.18E-001 +/- 2.13E-001	5.78E-002 +/- 5.97E-003

AG
6/17/16

0000154464.CNF

Live Time : 10200.000 sec
Real Time : 10200.500 sec
Start : 1:3465.1(kev)
Stop : 1024:6313.7(kev)
Acq. Start : Thu Jun 16 11:28:56 2016



 ***** 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: 10201

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	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:	1	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	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	1	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:	0	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	1	1
193:	0	0	0	1	0	1	1	1	0
201:	1	0	1	0	0	1	0	0	1
209:	0	1	0	1	0	0	1	1	1
217:	0	0	0	3	1	1	0	1	1
225:	3	2	0	3	1	1	2	0	0
233:	3	2	2	3	0	2	1	2	0
241:	4	2	3	0	4	4	1	0	0
249:	2	0	1	0	1	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	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	0	0	0
345:	0	0	0	1	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	0	0	0	0
385:	0	0	0	0	1	0	0	0	0
393:	0	0	0	0	0	1	0	1	1
401:	1	0	1	0	0	0	0	1	1
409:	0	0	1	0	0	0	1	2	2
417:	2	1	2	4	1	2	3	1	1
425:	1	2	2	3	4	4	2	3	3
433:	1	0	2	3	1	0	1	7	7
441:	1	2	1	2	2	1	1	1	1
449:	1	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0	0
465:	0	0	0	0	1	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	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0	0
529:	1	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0	0
561:	1	0	0	0	0	0	1	0	0
569:	0	1	0	0	0	0	0	1	1
577:	2	0	1	2	2	0	1	0	0
585:	1	0	1	4	4	3	3	2	2
593:	4	9	7	6	6	8	2	8	8
601:	6	9	12	11	9	17	12	16	16
609:	13	9	5	14	17	12	7	13	13
617:	20	10	17	17	15	17	18	19	19
625:	13	19	10	4	3	0	3	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	1	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	1	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: 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	0	0	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



KB
6/16/16

Sample Description: CP-5018 00-02-DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_035
 Chamber Serial Number: 04026477A
 Detector Serial Number: 58771
 Env. Background: System Bkgd 156074
 Reagent Blank: <not performed>

Sample Size: 1.016E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:28:58 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: 0.2155 +/- 0.0114
 Counting Efficiency: 0.1575 +/- 0.0028 on 12/11/2015 8:20:56 AM
 Chem. Recovery Factor: 1.3679 +/- 0.0762

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	443.49	9.31	0.51	0.00E+000	32.1
U-234	4.731	117.32	18.16	0.68	0.00E+000	7.1
U-235	4.447	6.00	86.43	0.00	0.00E+000	3.0
U-238	4.159	131.49	17.13	0.51	0.00E+000	6.3

T = Tracer Peak used for Effective Efficiency

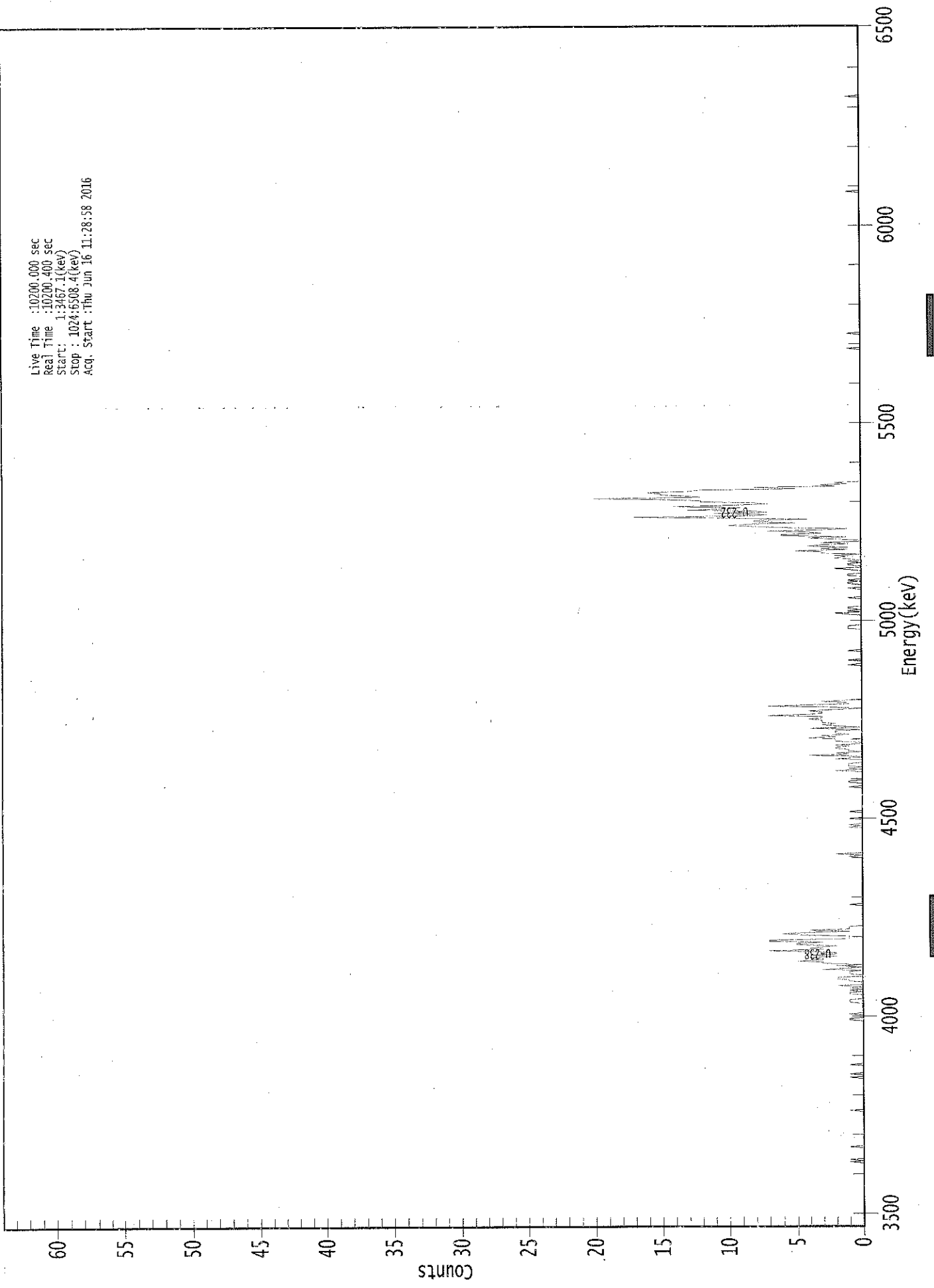
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	5.38E+000 +/- 5.57E-001	6.37E-002 +/- 6.59E-003
U-234	0.994	4761.50*	1.42E+000 +/- 2.97E-001	6.84E-002 +/- 7.08E-003
U-235	0.973	4385.50*	8.98E-002 +/- 7.82E-002	8.97E-002 +/- 9.29E-003
U-238	0.996	4184.40*	1.59E+000 +/- 3.18E-001	6.34E-002 +/- 6.56E-003

AG
6/17/16

0000154465.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:34:67.1(keV)
Stop : 1024:5508.4(keV)
Acq. Start : Thu Jun 16 11:28:58 2016



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: 10200
Elapsed Real Time: 10200

Channel									
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	1
57:	0	1	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	1	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	1
129:	0	0	1	0	0	0	0	0	0
137:	0	0	1	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:	1	1	0	0	0	1	0	0	0
185:	0	0	0	0	0	0	0	0	1
193:	1	1	0	0	0	0	1	1	1
201:	0	1	0	1	0	2	0	0	0
209:	0	1	1	2	2	0	0	0	1
217:	1	1	0	3	1	0	2	0	0
225:	3	3	5	3	3	4	2	4	4
233:	2	2	4	7	3	4	3	2	2
241:	5	5	3	7	7	1	1	1	1
249:	4	6	5	1	4	1	1	1	1
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	1	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	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	1	0	2	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	1	0	1	0	0
345:	0	0	0	1	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 1 0

Sample Title: 03

Channel	1	2	3	4	5	6	7	8
377:	0	0	1	1	0	0	0	0
385:	0	0	0	0	2	0	1	0
393:	1	1	1	0	0	0	2	0
401:	0	4	1	2	0	1	1	2
409:	2	1	2	0	0	2	2	2
417:	4	2	3	1	2	2	2	0
425:	4	0	2	3	2	3	3	3
433:	4	3	3	7	4	3	3	4
441:	2	0	2	7	4	1	1	3
449:	1	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	1	0
481:	0	0	1	0	0	0	0	0
489:	0	0	1	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	1	1	1
513:	0	0	0	0	0	0	0	0
521:	0	1	2	0	1	0	1	1
529:	0	0	0	0	0	0	0	1
537:	0	0	0	0	0	0	0	1
545:	0	0	0	1	1	0	1	0
553:	0	0	1	1	0	0	0	1
561:	2	0	0	1	1	0	1	0
569:	1	2	1	2	0	3	3	5
577:	1	3	1	4	3	1	3	0
585:	0	2	4	1	6	6	3	4
593:	7	3	1	6	8	10	8	5
601:	8	8	4	11	17	8	7	11
609:	7	8	13	10	9	14	10	7
617:	8	12	12	15	20	12	13	15
625:	15	16	13	12	5	8	2	3
633:	1	2	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	1	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	1	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	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	1	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	1	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

LB
6/16/16

Apex-Alpha™

Sample Description: CP-5018 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_036
 Chamber Serial Number: 04026477B
 Detector Serial Number: 84167
 Env. Background: System Bkgd 156075
 Reagent Blank: <not performed>

Sample Size: 1.090E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:00 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.656 mL
 Effective Efficiency: 0.1955 +/- 0.0108
 Counting Efficiency: 0.1870 +/- 0.0033 on 12/11/2015 8:20:54 AM
 Chem. Recovery Factor: 1.0454 +/- 0.0603

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.268	401.15	9.80	0.85	0.00E+000	16.2
U-234	4.722	122.49	17.75	0.51	0.00E+000	13.2
U-235	4.373	3.32	119.77	0.68	0.00E+000	3.0
U-238	4.148	103.49	19.32	0.51	0.00E+000	6.2

T = Tracer Peak used for Effective Efficiency

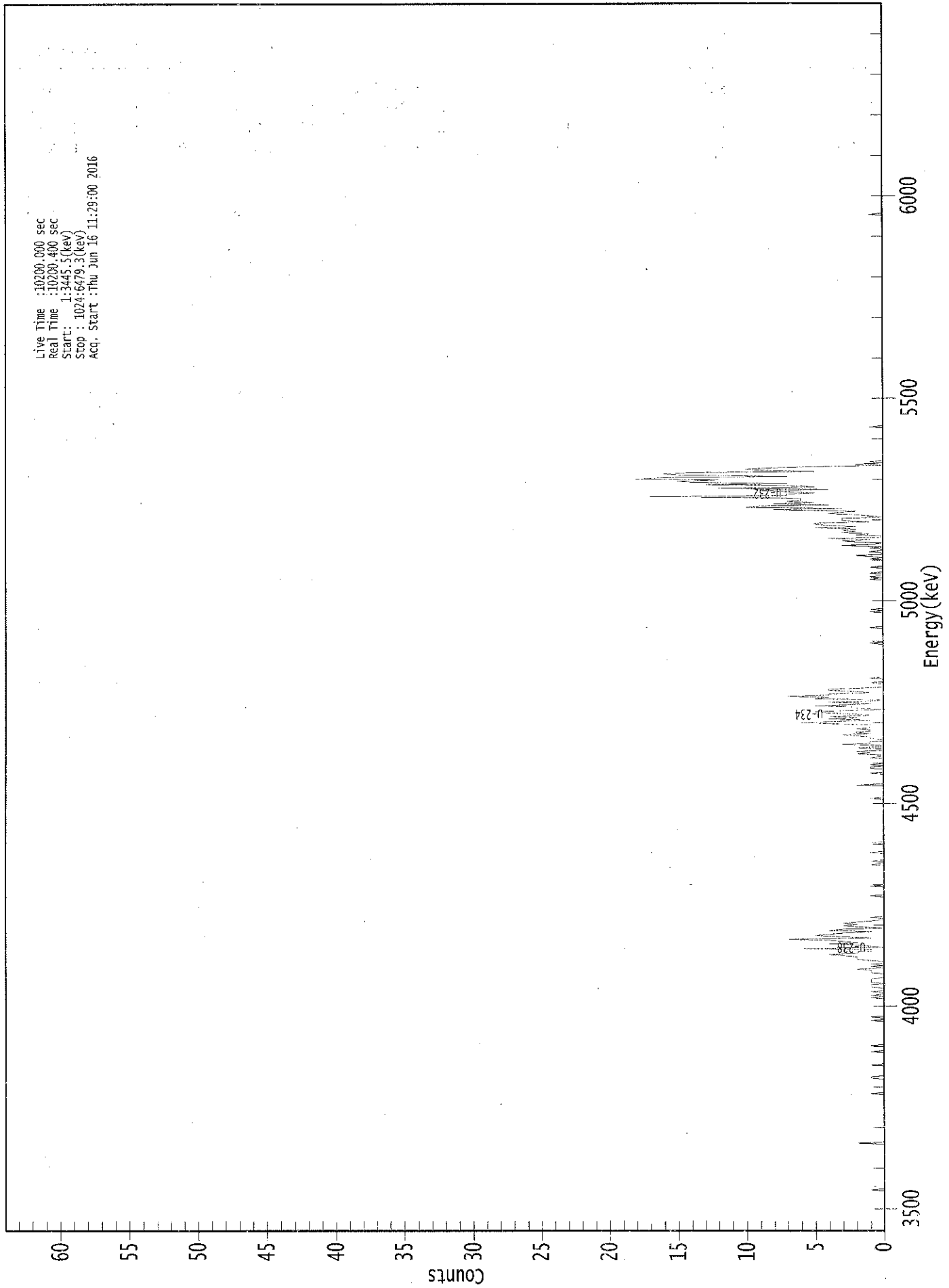
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.992	5302.50*	5.00E+000 +/- 5.39E-001	7.46E-002 +/- 8.05E-003
U-234	0.989	4761.50*	1.53E+000 +/- 3.17E-001	6.54E-002 +/- 7.05E-003
U-235	0.999	4385.50*	5.10E-002 +/- 6.13E-002	8.67E-002 +/- 9.35E-003
U-238	0.990	4184.40*	1.28E+000 +/- 2.84E-001	6.51E-002 +/- 7.02E-003

AG
6/17/16

0000154466.CNF

Live Time : 10200.400 sec
Real Time : 10200.400 sec
Start : 1:3445.3 (keV)
Stop : 1024:6479.3 (keV)
Acq. Start : Thu Jun 16 11:29:00 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 04

Elapsed Live time: 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	1	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	2	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	1	0	0	0	0	0
121:	0	0	0	0	0	0	0	1
129:	1	0	0	0	0	0	0	0
137:	0	0	1	0	0	0	0	0
145:	0	0	0	0	0	1	0	0
153:	0	0	1	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	1
177:	0	0	1	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	1	0	1	0	0	1
201:	0	0	0	1	1	1	0	1
209:	1	1	1	0	0	0	0	1
217:	1	1	2	0	1	0	1	0
225:	0	1	2	2	2	3	4	2
233:	2	1	1	6	0	1	2	4
241:	2	3	4	7	1	3	5	4
249:	3	1	4	3	0	2	3	2
257:	3	2	1	0	0	1	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	1
281:	0	0	0	0	0	0	0	1
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	1	0	0	1	0	0	0
313:	0	0	0	1	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	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	1	0	0	0	0	0	0	0

369: 0 0 0 2 0 0 0 0

Sample Title: 04

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 04

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

KS
6/16/16

Apex-Alpha™

Sample Description: CP-5018 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_037
 Chamber Serial Number: 04026478A
 Detector Serial Number: 91133
 Env. Background: System Bkgd 156076
 Reagent Blank: <not performed>

Sample Size: 1.041E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:02 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.657 mL
 Effective Efficiency: 0.2199 +/- 0.0115
 Counting Efficiency: 0.1645 +/- 0.0029 on 12/11/2015 8:20:53 AM
 Chem. Recovery Factor: 1.3366 +/- 0.0740

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.302	451.49	9.23	0.51	0.00E+000	29.0
U-234	4.758	139.00	16.68	0.00	0.00E+000	4.8
U-235	4.409	11.49	59.30	0.51	0.00E+000	3.0
U-238	4.172	129.00	17.32	0.00	0.00E+000	6.8

T = Tracer Peak used for Effective Efficiency

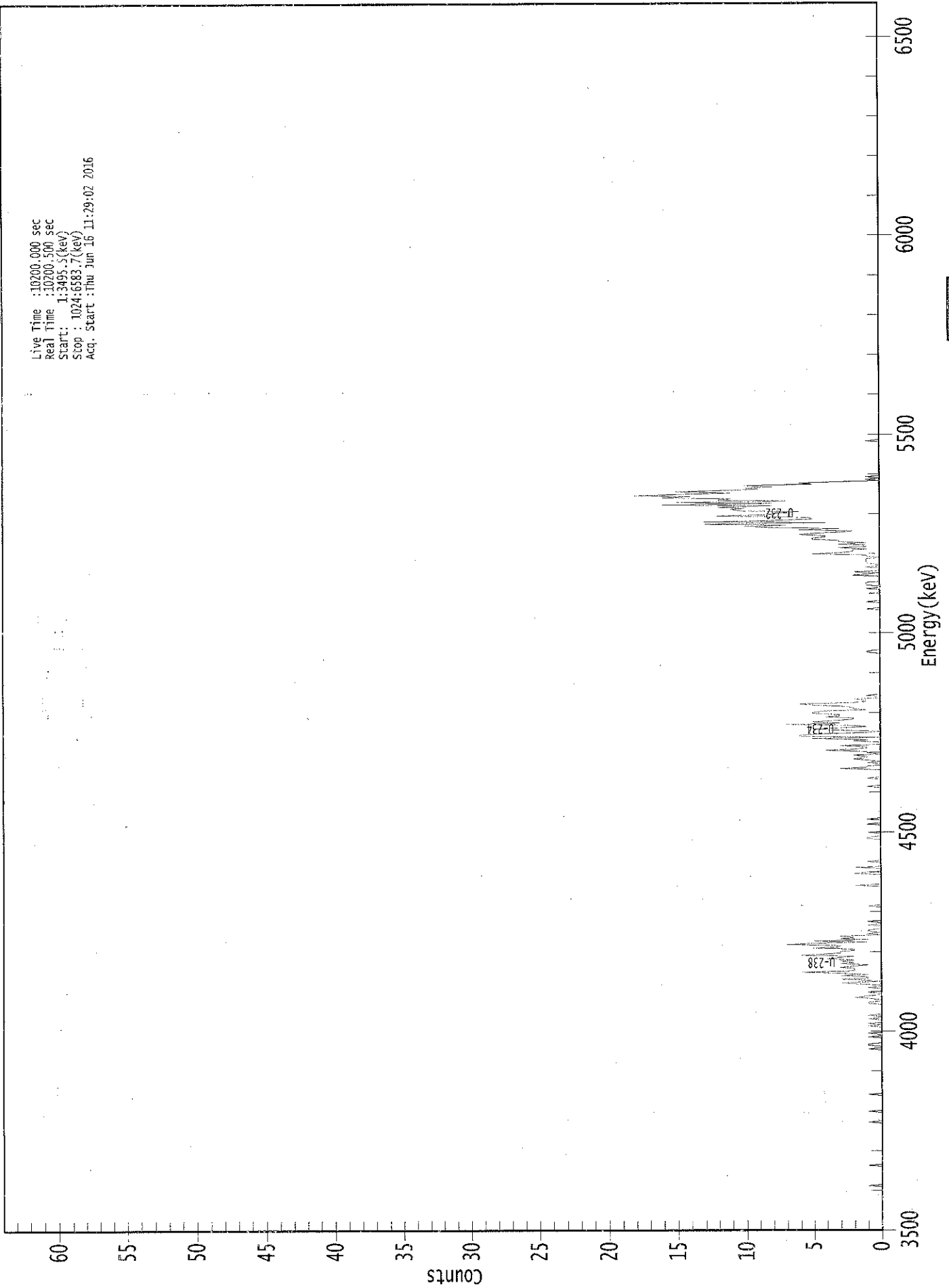
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	1.000	5302.50*	5.24E+000 +/- 5.38E-001	6.09E-002 +/- 6.25E-003
U-234	1.000	4761.50*	1.61E+000 +/- 3.16E-001	6.95E-002 +/- 7.14E-003
U-235	0.996	4385.50*	1.64E-001 +/- 9.89E-002	7.51E-002 +/- 7.71E-003
U-238	0.999	4184.40*	1.49E+000 +/- 3.00E-001	6.92E-002 +/- 7.11E-003

AG
6/17/16

0000154467.CNF

Live Time : 10200.000 sec
Real Time : 10200.500 sec
Start : 1:3495.3 (keV)
Stop : 1024:6583.7 (keV)
Acq. Start : Thu Jun 16 11:29:02 2016



ROI Type: 1

ROI Type: 3

50100

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

Sample Title: 05

Channel	1	2	3	4	5	6	7	8	9
377:	1	0	0	0	0	0	0	0	0
385:	3	1	1	0	0	1	0	1	1
393:	2	1	1	2	0	1	1	4	4
401:	2	1	1	3	0	0	0	2	2
409:	1	5	0	6	6	4	1	0	0
417:	3	5	3	1	2	7	3	5	5
425:	3	2	2	4	3	3	5	5	5
433:	4	1	2	2	3	5	6	2	2
441:	1	1	2	0	0	1	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	1	1	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	1	0	0	0
521:	0	0	0	1	0	0	0	0	0
529:	0	0	0	0	0	0	1	0	0
537:	0	1	1	1	0	0	0	0	0
545:	0	2	1	0	2	0	0	0	0
553:	1	0	0	1	1	1	1	1	1
561:	0	1	1	5	3	2	2	1	1
569:	3	1	1	3	1	3	3	5	5
577:	5	4	4	6	5	3	2	6	6
585:	3	8	10	7	13	4	13	8	8
593:	5	5	7	12	8	8	6	10	10
601:	11	10	12	8	16	8	15	7	7
609:	12	11	16	14	18	14	11	15	15
617:	12	9	10	8	10	5	6	3	3
625:	0	1	0	1	0	0	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	1	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

Sample Title: 05

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

YB
6/16/16

Apex-Alpha™

Sample Description: CP-5018 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_038
 Chamber Serial Number: 04026478B
 Detector Serial Number: 91134
 Env. Background: System Bkgd 156077
 Reagent Blank: <not performed>

Sample Size: 1.007E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:05 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.656 mL
 Effective Efficiency: 0.2155 +/- 0.0114
 Counting Efficiency: 0.1601 +/- 0.0028 on 12/11/2015 8:20:51 AM
 Chem. Recovery Factor: 1.3460 +/- 0.0751

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	442.32	9.33	0.68	0.00E+000	29.3
U-234	4.735	129.00	17.32	0.00	0.00E+000	9.0
U-235	4.396	6.00	86.43	0.00	0.00E+000	6.0
U-238	4.158	128.83	17.28	0.17	0.00E+000	4.4

T = Tracer Peak used for Effective Efficiency

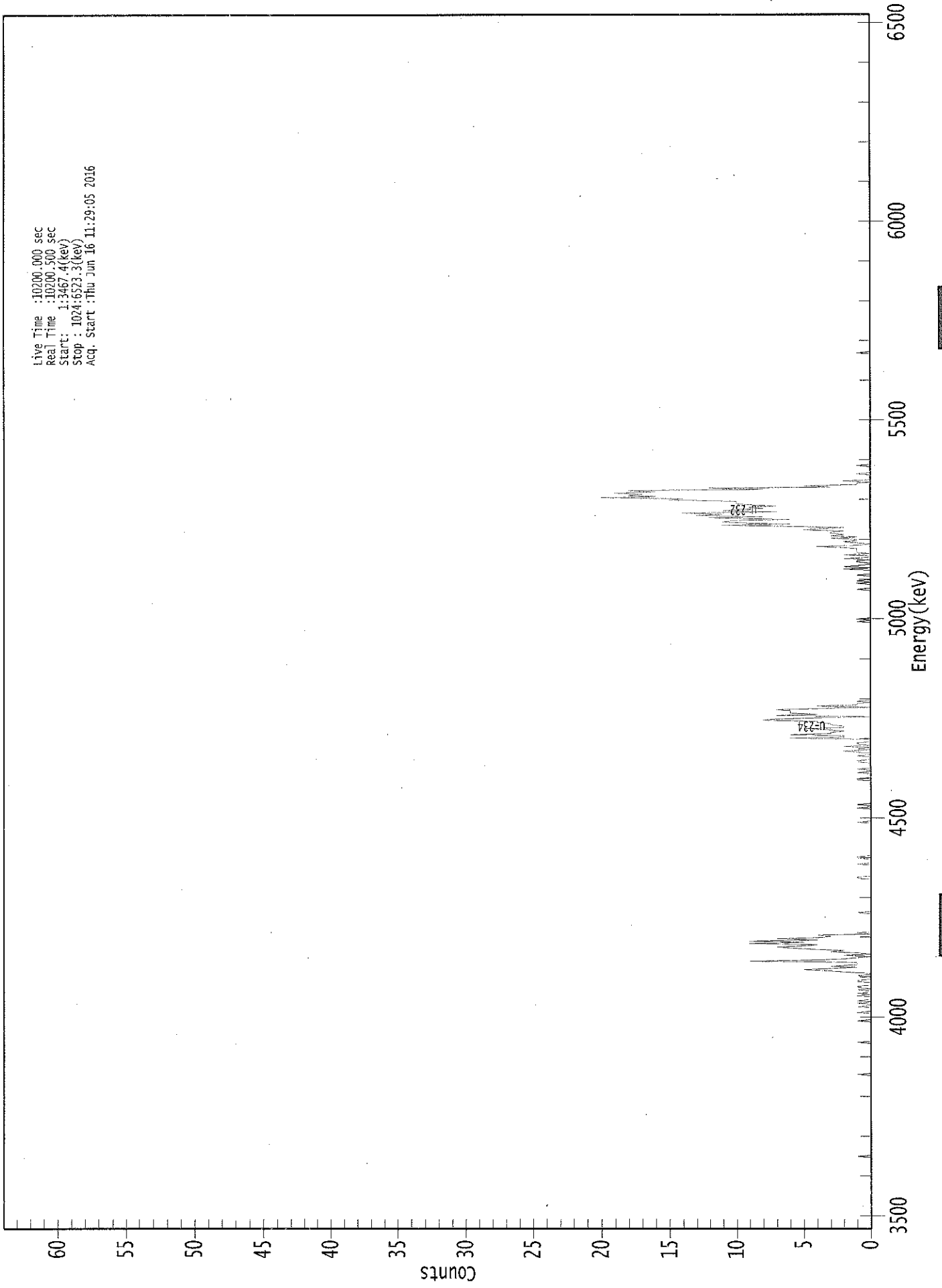
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	5.41E+000 +/- 5.61E-001	6.90E-002 +/- 7.15E-003
U-234	0.995	4761.50*	1.58E+000 +/- 3.19E-001	7.34E-002 +/- 7.60E-003
U-235	0.999	4385.50*	9.06E-002 +/- 7.88E-002	9.05E-002 +/- 9.38E-003
U-238	0.995	4184.40*	1.57E+000 +/- 3.16E-001	5.08E-002 +/- 5.27E-003

AG
6/17/16

0000154468.CNF

Live Time : 10200.000 sec
Real Time : 10200.500 sec
Start : 1:34:67.4(kev)
Stop : 1024:6523.3(kev)
Acq. Start : Thu Jun 16 11:29:05 2016



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: 10200

Elapsed Real Time: 10201

Channel	---	---	---	---	---	---	---	---	---
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	1	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	1	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	1	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	1	0
177:	0	0	0	0	0	0	1	0	0
185:	0	0	0	1	0	0	1	0	0
193:	1	0	0	0	1	0	1	0	0
201:	0	1	0	1	1	0	0	0	0
209:	1	1	0	0	0	1	0	0	0
217:	2	3	5	3	1	3	1	1	0
225:	1	9	4	2	1	0	2	0	0
233:	1	3	2	4	6	7	5	4	0
241:	9	5	9	4	7	4	3	4	0
249:	0	1	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	0	0	0	0	1	0
297:	1	0	0	0	0	0	0	0	0
305:	0	0	0	1	0	0	0	0	0
313:	1	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	1	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	1	0	0	1	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0

Sample Title: 06

Channel	1	2	3	4	5	6	7	8
377:	0	0	1	1	0	0	0	0
385:	1	0	0	1	0	0	0	0
393:	0	1	1	0	0	0	1	0
401:	0	1	2	0	1	0	2	0
409:	1	1	0	0	0	6	2	2
417:	6	3	3	2	3	5	2	2
425:	3	3	4	4	8	7	4	0
433:	7	4	6	6	6	7	3	0
441:	4	1	1	0	1	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	1
513:	0	1	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	1	0	0	0	0	1
545:	0	1	0	0	0	0	1	0
553:	0	0	0	2	0	2	1	0
561:	0	1	1	0	2	0	0	2
569:	0	1	1	1	1	2	4	1
577:	0	1	2	1	1	3	1	3
585:	2	3	3	2	5	4	2	6
593:	11	6	10	11	10	6	12	8
601:	13	11	14	7	11	10	8	9
609:	7	9	10	10	10	15	14	20
617:	16	18	17	19	16	18	8	12
625:	3	5	1	1	0	2	0	0
633:	0	0	0	1	0	0	0	0
641:	0	0	1	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	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: 06

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



108
6/16/16

Sample Description: CP-5018 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_039
 Chamber Serial Number: 06027396A
 Detector Serial Number: 83109
 Env. Background: System Bkgd 156078
 Reagent Blank: <not performed>

Sample Size: 1.006E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:07 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.655 mL
 Effective Efficiency: 0.1974 +/- 0.0108
 Counting Efficiency: 0.1862 +/- 0.0032 on 12/11/2015 8:20:49 AM
 Chem. Recovery Factor: 1.0604 +/- 0.0611

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	404.64	9.76	1.36	0.00E+000	28.4
U-234	4.731	124.47	17.69	1.53	0.00E+000	5.4
U-235	4.394	12.98	56.85	1.02	0.00E+000	4.5
U-238	4.145	102.96	19.54	2.04	0.00E+000	4.4

T = Tracer Peak used for Effective Efficiency

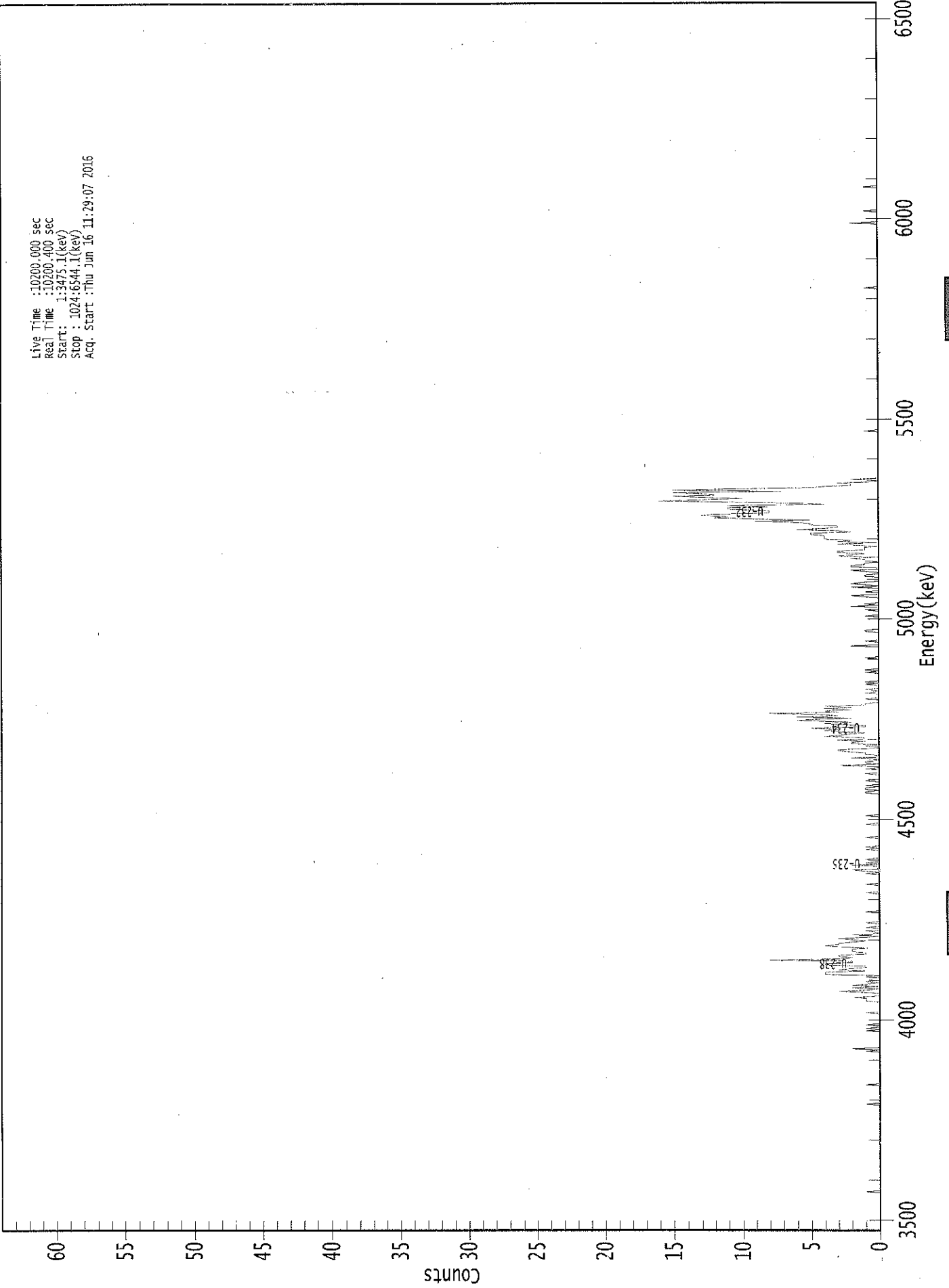
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	5.41E+000 +/- 5.82E-001	9.17E-002 +/- 9.86E-003
U-234	0.994	4761.50*	1.66E+000 +/- 3.45E-001	9.50E-002 +/- 1.02E-002
U-235	0.999	4385.50*	2.14E-001 +/- 1.24E-001	1.04E-001 +/- 1.12E-002
U-238	0.989	4184.40*	1.37E+000 +/- 3.06E-001	1.04E-001 +/- 1.12E-002

AG
6/17/16

0000154469.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3475.1(kev)
Stop : 1024:6544.1(kev)
Acq. Start :Thu Jun 16 11:29:07 2016



ROI Type: 1

ROI Type: 3

51100

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

Sample Title: 07

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	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:	1	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	1	0	0	0	0	0	0	0
113:	0	0	0	0	0	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:	0	0	0	0	0	1	0	0	2
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	1	0	0
169:	1	0	0	1	0	0	0	0	0
177:	0	0	0	0	0	1	0	0	0
185:	0	0	0	0	0	0	0	0	1
193:	1	1	2	0	0	0	1	0	3
201:	1	0	2	0	2	1	0	0	1
209:	0	0	0	1	0	4	4	0	4
217:	1	3	2	1	1	4	4	0	2
225:	2	8	3	2	3	3	1	0	1
233:	2	2	2	1	3	4	3	0	3
241:	2	1	2	3	1	0	2	0	0
249:	0	1	0	0	1	0	0	0	0
257:	1	0	0	0	0	0	0	0	0
265:	0	1	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	1	0	0	0	0	0	0	0
289:	1	0	0	0	0	0	0	0	0
297:	0	1	0	1	2	0	0	0	0
305:	2	0	1	0	0	1	0	0	0
313:	0	0	0	0	0	1	0	0	1
321:	0	0	0	0	0	0	0	0	1
329:	0	0	0	0	0	0	0	0	0
337:	0	0	1	0	0	0	0	0	0
345:	0	1	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	1	1	0	0	1

369: 1 0 1 0 0 0 1 0

Sample Title: 07

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

801: 0 0 0 0 0 0 0 0

Sample Title: 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	2	0
841:	0	0	0	0	0	0	0	0
849:	1	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	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	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
6/16/16

Sample Description: CP-5019 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001545
 Batch Identification: 1606038A-UU
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_053
 Chamber Serial Number: 10006122A
 Detector Serial Number: 53
 Env. Background: System Bkgd 156091
 Reagent Blank: <not performed>

Sample Size: 1.088E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 1:37:32 PM
 Acquisition Date/Time: 6/16/2016 2:39:25 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.655 mL
 Effective Efficiency: 0.1949 +/- 0.0107
 Counting Efficiency: 0.1516 +/- 0.0027 on 12/11/2015 11:36:34 AM
 Chem. Recovery Factor: 1.2854 +/- 0.0745

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	398.83	9.82	0.17	0.00E+000	16.0
U-234	4.723	95.15	20.20	0.85	0.00E+000	10.9
U-235	4.401	1.66	169.38	0.34	0.00E+000	3.0
U-238	4.133	94.83	20.15	0.17	0.00E+000	4.4

T = Tracer Peak used for Effective Efficiency

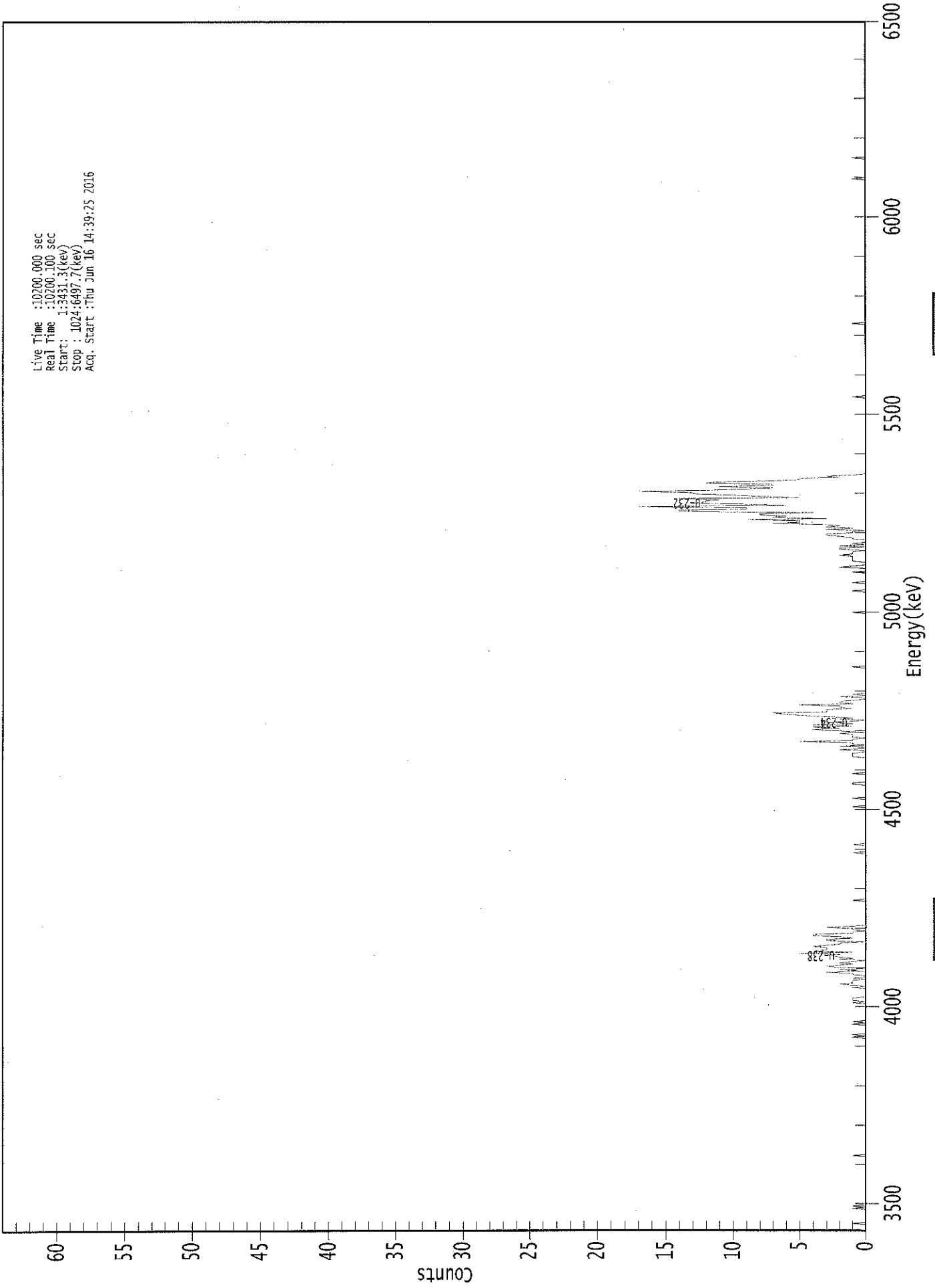
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	5.00E+000 +/- 5.40E-001	5.23E-002 +/- 5.65E-003
U-234	0.990	4761.50*	1.19E+000 +/- 2.73E-001	7.50E-002 +/- 8.10E-003
U-235	0.998	4385.50*	2.56E-002 +/- 4.35E-002	7.39E-002 +/- 7.98E-003
U-238	0.981	4184.40*	1.18E+000 +/- 2.70E-001	5.20E-002 +/- 5.62E-003

AG
6/17/16

0000154501.CNF

Live Time :10200.000 sec
Real Time :10200.100 sec
Start : 1:3431.3(kev)
Stop : 1024.6497.7(kev)
Acq. Start :Thu Jun 16 14:39:25 2016



00120

ROI Type: 1

ROI Type: 3

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

Sample Title: 08

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 0 0 0 0 0 0 0 0

Sample Title: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	1	1	0	0	0	0
385:	0	0	0	1	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	1	1	1	1	0	0	2
409:	0	0	2	0	1	1	5	1
417:	1	0	1	1	1	2	0	2
425:	4	2	4	1	4	1	3	1
433:	0	2	1	3	5	6	7	3
441:	3	3	1	2	2	5	1	2
449:	2	1	0	0	2	0	1	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	1	0	0
481:	0	0	0	0	0	0	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:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	1	0	0
545:	0	0	0	0	1	0	0	0
553:	0	0	0	0	0	1	0	0
561:	0	2	1	0	0	0	1	1
569:	1	1	1	2	1	1	1	0
577:	2	2	0	2	0	1	0	0
585:	0	1	1	2	3	3	1	1
593:	0	3	1	3	2	3	7	5
601:	5	9	3	7	6	8	8	4
609:	14	14	9	9	17	6	8	13
617:	12	12	11	14	5	8	10	13
625:	13	17	12	9	7	11	7	7
633:	12	11	7	5	5	2	3	1
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	1	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	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 08

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	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	1	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	1	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	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
6/16/16

Apex-Alpha™

Sample Description: CP-5019 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UJ
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_041
 Chamber Serial Number: 05026930A
 Detector Serial Number: 91087
 Env. Background: System Bkgd 156080
 Reagent Blank: <not performed>

Sample Size: 1.017E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:13 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UJ-10A
 Tracer Quantity: 0.655 mL
 Effective Efficiency: 0.1968 +/- 0.0108
 Counting Efficiency: 0.1900 +/- 0.0033 on 12/11/2015 8:21:11 AM
 Chem. Recovery Factor: 1.0361 +/- 0.0597

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 5.265	403.00	9.78	0.00	0.00E+000	19.1
U-234	4.721	123.30	17.79	1.70	0.00E+000	3.5
U-235	4.379	3.98	112.01	1.02	0.00E+000	3.0
U-238	4.145	145.60	16.46	3.40	0.00E+000	15.8

T = Tracer Peak used for Effective Efficiency

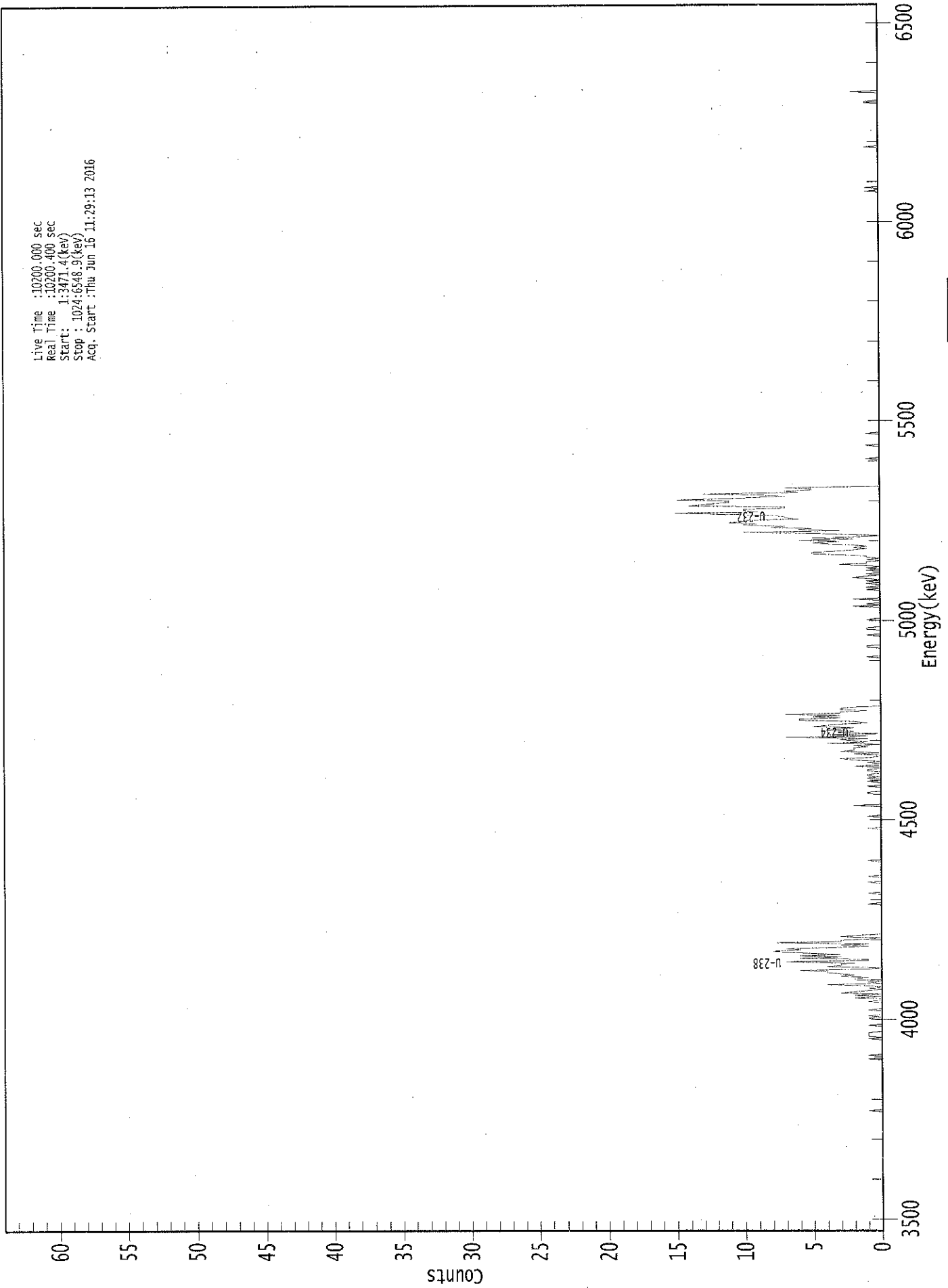
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	5.35E+000 +/- 5.76E-001	7.95E-002 +/- 8.56E-003
U-234	0.989	4761.50*	1.63E+000 +/- 3.40E-001	9.74E-002 +/- 1.05E-002
U-235	1.000	4385.50*	6.51E-002 +/- 7.33E-002	1.03E-001 +/- 1.11E-002
U-238	0.989	4184.40*	1.92E+000 +/- 3.78E-001	1.22E-001 +/- 1.32E-002

AG
6/17/16

0000154471.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3471.4(kev)
Stop : 1024:6548.9(kev)
Acq. Start :Thu Jun 16 11:29:13 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 09

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	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	1	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	1
145:	0	0	1	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	1	0	1	1	1	1	0	0
169:	0	0	0	1	0	0	0	0
177:	0	1	0	1	0	0	0	0
185:	1	0	0	0	0	0	0	1
193:	0	0	2	0	2	0	3	2
201:	1	0	1	0	1	4	0	1
209:	0	2	2	1	3	2	3	4
217:	4	6	1	0	4	3	3	2
225:	7	1	1	6	3	6	3	5
233:	7	8	6	7	3	1	3	1
241:	8	3	3	1	0	3	2	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	1	0	0	0	0	0	0
289:	0	0	1	0	0	0	0	1
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	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	1
337:	0	0	0	0	0	0	0	0
345:	0	1	0	0	0	0	0	0
353:	0	0	2	0	0	0	0	0
361:	0	0	0	0	1	1	0	0

369: 0 0 1 0 0 0 1 0

Sample Title: 09

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

801: 0 0 0 0 0 0 0 0

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	1	0	0	1	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	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	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	1	1	0	0
945:	0	0	0	0	0	2	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KB
6/16/16

Sample Description: CP-5019 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_042
 Chamber Serial Number: 05026930B
 Detector Serial Number: 84185
 Env. Background: System Bkgd 156081
 Reagent Blank: <not performed>

Sample Size: 1.017E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:16 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.655 mL
 Effective Efficiency: 0.1857 +/- 0.0105
 Counting Efficiency: 0.1789 +/- 0.0031 on 12/11/2015 8:21:10 AM
 Chem. Recovery Factor: 1.0381 +/- 0.0612

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 5.261	380.15	10.07	0.85	0.00E+000	26.1
U-234	4.711	101.32	19.55	0.68	0.00E+000	5.3
U-235	4.412	7.49	74.41	0.51	0.00E+000	3.0
U-238	4.132	97.15	19.99	0.85	0.00E+000	4.1

T = Tracer Peak used for Effective Efficiency

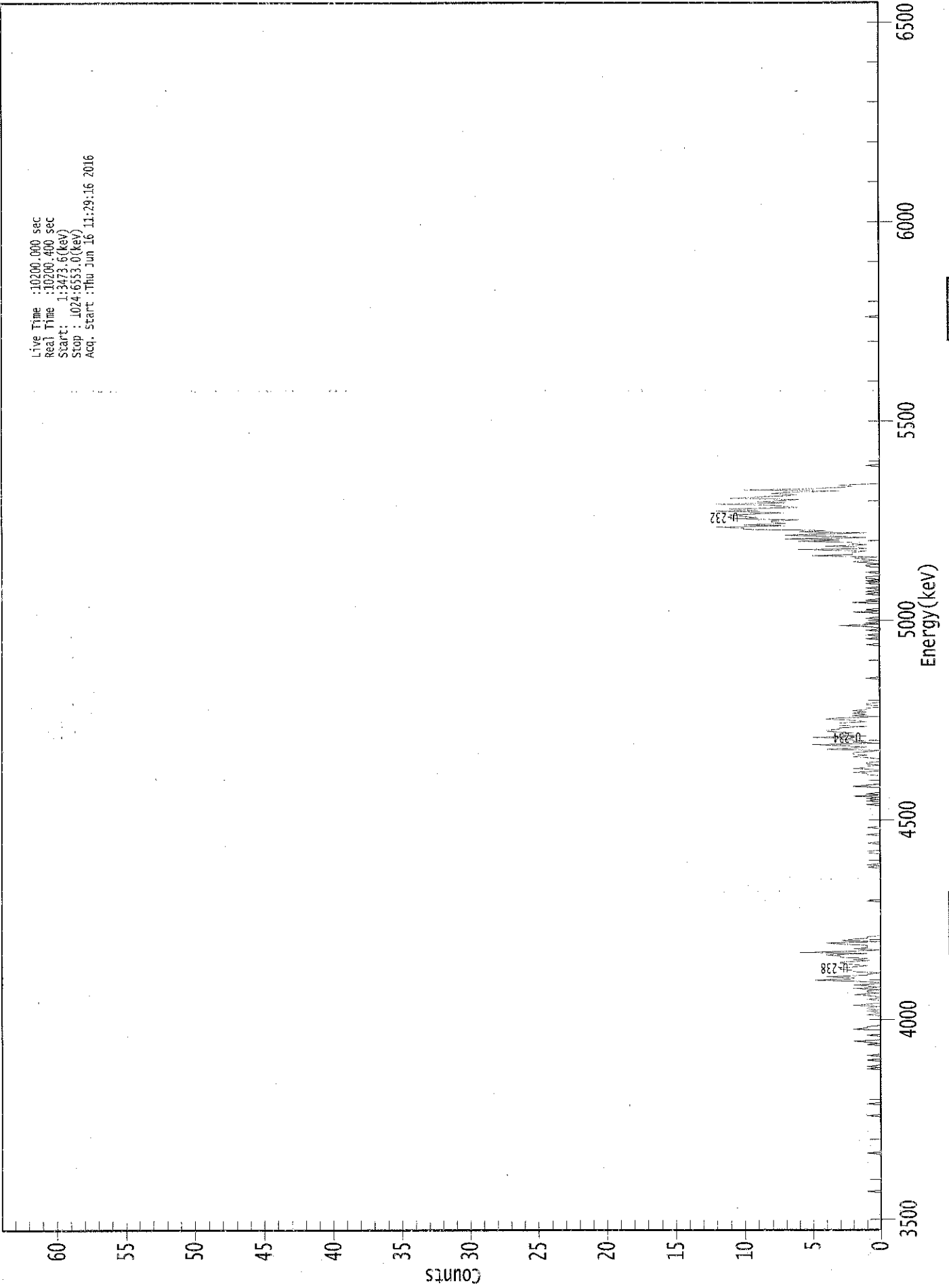
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.988	5302.50*	5.35E+000 +/- 5.90E-001	8.42E-002 +/- 9.29E-003
U-234	0.982	4761.50*	1.42E+000 +/- 3.20E-001	7.93E-002 +/- 8.75E-003
U-235	0.995	4385.50*	1.30E-001 +/- 9.77E-002	9.10E-002 +/- 1.00E-002
U-238	0.981	4184.40*	1.36E+000 +/- 3.11E-001	8.38E-002 +/- 9.25E-003

AC
6/17/16

0000154472.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3473.6(kev)
Stop : 1024.6533.0(kev)
Acq. Start :Thu Jun 16 11:29:16 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 10

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 2 1 0 0 0 0 0

Sample Title: 10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	1	1	2	0	0
385:	2	1	1	0	1	1	0	0
393:	0	1	2	1	2	2	1	0
401:	4	2	1	3	5	0	2	1
409:	3	2	5	1	3	3	2	4
417:	4	3	3	1	3	3	3	1
425:	2	4	3	0	2	1	2	1
433:	2	1	1	0	0	1	1	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	1	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	1
489:	0	0	0	0	1	0	0	1
497:	0	0	0	1	0	0	1	3
505:	0	1	0	0	0	1	0	0
513:	0	0	2	0	1	0	0	0
521:	0	0	2	0	1	0	0	0
529:	0	1	0	1	0	0	1	0
537:	0	0	1	0	1	0	1	1
545:	0	0	0	1	0	0	0	0
553:	1	1	0	1	2	0	1	2
561:	0	5	2	2	2	1	6	1
569:	2	4	1	2	2	6	3	7
577:	1	3	7	5	1	6	4	10
585:	10	12	7	10	7	8	8	6
593:	11	9	10	11	9	7	12	9
601:	11	6	7	8	12	7	9	7
609:	6	11	9	7	6	8	7	3
617:	10	5	3	2	3	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	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:	1	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	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
6/16/16

Apex-Alpha™

Sample Description: CP-5019 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_043
 Chamber Serial Number: 04026481A
 Detector Serial Number: 91088
 Env. Background: System Bkgd 156082
 Reagent Blank: <not performed>

Sample Size: 1.005E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:18 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.656 mL
 Effective Efficiency: 0.1433 +/- 0.0090
 Counting Efficiency: 0.1890 +/- 0.0033 on 12/11/2015 8:21:08 AM
 Chem. Recovery Factor: 0.7583 +/- 0.0494

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	5.264	294.15	11.45	0.85	0.00E+000	12.7
U-234	4.720	87.49	21.03	0.51	0.00E+000	5.0
U-235	4.372	5.49	88.08	0.51	0.00E+000	3.0
U-238	4.134	92.49	20.45	0.51	0.00E+000	3.3

T = Tracer Peak used for Effective Efficiency

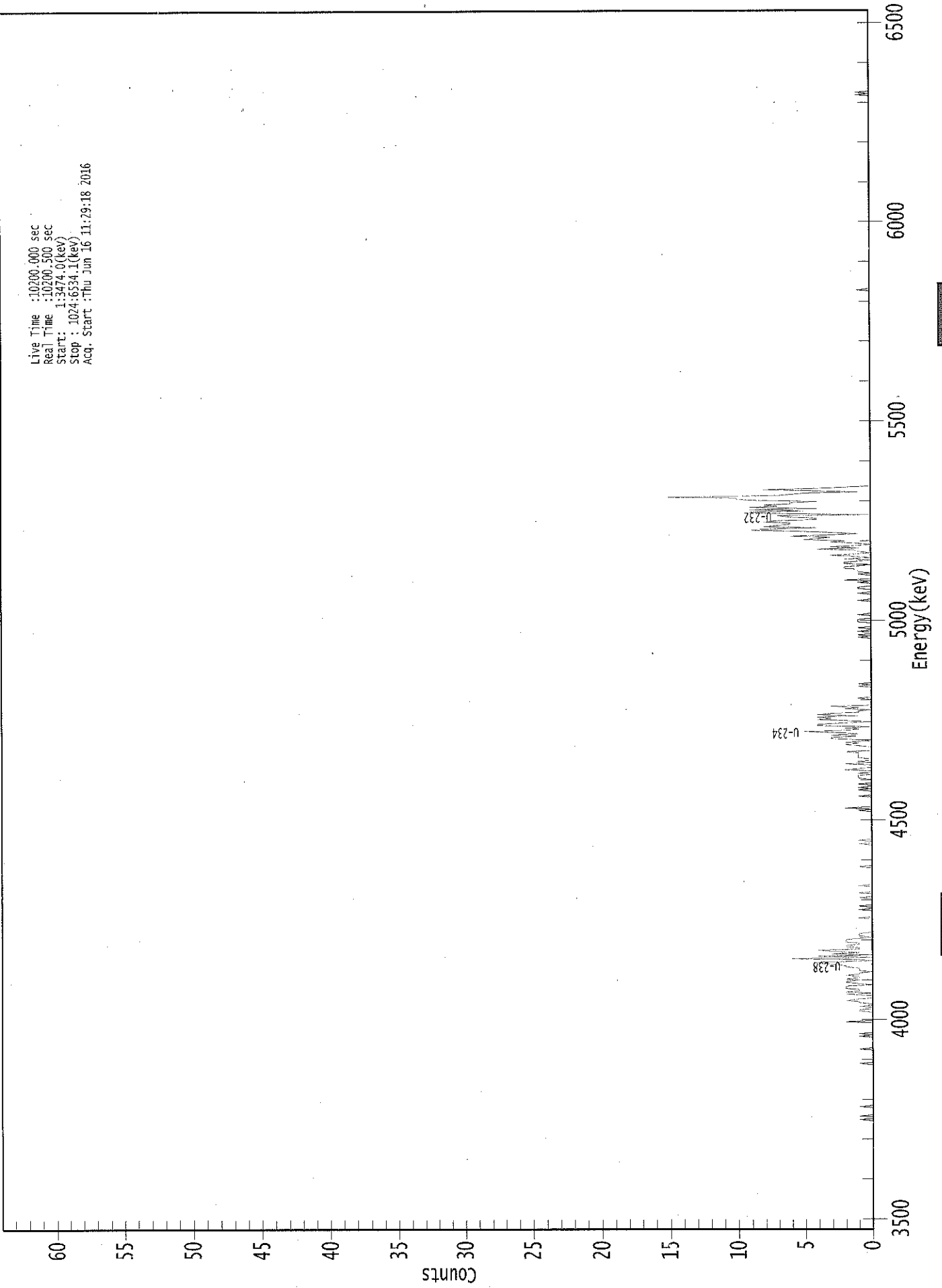
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	5.42E+000 +/- 6.67E-001	1.10E-001 +/- 1.36E-002
U-234	0.988	4761.50*	1.61E+000 +/- 3.93E-001	9.67E-002 +/- 1.19E-002
U-235	0.999	4385.50*	1.25E-001 +/- 1.11E-001	1.19E-001 +/- 1.47E-002
U-238	0.982	4184.40*	1.70E+000 +/- 4.05E-001	9.63E-002 +/- 1.19E-002

AG
6/17/16

0000154473.CNF

Live Time :10200.000 sec
Real Time :10200.500 sec
Start : 1:3474.0(kev)
Stop : 1024:6534.1(kev)
Acq. Start :Thu Jun 16 11:29:18 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 11

Elapsed Live time: 10200

Elapsed Real Time: 10201

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

369: 1 0 1 0 0 1 0 0

Sample Title: 11

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

801: 0 0 0 0 0 0 0 0

Sample Title: 11

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



VCB
6/16/16

Sample Description: CP-5022 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_044
 Chamber Serial Number: 04026481B
 Detector Serial Number: 84168
 Env. Background: System Bkgd 156083
 Reagent Blank: <not performed>

Sample Size: 1.005E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:21 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.654 mL
 Effective Efficiency: 0.1955 +/- 0.0108
 Counting Efficiency: 0.1864 +/- 0.0033 on 12/11/2015 8:21:07 AM
 Chem. Recovery Factor: 1.0486 +/- 0.0606

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	5.264	399.66	9.81	0.34	0.00E+000	27.0
U-234	4.716	95.32	20.16	0.68	0.00E+000	4.0
U-235	4.387	10.00	65.01	0.00	0.00E+000	3.0
U-238	4.134	124.83	17.56	0.17	0.00E+000	3.9

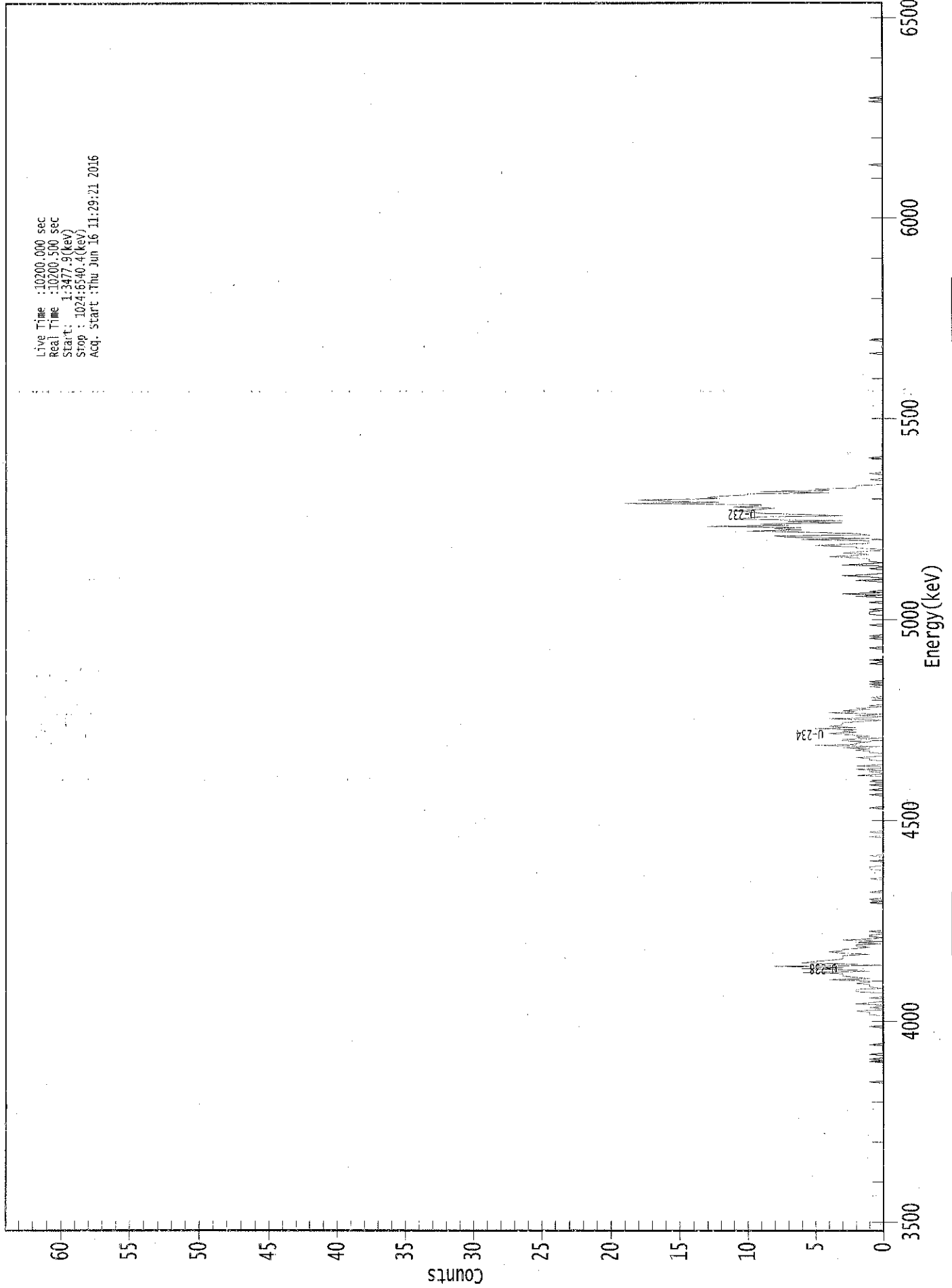
T = Tracer Peak used for Effective Efficiency

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.989	5302.50*	5.40E+000 +/- 5.83E-001	6.46E-002 +/- 6.98E-003
U-234	0.986	4761.50*	1.29E+000 +/- 2.95E-001	7.62E-002 +/- 8.23E-003
U-235	1.000	4385.50*	1.67E-001 +/- 1.10E-001	1.00E-001 +/- 1.08E-002
U-238	0.982	4184.40*	1.68E+000 +/- 3.46E-001	5.62E-002 +/- 6.06E-003

AG
6/17/16

0000154474.CNF



Live Time :10200.000 sec
Real Time :10200.500 sec
Start : 1:3477.9(keV)
Stop : 1024:6540.4(keV)
Acq. Start :Thu Jun 16 11:29:21 2016

: 00140

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: 12

Elapsed Live time: 10200

Elapsed Real Time: 10201

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

369: 0 0 0 1 0 0 1 0

Sample Title: 12

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

801: 0 0 0 0 0 0 0 0

Sample Title: 12

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

VP
6/16/16

Sample Description: CP 5022 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_045
 Chamber Serial Number: 04026482A
 Detector Serial Number: 91131
 Env. Background: System Bkgd 156084
 Reagent Blank: <not performed>

Sample Size: 1.020E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:24 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.654 mL
 Effective Efficiency: 0.2152 +/- 0.0114
 Counting Efficiency: 0.1710 +/- 0.0030 on 12/11/2015 8:21:05 AM
 Chem. Recovery Factor: 1.2587 +/- 0.0703

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232 T	5.273	439.98	9.36	1.02	0.00E+000	24.7
U-234	4.723	116.66	18.18	0.34	0.00E+000	5.4
U-235	4.410	5.83	82.55	0.17	0.00E+000	3.0
U-238	4.138	118.49	18.05	0.51	0.00E+000	4.7

T = Tracer Peak used for Effective Efficiency

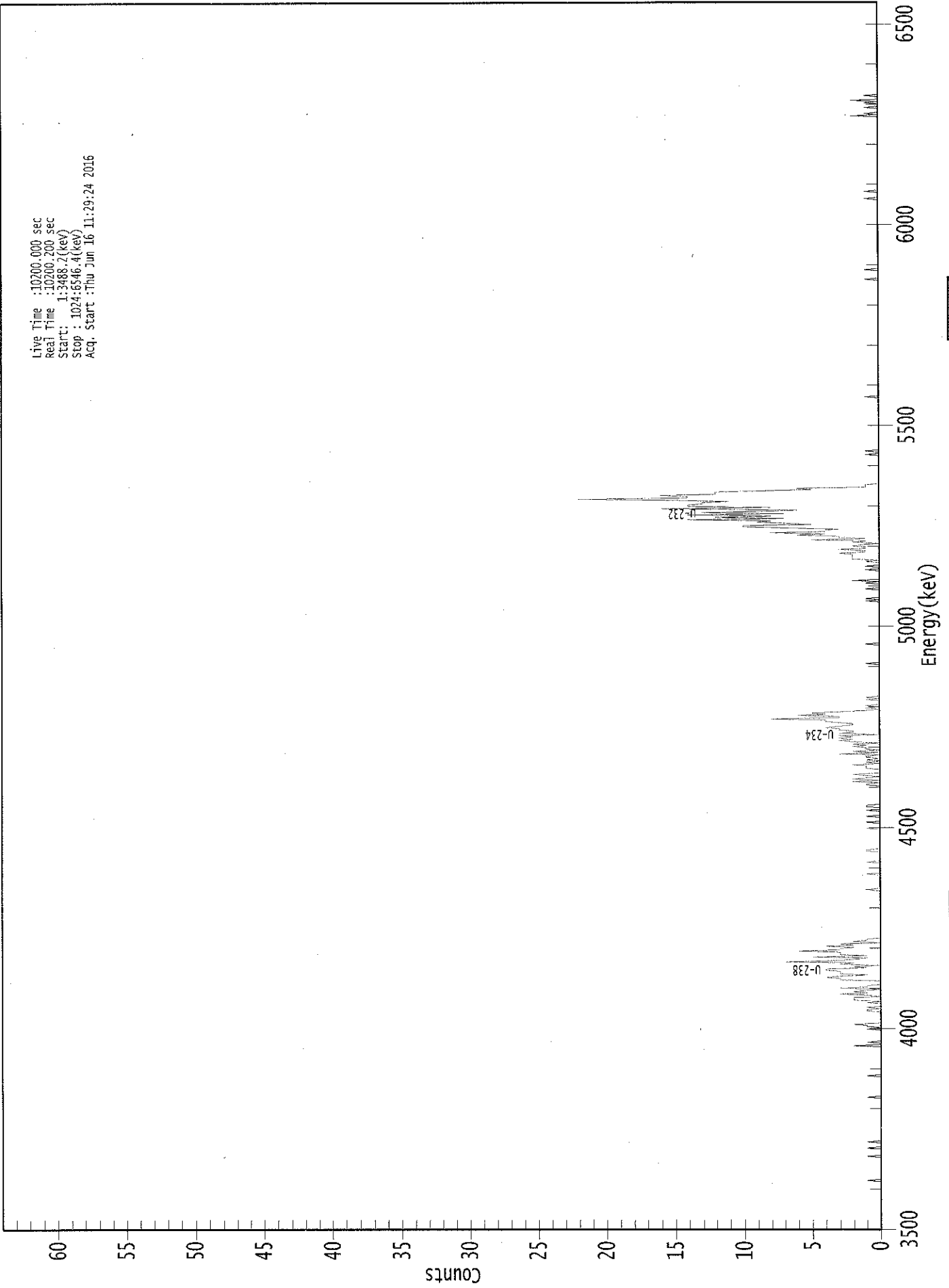
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	5.32E+000 +/- 5.53E-001	7.62E-002 +/- 7.92E-003
U-234	0.990	4761.50*	1.41E+000 +/- 2.95E-001	5.78E-002 +/- 6.01E-003
U-235	0.996	4385.50*	8.70E-002 +/- 7.24E-002	6.23E-002 +/- 6.47E-003
U-238	0.985	4184.40*	1.43E+000 +/- 2.97E-001	6.32E-002 +/- 6.56E-003

AG
6/17/16

0000154461.CNF

Live Time : 10200.000 sec
Real Time : 10200.200 sec
Start : 1:3488.2 (keV)
Stop : 1024.6546.4 (keV)
Acq. Start : Thu Jun 16 11:29:24 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 13

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	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	1	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	1	0	0	0
73:	0	1	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	1	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	1	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	2	0	0	1	0	0	0
161:	0	0	0	0	0	0	0	1
169:	0	1	1	2	0	0	0	0
177:	0	0	0	0	0	0	1	1
185:	0	1	0	0	0	1	0	2
193:	2	2	0	1	3	1	2	1
201:	0	3	1	1	0	0	0	0
209:	3	3	4	3	1	3	3	3
217:	4	4	1	2	0	3	2	7
225:	3	2	1	5	1	3	3	3
233:	6	3	3	2	4	2	3	0
241:	2	1	1	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	1	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	1	0	0	0	0	0	0	0
305:	0	0	1	0	0	0	0	0
313:	0	0	0	1	1	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	0
337:	0	0	0	1	0	0	0	0
345:	1	0	0	0	0	1	0	0
353:	1	1	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369: 0 0 1 1 0 2 0 2

Sample Title: 13

Channel	1	2	3	4	5	6	7	8	9
377:	1	0	1	2	0	0	0	0	0
385:	1	1	1	2	0	1	0	0	1
393:	0	1	1	0	3	0	2	0	0
401:	1	1	2	1	2	0	2	3	0
409:	2	3	2	3	0	3	2	2	2
417:	3	3	4	3	2	2	3	4	0
425:	4	8	3	3	6	4	5	3	0
433:	1	0	1	0	1	0	0	0	0
441:	0	1	0	1	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	1
473:	0	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0	1
489:	0	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	0	0	1	0	1	0	0	0
529:	0	0	0	0	0	1	0	0	0
537:	0	0	1	0	2	0	0	0	0
545:	0	0	0	0	0	1	0	0	0
553:	1	0	0	0	1	0	2	2	0
561:	2	2	2	3	1	1	3	1	0
569:	1	2	1	0	2	1	5	1	0
577:	3	3	6	4	8	4	4	3	0
585:	7	10	10	5	7	9	8	14	0
593:	7	12	8	14	7	13	8	6	0
601:	16	8	14	14	13	13	11	15	0
609:	22	14	14	16	12	12	12	8	0
617:	5	6	1	1	1	0	0	0	0
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:	1	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	1	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	1
793:	0	0	0	0	0	0	0	0	1

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	1	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:	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	2
929:	0	1	0	0	0	0	1	0
937:	0	0	1	0	2	0	0	0
945:	1	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



*EB
6/16/16*

Sample Description: CP 5022 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_046
 Chamber Serial Number: 04026482B
 Detector Serial Number: 58762
 Env. Background: System Bkgd 156085
 Reagent Blank: <not performed>

Sample Size: 1.032E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:26 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.655 mL
 Effective Efficiency: 0.2122 +/- 0.0113
 Counting Efficiency: 0.1806 +/- 0.0032 on 12/11/2015 8:21:03 AM
 Chem. Recovery Factor: 1.1750 +/- 0.0659

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	434.49	9.41	0.51	0.00E+000	33.2
U-234	4.730	129.15	17.31	0.85	0.00E+000	4.4
U-235	4.363	4.66	94.59	0.34	0.00E+000	3.0
U-238	4.149	136.15	16.86	0.85	0.00E+000	10.0

T = Tracer Peak used for Effective Efficiency

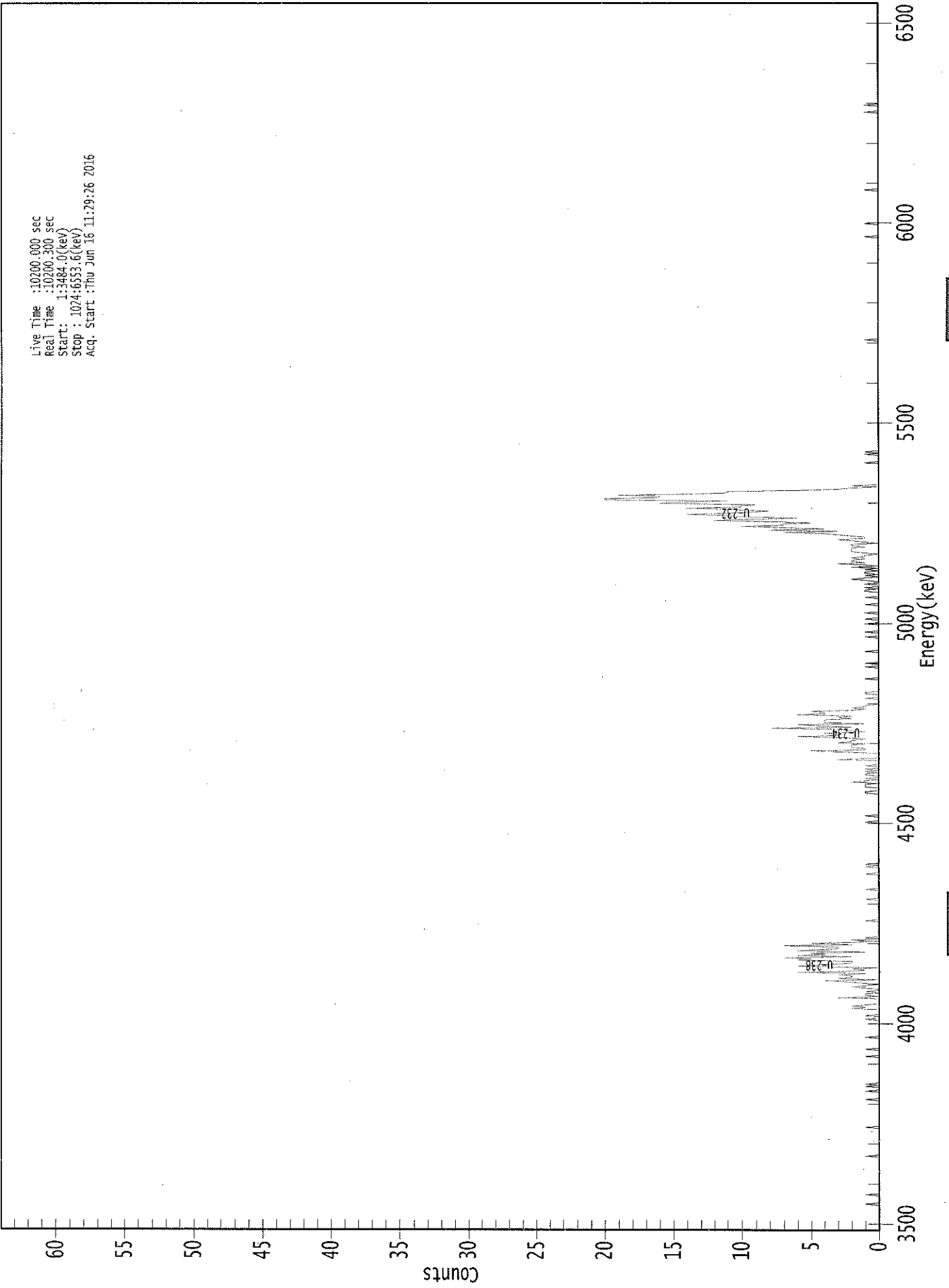
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	5.27E+000 +/- 5.50E-001	6.37E-002 +/- 6.64E-003
U-234	0.993	4761.50*	1.57E+000 +/- 3.17E-001	7.26E-002 +/- 7.58E-003
U-235	0.996	4385.50*	6.97E-002 +/- 6.64E-002	7.15E-002 +/- 7.47E-003
U-238	0.991	4184.40*	1.64E+000 +/- 3.26E-001	7.23E-002 +/- 7.55E-003

*AE
6/17/16*

0000154462.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3484.0(keV)
Stop : 1074:6553.6(keV)
Acq. Start :Thu Jun 16 11:29:26 2016



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	1	0
25:	0	0	0	0	0	0	0	1	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	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	0	0	0	0	1	0	0
113:	0	0	0	0	0	1	0	0	0
121:	1	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	1	0	0	0	0	0	0	1
153:	0	0	0	0	0	0	0	0	0
161:	0	1	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	2	1	2	1	0	0	0	0
193:	0	0	3	0	1	1	0	1	1
201:	0	0	1	2	1	0	1	1	2
209:	4	0	3	2	2	3	1	1	6
217:	2	1	2	0	6	5	3	2	2
225:	2	6	5	7	2	6	4	5	5
233:	1	6	4	3	3	7	2	5	5
241:	2	0	2	0	1	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	1	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	1	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	1	0	0	0	0	0	0	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	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	1	0	0	0	0
345:	0	1	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	1	1	0	0	0

369: 0 1 1 1 0 2 1 0

Sample Title: 14

Channel	1	2	3	4	5	6	7	8
377:	1	0	0	1	1	0	1	0
385:	1	0	0	1	0	0	0	0
393:	3	0	0	0	0	0	2	5
401:	1	1	2	2	2	1	3	2
409:	2	1	2	6	3	3	4	1
417:	2	3	8	2	4	6	1	4
425:	4	4	2	3	2	6	4	4
433:	5	2	1	2	1	1	0	0
441:	0	0	0	1	0	0	0	1
449:	1	0	0	0	0	0	0	0
457:	0	0	0	1	0	0	0	0
465:	0	0	0	0	0	1	0	0
473:	1	0	0	0	0	0	0	0
481:	0	0	1	0	0	0	0	0
489:	0	0	0	0	0	0	1	0
497:	0	0	1	0	0	0	0	0
505:	0	1	0	0	0	1	0	0
513:	0	0	1	0	0	0	0	0
521:	0	1	0	0	0	0	0	1
529:	0	0	0	0	1	1	0	1
537:	0	0	1	0	0	1	2	1
545:	0	1	0	1	1	0	1	0
553:	2	0	1	3	1	2	2	1
561:	2	1	1	0	1	2	2	2
569:	2	1	2	2	0	1	2	3
577:	1	1	2	3	4	7	3	8
585:	4	7	10	7	7	5	8	12
593:	9	6	10	11	14	11	9	8
601:	11	14	10	10	9	16	15	11
609:	20	20	16	16	19	13	11	11
617:	6	3	2	0	2	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	1
641:	0	0	0	0	0	0	1	0
649:	1	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	1	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 14

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	1	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:	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	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

ES
6/16/16

Apex-Alpha™

Sample Description: CP 5022 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001544
 Batch Identification: 1606038A-UU
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_047
 Chamber Serial Number: 02030596A
 Detector Serial Number: 91086
 Env. Background: System Bkgd 156086
 Reagent Blank: <not performed>

Sample Size: 1.008E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 6:05:27 AM
 Acquisition Date/Time: 6/16/2016 11:29:29 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.654 mL
 Effective Efficiency: 0.1989 +/- 0.0109
 Counting Efficiency: 0.1705 +/- 0.0030 on 12/11/2015 8:21:02 AM
 Chem. Recovery Factor: 1.1667 +/- 0.0671

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.273	406.49	9.73	0.51	0.00E+000	10.7
U-234	4.729	115.66	18.26	0.34	0.00E+000	4.1
U-235	4.385	7.83	70.93	0.17	0.00E+000	3.0
U-238	4.145	105.83	19.07	0.17	0.00E+000	12.8

T = Tracer Peak used for Effective Efficiency

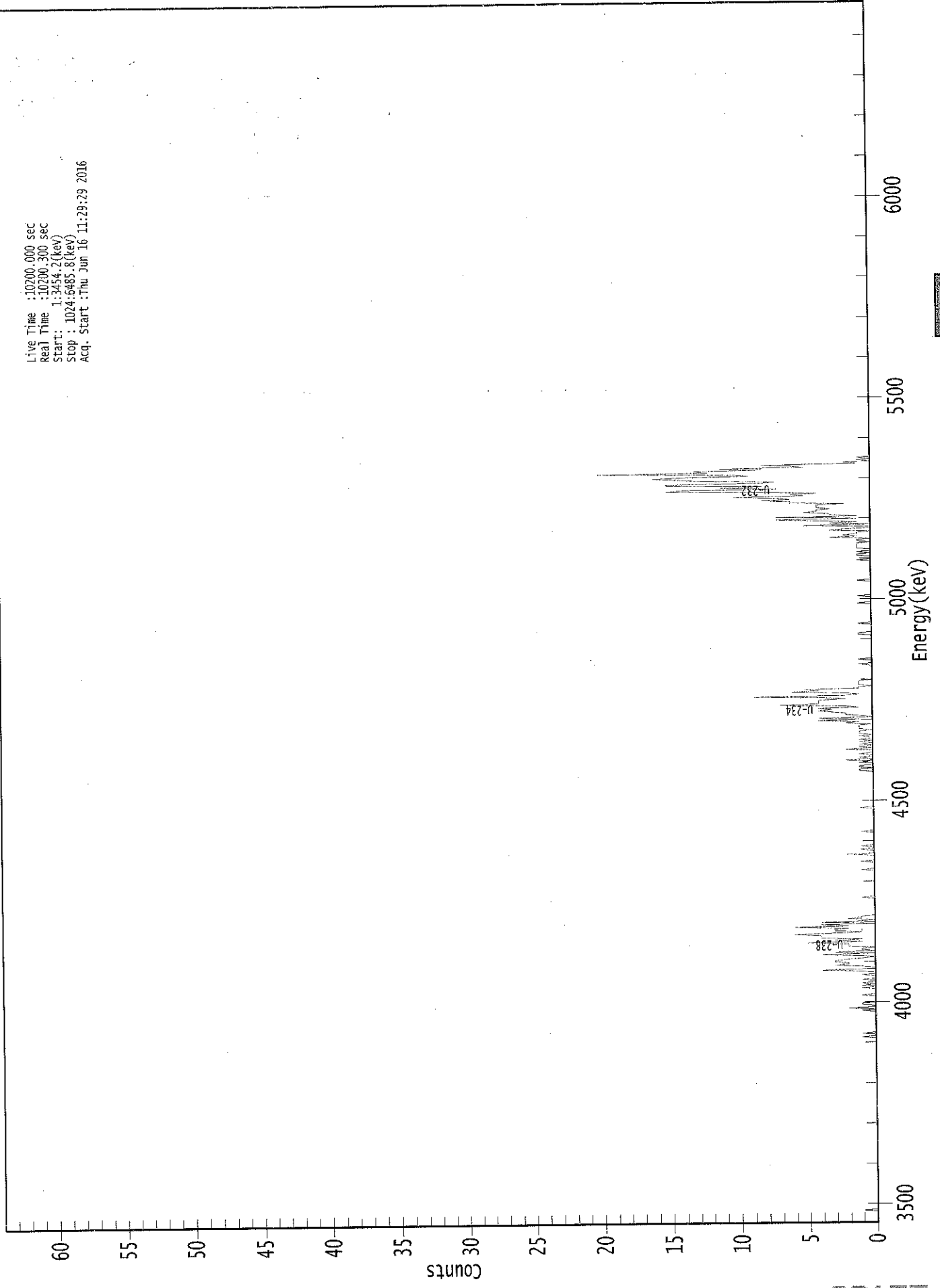
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	5.39E+000 +/- 5.78E-001	6.95E-002 +/- 7.46E-003
U-234	0.993	4761.50*	1.53E+000 +/- 3.24E-001	6.33E-002 +/- 6.79E-003
U-235	1.000	4385.50*	1.28E-001 +/- 9.18E-002	6.82E-002 +/- 7.31E-003
U-238	0.989	4184.40*	1.40E+000 +/- 3.05E-001	5.51E-002 +/- 5.90E-003

AG
6/17/16

0000154475.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3454.2(keV)
Stop : 1024:6485.8(keV)
Acq. Start : Thu Jun 16 11:29:29 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 15

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 0 0 0 0 0 0 0 0

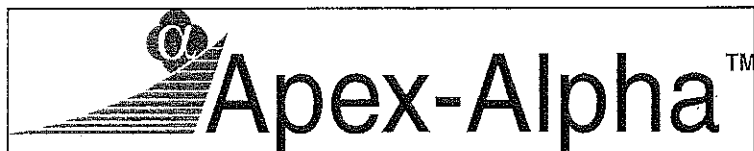
Sample Title: 15

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

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



QA SUMMARY REPORT

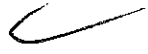
Review Of QA Results - Pulser Check

Date : 6/16/2016

Time : 6:04:46 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	6/16/2016 5:21:18 AM
Alpha 004	21f	ALL	Passed	6/16/2016 5:21:18 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	6/16/2016 5:21:19 AM
Alpha 011	21f	ALL	Passed	6/16/2016 5:21:20 AM
Alpha 012	21f	ALL	Passed	6/16/2016 5:21:21 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	6/16/2016 5:21:22 AM
Alpha 015	21f	Peak Energy	Action	6/16/2016 5:21:23 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:24 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:25 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:27 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:29 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:30 AM
Alpha 038	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:32 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:34 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:37 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:39 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:41 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:44 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:47 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:49 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:52 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:55 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:21:57 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:22:00 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:22:03 AM
Alpha 051	Alpha Analyst100DC	ALL	Not Done	
Alpha 052	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:22:05 AM
Alpha 053	Alpha Analyst100DC	Peak FWHM	Action	6/16/2016 5:22:08 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:22:11 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:22:14 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:22:17 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:22:19 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:22:22 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:22:25 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	6/16/2016 5:22:28 AM

APPROVED BY:  _____

APPROVAL DATE: 6/16/16

***** 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	16-06038
Analysis Code	ThISO
Run	1
Date Received	6/9/2016
Lab Deadline	6/29/2016
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		06/09/16 00:00	1.0000E+00
02	MBL	BLANK		06/09/16 00:00	1.0000E+00
03	DUP	CP-5018 00-02	45	06/06/16 00:00	1.0497E+00
04	DO	CP-5018 00-02	45	06/06/16 00:00	1.0484E+00
05	TRG	CP-5018 02-05	43	06/06/16 00:00	1.0109E+00
06	TRG	CP-5018 05-10	53	06/06/16 00:00	1.0056E+00
07	TRG	CP-5018 10-15	42	06/06/16 00:00	1.0112E+00
08	TRG	CP-5019 00-02	48	06/06/16 00:00	1.0347E+00
09	TRG	CP-5019 02-05	57	06/06/16 00:00	1.0130E+00
10	TRG	CP-5019 05-10	50	06/06/16 00:00	1.0258E+00
11	TRG	CP-5019 10-15	34	06/06/16 00:00	1.0116E+00
12	TRG	CP-5022 00-02	39	06/02/16 00:00	1.0096E+00
13	TRG	CP 5022 02-05	55	06/02/16 00:00	1.0131E+00
14	TRG	CP 5022 05-10	43	06/02/16 00:00	1.0497E+00
15	TRG	CP 5022 10-15	39	06/02/16 00:00	1.0180E+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	0.4490	10.1		0.00								
02	MBL	0.2237	5.0		0.00								
03	DUP	0.2240	5.0		0.00								
04	DO	0.2361	5.3		0.00								
05	TRG	0.2364	5.3		0.00								
06	TRG	0.2362	5.3		0.00								
07	TRG	0.2364	5.3		0.00								
08	TRG	0.2356	5.3		0.00								
09	TRG	0.2366	5.3		0.00								
10	TRG	0.2370	5.3		0.00								
11	TRG	0.2365	5.3		0.00								
12	TRG	0.2362	5.3		0.00								
13	TRG	0.2367	5.3		0.00								
14	TRG	0.2367	5.3		0.00								
15	TRG	0.2375	5.3		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.


16-06038
THISO
Run 1

Eberline Services
Oak Ridge Laboratory
Analysis Sheet

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep 10 Date/Time	Sep 10 By	Sep 11 Date/Time	Sep 11 By
01	LCS			06/14/16 11:17	JPACHELLA				
02	MBL			06/14/16 11:17	JPACHELLA				
03	DUP			06/14/16 11:17	JPACHELLA				
04	DO	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
05	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
06	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
07	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
08	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
09	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
10	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
11	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
12	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
13	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
14	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	JPACHELLA				
15	TRG	06/14/16 13:22	KSALLINGS	06/14/16 11:17	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	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	TH-228	LCS	06/09/16 00:00	1.00E+00	94.15	0.00	0.00			
02	TH-228	MBL	06/09/16 00:00	1.00E+00	108.77	0.00	0.00			
03	TH-228	DUP	06/06/16 00:00	1.05E+00	109.48	0.00	0.00			
04	TH-228	DO	06/06/16 00:00	1.05E+00	96.04	0.00	0.00			
05	TH-228	TRG	06/06/16 00:00	1.01E+00	99.03	0.00	0.00			
06	TH-228	TRG	06/06/16 00:00	1.01E+00	115.00	0.00	0.00			
07	TH-228	TRG	06/06/16 00:00	1.01E+00	124.95	0.00	0.00			
08	TH-228	TRG	06/06/16 00:00	1.03E+00	115.74	0.00	0.00			
09	TH-228	TRG	06/06/16 00:00	1.01E+00	103.25	0.00	0.00			
10	TH-228	TRG	06/06/16 00:00	1.03E+00	165.35	0.00	0.00			
11	TH-228	TRG	06/06/16 00:00	1.01E+00	122.91	0.00	0.00			
12	TH-228	TRG	06/02/16 00:00	1.01E+00	99.41	0.00	0.00			
13	TH-228	TRG	06/02/16 00:00	1.01E+00	151.45	0.00	0.00			
14	TH-228	TRG	06/02/16 00:00	1.05E+00	120.69	0.00	0.00			
15	TH-228	TRG	06/02/16 00:00	1.02E+00	108.36	0.00	0.00			

	Run	1
Analysis Code	THISO	
Eberline Analytical Work Order	16-06038	
Client	Auxier & Associates, Inc.	

79102

Preliminary Data Report & Analytical Calculations
Work Order: 16-06038-THISO-1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-228	LCS	06/20/16 12:14		A_Spec	Alpha_039	170	3.79 E+02	9.00 E-03	18.6
02	TH-228	MBL	06/20/16 12:14		A_Spec	Alpha_041	170	2.15 E+00	5.00 E-03	19
03	TH-228	DUP	06/20/16 12:14		A_Spec	Alpha_042	170	8.78 E+01	7.00 E-03	17.9
04	TH-228	DO	06/20/16 12:14		A_Spec	Alpha_043	170	8.75 E+01	9.00 E-03	18.9
05	TH-228	TRG	06/20/16 12:14		A_Spec	Alpha_044	170	1.09 E+02	4.00 E-03	18.6
06	TH-228	TRG	06/20/16 12:14		A_Spec	Alpha_045	170	1.01 E+02	1.10 E-02	17.1
07	TH-228	TRG	06/20/16 12:14		A_Spec	Alpha_046	170	1.23 E+02	1.10 E-02	18.1
08	TH-228	TRG	06/20/16 12:14		A_Spec	Alpha_047	170	4.13 E+01	4.00 E-03	17
09	TH-228	TRG	06/20/16 12:14		A_Spec	Alpha_048	170	6.50 E+01	1.20 E-02	17.6
10	TH-228	TRG	06/20/16 12:15		A_Spec	Alpha_049	170	8.60 E+01	6.00 E-03	15.1
11	TH-228	TRG	06/20/16 12:15		A_Spec	Alpha_050	170	8.65 E+01	9.00 E-03	14.7
12	TH-228	TRG	06/20/16 12:15		A_Spec	Alpha_052	170	7.75 E+01	3.00 E-03	17.3
13	TH-228	TRG	06/20/16 12:15		A_Spec	Alpha_053	170	8.68 E+01	7.00 E-03	15.2
14	TH-228	TRG	06/20/16 12:15		A_Spec	Alpha_054	170	7.23 E+01	1.00 E-02	13.6
15	TH-228	TRG	06/20/16 12:15		A_Spec	Alpha_055	170	6.36 E+01	8.00 E-03	16.2


	Run	1
	Analysis Code	THISO
Eberline Analytical Work Order	16-06038	
Client	Auxier & Associates, Inc.	

09100


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	6.51E+00	1.04E+00	9.54E-02	5.34E+00	122.05	OK		OK	
02	TH-230	MBL	BLANK	pCi/g	7.90E-02	6.85E-02	7.69E-02					OK	OK
03	TH-230	DUP	CP-5018 00-02	pCi/g	1.27E+00	3.26E-01	7.73E-02				OK	OK	
04	TH-230	DO	CP-5018 00-02	pCi/g	1.47E+00	3.72E-01	7.87E-02					OK	
05	TH-230	TRG	CP-5018 02-05	pCi/g	1.60E+00	3.96E-01	5.93E-02					OK	
06	TH-230	TRG	CP-5018 05-10	pCi/g	1.34E+00	3.39E-01	7.04E-02					OK	
07	TH-230	TRG	CP-5018 10-15	pCi/g	1.25E+00	3.05E-01	9.30E-02					OK	
08	TH-230	TRG	CP-5019 00-02	pCi/g	9.95E-01	2.74E-01	6.82E-02					OK	
09	TH-230	TRG	CP-5019 02-05	pCi/g	1.34E+00	3.51E-01	7.58E-02					OK	
10	TH-230	TRG	CP-5019 05-10	pCi/g	1.11E+00	2.65E-01	5.84E-02					OK	
11	TH-230	TRG	CP-5019 10-15	pCi/g	1.02E+00	2.96E-01	1.07E-01					OK	
12	TH-230	TRG	CP-5022 00-02	pCi/g	1.41E+00	3.75E-01	8.63E-02					OK	
13	TH-230	TRG	CP 5022 02-05	pCi/g	9.96E-01	2.58E-01	8.38E-02					OK	
14	TH-230	TRG	CP 5022 05-10	pCi/g	1.61E+00	4.17E-01	9.69E-02					OK	
15	TH-230	TRG	CP 5022 10-15	pCi/g	1.14E+00	3.22E-01	1.09E-01					OK	

	Run	1
Analysis Code	THISO	1
Eberline Analytical Work Order	16-06038	1
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	5.61E+00	9.21E-01	1.14E-01	4.64E+00	121.00	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	-3.49E-02	3.09E-02	1.10E-01					OK	OK
03	TH-232	DUP	CP-5018 00-02	pCi/g	1.09E+00	2.93E-01	7.27E-02				OK	OK	
04	TH-232	DO	CP-5018 00-02	pCi/g	1.10E+00	3.03E-01	6.66E-02					OK	
05	TH-232	TRG	CP-5018 02-05	pCi/g	1.28E+00	3.38E-01	8.51E-02					OK	
06	TH-232	TRG	CP-5018 05-10	pCi/g	1.33E+00	3.40E-01	1.15E-01					OK	
07	TH-232	TRG	CP-5018 10-15	pCi/g	1.29E+00	3.12E-01	9.96E-02					OK	
08	TH-232	TRG	CP-5019 00-02	pCi/g	5.00E-01	1.78E-01	6.81E-02					OK	
09	TH-232	TRG	CP-5019 02-05	pCi/g	9.54E-01	2.80E-01	8.64E-02					OK	
10	TH-232	TRG	CP-5019 05-10	pCi/g	1.02E+00	2.49E-01	5.83E-02					OK	
11	TH-232	TRG	CP-5019 10-15	pCi/g	1.26E+00	3.38E-01	8.20E-02					OK	
12	TH-232	TRG	CP-5022 00-02	pCi/g	1.17E+00	3.29E-01	7.30E-02					OK	
13	TH-232	TRG	CP 5022 02-05	pCi/g	1.21E+00	2.93E-01	6.82E-02					OK	
14	TH-232	TRG	CP 5022 05-10	pCi/g	9.28E-01	2.84E-01	8.05E-02					OK	
15	TH-232	TRG	CP 5022 10-15	pCi/g	1.26E+00	3.42E-01	8.34E-02					OK	

	Run	1
Analysis Code	THISO	
Eberline Analytical Work Order	16-06038	
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	06/09/16 00:00	1.00E+00	94.15	0.00	0.00			
02	TH-232	MBL	06/09/16 00:00	1.00E+00	108.77	0.00	0.00			
03	TH-232	DUP	06/06/16 00:00	1.05E+00	109.48	0.00	0.00			
04	TH-232	DO	06/06/16 00:00	1.05E+00	96.04	0.00	0.00			
05	TH-232	TRG	06/06/16 00:00	1.01E+00	99.03	0.00	0.00			
06	TH-232	TRG	06/06/16 00:00	1.01E+00	115.00	0.00	0.00			
07	TH-232	TRG	06/06/16 00:00	1.01E+00	124.95	0.00	0.00			
08	TH-232	TRG	06/06/16 00:00	1.03E+00	115.74	0.00	0.00			
09	TH-232	TRG	06/06/16 00:00	1.01E+00	103.25	0.00	0.00			
10	TH-232	TRG	06/06/16 00:00	1.03E+00	165.35	0.00	0.00			
11	TH-232	TRG	06/06/16 00:00	1.01E+00	122.91	0.00	0.00			
12	TH-232	TRG	06/02/16 00:00	1.01E+00	99.41	0.00	0.00			
13	TH-232	TRG	06/02/16 00:00	1.01E+00	151.45	0.00	0.00			
14	TH-232	TRG	06/02/16 00:00	1.05E+00	120.69	0.00	0.00			
15	TH-232	TRG	06/02/16 00:00	1.02E+00	108.36	0.00	0.00			

	Run	1
	Analysis Code	THISO
Eberline Analytical Work Order	16-06038	
Client	Auxier & Associates, Inc.	

Preliminary Data Report & Analytical Calculations
Work Order: 16-06038-THISO-1

Eberline Analytical
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-232	LCS	06/20/16 12:14		A_Spec	Alpha_039	170	3.71 E+02	1.10 E-02	18.6
02	TH-232	MBL	06/20/16 12:14		A_Spec	Alpha_041	170	-2.72 E+00	1.60 E-02	19
03	TH-232	DUP	06/20/16 12:14		A_Spec	Alpha_042	170	8.43 E+01	4.00 E-03	17.9
04	TH-232	DO	06/20/16 12:14		A_Spec	Alpha_043	170	7.87 E+01	2.00 E-03	18.9
05	TH-232	TRG	06/20/16 12:14		A_Spec	Alpha_044	170	9.00 E+01	0.00 E+00	18.6
06	TH-232	TRG	06/20/16 12:14		A_Spec	Alpha_045	170	9.93 E+01	1.60 E-02	17.1
07	TH-232	TRG	06/20/16 12:14		A_Spec	Alpha_046	170	1.11 E+02	1.60 E-02	18.1
08	TH-232	TRG	06/20/16 12:14		A_Spec	Alpha_047	170	3.85 E+01	3.00 E-03	17
09	TH-232	TRG	06/20/16 12:14		A_Spec	Alpha_048	170	6.62 E+01	5.00 E-03	17.6
10	TH-232	TRG	06/20/16 12:15		A_Spec	Alpha_049	170	9.83 E+01	4.00 E-03	15.1
11	TH-232	TRG	06/20/16 12:15		A_Spec	Alpha_050	170	8.63 E+01	4.00 E-03	14.7
12	TH-232	TRG	06/20/16 12:15		A_Spec	Alpha_052	170	7.67 E+01	2.00 E-03	17.3
13	TH-232	TRG	06/20/16 12:15		A_Spec	Alpha_053	170	1.06 E+02	5.00 E-03	15.2
14	TH-232	TRG	06/20/16 12:15		A_Spec	Alpha_054	170	6.05 E+01	3.00 E-03	13.6
15	TH-232	TRG	06/20/16 12:15		A_Spec	Alpha_055	170	8.53 E+01	4.00 E-03	16.2

	Run 1	THISO	16-06038	Auxier & Associates, Inc.
	Analysis Code		Eberline Analytical Work Order	Client

7/1/19

Count Room Report

Client: Auxier Associates, Inc.

16-06038-ThISO-1 (pCi/g) in SO

Tracer ID: Th-18a

2 hr 50m

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	06/09/16 00:00	1.0000	0.4490	10.0845		0.00		
02	MBL	BLANK	06/09/16 00:00	1.0000	0.2237	5.0243		0.00		
03	DUP	CP-5018 00-02	06/06/16 00:00	1.0497	0.2240	5.0310		0.00		
04	DO	CP-5018 00-02	06/06/16 00:00	1.0484	0.2361	5.3028		0.00		
05	TRG	CP-5018 02-05	06/06/16 00:00	1.0109	0.2364	5.3095		0.00		
06	TRG	CP-5018 05-10	06/06/16 00:00	1.0056	0.2362	5.3051		0.00		
07	TRG	CP-5018 10-15	06/06/16 00:00	1.0112	0.2364	5.3095		0.00		
08	TRG	CP-5019 00-02	06/06/16 00:00	1.0347	0.2356	5.2916		0.00		
09	TRG	CP-5019 02-05	06/06/16 00:00	1.0130	0.2366	5.3140		0.00		
10	TRG	CP-5019 05-10	06/06/16 00:00	1.0258	0.2370	5.3230		0.00		
11	TRG	CP-5019 10-15	06/06/16 00:00	1.0116	0.2365	5.3118		0.00		
12	TRG	CP-5022 00-02	06/02/16 00:00	1.0096	0.2362	5.3051		0.00		
13	TRG	CP 5022 02-05	06/02/16 00:00	1.0131	0.2367	5.3163		0.00		
14	TRG	CP 5022 05-10	06/02/16 00:00	1.0497	0.2367	5.3163		0.00		
15	TRG	CP 5022 10-15	06/02/16 00:00	1.0180	0.2375	5.3343		0.00		

Internal Work Order		Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
16-06038		1	ThISO	6/14/2016 11:10	JPACHELLA	<i>JPM</i>	
LCS & Matrix Spikes							
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	MSD Volume Used (g)
Th-228	Th-8b	103.560	6/14/2016	0.100	0.0994		
Th-230	Th-1b	23.520	6/14/2016	0.500	0.5036		
Th-232	Th-8b	103.560	6/14/2016	0.100	0.0994		
Th-99 MS	Th-2a	22043.636	7/5/2014	0.1			
Tracers							
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	
01	Th-229	Th-18a	22.460	6/14/2016	0.4490	0.2200	
02	Th-229	Th-18a	22.460	6/14/2016	0.2237	0.2200	
03	Th-229	Th-18a	22.460	6/14/2016	0.2240	0.2200	
04	Th-229	Th-18a	22.460	6/14/2016	0.2361	0.2200	
05	Th-229	Th-18a	22.460	6/14/2016	0.2364	0.2200	
06	Th-229	Th-18a	22.460	6/14/2016	0.2362	0.2200	
07	Th-229	Th-18a	22.460	6/14/2016	0.2364	0.2200	
08	Th-229	Th-18a	22.460	6/14/2016	0.2356	0.2200	
09	Th-229	Th-18a	22.460	6/14/2016	0.2366	0.2200	
10	Th-229	Th-18a	22.460	6/14/2016	0.2370	0.2200	
11	Th-229	Th-18a	22.460	6/14/2016	0.2365	0.2200	
12	Th-229	Th-18a	22.460	6/14/2016	0.2362	0.2200	
13	Th-229	Th-18a	22.460	6/14/2016	0.2367	0.2200	
14	Th-229	Th-18a	22.460	6/14/2016	0.2367	0.2200	
15	Th-229	Th-18a	22.460	6/14/2016	0.2375	0.2200	
Balance Printer Tapes							
Tracer				LCS			
Matrix Spike							

Aliquot Worksheet

Work Order		Run	Analysis Code	Rpt Units	Lab Deadline	Technician	
16-06038		1	THISO	grams	6/29/2016	JPACHELLA	

Lab Fraction	Auxier & Associates, Inc.		Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID			Ratio Post/Pre	No. of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist	Aliq
01	LCS		LCS					1.0000E+00	1.0000E+00					
02	BLANK		MBL					1.0000E+00	1.0000E+00					
03	CP-5018 00-02		DUP					1.0497E+00	1.0497E+00					
04	CP-5018 00-02		DO					1.0484E+00	1.0484E+00					
05	CP-5018 02-05		TRG					1.0109E+00	1.0109E+00					
06	CP-5018 05-10		TRG					1.0056E+00	1.0056E+00					
07	CP-5018 10-15		TRG					1.0112E+00	1.0112E+00					
08	CP-5019 00-02		TRG					1.0347E+00	1.0347E+00					
09	CP-5019 02-05		TRG					1.0130E+00	1.0130E+00					
10	CP-5019 05-10		TRG					1.0258E+00	1.0258E+00					
11	CP-5019 10-15		TRG					1.0116E+00	1.0116E+00					
12	CP-5022 00-02		TRG					1.0096E+00	1.0096E+00					
13	CP 5022 02-05		TRG					1.0131E+00	1.0131E+00					
14	CP 5022 05-10		TRG					1.0497E+00	1.0497E+00					
15	CP 5022 10-15		TRG					1.0180E+00	1.0180E+00					

Comments

Technician: JPachella Date: 6/14/16

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
16-06038	6/29/2016	6/13/2016	6/14/2016	6/15/2016	KSALLINGS

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pen Wt		Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP-5018 00-02	14.5500		969.7800	790.2300	955.2300	775.6800	18.80%	81.20%	0.0000	0.0000	
05	CP-5018 02-05	14.5100		868.0400	698.9000	853.5300	684.3900	19.82%	80.18%	0.0000	0.0000	
06	CP-5018 05-10	14.5500		527.5000	425.4700	512.9500	410.9200	19.89%	80.11%	0.0000	0.0000	
07	CP-5018 10-15	14.6100		452.9700	355.0100	438.3600	340.4000	22.35%	77.65%	0.0000	0.0000	
08	CP-5019 00-02	14.6200		640.3100	570.4900	625.6900	555.8700	11.16%	88.84%	0.0000	0.0000	
09	CP-5019 02-05	14.5200		789.8900	636.4800	775.3700	621.9600	19.79%	80.21%	0.0000	0.0000	
10	CP-5019 05-10	14.5700		544.5600	438.1600	529.9900	423.5900	20.08%	79.92%	0.0000	0.0000	
11	CP-5019 10-15	14.6000		441.8400	342.7700	427.2400	328.1700	23.19%	76.81%	0.0000	0.0000	
12	CP-5022 00-02	14.6100		675.0900	569.9700	660.4800	555.3600	15.92%	84.08%	0.0000	0.0000	
13	CP 5022 02-05	14.6000		700.8100	571.6000	686.2100	557.0000	18.83%	81.17%	0.0000	0.0000	
14	CP 5022 05-10	14.6500		458.2900	367.5100	443.6400	352.8600	20.46%	79.54%	0.0000	0.0000	
15	CP 5022 10-15	14.6400		490.2300	380.8100	475.5900	366.1700	23.01%	76.99%	0.0000	0.0000	

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



Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_039
 Chamber Serial Number: 06027396A
 Detector Serial Number: 83109
 Env. Background: System Bkgd 156901
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/20/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:14:38 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.449 mL
 Effective Efficiency: 0.1753 +/- 0.0115
 Counting Efficiency: 0.1862 +/- 0.0032 on 12/11/2015 8:20:49 AM
 Chem. Recovery Factor: 0.9415 +/- 0.0639

Control Certificate Name: NatTh_Th-8
 Chem. Recov. of Control: TH-232 1.210020 +/- 0.107680
 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	28.96	37.89	2.04	0.00E+000	3.0
TH-228	5.378	379.47	10.09	1.53	0.00E+000	19.6
TH-229 T	4.866	300.47	11.34	1.53	0.00E+000	10.1
TH-230	4.640	429.98	9.47	1.02	0.00E+000	8.1
TH-232	3.953	371.13	10.20	1.87	0.00E+000	47.7

T = Tracer Peak used for Effective Efficiency

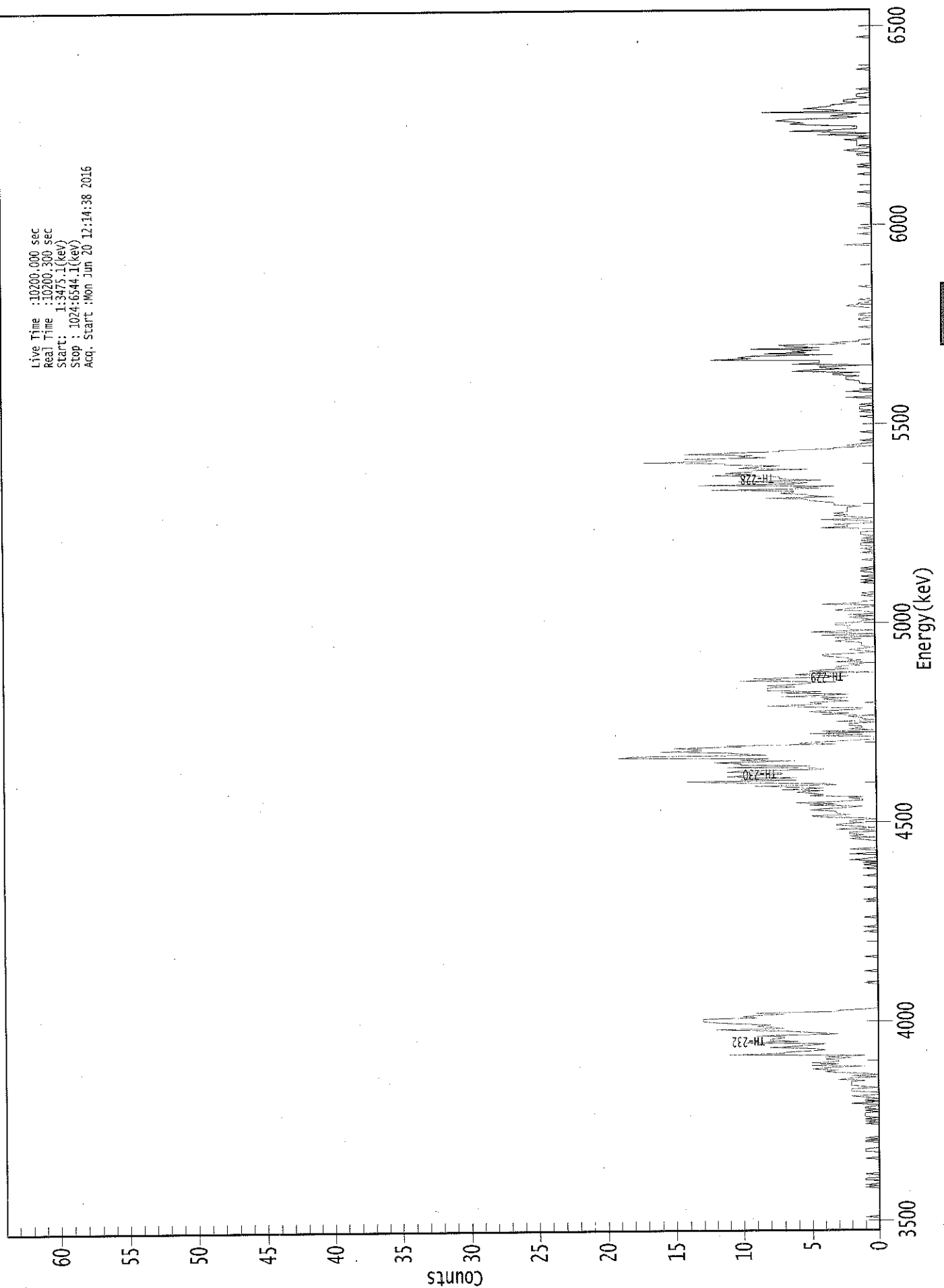
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.975	5850.00*	4.49E-001 +/- 1.80E-001	1.21E-001 +/- 1.55E-002
TH-228	0.997	5400.00*	5.74E+000 +/- 9.39E-001	1.08E-001 +/- 1.38E-002
TH-229	1.000	4872.00*	4.56E+000 +/- 5.87E-001	1.08E-001 +/- 1.39E-002
TH-230	0.995	4672.00*	6.51E+000 +/- 1.04E+000	9.54E-002 +/- 1.23E-002
TH-232	0.990	3997.00*	5.61E+000 +/- 9.21E-001	1.14E-001 +/- 1.47E-002

AG
 6/21/16

0000154825.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3475.1(keV)
Stop : 1024:6544.1(keV)
Acq. Start : Mon Jun 20 12:14:38 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 01

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 4 7 4 6 9 3 4 11

Sample Title: 01

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

801: 0 0 0 0 0 0 0 0

Sample Title: 01

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



KS
6/21/16

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_041
 Chamber Serial Number: 05026930A
 Detector Serial Number: 91087
 Env. Background: System Bkgd 156902
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/20/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:14:40 PM
 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: 0.2066 +/- 0.0168
 Counting Efficiency: 0.1900 +/- 0.0033 on 12/11/2015 8:21:11 AM
 Chem. Recovery Factor: 1.0877 +/- 0.0907

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.783	2.15	161.66	0.85	0.00E+000	3.0
TH-228	5.292	2.15	161.66	0.85	0.00E+000	3.0
TH-229 T	4.876	176.49	14.78	0.51	0.00E+000	10.2
TH-230	4.627	6.15	85.19	0.85	0.00E+000	3.0
TH-232	3.947	-2.72	87.14	2.72	0.00E+000	0.0

T = Tracer Peak used for Effective Efficiency

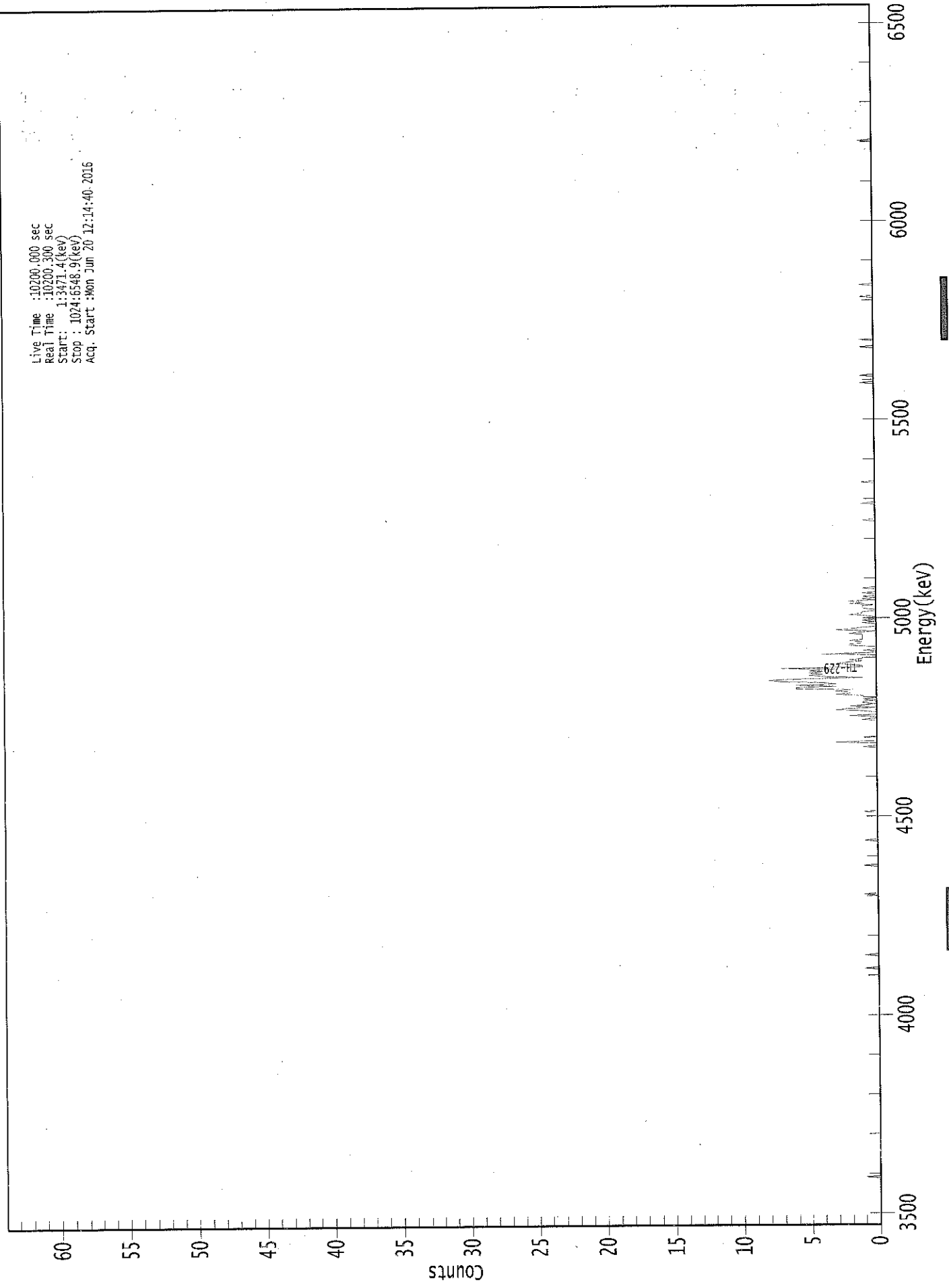
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.977	5850.00*	2.83E-002 +/- 4.59E-002	7.87E-002 +/- 1.26E-002
TH-228	0.941	5400.00*	2.76E-002 +/- 4.48E-002	7.68E-002 +/- 1.23E-002
TH-229	1.000	4872.00*	2.27E+000 +/- 3.63E-001	6.76E-002 +/- 1.08E-002
TH-230	0.989	4672.00*	7.90E-002 +/- 6.85E-002	7.69E-002 +/- 1.23E-002
TH-232	0.987	3997.00*	-3.49E-002 +/- 3.09E-002	1.10E-001 +/- 1.76E-002

AG
6/21/16

0000154826.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3471.4(kev)
Stop : 1024:6548.9(kev)
Acq. Start :Mon Jun 20 12:14:40-2016



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: 02

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	1	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	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	1
217:	0	0	0	0	0	0	0	0	0
225:	0	0	1	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	1	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	1	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	1	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	1	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

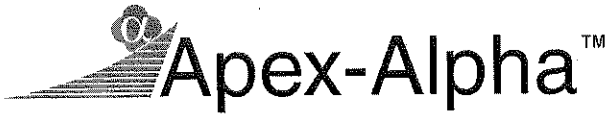
Sample Title: 02

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

801: 0 0 0 0 0 0 0 0

Sample Title: 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	1	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



KB
6/20/16

Sample Description: CP-5018 00-02 DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_042
 Chamber Serial Number: 05026930B
 Detector Serial Number: 84185
 Env. Background: System Bkgd 156903
 Reagent Blank: <not performed>

Sample Size: 1.050E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:14:43 PM
 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: 0.1958 +/- 0.0163
 Counting Efficiency: 0.1789 +/- 0.0031 on 12/11/2015 8:21:10 AM
 Chem. Recovery Factor: 1.0948 +/- 0.0933

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	10.98	62.28	1.02	0.00E+000	3.0
TH-228	5.366	87.81	21.08	1.19	0.00E+000	13.2
TH-229 T	4.864	167.49	15.17	0.51	0.00E+000	9.2
TH-230	4.625	98.15	19.88	0.85	0.00E+000	11.3
TH-232	3.956	84.32	21.45	0.68	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

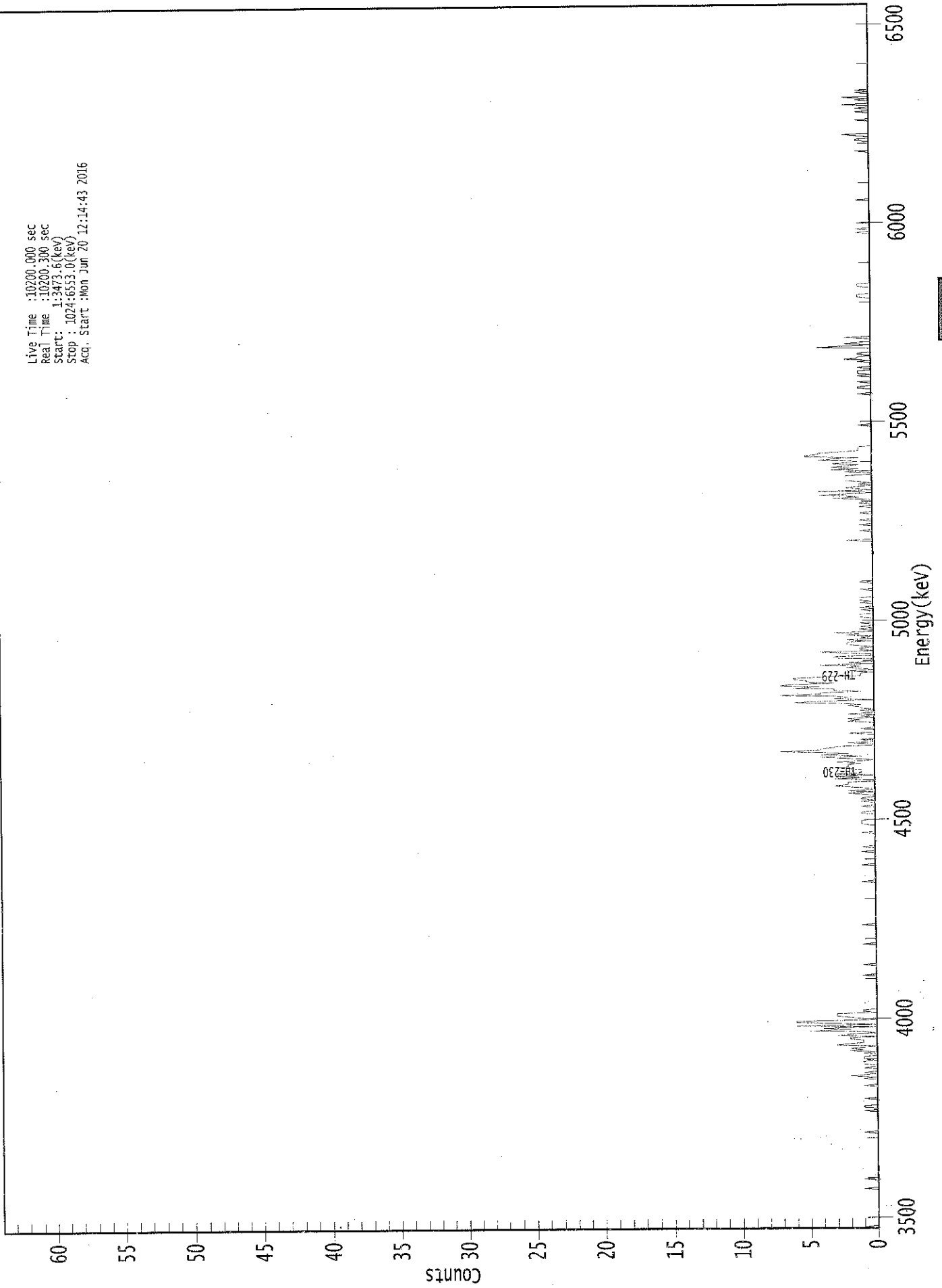
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.45E-001 +/- 9.36E-002	8.34E-002 +/- 1.36E-002
TH-228	0.994	5400.00*	1.15E+000 +/- 3.06E-001	8.62E-002 +/- 1.41E-002
TH-229	1.000	4872.00*	2.17E+000 +/- 3.55E-001	6.80E-002 +/- 1.11E-002
TH-230	0.988	4672.00*	1.27E+000 +/- 3.26E-001	7.73E-002 +/- 1.26E-002
TH-232	0.991	3997.00*	1.09E+000 +/- 2.93E-001	7.27E-002 +/- 1.19E-002

AG
6/21/16

0000154827.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3473.6(kev)
Stop : 1024:6553.0(kev)
Acq. Start : Mon Jun 20 12:14:43 2016



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: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	1	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	1	0	0	0	0	0	0	0
41:	0	1	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	1	0	0	1	1	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	1	0	0	2
129:	1	0	1	0	0	0	1	0	0
137:	0	1	1	1	0	1	1	1	1
145:	0	0	1	0	2	1	2	1	1
153:	0	3	2	1	1	1	2	2	2
161:	0	3	2	0	1	5	2	4	4
169:	0	6	0	3	6	6	0	1	1
177:	2	3	3	3	0	1	1	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	1	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	1	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	1	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	1	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	0
313:	0	0	1	0	0	0	1	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	1	0	0	0	0	0	0
337:	0	1	1	1	1	0	0	0	0
345:	0	0	1	1	0	0	0	0	0
353:	1	0	0	0	1	0	1	1	1
361:	0	0	1	2	0	2	0	0	0

369: 2 3 2 2 2 0 0 3

Sample Title: 03

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

801: 0 0 0 0 0 0 0 0

Sample Title: 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	1
833:	0	0	1	0	0	0	0	1
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	1	0	0	0	0
905:	0	0	0	0	1	1	0	0
913:	1	2	0	0	0	0	0	0
921:	0	0	0	0	0	1	0	0
929:	0	0	0	0	1	0	0	1
937:	0	0	2	0	0	0	1	0
945:	2	0	0	0	1	0	1	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KS
6/20/16

Apex-Alpha™

Sample Description: CP-5018 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_043
 Chamber Serial Number: 04026481A
 Detector Serial Number: 91088
 Env. Background: System Bkgd 156904
 Reagent Blank: <not performed>

Sample Size: 1.048E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:14:45 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.236 mL
 Effective Efficiency: 0.1815 +/- 0.0153
 Counting Efficiency: 0.1890 +/- 0.0033 on 12/11/2015 8:21:08 AM
 Chem. Recovery Factor: 0.9604 +/- 0.0828

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.832	10.30	66.71	1.70	0.00E+000	3.0
TH-228	5.382	87.47	21.17	1.53	0.00E+000	5.4
TH-229 T	4.883	163.64	15.40	1.36	0.00E+000	4.7
TH-230	4.644	105.32	19.17	0.68	0.00E+000	32.9
TH-232	3.981	78.66	22.16	0.34	0.00E+000	10.5

T = Tracer Peak used for Effective Efficiency

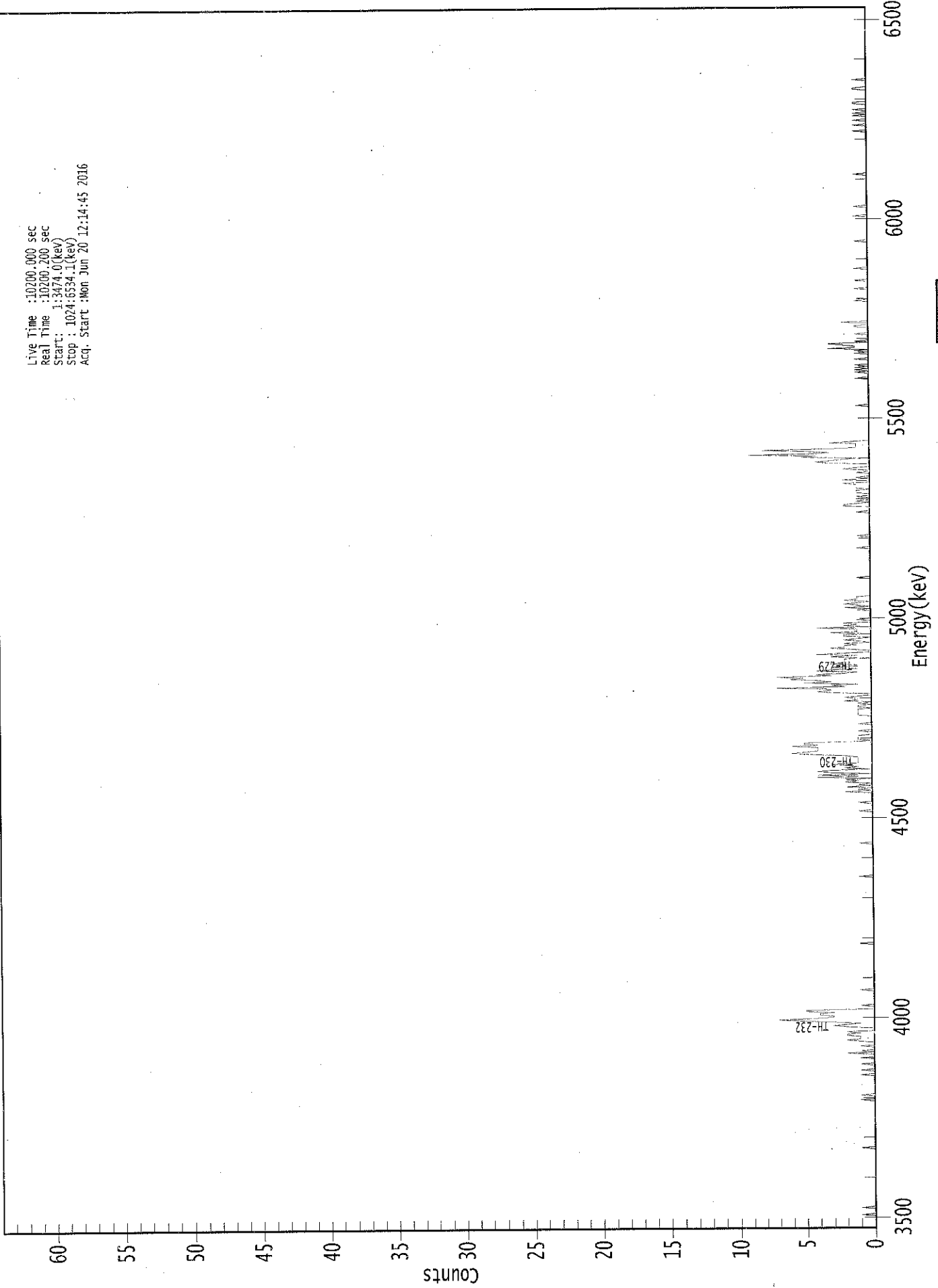
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	1.47E-001 +/- 1.01E-001	1.05E-001 +/- 1.74E-002
TH-228	0.998	5400.00*	1.24E+000 +/- 3.32E-001	1.00E-001 +/- 1.66E-002
TH-229	0.999	4872.00*	2.29E+000 +/- 3.79E-001	9.59E-002 +/- 1.59E-002
TH-230	0.996	4672.00*	1.47E+000 +/- 3.72E-001	7.87E-002 +/- 1.30E-002
TH-232	0.999	3997.00*	1.10E+000 +/- 3.03E-001	6.66E-002 +/- 1.10E-002

AG
6/21/16

0000154828.CNF

Live Time :10200.000 sec
Real Time :10200.200 sec
Start: 1:3474.0(kev)
Stop : 1024:5534.1(kev)
Acq. Start :Mon Jun 20 12:14:45 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 04

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel									
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	1	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	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	1	0	0	0	0	1
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	1	0	0	0	1	0	0	0	0
137:	0	1	0	0	0	0	1	0	0
145:	0	0	2	0	1	0	0	0	0
153:	1	0	0	0	1	2	1	1	1
161:	1	2	2	1	2	0	0	0	0
169:	2	3	2	1	3	5	7	5	5
177:	3	3	4	4	3	5	5	0	0
185:	0	0	1	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	1
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	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	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	1	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	1	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	1	0	0	0
353:	0	0	0	0	1	0	0	0	0
361:	0	0	0	0	0	2	0	0	1

369: 0 2 0 1 0 2 1 2

Sample Title: 04

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

801: 0 0 0 1 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	1	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	1
849:	0	0	0	0	0	0	0	1
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	1	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	1	0
921:	0	0	0	1	0	0	0	1
929:	0	0	0	1	0	1	0	0
937:	1	0	0	0	0	1	1	0
945:	0	0	0	0	0	0	0	0
953:	0	1	1	0	0	0	0	0
961:	0	1	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

20
6/20/16

Sample Description: CP-5018 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_044
 Chamber Serial Number: 04026481B
 Detector Serial Number: 84168
 Env. Background: System Bkgd 156905
 Reagent Blank: <not performed>

Sample Size: 1.011E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:14:48 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.236 mL
 Effective Efficiency: 0.1846 +/- 0.0154
 Counting Efficiency: 0.1864 +/- 0.0033 on 12/11/2015 8:21:07 AM
 Chem. Recovery Factor: 0.9903 +/- 0.0845

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	5.774	7.32	76.28	0.68	0.00E+000	3.0
TH-228	5.377	109.32	18.81	0.68	0.00E+000	14.1
TH-229 T	4.877	166.66	15.20	0.34	0.00E+000	8.6
TH-230	4.639	112.83	18.47	0.17	0.00E+000	6.1
TH-232	3.980	90.00	20.77	0.00	0.00E+000	7.0

T = Tracer Peak used for Effective Efficiency

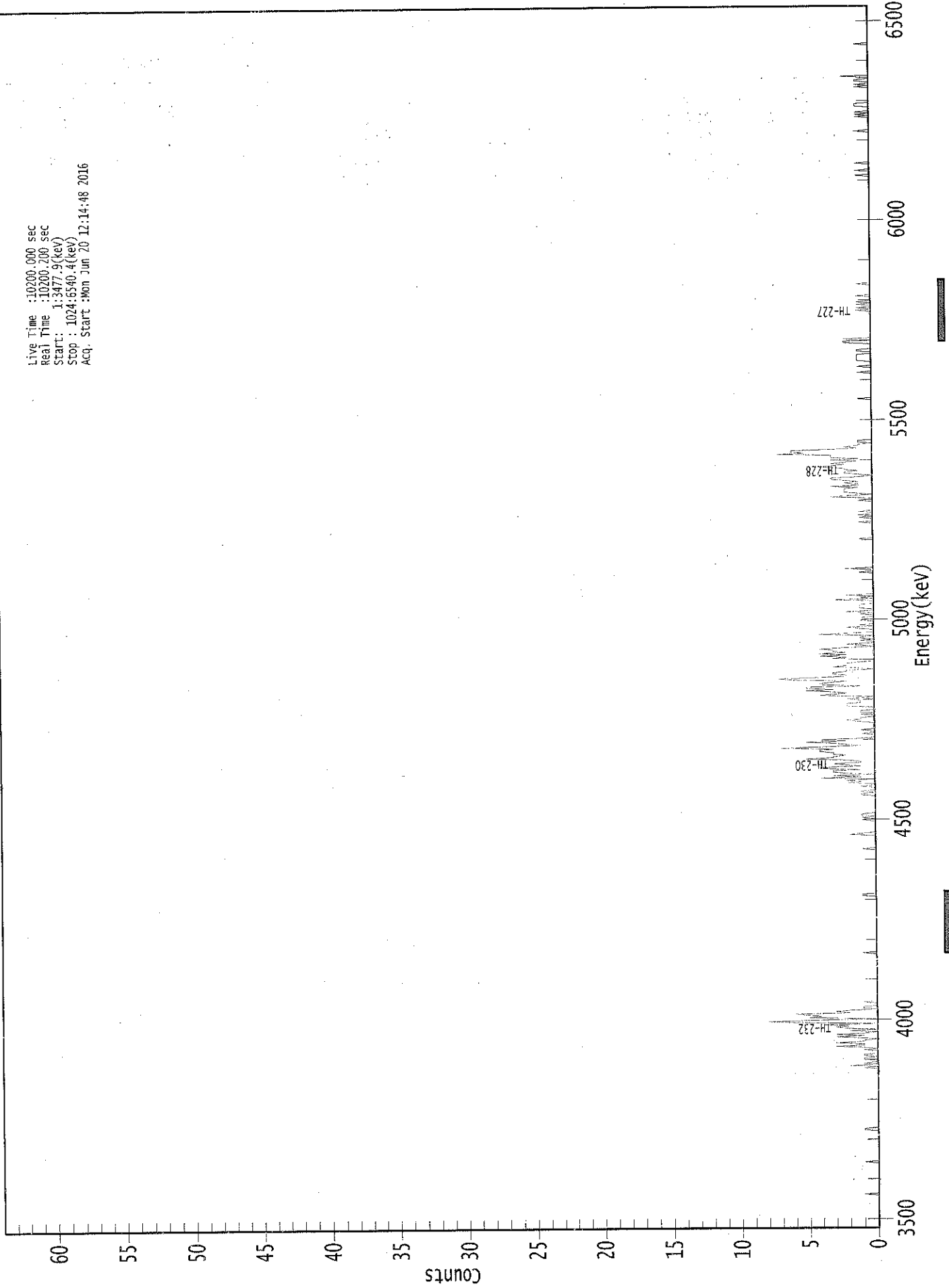
NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.970	5850.00*	1.07E-001 +/- 8.32E-002	8.22E-002 +/- 1.35E-002
TH-228	0.997	5400.00*	1.57E+000 +/- 3.93E-001	8.13E-002 +/- 1.33E-002
TH-229	1.000	4872.00*	2.38E+000 +/- 3.89E-001	6.82E-002 +/- 1.12E-002
TH-230	0.994	4672.00*	1.60E+000 +/- 3.96E-001	5.93E-002 +/- 9.72E-003
TH-232	0.998	3997.00*	1.28E+000 +/- 3.38E-001	8.51E-002 +/- 1.39E-002

AG
6/21/16

0000154829.CNF

Live Time :10200.000 sec
Real Time :10200.200 sec
Start : 1:3477.9(kev)
Stop : 1024:6540.4(kev)
Acq. Start :Mon Jun 20 12:14:48 2016



ROI Type: 1

ROI Type: 3

00200

 ***** 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	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	1	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	1
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	1	1	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	1	0	0
137:	2	0	1	0	0	1	1	0	0
145:	1	1	0	0	0	1	0	1	1
153:	3	1	1	3	1	1	0	1	1
161:	3	1	3	1	0	2	0	2	2
169:	3	2	4	0	6	8	4	0	0
177:	5	4	5	6	2	3	2	0	0
185:	1	1	0	0	0	1	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	1	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	1	1	1
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	1	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	2	1	0	0	0	0	0	0
337:	0	0	0	0	0	1	0	1	1
345:	0	1	1	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	1	1	0	1	0	0	0

369: 0 1 0 0 2 1 2 0

Sample Title: 05

Channel	1	2	3	4	5	6	7	8	9
377:	4	1	3	0	2	3	3	1	
385:	4	4	1	2	3	1	1	2	
393:	5	3	3	2	3	3	4	4	
401:	3	7	4	1	2	3	5	2	
409:	4	1	0	0	0	1	0	0	
417:	1	0	0	0	0	0	0	1	
425:	2	1	1	0	0	1	0	1	
433:	1	0	0	0	2	2	2	1	
441:	1	1	2	1	0	4	3	2	
449:	3	5	3	5	5	1	4	4	
457:	3	2	6	7	4	2	2	3	
465:	3	2	2	0	1	3	2	2	
473:	2	1	0	0	3	2	4	2	
481:	4	2	3	3	4	2	0	1	
489:	2	0	0	1	0	1	1	0	
497:	4	2	0	0	0	1	2	0	
505:	1	0	0	0	1	0	1	0	
513:	0	1	0	2	0	0	1	1	
521:	1	1	0	0	0	3	0	1	
529:	0	2	0	0	0	0	0	0	
537:	0	0	0	0	0	0	0	0	
545:	0	0	0	0	1	0	0	2	
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:	1	0	0	0	0	0	0	0	
585:	0	0	0	0	0	0	1	0	
593:	0	0	1	0	1	0	0	1	
601:	0	0	0	0	0	0	0	0	
609:	1	0	0	3	2	0	1	2	
617:	2	2	2	1	3	1	1	2	
625:	1	2	3	3	1	0	1	2	
633:	2	1	2	2	4	3	2	3	
641:	2	1	3	1	3	3	3	7	
649:	5	6	6	3	1	2	1	1	
657:	0	1	1	0	0	0	0	0	
665:	0	0	0	0	0	0	0	0	
673:	0	0	0	0	0	0	0	0	
681:	0	0	0	0	0	0	0	0	
689:	0	0	0	0	0	1	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:	1	0	0	0	0	1	1	1	
729:	1	1	1	0	0	1	1	0	
737:	0	0	0	0	2	2	0	2	
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	1	0	0	1	0	1	0	
777:	0	0	0	1	0	0	0	0	
785:	0	0	0	0	0	1	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:	1	0	0	0	1	0	0	0
889:	0	0	1	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	1	0	0
921:	0	0	0	0	0	0	0	0
929:	0	1	0	1	0	1	0	0
937:	0	0	1	1	1	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	1	0	1	0	0	1
961:	1	0	0	2	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	1	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
6/20/16

Apex-Alpha™

Sample Description: CP-5018 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_045
 Chamber Serial Number: 04026482A
 Detector Serial Number: 91131
 Env. Background: System Bkgd 156906
 Reagent Blank: <not performed>

Sample Size: 1.006E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:14:50 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.236 mL
 Effective Efficiency: 0.1966 +/- 0.0160
 Counting Efficiency: 0.1710 +/- 0.0030 on 12/11/2015 8:21:05 AM
 Chem. Recovery Factor: 1.1500 +/- 0.0958

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	5.762	8.13	77.44	1.87	0.00E+000	3.0
TH-228	5.368	101.13	19.70	1.87	0.00E+000	7.5
TH-229 T	4.895	177.32	14.75	0.68	0.00E+000	6.4
TH-230	4.642	99.49	19.71	0.51	0.00E+000	7.5
TH-232	3.965	99.28	19.98	2.72	0.00E+000	17.9

T = Tracer Peak used for Effective Efficiency

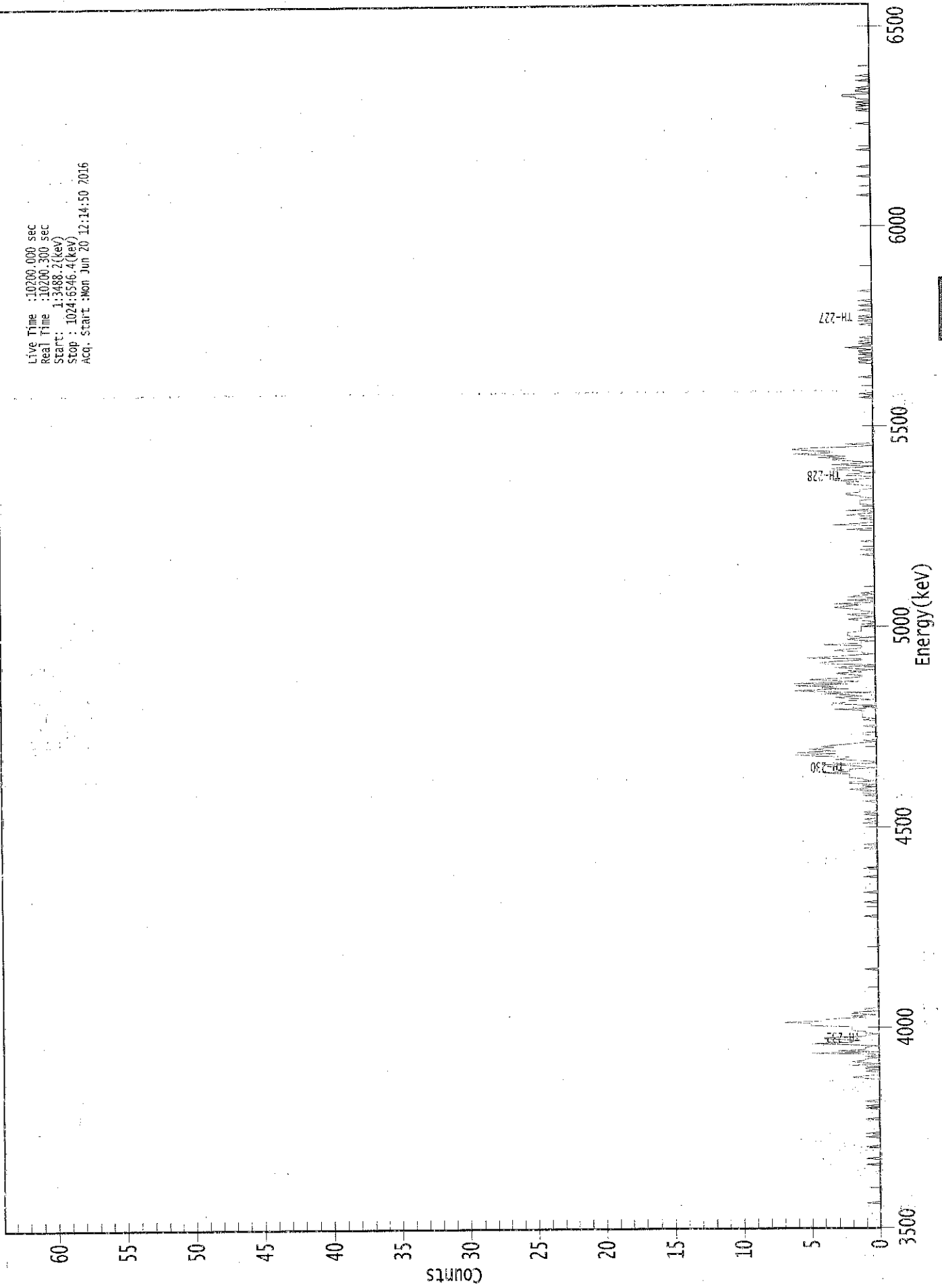
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.960	5850.00*	1.12E-001 +/- 8.85E-002	1.04E-001 +/- 1.66E-002
TH-228	0.995	5400.00*	1.38E+000 +/- 3.49E-001	1.03E-001 +/- 1.64E-002
TH-229	0.997	4872.00*	2.39E+000 +/- 3.81E-001	7.60E-002 +/- 1.21E-002
TH-230	0.995	4672.00*	1.34E+000 +/- 3.39E-001	7.04E-002 +/- 1.12E-002
TH-232	0.995	3997.00*	1.33E+000 +/- 3.40E-001	1.15E-001 +/- 1.83E-002

AG
6/21/16

0000154821.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3488.2(kev)
Stop : 1024:5546.4(kev)
Acq. Start : Mon Jun 20 12:14:50 2016



ROI Type: 3

ROI Type: 1

100200

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

Sample Title: 06

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	1	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	1	0	0
57:	0	0	1	0	0	0	0	0
65:	0	0	0	0	1	0	0	0
73:	0	0	0	0	1	0	0	1
81:	0	0	0	0	0	0	0	0
89:	0	0	0	1	0	0	0	0
97:	0	0	0	0	1	0	1	0
105:	0	0	1	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	1	2	1
129:	0	0	0	1	0	1	1	0
137:	2	0	1	2	1	1	0	1
145:	0	0	5	0	3	1	1	1
153:	0	2	5	2	2	2	4	4
161:	1	1	0	1	1	2	2	2
169:	2	5	5	5	7	4	4	3
177:	1	2	0	2	2	0	1	1
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:	1	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	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	1	0	0
297:	0	0	0	0	1	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	1	0	0
321:	1	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	1	0	0	1	0	0
345:	0	1	0	1	0	0	0	0
353:	0	0	0	0	1	0	0	0
361:	0	1	0	1	1	0	2	1

369: 0 1 0 2 2 0 1 1

Sample Title: 06

Channel	1	2	3	4	5	6	7	8
377:	2	2	2	2	4	2	2	2
385:	0	1	2	4	0	0	1	3
393:	2	2	4	6	3	6	3	4
401:	5	3	4	3	2	1	0	1
409:	0	0	0	0	1	1	0	0
417:	0	0	0	1	0	0	0	0
425:	1	0	1	1	1	1	1	1
433:	1	3	0	1	0	2	3	2
441:	2	0	2	3	1	2	4	0
449:	5	6	2	4	3	6	2	6
457:	1	3	5	2	1	1	2	3
465:	1	2	0	2	3	1	0	4
473:	4	3	1	1	5	3	2	0
481:	1	1	3	2	1	1	1	4
489:	1	1	0	2	2	0	2	2
497:	2	2	1	1	1	1	1	0
505:	1	0	0	1	2	1	0	1
513:	2	0	0	1	1	2	3	2
521:	1	3	0	0	2	0	0	2
529:	1	0	1	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	1	0	0	0	1	0
569:	0	0	0	0	0	1	0	0
577:	0	0	0	0	0	0	0	2
585:	0	0	0	3	1	0	0	0
593:	1	0	0	2	1	0	0	2
601:	0	0	0	0	1	1	1	1
609:	0	0	1	1	2	2	1	1
617:	1	0	0	0	1	2	2	1
625:	3	1	0	0	2	2	0	1
633:	1	3	3	0	1	3	1	0
641:	2	3	2	4	2	4	6	3
649:	3	5	6	5	1	0	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:	1	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	1	0
713:	0	0	0	0	0	0	0	0
721:	0	0	1	1	0	1	1	0
729:	0	1	0	1	1	0	1	2
737:	0	0	1	0	1	0	0	1
745:	0	0	0	0	0	0	0	0
753:	0	0	1	0	0	1	0	1
761:	0	1	0	0	0	0	1	0
769:	0	0	1	0	0	0	1	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: 06

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

KB
Sholly

Apex-Alpha™

Sample Description: CP-5018 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_046
 Chamber Serial Number: 04026482B
 Detector Serial Number: 58762
 Env. Background: System Bkgd 156907
 Reagent Blank: <not performed>

Sample Size: 1.011E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:14:53 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.236 mL
 Effective Efficiency: 0.2256 +/- 0.0174
 Counting Efficiency: 0.1806 +/- 0.0032 on 12/11/2015 8:21:03 AM
 Chem. Recovery Factor: 1.2495 +/- 0.0988

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	5.797	17.15	48.68	0.85	0.00E+000	3.0
TH-228	5.386	123.13	17.82	1.87	0.00E+000	8.3
TH-229 T	4.876	203.62	13.83	2.38	0.00E+000	8.4
TH-230	4.646	107.79	19.10	2.21	0.00E+000	20.3
TH-232	3.970	111.28	18.84	2.72	0.00E+000	6.4

T = Tracer Peak used for Effective Efficiency

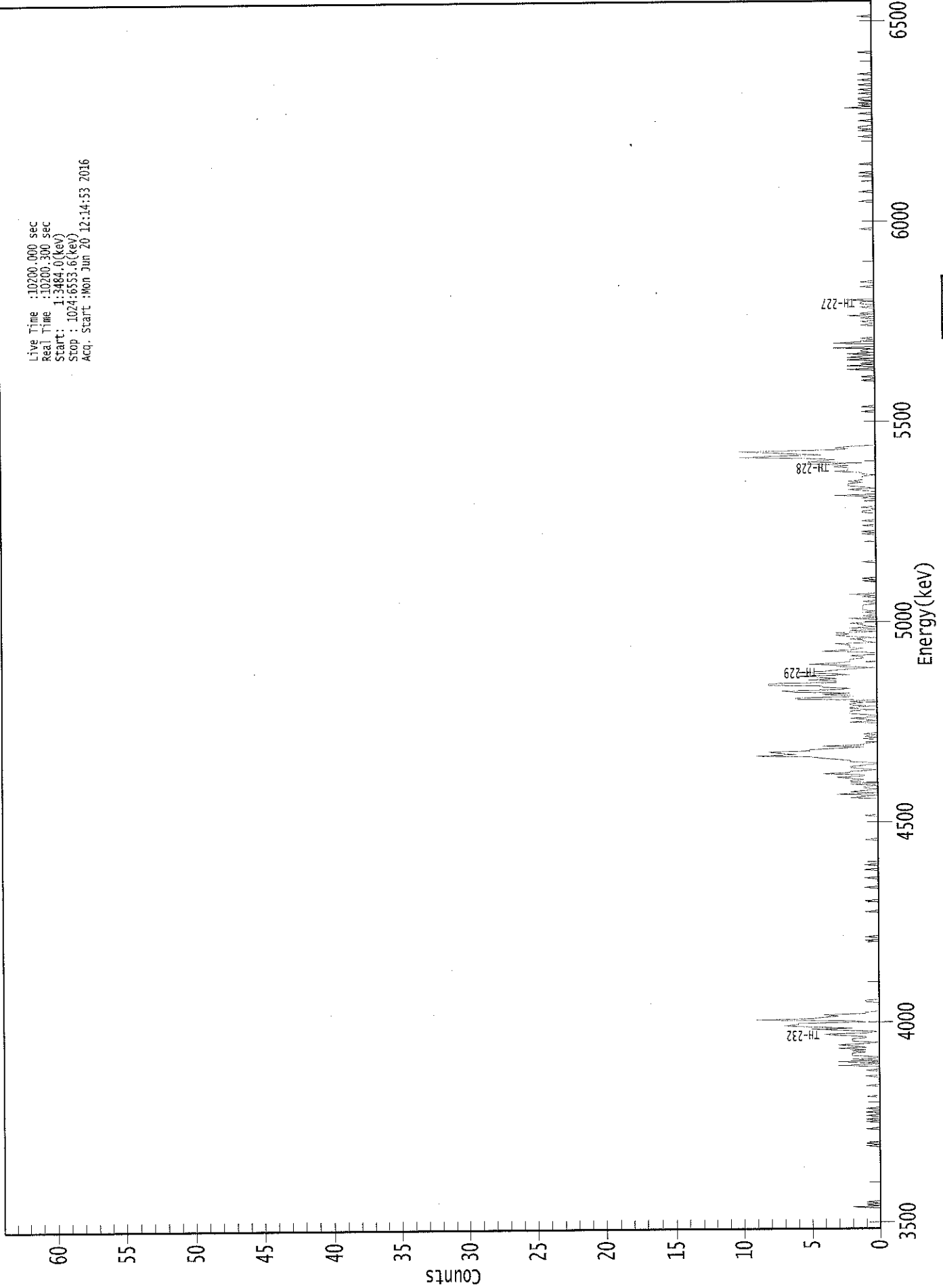
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.986	5850.00*	2.05E-001 +/- 1.04E-001	7.14E-002 +/- 1.08E-002
TH-228	0.999	5400.00*	1.45E+000 +/- 3.39E-001	8.93E-002 +/- 1.35E-002
TH-229	1.000	4872.00*	2.38E+000 +/- 3.59E-001	9.57E-002 +/- 1.44E-002
TH-230	0.996	4672.00*	1.25E+000 +/- 3.05E-001	9.30E-002 +/- 1.41E-002
TH-232	0.996	3997.00*	1.29E+000 +/- 3.12E-001	9.96E-002 +/- 1.50E-002

AG
6/21/16

0000154822.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3484.0(kev)
Stop : 1024:6553.6(kev)
Acq. Start : Mon Jun 20 12:14:53 2016



0120210

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

Sample Title: .07

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	2	0	1	0	1	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	1	0	1	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	1	0	0	0	0	0
89:	0	1	0	1	0	0	1	0	0
97:	0	1	0	0	1	0	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	0	0	0	1	0
129:	0	0	0	0	1	0	0	0	0
137:	3	0	1	3	0	2	0	0	0
145:	2	2	2	1	2	1	3	1	0
153:	2	3	1	0	2	2	2	1	0
161:	1	3	4	1	0	2	5	2	0
169:	5	7	6	6	1	2	9	5	0
177:	4	3	4	1	1	0	0	0	0
185:	0	0	0	0	0	1	1	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:	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	0	0
265:	1	0	0	0	0	0	0	0	0
273:	0	1	0	0	0	0	0	0	0
281:	0	0	0	0	1	0	0	0	0
289:	0	0	0	0	1	0	0	0	0
297:	0	0	0	1	0	0	0	1	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	1	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:	1	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	2	0
361:	1	0	3	0	2	1	0	1	0

369: 1 0 2 0 2 2 1 2

Sample Title: 07

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

801: 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:	1	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	1
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	1	0	0	1
881:	0	0	0	0	0	0	1	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	1	0	0
913:	0	0	1	0	1	1	0	0
921:	0	0	1	0	0	0	0	0
929:	1	0	0	0	0	2	0	1
937:	0	1	0	0	1	1	0	0
945:	0	1	0	0	1	0	0	0
953:	1	0	0	0	1	0	0	0
961:	0	1	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	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	1	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



105
6/20/16

Sample Description: CP-5019 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_047
 Chamber Serial Number: 02030596A
 Detector Serial Number: 91086
 Env. Background: System Bkgd 156908
 Reagent Blank: <not performed>

Sample Size: 1.035E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:14:55 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.236 mL
 Effective Efficiency: 0.1973 +/- 0.0160
 Counting Efficiency: 0.1705 +/- 0.0030 on 12/11/2015 8:21:02 AM
 Chem. Recovery Factor: 1.1574 +/- 0.0963

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	8.83	66.70	0.17	0.00E+000	3.0
TH-228	5.362	41.32	30.78	0.68	0.00E+000	4.9
TH-229 T	4.877	177.49	14.74	0.51	0.00E+000	19.3
TH-230	4.632	76.49	22.50	0.51	0.00E+000	3.6
TH-232	3.952	38.49	31.84	0.51	0.00E+000	3.5

T = Tracer Peak used for Effective Efficiency

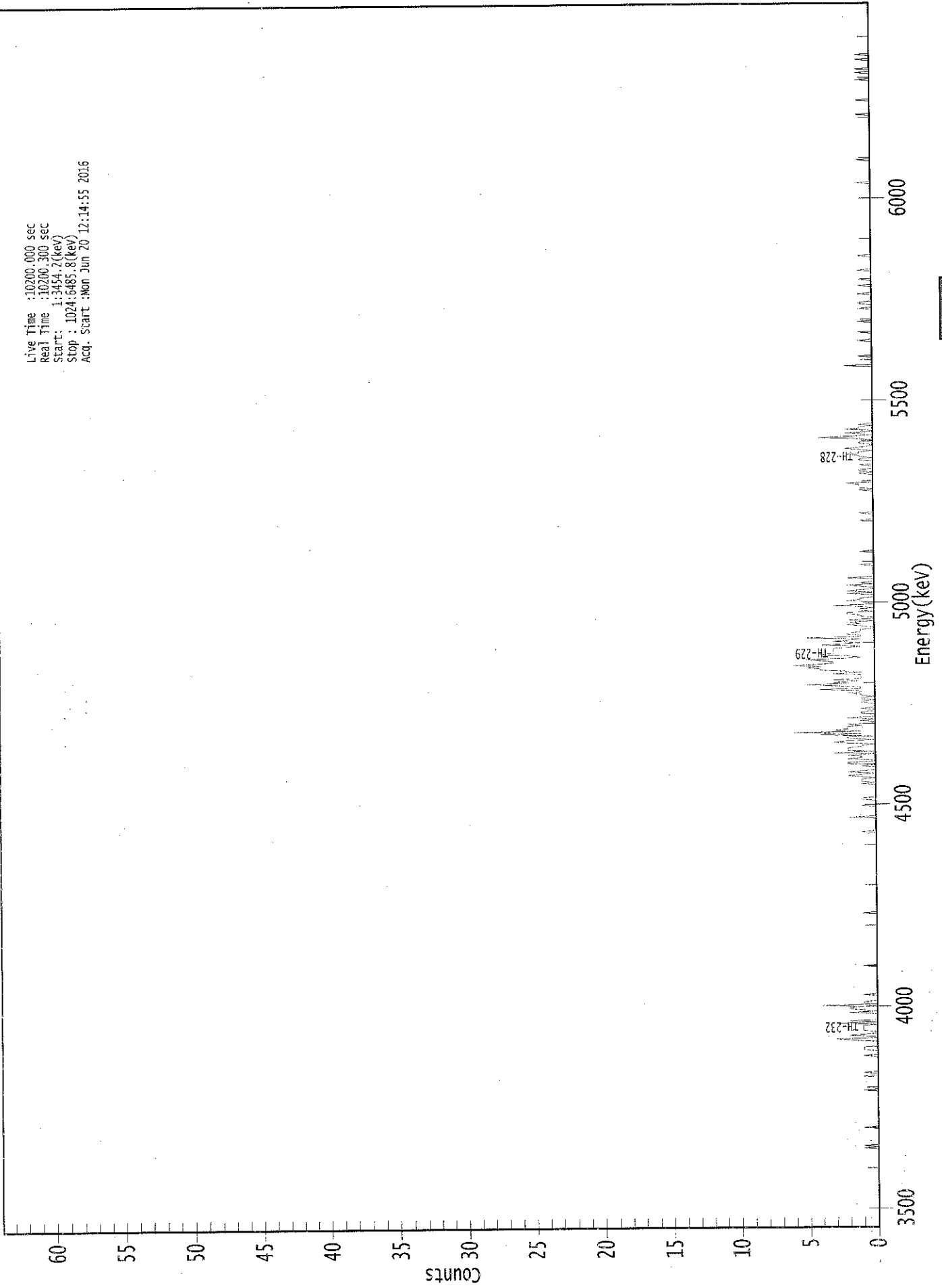
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.991	5850.00*	1.18E-001 +/- 8.07E-002	5.56E-002 +/- 8.87E-003
TH-228	0.993	5400.00*	5.44E-001 +/- 1.89E-001	7.43E-002 +/- 1.18E-002
TH-229	1.000	4872.00*	2.31E+000 +/- 3.69E-001	6.84E-002 +/- 1.09E-002
TH-230	0.991	4672.00*	9.95E-001 +/- 2.74E-001	6.82E-002 +/- 1.09E-002
TH-232	0.990	3997.00*	5.00E-001 +/- 1.78E-001	6.81E-002 +/- 1.09E-002

AG
6/21/16

0000154823.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:34:42.2(kev)
Stop : 1024:6485.8(kev)
Acq. Start :Mon Jun 20 12:14:55 2016



ROI Type: 3

ROI Type: 1

369: 0 0 1 0 1 1 1 0

Sample Title: 08

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

801: 0 0 0 0 0 0 0 0

Sample Title: 08

Channel								
809:	0	0	0	1	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	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	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	1	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	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	0	0	0	1	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	1	0	0	1
969:	0	0	0	0	0	0	0	1
977:	0	0	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

KB
6/20/14

Apex-Alpha™

Sample Description: CP-5019 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_048
 Chamber Serial Number: 02030596B
 Detector Serial Number: 83111
 Env. Background: System Bkgd 156909
 Reagent Blank: <not performed>

Sample Size: 1.013E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:14:58 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.237 mL
 Effective Efficiency: 0.1814 +/- 0.0153
 Counting Efficiency: 0.1756 +/- 0.0031 on 12/11/2015 8:21:00 AM
 Chem. Recovery Factor: 1.0325 +/- 0.0887

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	5.816	9.32	66.89	0.68	0.00E+000	3.0
TH-228	5.373	64.96	24.76	2.04	0.00E+000	4.5
TH-229 T	4.882	163.83	15.32	0.17	0.00E+000	13.4
TH-230	4.629	92.49	20.45	0.51	0.00E+000	4.3
TH-232	3.968	66.15	24.28	0.85	0.00E+000	6.3

T = Tracer Peak used for Effective Efficiency

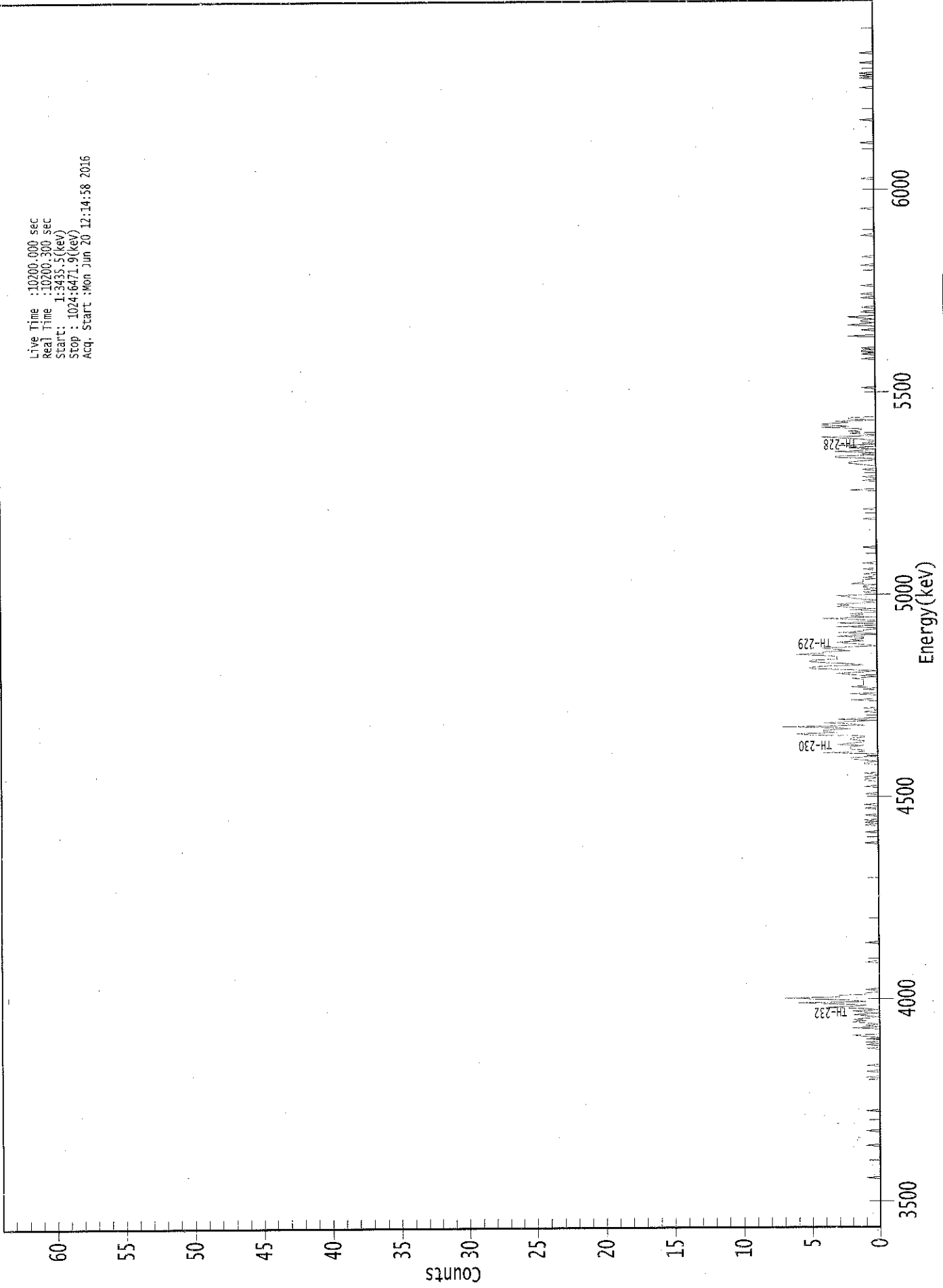
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.994	5850.00*	1.38E-001 +/- 9.51E-002	8.35E-002 +/- 1.38E-002
TH-228	0.996	5400.00*	9.51E-001 +/- 2.83E-001	1.14E-001 +/- 1.88E-002
TH-229	0.999	4872.00*	2.37E+000 +/- 3.91E-001	6.05E-002 +/- 9.97E-003
TH-230	0.990	4672.00*	1.34E+000 +/- 3.51E-001	7.58E-002 +/- 1.25E-002
TH-232	0.996	3997.00*	9.54E-001 +/- 2.80E-001	8.64E-002 +/- 1.42E-002

AG
6/21/16

0000154824.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3435.5(keV)
Stop : 1024:6471.9(keV)
Acq. Start : Mon Jun 20 12:14:58 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 09

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369: 0 0 0 0 1 1 0 1

Sample Title: 09

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

801: 0 1 0 0 0 0 0 0 0

Sample Title: 09

Channel	1	2	3	4	5	6	7	8	9
809:	1	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	1	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:	1	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	1	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	1
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	1	0	0	0	0	0	0
929:	0	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	1	0	0
953:	0	0	0	0	0	0	1	0	1
961:	0	1	0	0	0	0	0	0	0
969:	0	0	1	0	0	0	0	0	0
977:	0	0	1	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0

Apex-Alpha™

708
6/20/16

Sample Description: CP-5019 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_049
 Chamber Serial Number: 10006121A
 Detector Serial Number: 49
 Env. Background: System Bkgd 156910
 Reagent Blank: <not performed>

Sample Size: 1.026E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:15:37 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.237 mL
 Effective Efficiency: 0.2498 +/- 0.0184
 Counting Efficiency: 0.1510 +/- 0.0027 on 12/11/2015 11:36:41 AM
 Chem. Recovery Factor: 1.6535 +/- 0.1252

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	5.799	9.49	65.59	0.51	0.00E+000	3.0
TH-228	5.375	85.98	21.28	1.02	0.00E+000	9.1
TH-229 T	4.879	226.00	13.07	0.00	0.00E+000	3.1
TH-230	4.641	107.32	18.99	0.68	0.00E+000	11.8
TH-232	3.976	98.32	19.85	0.68	0.00E+000	8.6

T = Tracer Peak used for Effective Efficiency

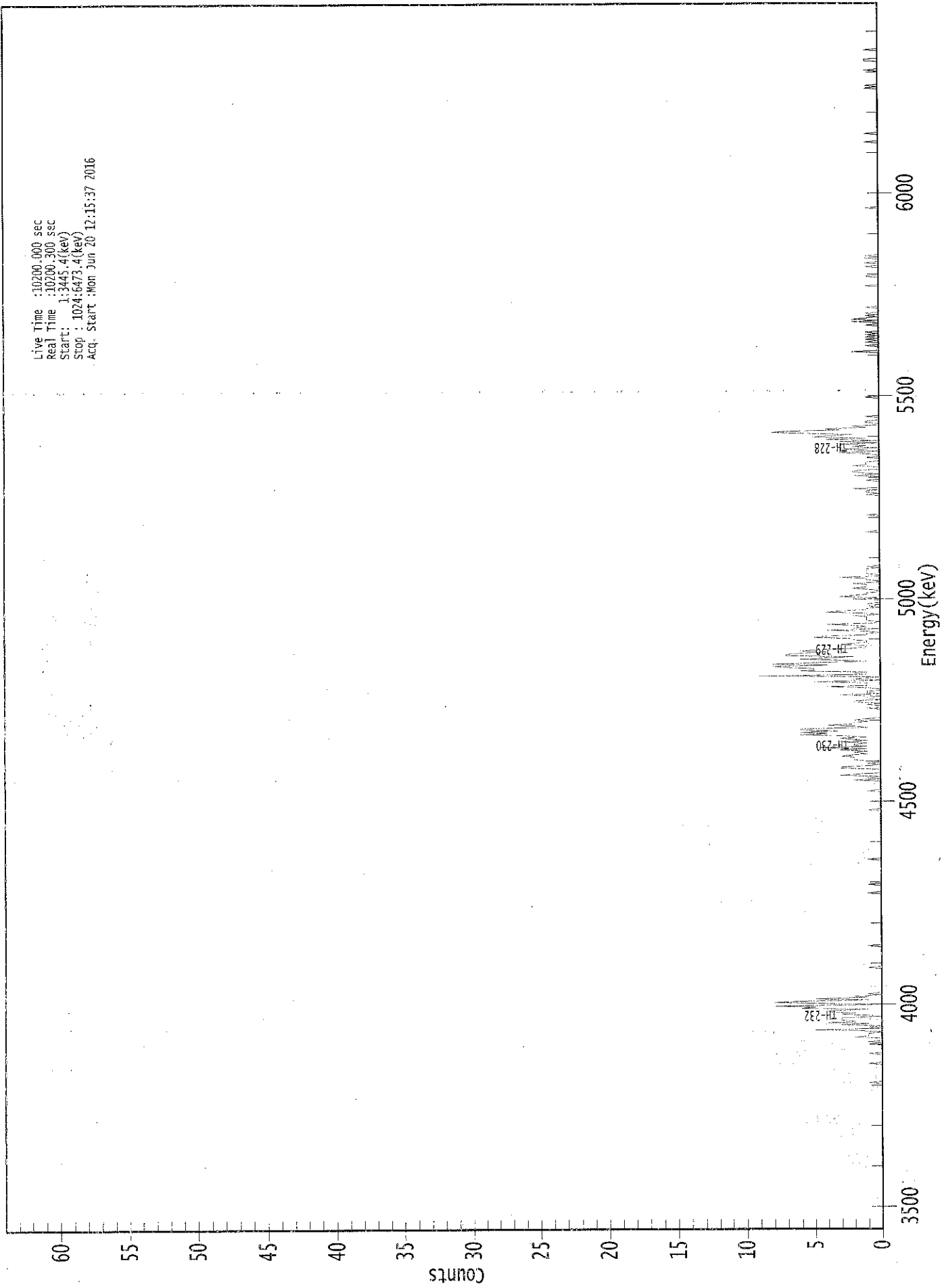
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.986	5850.00*	1.01E-001 +/- 6.77E-002	5.57E-002 +/- 8.03E-003
TH-228	0.997	5400.00*	9.02E-001 +/- 2.32E-001	6.61E-002 +/- 9.53E-003
TH-229	1.000	4872.00*	2.35E+000 +/- 3.38E-001	6.23E-002 +/- 8.98E-003
TH-230	0.995	4672.00*	1.11E+000 +/- 2.65E-001	5.84E-002 +/- 8.42E-003
TH-232	0.998	3997.00*	1.02E+000 +/- 2.49E-001	5.83E-002 +/- 8.41E-003

AG
6/21/16

0000154833.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3445.4(keV)
Stop : 1024:6473.4(keV)
Acq. Start : Mon Jun 20 12:15:37 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 10

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	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	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	0	0	0	0	0	0
137:	0	0	1	0	0	0	0	0	0
145:	0	0	1	0	0	0	0	0	0
153:	0	0	1	0	1	0	0	0	0
161:	2	1	1	1	0	1	5	0	0
169:	1	0	3	1	4	2	3	3	0
177:	3	0	1	3	2	4	4	1	0
185:	6	5	8	0	4	8	6	1	0
193:	5	1	2	0	1	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	1	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	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	1
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:	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	1	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	1	0	0	0

369: 0 0 0 0 0 0 0 2 0

Sample Title: 10

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

801: 0 0 1 0 0 1 0 0

Sample Title: 10

Channel	1	2	3	4	5	6	7	8
809:	0	1	0	1	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	1	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	1	0	0	0	0	0
913:	0	1	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:	0	1	0	0	0	0	0	0
961:	0	0	0	0	0	0	1	0
969:	0	0	0	0	0	0	1	1
977:	0	0	0	0	0	0	0	1
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
6/20/16

Apex-Alpha™

Sample Description: CP-5019 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_050
 Chamber Serial Number: 10006121B
 Detector Serial Number: 50
 Env. Background: System Bkgd 156911
 Reagent Blank: <not performed>

Sample Size: 1.012E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:15:39 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.236 mL
 Effective Efficiency: 0.1801 +/- 0.0153
 Counting Efficiency: 0.1465 +/- 0.0026 on 12/11/2015 11:36:39 AM
 Chem. Recovery Factor: 1.2291 +/- 0.1064

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	5.748	6.64	84.69	1.36	0.00E+000	4.4
TH-228	5.382	86.47	21.29	1.53	0.00E+000	6.1
TH-229 T	4.879	162.64	15.44	1.36	0.00E+000	12.2
TH-230	4.645	70.30	23.70	1.70	0.00E+000	8.9
TH-232	3.970	86.32	21.19	0.68	0.00E+000	11.5

T = Tracer Peak used for Effective Efficiency

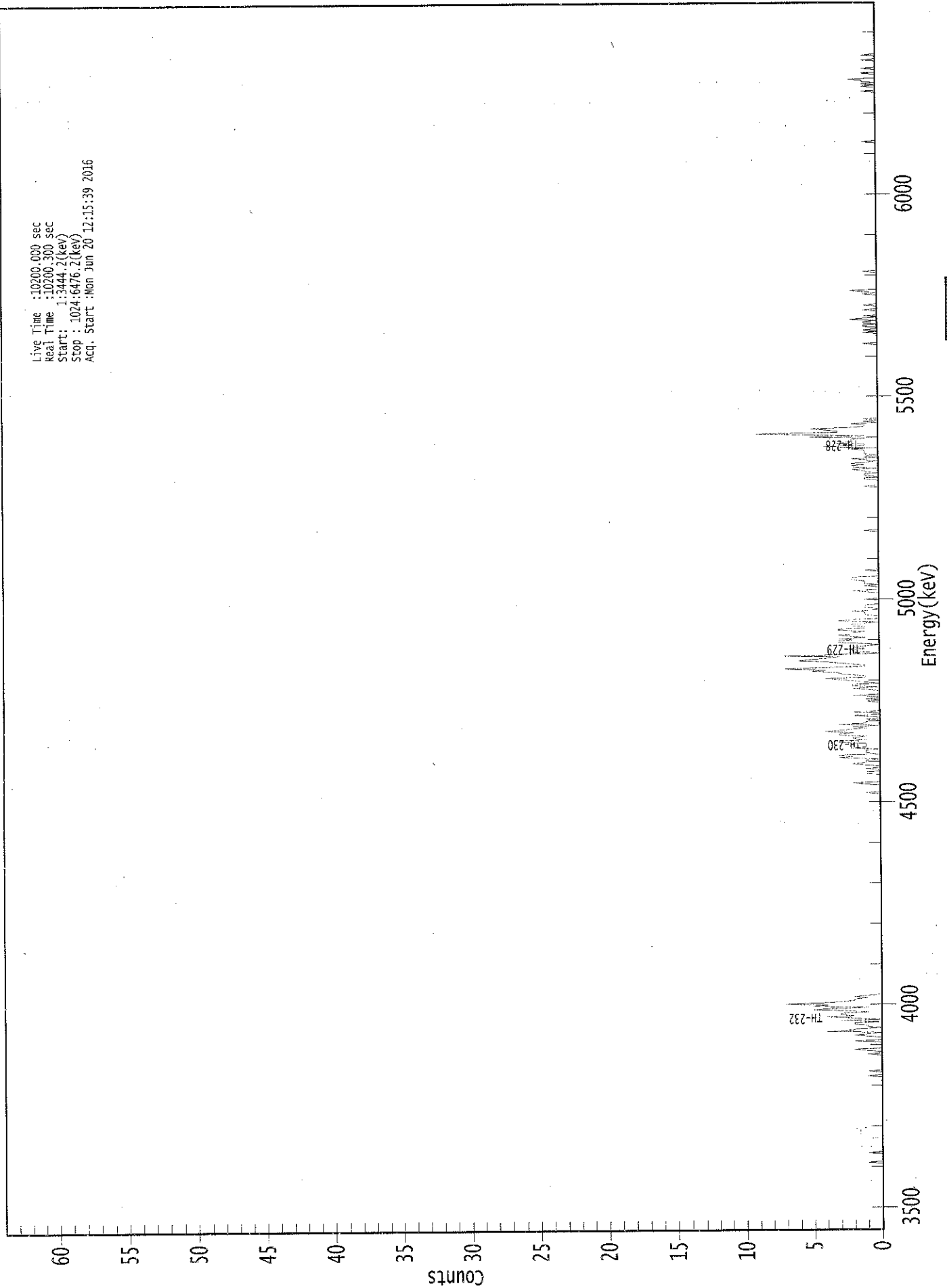
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.947	5850.00*	9.92E-002 +/- 8.56E-002	1.02E-001 +/- 1.70E-002
TH-228	0.998	5400.00*	1.28E+000 +/- 3.44E-001	1.05E-001 +/- 1.74E-002
TH-229	1.000	4872.00*	2.38E+000 +/- 3.94E-001	1.00E-001 +/- 1.66E-002
TH-230	0.996	4672.00*	1.02E+000 +/- 2.96E-001	1.07E-001 +/- 1.78E-002
TH-232	0.996	3997.00*	1.26E+000 +/- 3.38E-001	8.20E-002 +/- 1.36E-002

AG
6/21/16

0000154834.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3444.2(kev)
Stop : 1024:6476.2(kev)
Acq. Start : Mon Jun 20 12:15:39 2016



ROI Type: 3

ROI Type: 1

03200 :

 ***** 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:	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:	1	0	0	0	0	0	0	0	0
65:	1	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	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:	1	0	0	0	0	1	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	1	0	0	0	1	2	0
153:	0	0	0	0	0	0	2	0	0
161:	0	1	2	1	0	0	4	2	2
169:	0	1	1	2	2	0	0	3	0
177:	2	4	2	3	3	1	2	5	0
185:	4	1	5	4	7	4	3	2	0
193:	2	1	2	1	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	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	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	1	0	0	0	0

369: 0 0 0 1 2 0 0 0

Sample Title: 11

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

801: 0 0 0 0 0 0 0 0

Sample Title: 11

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	1	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	1	0	0	0	0
953:	1	0	1	0	1	1	2	0	0
961:	0	0	0	1	0	0	0	1	1
969:	0	0	0	0	0	0	1	0	0
977:	0	0	1	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0

EB
6/20/16

Apex-Alpha™

Sample Description: CP-5022 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_052
 Chamber Serial Number: 10006123B
 Detector Serial Number: 52
 Env. Background: System Bkgd 156912
 Reagent Blank: <not performed>

Sample Size: 1.010E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:15:41 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.236 mL
 Effective Efficiency: 0.1719 +/- 0.0148
 Counting Efficiency: 0.1729 +/- 0.0030 on 12/11/2015 11:36:36 AM
 Chem. Recovery Factor: 0.9941 +/- 0.0876

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.787	12.32	57.62	0.68	0.00E+000	3.0
TH-228	5.384	77.49	22.35	0.51	0.00E+000	6.1
TH-229 T	4.880	155.00	15.79	0.00	0.00E+000	15.6
TH-230	4.641	92.32	20.49	0.68	0.00E+000	4.4
TH-232	3.971	76.66	22.44	0.34	0.00E+000	12.3

T = Tracer Peak used for Effective Efficiency

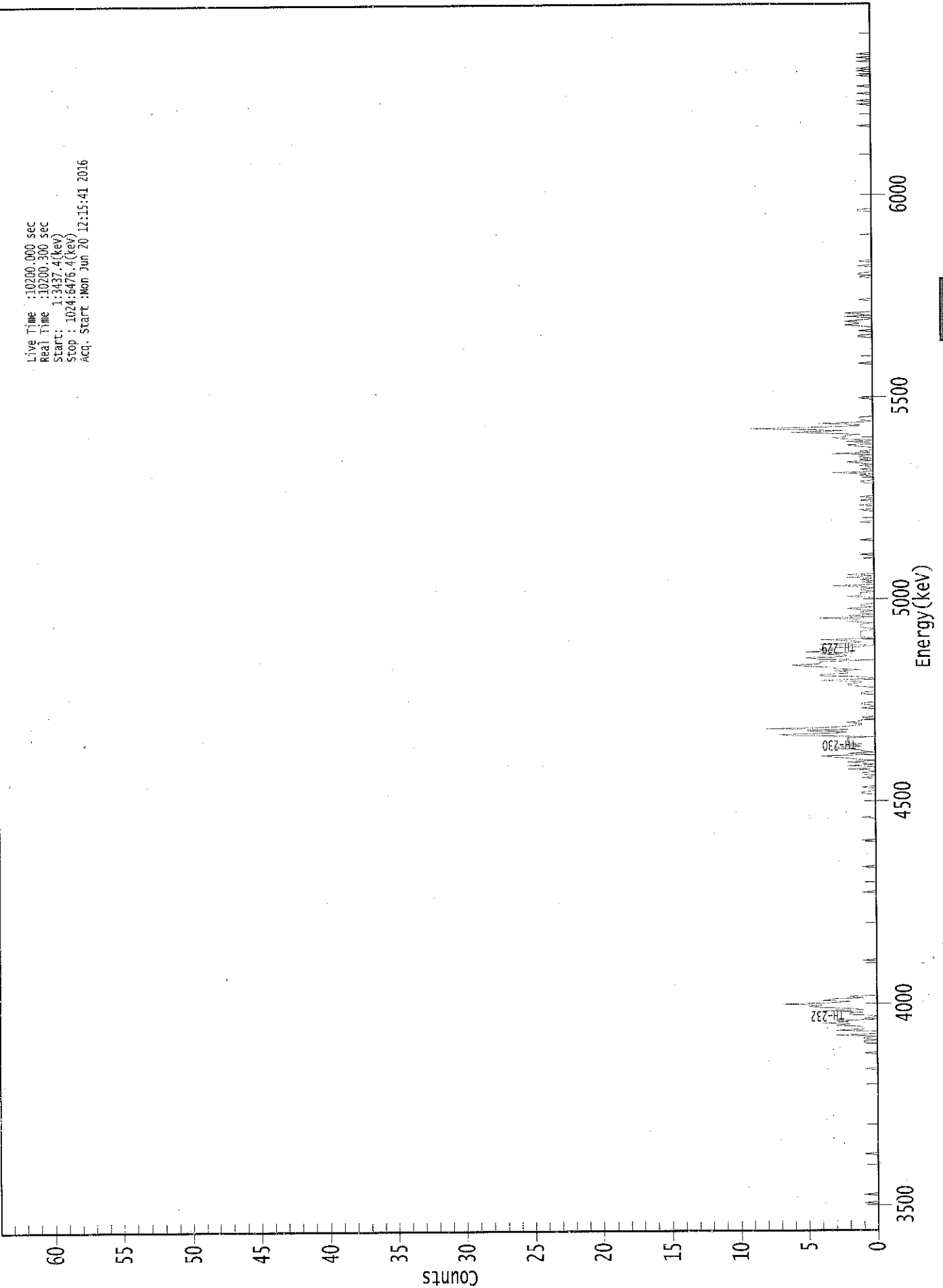
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.980	5850.00*	1.93E-001 +/- 1.16E-001	8.85E-002 +/- 1.50E-002
TH-228	0.999	5400.00*	1.21E+000 +/- 3.38E-001	8.16E-002 +/- 1.38E-002
TH-229	1.000	4872.00*	2.38E+000 +/- 4.02E-001	9.20E-002 +/- 1.56E-002
TH-230	0.995	4672.00*	1.41E+000 +/- 3.75E-001	8.63E-002 +/- 1.46E-002
TH-232	0.997	3997.00*	1.17E+000 +/- 3.29E-001	7.30E-002 +/- 1.24E-002

AG
6/21/16

0000154830.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3437.4(keV)
Stop : 1024:6476.4(keV)
Acq. Start : Mon Jun 20 12:15:41 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 12

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	1
25:	0	0	0	0	0	0	0	1	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	1	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	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	1
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	1	0	0	0	0
153:	0	0	0	0	0	1	1	1	0
161:	1	1	0	3	0	0	0	0	3
169:	1	1	1	3	2	4	2	2	3
177:	0	1	0	0	2	2	1	1	4
185:	1	2	4	5	4	7	3	3	2
193:	4	3	1	2	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	1	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	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	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	0	0
321:	0	0	0	0	0	1	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	1	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	1	1	0	0	0

369: 0 1 0 0 0 0 0 0

Sample Title: 12

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

801: 0 0 0 1 0 0 0 1

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	1	1	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	1	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	1	0	0	1	0	0
945:	0	0	0	1	0	0	0	0
953:	0	1	0	0	0	0	0	0
961:	0	0	1	0	0	0	1	0
969:	1	0	0	0	0	0	1	0
977:	0	1	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



VB
6/20/16

Sample Description: CP 5022 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_053
 Chamber Serial Number: 10006122A
 Detector Serial Number: 53
 Env. Background: System Bkgd 156913
 Reagent Blank: <not performed>

Sample Size: 1.013E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:15:43 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.237 mL
 Effective Efficiency: 0.2296 +/- 0.0175
 Counting Efficiency: 0.1516 +/- 0.0027 on 12/11/2015 11:36:34 AM
 Chem. Recovery Factor: 1.5145 +/- 0.1184

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	5.794	19.32	45.50	0.68	0.00E+000	3.0
TH-228	5.376	86.81	21.20	1.19	0.00E+000	13.9
TH-229 T	4.890	207.49	13.63	0.51	0.00E+000	6.4
TH-230	4.644	87.30	21.21	1.70	0.00E+000	7.6
TH-232	3.963	106.15	19.11	0.85	0.00E+000	6.2

T = Tracer Peak used for Effective Efficiency

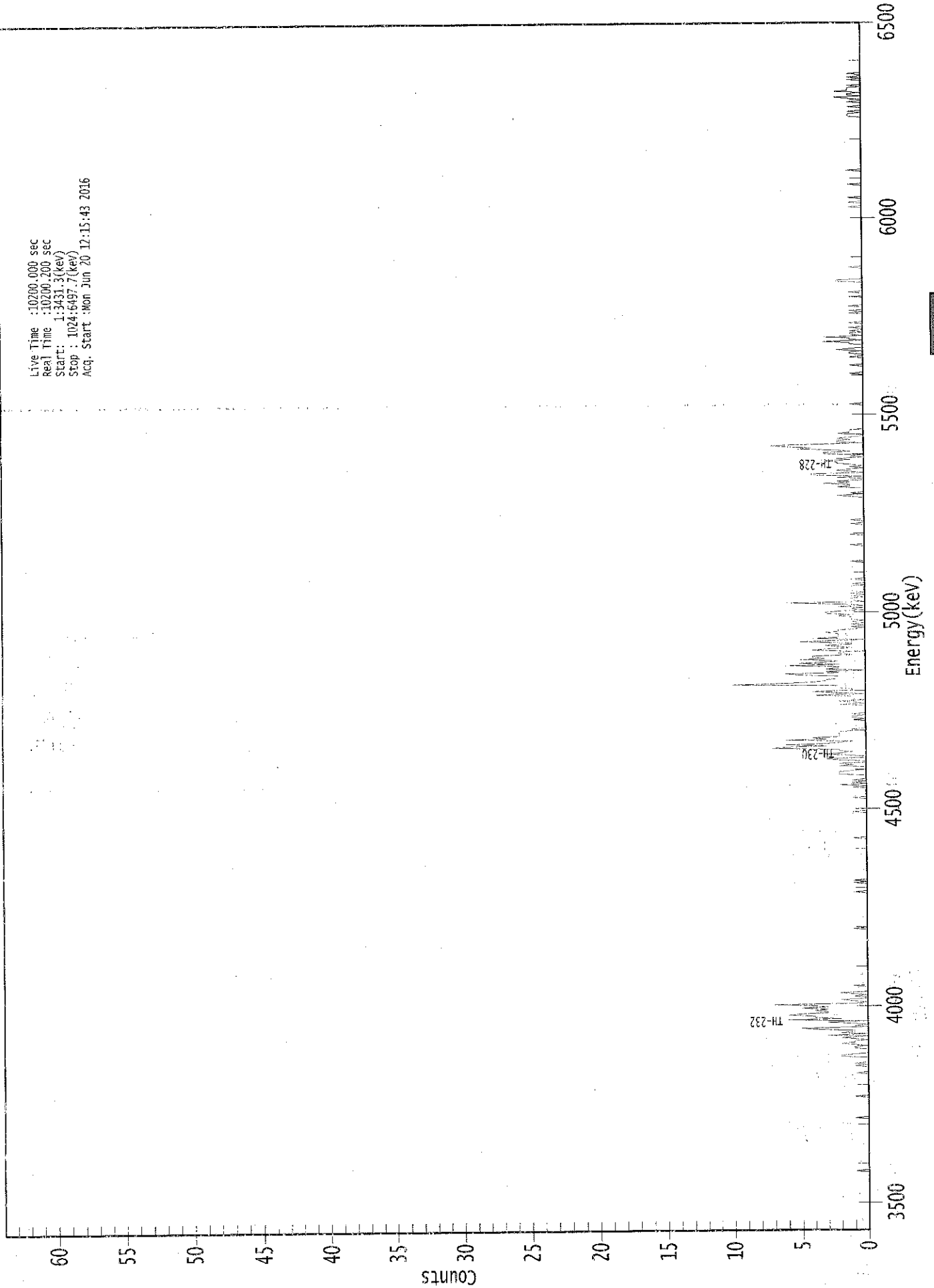
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.984	5850.00*	2.26E-001 +/- 1.08E-001	6.60E-002 +/- 9.85E-003
TH-228	0.997	5400.00*	1.01E+000 +/- 2.61E-001	7.65E-002 +/- 1.14E-002
TH-229	0.998	4872.00*	2.38E+000 +/- 3.54E-001	6.01E-002 +/- 8.96E-003
TH-230	0.996	4672.00*	9.96E-001 +/- 2.58E-001	8.38E-002 +/- 1.25E-002
TH-232	0.994	3997.00*	1.21E+000 +/- 2.93E-001	6.82E-002 +/- 1.02E-002

AG
6/21/16

0000154835.CNF

Live Time : 10200.000 sec
Real Time : 10200.200 sec
Start : 1:3431.3(keV)
Stop : 1024:5497.7(keV)
Acq. Start : Mon Jun 20 12:15:43 2016



ROI Type: 3

ROI Type: 1

07R00

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

Sample Title: 13

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	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	1	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	0
105:	0	0	0	0	0	0	0	0	0
113:	0	1	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	1	0	0	0
137:	0	0	0	1	0	1	0	0	0
145:	0	0	0	2	2	1	0	0	0
153:	0	0	1	1	0	1	2	1	1
161:	1	0	1	2	0	3	0	2	2
169:	1	1	4	5	0	1	0	1	1
177:	3	0	6	2	4	4	6	5	5
185:	3	3	4	3	5	3	4	7	7
193:	1	0	1	2	0	0	1	0	0
201:	1	2	0	0	0	0	0	1	1
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	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	1	1
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	0	1	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	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	0	0	0	0
361:	0	0	0	0	0	0	1	0	0

369: 0 0 0 0 0 0 0 0 1

Sample Title: 13

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

801: 0 0 0 2 2 0 0 0

Sample Title: 13

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	1	0	0	0	1	0
873:	0	0	1	0	0	0	0	0
881:	0	0	0	0	0	1	0	0
889:	0	0	0	0	0	0	0	0
897:	0	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	1
945:	1	1	0	1	0	0	0	1
953:	0	0	0	1	0	0	1	2
961:	0	1	1	0	2	1	1	1
969:	0	1	0	0	0	0	1	0
977:	1	0	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

105
6/20/16

Apex-Alpha™

Sample Description: CP 5022 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_054
 Chamber Serial Number: 10006122B
 Detector Serial Number: 54
 Env. Background: System Bkgd 156914
 Reagent Blank: <not performed>

Sample Size: 1.050E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:15:45 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.237 mL
 Effective Efficiency: 0.1645 +/- 0.0144
 Counting Efficiency: 0.1363 +/- 0.0025 on 12/11/2015 11:36:32 AM
 Chem. Recovery Factor: 1.2069 +/- 0.1082

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	5.822	13.49	54.53	0.51	0.00E+000	3.0
TH-228	5.362	72.30	23.37	1.70	0.00E+000	3.6
TH-229 T	4.880	148.66	16.10	0.34	0.00E+000	5.8
TH-230	4.624	104.98	19.24	1.02	0.00E+000	13.5
TH-232	3.959	60.49	25.32	0.51	0.00E+000	8.2

T = Tracer Peak used for Effective Efficiency

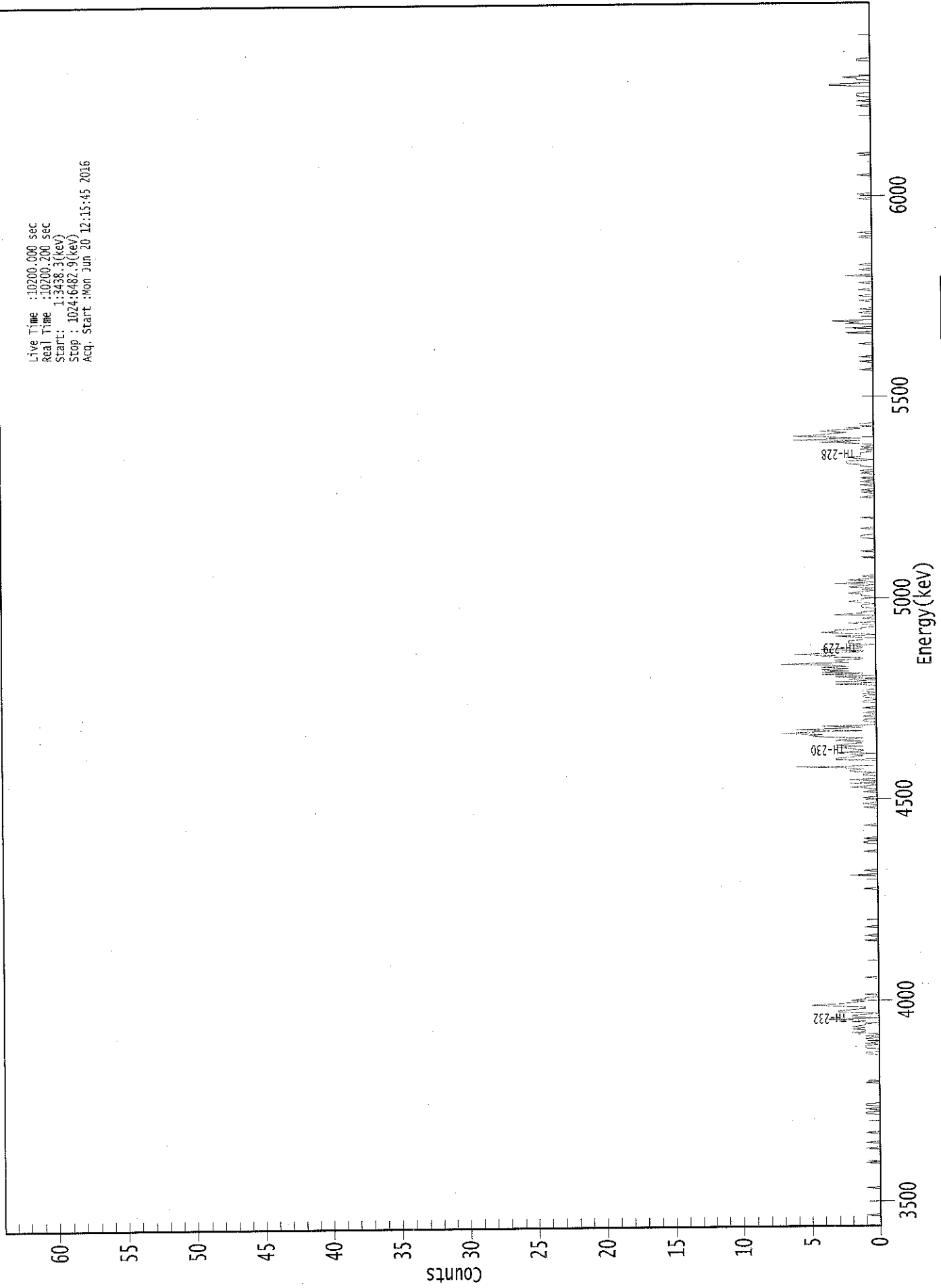
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.996	5850.00*	2.13E-001 +/- 1.22E-001	8.27E-002 +/- 1.42E-002
TH-228	0.993	5400.00*	1.13E+000 +/- 3.27E-001	1.14E-001 +/- 1.97E-002
TH-229	1.000	4872.00*	2.29E+000 +/- 3.94E-001	7.37E-002 +/- 1.27E-002
TH-230	0.988	4672.00*	1.61E+000 +/- 4.17E-001	9.69E-002 +/- 1.67E-002
TH-232	0.992	3997.00*	9.28E-001 +/- 2.84E-001	8.05E-002 +/- 1.39E-002

AG
6/21/16

0000154836.CNF

Live Time :10200.000 sec
Real Time :10200.200 sec
Start: 1:3438.3(keV)
Stop : 1024.6482.9(keV)
Acq. Start :Mon Jun 20 12:15:45 2016



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	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:	1	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	1	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	1	0	0	0	0	1	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	1	1	1
97:	0	0	1	0	0	1	1	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	1	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	1	0	0	0	1	1	1	1
153:	0	1	0	0	0	1	0	1	1
161:	0	0	2	1	1	2	1	2	2
169:	1	1	0	2	1	4	0	2	2
177:	2	1	0	3	3	2	1	1	1
185:	3	5	3	2	1	2	1	1	1
193:	0	0	1	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	1	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	1
241:	0	0	0	1	0	0	0	0	0
249:	0	0	1	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	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	2	0	0	0
297:	0	1	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	1	0	0	0	0	0	0	0
321:	1	1	0	0	1	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	1	0	0
353:	0	1	0	0	0	0	1	0	0
361:	0	0	0	1	0	0	1	2	2

369: 0 0 2 0 0 2 0 0

Sample Title: 14

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

801: 0 0 0 1 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	1	0	0	0	1	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	1	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	1	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	0
929:	0	0	0	0	0	0	0	0
937:	1	0	0	0	1	0	0	0
945:	1	1	1	0	0	0	0	0
953:	0	3	3	0	0	0	1	1
961:	2	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	1	1
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
6/20/16

Sample Description: CP 5022 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001548
 Batch Identification: 1606038A-TH
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_055
 Chamber Serial Number: 10006124A
 Detector Serial Number: 55
 Env. Background: System Bkgd 156915
 Reagent Blank: <not performed>

Sample Size: 1.018E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/6/2016 9:18:24 AM
 Acquisition Date/Time: 6/20/2016 12:15:47 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.237 mL
 Effective Efficiency: 0.1760 +/- 0.0150
 Counting Efficiency: 0.1625 +/- 0.0029 on 12/11/2015 11:36:31 AM
 Chem. Recovery Factor: 1.0836 +/- 0.0945

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	5.817	9.66	64.35	0.34	0.00E+000	3.0
TH-228	5.391	63.64	24.87	1.36	0.00E+000	8.2
TH-229 T	4.909	159.64	15.59	1.36	0.00E+000	6.3
TH-230	4.655	77.30	22.58	1.70	0.00E+000	4.0
TH-232	3.991	85.32	21.32	0.68	0.00E+000	4.3

T = Tracer Peak used for Effective Efficiency

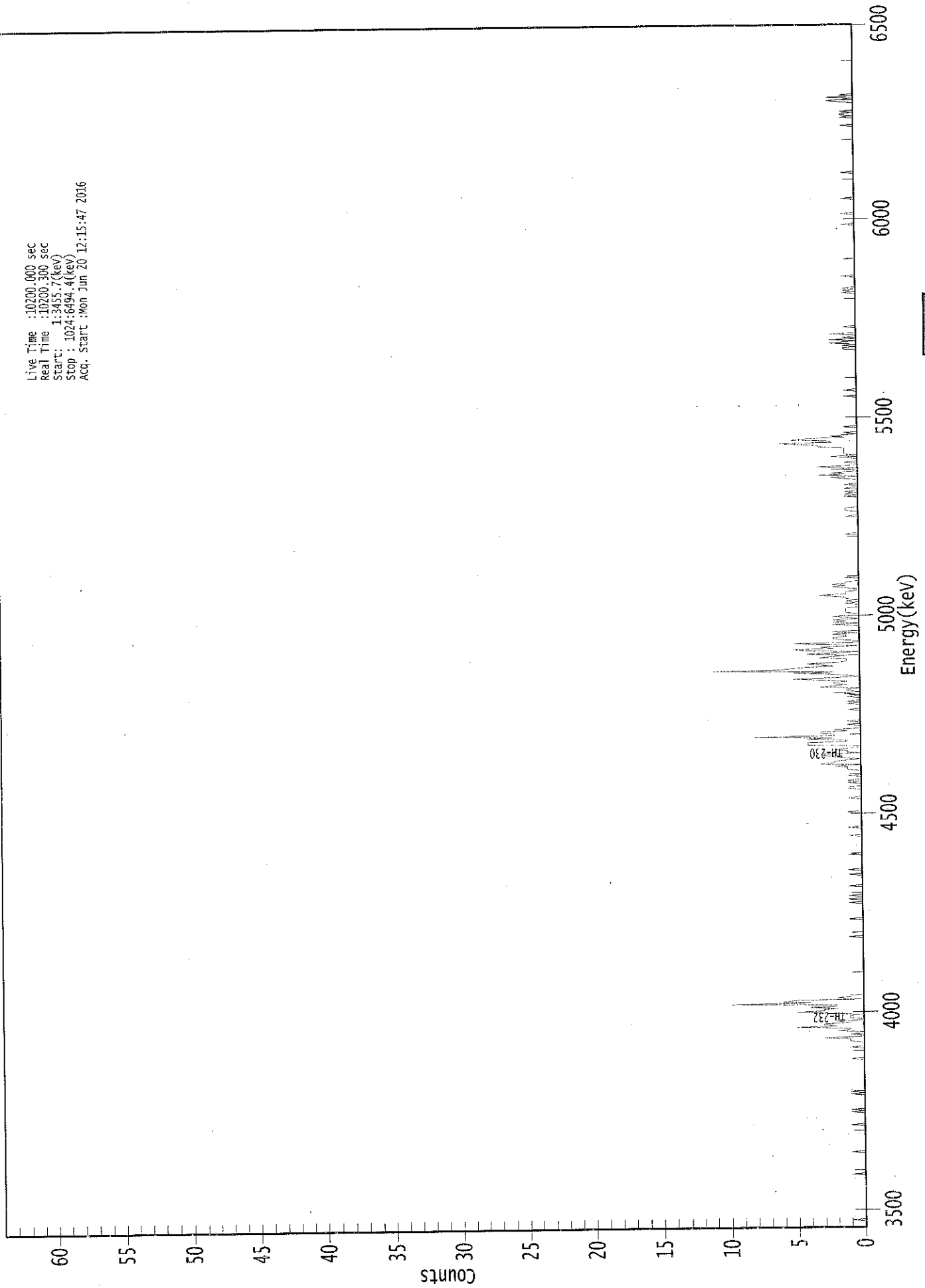
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.994	5850.00*	1.47E-001 +/- 9.75E-002	7.26E-002 +/- 1.21E-002
TH-228	1.000	5400.00*	9.55E-001 +/- 2.86E-001	1.03E-001 +/- 1.72E-002
TH-229	0.993	4872.00*	2.37E+000 +/- 3.97E-001	1.02E-001 +/- 1.70E-002
TH-230	0.999	4672.00*	1.14E+000 +/- 3.22E-001	1.09E-001 +/- 1.82E-002
TH-232	1.000	3997.00*	1.26E+000 +/- 3.42E-001	8.34E-002 +/- 1.40E-002

AG
6/21/16

0000154831.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3455.7(kev)
Stop : 1024:6494.4(kev)
Acq. Start :Mon Jun 20 12:15:47 2016



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	1	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	1	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	1	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	1
89:	0	0	0	0	0	0	0	0	0
97:	0	0	1	0	1	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	1	0	1	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	1
145:	0	0	0	0	0	0	0	0	0
153:	0	1	0	0	0	0	1	1	1
161:	1	3	0	0	1	0	0	2	2
169:	1	1	5	2	3	3	1	2	2
177:	0	0	1	1	1	0	3	5	5
185:	3	3	2	4	2	2	10	4	4
193:	6	5	0	2	1	1	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	1
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	1	0	0	0	1
281:	0	0	1	0	0	0	0	0	0
289:	0	0	1	0	0	0	0	0	0
297:	0	0	0	0	1	0	0	0	0
305:	1	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	1	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	1	0	0	0	0
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	1	0	0	0

369: 0 0 0 0 0 1 1 0

Sample Title: 15

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	1	0	1	0	0	0	0
385:	1	0	0	0	0	1	1	1	1
393:	2	0	3	2	2	1	0	2	2
401:	2	3	3	0	1	1	2	1	1
409:	0	0	4	4	4	1	1	4	4
417:	2	8	2	2	3	3	1	2	2
425:	0	0	0	1	0	0	1	0	0
433:	0	0	0	0	0	0	0	0	0
441:	1	0	0	0	0	1	0	1	1
449:	0	0	0	1	0	0	2	0	0
457:	1	1	0	3	2	1	2	2	2
465:	1	3	5	2	0	1	2	5	5
473:	2	11	6	5	4	2	3	4	4
481:	2	1	1	1	3	2	1	4	4
489:	2	0	4	5	2	3	0	2	2
497:	5	0	0	1	2	2	1	1	1
505:	2	0	2	0	0	0	0	0	0
513:	2	0	2	1	2	0	1	2	2
521:	0	0	1	1	1	1	1	0	0
529:	0	0	1	0	1	0	1	1	1
537:	2	3	1	1	1	0	0	1	1
545:	2	1	2	1	1	0	0	0	0
553:	1	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	1	0	0	0
593:	0	0	0	0	0	0	0	0	0
601:	0	0	0	0	1	0	0	0	0
609:	0	1	1	1	0	0	0	0	0
617:	0	0	0	0	0	1	0	1	1
625:	0	1	0	0	1	0	0	1	1
633:	0	0	0	0	1	2	0	3	3
641:	1	2	0	0	2	0	3	1	1
649:	0	0	1	0	0	0	1	2	2
657:	0	1	1	1	1	1	1	3	3
665:	3	4	6	2	2	5	4	1	1
673:	2	1	0	1	0	0	0	0	0
681:	1	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	0	0	0	1	1
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	1	1	0	1	0	2	2
753:	1	0	2	0	1	0	0	2	2
761:	0	0	0	0	0	1	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	1	0	1	0	1	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 15

Channel	1	2	3	4	5	6	7	8	9
809:	1	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	1	0	0	0	0
857:	0	0	0	0	0	1	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	1	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:	1	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:	1	0	0	0	0	0	0	0	1
945:	0	1	1	0	1	0	0	0	0
953:	0	0	0	0	1	2	1	0	0
961:	2	0	1	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 6/20/2016
Time : 6:45:29 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	6/20/2016 6:30:21 AM
Alpha 004	21f	ALL	Passed	6/20/2016 6:30:22 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	6/20/2016 6:30:23 AM
Alpha 011	21f	ALL	Passed	6/20/2016 6:30:23 AM
Alpha 012	21f	ALL	Passed	6/20/2016 6:30:24 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	6/20/2016 6:30:25 AM
Alpha 015	21f	Peak Energy	Action	6/20/2016 6:30:26 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:27 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:29 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:30 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:32 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:34 AM
Alpha 038	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:36 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:38 AM
Alpha 040	Alpha Analyst100DC	Peak FWHM	Action	6/17/2016 5:04:18 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:40 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:42 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:45 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:47 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:50 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:52 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:55 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:30:58 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:31:00 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:31:03 AM
Alpha 051	Alpha Analyst100DC	ALL	Not Done	
Alpha 052	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:31:05 AM
Alpha 053	Alpha Analyst100DC	Peak FWHM	Action	6/20/2016 6:31:08 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:31:11 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:31:14 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:31:17 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:31:19 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:31:22 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:31:25 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	6/20/2016 6:31:28 AM

APPROVED BY: AG

APPROVAL DATE: 6/20/16

***** 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	16-06038
Analysis Code	Gamma
Run	1
Date Received	6/9/2016
Lab Deadline	6/29/2016
Client	Auxier & Associates, Inc.
Project	PAP-KAN
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	LANL ER-130 Modified
Instrument Type	Gamma Spectroscopy
Radiometric Tracer	
Radiometric Sol#	
Tracer Act (dpm/g)	
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		06/09/16 00:00	1.0000E+00
02	MBL	BLANK		06/09/16 00:00	1.0000E+00
03	DUP	CP-5018 00-02	45	06/06/16 00:00	6.7295E+02
04	DO	CP-5018 00-02	45	06/06/16 00:00	6.7295E+02
05	TRG	CP-5018 02-05	43	06/06/16 00:00	6.1012E+02
06	TRG	CP-5018 05-10	53	06/06/16 00:00	3.3927E+02
07	TRG	CP-5018 10-15	42	06/06/16 00:00	2.8062E+02
08	TRG	CP-5019 00-02	48	06/06/16 00:00	4.9580E+02
09	TRG	CP-5019 02-05	57	06/06/16 00:00	5.5743E+02
10	TRG	CP-5019 05-10	50	06/06/16 00:00	3.5657E+02
11	TRG	CP-5019 10-15	34	06/06/16 00:00	2.6306E+02
12	TRG	CP-5022 00-02	39	06/02/16 00:00	4.8754E+02
13	TRG	CP 5022 02-05	55	06/02/16 00:00	4.8400E+02
14	TRG	CP 5022 05-10	43	06/02/16 00:00	2.9980E+02
15	TRG	CP 5022 10-15	39	06/02/16 00:00	3.0758E+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								

* 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.

00259

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	06/14/16 07:12	KSALLINGS						
05	TRG	06/14/16 07:12	KSALLINGS						
06	TRG	06/14/16 07:12	KSALLINGS						
07	TRG	06/14/16 07:12	KSALLINGS						
08	TRG	06/14/16 07:12	KSALLINGS						
09	TRG	06/14/16 07:12	KSALLINGS						
10	TRG	06/14/16 07:12	KSALLINGS						
11	TRG	06/14/16 07:12	KSALLINGS						
12	TRG	06/14/16 07:12	KSALLINGS						
13	TRG	06/14/16 07:12	KSALLINGS						
14	TRG	06/14/16 07:12	KSALLINGS						
15	TRG	06/14/16 07:12	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: 16-06038-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	1.50E+02	1.04E+01	1.38E+00	1.37E+02	109.50	OK		06/09/16 00:00	1.00E+00	06/14/16 12:19	YES
01	CS-137	LCS	LCS	pCi/g	9.29E+01	8.93E+00	2.24E+00	8.69E+01	106.85	OK		06/09/16 00:00	1.00E+00	06/14/16 12:19	YES
02	AC-228	MBL	BLANK	pCi/g	-7.04E-02	1.71E-01	2.67E-01					06/09/16 00:00	1.00E+00	06/14/16 11:18	NO
02	BI-214	MBL	BLANK	pCi/g	6.56E-02	8.17E-02	1.53E-01					06/09/16 00:00	1.00E+00	06/14/16 11:18	NO
02	K-40	MBL	BLANK	pCi/g	1.04E-01	4.30E-01	8.01E-01					06/09/16 00:00	1.00E+00	06/14/16 11:18	NO
02	PA-231	MBL	BLANK	pCi/g	-7.56E-02	9.19E-01	1.99E+00					06/09/16 00:00	1.00E+00	06/14/16 11:18	NO
02	PB-210	MBL	BLANK	pCi/g	1.54E-01	3.00E-01	4.90E-01					06/09/16 00:00	1.00E+00	06/14/16 11:18	NO
02	PB-212	MBL	BLANK	pCi/g	-3.22E-02	6.78E-02	1.03E-01					06/09/16 00:00	1.00E+00	06/14/16 11:18	YES
02	PB-214	MBL	BLANK	pCi/g	9.26E-02	8.69E-02	1.41E-01					06/09/16 00:00	1.00E+00	06/14/16 11:18	NO
02	TL-208	MBL	BLANK	pCi/g	-3.41E-02	1.11E-01	1.76E-01				OK	06/06/16 00:00	6.73E+02	06/14/16 10:38	YES
03	AC-228	DUP	CP-5018 00-02	pCi/g	1.05E+00	1.93E-01	3.44E-01				OK	06/06/16 00:00	6.73E+02	06/14/16 10:38	YES
03	BI-214	DUP	CP-5018 00-02	pCi/g	8.96E-01	1.27E-01	1.41E-01				OK	06/06/16 00:00	6.73E+02	06/14/16 10:38	NO
03	K-40	DUP	CP-5018 00-02	pCi/g	1.52E+01	1.77E+00	2.78E+00					06/06/16 00:00	6.73E+02	06/14/16 10:38	NO
03	PA-231	DUP	CP-5018 00-02	pCi/g	-1.04E-02	5.91E-01	2.03E+00					06/06/16 00:00	6.73E+02	06/14/16 10:38	NO
03	PB-210	DUP	CP-5018 00-02	pCi/g	1.37E+00	1.15E+00	1.59E+00					06/06/16 00:00	6.73E+02	06/14/16 10:38	NO
03	PB-212	DUP	CP-5018 00-02	pCi/g	9.56E-01	1.37E-01	2.17E-01					06/06/16 00:00	6.73E+02	06/14/16 10:38	NO
03	PB-214	DUP	CP-5018 00-02	pCi/g	9.99E-01	1.31E-01	2.49E-01					06/06/16 00:00	6.73E+02	06/14/16 10:38	YES
03	TL-208	DUP	CP-5018 00-02	pCi/g	1.03E+00	1.28E-01	9.94E-02					06/06/16 00:00	6.73E+02	06/14/16 10:38	YES
04	AC-228	DO	CP-5018 00-02	pCi/g	1.30E+00	1.63E-01	4.64E-01					06/06/16 00:00	6.73E+02	06/14/16 11:38	YES
04	BI-214	DO	CP-5018 00-02	pCi/g	7.88E-01	1.27E-01	2.28E-01					06/06/16 00:00	6.73E+02	06/14/16 11:38	YES
04	K-40	DO	CP-5018 00-02	pCi/g	1.61E+01	1.86E+00	9.65E-01					06/06/16 00:00	6.73E+02	06/14/16 11:38	NO
04	PA-231	DO	CP-5018 00-02	pCi/g	1.61E+00	1.22E+00	2.07E+00					06/06/16 00:00	6.73E+02	06/14/16 11:38	YES
04	PB-210	DO	CP-5018 00-02	pCi/g	1.13E+00	1.33E+00	2.22E+00					06/06/16 00:00	6.73E+02	06/14/16 11:38	YES
04	PB-212	DO	CP-5018 00-02	pCi/g	1.26E+00	1.49E-01	2.09E-01					06/06/16 00:00	6.73E+02	06/14/16 11:38	YES
04	PB-214	DO	CP-5018 00-02	pCi/g	9.24E-01	1.14E-01	1.75E-01					06/06/16 00:00	6.73E+02	06/14/16 11:38	YES
04	TL-208	DO	CP-5018 00-02	pCi/g	1.00E+00	1.41E-01	2.22E-02					06/06/16 00:00	6.73E+02	06/14/16 11:38	YES
05	AC-228	TRG	CP-5018 02-05	pCi/g	1.37E+00	1.97E-01	4.69E-01					06/06/16 00:00	6.10E+02	06/14/16 08:20	YES
05	BI-214	TRG	CP-5018 02-05	pCi/g	8.19E-01	1.37E-01	1.98E-01					06/06/16 00:00	6.10E+02	06/14/16 08:20	YES
05	K-40	TRG	CP-5018 02-05	pCi/g	1.85E+01	2.04E+00	1.27E+00					06/06/16 00:00	6.10E+02	06/14/16 08:20	YES
05	PA-231	TRG	CP-5018 02-05	pCi/g	5.06E-01	1.32E+00	2.18E+00					06/06/16 00:00	6.10E+02	06/14/16 08:20	NO
05	PB-210	TRG	CP-5018 02-05	pCi/g	1.30E+00	1.46E+00	2.44E+00					06/06/16 00:00	6.10E+02	06/14/16 08:20	YES
05	PB-212	TRG	CP-5018 02-05	pCi/g	1.67E+00	2.10E-01	2.22E-01					06/06/16 00:00	6.10E+02	06/14/16 08:20	YES
05	PB-214	TRG	CP-5018 02-05	pCi/g	9.69E-01	1.26E-01	2.01E-01					06/06/16 00:00	6.10E+02	06/14/16 08:20	YES
05	TL-208	TRG	CP-5018 02-05	pCi/g	1.27E+00	1.68E-01	2.45E-02					06/06/16 00:00	6.10E+02	06/14/16 08:20	YES
06	AC-228	TRG	CP-5018 05-10	pCi/g	1.97E+00	3.59E-01	1.10E+00					06/06/16 00:00	3.39E+02	06/14/16 08:20	YES
06	BI-214	TRG	CP-5018 05-10	pCi/g	1.27E+00	2.25E-01	2.79E-01					06/06/16 00:00	3.39E+02	06/14/16 08:20	YES
06	K-40	TRG	CP-5018 05-10	pCi/g	2.54E+01	3.19E+00	1.66E+00					06/06/16 00:00	3.39E+02	06/14/16 08:20	YES
06	PA-231	TRG	CP-5018 05-10	pCi/g	-4.11E+00	3.26E+00	3.51E+00					06/06/16 00:00	3.39E+02	06/14/16 08:20	NO

Preliminary Data Report & Analytical Calculations
Work Order: 16-06038-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
06	PB-210	TRG	CP-5018 05-10	pCi/g	2.30E+00	1.47E+00	2.39E+00					06/06/16 00:00	3.39E+02	06/14/16 08:20	NO
06	PB-212	TRG	CP-5018 05-10	pCi/g	2.55E+00	4.35E-01	3.62E-01					06/06/16 00:00	3.39E+02	06/14/16 08:20	YES
06	PB-214	TRG	CP-5018 05-10	pCi/g	1.45E+00	2.41E-01	3.03E-01					06/06/16 00:00	3.39E+02	06/14/16 08:20	YES
06	TL-208	TRG	CP-5018 05-10	pCi/g	1.66E+00	2.69E-01	1.75E-01					06/06/16 00:00	3.39E+02	06/14/16 08:20	YES
07	AC-228	TRG	CP-5018 10-15	pCi/g	2.63E+00	4.46E-01	8.60E-01					06/06/16 00:00	2.81E+02	06/14/16 08:20	YES
07	BI-214	TRG	CP-5018 10-15	pCi/g	1.63E+00	3.23E-01	4.36E-01					06/06/16 00:00	2.81E+02	06/14/16 08:20	YES
07	K-40	TRG	CP-5018 10-15	pCi/g	3.42E+01	4.38E+00	2.02E+00					06/06/16 00:00	2.81E+02	06/14/16 08:20	NO
07	PA-231	TRG	CP-5018 10-15	pCi/g	1.26E+00	3.51E+00	5.37E+00					06/06/16 00:00	2.81E+02	06/14/16 08:20	YES
07	PB-210	TRG	CP-5018 10-15	pCi/g	3.16E+00	2.56E+00	4.20E+00					06/06/16 00:00	2.81E+02	06/14/16 08:20	YES
07	PB-212	TRG	CP-5018 10-15	pCi/g	2.85E+00	3.94E-01	4.39E-01					06/06/16 00:00	2.81E+02	06/14/16 08:20	YES
07	PB-214	TRG	CP-5018 10-15	pCi/g	1.60E+00	3.13E-01	5.36E-01					06/06/16 00:00	2.81E+02	06/14/16 08:20	YES
07	TL-208	TRG	CP-5018 10-15	pCi/g	1.79E+00	3.86E-01	3.06E-01					06/06/16 00:00	2.81E+02	06/14/16 08:20	YES
08	AC-228	TRG	CP-5019 00-02	pCi/g	8.82E-01	1.94E-01	4.12E-01					06/06/16 00:00	4.96E+02	06/14/16 09:36	YES
08	BI-214	TRG	CP-5019 00-02	pCi/g	9.01E-01	1.58E-01	1.75E-01					06/06/16 00:00	4.96E+02	06/14/16 09:36	YES
08	K-40	TRG	CP-5019 00-02	pCi/g	1.74E+01	2.16E+00	1.31E+00					06/06/16 00:00	4.96E+02	06/14/16 09:36	YES
08	PA-231	TRG	CP-5019 00-02	pCi/g	1.63E+00	1.33E+00	2.34E+00					06/06/16 00:00	4.96E+02	06/14/16 09:36	NO
08	PB-210	TRG	CP-5019 00-02	pCi/g	3.13E+00	1.35E+00	1.99E+00					06/06/16 00:00	4.96E+02	06/14/16 09:36	NO
08	PB-212	TRG	CP-5019 00-02	pCi/g	4.83E-01	1.26E-01	2.14E-01					06/06/16 00:00	4.96E+02	06/14/16 09:36	NO
08	PB-214	TRG	CP-5019 00-02	pCi/g	9.81E-01	1.44E-01	2.59E-01					06/06/16 00:00	4.96E+02	06/14/16 09:36	YES
08	TL-208	TRG	CP-5019 00-02	pCi/g	6.98E-01	1.41E-01	1.31E-01					06/06/16 00:00	4.96E+02	06/14/16 09:36	YES
09	AC-228	TRG	CP-5019 02-05	pCi/g	1.09E+00	2.38E-01	4.27E-01					06/06/16 00:00	5.57E+02	06/14/16 09:36	YES
09	BI-214	TRG	CP-5019 02-05	pCi/g	1.00E+00	1.57E-01	2.02E-01					06/06/16 00:00	5.57E+02	06/14/16 09:36	YES
09	K-40	TRG	CP-5019 02-05	pCi/g	1.82E+01	2.17E+00	9.28E-01					06/06/16 00:00	5.57E+02	06/14/16 09:36	NO
09	PA-231	TRG	CP-5019 02-05	pCi/g	7.89E-01	8.15E-01	2.30E+00					06/06/16 00:00	5.57E+02	06/14/16 09:36	NO
09	PB-210	TRG	CP-5019 02-05	pCi/g	1.24E+00	9.19E-01	1.46E+00					06/06/16 00:00	5.57E+02	06/14/16 09:36	YES
09	PB-212	TRG	CP-5019 02-05	pCi/g	1.34E+00	2.37E-01	2.06E-01					06/06/16 00:00	5.57E+02	06/14/16 09:36	YES
09	PB-214	TRG	CP-5019 02-05	pCi/g	9.79E-01	1.60E-01	2.06E-01					06/06/16 00:00	5.57E+02	06/14/16 09:36	YES
09	TL-208	TRG	CP-5019 02-05	pCi/g	1.02E+00	1.65E-01	1.07E-01					06/06/16 00:00	5.57E+02	06/14/16 09:36	YES
10	AC-228	TRG	CP-5019 05-10	pCi/g	2.13E+00	3.88E-01	7.79E-01					06/06/16 00:00	3.57E+02	06/14/16 09:36	YES
10	BI-214	TRG	CP-5019 05-10	pCi/g	1.21E+00	2.45E-01	3.53E-01					06/06/16 00:00	3.57E+02	06/14/16 09:36	YES
10	K-40	TRG	CP-5019 05-10	pCi/g	2.64E+01	3.34E+00	1.94E+00					06/06/16 00:00	3.57E+02	06/14/16 09:36	YES
10	PA-231	TRG	CP-5019 05-10	pCi/g	8.00E-01	1.52E+00	4.70E+00					06/06/16 00:00	3.57E+02	06/14/16 09:36	NO
10	PB-210	TRG	CP-5019 05-10	pCi/g	2.20E+00	2.16E+00	3.58E+00					06/06/16 00:00	3.57E+02	06/14/16 09:36	YES
10	PB-212	TRG	CP-5019 05-10	pCi/g	2.00E+00	2.57E-01	4.19E-01					06/06/16 00:00	3.57E+02	06/14/16 09:36	YES
10	PB-214	TRG	CP-5019 05-10	pCi/g	1.47E+00	2.32E-01	4.04E-01					06/06/16 00:00	3.57E+02	06/14/16 09:36	YES
10	TL-208	TRG	CP-5019 05-10	pCi/g	1.85E+00	3.17E-01	2.40E-01					06/06/16 00:00	3.57E+02	06/14/16 09:36	YES
11	AC-228	TRG	CP-5019 10-15	pCi/g	2.52E+00	4.69E-01	5.44E-01					06/06/16 00:00	2.63E+02	06/14/16 10:38	YES
11	BI-214	TRG	CP-5019 10-15	pCi/g	1.41E+00	2.77E-01	3.97E-01					06/06/16 00:00	2.63E+02	06/14/16 10:38	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
11	K-40	TRG	CP-5019 10-15	pCi/g	3.31E+01	4.14E+00	1.38E+00					06/06/16 00:00	2.63E+02	06/14/16 10:38	YES
11	PA-231	TRG	CP-5019 10-15	pCi/g	-4.85E-01	1.55E+00	4.26E+00					06/06/16 00:00	2.63E+02	06/14/16 10:38	NO
11	PB-210	TRG	CP-5019 10-15	pCi/g	3.93E+00	1.92E+00	3.14E+00					06/06/16 00:00	2.63E+02	06/14/16 10:38	NO
11	PB-212	TRG	CP-5019 10-15	pCi/g	2.59E+00	4.69E-01	4.31E-01					06/06/16 00:00	2.63E+02	06/14/16 10:38	YES
11	PB-214	TRG	CP-5019 10-15	pCi/g	1.84E+00	2.87E-01	3.99E-01					06/06/16 00:00	2.63E+02	06/14/16 10:38	YES
11	TL-208	TRG	CP-5019 10-15	pCi/g	1.54E+00	3.14E-01	2.26E-01					06/06/16 00:00	2.63E+02	06/14/16 10:38	YES
12	AC-228	TRG	CP-5022 00-02	pCi/g	1.54E+00	2.56E-01	4.06E-01					06/02/16 00:00	4.88E+02	06/14/16 10:38	YES
12	BI-214	TRG	CP-5022 00-02	pCi/g	1.11E+00	1.77E-01	9.23E-02					06/02/16 00:00	4.88E+02	06/14/16 10:38	YES
12	K-40	TRG	CP-5022 00-02	pCi/g	1.94E+01	2.49E+00	1.12E+00					06/02/16 00:00	4.88E+02	06/14/16 10:38	YES
12	PA-231	TRG	CP-5022 00-02	pCi/g	1.65E+00	2.26E+00	3.50E+00					06/02/16 00:00	4.88E+02	06/14/16 10:38	NO
12	PB-210	TRG	CP-5022 00-02	pCi/g	2.60E+00	1.58E+00	2.54E+00					06/02/16 00:00	4.88E+02	06/14/16 10:38	YES
12	PB-212	TRG	CP-5022 00-02	pCi/g	1.51E+00	1.84E-01	3.37E-01					06/02/16 00:00	4.88E+02	06/14/16 10:38	YES
12	PB-214	TRG	CP-5022 00-02	pCi/g	1.21E+00	2.03E-01	3.21E-01					06/02/16 00:00	4.88E+02	06/14/16 10:38	YES
12	TL-208	TRG	CP-5022 00-02	pCi/g	1.15E+00	1.93E-01	1.75E-01					06/02/16 00:00	4.88E+02	06/14/16 10:38	YES
13	AC-228	TRG	CP 5022 02-05	pCi/g	1.48E+00	2.80E-01	3.10E-01					06/02/16 00:00	4.84E+02	06/14/16 11:38	YES
13	BI-214	TRG	CP 5022 02-05	pCi/g	1.02E+00	1.63E-01	1.95E-01					06/02/16 00:00	4.84E+02	06/14/16 11:38	YES
13	K-40	TRG	CP 5022 02-05	pCi/g	2.16E+01	2.59E+00	8.60E-01					06/02/16 00:00	4.84E+02	06/14/16 11:38	YES
13	PA-231	TRG	CP 5022 02-05	pCi/g	-1.79E-01	1.06E+00	2.66E+00					06/02/16 00:00	4.84E+02	06/14/16 11:38	NO
13	PB-210	TRG	CP 5022 02-05	pCi/g	2.08E+00	1.05E+00	1.74E+00					06/02/16 00:00	4.84E+02	06/14/16 11:38	NO
13	PB-212	TRG	CP 5022 02-05	pCi/g	1.20E+00	2.46E-01	3.08E-01					06/02/16 00:00	4.84E+02	06/14/16 11:38	NO
13	PB-214	TRG	CP 5022 02-05	pCi/g	1.15E+00	2.10E-01	2.50E-01					06/02/16 00:00	4.84E+02	06/14/16 11:38	YES
13	TL-208	TRG	CP 5022 02-05	pCi/g	1.36E+00	2.01E-01	2.57E-01					06/02/16 00:00	4.84E+02	06/14/16 11:38	YES
14	AC-228	TRG	CP 5022 05-10	pCi/g	2.59E+00	4.62E-01	5.87E-01					06/02/16 00:00	3.00E+02	06/14/16 11:39	YES
14	BI-214	TRG	CP 5022 05-10	pCi/g	1.53E+00	2.85E-01	4.22E-01					06/02/16 00:00	3.00E+02	06/14/16 11:39	YES
14	K-40	TRG	CP 5022 05-10	pCi/g	2.74E+01	3.85E+00	2.71E+00					06/02/16 00:00	3.00E+02	06/14/16 11:39	YES
14	PA-231	TRG	CP 5022 05-10	pCi/g	-9.49E-01	1.96E+00	5.37E+00					06/02/16 00:00	3.00E+02	06/14/16 11:39	NO
14	PB-210	TRG	CP 5022 05-10	pCi/g	4.01E+00	3.38E+00	5.58E+00					06/02/16 00:00	3.00E+02	06/14/16 11:39	YES
14	PB-212	TRG	CP 5022 05-10	pCi/g	2.53E+00	2.99E-01	4.14E-01					06/02/16 00:00	3.00E+02	06/14/16 11:39	YES
14	PB-214	TRG	CP 5022 05-10	pCi/g	1.68E+00	2.61E-01	4.13E-01					06/02/16 00:00	3.00E+02	06/14/16 11:39	YES
14	TL-208	TRG	CP 5022 05-10	pCi/g	2.06E+00	3.45E-01	2.85E-01					06/02/16 00:00	3.00E+02	06/14/16 11:39	YES
15	AC-228	TRG	CP 5022 10-15	pCi/g	1.98E+00	3.59E-01	4.75E-01					06/02/16 00:00	3.08E+02	06/14/16 12:40	YES
15	BI-214	TRG	CP 5022 10-15	pCi/g	1.69E+00	2.84E-01	3.75E-01					06/02/16 00:00	3.08E+02	06/14/16 12:40	YES
15	K-40	TRG	CP 5022 10-15	pCi/g	2.84E+01	3.59E+00	1.50E+00					06/02/16 00:00	3.08E+02	06/14/16 12:40	YES
15	PA-231	TRG	CP 5022 10-15	pCi/g	1.17E+00	1.35E+00	3.86E+00					06/02/16 00:00	3.08E+02	06/14/16 12:40	NO
15	PB-210	TRG	CP 5022 10-15	pCi/g	2.20E+00	2.22E+00	3.70E+00					06/02/16 00:00	3.08E+02	06/14/16 12:40	YES
15	PB-212	TRG	CP 5022 10-15	pCi/g	1.84E+00	3.07E-01	3.29E-01					06/02/16 00:00	3.08E+02	06/14/16 12:40	YES
15	PB-214	TRG	CP 5022 10-15	pCi/g	2.00E+00	3.31E-01	3.47E-01					06/02/16 00:00	3.08E+02	06/14/16 12:40	YES
15	TL-208	TRG	CP 5022 10-15	pCi/g	1.75E+00	2.78E-01	3.05E-01					06/02/16 00:00	3.08E+02	06/14/16 12:40	YES

Count Room Report
Client: Auxier Associates, Inc.

16-06038-Gamma-1 (pCi/g) in SO
Tracer ID:

Handwritten signature

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	06/09/16 00:00	1.0000				0.00		
02	MBL	BLANK	06/09/16 00:00	1.0000				0.00		
03	DUP	CP-5018 00-02	06/06/16 00:00	672.9500				0.00		
04	DO	CP-5018 00-02	06/06/16 00:00	672.9500				0.00		
05	TRG	CP-5018 02-05	06/06/16 00:00	610.1200				0.00		
06	TRG	CP-5018 05-10	06/06/16 00:00	339.2700				0.00		
07	TRG	CP-5018 10-15	06/06/16 00:00	280.6200				0.00		
08	TRG	CP-5019 00-02	06/06/16 00:00	495.8000				0.00		
09	TRG	CP-5019 02-05	06/06/16 00:00	557.4300				0.00		
10	TRG	CP-5019 05-10	06/06/16 00:00	356.5700				0.00		
11	TRG	CP-5019 10-15	06/06/16 00:00	263.0600				0.00		
12	TRG	CP-5022 00-02	06/02/16 00:00	487.5400				0.00		
13	TRG	CP 5022 02-05	06/02/16 00:00	484.0000				0.00		
14	TRG	CP 5022 05-10	06/02/16 00:00	299.8000				0.00		
15	TRG	CP 5022 10-15	06/02/16 00:00	307.5800				0.00		

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Aliquot Worksheet

Work Order		Run		Analysis Code		Rpt Units		Lab Deadline		Technician	
16-06038		1		Gamma		grams		6/29/2016		KSALLINGS	

Lab Fraction	Auxier & Associates, Inc.		Sample		Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID	Type	Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist	Alliq		
01	LCS	LCS					1.0000E+00	1.0000E+00							
02	BLANK	MBL					1.0000E+00	1.0000E+00							
03	CP-5018 00-02	DUP					6.7295E+02	6.7295E+02							
04	CP-5018 00-02	DO					6.7295E+02	6.7295E+02							
05	CP-5018 02-05	TRG					6.1012E+02	6.1012E+02							
06	CP-5018 05-10	TRG					3.3927E+02	3.3927E+02							
07	CP-5018 10-15	TRG					2.8062E+02	2.8062E+02							
08	CP-5019 00-02	TRG					4.9580E+02	4.9580E+02							
09	CP-5019 02-05	TRG					5.5743E+02	5.5743E+02							
10	CP-5019 05-10	TRG					3.5657E+02	3.5657E+02							
11	CP-5019 10-15	TRG					2.6306E+02	2.6306E+02							
12	CP-5022 00-02	TRG					4.8754E+02	4.8754E+02							
13	CP 5022 02-05	TRG					4.8400E+02	4.8400E+02							
14	CP 5022 05-10	TRG					2.9980E+02	2.9980E+02							
15	CP 5022 10-15	TRG					3.0758E+02	3.0758E+02							

Comments

Technician: Kenny Seely Date: 6/14/16

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
16-06038	6/29/2016	6/13/2016	6/14/2016	6/15/2016	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	CP-5018 00-02	14.5500	790.2300	969.7800	790.2300	955.2300	775.6800	18.80%	81.20%	0.0000	0.0000	
05	CP-5018 02-05	14.5100	698.9000	868.0400	698.9000	853.5300	684.3900	19.82%	80.18%	0.0000	0.0000	
06	CP-5018 05-10	14.5500	425.4700	527.5000	425.4700	512.9500	410.9200	19.89%	80.11%	0.0000	0.0000	
07	CP-5018 10-15	14.6100	355.0100	452.9700	355.0100	438.3600	340.4000	22.35%	77.65%	0.0000	0.0000	
08	CP-5019 00-02	14.6200	570.4900	640.3100	570.4900	625.6900	555.8700	11.16%	88.84%	0.0000	0.0000	
09	CP-5019 02-05	14.5200	636.4800	789.8900	636.4800	775.3700	621.9600	19.79%	80.21%	0.0000	0.0000	
10	CP-5019 05-10	14.5700	438.1600	544.5600	438.1600	529.9900	423.5900	20.08%	79.92%	0.0000	0.0000	
11	CP-5019 10-15	14.6000	342.7700	441.8400	342.7700	427.2400	328.1700	23.19%	76.81%	0.0000	0.0000	
12	CP-5022 00-02	14.6100	569.9700	675.0900	569.9700	660.4800	555.3600	15.92%	84.08%	0.0000	0.0000	
13	CP-5022 02-05	14.6000	571.6000	700.8100	571.6000	686.2100	557.0000	18.83%	81.17%	0.0000	0.0000	
14	CP-5022 05-10	14.6500	367.5100	458.2900	367.5100	443.6400	352.8600	20.46%	79.54%	0.0000	0.0000	
15	CP-5022 10-15	14.6400	380.8100	490.2300	380.8100	475.5900	366.1700	23.01%	76.99%	0.0000	0.0000	

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

00200

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

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

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

(Certificate continued on reverse side)



Analysis Report for 1606038-01
GAS-1302

6/14

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-01
Sample Description : GAS-1302
Sample Type : SOIL

Sample Size : 7.360E+02 grams
Facility : Countroom

Sample Taken On : 7/1/2013 8:13:23AM
Acquisition Started : 6/14/2016 12:19:41PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 1800.0 seconds
Real Time : 1838.5 seconds

Dead Time : 2.10 %

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 : 38825

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-01
GAS-1302

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 12:50:24PM
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	22.42	21.66	0.0000	0.00
2	32.13	31.38	0.0000	0.00
3	53.81	53.07	0.0000	0.00
4	59.54	58.80	0.0000	0.00
5	67.84	67.10	0.0000	0.00
6	87.93	87.20	0.0000	0.00
7	122.16	121.45	0.0000	0.00
8	136.64	135.93	0.0000	0.00
9	165.87	165.17	0.0000	0.00
10	220.53	219.86	0.0000	0.00
11	282.74	282.10	0.0000	0.00
12	325.91	325.28	0.0000	0.00
13	362.41	361.80	0.0000	0.00
14	608.10	607.60	0.0000	0.00
15	661.48	661.01	0.0000	0.00
16	784.34	783.93	0.0000	0.00
17	898.26	897.91	0.0000	0.00
18	1172.76	1172.57	0.0000	0.00
19	1277.04	1276.91	0.0000	0.00
20	1331.96	1331.85	0.0000	0.00
21	1378.19	1378.11	0.0000	0.00
22	1405.87	1405.81	0.0000	0.00
23	1459.91	1459.88	0.0000	0.00
24	1513.80	1513.80	0.0000	0.00
25	1834.40	1834.61	0.0000	0.00
26	1906.59	1906.85	0.0000	0.00
27	1996.26	1996.58	0.0000	0.00
28	2088.85	2089.23	0.0000	0.00
29	2095.20	2095.59	0.0000	0.00
30	2117.30	2117.70	0.0000	0.00
31	2166.16	2166.60	0.0000	0.00
32	2299.05	2299.59	0.0000	0.00
33	2504.14	2504.83	0.0000	0.00
34	2612.79	2613.56	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-01
 GAS-1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 12:50:24PM

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	22.42	19 -	25	21.66	5.10E+04	663.32	4.45E+04	2.38
2	32.13	29 -	34	31.38	1.01E+03	218.41	8.81E+03	2.26
3	53.81	44 -	63	53.07	1.66E+04	916.78	5.10E+04	6.63
4	59.54	44 -	63	58.80	5.63E+04	592.63	1.70E+04	2.22
5	67.84	64 -	70	67.10	6.33E+02	293.99	1.54E+04	4.25
6	87.93	80 -	93	87.20	1.83E+04	559.79	2.63E+04	2.29
7	122.16	117 -	125	121.45	2.72E+03	298.65	1.20E+04	2.35
8	136.64	133 -	139	135.93	2.26E+02	221.18	8.73E+03	2.23
9	165.87	162 -	169	165.17	4.16E+02	228.51	8.43E+03	2.01
10	220.53	217 -	223	219.86	2.34E+02	207.10	7.62E+03	1.70
11	282.74	279 -	286	282.10	1.72E+02	186.37	5.65E+03	3.68
12	325.91	322 -	329	325.28	1.50E+02	174.32	4.97E+03	3.70
13	362.41	359 -	365	361.80	1.78E+02	148.60	3.88E+03	2.88
14	608.10	605 -	611	607.60	9.43E+01	109.87	2.12E+03	3.67
15	661.48	654 -	667	661.01	1.29E+04	294.99	3.91E+03	2.51
16	784.34	781 -	787	783.93	8.37E+01	102.87	1.86E+03	1.62
17	898.26	895 -	901	897.91	1.17E+02	113.96	2.27E+03	3.18
18	1172.76	1167 -	1177	1172.57	1.02E+04	227.20	1.45E+03	2.71
19	1277.04	1269 -	1285	1276.91	9.15E+01	70.75	4.41E+02	12.75
20	1331.96	1325 -	1337	1331.85	9.23E+03	198.37	2.94E+02	2.75
21	1378.19	1375 -	1383	1378.11	2.33E+01	17.02	2.75E+01	2.63
22	1405.87	1398 -	1414	1405.81	3.68E+01	29.36	6.85E+01	8.03
23	1459.91	1457 -	1465	1459.88	1.91E+01	20.76	5.59E+01	2.60
24	1513.80	1509 -	1517	1513.80	1.53E+01	12.20	1.35E+01	3.22
25	1834.40	1829 -	1839	1834.61	3.60E+01	12.00	0.00E+00	3.41
26	1906.59	1902 -	1912	1906.85	1.37E+01	9.71	4.69E+00	5.66
27	1996.26	1993 -	2001	1996.58	1.08E+01	12.21	1.25E+01	2.03
28	2088.85	2085 -	2093	2089.23	9.15E+00	9.62	7.69E+00	2.60
29	2095.20	2093 -	2098	2095.59	5.71E+00	6.08	2.57E+00	1.41
30	2117.30	2113 -	2120	2117.70	1.00E+01	6.32	0.00E+00	1.12
31	2166.16	2163 -	2171	2166.60	8.27E+00	10.62	9.46E+00	5.18
32	2299.05	2296 -	2303	2299.59	1.33E+01	8.72	3.47E+00	2.85
33	2504.14	2500 -	2508	2504.83	4.60E+01	13.56	0.00E+00	1.73
34	2612.79	2609 -	2616	2613.56	9.00E+00	6.00	0.00E+00	2.11

M
m

Analysis Report for 1606038-01
GAS-1302

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 12:50:24PM

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	22.42	19 -	25	5.10E+04	663.32	4.45E+04	3.99E+02
2	32.13	29 -	34	1.01E+03	218.41	8.81E+03	1.72E+02
M 3	53.81	44 -	63	1.66E+04	916.78	5.10E+04	3.71E+02
m 4	59.54	44 -	63	5.63E+04	592.63	1.70E+04	2.14E+02
5	67.84	64 -	70	6.33E+02	293.99	1.54E+04	2.38E+02
6	87.93	80 -	93	1.83E+04	559.79	2.63E+04	4.03E+02
7	122.16	117 -	125	2.72E+03	298.65	1.20E+04	2.30E+02
8	136.64	133 -	139	2.26E+02	221.18	8.73E+03	1.80E+02
9	165.87	162 -	169	4.16E+02	228.51	8.43E+03	1.85E+02
10	220.53	217 -	223	2.34E+02	207.10	7.62E+03	1.68E+02
11	282.74	279 -	286	1.72E+02	186.37	5.65E+03	1.52E+02
12	325.91	322 -	329	1.50E+02	174.32	4.97E+03	1.42E+02
13	362.41	359 -	365	1.78E+02	148.60	3.88E+03	1.20E+02
14	608.10	605 -	611	9.43E+01	109.87	2.12E+03	8.89E+01
15	661.48	654 -	667	1.29E+04	294.99	3.91E+03	1.54E+02
16	784.34	781 -	787	8.37E+01	102.87	1.86E+03	8.32E+01
17	898.26	895 -	901	1.17E+02	113.96	2.27E+03	9.20E+01
18	1172.76	1167 -	1177	1.02E+04	227.20	1.45E+03	8.58E+01
19	1277.04	1269 -	1285	9.15E+01	70.75	4.41E+02	5.60E+01
20	1331.96	1325 -	1337	9.23E+03	198.37	2.94E+02	4.07E+01
21	1378.19	1375 -	1383	2.33E+01	17.02	2.75E+01	1.15E+01
22	1405.87	1398 -	1414	3.68E+01	29.36	6.85E+01	2.20E+01
23	1459.91	1457 -	1465	1.91E+01	20.76	5.59E+01	1.55E+01
24	1513.80	1509 -	1517	1.53E+01	12.20	1.35E+01	7.70E+00
25	1834.40	1829 -	1839	3.60E+01	12.00	0.00E+00	0.00E+00
26	1906.59	1902 -	1912	1.37E+01	9.71	4.69E+00	5.17E+00
27	1996.26	1993 -	2001	1.08E+01	12.21	1.25E+01	8.46E+00
28	2088.85	2085 -	2093	9.15E+00	9.62	7.69E+00	6.15E+00
29	2095.20	2093 -	2098	5.71E+00	6.08	2.57E+00	3.09E+00
30	2117.30	2113 -	2120	1.00E+01	6.32	0.00E+00	0.00E+00
31	2166.16	2163 -	2171	8.27E+00	10.62	9.46E+00	7.34E+00

Analysis Report for 1606038-01
GAS-1302

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2299.05	2296 -	2303	1.33E+01	8.72	3.47E+00	3.94E+00
33	2504.14	2500 -	2508	4.60E+01	13.56	0.00E+00	0.00E+00
34	2612.79	2609 -	2616	9.00E+00	6.00	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/14/2016 12:50:24PM

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	22.42	19 -	25	21.66	5.10E+04	663.32	4.45E+04	.....
2	32.13	29 -	34	31.38	1.01E+03	218.41	8.81E+03	.....
M	3	44 -	63	53.07	1.66E+04	916.78	5.10E+04	.....
m	4	44 -	63	58.80	5.63E+04	592.63	1.70E+04	AM-241
5	67.84	64 -	70	67.10	6.33E+02	293.99	1.54E+04	TI-44 TA-182 TH-230
6	87.93	80 -	93	87.20	1.83E+04	559.79	2.63E+04	CD-109 SN-126 LU-176
7	122.16	117 -	125	121.45	2.72E+03	298.65	1.20E+04	CO-57 EU-152 EU-154
8	136.64	133 -	139	135.93	2.26E+02	221.18	8.73E+03	CO-57 SE-75
9	165.87	162 -	169	165.17	4.16E+02	228.51	8.43E+03	CE-139
10	220.53	217 -	223	219.86	2.34E+02	207.10	7.62E+03	.....
11	282.74	279 -	286	282.10	1.72E+02	186.37	5.65E+03	PA-231
12	325.91	322 -	329	325.28	1.50E+02	174.32	4.97E+03	.....
13	362.41	359 -	365	361.80	1.78E+02	148.60	3.88E+03	.....
14	608.10	605 -	611	607.60	9.43E+01	109.87	2.12E+03	.....
15	661.48	654 -	667	661.01	1.29E+04	294.99	3.91E+03	CS-137
16	784.34	781 -	787	783.93	8.37E+01	102.87	1.86E+03	SB-127

Analysis Report for 1606038-01

GAS-1302

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
17	898.26	895 -	901	897.91	1.17E+02	113.96	2.27E+03	Y-88
18	1172.76	1167 -	1177	1172.57	1.02E+04	227.20	1.45E+03	CO-60
19	1277.04	1269 -	1285	1276.91	9.15E+01	70.75	4.41E+02	.....
20	1331.96	1325 -	1337	1331.85	9.23E+03	198.37	2.94E+02	CO-60
21	1378.19	1375 -	1383	1378.11	2.33E+01	17.02	2.75E+01	.....
22	1405.87	1398 -	1414	1405.81	3.68E+01	29.36	6.85E+01	.....
23	1459.91	1457 -	1465	1459.88	1.91E+01	20.76	5.59E+01	K-40
24	1513.80	1509 -	1517	1513.80	1.53E+01	12.20	1.35E+01	.....
25	1834.40	1829 -	1839	1834.61	3.60E+01	12.00	0.00E+00	.....
26	1906.59	1902 -	1912	1906.85	1.37E+01	9.71	4.69E+00	.....
27	1996.26	1993 -	2001	1996.58	1.08E+01	12.21	1.25E+01	.....
28	2088.85	2085 -	2093	2089.23	9.15E+00	9.62	7.69E+00	.....
29	2095.20	2093 -	2098	2095.59	5.71E+00	6.08	2.57E+00	.....
30	2117.30	2113 -	2120	2117.70	1.00E+01	6.32	0.00E+00	.....
31	2166.16	2163 -	2171	2166.60	8.27E+00	10.62	9.46E+00	.....
32	2299.05	2296 -	2303	2299.59	1.33E+01	8.72	3.47E+00	.....
33	2504.14	2500 -	2508	2504.83	4.60E+01	13.56	0.00E+00	.....
34	2612.79	2609 -	2616	2613.56	9.00E+00	6.00	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 EFFICIENCY REPORT

Peak Analysis Performed on : 6/14/2016 12:50:24PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
M	1	22.42	5.10E+04	663.32	3.04E-02	1.78E-03
m	2	32.13	1.01E+03	218.41	2.90E-02	1.78E-03
	3	53.81	1.66E+04	916.78	2.49E-02	1.78E-03
	4	59.54	5.63E+04	592.63	2.39E-02	1.78E-03
	5	67.84	6.33E+02	293.99	2.25E-02	1.74E-03
	6	87.93	1.83E+04	559.79	1.96E-02	1.63E-03
	7	122.16	2.72E+03	298.65	1.59E-02	1.53E-03
	8	136.64	2.26E+02	221.18	1.47E-02	1.42E-03
	9	165.87	4.16E+02	228.51	1.27E-02	1.21E-03
	10	220.53	2.34E+02	207.10	1.01E-02	1.04E-03
	11	282.74	1.72E+02	186.37	8.10E-03	8.57E-04
	12	325.91	1.50E+02	174.32	7.10E-03	8.09E-04

: 00273

Analysis Report for 1606038-01
GAS-1302

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
13	362.41	1.78E+02	148.60	6.43E-03	7.69E-04
14	608.10	9.43E+01	109.87	3.88E-03	4.19E-04
15	661.48	1.29E+04	294.99	3.57E-03	3.41E-04
16	784.34	8.37E+01	102.87	3.02E-03	2.72E-04
17	898.26	1.17E+02	113.96	2.65E-03	2.08E-04
18	1172.76	1.02E+04	227.20	2.05E-03	1.73E-04
19	1277.04	9.15E+01	70.75	1.90E-03	2.01E-04
20	1331.96	9.23E+03	198.37	1.83E-03	2.16E-04
21	1378.19	2.33E+01	17.02	1.77E-03	2.06E-04
22	1405.87	3.68E+01	29.36	1.74E-03	2.00E-04
23	1459.91	1.91E+01	20.76	1.68E-03	1.89E-04
24	1513.80	1.53E+01	12.20	1.63E-03	1.78E-04
25	1834.40	3.60E+01	12.00	1.39E-03	1.11E-04
26	1906.59	1.37E+01	9.71	1.35E-03	1.11E-04
27	1996.26	1.08E+01	12.21	1.30E-03	1.11E-04
28	2088.85	9.15E+00	9.62	1.26E-03	1.11E-04
29	2095.20	5.71E+00	6.08	1.25E-03	1.11E-04
30	2117.30	1.00E+01	6.32	1.24E-03	1.11E-04
31	2166.16	8.27E+00	10.62	1.22E-03	1.11E-04
32	2299.05	1.33E+01	8.72	1.17E-03	1.11E-04
33	2504.14	4.60E+01	13.56	1.10E-03	1.11E-04
34	2612.79	9.00E+00	6.00	1.07E-03	1.11E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/14/2016 12:50:24PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037622.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	22.42	5.10E+04	663.32		5.10E+04	6.63E+02
	2	32.13	1.01E+03	218.41		1.01E+03	2.18E+02
M	3	53.81	1.66E+04	916.78		1.66E+04	9.17E+02
m	4	59.54	5.63E+04	592.63		5.63E+04	5.93E+02
	5	67.84	6.33E+02	293.99		6.33E+02	2.94E+02
	6	87.93	1.83E+04	559.79		1.83E+04	5.60E+02
	7	122.16	2.72E+03	298.65		2.72E+03	2.99E+02
	8	136.64	2.26E+02	221.18		2.26E+02	2.21E+02

Analysis Report for 1606038-01

GAS-1302

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
9	165.87	4.16E+02	228.51			4.16E+02	2.29E+02
10	220.53	2.34E+02	207.10			2.34E+02	2.07E+02
11	282.74	1.72E+02	186.37			1.72E+02	1.86E+02
12	325.91	1.50E+02	174.32			1.50E+02	1.74E+02
13	362.41	1.78E+02	148.60			1.78E+02	1.49E+02
14	608.10	9.43E+01	109.87			9.43E+01	1.10E+02
15	661.48	1.29E+04	294.99			1.29E+04	2.95E+02
16	784.34	8.37E+01	102.87			8.37E+01	1.03E+02
17	898.26	1.17E+02	113.96			1.17E+02	1.14E+02
18	1172.76	1.02E+04	227.20			1.02E+04	2.27E+02
19	1277.04	9.15E+01	70.75			9.15E+01	7.07E+01
20	1331.96	9.23E+03	198.37			9.23E+03	1.98E+02
21	1378.19	2.33E+01	17.02			2.33E+01	1.70E+01
22	1405.87	3.68E+01	29.36			3.68E+01	2.94E+01
23	1459.91	1.91E+01	20.76	8.81E-01	8.80E-01	1.82E+01	2.08E+01
24	1513.80	1.53E+01	12.20			1.53E+01	1.22E+01
25	1834.40	3.60E+01	12.00			3.60E+01	1.20E+01
26	1906.59	1.37E+01	9.71			1.37E+01	9.71E+00
27	1996.26	1.08E+01	12.21			1.08E+01	1.22E+01
28	2088.85	9.15E+00	9.62			9.15E+00	9.62E+00
29	2095.20	5.71E+00	6.08			5.71E+00	6.08E+00
30	2117.30	1.00E+01	6.32			1.00E+01	6.32E+00
31	2166.16	8.27E+00	10.62			8.27E+00	1.06E+01
32	2299.05	1.33E+01	8.72			1.33E+01	8.72E+00
33	2504.14	4.60E+01	13.56			4.60E+01	1.36E+01
34	2612.79	9.00E+00	6.00			9.00E+00	6.00E+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 : 6/14/2016 12:50:24PM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037622.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	22.42	5.10E+04	663.32			5.10E+04	6.63E+02
2	32.13	1.01E+03	218.41			1.01E+03	2.18E+02

: 00275

Analysis Report for 1606038-01
GAS-1302

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	3	53.81	1.66E+04	916.78			1.66E+04	9.17E+02
m	4	59.54	5.63E+04	592.63			5.63E+04	5.93E+02
	5	67.84	6.33E+02	293.99			6.33E+02	2.94E+02
	6	87.93	1.83E+04	559.79			1.83E+04	5.60E+02
	7	122.16	2.72E+03	298.65			2.72E+03	2.99E+02
	8	136.64	2.26E+02	221.18			2.26E+02	2.21E+02
	9	165.87	4.16E+02	228.51			4.16E+02	2.29E+02
	10	220.53	2.34E+02	207.10			2.34E+02	2.07E+02
	11	282.74	1.72E+02	186.37			1.72E+02	1.86E+02
	12	325.91	1.50E+02	174.32			1.50E+02	1.74E+02
	13	362.41	1.78E+02	148.60			1.78E+02	1.49E+02
	14	608.10	9.43E+01	109.87			9.43E+01	1.10E+02
	15	661.48	1.29E+04	294.99			1.29E+04	2.95E+02
	16	784.34	8.37E+01	102.87			8.37E+01	1.03E+02
	17	898.26	1.17E+02	113.96			1.17E+02	1.14E+02
	18	1172.76	1.02E+04	227.20			1.02E+04	2.27E+02
	19	1277.04	9.15E+01	70.75			9.15E+01	7.07E+01
	20	1331.96	9.23E+03	198.37			9.23E+03	1.98E+02
	21	1378.19	2.33E+01	17.02			2.33E+01	1.70E+01
	22	1405.87	3.68E+01	29.36			3.68E+01	2.94E+01
	23	1459.91	1.91E+01	20.76	8.81E-01	8.80E-01	1.82E+01	2.08E+01
	24	1513.80	1.53E+01	12.20			1.53E+01	1.22E+01
	25	1834.40	3.60E+01	12.00			3.60E+01	1.20E+01
	26	1906.59	1.37E+01	9.71			1.37E+01	9.71E+00
	27	1996.26	1.08E+01	12.21			1.08E+01	1.22E+01
	28	2088.85	9.15E+00	9.62			9.15E+00	9.62E+00
	29	2095.20	5.71E+00	6.08			5.71E+00	6.08E+00
	30	2117.30	1.00E+01	6.32			1.00E+01	6.32E+00
	31	2166.16	8.27E+00	10.62			8.27E+00	1.06E+01
	32	2299.05	1.33E+01	8.72			1.33E+01	8.72E+00
	33	2504.14	4.60E+01	13.56			4.60E+01	1.36E+01
	34	2612.79	9.00E+00	6.00			9.00E+00	6.00E+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 1606038-01
GAS-1302

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.877	1460.81 *	10.67	2.06E+00	2.37E+00
CO-57	0.922	122.06 *	85.51	6.45E+01	9.42E+00
		136.48 *	10.60	4.68E+01	4.60E+01
CO-60	0.960	1173.22 *	100.00	1.49E+02	1.30E+01
		1332.49 *	100.00	1.52E+02	1.82E+01
CD-109	0.972	88.03 *	3.72	2.57E+03	2.74E+02
SN-126	0.979	87.57 *	37.00	5.15E+01	4.57E+00
CS-137	0.995	661.65 *	85.12	9.29E+01	9.12E+00
CE-139	0.735	165.85 *	80.35	1.90E+02	1.06E+02
AM-241	1.000	59.54 *	35.90	1.34E+02	1.01E+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 : 6/14/2016 12:50:24PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	22.42	2.83358E+01	0.65		
2	32.13	5.60962E-01	10.82		
M 3	53.81	9.23268E+00	2.76		
5	67.84	3.51781E-01	23.21	Tol.	TA-182 TH-230
10	220.53	1.30202E-01	44.18		
11	282.74	9.57439E-02	54.07	Tol.	PA-231
12	325.91	8.32906E-02	58.14		
13	362.41	9.90851E-02	41.66		
14	608.10	5.23741E-02	58.27		
16	784.34	4.65208E-02	61.42	Sum	
17	898.26	6.50980E-02	48.63	Tol.	Y-88
19	1277.04	5.08387E-02	38.65		
21	1378.19	1.29204E-02	36.60		
22	1405.87	2.04264E-02	39.93		
24	1513.80	8.47222E-03	39.99		
25	1834.40	2.00000E-02	16.67	Sum	
26	1906.59	7.58681E-03	35.55		

Analysis Report for 1606038-01
GAS-1302

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
27	1996.26	5.98039E-03	56.70		
28	2088.85	5.08547E-03	52.53		
29	2095.20	3.17460E-03	53.22		
30	2117.30	5.55556E-03	31.62		
31	2166.16	4.59402E-03	64.20		
32	2299.05	7.37037E-03	32.86		
33	2504.14	2.55556E-02	14.74	Sum	
34	2612.79	5.00000E-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	0.87	1460.81 *	10.67	2.06E+00	2.37E+00
CO-57	0.92	122.06 *	85.51	6.45E+01	9.42E+00
		136.48 *	10.60	4.68E+01	4.60E+01
CO-60	0.96	1173.22 *	100.00	1.49E+02	1.30E+01
		1332.49 *	100.00	1.52E+02	1.82E+01
CD-109	0.97	88.03 *	3.72	2.57E+03	2.74E+02
SN-126	0.97	87.57 *	37.00	5.15E+01	4.57E+00
CS-137	0.99	661.65 *	85.12	9.29E+01	9.12E+00
CE-139	0.73	165.85 *	80.35	1.90E+02	1.06E+02
AM-241	1.00	59.54 *	35.90	1.34E+02	1.01E+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 1606038-01
GAS-1302

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.877	2.06E+00	2.37E+00	
CO-57	0.922	6.38E+01	9.23E+00	
CO-60	0.960	1.50E+02	1.06E+01	
? CD-109	0.972	2.57E+03	2.74E+02	
? SN-126	0.979	5.15E+01	4.57E+00	
CS-137	0.995	9.29E+01	9.12E+00	
CE-139	0.735	1.90E+02	1.06E+02	
AM-241	1.000	1.34E+02	1.01E+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 1606038-01
GAS-1302

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 12:50:24PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	22.42	2.83358E+01	0.65		
2	32.13	5.60962E-01	10.82		
M 3	53.81	9.23268E+00	2.76		
5	67.84	3.51781E-01	23.21	Tol.	TA-182 TH-230
10	220.53	1.30202E-01	44.18		
11	282.74	9.57439E-02	54.07	Tol.	PA-231
12	325.91	8.32906E-02	58.14		
13	362.41	9.90851E-02	41.66		
14	608.10	5.23741E-02	58.27		
16	784.34	4.65208E-02	61.42	Sum	
17	898.26	6.50980E-02	48.63	Tol.	Y-88
19	1277.04	5.08387E-02	38.65		
21	1378.19	1.29204E-02	36.60		
22	1405.87	2.04264E-02	39.93		
24	1513.80	8.47222E-03	39.99		
25	1834.40	2.00000E-02	16.67	Sum	
26	1906.59	7.58681E-03	35.55		
27	1996.26	5.98039E-03	56.70		
28	2088.85	5.08547E-03	52.53		
29	2095.20	3.17460E-03	53.22		
30	2117.30	5.55556E-03	31.62		
31	2166.16	4.59402E-03	64.20		
32	2299.05	7.37037E-03	32.86		
33	2504.14	2.55556E-02	14.74	Sum	
34	2612.79	5.00000E-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

Analysis Report for 1606038-01
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	7.26E+06	1.12E+07	1.12E+07	
+	NA-22	1274.54	99.94	4.28E-01	1.51E+00	1.51E+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	7.39E-02	3.78E-01	3.78E-01	
+	K-40	1460.81	*	10.67	2.06E+00	3.84E+00	3.84E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	
+	TI-44	67.88	94.40	-1.66E+01	4.75E-01	4.75E-01	
		78.34	96.00	3.36E-02		5.18E-01	
+	SC-46	889.25	99.98	-4.24E+01	1.05E+04	1.05E+04	
		1120.51	99.99	6.66E+03		1.05E+04	
+	@ V-48	983.52	99.98	1.00E+26	1.00E+26	1.00E+26	
	@	1312.10	97.50	1.00E+26		1.00E+26	
+	CR-51	320.08	9.83	-3.82E+11	3.91E+12	3.91E+12	
+	MN-54	834.83	99.97	-1.68E+00	1.36E+01	1.36E+01	
+	CO-56	846.75	99.96	2.76E+03	1.10E+04	1.71E+04	
		1037.75	14.03	-1.49E+03		1.40E+05	
		1238.25	67.00	6.52E+03		1.55E+04	
		1771.40	15.51	1.54E+04		3.85E+04	
		2598.48	16.90	0.00E+00		1.10E+04	
+	CO-57	122.06	*	85.51	6.45E+01	1.10E+01	1.10E+01
		136.48	*	10.60	4.68E+01		7.51E+01
+	CO-58	810.76	99.40	-1.10E+04	4.63E+04	4.63E+04	
+	FE-59	1099.22	56.50	-4.16E+07	3.03E+07	4.98E+07	
		1291.56	43.20	1.36E+07		3.03E+07	
+	CO-60	1173.22	* 100.00	1.49E+02	1.38E+00	2.55E+00	
		1332.49	* 100.00	1.52E+02		1.38E+00	
+	ZN-65	1115.52	50.75	2.56E+00	6.18E+01	6.18E+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	1.15E+04	4.30E+02	1.72E+03	
		136.00	59.20	-8.27E+01		4.30E+02	
		264.65	59.80	1.32E+01		5.91E+02	
		279.53	25.20	-5.91E+02		1.40E+03	
		400.65	11.40	-4.69E+02		3.89E+03	
+	RB-82	776.52	13.00	-2.10E+13	4.48E+13	4.48E+13	
+	RB-83	520.41	46.00	-4.74E+02	1.18E+04	1.18E+04	
		529.64	30.30	1.54E+03		1.78E+04	
		552.65	16.40	3.99E+03		3.29E+04	

Analysis Report for 1606038-01
GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99	0.43	1.65E+02	2.63E+02	2.63E+02
+	SR-85	513.99	99.27	6.10E+04	9.74E+04	9.74E+04
+	Y-88	898.02	93.40	2.35E+01	5.42E+02	1.73E+03
		1836.01	99.38	8.24E+01		5.42E+02
+	NB-93M	16.57	9.43	-1.56E+02	4.95E+00	4.95E+00
+	NB-94	702.63	100.00	4.00E-01	1.01E+00	1.01E+00
		871.10	100.00	-5.06E-01		1.35E+00
+	NB-95	765.79	99.81	-8.01E+08	2.05E+09	2.05E+09
+	@ NB-95M	235.69	25.00	1.00E+26	1.00E+26	1.00E+26
+	ZR-95	724.18	43.70	6.84E+04	2.34E+05	2.80E+05
		756.72	55.30	5.86E+04		2.34E+05
+	@ MO-99	181.06	6.20	1.00E+26	1.00E+26	1.00E+26
	@	739.58	12.80	1.00E+26		1.00E+26
	@	778.00	4.50	1.00E+26		1.00E+26
+	RU-103	497.08	89.00	-5.22E+07	1.87E+08	1.87E+08
+	RU-106	621.84	9.80	-4.03E+00	7.53E+01	7.53E+01
+	AG-108M	433.93	89.90	1.01E-01	1.05E+00	1.05E+00
		614.37	90.40	1.10E-01		1.06E+00
		722.95	90.50	3.06E-01		1.16E+00
+	CD-109	88.03	* 3.72	2.57E+03	1.13E+02	1.13E+02
+	AG-110M	657.75	93.14	7.72E+02	2.41E+01	5.79E+01
		677.61	10.53	-1.13E+02		1.76E+02
		706.67	16.46	8.81E+01		1.24E+02
		763.93	21.98	-3.25E+01		1.00E+02
		884.67	71.63	-1.21E+00		3.88E+01
		1384.27	23.94	-7.59E+00		2.41E+01
+	CD-113M	263.70	0.02	-1.13E+02	3.45E+03	3.45E+03
+	SN-113	255.12	1.93	-1.20E+04	8.78E+02	2.32E+04
		391.69	64.90	6.26E+02		8.78E+02
+	TE123M	159.00	84.10	-7.17E+00	3.19E+02	3.19E+02
+	SB-124	602.71	97.87	4.54E+03	1.71E+05	2.41E+05
		645.85	7.26	1.76E+06		3.48E+06
		722.78	11.10	2.05E+05		2.32E+06
		1691.02	49.00	-4.09E+04		1.71E+05
+	I-125	35.49	6.49	-2.97E+06	1.20E+06	1.20E+06
+	SB-125	176.33	6.89	-4.57E+00	6.58E+00	1.66E+01
		427.89	29.33	-2.36E+00		6.58E+00
		463.38	10.35	1.28E+01		2.08E+01
		600.56	17.80	-1.02E+00		1.10E+01
		635.90	11.32	2.31E+00		1.85E+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	5.15E+01	2.27E+00	2.27E+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

Analysis Report for 1606038-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	@ SB-127	783.80	14.70	1.00E+26	1.00E+26	1.00E+26
+	I-129	29.78	57.00	-3.25E+00	6.77E-01	6.77E-01
		33.60	13.20	-1.77E+00		2.25E+00
		39.58	7.52	-2.31E+01		4.55E+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	1.94E-01	1.58E+00	1.82E+00
		302.84	17.80	-6.57E-02		4.90E+00
		356.01	60.00	2.56E-01		1.58E+00
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	@ XE-133	81.00	38.00	1.00E+26	1.00E+26	1.00E+26
+	CS-134	563.23	8.38	3.84E+00	2.67E+00	2.92E+01
		569.32	15.43	1.89E+00		1.58E+01
		604.70	97.60	5.64E-01		2.67E+00
		795.84	85.40	1.66E+00		3.65E+00
		801.93	8.73	-8.75E+00		3.56E+01
+	CS-135	268.24	16.00	8.35E-01	4.30E+00	4.30E+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	1.00E+26	1.00E+26	1.00E+26
	@	163.89	4.61	1.00E+26		1.00E+26
	@	176.55	13.56	1.00E+26		1.00E+26
	@	273.65	12.66	1.00E+26		1.00E+26
	@	340.57	48.50	1.00E+26		1.00E+26
	@	818.50	99.70	1.00E+26		1.00E+26
	@	1048.07	79.60	1.00E+26		1.00E+26
	@	1235.34	19.70	1.00E+26		1.00E+26
+	CS-137	661.65	* 85.12	9.29E+01	2.24E+00	2.24E+00
+	LA-138	788.74	34.00	5.43E-01	5.61E-01	3.38E+00
		1435.80	66.00	1.10E-01		5.61E-01
+	CE-139	165.85	* 80.35	1.90E+02	1.70E+02	1.70E+02
+	@ 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	-3.24E+09	1.01E+10	1.01E+10
+	@ 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

Analysis Report for 1606038-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	@ CE-143	664.55	5.20	1.00E+26	1.00E+26	1.00E+26
+	CE-144	133.54	10.80	-2.45E+01	6.28E+01	6.28E+01
+	PM-144	476.78	42.00	7.22E+00	7.62E+00	1.82E+01
		618.01	98.60	1.39E+00		7.62E+00
		696.49	99.49	-3.66E+00		7.64E+00
+	PM-145	36.85	21.70	-6.04E+00	8.81E-01	1.60E+00
		37.36	39.70	-4.23E+00		8.81E-01
		42.30	15.10	-4.97E+00		2.94E+00
		72.40	2.31	-6.57E+00		2.23E+01
+	PM-146	453.90	39.94	7.66E-01	3.63E+00	3.63E+00
		735.90	14.01	1.73E+00		1.10E+01
		747.13	13.10	-3.61E+00		1.17E+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	2.02E+01	3.09E+00	3.17E+00
		244.69	5.40	-3.62E+00		1.46E+01
		344.27	19.13	-2.46E+00		4.61E+00
		778.89	9.20	3.19E-01		1.43E+01
		964.01	10.40	9.18E+00		1.77E+01
		1085.78	7.22	-3.49E+00		2.41E+01
		1112.02	9.60	9.35E+00		1.85E+01
		1407.95	14.94	1.76E+00		3.09E+00
+	GD-153	97.43	31.30	-1.33E+01	2.84E+01	2.84E+01
		103.18	22.20	7.91E+00		4.14E+01
+	EU-154	123.07	40.50	1.17E+01	1.75E+00	1.75E+00
		723.30	19.70	1.75E+00		6.63E+00
		873.19	11.50	-6.25E+00		1.49E+01
		996.32	10.30	3.99E+00		1.84E+01
		1004.76	17.90	-1.55E+00		1.04E+01
		1274.45	35.50	6.92E-01		2.44E+00
+	EU-155	86.50	30.90	9.13E+01	3.07E+00	3.86E+00
		105.30	20.70	-1.16E+00		3.07E+00
+	@ EU-156	811.77	10.40	1.00E+26	1.00E+26	1.00E+26
	@	1153.47	7.20	1.00E+26		1.00E+26
	@	1230.71	8.90	1.00E+26		1.00E+26
+	HO-166M	184.41	72.60	-1.62E-01	7.99E-01	7.99E-01
		280.45	29.60	-4.62E-01		2.34E+00
		410.94	11.10	-1.62E+00		7.89E+00
		711.69	54.10	-7.46E-01		1.85E+00
+	TM-171	66.72	0.14	-9.35E+04	8.82E+02	8.82E+02
+	HF-172	81.75	4.52	-2.25E+00	1.46E+01	3.32E+01
		125.81	11.30	-5.31E+00		1.46E+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	2.52E+00	1.46E+01	3.48E+01
		272.11	21.20	1.01E+01		1.46E+01

Analysis Report for 1606038-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HF-175	343.40	84.00	-4.49E+03	3.97E+04	3.97E+04
+	LU-176	88.34	13.30	1.38E+02	7.21E-01	5.87E+00
		201.83	86.00	-1.60E-01		7.21E-01
		306.78	94.00	2.65E-01		7.73E-01
+	TA-182	67.75	41.20	-2.54E+04	7.26E+02	7.26E+02
		1121.30	34.90	4.72E+02		2.69E+03
		1189.05	16.23	6.93E+01		4.30E+03
		1221.41	26.98	-2.26E+02		2.13E+03
		1231.02	11.44	-1.34E+02		4.93E+03
+	IR-192	308.46	29.68	1.86E+04	5.13E+04	6.01E+04
		468.07	48.10	-2.45E+04		5.13E+04
+	HG-203	279.19	77.30	-3.50E+06	8.31E+06	8.31E+06
+	BI-207	569.67	97.72	1.18E-01	9.82E-01	9.82E-01
		1063.62	74.90	-4.87E-01		2.09E+00
+	TL-208	583.14	30.22	9.84E-01	8.85E-01	3.12E+00
		860.37	4.48	-1.61E+00		3.00E+01
		2614.66	35.85	0.00E+00		8.85E-01
+	BI-210M	262.00	45.00	1.12E-01	1.52E+00	1.52E+00
		300.00	23.00	-4.18E-01		3.11E+00
+	PB-210	46.50	4.25	-4.48E+00	1.35E+01	1.35E+01
+	PB-211	404.84	2.90	6.82E+00	3.00E+01	3.00E+01
		831.96	2.90	-9.49E+00		4.23E+01
+	BI-212	727.17	11.80	-7.44E+00	8.57E+00	8.57E+00
		1620.62	2.75	-4.72E+00		1.23E+01
+	PB-212	238.63	44.60	2.94E-01	1.54E+00	1.54E+00
		300.09	3.41	-2.82E+00		2.10E+01
+	BI-214	609.31	46.30	2.27E-02	2.06E+00	2.06E+00
		1120.29	15.10	5.89E+00		9.30E+00
		1764.49	15.80	-8.82E-01		2.62E+00
		2204.22	4.98	2.14E+00		7.81E+00
+	PB-214	295.21	19.19	-6.25E-01	2.09E+00	3.71E+00
		351.92	37.19	3.73E-01		2.09E+00
+	RN-219	401.80	6.50	-3.44E+00	1.32E+01	1.32E+01
+	RA-223	323.87	3.88	2.85E+00	1.90E+01	1.90E+01
+	RA-224	240.98	3.95	9.26E+00	1.74E+01	1.74E+01
+	@ RA-225	40.00	31.00	1.00E+26	1.00E+26	1.00E+26
+	RA-226	186.21	3.28	3.65E+00	1.80E+01	1.80E+01
+	TH-227	50.10	8.40	2.23E+01	5.98E+00	7.24E+00
		236.00	11.50	4.33E+00		5.98E+00
		256.20	6.30	2.54E+00		1.08E+01
+	AC-228	338.32	11.40	-1.35E+00	5.34E+00	6.67E+00
		911.07	27.70	-1.85E+00		5.34E+00
		969.11	16.60	-7.95E+00		8.94E+00
+	TH-230	48.44	16.90	1.10E+01	3.43E+00	3.43E+00
		62.85	4.60	8.73E+02		2.21E+01
		67.67	0.37	-4.09E+03		1.17E+02
+	PA-231	283.67	1.60	-6.28E+00	3.12E+01	4.31E+01
		302.67	2.30	-4.18E-01		3.12E+01

Analysis Report for 1606038-01
GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-231	25.64	14.70	-1.23E+01	5.49E+00	5.49E+00
		84.21	6.40	4.11E+01		1.06E+01
+	PA-233	311.98	38.60	8.18E+11	2.03E+12	2.03E+12
+	PA-234	131.20	20.40	-2.87E+00	2.33E+00	2.33E+00
		733.99	8.80	-1.10E+00		1.20E+01
		946.00	12.00	3.21E+00		1.35E+01
+	PA-234M	1001.03	0.92	-5.06E+01	1.60E+02	1.60E+02
+	TH-234	63.29	3.80	5.49E+02	2.29E+01	2.29E+01
+	U-235	143.76	10.50	-6.03E-01	4.71E+00	4.71E+00
		163.35	4.70	-8.02E-01		1.14E+01
		205.31	4.70	-9.70E+00		1.33E+01
+	NP-237	86.50	12.60	1.48E+02	6.26E+00	6.26E+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	1.34E+02	2.94E+00	2.94E+00
+	AM-243	74.67	66.00	-2.01E-01	7.04E-01	7.04E-01
+	CM-243	209.75	3.29	8.09E+00	5.27E+00	2.10E+01
		228.14	10.60	2.74E-01		6.88E+00
		277.60	14.00	-1.69E+00		5.27E+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	1.12E+07	1.12E+07	7.26E+06	5.53E+06

Analysis Report for 1606038-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NA-22	1274.54	99.94	1.51E+00	1.51E+00	4.28E-01	7.23E-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	7.39E-02	1.69E-01
+	K-40	1460.81	*	10.67	3.84E+00	2.06E+00	1.77E+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	4.75E-01	4.75E-01	-1.66E+01	2.36E-01
		78.34	96.00	5.18E-01		3.36E-02	2.57E-01
	SC-46	889.25	99.98	1.05E+04	1.05E+04	-4.24E+01	5.18E+03
		1120.51	99.99	1.05E+04		6.66E+03	5.16E+03
@	V-48	983.52	99.98	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1312.10	97.50	1.00E+26		1.00E+26	1.00E+20
	CR-51	320.08	9.83	3.91E+12	3.91E+12	-3.82E+11	1.93E+12
	MN-54	834.83	99.97	1.36E+01	1.36E+01	-1.68E+00	6.69E+00
	CO-56	846.75	99.96	1.71E+04	1.10E+04	2.76E+03	8.42E+03
		1037.75	14.03	1.40E+05		-1.49E+03	6.89E+04
		1238.25	67.00	1.55E+04		6.52E+03	7.49E+03
		1771.40	15.51	3.85E+04		1.54E+04	1.76E+04
		2598.48	16.90	1.10E+04		0.00E+00	3.48E+03
+	CO-57	122.06	*	85.51	1.10E+01	6.45E+01	5.45E+00
		136.48	*	10.60	7.51E+01	4.68E+01	3.73E+01
	CO-58	810.76	99.40	4.63E+04	4.63E+04	-1.10E+04	2.28E+04
	FE-59	1099.22	56.50	4.98E+07	3.03E+07	-4.16E+07	2.45E+07
		1291.56	43.20	3.03E+07		1.36E+07	1.45E+07
+	CO-60	1173.22	*	100.00	2.55E+00	1.38E+00	1.49E+02
		1332.49	*	100.00	1.38E+00	1.52E+02	1.26E+00
	ZN-65	1115.52	50.75	6.18E+01	6.18E+01	2.56E+00	3.04E+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	1.72E+03	4.30E+02	1.15E+04	8.57E+02
		136.00	59.20	4.30E+02		-8.27E+01	2.13E+02
		264.65	59.80	5.91E+02		1.32E+01	2.93E+02
		279.53	25.20	1.40E+03		-5.91E+02	6.95E+02
		400.65	11.40	3.89E+03		-4.69E+02	1.92E+03
	RB-82	776.52	13.00	4.48E+13	4.48E+13	-2.10E+13	2.21E+13
	RB-83	520.41	46.00	1.18E+04	1.18E+04	-4.74E+02	5.81E+03
		529.64	30.30	1.78E+04		1.54E+03	8.78E+03
		552.65	16.40	3.29E+04		3.99E+03	1.62E+04
	KR-85	513.99	0.43	2.63E+02	2.63E+02	1.65E+02	1.30E+02
	SR-85	513.99	99.27	9.74E+04	9.74E+04	6.10E+04	4.81E+04
	Y-88	898.02	93.40	1.73E+03	5.42E+02	2.35E+01	8.51E+02
		1836.01	99.38	5.42E+02		8.24E+01	2.49E+02
	NB-93M	16.57	9.43	4.95E+00	4.95E+00	-1.56E+02	2.47E+00
	NB-94	702.63	100.00	1.01E+00	1.01E+00	4.00E-01	4.99E-01
		871.10	100.00	1.35E+00		-5.06E-01	6.67E-01
	NB-95	765.79	99.81	2.05E+09	2.05E+09	-8.01E+08	1.01E+09
@	NB-95M	235.69	25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	ZR-95	724.18	43.70	2.80E+05	2.34E+05	6.84E+04	1.38E+05
		756.72	55.30	2.34E+05		5.86E+04	1.15E+05
@	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

Analysis Report for 1606038-01
GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RU-103	497.08	89.00	1.87E+08	1.87E+08	-5.22E+07	9.24E+07
RU-106	621.84	9.80	7.53E+01	7.53E+01	-4.03E+00	3.71E+01
AG-108M	433.93	89.90	1.05E+00	1.05E+00	1.01E-01	5.22E-01
	614.37	90.40	1.06E+00		1.10E-01	5.22E-01
	722.95	90.50	1.16E+00		3.06E-01	5.72E-01
+ CD-109	88.03	* 3.72	1.13E+02	1.13E+02	2.57E+03	5.64E+01
AG-110M	657.75	93.14	5.79E+01	2.41E+01	7.72E+02	2.88E+01
	677.61	10.53	1.76E+02		-1.13E+02	8.65E+01
	706.67	16.46	1.24E+02		8.81E+01	6.12E+01
	763.93	21.98	1.00E+02		-3.25E+01	4.94E+01
	884.67	71.63	3.88E+01		-1.21E+00	1.91E+01
	1384.27	23.94	2.41E+01		-7.59E+00	1.07E+01
CD-113M	263.70	0.02	3.45E+03	3.45E+03	-1.13E+02	1.71E+03
SN-113	255.12	1.93	2.32E+04	8.78E+02	-1.20E+04	1.15E+04
	391.69	64.90	8.78E+02		6.26E+02	4.34E+02
TE123M	159.00	84.10	3.19E+02	3.19E+02	-7.17E+00	1.58E+02
SB-124	602.71	97.87	2.41E+05	1.71E+05	4.54E+03	1.19E+05
	645.85	7.26	3.48E+06		1.76E+06	1.72E+06
	722.78	11.10	2.32E+06		2.05E+05	1.14E+06
	1691.02	49.00	1.71E+05		-4.09E+04	7.62E+04
I-125	35.49	6.49	1.20E+06	1.20E+06	-2.97E+06	5.94E+05
SB-125	176.33	6.89	1.66E+01	6.58E+00	-4.57E+00	8.21E+00
	427.89	29.33	6.58E+00		-2.36E+00	3.25E+00
	463.38	10.35	2.08E+01		1.28E+01	1.03E+01
	600.56	17.80	1.10E+01		-1.02E+00	5.44E+00
	635.90	11.32	1.85E+01		2.31E+00	9.10E+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	2.27E+00	2.27E+00	5.15E+01	1.13E+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	6.77E-01	6.77E-01	-3.25E+00	3.37E-01
	33.60	13.20	2.25E+00		-1.77E+00	1.12E+00
	39.58	7.52	4.55E+00		-2.31E+01	2.26E+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	1.82E+00	1.58E+00	1.94E-01	9.06E-01
	302.84	17.80	4.90E+00		-6.57E-02	2.43E+00
	356.01	60.00	1.58E+00		2.56E-01	7.79E-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	2.92E+01	2.67E+00	3.84E+00	1.44E+01
	569.32	15.43	1.58E+01		1.89E+00	7.78E+00
	604.70	97.60	2.67E+00		5.64E-01	1.32E+00
	795.84	85.40	3.65E+00		1.66E+00	1.79E+00
	801.93	8.73	3.56E+01		-8.75E+00	1.75E+01

Analysis Report for 1606038-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-135	268.24	16.00	4.30E+00	4.30E+00	8.35E-01	2.13E+00
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
@ CS-136	153.22	7.46	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	163.89	4.61	1.00E+26		1.00E+26	1.00E+20
@	176.55	13.56	1.00E+26		1.00E+26	1.00E+20
@	273.65	12.66	1.00E+26		1.00E+26	1.00E+20
@	340.57	48.50	1.00E+26		1.00E+26	1.00E+20
@	818.50	99.70	1.00E+26		1.00E+26	1.00E+20
@	1048.07	79.60	1.00E+26		1.00E+26	1.00E+20
@	1235.34	19.70	1.00E+26		1.00E+26	1.00E+20
+ CS-137	661.65	* 85.12	2.24E+00	2.24E+00	9.29E+01	1.11E+00
LA-138	788.74	34.00	3.38E+00	5.61E-01	5.43E-01	1.66E+00
	1435.80	66.00	5.61E-01		1.10E-01	2.56E-01
+ CE-139	165.85	* 80.35	1.70E+02	1.70E+02	1.90E+02	8.45E+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+20
@	423.70	3.20	1.00E+26		1.00E+26	1.00E+20
@	437.55	2.00	1.00E+26		1.00E+26	1.00E+20
@	537.32	25.00	1.00E+26		1.00E+26	1.00E+20
@ LA-140	328.77	20.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	487.03	45.50	1.00E+26		1.00E+26	1.00E+20
@	815.85	23.50	1.00E+26		1.00E+26	1.00E+20
@	1596.49	95.49	1.00E+26		1.00E+26	1.00E+20
CE-141	145.44	48.40	1.01E+10	1.01E+10	-3.24E+09	5.03E+09
@ 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+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	6.28E+01	6.28E+01	-2.45E+01	3.12E+01
PM-144	476.78	42.00	1.82E+01	7.62E+00	7.22E+00	9.01E+00
	618.01	98.60	7.62E+00		1.39E+00	3.75E+00
	696.49	99.49	7.64E+00		-3.66E+00	3.75E+00
PM-145	36.85	21.70	1.60E+00	8.81E-01	-6.04E+00	7.94E-01
	37.36	39.70	8.81E-01		-4.23E+00	4.38E-01
	42.30	15.10	2.94E+00		-4.97E+00	1.46E+00
	72.40	2.31	2.23E+01		-6.57E+00	1.11E+01
PM-146	453.90	39.94	3.63E+00	3.63E+00	7.66E-01	1.79E+00
	735.90	14.01	1.10E+01		1.73E+00	5.42E+00
	747.13	13.10	1.17E+01		-3.61E+00	5.73E+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+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	3.17E+00	3.09E+00	2.02E+01	1.57E+00
	244.69	5.40	1.46E+01		-3.62E+00	7.24E+00
	344.27	19.13	4.61E+00		-2.46E+00	2.28E+00
	778.89	9.20	1.43E+01		3.19E-01	7.03E+00
	964.01	10.40	1.77E+01		9.18E+00	8.73E+00
	1085.78	7.22	2.41E+01		-3.49E+00	1.19E+01
	1112.02	9.60	1.85E+01		9.35E+00	9.09E+00
	1407.95	14.94	3.09E+00		1.76E+00	1.42E+00
GD-153	97.43	31.30	2.84E+01	2.84E+01	-1.33E+01	1.41E+01
	103.18	22.20	4.14E+01		7.91E+00	2.05E+01

Analysis Report for 1606038-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	123.07	40.50	1.75E+00	1.75E+00	1.17E+01	8.71E-01
	723.30	19.70	6.63E+00		1.75E+00	3.26E+00
	873.19	11.50	1.49E+01		-6.25E+00	7.35E+00
	996.32	10.30	1.84E+01		3.99E+00	9.06E+00
	1004.76	17.90	1.04E+01		-1.55E+00	5.12E+00
	1274.45	35.50	2.44E+00		6.92E-01	1.17E+00
EU-155	86.50	30.90	3.86E+00	3.07E+00	9.13E+01	1.92E+00
	105.30	20.70	3.07E+00		-1.16E+00	1.52E+00
@ EU-156	811.77	10.40	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1153.47	7.20	1.00E+26		1.00E+26	1.00E+20
@	1230.71	8.90	1.00E+26		1.00E+26	1.00E+20
HO-166M	184.41	72.60	7.99E-01	7.99E-01	-1.62E-01	3.96E-01
	280.45	29.60	2.34E+00		-4.62E-01	1.16E+00
	410.94	11.10	7.89E+00		-1.62E+00	3.90E+00
	711.69	54.10	1.85E+00		-7.46E-01	9.08E-01
TM-171	66.72	0.14	8.82E+02	8.82E+02	-9.35E+04	4.39E+02
HF-172	81.75	4.52	3.32E+01	1.46E+01	-2.25E+00	1.65E+01
	125.81	11.30	1.46E+01		-5.31E+00	7.26E+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	3.48E+01	1.46E+01	2.52E+00	1.73E+01
	272.11	21.20	1.46E+01		1.01E+01	7.24E+00
HF-175	343.40	84.00	3.97E+04	3.97E+04	-4.49E+03	1.96E+04
LU-176	88.34	13.30	5.87E+00	7.21E-01	1.38E+02	2.92E+00
	201.83	86.00	7.21E-01		-1.60E-01	3.58E-01
	306.78	94.00	7.73E-01		2.65E-01	3.83E-01
TA-182	67.75	41.20	7.26E+02	7.26E+02	-2.54E+04	3.61E+02
	1121.30	34.90	2.69E+03		4.72E+02	1.32E+03
	1189.05	16.23	4.30E+03		6.93E+01	2.09E+03
	1221.41	26.98	2.13E+03		-2.26E+02	1.03E+03
	1231.02	11.44	4.93E+03		-1.34E+02	2.38E+03
IR-192	308.46	29.68	6.01E+04	5.13E+04	1.86E+04	2.98E+04
	468.07	48.10	5.13E+04		-2.45E+04	2.54E+04
HG-203	279.19	77.30	8.31E+06	8.31E+06	-3.50E+06	4.11E+06
BI-207	569.67	97.72	9.82E-01	9.82E-01	1.18E-01	4.84E-01
	1063.62	74.90	2.09E+00		-4.87E-01	1.03E+00
TL-208	583.14	30.22	3.12E+00	8.85E-01	9.84E-01	1.54E+00
	860.37	4.48	3.00E+01		-1.61E+00	1.48E+01
	2614.66	35.85	8.85E-01		0.00E+00	3.71E-01
BI-210M	262.00	45.00	1.52E+00	1.52E+00	1.12E-01	7.53E-01
	300.00	23.00	3.11E+00		-4.18E-01	1.54E+00
PB-210	46.50	4.25	1.35E+01	1.35E+01	-4.48E+00	6.73E+00
PB-211	404.84	2.90	3.00E+01	3.00E+01	6.82E+00	1.48E+01
	831.96	2.90	4.23E+01		-9.49E+00	2.08E+01
BI-212	727.17	11.80	8.57E+00	8.57E+00	-7.44E+00	4.21E+00
	1620.62	2.75	1.23E+01		-4.72E+00	5.49E+00
PB-212	238.63	44.60	1.54E+00	1.54E+00	2.94E-01	7.63E-01
	300.09	3.41	2.10E+01		-2.82E+00	1.04E+01
BI-214	609.31	46.30	2.06E+00	2.06E+00	2.27E-02	1.02E+00
	1120.29	15.10	9.30E+00		5.89E+00	4.56E+00
	1764.49	15.80	2.62E+00		-8.82E-01	1.19E+00

Analysis Report for 1606038-01
GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BI-214	2204.22	4.98	7.81E+00	2.06E+00	2.14E+00	3.45E+00
PB-214	295.21	19.19	3.71E+00	2.09E+00	-6.25E-01	1.83E+00
	351.92	37.19	2.09E+00		3.73E-01	1.03E+00
RN-219	401.80	6.50	1.32E+01	1.32E+01	-3.44E+00	6.54E+00
RA-223	323.87	3.88	1.90E+01	1.90E+01	2.85E+00	9.41E+00
RA-224	240.98	3.95	1.74E+01	1.74E+01	9.26E+00	8.62E+00
@ RA-225	40.00	31.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
RA-226	186.21	3.28	1.80E+01	1.80E+01	3.65E+00	8.93E+00
TH-227	50.10	8.40	7.24E+00	5.98E+00	2.23E+01	3.61E+00
	236.00	11.50	5.98E+00		4.33E+00	2.96E+00
	256.20	6.30	1.08E+01		2.54E+00	5.34E+00
AC-228	338.32	11.40	6.67E+00	5.34E+00	-1.35E+00	3.30E+00
	911.07	27.70	5.34E+00		-1.85E+00	2.63E+00
	969.11	16.60	8.94E+00		-7.95E+00	4.40E+00
TH-230	48.44	16.90	3.43E+00	3.43E+00	1.10E+01	1.71E+00
	62.85	4.60	2.21E+01		8.73E+02	1.10E+01
	67.67	0.37	1.17E+02		-4.09E+03	5.82E+01
PA-231	283.67	1.60	4.31E+01	3.12E+01	-6.28E+00	2.13E+01
	302.67	2.30	3.12E+01		-4.18E-01	1.54E+01
TH-231	25.64	14.70	5.49E+00	5.49E+00	-1.23E+01	2.74E+00
	84.21	6.40	1.06E+01		4.11E+01	5.30E+00
PA-233	311.98	38.60	2.03E+12	2.03E+12	8.18E+11	1.01E+12
PA-234	131.20	20.40	2.33E+00	2.33E+00	-2.87E+00	1.15E+00
	733.99	8.80	1.20E+01		-1.10E+00	5.89E+00
	946.00	12.00	1.35E+01		3.21E+00	6.65E+00
PA-234M	1001.03	0.92	1.60E+02	1.60E+02	-5.06E+01	7.90E+01
TH-234	63.29	3.80	2.29E+01	2.29E+01	5.49E+02	1.14E+01
U-235	143.76	10.50	4.71E+00	4.71E+00	-6.03E-01	2.34E+00
	163.35	4.70	1.14E+01		-8.02E-01	5.67E+00
	205.31	4.70	1.33E+01		-9.70E+00	6.59E+00
NP-237	86.50	12.60	6.26E+00	6.26E+00	1.48E+02	3.12E+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	2.94E+00	2.94E+00	1.34E+02	1.47E+00
AM-243	74.67	66.00	7.04E-01	7.04E-01	-2.01E-01	3.50E-01
CM-243	209.75	3.29	2.10E+01	5.27E+00	8.09E+00	1.04E+01
	228.14	10.60	6.88E+00		2.74E-01	3.41E+00
	277.60	14.00	5.27E+00		-1.69E+00	2.61E+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

Analysis Report for 1606038-01
GAS-1302

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: GAS-1302

Elapsed Live time: 1800
 Elapsed Real Time: 1839

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	2	305	1248
17:	1465	1384	2572	9859	20994	18014	8422	7521
25:	5857	2190	837	630	673	842	1156	1146
33:	859	740	850	850	873	851	1045	1087
41:	1233	1412	1605	1688	1755	1961	2416	3057
49:	3497	3516	3495	3524	3528	3649	3859	4107
57:	6630	18551	24194	12168	2215	962	943	1014
65:	1110	1203	1264	1239	1300	1183	1201	1200
73:	1176	1222	1191	1277	1250	1212	1232	1210
81:	1242	1295	1318	1305	1522	3603	7953	6875
89:	2300	760	666	722	727	655	628	665
97:	641	677	652	690	677	700	634	657
105:	676	626	670	654	680	649	685	717
113:	676	680	642	698	682	685	686	1052
121:	1728	1654	959	658	632	667	626	657
129:	582	657	597	626	628	624	700	744
137:	685	609	599	642	552	575	592	618
145:	576	645	587	591	562	595	593	576
153:	567	567	583	582	578	561	581	583
161:	508	542	547	595	694	623	550	529
169:	550	506	555	537	501	536	495	565
177:	572	534	491	536	548	539	538	593
185:	540	583	582	555	603	584	586	601
193:	585	562	589	589	558	596	546	543
201:	539	571	533	527	545	543	554	531
209:	546	569	573	587	548	544	529	543
217:	563	557	642	597	569	564	551	524
225:	572	560	527	522	511	524	529	507
233:	485	537	510	484	530	545	536	458
241:	475	479	500	483	497	441	432	492
249:	427	453	432	439	434	424	426	458
257:	427	415	452	454	449	423	394	426
265:	394	400	422	420	421	414	396	431
273:	398	425	365	378	374	370	366	375
281:	430	387	390	387	347	317	368	401
289:	359	386	371	360	374	384	397	382
297:	352	365	340	367	364	375	337	376
305:	359	360	383	306	354	393	360	339
313:	335	350	343	308	349	302	362	350
321:	309	297	336	360	310	370	330	339
329:	295	339	346	351	349	328	339	324
337:	329	318	357	333	327	302	330	315
345:	324	304	289	322	300	347	338	314
353:	311	311	327	332	311	291	273	318
361:	319	345	301	301	261	286	340	276

369: 301 314 309 302 318 325 272 289

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	289	337	304	300	284	284	301	300
385:	276	299	317	319	338	292	325	307
393:	319	310	317	296	285	318	305	283
401:	295	311	313	330	285	305	312	318
409:	299	279	313	312	281	276	280	335
417:	290	281	303	324	294	328	304	313
425:	315	288	326	328	301	301	295	322
433:	322	315	293	301	315	293	298	300
441:	296	322	326	322	309	320	281	287
449:	325	315	304	329	309	361	359	290
457:	320	347	327	331	322	362	346	300
465:	343	310	319	305	313	298	311	287
473:	299	297	324	265	276	249	271	244
481:	256	233	231	224	233	257	229	249
489:	242	241	238	242	225	251	228	222
497:	223	247	247	193	237	244	242	217
505:	200	215	221	225	228	262	243	225
513:	223	203	210	226	205	201	210	197
521:	227	205	204	208	227	204	195	214
529:	182	200	172	206	204	211	181	187
537:	189	198	211	177	209	191	197	187
545:	179	199	182	176	182	188	186	188
553:	197	198	161	184	160	181	193	177
561:	176	179	171	153	172	161	168	178
569:	169	149	167	163	179	149	168	171
577:	163	170	181	179	160	173	198	181
585:	176	155	168	172	164	168	169	181
593:	159	170	157	162	157	147	154	170
601:	170	188	165	153	155	176	170	184
609:	179	147	145	155	158	165	142	158
617:	166	176	171	157	145	160	164	158
625:	156	174	164	167	158	164	177	137
633:	192	166	157	168	160	190	136	150
641:	166	169	167	152	161	162	175	153
649:	182	158	141	157	175	142	184	158
657:	155	217	828	3289	5188	3294	883	185
665:	137	123	112	131	140	137	152	124
673:	134	124	129	105	124	130	139	122
681:	118	145	147	114	162	118	142	162
689:	115	148	144	137	135	133	135	118
697:	108	129	130	134	135	141	140	161
705:	131	152	150	122	153	117	125	129
713:	116	135	133	133	141	119	155	132
721:	158	144	115	118	141	147	123	142
729:	138	119	119	150	143	141	153	137
737:	127	152	141	161	130	132	140	131
745:	137	125	145	133	129	132	126	125
753:	137	149	147	136	131	142	137	150
761:	147	131	140	136	143	156	125	132
769:	148	176	136	139	131	151	141	131
777:	152	161	121	136	137	141	159	174
785:	127	137	138	122	135	163	151	136
793:	145	135	132	150	147	135	137	137

801: 107 135 144 136 151 164 145 161

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	123	148	138	130	146	140	145	153
817:	158	146	159	153	147	147	146	147
825:	145	150	146	139	142	148	130	144
833:	158	137	173	143	157	150	152	169
841:	155	152	138	139	158	163	166	160
849:	161	154	152	145	139	165	169	140
857:	166	163	151	180	190	157	162	169
865:	172	166	177	164	136	163	173	176
873:	163	139	179	166	181	170	176	180
881:	150	159	170	169	185	168	159	167
889:	157	164	165	178	167	168	164	176
897:	197	198	191	165	162	157	185	164
905:	188	185	184	177	164	183	194	172
913:	205	188	144	208	175	193	181	172
921:	163	202	184	193	173	185	193	182
929:	186	191	206	193	172	190	195	198
937:	197	188	201	190	202	183	198	208
945:	180	200	210	203	221	189	177	210
953:	185	196	181	202	196	201	188	197
961:	196	216	194	181	166	166	153	187
969:	155	153	162	153	140	165	163	158
977:	158	137	174	157	157	143	141	140
985:	153	155	135	153	165	172	125	160
993:	139	154	176	166	154	146	147	152
1001:	152	135	157	147	143	134	151	151
1009:	158	164	129	156	136	143	152	143
1017:	137	151	152	139	150	141	148	158
1025:	149	145	161	140	140	147	130	135
1033:	142	142	132	149	127	150	150	142
1041:	107	131	134	151	134	120	139	125
1049:	111	130	118	145	116	146	133	123
1057:	119	135	113	127	143	134	141	116
1065:	126	144	133	163	142	123	135	141
1073:	138	125	129	111	105	121	127	134
1081:	125	138	139	121	153	119	116	121
1089:	134	134	128	126	156	147	128	116
1097:	107	139	133	121	124	136	116	130
1105:	136	142	140	144	148	121	118	124
1113:	127	111	136	138	101	107	110	114
1121:	104	93	94	105	76	81	73	71
1129:	85	74	87	90	77	95	81	74
1137:	80	87	88	73	72	79	73	85
1145:	79	85	65	84	84	60	78	78
1153:	76	75	82	82	80	66	60	85
1161:	61	59	87	80	88	89	74	84
1169:	102	301	1439	3323	3419	1691	362	73
1177:	41	60	53	43	41	52	57	47
1185:	60	48	62	41	42	53	40	47
1193:	49	54	50	36	48	39	41	44
1201:	38	35	42	28	33	31	30	28
1209:	31	27	34	29	32	29	34	40
1217:	28	25	37	29	27	32	37	40
1225:	26	34	27	30	31	26	36	30

1233: 30 36 20 26 25 30 27 18

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	30	28	15	21	13	21	20	22
1249:	24	22	17	19	19	21	17	20
1257:	24	16	19	19	16	16	18	18
1265:	13	24	16	16	11	24	18	11
1273:	16	24	24	28	14	15	15	20
1281:	24	21	20	14	13	12	19	17
1289:	15	23	14	22	21	22	17	24
1297:	15	15	20	8	17	17	16	25
1305:	19	20	16	14	16	14	16	18
1313:	14	15	16	22	23	14	21	18
1321:	17	22	26	20	15	14	28	33
1329:	166	866	2413	3232	1975	545	75	9
1337:	2	7	3	7	4	8	3	3
1345:	9	6	4	10	5	7	9	7
1353:	7	7	5	4	5	8	9	3
1361:	3	4	3	5	3	2	5	2
1369:	7	3	1	6	8	2	3	6
1377:	7	9	3	2	3	2	2	0
1385:	4	4	5	1	6	7	5	7
1393:	7	8	6	4	2	1	5	6
1401:	4	2	2	3	4	6	10	4
1409:	6	3	4	5	4	2	3	3
1417:	4	3	4	3	7	4	4	3
1425:	6	2	0	4	1	5	6	5
1433:	3	5	5	3	5	2	4	5
1441:	1	3	5	3	5	7	4	5
1449:	5	5	2	4	4	6	3	4
1457:	1	6	7	11	10	4	3	3
1465:	2	5	2	1	2	2	1	4
1473:	3	5	3	5	2	2	6	2
1481:	2	2	2	2	5	1	3	1
1489:	1	2	1	4	4	3	2	1
1497:	3	1	2	3	2	4	3	2
1505:	3	7	0	2	0	1	2	2
1513:	6	4	5	2	0	1	2	2
1521:	3	2	6	2	3	4	4	6
1529:	3	4	1	6	6	2	3	5
1537:	5	2	6	7	4	2	4	2
1545:	2	3	0	3	5	1	3	4
1553:	6	5	2	5	3	4	6	3
1561:	4	0	5	3	2	5	7	1
1569:	1	2	2	3	1	2	2	1
1577:	3	2	3	2	4	1	2	1
1585:	2	6	2	5	3	2	3	3
1593:	8	4	5	3	1	6	1	6
1601:	3	3	4	3	7	3	3	4
1609:	7	0	7	2	2	4	8	2
1617:	3	2	3	2	3	2	3	4
1625:	2	2	3	4	4	0	5	2
1633:	6	3	4	3	4	3	1	4
1641:	2	4	5	1	3	2	4	5
1649:	1	3	3	2	2	4	1	4
1657:	6	4	3	1	3	1	3	4

1665: 4 0 3 2 3 4 2 1

Sample Title: GAS-1302

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

2097: 1 0 0 2 2 2 0 2

Sample Title: GAS-1302

Channel	1	0	1	1	0	0	0	0
2105:	1	0	1	1	0	0	0	0
2113:	0	1	0	1	2	1	5	0
2121:	0	1	2	1	1	2	3	4
2129:	1	1	1	1	0	5	1	0
2137:	2	0	1	2	2	1	1	1
2145:	0	2	0	2	1	1	0	0
2153:	1	2	2	2	1	1	1	1
2161:	4	1	2	4	0	0	1	4
2169:	1	1	0	0	0	2	1	2
2177:	0	3	1	1	2	2	0	0
2185:	3	0	2	2	0	0	2	1
2193:	1	1	2	1	0	1	3	1
2201:	2	2	1	2	3	2	0	2
2209:	3	1	2	1	0	2	0	0
2217:	2	0	1	1	1	1	1	0
2225:	2	1	0	4	1	2	0	1
2233:	1	4	2	1	1	0	0	0
2241:	2	1	1	0	0	2	1	1
2249:	0	1	0	2	2	1	4	3
2257:	0	2	1	1	0	2	1	1
2265:	0	0	1	2	2	0	1	0
2273:	1	2	1	1	2	1	3	0
2281:	1	3	0	2	0	2	2	1
2289:	2	1	1	3	2	1	1	0
2297:	1	3	4	4	1	2	0	0
2305:	3	1	2	0	1	0	1	0
2313:	1	0	1	1	1	0	0	0
2321:	1	1	0	0	0	1	0	0
2329:	1	2	0	1	3	0	3	0
2337:	0	1	0	3	0	3	0	2
2345:	0	0	0	0	0	0	0	2
2353:	0	1	1	1	1	0	1	0
2361:	0	0	0	0	0	0	1	1
2369:	0	1	0	0	0	0	0	0
2377:	0	0	2	0	0	1	0	0
2385:	0	0	2	1	0	0	0	0
2393:	0	0	0	2	1	0	0	0
2401:	0	1	0	2	0	0	0	0
2409:	1	0	0	1	1	0	0	0
2417:	0	0	0	0	0	0	0	0
2425:	0	0	0	1	1	1	0	0
2433:	0	0	0	1	1	2	1	0
2441:	0	0	0	1	1	1	0	0
2449:	1	0	0	0	0	0	0	0
2457:	1	1	1	0	0	0	0	0
2465:	0	0	1	1	0	0	0	0
2473:	0	0	0	0	1	1	0	0
2481:	0	0	0	1	0	0	0	0
2489:	0	1	0	0	0	1	0	0
2497:	1	0	0	0	1	0	6	8
2505:	19	8	4	0	0	0	0	0
2513:	0	0	0	0	0	0	0	0
2521:	0	0	0	1	0	0	0	0

2529: 0 0 0 0 0 0 0 0 0

Sample Title: GAS-1302

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

2961: 0 0 1 0 0 0 0 0

Sample Title: GAS-1302

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

3393: 0 0 0 0 0 0 0 0

Sample Title: GAS-1302

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	0	0	0	0
3409:	1	0	0	0	0	0	0	0	0
3417:	0	0	1	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0	0
3433:	0	0	0	0	1	0	0	0	0
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	0	0	0	0
3465:	0	0	0	0	0	1	0	0	0
3473:	0	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0	0
3505:	0	0	0	0	1	0	0	0	0
3513:	0	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	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	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:	1	1	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0	0
3609:	0	0	0	0	1	0	0	0	0
3617:	0	1	0	0	0	0	1	0	0
3625:	0	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0	0
3641:	0	1	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0	0
3673:	1	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0	0
3737:	0	0	0	1	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0	0
3761:	0	0	0	0	1	0	0	0	0
3769:	0	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0	0
3809:	0	0	1	0	1	0	0	0	0
3817:	0	0	0	1	0	0	0	0	0

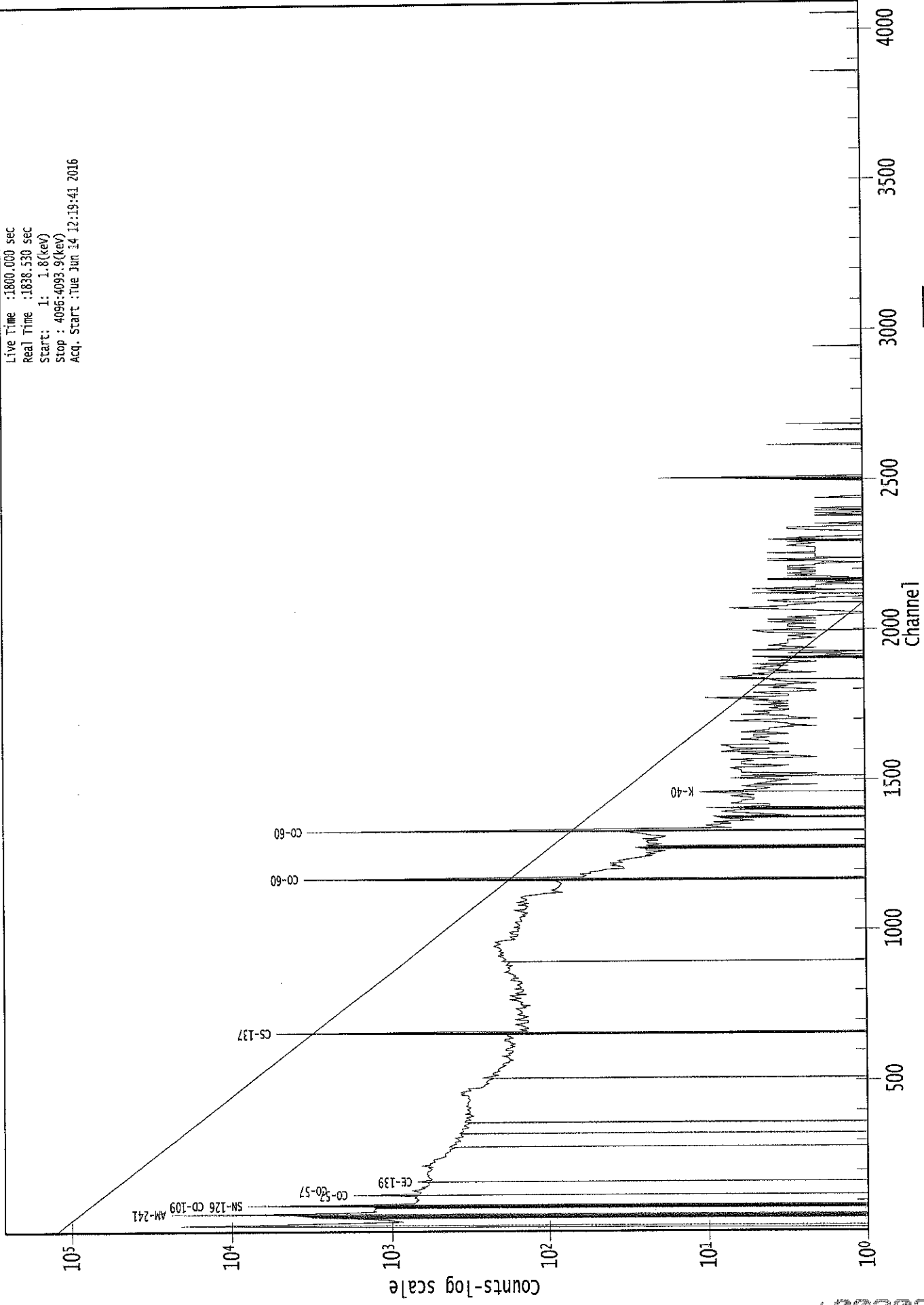
3825: 0 0 1 1 0 0 0 0

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	1	0	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	2	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	1	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	1	0
3897:	0	0	0	0	1	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	1	0
3937:	0	1	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	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	1	0	0	0
4009:	0	0	0	0	0	0	0	1
4017:	0	1	0	0	0	0	0	0
4025:	0	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	2	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

0000038825.CNF

Live Time :1800.000 sec
Real Time :1838.530 sec
Start : 1: 1.8(keV)
Stop : 4096:4093.9(keV)
Acq. Start :Tue Jun 14 12:19:41 2016



ROI Type: 2

ROI Type: 1

00000

VB
6/14/16Analysis Report for 1606038-02
BLANK

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-02
Sample Description : BLANK
Sample Type : SOIL

Sample Size : 7.834E+02 grams
Facility : Countroom

Sample Taken On : 6/14/2016 8:13:41AM
Acquisition Started : 6/14/2016 11:18:46AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3602.4 seconds

Dead Time : 0.07 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 38820

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-02

BLANK

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 12:18:50PM
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	25.09	24.34	0.0000	0.00
2	61.94	61.20	0.0000	0.00
3	217.64	216.97	0.0000	0.00
4	296.40	295.76	0.0000	0.00
5	351.24	350.63	0.0000	0.00
6	385.67	385.07	0.0000	0.00
7	664.30	663.83	0.0000	0.00
8	699.24	698.79	0.0000	0.00
9	720.18	719.74	0.0000	0.00
10	766.53	766.12	0.0000	0.00
11	789.85	789.44	0.0000	0.00
12	809.45	809.06	0.0000	0.00
13	1084.99	1084.75	0.0000	0.00
14	1284.50	1284.36	0.0000	0.00
15	1476.72	1476.70	0.0000	0.00
16	1611.64	1611.71	0.0000	0.00
17	1760.64	1760.80	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1606038-02

BLANK

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 12:18:50PM

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	25.09	20 -	29	24.34	1.02E+02	53.82	3.32E+02	7.03
2	61.94	57 -	66	61.20	4.13E+01	44.63	2.63E+02	5.53
3	217.64	213 -	220	216.97	2.14E+01	25.53	9.12E+01	2.65
4	296.40	292 -	300	295.76	3.27E+01	23.31	6.46E+01	4.58
5	351.24	347 -	355	350.63	2.38E+01	22.62	6.64E+01	4.56
6	385.67	381 -	389	385.07	1.45E+01	17.95	4.10E+01	6.21
7	664.30	656 -	671	663.83	2.93E+01	18.76	2.14E+01	11.05
8	699.24	694 -	703	698.79	1.70E+01	14.42	2.00E+01	2.53
9	720.18	717 -	722	719.74	4.88E+00	7.07	6.25E+00	2.58
10	766.53	763 -	769	766.12	7.04E+00	9.21	9.92E+00	3.06
11	789.85	784 -	793	789.44	1.12E+01	13.42	1.76E+01	2.35
12	809.45	806 -	812	809.06	7.50E+00	8.28	7.00E+00	4.49
13	1084.99	1081 -	1088	1084.75	7.13E+00	9.80	9.75E+00	2.18
14	1284.50	1280 -	1288	1284.36	1.10E+01	6.63	0.00E+00	5.25
15	1476.72	1472 -	1479	1476.70	4.71E+00	6.63	4.57E+00	1.96
16	1611.64	1606 -	1614	1611.71	5.31E+00	7.23	5.38E+00	2.55
17	1760.64	1756 -	1765	1760.80	1.00E+01	6.32	0.00E+00	7.87

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 : 6/14/2016 12:18:50PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Analysis Report for 1606038-02

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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	25.09	20 -	29	1.02E+02	53.82	3.32E+02	4.10E+01
2	61.94	57 -	66	4.13E+01	44.63	2.63E+02	3.51E+01
3	217.64	213 -	220	2.14E+01	25.53	9.12E+01	1.96E+01
4	296.40	292 -	300	3.27E+01	23.31	6.46E+01	1.67E+01
5	351.24	347 -	355	2.38E+01	22.62	6.64E+01	1.68E+01
6	385.67	381 -	389	1.45E+01	17.95	4.10E+01	1.34E+01
7	664.30	656 -	671	2.93E+01	18.76	2.14E+01	1.26E+01
8	699.24	694 -	703	1.70E+01	14.42	2.00E+01	9.73E+00
9	720.18	717 -	722	4.88E+00	7.07	6.25E+00	4.54E+00
10	766.53	763 -	769	7.04E+00	9.21	9.92E+00	6.18E+00
11	789.85	784 -	793	1.12E+01	13.42	1.76E+01	9.56E+00
12	809.45	806 -	812	7.50E+00	8.28	7.00E+00	5.10E+00
13	1084.99	1081 -	1088	7.13E+00	9.80	9.75E+00	6.75E+00
14	1284.50	1280 -	1288	1.10E+01	6.63	0.00E+00	0.00E+00
15	1476.72	1472 -	1479	4.71E+00	6.63	4.57E+00	4.12E+00
16	1611.64	1606 -	1614	5.31E+00	7.23	5.38E+00	4.58E+00
17	1760.64	1756 -	1765	1.00E+01	6.32	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

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/14/2016 12:18:50PM

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	25.09	20 -	29	24.34	1.02E+02	53.82	3.32E+02	TH-231
2	61.94	57 -	66	61.20	4.13E+01	44.63	2.63E+02	TH-230
3	217.64	213 -	220	216.97	2.14E+01	25.53	9.12E+01	.....
4	296.40	292 -	300	295.76	3.27E+01	23.31	6.46E+01	.....
5	351.24	347 -	355	350.63	2.38E+01	22.62	6.64E+01	PB-214
6	385.67	381 -	389	385.07	1.45E+01	17.95	4.10E+01	.....
7	664.30	656 -	671	663.83	2.93E+01	18.76	2.14E+01	CE-143
8	699.24	694 -	703	698.79	1.70E+01	14.42	2.00E+01

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Analysis Report for 1606038-02

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
9	720.18	717 -	722	719.74	4.88E+00	7.07	6.25E+00	SB-126
10	766.53	763 -	769	766.12	7.04E+00	9.21	9.92E+00	NB-95
11	789.85	784 -	793	789.44	1.12E+01	13.42	1.76E+01	.....
12	809.45	806 -	812	809.06	7.50E+00	8.28	7.00E+00	LU-172
13	1084.99	1081 -	1088	1084.75	7.13E+00	9.80	9.75E+00	EU-152
14	1284.50	1280 -	1288	1284.36	1.10E+01	6.63	0.00E+00	.....
15	1476.72	1472 -	1479	1476.70	4.71E+00	6.63	4.57E+00	.....
16	1611.64	1606 -	1614	1611.71	5.31E+00	7.23	5.38E+00	.....
17	1760.64	1756 -	1765	1760.80	1.00E+01	6.32	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 : 6/14/2016 12:18:50PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	25.09	1.02E+02	53.82	3.01E-02	1.78E-03
2	61.94	4.13E+01	44.63	2.35E-02	1.77E-03
3	217.64	2.14E+01	25.53	1.02E-02	1.05E-03
4	296.40	3.27E+01	23.31	7.76E-03	8.42E-04
5	351.24	2.38E+01	22.62	6.62E-03	7.81E-04
6	385.67	1.45E+01	17.95	6.06E-03	7.43E-04
7	664.30	2.93E+01	18.76	3.56E-03	3.39E-04
8	699.24	1.70E+01	14.42	3.38E-03	3.19E-04
9	720.18	4.88E+00	7.07	3.29E-03	3.08E-04
10	766.53	7.04E+00	9.21	3.09E-03	2.82E-04
11	789.85	1.12E+01	13.42	3.00E-03	2.69E-04
12	809.45	7.50E+00	8.28	2.93E-03	2.58E-04
13	1084.99	7.13E+00	9.80	2.21E-03	1.84E-04
14	1284.50	1.10E+01	6.63	1.89E-03	2.03E-04
15	1476.72	4.71E+00	6.63	1.67E-03	1.86E-04
16	1611.64	5.31E+00	7.23	1.55E-03	1.58E-04
17	1760.64	1.00E+01	6.32	1.44E-03	1.27E-04

Analysis Report for 1606038-02

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/14/2016 12:18:50PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037622.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	25.09	1.02E+02	53.82			1.02E+02	5.38E+01
2	61.94	4.13E+01	44.63			4.13E+01	4.46E+01
3	217.64	2.14E+01	25.53			2.14E+01	2.55E+01
4	296.40	3.27E+01	23.31			3.27E+01	2.33E+01
5	351.24	2.38E+01	22.62			2.38E+01	2.26E+01
6	385.67	1.45E+01	17.95			1.45E+01	1.80E+01
7	664.30	2.93E+01	18.76			2.93E+01	1.88E+01
8	699.24	1.70E+01	14.42			1.70E+01	1.44E+01
9	720.18	4.88E+00	7.07			4.88E+00	7.07E+00
10	766.53	7.04E+00	9.21			7.04E+00	9.21E+00
11	789.85	1.12E+01	13.42			1.12E+01	1.34E+01
12	809.45	7.50E+00	8.28			7.50E+00	8.28E+00
13	1084.99	7.13E+00	9.80			7.13E+00	9.80E+00
14	1284.50	1.10E+01	6.63			1.10E+01	6.63E+00
15	1476.72	4.71E+00	6.63			4.71E+00	6.63E+00
16	1611.64	5.31E+00	7.23			5.31E+00	7.23E+00
17	1760.64	1.00E+01	6.32			1.00E+01	6.32E+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 1606038-02

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AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/14/2016 12:18:50PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037622.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	25.09	1.02E+02	53.82			1.02E+02	5.38E+01
2	61.94	4.13E+01	44.63			4.13E+01	4.46E+01
3	217.64	2.14E+01	25.53			2.14E+01	2.55E+01
4	296.40	3.27E+01	23.31			3.27E+01	2.33E+01
5	351.24	2.38E+01	22.62			2.38E+01	2.26E+01
6	385.67	1.45E+01	17.95			1.45E+01	1.80E+01
7	664.30	2.93E+01	18.76			2.93E+01	1.88E+01
8	699.24	1.70E+01	14.42			1.70E+01	1.44E+01
9	720.18	4.88E+00	7.07			4.88E+00	7.07E+00
10	766.53	7.04E+00	9.21			7.04E+00	9.21E+00
11	789.85	1.12E+01	13.42			1.12E+01	1.34E+01
12	809.45	7.50E+00	8.28			7.50E+00	8.28E+00
13	1084.99	7.13E+00	9.80			7.13E+00	9.80E+00
14	1284.50	1.10E+01	6.63			1.10E+01	6.63E+00
15	1476.72	4.71E+00	6.63			4.71E+00	6.63E+00
16	1611.64	5.31E+00	7.23			5.31E+00	7.23E+00
17	1760.64	1.00E+01	6.32			1.00E+01	6.32E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
NB-95	0.915	765.79 *	99.81	2.19E-02	2.88E-02

Analysis Report for 1606038-02

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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.379	295.21	19.19		
		351.92 *	37.19	9.26E-02	8.87E-02
TH-231	0.547	25.64 *	14.70	2.20E-01	1.17E-01
		84.21	6.40		

* = 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 : 6/14/2016 12:18:50PM

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	61.94	1.14708E-02	54.04	Tol.	TH-230
3	217.64	5.94113E-03	59.69		
4	296.40	9.08761E-03	35.63		
6	385.67	4.02778E-03	61.90		
7	664.30	8.14236E-03	32.00	Tol.	CE-143
8	699.24	4.72222E-03	42.42		
9	720.18	1.35417E-03	72.52	Tol.	SB-126
11	789.85	3.11111E-03	59.89		
12	809.45	2.08333E-03	55.18	Tol.	LU-172
13	1084.99	1.97917E-03	68.76	Tol.	EU-152
14	1284.50	3.05556E-03	30.15		
15	1476.72	1.30952E-03	70.35		
16	1611.64	1.47569E-03	68.03		
17	1760.64	2.77778E-03	31.62		

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606038-02

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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
NB-95	0.91	765.79 *	99.81	2.19E-02	2.88E-02
PB-214	0.37	295.21	19.19		
		351.92 *	37.19	9.26E-02	8.87E-02
TH-231	0.54	25.64 *	14.70	2.20E-01	1.17E-01
		84.21	6.40		

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
NB-95	0.915	2.19E-02	2.88E-02	
PB-214	0.379	9.26E-02	8.87E-02	
TH-231	0.547	2.20E-01	1.17E-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 1606038-02

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 12:18:50PM
 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	61.94	1.14708E-02	54.04	Tol.	TH-230
3	217.64	5.94113E-03	59.69		
4	296.40	9.08761E-03	35.63		
6	385.67	4.02778E-03	61.90		
7	664.30	8.14236E-03	32.00	Tol.	CE-143
8	699.24	4.72222E-03	42.42		
9	720.18	1.35417E-03	72.52	Tol.	SB-126
11	789.85	3.11111E-03	59.89		
12	809.45	2.08333E-03	55.18	Tol.	LU-172
13	1084.99	1.97917E-03	68.76	Tol.	EU-152
14	1284.50	3.05556E-03	30.15		
15	1476.72	1.30952E-03	70.35		
16	1611.64	1.47569E-03	68.03		
17	1760.64	2.77778E-03	31.62		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	6.44E-02	5.73E-01	5.73E-01
+	NA-22	1274.54	99.94	3.02E-02	8.00E-02	8.00E-02
+	NA-24	1368.53	99.99	2.22E-02	2.96E-02	1.01E-01

Analysis Report for 1606038-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	NA-24	2754.09	99.86	0.00E+00	2.96E-02	2.96E-02
+	AL-26	1808.65	99.76	-3.64E-02	6.35E-02	6.35E-02
+	K-40	1460.81	10.67	1.04E-01	8.01E-01	8.01E-01
+	AR-41	1293.64	99.16	9.97E-02	3.16E-01	3.16E-01
+	TI-44	67.88	94.40	-1.37E-03	2.67E-02	2.67E-02
		78.34	96.00	1.36E-02		3.00E-02
+	SC-46	889.25	99.98	1.08E-02	8.06E-02	8.06E-02
		1120.51	99.99	1.07E-02		9.01E-02
+	V-48	983.52	99.98	-2.76E-02	5.75E-02	6.93E-02
		1312.10	97.50	-8.90E-03		5.75E-02
+	CR-51	320.08	9.83	1.89E-01	5.49E-01	5.49E-01
+	MN-54	834.83	99.97	2.60E-02	8.44E-02	8.44E-02
+	CO-56	846.75	99.96	1.65E-02	7.10E-02	7.10E-02
		1037.75	14.03	-9.89E-04		5.17E-01
		1238.25	67.00	6.18E-02		1.47E-01
		1771.40	15.51	-2.45E-01		3.18E-01
		2598.48	16.90	-1.06E-01		3.88E-01
+	CO-57	122.06	85.51	-9.72E-03	3.10E-02	3.10E-02
		136.48	10.60	-5.46E-02		2.83E-01
+	CO-58	810.76	99.40	-3.30E-03	6.21E-02	6.21E-02
+	FE-59	1099.22	56.50	-2.08E-02	1.02E-01	1.02E-01
		1291.56	43.20	1.30E-02		1.88E-01
+	CO-60	1173.22	100.00	-3.50E-03	7.41E-02	7.41E-02
		1332.49	100.00	2.50E-04		7.87E-02
+	ZN-65	1115.52	50.75	2.98E-02	1.59E-01	1.59E-01
+	GA-67	93.31	35.70	9.51E-02	8.97E-02	8.97E-02
		208.95	2.24	-1.40E-01		1.81E+00
		300.22	16.00	5.84E-02		3.24E-01
+	SE-75	121.11	16.70	-6.80E-02	5.11E-02	1.57E-01
		136.00	59.20	-5.94E-03		5.11E-02
		264.65	59.80	6.12E-03		7.40E-02
		279.53	25.20	-3.90E-02		1.77E-01
		400.65	11.40	1.37E-01		4.63E-01
+	RB-82	776.52	13.00	3.70E-02	4.88E-01	4.88E-01
+	RB-83	520.41	46.00	-4.99E-02	1.06E-01	1.06E-01
		529.64	30.30	2.13E-02		1.81E-01
		552.65	16.40	1.29E-01		3.86E-01
+	KR-85	513.99	0.43	1.37E+01	1.76E+01	1.76E+01
+	SR-85	513.99	99.27	6.00E-02	7.72E-02	7.72E-02
+	Y-88	898.02	93.40	5.09E-03	5.11E-02	8.04E-02
		1836.01	99.38	6.95E-03		5.11E-02
+	NB-93M	16.57	9.43	2.35E-01	2.26E-01	2.26E-01
+	NB-94	702.63	100.00	8.13E-03	6.37E-02	7.39E-02
		871.10	100.00	9.48E-03		6.37E-02
+	NB-95	765.79	* 99.81	2.19E-02	4.70E-02	4.70E-02
+	NB-95M	235.69	25.00	4.85E-02	1.95E-01	1.95E-01
+	ZR-95	724.18	43.70	2.02E-02	9.66E-02	1.39E-01

Analysis Report for 1606038-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	ZR-95	756.72	55.30	-2.63E-02	9.66E-02	9.66E-02
+	MO-99	181.06	6.20	-5.71E-01	5.71E-01	5.85E-01
		739.58	12.80	1.06E-01		5.71E-01
		778.00	4.50	5.29E-02		1.55E+00
+	RU-103	497.08	89.00	-1.40E-03	6.02E-02	6.02E-02
+	RU-106	621.84	9.80	3.04E-01	6.32E-01	6.32E-01
+	AG-108M	433.93	89.90	-9.61E-03	5.30E-02	5.30E-02
		614.37	90.40	-2.10E-02		6.76E-02
		722.95	90.50	4.31E-03		6.90E-02
+	CD-109	88.03	3.72	-7.85E-01	7.54E-01	7.54E-01
+	AG-110M	657.75	93.14	1.91E-03	7.30E-02	7.30E-02
		677.61	10.53	2.85E-01		7.13E-01
		706.67	16.46	-5.17E-02		3.61E-01
		763.93	21.98	7.03E-03		3.00E-01
		884.67	71.63	2.26E-02		1.12E-01
		1384.27	23.94	5.67E-02		2.72E-01
+	CD-113M	263.70	0.02	-4.01E+01	1.90E+02	1.90E+02
+	SN-113	255.12	1.93	9.11E-01	7.58E-02	2.36E+00
		391.69	64.90	-2.55E-02		7.58E-02
+	TE123M	159.00	84.10	-2.84E-02	3.54E-02	3.54E-02
+	SB-124	602.71	97.87	-1.71E-02	6.62E-02	6.62E-02
		645.85	7.26	-1.72E-01		8.31E-01
		722.78	11.10	4.40E-02		5.47E-01
		1691.02	49.00	-5.49E-03		1.58E-01
+	I-125	35.49	6.49	-7.29E-02	2.80E-01	2.80E-01
+	SB-125	176.33	6.89	5.73E-02	1.71E-01	5.20E-01
		427.89	29.33	1.02E-02		1.71E-01
		463.38	10.35	1.67E-02		4.91E-01
		600.56	17.80	4.21E-03		3.62E-01
		635.90	11.32	1.52E-02		5.36E-01
+	SB-126	414.70	83.30	1.77E-02	6.71E-02	6.75E-02
		666.33	99.60	-1.23E-02		6.71E-02
		695.00	99.60	4.87E-03		6.99E-02
		720.50	53.80	-3.07E-02		9.92E-02
+	SN-126	87.57	37.00	-7.87E-02	7.55E-02	7.55E-02
+	SB-127	473.00	25.00	-2.98E-02	1.84E-01	2.16E-01
		685.20	35.70	-7.50E-02		1.84E-01
		783.80	14.70	-8.31E-02		4.85E-01
+	I-129	29.78	57.00	-1.13E-02	3.50E-02	3.50E-02
		33.60	13.20	-3.62E-02		1.36E-01
		39.58	7.52	-6.95E-02		2.57E-01
+	I-131	284.30	6.05	4.03E-01	6.66E-02	8.18E-01
		364.48	81.20	1.81E-02		6.66E-02
		636.97	7.26	4.68E-01		9.36E-01
		722.89	1.80	2.75E-01		3.41E+00
+	TE-132	49.72	13.10	7.15E-03	5.18E-02	1.61E-01
		228.16	88.00	1.78E-02		5.18E-02
+	BA-133	81.00	33.00	0.00E+00	8.59E-02	8.59E-02
		302.84	17.80	-9.78E-03		2.57E-01

Analysis Report for 1606038-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-133	356.01	60.00	1.61E-02	8.59E-02	9.54E-02
+	I-133	529.87	86.30	8.44E-03	7.17E-02	7.17E-02
+	XE-133	81.00	38.00	0.00E+00	7.61E-02	7.61E-02
+	CS-134	563.23	8.38	7.52E-02	6.56E-02	6.28E-01
		569.32	15.43	-1.63E-01		2.92E-01
		604.70	97.60	-2.16E-02		6.65E-02
		795.84	85.40	-3.01E-02		6.56E-02
		801.93	8.73	1.86E-01		6.74E-01
+	CS-135	268.24	16.00	-4.28E-02	2.71E-01	2.71E-01
+	I-135	1131.51	22.50	-1.02E-01	3.81E-01	4.86E-01
		1260.41	28.60	-2.18E-02		3.81E-01
		1678.03	9.54	2.93E-01		1.38E+00
+	CS-136	153.22	7.46	6.21E-02	5.30E-02	4.39E-01
		163.89	4.61	-7.60E-02		7.31E-01
		176.55	13.56	2.94E-02		2.67E-01
		273.65	12.66	2.18E-02		3.49E-01
		340.57	48.50	-9.47E-03		9.06E-02
		818.50	99.70	-8.92E-03		5.30E-02
		1048.07	79.60	-1.19E-02		7.98E-02
		1235.34	19.70	1.67E-01		5.04E-01
+	CS-137	661.65	85.12	1.39E-02	8.04E-02	8.04E-02
+	LA-138	788.74	34.00	1.05E-01	1.20E-01	2.21E-01
		1435.80	66.00	-1.18E-02		1.20E-01
+	CE-139	165.85	80.35	7.04E-03	4.35E-02	4.35E-02
+	BA-140	162.64	6.70	-8.71E-02	1.88E-01	4.83E-01
		304.84	4.50	6.20E-02		1.02E+00
		423.70	3.20	-2.97E-01		1.58E+00
		437.55	2.00	-4.64E-01		2.42E+00
		537.32	25.00	-1.84E-01		1.88E-01
+	LA-140	328.77	20.50	3.90E-02	9.74E-02	2.57E-01
		487.03	45.50	-3.20E-02		1.22E-01
		815.85	23.50	-6.13E-02		2.24E-01
		1596.49	95.49	2.01E-02		9.74E-02
+	CE-141	145.44	48.40	-8.44E-03	6.85E-02	6.85E-02
+	CE-143	57.36	11.80	-2.22E-02	1.24E-01	1.99E-01
		293.26	42.00	-1.75E-02		1.24E-01
		664.55	5.20	5.09E-01		1.48E+00
+	CE-144	133.54	10.80	-9.01E-02	2.69E-01	2.69E-01
+	PM-144	476.78	42.00	-2.11E-02	5.98E-02	1.30E-01
		618.01	98.60	-2.63E-03		5.98E-02
		696.49	99.49	2.84E-03		7.37E-02
+	PM-145	36.85	21.70	1.06E-02	4.74E-02	8.65E-02
		37.36	39.70	9.41E-04		4.74E-02
		42.30	15.10	1.43E-02		1.33E-01
		72.40	2.31	1.96E-01		1.14E+00
+	PM-146	453.90	39.94	1.85E-02	1.20E-01	1.20E-01
		735.90	14.01	1.77E-01		5.22E-01
		747.13	13.10	2.13E-01		5.31E-01
+	ND-147	91.11	28.90	3.76E-02	1.07E-01	1.07E-01

Analysis Report for 1606038-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	ND-147	531.02	13.10	1.20E-01	1.07E-01	4.24E-01
+	PM-149	285.90	3.10	1.02E+00	1.66E+00	1.66E+00
+	EU-152	121.78	20.50	-4.04E-02	1.29E-01	1.29E-01
		244.69	5.40	-1.21E-01		8.13E-01
		344.27	19.13	2.24E-03		2.41E-01
		778.89	9.20	2.50E-02		7.30E-01
		964.01	10.40	-2.98E-01		5.60E-01
		1085.78	7.22	0.00E+00		1.09E+00
		1112.02	9.60	-1.08E-01		7.34E-01
		1407.95	14.94	-2.87E-02		3.97E-01
+	GD-153	97.43	31.30	-9.69E-02	8.28E-02	8.28E-02
		103.18	22.20	-5.46E-02		1.20E-01
+	EU-154	123.07	40.50	-1.29E-02	6.73E-02	6.73E-02
		723.30	19.70	1.98E-02		3.17E-01
		873.19	11.50	-2.02E-01		4.86E-01
		996.32	10.30	-1.29E-01		7.57E-01
		1004.76	17.90	2.91E-02		4.80E-01
		1274.45	35.50	8.51E-02		2.25E-01
+	EU-155	86.50	30.90	-1.65E-01	8.66E-02	8.66E-02
		105.30	20.70	3.27E-02		1.41E-01
+	EU-156	811.77	10.40	-4.23E-02	6.19E-01	6.19E-01
		1153.47	7.20	1.58E-01		1.12E+00
		1230.71	8.90	-3.68E-01		9.20E-01
+	HO-166M	184.41	72.60	9.03E-03	5.34E-02	5.34E-02
		280.45	29.60	1.76E-02		1.57E-01
		410.94	11.10	-1.15E-01		4.46E-01
		711.69	54.10	1.69E-02		1.07E-01
+	TM-171	66.72	0.14	3.59E+00	1.87E+01	1.87E+01
+	HF-172	81.75	4.52	4.56E-02	2.50E-01	6.29E-01
		125.81	11.30	1.51E-02		2.50E-01
+	LU-172	181.53	20.60	-8.58E-03	1.00E-01	1.85E-01
		810.06	16.63	-2.00E-02		3.76E-01
		912.12	15.25	-1.62E-01		4.77E-01
		1093.66	62.50	1.81E-02		1.00E-01
+	LU-173	100.72	5.24	-3.86E-01	2.09E-01	4.86E-01
		272.11	21.20	2.95E-02		2.09E-01
+	HF-175	343.40	84.00	4.90E-03	5.37E-02	5.37E-02
+	LU-176	88.34	13.30	1.38E-01	4.73E-02	2.34E-01
		201.83	86.00	6.15E-03		4.73E-02
		306.78	94.00	2.17E-02		5.13E-02
+	TA-182	67.75	41.20	-3.14E-03	6.11E-02	6.11E-02
		1121.30	34.90	9.09E-02		2.74E-01
		1189.05	16.23	4.37E-02		4.11E-01
		1221.41	26.98	3.59E-02		2.85E-01
		1231.02	11.44	-2.85E-01		7.11E-01
+	IR-192	308.46	29.68	-2.31E-02	1.09E-01	1.54E-01
		468.07	48.10	3.97E-03		1.09E-01
+	HG-203	279.19	77.30	-1.27E-02	5.79E-02	5.79E-02
+	BI-207	569.67	97.72	-2.57E-02	4.61E-02	4.61E-02

Analysis Report for 1606038-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-207	1063.62	74.90	-1.42E-02	4.61E-02	1.07E-01
+	TL-208	583.14	30.22	-3.41E-02	1.76E-01	1.76E-01
		860.37	4.48	2.39E-01		1.65E+00
		2614.66	35.85	-8.31E-03		2.32E-01
+	BI-210M	262.00	45.00	-1.96E-02	9.66E-02	9.66E-02
		300.00	23.00	1.42E-02		2.22E-01
+	PB-210	46.50	4.25	1.54E-01	4.90E-01	4.90E-01
+	PB-211	404.84	2.90	-1.69E-01	1.71E+00	1.71E+00
		831.96	2.90	7.69E-01		2.90E+00
+	BI-212	727.17	11.80	-4.99E-02	5.17E-01	5.17E-01
		1620.62	2.75	3.02E-01		2.44E+00
+	PB-212	238.63	44.60	-3.22E-02	1.03E-01	1.03E-01
		300.09	3.41	9.58E-02		1.49E+00
+	BI-214	609.31	46.30	6.56E-02	1.53E-01	1.53E-01
		1120.29	15.10	7.05E-02		5.95E-01
		1764.49	15.80	0.00E+00		5.96E-01
		2204.22	4.98	-6.91E-01		1.72E+00
+	PB-214	295.21	19.19	3.10E-02	1.41E-01	2.52E-01
		351.92	* 37.19	9.26E-02		1.41E-01
+	RN-219	401.80	6.50	5.13E-01	8.41E-01	8.41E-01
+	RA-223	323.87	3.88	-3.32E-01	1.30E+00	1.30E+00
+	RA-224	240.98	3.95	4.77E-01	1.19E+00	1.19E+00
+	RA-225	40.00	31.00	-1.70E-02	6.30E-02	6.30E-02
+	RA-226	186.21	3.28	-1.78E-01	1.20E+00	1.20E+00
+	TH-227	50.10	8.40	1.08E-02	2.45E-01	2.45E-01
		236.00	11.50	1.03E-01		4.13E-01
		256.20	6.30	-1.46E-01		7.01E-01
+	AC-228	338.32	11.40	-5.75E-02	2.67E-01	4.03E-01
		911.07	27.70	-7.04E-02		2.67E-01
		969.11	16.60	-6.08E-03		3.91E-01
+	TH-230	48.44	16.90	2.24E-02	1.22E-01	1.22E-01
		62.85	4.60	2.54E-01		5.59E-01
		67.67	0.37	-3.50E-01		6.79E+00
+	PA-231	283.67	1.60	3.62E-01	1.99E+00	2.98E+00
		302.67	2.30	-7.56E-02		1.99E+00
+	TH-231	25.64	* 14.70	2.20E-01	1.83E-01	1.83E-01
		84.21	6.40	2.30E-01		4.51E-01
+	PA-233	311.98	38.60	-2.95E-02	1.22E-01	1.22E-01
+	PA-234	131.20	20.40	1.55E-02	1.42E-01	1.42E-01
		733.99	8.80	2.38E-01		8.28E-01
		946.00	12.00	-5.07E-01		5.03E-01
+	PA-234M	1001.03	0.92	3.31E+00	9.56E+00	9.56E+00
+	TH-234	63.29	3.80	3.38E-01	6.79E-01	6.79E-01
+	U-235	143.76	10.50	8.12E-02	3.15E-01	3.15E-01
		163.35	4.70	-7.37E-02		7.10E-01
		205.31	4.70	-2.73E-01		8.29E-01
+	NP-237	86.50	12.60	-4.05E-01	2.12E-01	2.12E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NP-239	106.10	22.70	3.13E-02	1.35E-01	1.35E-01
		228.18	10.70	1.09E-01		4.33E-01
		277.60	14.10	-1.46E-01		3.16E-01
+	AM-241	59.54	35.90	5.58E-04	6.77E-02	6.77E-02
+	AM-243	74.67	66.00	-1.86E-02	3.96E-02	3.96E-02
+	CM-243	209.75	3.29	8.07E-02	3.04E-01	1.23E+00
		228.14	10.60	1.43E-01		4.16E-01
		277.60	14.00	-1.40E-01		3.04E-01

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

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	5.73E-01	5.73E-01	6.44E-02	2.61E-01
NA-22	1274.54	99.94	8.00E-02	8.00E-02	3.02E-02	3.32E-02
NA-24	1368.53	99.99	1.01E-01	2.96E-02	2.22E-02	4.17E-02
	2754.09	99.86	2.96E-02		0.00E+00	0.00E+00
AL-26	1808.65	99.76	6.35E-02	6.35E-02	-3.64E-02	2.25E-02
K-40	1460.81	10.67	8.01E-01	8.01E-01	1.04E-01	3.28E-01
AR-41	1293.64	99.16	3.16E-01	3.16E-01	9.97E-02	1.31E-01
TI-44	67.88	94.40	2.67E-02	2.67E-02	-1.37E-03	1.27E-02
	78.34	96.00	3.00E-02		1.36E-02	1.43E-02
SC-46	889.25	99.98	8.06E-02	8.06E-02	1.08E-02	3.54E-02
	1120.51	99.99	9.01E-02		1.07E-02	3.90E-02
V-48	983.52	99.98	6.93E-02	5.75E-02	-2.76E-02	2.93E-02
	1312.10	97.50	5.75E-02		-8.90E-03	2.15E-02
CR-51	320.08	9.83	5.49E-01	5.49E-01	1.89E-01	2.56E-01
MN-54	834.83	99.97	8.44E-02	8.44E-02	2.60E-02	3.76E-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-56	846.75	99.96	7.10E-02	7.10E-02	1.65E-02	3.09E-02	
	1037.75	14.03	5.17E-01		-9.89E-04	2.18E-01	
	1238.25	67.00	1.47E-01		6.18E-02	6.38E-02	
	1771.40	15.51	3.18E-01		-2.45E-01	1.01E-01	
	2598.48	16.90	3.88E-01		-1.06E-01	1.23E-01	
CO-57	122.06	85.51	3.10E-02	3.10E-02	-9.72E-03	1.45E-02	
	136.48	10.60	2.83E-01		-5.46E-02	1.33E-01	
CO-58	810.76	99.40	6.21E-02	6.21E-02	-3.30E-03	2.66E-02	
FE-59	1099.22	56.50	1.02E-01	1.02E-01	-2.08E-02	4.05E-02	
	1291.56	43.20	1.88E-01		1.30E-02	7.78E-02	
CO-60	1173.22	100.00	7.41E-02	7.41E-02	-3.50E-03	3.07E-02	
	1332.49	100.00	7.87E-02		2.50E-04	3.23E-02	
ZN-65	1115.52	50.75	1.59E-01	1.59E-01	2.98E-02	6.77E-02	
GA-67	93.31	35.70	8.97E-02	8.97E-02	9.51E-02	4.29E-02	
	208.95	2.24	1.81E+00		-1.40E-01	8.49E-01	
	300.22	16.00	3.24E-01		5.84E-02	1.51E-01	
SE-75	121.11	16.70	1.57E-01	5.11E-02	-6.80E-02	7.36E-02	
	136.00	59.20	5.11E-02		-5.94E-03	2.41E-02	
	264.65	59.80	7.40E-02		6.12E-03	3.45E-02	
	279.53	25.20	1.77E-01		-3.90E-02	8.24E-02	
	400.65	11.40	4.63E-01		1.37E-01	2.12E-01	
RB-82	776.52	13.00	4.88E-01	4.88E-01	3.70E-02	2.11E-01	
RB-83	520.41	46.00	1.06E-01	1.06E-01	-4.99E-02	4.67E-02	
	529.64	30.30	1.81E-01		2.13E-02	8.11E-02	
	552.65	16.40	3.86E-01		1.29E-01	1.75E-01	
KR-85	513.99	0.43	1.76E+01	1.76E+01	1.37E+01	8.16E+00	
SR-85	513.99	99.27	7.72E-02	7.72E-02	6.00E-02	3.57E-02	
Y-88	898.02	93.40	8.04E-02	5.11E-02	5.09E-03	3.50E-02	
	1836.01	99.38	5.11E-02		6.95E-03	1.62E-02	
NB-93M	16.57	9.43	2.26E-01	2.26E-01	2.35E-01	1.09E-01	
NB-94	702.63	100.00	7.39E-02	6.37E-02	8.13E-03	3.31E-02	
	871.10	100.00	6.37E-02		9.48E-03	2.71E-02	
NB-95	765.79	* 99.81	4.70E-02	4.70E-02	2.19E-02	1.93E-02	
NB-95M	235.69	25.00	1.95E-01	1.95E-01	4.85E-02	9.20E-02	
ZR-95	724.18	43.70	1.39E-01	9.66E-02	2.02E-02	6.06E-02	
	756.72	55.30	9.66E-02		-2.63E-02	4.08E-02	
MO-99	181.06	6.20	5.85E-01	5.71E-01	-5.71E-01	2.74E-01	
	739.58	12.80	5.71E-01		1.06E-01	2.53E-01	
	778.00	4.50	1.55E+00		5.29E-02	6.76E-01	
RU-103	497.08	89.00	6.02E-02	6.02E-02	-1.40E-03	2.70E-02	
RU-106	621.84	9.80	6.32E-01	6.32E-01	3.04E-01	2.81E-01	
AG-108M	433.93	89.90	5.30E-02	5.30E-02	-9.61E-03	2.38E-02	
	614.37	90.40	6.76E-02		-2.10E-02	3.01E-02	
	722.95	90.50	6.90E-02		4.31E-03	3.01E-02	
CD-109	88.03	3.72	7.54E-01	7.54E-01	-7.85E-01	3.59E-01	
AG-110M	657.75	93.14	7.30E-02	7.30E-02	1.91E-03	3.26E-02	
	677.61	10.53	7.13E-01		2.85E-01	3.21E-01	
	706.67	16.46	3.61E-01		-5.17E-02	1.57E-01	
	763.93	21.98	3.00E-01		7.03E-03	1.31E-01	
	884.67	71.63	1.12E-01		2.26E-02	4.92E-02	
	1384.27	23.94	2.72E-01		5.67E-02	1.05E-01	
	CD-113M	263.70	0.02	1.90E+02	1.90E+02	-4.01E+01	8.85E+01
	SN-113	255.12	1.93	2.36E+00	7.58E-02	9.11E-01	1.10E+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)
SN-113	391.69	64.90	7.58E-02	7.58E-02	-2.55E-02	3.46E-02
TE123M	159.00	84.10	3.54E-02	3.54E-02	-2.84E-02	1.65E-02
SB-124	602.71	97.87	6.62E-02	6.62E-02	-1.71E-02	2.97E-02
	645.85	7.26	8.31E-01		-1.72E-01	3.66E-01
	722.78	11.10	5.47E-01		4.40E-02	2.38E-01
	1691.02	49.00	1.58E-01		-5.49E-03	6.14E-02
I-125	35.49	6.49	2.80E-01	2.80E-01	-7.29E-02	1.33E-01
SB-125	176.33	6.89	5.20E-01	1.71E-01	5.73E-02	2.45E-01
	427.89	29.33	1.71E-01		1.02E-02	7.72E-02
	463.38	10.35	4.91E-01		1.67E-02	2.21E-01
	600.56	17.80	3.62E-01		4.21E-03	1.62E-01
	635.90	11.32	5.36E-01		1.52E-02	2.37E-01
SB-126	414.70	83.30	6.75E-02	6.71E-02	1.77E-02	3.10E-02
	666.33	99.60	6.71E-02		-1.23E-02	2.98E-02
	695.00	99.60	6.99E-02		4.87E-03	3.11E-02
	720.50	53.80	9.92E-02		-3.07E-02	4.22E-02
SN-126	87.57	37.00	7.55E-02	7.55E-02	-7.87E-02	3.60E-02
SB-127	473.00	25.00	2.16E-01	1.84E-01	-2.98E-02	9.75E-02
	685.20	35.70	1.84E-01		-7.50E-02	8.10E-02
	783.80	14.70	4.85E-01		-8.31E-02	2.12E-01
I-129	29.78	57.00	3.50E-02	3.50E-02	-1.13E-02	1.68E-02
	33.60	13.20	1.36E-01		-3.62E-02	6.48E-02
	39.58	7.52	2.57E-01		-6.95E-02	1.22E-01
I-131	284.30	6.05	8.18E-01	6.66E-02	4.03E-01	3.82E-01
	364.48	81.20	6.66E-02		1.81E-02	3.08E-02
	636.97	7.26	9.36E-01		4.68E-01	4.19E-01
	722.89	1.80	3.41E+00		2.75E-01	1.48E+00
TE-132	49.72	13.10	1.61E-01	5.18E-02	7.15E-03	7.68E-02
	228.16	88.00	5.18E-02		1.78E-02	2.43E-02
BA-133	81.00	33.00	8.59E-02	8.59E-02	0.00E+00	4.11E-02
	302.84	17.80	2.57E-01		-9.78E-03	1.19E-01
	356.01	60.00	9.54E-02		1.61E-02	4.44E-02
I-133	529.87	86.30	7.17E-02	7.17E-02	8.44E-03	3.21E-02
XE-133	81.00	38.00	7.61E-02	7.61E-02	0.00E+00	3.64E-02
CS-134	563.23	8.38	6.28E-01	6.56E-02	7.52E-02	2.77E-01
	569.32	15.43	2.92E-01		-1.63E-01	1.26E-01
	604.70	97.60	6.65E-02		-2.16E-02	2.98E-02
	795.84	85.40	6.56E-02		-3.01E-02	2.77E-02
	801.93	8.73	6.74E-01		1.86E-01	2.87E-01
CS-135	268.24	16.00	2.71E-01	2.71E-01	-4.28E-02	1.26E-01
I-135	1131.51	22.50	4.86E-01	3.81E-01	-1.02E-01	2.04E-01
	1260.41	28.60	3.81E-01		-2.18E-02	1.56E-01
	1678.03	9.54	1.38E+00		2.93E-01	5.57E-01
CS-136	153.22	7.46	4.39E-01	5.30E-02	6.21E-02	2.06E-01
	163.89	4.61	7.31E-01		-7.60E-02	3.44E-01
	176.55	13.56	2.67E-01		2.94E-02	1.25E-01
	273.65	12.66	3.49E-01		2.18E-02	1.62E-01
	340.57	48.50	9.06E-02		-9.47E-03	4.13E-02
	818.50	99.70	5.30E-02		-8.92E-03	2.20E-02
	1048.07	79.60	7.98E-02		-1.19E-02	3.27E-02
	1235.34	19.70	5.04E-01		1.67E-01	2.18E-01
CS-137	661.65	85.12	8.04E-02	8.04E-02	1.39E-02	3.59E-02
LA-138	788.74	34.00	2.21E-01	1.20E-01	1.05E-01	9.76E-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-138	1435.80	66.00	1.20E-01	1.20E-01	-1.18E-02	4.84E-02
CE-139	165.85	80.35	4.35E-02	4.35E-02	7.04E-03	2.05E-02
BA-140	162.64	6.70	4.83E-01	1.88E-01	-8.71E-02	2.26E-01
	304.84	4.50	1.02E+00		6.20E-02	4.72E-01
	423.70	3.20	1.58E+00		-2.97E-01	7.18E-01
	437.55	2.00	2.42E+00		-4.64E-01	1.09E+00
	537.32	25.00	1.88E-01		-1.84E-01	8.20E-02
LA-140	328.77	20.50	2.57E-01	9.74E-02	3.90E-02	1.20E-01
	487.03	45.50	1.22E-01		-3.20E-02	5.51E-02
	815.85	23.50	2.24E-01		-6.13E-02	9.31E-02
	1596.49	95.49	9.74E-02		2.01E-02	3.99E-02
CE-141	145.44	48.40	6.85E-02	6.85E-02	-8.44E-03	3.23E-02
CE-143	57.36	11.80	1.99E-01	1.24E-01	-2.22E-02	9.45E-02
	293.26	42.00	1.24E-01		-1.75E-02	5.75E-02
	664.55	5.20	1.48E+00		5.09E-01	6.63E-01
CE-144	133.54	10.80	2.69E-01	2.69E-01	-9.01E-02	1.26E-01
PM-144	476.78	42.00	1.30E-01	5.98E-02	-2.11E-02	5.89E-02
	618.01	98.60	5.98E-02		-2.63E-03	2.65E-02
	696.49	99.49	7.37E-02		2.84E-03	3.30E-02
PM-145	36.85	21.70	8.65E-02	4.74E-02	1.06E-02	4.11E-02
	37.36	39.70	4.74E-02		9.41E-04	2.25E-02
	42.30	15.10	1.33E-01		1.43E-02	6.33E-02
	72.40	2.31	1.14E+00		1.96E-01	5.44E-01
PM-146	453.90	39.94	1.20E-01	1.20E-01	1.85E-02	5.39E-02
	735.90	14.01	5.22E-01		1.77E-01	2.32E-01
	747.13	13.10	5.31E-01		2.13E-01	2.34E-01
ND-147	91.11	28.90	1.07E-01	1.07E-01	3.76E-02	5.09E-02
	531.02	13.10	4.24E-01		1.20E-01	1.90E-01
PM-149	285.90	3.10	1.66E+00	1.66E+00	1.02E+00	7.75E-01
EU-152	121.78	20.50	1.29E-01	1.29E-01	-4.04E-02	6.05E-02
	244.69	5.40	8.13E-01		-1.21E-01	3.80E-01
	344.27	19.13	2.41E-01		2.24E-03	1.11E-01
	778.89	9.20	7.30E-01		2.50E-02	3.19E-01
	964.01	10.40	5.60E-01		-2.98E-01	2.29E-01
	1085.78	7.22	1.09E+00		0.00E+00	4.64E-01
	1112.02	9.60	7.34E-01		-1.08E-01	3.04E-01
	1407.95	14.94	3.97E-01		-2.87E-02	1.49E-01
GD-153	97.43	31.30	8.28E-02	8.28E-02	-9.69E-02	3.92E-02
	103.18	22.20	1.20E-01		-5.46E-02	5.69E-02
EU-154	123.07	40.50	6.73E-02	6.73E-02	-1.29E-02	3.16E-02
	723.30	19.70	3.17E-01		1.98E-02	1.38E-01
	873.19	11.50	4.86E-01		-2.02E-01	2.02E-01
	996.32	10.30	7.57E-01		-1.29E-01	3.26E-01
	1004.76	17.90	4.80E-01		2.91E-02	2.10E-01
	1274.45	35.50	2.25E-01		8.51E-02	9.34E-02
EU-155	86.50	30.90	8.66E-02	8.66E-02	-1.65E-01	4.12E-02
	105.30	20.70	1.41E-01		3.27E-02	6.68E-02
EU-156	811.77	10.40	6.19E-01	6.19E-01	-4.23E-02	2.66E-01
	1153.47	7.20	1.12E+00		1.58E-01	4.73E-01
	1230.71	8.90	9.20E-01		-3.68E-01	3.85E-01
HO-166M	184.41	72.60	5.34E-02	5.34E-02	9.03E-03	2.52E-02
	280.45	29.60	1.57E-01		1.76E-02	7.33E-02
	410.94	11.10	4.46E-01		-1.15E-01	2.02E-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)
HO-166M	711.69	54.10	1.07E-01	5.34E-02	1.69E-02	4.64E-02
TM-171	66.72	0.14	1.87E+01	1.87E+01	3.59E+00	8.96E+00
HF-172	81.75	4.52	6.29E-01	2.50E-01	4.56E-02	3.00E-01
	125.81	11.30	2.50E-01		1.51E-02	1.18E-01
LU-172	181.53	20.60	1.85E-01	1.00E-01	-8.58E-03	8.70E-02
	810.06	16.63	3.76E-01		-2.00E-02	1.61E-01
	912.12	15.25	4.77E-01		-1.62E-01	2.05E-01
	1093.66	62.50	1.00E-01		1.81E-02	4.05E-02
LU-173	100.72	5.24	4.86E-01	2.09E-01	-3.86E-01	2.29E-01
	272.11	21.20	2.09E-01		2.95E-02	9.72E-02
HF-175	343.40	84.00	5.37E-02	5.37E-02	4.90E-03	2.45E-02
LU-176	88.34	13.30	2.34E-01	4.73E-02	1.38E-01	1.12E-01
	201.83	86.00	4.73E-02		6.15E-03	2.23E-02
	306.78	94.00	5.13E-02		2.17E-02	2.38E-02
TA-182	67.75	41.20	6.11E-02	6.11E-02	-3.14E-03	2.91E-02
	1121.30	34.90	2.74E-01		9.09E-02	1.19E-01
	1189.05	16.23	4.11E-01		4.37E-02	1.66E-01
	1221.41	26.98	2.85E-01		3.59E-02	1.18E-01
	1231.02	11.44	7.11E-01		-2.85E-01	2.98E-01
IR-192	308.46	29.68	1.54E-01	1.09E-01	-2.31E-02	7.11E-02
	468.07	48.10	1.09E-01		3.97E-03	4.89E-02
HG-203	279.19	77.30	5.79E-02	5.79E-02	-1.27E-02	2.69E-02
BI-207	569.67	97.72	4.61E-02	4.61E-02	-2.57E-02	1.99E-02
	1063.62	74.90	1.07E-01		-1.42E-02	4.58E-02
TL-208	583.14	30.22	1.76E-01	1.76E-01	-3.41E-02	7.73E-02
	860.37	4.48	1.65E+00		2.39E-01	7.21E-01
	2614.66	35.85	2.32E-01		-8.31E-03	8.21E-02
BI-210M	262.00	45.00	9.66E-02	9.66E-02	-1.96E-02	4.50E-02
	300.00	23.00	2.22E-01		1.42E-02	1.03E-01
PB-210	46.50	4.25	4.90E-01	4.90E-01	1.54E-01	2.33E-01
PB-211	404.84	2.90	1.71E+00	1.71E+00	-1.69E-01	7.75E-01
	831.96	2.90	2.90E+00		7.69E-01	1.29E+00
BI-212	727.17	11.80	5.17E-01	5.17E-01	-4.99E-02	2.25E-01
	1620.62	2.75	2.44E+00		3.02E-01	9.12E-01
PB-212	238.63	44.60	1.03E-01	1.03E-01	-3.22E-02	4.84E-02
	300.09	3.41	1.49E+00		9.58E-02	6.98E-01
BI-214	609.31	46.30	1.53E-01	1.53E-01	6.56E-02	6.92E-02
	1120.29	15.10	5.95E-01		7.05E-02	2.58E-01
	1764.49	15.80	5.96E-01		0.00E+00	2.41E-01
	2204.22	4.98	1.72E+00		-6.91E-01	6.43E-01
+ PB-214	295.21	19.19	2.52E-01	1.41E-01	3.10E-02	1.18E-01
	351.92	* 37.19	1.41E-01		9.26E-02	6.53E-02
RN-219	401.80	6.50	8.41E-01	8.41E-01	5.13E-01	3.86E-01
RA-223	323.87	3.88	1.30E+00	1.30E+00	-3.32E-01	6.02E-01
RA-224	240.98	3.95	1.19E+00	1.19E+00	4.77E-01	5.61E-01
RA-225	40.00	31.00	6.30E-02	6.30E-02	-1.70E-02	3.00E-02
RA-226	186.21	3.28	1.20E+00	1.20E+00	-1.78E-01	5.65E-01
TH-227	50.10	8.40	2.45E-01	2.45E-01	1.08E-02	1.16E-01
	236.00	11.50	4.13E-01		1.03E-01	1.94E-01
	256.20	6.30	7.01E-01		-1.46E-01	3.27E-01
AC-228	338.32	11.40	4.03E-01	2.67E-01	-5.75E-02	1.85E-01
	911.07	27.70	2.67E-01		-7.04E-02	1.15E-01
	969.11	16.60	3.91E-01		-6.08E-03	1.64E-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)
TH-230	48.44	16.90	1.22E-01	1.22E-01	2.24E-02	5.80E-02
	62.85	4.60	5.59E-01		2.54E-01	2.68E-01
	67.67	0.37	6.79E+00		-3.50E-01	3.24E+00
PA-231	283.67	1.60	2.98E+00	1.99E+00	3.62E-01	1.39E+00
	302.67	2.30	1.99E+00		-7.56E-02	9.19E-01
+ TH-231	25.64 *	14.70	1.83E-01	1.83E-01	2.20E-01	8.88E-02
	84.21	6.40	4.51E-01		2.30E-01	2.16E-01
PA-233	311.98	38.60	1.22E-01	1.22E-01	-2.95E-02	5.65E-02
PA-234	131.20	20.40	1.42E-01	1.42E-01	1.55E-02	6.68E-02
	733.99	8.80	8.28E-01		2.38E-01	3.68E-01
	946.00	12.00	5.03E-01		-5.07E-01	2.09E-01
PA-234M	1001.03	0.92	9.56E+00	9.56E+00	3.31E+00	4.19E+00
TH-234	63.29	3.80	6.79E-01	6.79E-01	3.38E-01	3.25E-01
U-235	143.76	10.50	3.15E-01	3.15E-01	8.12E-02	1.49E-01
	163.35	4.70	7.10E-01		-7.37E-02	3.33E-01
	205.31	4.70	8.29E-01		-2.73E-01	3.89E-01
NP-237	86.50	12.60	2.12E-01	2.12E-01	-4.05E-01	1.01E-01
NP-239	106.10	22.70	1.35E-01	1.35E-01	3.13E-02	6.40E-02
	228.18	10.70	4.33E-01		1.09E-01	2.04E-01
	277.60	14.10	3.16E-01		-1.46E-01	1.46E-01
AM-241	59.54	35.90	6.77E-02	6.77E-02	5.58E-04	3.23E-02
AM-243	74.67	66.00	3.96E-02	3.96E-02	-1.86E-02	1.89E-02
CM-243	209.75	3.29	1.23E+00	3.04E-01	8.07E-02	5.76E-01
	228.14	10.60	4.16E-01		1.43E-01	1.96E-01
	277.60	14.00	3.04E-01		-1.40E-01	1.41E-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 1606038-02
BLANK

No Data Review Comments Entered.

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

Sample Title: BLANK

Elapsed Live time: 3600

Elapsed Real Time: 3602

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	9	53
17:	43	39	22	30	29	39	26	34
25:	28	22	26	24	10	11	10	16
33:	12	16	16	14	17	6	14	16
41:	16	13	18	15	19	18	17	10
49:	12	15	9	15	11	10	14	14
57:	7	20	16	17	18	26	23	16
65:	19	11	20	16	18	14	10	15
73:	15	20	17	26	12	15	17	27
81:	16	17	10	16	25	13	14	12
89:	11	10	27	43	20	8	18	12
97:	10	7	11	8	9	12	15	11
105:	19	10	14	13	16	15	14	15
113:	12	8	16	9	5	7	9	11
121:	7	13	5	12	10	9	10	10
129:	11	12	10	7	12	5	10	5
137:	12	14	14	8	8	14	9	11
145:	13	12	10	11	9	7	13	13
153:	13	10	9	7	5	7	5	10
161:	7	7	18	10	1	11	13	11
169:	10	17	9	5	12	11	9	8
177:	10	7	11	11	7	7	4	11
185:	20	15	10	7	9	10	9	15
193:	13	10	12	5	9	14	13	9
201:	9	10	8	6	9	6	13	8
209:	8	14	6	6	10	6	10	4
217:	13	10	10	4	4	11	6	10
225:	7	8	9	9	9	9	16	7
233:	11	8	8	12	6	14	9	4
241:	10	12	8	11	12	3	4	8
249:	6	10	8	8	8	5	13	7
257:	5	8	8	5	6	12	8	3
265:	7	7	6	9	10	7	2	8
273:	7	5	6	7	6	6	6	4
281:	6	9	8	11	4	9	8	9
289:	4	8	2	3	7	7	9	11
297:	11	4	8	5	4	8	7	7
305:	3	6	3	8	8	7	1	7
313:	3	3	12	11	5	8	4	5
321:	11	6	4	3	8	9	6	7
329:	7	6	6	7	2	4	9	5
337:	3	2	6	1	3	9	5	3
345:	8	2	2	8	5	6	10	15
353:	6	3	2	8	9	3	5	3
361:	4	8	5	6	3	6	9	6

369: 1 1 8 5 6 1 4 2

Sample Title: BLANK

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

801: 1 3 0 1 1 0 3 0

Sample Title: BLANK

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

1233: 1 0 2 2 3 2 2 1

Sample Title: BLANK

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

1665: 0 0 1 0 0 1 1 0

Sample Title: BLANK

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

2097: 0 0 0 0 0 0 0 0 0

Sample Title: BLANK

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

2529: 0 0 0 0 0 0 0 0 0

Sample Title: BLANK

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

2961: 0 0 0 0 0 0 0 0 0

Sample Title: BLANK

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

3393: 1 0 0 0 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:	1	1	0	0	0	0	0	0	0
3417:	1	0	0	0	0	0	0	1	0
3425:	0	0	0	0	0	0	0	0	0
3433:	0	1	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0	0
3449:	0	0	0	0	1	0	0	0	0
3457:	0	0	0	1	0	0	0	0	0
3465:	0	0	0	0	1	0	0	0	2
3473:	0	0	1	0	1	0	0	0	1
3481:	0	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0	0
3505:	0	0	0	1	0	0	0	0	0
3513:	0	0	0	0	0	0	0	1	0
3521:	0	0	0	0	0	0	0	0	0
3529:	0	1	0	0	0	0	0	0	1
3537:	0	0	0	0	0	0	0	0	1
3545:	0	0	0	0	1	0	0	1	0
3553:	0	0	1	0	0	0	0	1	0
3561:	0	0	0	0	0	0	0	0	0
3569:	1	0	0	0	0	0	0	1	0
3577:	1	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0	0
3601:	0	0	0	0	2	0	0	0	0
3609:	0	0	0	0	0	1	0	0	0
3617:	1	0	0	0	0	0	0	1	0
3625:	0	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	1	0	0	0
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	1	0
3665:	0	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	1	0	0	0
3689:	0	0	1	0	0	0	0	0	0
3697:	1	0	0	0	0	1	0	0	0
3705:	0	0	0	0	0	0	0	0	0
3713:	0	0	0	0	1	0	0	1	0
3721:	1	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	1	0	0	0
3753:	0	0	0	0	0	0	0	0	0
3761:	0	2	1	1	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0	1
3777:	0	0	0	0	0	0	0	1	0
3785:	0	0	0	0	0	0	0	0	0
3793:	0	0	0	0	1	0	0	0	1
3801:	0	0	0	0	0	0	0	0	0
3809:	2	0	0	0	1	0	0	0	0
3817:	0	1	0	0	0	0	0	0	0

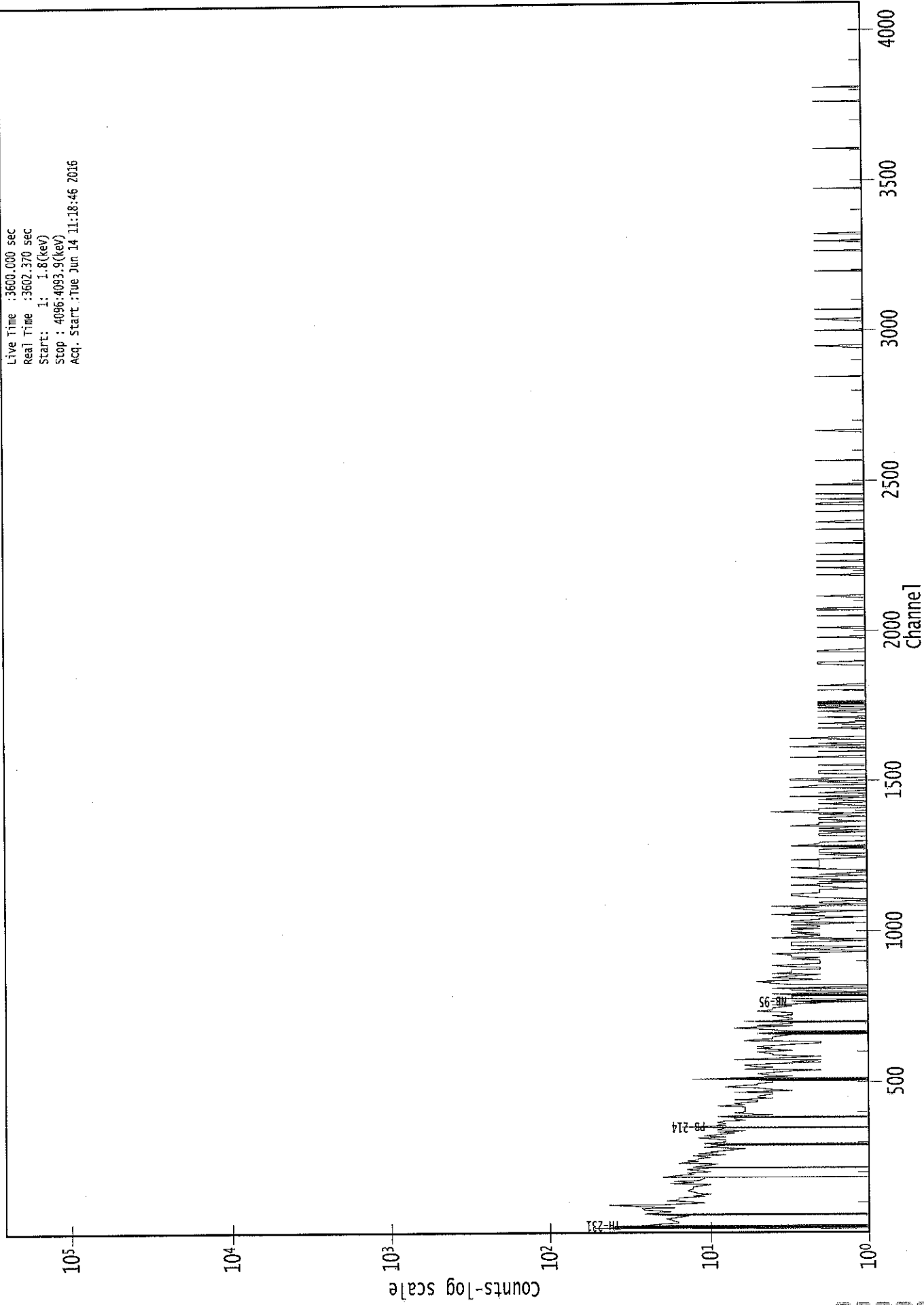
3825: 0 0 0 0 1 0 0 0

Sample Title: BLANK

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

0000038820.CNF

Live Time : 3600.000 sec
Real Time : 3602.370 sec
Start: 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start : Tue Jun 14 11:18:46 2016



ROI Type: 1

Analysis Report for 1606038-03
CP-5018 00-02

14
6/14/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-03
Sample Description : CP-5018 00-02
Sample Type : SOIL

Sample Size : 6.730E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 8:14:04AM
Acquisition Started : 6/14/2016 10:38:06AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.3 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

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

Sample Number : 38814

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-03
CP-5018 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 11:38:10AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.94	77.28	0.0000	0.00
2	87.77	88.11	0.0000	0.00
3	90.38	90.72	0.0000	0.00
4	93.51	93.84	0.0000	0.00
5	99.21	99.54	0.0000	0.00
6	129.37	129.70	0.0000	0.00
7	153.83	154.14	0.0000	0.00
8	178.02	178.33	0.0000	0.00
9	186.72	187.03	0.0000	0.00
10	209.97	210.27	0.0000	0.00
11	239.71	239.99	0.0000	0.00
12	270.76	271.04	0.0000	0.00
13	278.85	279.13	0.0000	0.00
14	295.67	295.93	0.0000	0.00
15	300.77	301.04	0.0000	0.00
16	339.11	339.36	0.0000	0.00
17	352.71	352.96	0.0000	0.00
18	410.32	410.55	0.0000	0.00
19	422.62	422.84	0.0000	0.00
20	464.67	464.88	0.0000	0.00
21	511.09	511.28	0.0000	0.00
22	579.20	579.37	0.0000	0.00
23	583.81	583.98	0.0000	0.00
24	610.02	610.18	0.0000	0.00
25	662.47	662.61	0.0000	0.00
26	712.06	712.18	0.0000	0.00
27	728.25	728.37	0.0000	0.00
28	736.49	736.61	0.0000	0.00
29	755.94	756.05	0.0000	0.00
30	773.26	773.36	0.0000	0.00
31	795.89	795.99	0.0000	0.00
32	805.90	805.99	0.0000	0.00
33	860.86	860.94	0.0000	0.00
34	911.95	912.00	0.0000	0.00
35	933.16	933.21	0.0000	0.00
36	969.87	969.90	0.0000	0.00
37	1122.93	1122.91	0.0000	0.00
38	1238.29	1238.23	0.0000	0.00
39	1378.49	1378.37	0.0000	0.00
40	1461.82	1461.67	0.0000	0.00
41	1495.20	1495.05	0.0000	0.00
42	1510.82	1510.66	0.0000	0.00

Analysis Report for 1606038-03
CP-5018 00-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1520.71	1520.54	0.0000	0.00
44	1563.22	1563.04	0.0000	0.00
45	1587.80	1587.61	0.0000	0.00
46	1729.82	1729.57	0.0000	0.00
47	1765.31	1765.06	0.0000	0.00
48	1929.89	1929.57	0.0000	0.00
49	1978.41	1978.07	0.0000	0.00
50	2104.54	2104.16	0.0000	0.00
51	2183.87	2183.46	0.0000	0.00
52	2205.13	2204.71	0.0000	0.00
53	2300.74	2300.28	0.0000	0.00
54	2317.80	2317.33	0.0000	0.00
55	2368.44	2367.95	0.0000	0.00
56	2615.48	2614.90	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-03
CP-5018 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 11:38:10AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	1	76.94	61 -	81	77.28	1.31E+03	143.73	2.48E+03	2.85
m	2	87.77	83 -	97	88.11	1.90E+02	77.87	1.14E+03	1.63
m	3	90.38	83 -	97	90.72	1.53E+02	79.17	1.07E+03	1.64
m	4	93.51	83 -	97	93.84	3.99E+02	82.95	9.65E+02	1.64
	5	99.21	98 -	102	99.54	6.41E+01	63.69	8.44E+02	1.89
	6	129.37	127 -	132	129.70	6.04E+01	71.60	9.71E+02	1.50
	7	153.83	150 -	159	154.14	1.17E+02	98.36	1.32E+03	1.81
	8	178.02	175 -	182	178.33	7.43E+01	76.42	9.23E+02	3.75
	9	186.72	183 -	190	187.03	2.40E+02	84.33	1.03E+03	1.33
	10	209.97	207 -	213	210.27	1.12E+02	67.96	7.50E+02	1.51
	11	239.71	234 -	245	239.99	1.24E+03	116.45	1.07E+03	1.93
	12	270.76	266 -	274	271.04	1.21E+02	64.71	5.66E+02	2.04
	13	278.85	276 -	284	279.13	5.83E+01	58.27	4.87E+02	1.55
M	14	295.67	291 -	303	295.93	2.99E+02	48.70	2.74E+02	1.66
m	15	300.77	291 -	303	301.04	6.57E+01	38.72	2.78E+02	1.74
	16	339.11	334 -	343	339.36	2.31E+02	67.53	5.19E+02	1.66
	17	352.71	348 -	361	352.96	4.88E+02	84.78	5.60E+02	1.73
M	18	410.32	408 -	428	410.55	3.52E+01	28.25	1.55E+02	2.22
m	19	422.62	408 -	428	422.84	2.44E+01	34.73	1.83E+02	2.23
	20	464.67	459 -	469	464.88	8.74E+01	49.46	2.77E+02	1.89
	21	511.09	505 -	517	511.28	2.06E+02	61.72	3.52E+02	2.57
M	22	579.20	578 -	605	579.37	2.39E+01	12.73	3.61E+01	2.15
m	23	583.81	578 -	605	583.98	2.93E+02	39.82	9.28E+01	1.81
	24	610.02	606 -	613	610.18	3.58E+02	50.12	1.80E+02	1.56
	25	662.47	658 -	668	662.61	4.74E+01	45.73	2.55E+02	4.91
	26	712.06	709 -	715	712.18	3.03E+01	23.70	7.95E+01	3.38
M	27	728.25	724 -	739	728.37	8.66E+01	30.51	1.02E+02	2.26
m	28	736.49	724 -	739	736.61	1.91E+01	24.47	8.77E+01	2.26
	29	755.94	753 -	759	756.05	2.27E+01	25.91	1.07E+02	1.65
	30	773.26	771 -	777	773.36	2.75E+01	31.50	1.47E+02	1.50
	31	795.89	792 -	800	795.99	6.01E+01	32.97	1.30E+02	1.46
	32	805.90	802 -	809	805.99	2.72E+01	30.00	1.32E+02	1.27
	33	860.86	857 -	863	860.94	5.04E+01	26.12	8.72E+01	2.05
	34	911.95	907 -	915	912.00	1.81E+02	44.21	1.90E+02	1.50
	35	933.16	927 -	940	933.21	4.68E+01	37.24	1.34E+02	9.61
	36	969.87	967 -	974	969.90	8.79E+01	38.83	1.78E+02	1.67
	37	1122.93	1117 -	1134	1122.91	8.12E+01	57.22	2.60E+02	2.80
	38	1238.29	1235 -	1242	1238.23	3.13E+01	26.08	9.34E+01	5.06
	39	1378.49	1375 -	1384	1378.37	1.85E+01	22.83	6.11E+01	1.94
	40	1461.82	1456 -	1467	1461.67	7.64E+02	60.63	7.61E+01	2.13

Analysis Report for 1606038-03

CP-5018 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1495.20	1492 - 1497		1495.05	1.11E+01	8.60	5.86E+00	1.25
42	1510.82	1506 - 1516		1510.66	1.92E+01	19.07	3.76E+01	2.40
43	1520.71	1518 - 1522		1520.54	6.71E+00	9.67	1.46E+01	1.65
44	1563.22	1559 - 1565		1563.04	7.00E+00	6.95	4.00E+00	2.77
45	1587.80	1584 - 1591		1587.61	1.47E+01	16.61	3.66E+01	1.23
46	1729.82	1723 - 1736		1729.57	1.91E+01	14.21	1.38E+01	2.80
47	1765.31	1760 - 1769		1765.06	6.10E+01	17.72	1.00E+01	1.63
48	1929.89	1926 - 1934		1929.57	1.00E+01	10.02	1.00E+01	2.06
49	1978.41	1974 - 1980		1978.07	7.11E+00	6.95	3.78E+00	1.69
50	2104.54	2100 - 2109		2104.16	1.63E+01	13.08	1.55E+01	2.99
51	2183.87	2181 - 2186		2183.46	5.29E+00	6.08	3.43E+00	2.15
52	2205.13	2199 - 2208		2204.71	2.47E+01	15.49	2.06E+01	4.23
53	2300.74	2297 - 2303		2300.28	7.45E+00	8.28	7.09E+00	2.43
54	2317.80	2316 - 2320		2317.33	4.25E+00	5.50	3.50E+00	1.09
55	2368.44	2364 - 2371		2367.95	9.09E+00	7.75	3.82E+00	1.57
56	2615.48	2611 - 2620		2614.90	1.20E+02	22.65	3.88E+00	2.81

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 : 6/14/2016 11:38:10AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m 1	76.94	61 -	81	1.31E+03	143.73	2.48E+03	8.19E+01
m 2	87.77	83 -	97	1.90E+02	77.87	1.14E+03	5.55E+01
m 3	90.38	83 -	97	1.53E+02	79.17	1.07E+03	5.38E+01
m 4	93.51	83 -	97	3.99E+02	82.95	9.65E+02	5.11E+01
5	99.21	98 -	102	6.41E+01	63.69	8.44E+02	5.07E+01
6	129.37	127 -	132	6.04E+01	71.60	9.71E+02	5.75E+01
7	153.83	150 -	159	1.17E+02	98.36	1.32E+03	7.89E+01
8	178.02	175 -	182	7.43E+01	76.42	9.23E+02	6.12E+01
9	186.72	183 -	190	2.40E+02	84.33	1.03E+03	6.45E+01
10	209.97	207 -	213	1.12E+02	67.96	7.50E+02	5.31E+01
11	239.71	234 -	245	1.24E+03	116.45	1.07E+03	7.62E+01
12	270.76	266 -	274	1.21E+02	64.71	5.66E+02	5.00E+01

Analysis Report for 1606038-03

CP-5018 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	13	278.85	276 -	284	5.83E+01	58.27	4.87E+02	2.69E+01
M	14	295.67	291 -	303	2.99E+02	48.70	2.74E+02	2.72E+01
m	15	300.77	291 -	303	6.57E+01	38.72	2.78E+02	2.74E+01
	16	339.11	334 -	343	2.31E+02	67.53	5.19E+02	4.96E+01
	17	352.71	348 -	361	4.88E+02	84.78	5.60E+02	2.41E+01
M	18	410.32	408 -	428	3.52E+01	28.25	1.55E+02	2.04E+01
m	19	422.62	408 -	428	2.44E+01	34.73	1.83E+02	2.22E+01
	20	464.67	459 -	469	8.74E+01	49.46	2.77E+02	3.76E+01
	21	511.09	505 -	517	2.06E+02	61.72	3.52E+02	4.49E+01
M	22	579.20	578 -	605	2.39E+01	12.73	3.61E+01	9.88E+00
m	23	583.81	578 -	605	2.93E+02	39.82	9.28E+01	1.58E+01
	24	610.02	606 -	613	3.58E+02	50.12	1.80E+02	2.70E+01
	25	662.47	658 -	668	4.74E+01	45.73	2.55E+02	1.92E+01
	26	712.06	709 -	715	3.03E+01	23.70	7.95E+01	1.73E+01
M	27	728.25	724 -	739	8.66E+01	30.51	1.02E+02	1.66E+01
m	28	736.49	724 -	739	1.91E+01	24.47	8.77E+01	1.54E+01
	29	755.94	753 -	759	2.27E+01	25.91	1.07E+02	1.98E+01
	30	773.26	771 -	777	2.75E+01	31.50	1.47E+02	2.44E+01
	31	795.89	792 -	800	6.01E+01	32.97	1.30E+02	2.39E+01
	32	805.90	802 -	809	2.72E+01	30.00	1.32E+02	2.31E+01
	33	860.86	857 -	863	5.04E+01	26.12	8.72E+01	1.80E+01
	34	911.95	907 -	915	1.81E+02	44.21	1.90E+02	2.88E+01
	35	933.16	927 -	940	4.68E+01	37.24	1.34E+02	2.85E+01
	36	969.87	967 -	974	8.79E+01	38.83	1.78E+02	2.80E+01
	37	1122.93	1117 -	1134	8.12E+01	57.22	2.60E+02	1.87E+01
	38	1238.29	1235 -	1242	3.13E+01	26.08	9.34E+01	1.94E+01
	39	1378.49	1375 -	1384	1.85E+01	22.83	6.11E+01	1.74E+01
	40	1461.82	1456 -	1467	7.64E+02	60.63	7.61E+01	2.05E+01
	41	1495.20	1492 -	1497	1.11E+01	8.60	5.86E+00	4.48E+00
	42	1510.82	1506 -	1516	1.92E+01	19.07	3.76E+01	1.39E+01
	43	1520.71	1518 -	1522	6.71E+00	9.67	1.46E+01	6.71E+00
	44	1563.22	1559 -	1565	7.00E+00	6.95	4.00E+00	3.70E+00
	45	1587.80	1584 -	1591	1.47E+01	16.61	3.66E+01	1.21E+01
	46	1729.82	1723 -	1736	1.91E+01	14.21	1.38E+01	9.21E+00
	47	1765.31	1760 -	1769	6.10E+01	17.72	1.00E+01	6.88E+00
	48	1929.89	1926 -	1934	1.00E+01	10.02	1.00E+01	6.39E+00
	49	1978.41	1974 -	1980	7.11E+00	6.95	3.78E+00	3.66E+00
	50	2104.54	2100 -	2109	1.63E+01	13.08	1.55E+01	8.46E+00
	51	2183.87	2181 -	2186	5.29E+00	6.08	3.43E+00	3.27E+00
	52	2205.13	2199 -	2208	2.47E+01	15.49	2.06E+01	9.77E+00
	53	2300.74	2297 -	2303	7.45E+00	8.28	7.09E+00	5.11E+00
	54	2317.80	2316 -	2320	4.25E+00	5.50	3.50E+00	2.99E+00
	55	2368.44	2364 -	2371	9.09E+00	7.75	3.82E+00	4.00E+00
	56	2615.48	2611 -	2620	1.20E+02	22.65	3.88E+00	4.70E+00

Analysis Report for 1606038-03
CP-5018 00-02

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/14/2016 11:38:10AM

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

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	1	76.94	61 -	81	77.28	1.31E+03	143.73	2.48E+03	.....
m	2	87.77	83 -	97	88.11	1.90E+02	77.87	1.14E+03	SN-126 CD-109 LU-176
m	3	90.38	83 -	97	90.72	1.53E+02	79.17	1.07E+03	ND-147
m	4	93.51	83 -	97	93.84	3.99E+02	82.95	9.65E+02	GA-67
	5	99.21	98 -	102	99.54	6.41E+01	63.69	8.44E+02	.....
	6	129.37	127 -	132	129.70	6.04E+01	71.60	9.71E+02	.....
	7	153.83	150 -	159	154.14	1.17E+02	98.36	1.32E+03	CS-136
	8	178.02	175 -	182	178.33	7.43E+01	76.42	9.23E+02	.....
	9	186.72	183 -	190	187.03	2.40E+02	84.33	1.03E+03	RA-226
	10	209.97	207 -	213	210.27	1.12E+02	67.96	7.50E+02	CM-243
	11	239.71	234 -	245	239.99	1.24E+03	116.45	1.07E+03	.....
	12	270.76	266 -	274	271.04	1.21E+02	64.71	5.66E+02	.....
	13	278.85	276 -	284	279.13	5.83E+01	58.27	4.87E+02	HG-203 SE-75
M	14	295.67	291 -	303	295.93	2.99E+02	48.70	2.74E+02	PB-214
m	15	300.77	291 -	303	301.04	6.57E+01	38.72	2.78E+02	GA-67 PB-212 BI-210M
	16	339.11	334 -	343	339.36	2.31E+02	67.53	5.19E+02	AC-228
	17	352.71	348 -	361	352.96	4.88E+02	84.78	5.60E+02	PB-214
M	18	410.32	408 -	428	410.55	3.52E+01	28.25	1.55E+02	HO-166M
m	19	422.62	408 -	428	422.84	2.44E+01	34.73	1.83E+02	.....
	20	464.67	459 -	469	464.88	8.74E+01	49.46	2.77E+02	.....
	21	511.09	505 -	517	511.28	2.06E+02	61.72	3.52E+02	.....
M	22	579.20	578 -	605	579.37	2.39E+01	12.73	3.61E+01	.....
m	23	583.81	578 -	605	583.98	2.93E+02	39.82	9.28E+01	TL-208
	24	610.02	606 -	613	610.18	3.58E+02	50.12	1.80E+02	BI-214
	25	662.47	658 -	668	662.61	4.74E+01	45.73	2.55E+02	CS-137

Analysis Report for 1606038-03

CP-5018 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	26	712.06	709 -	715	712.18	3.03E+01	23.70	7.95E+01	HO-166M
M	27	728.25	724 -	739	728.37	8.66E+01	30.51	1.02E+02	.....
m	28	736.49	724 -	739	736.61	1.91E+01	24.47	8.77E+01	PM-146
	29	755.94	753 -	759	756.05	2.27E+01	25.91	1.07E+02	ZR-95
	30	773.26	771 -	777	773.36	2.75E+01	31.50	1.47E+02	.....
	31	795.89	792 -	800	795.99	6.01E+01	32.97	1.30E+02	CS-134
	32	805.90	802 -	809	805.99	2.72E+01	30.00	1.32E+02	.....
	33	860.86	857 -	863	860.94	5.04E+01	26.12	8.72E+01	TL-208
	34	911.95	907 -	915	912.00	1.81E+02	44.21	1.90E+02	LU-172 AC-228
	35	933.16	927 -	940	933.21	4.68E+01	37.24	1.34E+02	.....
	36	969.87	967 -	974	969.90	8.79E+01	38.83	1.78E+02	AC-228
	37	1122.93	1117 -	1134	1122.91	8.12E+01	57.22	2.60E+02	.....
	38	1238.29	1235 -	1242	1238.23	3.13E+01	26.08	9.34E+01	CO-56
	39	1378.49	1375 -	1384	1378.37	1.85E+01	22.83	6.11E+01	.....
	40	1461.82	1456 -	1467	1461.67	7.64E+02	60.63	7.61E+01	.....
	41	1495.20	1492 -	1497	1495.05	1.11E+01	8.60	5.86E+00	.....
	42	1510.82	1506 -	1516	1510.66	1.92E+01	19.07	3.76E+01	.....
	43	1520.71	1518 -	1522	1520.54	6.71E+00	9.67	1.46E+01	.....
	44	1563.22	1559 -	1565	1563.04	7.00E+00	6.95	4.00E+00	.....
	45	1587.80	1584 -	1591	1587.61	1.47E+01	16.61	3.66E+01	.....
	46	1729.82	1723 -	1736	1729.57	1.91E+01	14.21	1.38E+01	.....
	47	1765.31	1760 -	1769	1765.06	6.10E+01	17.72	1.00E+01	BI-214
	48	1929.89	1926 -	1934	1929.57	1.00E+01	10.02	1.00E+01	.....
	49	1978.41	1974 -	1980	1978.07	7.11E+00	6.95	3.78E+00	.....
	50	2104.54	2100 -	2109	2104.16	1.63E+01	13.08	1.55E+01	.....
	51	2183.87	2181 -	2186	2183.46	5.29E+00	6.08	3.43E+00	.....
	52	2205.13	2199 -	2208	2204.71	2.47E+01	15.49	2.06E+01	BI-214
	53	2300.74	2297 -	2303	2300.28	7.45E+00	8.28	7.09E+00	.....
	54	2317.80	2316 -	2320	2317.33	4.25E+00	5.50	3.50E+00	.....
	55	2368.44	2364 -	2371	2367.95	9.09E+00	7.75	3.82E+00	.....
	56	2615.48	2611 -	2620	2614.90	1.20E+02	22.65	3.88E+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 : 6/14/2016 11:38:10AM

Analysis Report for 1606038-03
CP-5018 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	1	76.94	1.31E+03	143.73	2.77E-02	2.37E-03
m	2	87.77	1.90E+02	77.87	2.85E-02	2.73E-03
m	3	90.38	1.53E+02	79.17	2.85E-02	2.69E-03
m	4	93.51	3.99E+02	82.95	2.86E-02	2.63E-03
	5	99.21	6.41E+01	63.69	2.85E-02	2.52E-03
	6	129.37	6.04E+01	71.60	2.67E-02	2.09E-03
	7	153.83	1.17E+02	98.36	2.48E-02	2.15E-03
	8	178.02	7.43E+01	76.42	2.30E-02	2.09E-03
	9	186.72	2.40E+02	84.33	2.23E-02	2.02E-03
	10	209.97	1.12E+02	67.96	2.08E-02	1.85E-03
	11	239.71	1.24E+03	116.45	1.92E-02	1.63E-03
	12	270.76	1.21E+02	64.71	1.77E-02	1.40E-03
	13	278.85	5.83E+01	58.27	1.73E-02	1.34E-03
M	14	295.67	2.99E+02	48.70	1.67E-02	1.31E-03
m	15	300.77	6.57E+01	38.72	1.65E-02	1.30E-03
	16	339.11	2.31E+02	67.53	1.52E-02	1.22E-03
	17	352.71	4.88E+02	84.78	1.47E-02	1.19E-03
M	18	410.32	3.52E+01	28.25	1.32E-02	1.09E-03
m	19	422.62	2.44E+01	34.73	1.29E-02	1.08E-03
	20	464.67	8.74E+01	49.46	1.21E-02	1.04E-03
	21	511.09	2.06E+02	61.72	1.12E-02	9.90E-04
M	22	579.20	2.39E+01	12.73	1.02E-02	9.20E-04
m	23	583.81	2.93E+02	39.82	1.02E-02	9.15E-04
	24	610.02	3.58E+02	50.12	9.82E-03	8.88E-04
	25	662.47	4.74E+01	45.73	9.21E-03	8.33E-04
	26	712.06	3.03E+01	23.70	8.70E-03	7.89E-04
M	27	728.25	8.66E+01	30.51	8.55E-03	7.75E-04
m	28	736.49	1.91E+01	24.47	8.47E-03	7.67E-04
	29	755.94	2.27E+01	25.91	8.30E-03	7.50E-04
	30	773.26	2.75E+01	31.50	8.15E-03	7.34E-04
	31	795.89	6.01E+01	32.97	7.96E-03	7.14E-04
	32	805.90	2.72E+01	30.00	7.88E-03	7.05E-04
	33	860.86	5.04E+01	26.12	7.48E-03	6.56E-04
	34	911.95	1.81E+02	44.21	7.14E-03	6.15E-04
	35	933.16	4.68E+01	37.24	7.01E-03	6.04E-04
	36	969.87	8.79E+01	38.83	6.80E-03	5.85E-04
	37	1122.93	8.12E+01	57.22	6.06E-03	5.05E-04
	38	1238.29	3.13E+01	26.08	5.61E-03	4.68E-04
	39	1378.49	1.85E+01	22.83	5.18E-03	4.40E-04
	40	1461.82	7.64E+02	60.63	4.97E-03	4.19E-04
	41	1495.20	1.11E+01	8.60	4.89E-03	4.11E-04
	42	1510.82	1.92E+01	19.07	4.86E-03	4.07E-04
	43	1520.71	6.71E+00	9.67	4.83E-03	4.04E-04
	44	1563.22	7.00E+00	6.95	4.74E-03	3.94E-04
	45	1587.80	1.47E+01	16.61	4.70E-03	3.88E-04
	46	1729.82	1.91E+01	14.21	4.45E-03	3.52E-04
	47	1765.31	6.10E+01	17.72	4.39E-03	3.43E-04
	48	1929.89	1.00E+01	10.02	4.18E-03	3.26E-04
	49	1978.41	7.11E+00	6.95	4.13E-03	3.26E-04
	50	2104.54	1.63E+01	13.08	4.02E-03	3.26E-04
	51	2183.87	5.29E+00	6.08	3.96E-03	3.26E-04
	52	2205.13	2.47E+01	15.49	3.95E-03	3.26E-04
	53	2300.74	7.45E+00	8.28	3.89E-03	3.26E-04

Analysis Report for 1606038-03
CP-5018 00-02

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2317.80	4.25E+00	5.50	3.88E-03	3.26E-04
55	2368.44	9.09E+00	7.75	3.86E-03	3.26E-04
56	2615.48	1.20E+02	22.65	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 : 6/14/2016 11:38:10AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037619.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m 1	76.94	1.31E+03	143.73	2.07E+01	1.05E+01	1.29E+03	1.44E+02
m 2	87.77	1.90E+02	77.87	6.70E+00	2.87E+00	1.84E+02	7.79E+01
m 3	90.38	1.53E+02	79.17			1.53E+02	7.92E+01
m 4	93.51	3.99E+02	82.95	1.48E+02	9.68E+00	2.51E+02	8.35E+01
5	99.21	6.41E+01	63.69			6.41E+01	6.37E+01
6	129.37	6.04E+01	71.60			6.04E+01	7.16E+01
7	153.83	1.17E+02	98.36			1.17E+02	9.84E+01
8	178.02	7.43E+01	76.42			7.43E+01	7.64E+01
9	186.72	2.40E+02	84.33	6.64E+01	1.07E+01	1.73E+02	8.50E+01
10	209.97	1.12E+02	67.96			1.12E+02	6.80E+01
11	239.71	1.24E+03	116.45	1.23E+01	5.65E+00	1.23E+03	1.17E+02
12	270.76	1.21E+02	64.71			1.21E+02	6.47E+01
13	278.85	5.83E+01	58.27			5.83E+01	5.83E+01
M 14	295.67	2.99E+02	48.70	5.98E+00	5.34E+00	2.93E+02	4.90E+01
m 15	300.77	6.57E+01	38.72			6.57E+01	3.87E+01
16	339.11	2.31E+02	67.53	4.42E+00	4.48E+00	2.26E+02	6.77E+01
17	352.71	4.88E+02	84.78	9.38E+00	4.37E+00	4.79E+02	8.49E+01
M 18	410.32	3.52E+01	28.25			3.52E+01	2.82E+01
m 19	422.62	2.44E+01	34.73			2.44E+01	3.47E+01
20	464.67	8.74E+01	49.46			8.74E+01	4.95E+01
21	511.09	2.06E+02	61.72	8.60E+01	5.42E+00	1.20E+02	6.20E+01
M 22	579.20	2.39E+01	12.73			2.39E+01	1.27E+01
m 23	583.81	2.93E+02	39.82	9.83E+00	3.55E+00	2.83E+02	4.00E+01
24	610.02	3.58E+02	50.12	4.88E+00	4.12E+00	3.53E+02	5.03E+01
25	662.47	4.74E+01	45.73			4.74E+01	4.57E+01
26	712.06	3.03E+01	23.70			3.03E+01	2.37E+01
M 27	728.25	8.66E+01	30.51			8.66E+01	3.05E+01

Analysis Report for 1606038-03
CP-5018 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m 28	736.49	1.91E+01	24.47			1.91E+01	2.45E+01
29	755.94	2.27E+01	25.91			2.27E+01	2.59E+01
30	773.26	2.75E+01	31.50			2.75E+01	3.15E+01
31	795.89	6.01E+01	32.97			6.01E+01	3.30E+01
32	805.90	2.72E+01	30.00			2.72E+01	3.00E+01
33	860.86	5.04E+01	26.12			5.04E+01	2.61E+01
34	911.95	1.81E+02	44.21	5.44E+00	2.47E+00	1.76E+02	4.43E+01
35	933.16	4.68E+01	37.24			4.68E+01	3.72E+01
36	969.87	8.79E+01	38.83			8.79E+01	3.88E+01
37	1122.93	8.12E+01	57.22			8.12E+01	5.72E+01
38	1238.29	3.13E+01	26.08			3.13E+01	2.61E+01
39	1378.49	1.85E+01	22.83			1.85E+01	2.28E+01
40	1461.82	7.64E+02	60.63	6.04E+00	1.30E+00	7.58E+02	6.06E+01
41	1495.20	1.11E+01	8.60			1.11E+01	8.60E+00
42	1510.82	1.92E+01	19.07			1.92E+01	1.91E+01
43	1520.71	6.71E+00	9.67			6.71E+00	9.67E+00
44	1563.22	7.00E+00	6.95			7.00E+00	6.95E+00
45	1587.80	1.47E+01	16.61			1.47E+01	1.66E+01
46	1729.82	1.91E+01	14.21			1.91E+01	1.42E+01
47	1765.31	6.10E+01	17.72	1.45E+00	2.00E+00	5.96E+01	1.78E+01
48	1929.89	1.00E+01	10.02			1.00E+01	1.00E+01
49	1978.41	7.11E+00	6.95			7.11E+00	6.95E+00
50	2104.54	1.63E+01	13.08			1.63E+01	1.31E+01
51	2183.87	5.29E+00	6.08			5.29E+00	6.08E+00
52	2205.13	2.47E+01	15.49			2.47E+01	1.55E+01
53	2300.74	7.45E+00	8.28			7.45E+00	8.28E+00
54	2317.80	4.25E+00	5.50			4.25E+00	5.50E+00
55	2368.44	9.09E+00	7.75			9.09E+00	7.75E+00
56	2615.48	1.20E+02	22.65			1.20E+02	2.26E+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 : 6/14/2016 11:38:10AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037619.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1606038-03

CP-5018 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	1	76.94	1.31E+03	143.73	2.07E+01	1.05E+01	1.29E+03	1.44E+02
m	2	87.77	1.90E+02	77.87	6.70E+00	2.87E+00	1.84E+02	7.79E+01
m	3	90.38	1.53E+02	79.17			1.53E+02	7.92E+01
m	4	93.51	3.99E+02	82.95	1.48E+02	9.68E+00	2.51E+02	8.35E+01
	5	99.21	6.41E+01	63.69			6.41E+01	6.37E+01
	6	129.37	6.04E+01	71.60			6.04E+01	7.16E+01
	7	153.83	1.17E+02	98.36			1.17E+02	9.84E+01
	8	178.02	7.43E+01	76.42			7.43E+01	7.64E+01
	9	186.72	2.40E+02	84.33	6.64E+01	1.07E+01	1.73E+02	8.50E+01
	10	209.97	1.12E+02	67.96			1.12E+02	6.80E+01
	11	239.71	1.24E+03	116.45	1.23E+01	5.65E+00	1.23E+03	1.17E+02
	12	270.76	1.21E+02	64.71			1.21E+02	6.47E+01
	13	278.85	5.83E+01	58.27			5.83E+01	5.83E+01
M	14	295.67	2.99E+02	48.70	5.98E+00	5.34E+00	2.93E+02	4.90E+01
m	15	300.77	6.57E+01	38.72			6.57E+01	3.87E+01
	16	339.11	2.31E+02	67.53	4.42E+00	4.48E+00	2.26E+02	6.77E+01
	17	352.71	4.88E+02	84.78	9.38E+00	4.37E+00	4.79E+02	8.49E+01
M	18	410.32	3.52E+01	28.25			3.52E+01	2.82E+01
m	19	422.62	2.44E+01	34.73			2.44E+01	3.47E+01
	20	464.67	8.74E+01	49.46			8.74E+01	4.95E+01
	21	511.09	2.06E+02	61.72	8.60E+01	5.42E+00	1.20E+02	6.20E+01
	22	579.20	2.39E+01	12.73			2.39E+01	1.27E+01
M	23	583.81	2.93E+02	39.82	9.83E+00	3.55E+00	2.83E+02	4.00E+01
m	24	610.02	3.58E+02	50.12	4.88E+00	4.12E+00	3.53E+02	5.03E+01
	25	662.47	4.74E+01	45.73			4.74E+01	4.57E+01
	26	712.06	3.03E+01	23.70			3.03E+01	2.37E+01
M	27	728.25	8.66E+01	30.51			8.66E+01	3.05E+01
m	28	736.49	1.91E+01	24.47			1.91E+01	2.45E+01
	29	755.94	2.27E+01	25.91			2.27E+01	2.59E+01
	30	773.26	2.75E+01	31.50			2.75E+01	3.15E+01
	31	795.89	6.01E+01	32.97			6.01E+01	3.30E+01
	32	805.90	2.72E+01	30.00			2.72E+01	3.00E+01
	33	860.86	5.04E+01	26.12			5.04E+01	2.61E+01
	34	911.95	1.81E+02	44.21	5.44E+00	2.47E+00	1.76E+02	4.43E+01
	35	933.16	4.68E+01	37.24			4.68E+01	3.72E+01
	36	969.87	8.79E+01	38.83			8.79E+01	3.88E+01
	37	1122.93	8.12E+01	57.22			8.12E+01	5.72E+01
	38	1238.29	3.13E+01	26.08			3.13E+01	2.61E+01
	39	1378.49	1.85E+01	22.83			1.85E+01	2.28E+01
	40	1461.82	7.64E+02	60.63	6.04E+00	1.30E+00	7.58E+02	6.06E+01
	41	1495.20	1.11E+01	8.60			1.11E+01	8.60E+00
	42	1510.82	1.92E+01	19.07			1.92E+01	1.91E+01
	43	1520.71	6.71E+00	9.67			6.71E+00	9.67E+00
	44	1563.22	7.00E+00	6.95			7.00E+00	6.95E+00
	45	1587.80	1.47E+01	16.61			1.47E+01	1.66E+01
	46	1729.82	1.91E+01	14.21			1.91E+01	1.42E+01
	47	1765.31	6.10E+01	17.72	1.45E+00	2.00E+00	5.96E+01	1.78E+01
	48	1929.89	1.00E+01	10.02			1.00E+01	1.00E+01
	49	1978.41	7.11E+00	6.95			7.11E+00	6.95E+00
	50	2104.54	1.63E+01	13.08			1.63E+01	1.31E+01
	51	2183.87	5.29E+00	6.08			5.29E+00	6.08E+00
	52	2205.13	2.47E+01	15.49			2.47E+01	1.55E+01
	53	2300.74	7.45E+00	8.28			7.45E+00	8.28E+00
	54	2317.80	4.25E+00	5.50			4.25E+00	5.50E+00

Analysis Report for 1606038-03
CP-5018 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2368.44	9.09E+00	7.75			9.09E+00	7.75E+00
56	2615.48	1.20E+02	22.65			1.20E+02	2.26E+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
GA-67	0.892	93.31 *	35.70	1.54E+00	2.44E+00
		208.95	2.24		
		300.22 *	16.00	1.56E+00	2.58E+00
CD-109	0.989	88.03 *	3.72	1.96E+00	8.59E-01
		SN-126	0.994	87.57 *	37.00	1.94E-01	8.45E-02
CS-137	0.899	661.65 *	85.12	6.76E-02	6.54E-02
ND-147	0.592	91.11 *	28.90	3.45E-01	1.82E-01
		531.02	13.10		
HG-203	0.982	279.19 *	77.30	5.48E-02	5.49E-02
		TL-208	0.915	583.14 *	30.22	1.03E+00	1.72E-01
BI-214	0.665	860.37 *	4.48	1.68E+00	8.82E-01
		2614.66 *	35.85	9.85E-01	2.04E-01
		609.31 *	46.30	8.67E-01	1.46E-01
		1120.29	15.10		
		1764.49 *	15.80	9.57E-01	2.96E-01
PB-214	0.926	2204.22 *	4.98	1.40E+00	8.87E-01
		295.21 *	19.19	1.02E+00	1.89E-01
		351.92 *	37.19	9.74E-01	1.90E-01
RA-226	0.959	186.21 *	3.28	2.64E+00	5.00E+00
		AC-228	0.897	338.32 *	11.40	1.46E+00	4.52E-01
		911.07 *	27.70	9.90E-01	2.64E-01
		969.11 *	16.60	8.69E-01	3.91E-01

Analysis Report for 1606038-03
CP-5018 00-02

* = 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 : 6/14/2016 11:38:10AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 1	76.94	3.58773E-01	5.58		
5	99.21	1.78098E-02	49.67		
6	129.37	1.67702E-02	59.30		
7	153.83	3.25661E-02	41.95	Tol.	CS-136
8	178.02	2.06273E-02	51.46	Sum	
10	209.97	3.10969E-02	30.35	Tol.	CM-243
11	239.71	3.42219E-01	4.73		
12	270.76	3.36362E-02	26.72		
M 18	410.32	9.79013E-03	40.08	Tol.	HO-166M
m 19	422.62	6.79115E-03	71.02		
20	464.67	2.42724E-02	28.30	Sum	
21	511.09	3.32887E-02	25.85		
M 22	579.20	6.64021E-03	26.62	Sum	
26	712.06	8.40675E-03	39.16	Tol.	HO-166M
M 27	728.25	2.40648E-02	17.61		
m 28	736.49	5.31527E-03	63.95	Tol.	PM-146
29	755.94	6.30848E-03	57.05	Sum	
30	773.26	7.65127E-03	57.17		
31	795.89	1.66867E-02	27.44	Sum	
32	805.90	7.54331E-03	55.24		
35	933.16	1.30080E-02	39.76		
37	1122.93	2.25685E-02	35.21		
38	1238.29	8.69124E-03	41.67	Tol.	CO-56
39	1378.49	5.12755E-03	61.83		
40	1461.82	2.10524E-01	4.00		
41	1495.20	3.07540E-03	38.85	Sum	
42	1510.82	5.33260E-03	49.67		
43	1520.71	1.86508E-03	72.01		
44	1563.22	1.94444E-03	49.62		
45	1587.80	4.08249E-03	56.52		
46	1729.82	5.30983E-03	37.18		
48	1929.89	2.77778E-03	50.12		
49	1978.41	1.97531E-03	48.84		
50	2104.54	4.51389E-03	40.24	S-Esc	

Analysis Report for 1606038-03
CP-5018 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
51	2183.87	1.46825E-03	57.54		
53	2300.74	2.07071E-03	55.51		
54	2317.80	1.18056E-03	64.71		
55	2368.44	2.52525E-03	42.60		

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
GA-67	0.89	93.31 *	35.70	1.54E+00	2.44E+00
		208.95	2.24		
		300.22 *	16.00	1.56E+00	2.58E+00
CD-109	0.98	88.03 *	3.72	1.96E+00	8.59E-01
SN-126	0.99	87.57 *	37.00	1.94E-01	8.45E-02
CS-137	0.89	661.65 *	85.12	6.76E-02	6.54E-02
ND-147	0.59	91.11 *	28.90	3.45E-01	1.82E-01
		531.02	13.10		
		279.19 *	77.30	5.48E-02	5.49E-02
HG-203	0.98	583.14 *	30.22	1.03E+00	1.72E-01
TL-208	0.91	860.37 *	4.48	1.68E+00	8.82E-01
		2614.66 *	35.85	9.85E-01	2.04E-01
		609.31 *	46.30	8.67E-01	1.46E-01
BI-214	0.66	1120.29	15.10		
		1764.49 *	15.80	9.57E-01	2.96E-01
		2204.22 *	4.98	1.40E+00	8.87E-01
PB-214	0.92	295.21 *	19.19	1.02E+00	1.89E-01
		351.92 *	37.19	9.74E-01	1.90E-01
RA-226	0.95	186.21 *	3.28	2.64E+00	5.00E+00
AC-228	0.89	338.32 *	11.40	1.46E+00	4.52E-01
		911.07 *	27.70	9.90E-01	2.64E-01
		969.11 *	16.60	8.69E-01	3.91E-01

Analysis Report for 1606038-03
CP-5018 00-02

* = 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
	GA-67	0.892	1.55E+00	2.12E+00	
?	CD-109	0.989	1.96E+00	8.59E-01	
?	SN-126	0.994	1.94E-01	8.45E-02	
	CS-137	0.899	6.76E-02	6.54E-02	
	ND-147	0.592	3.45E-01	1.82E-01	
	HG-203	0.982	5.48E-02	5.49E-02	
	TL-208	0.915	1.03E+00	1.30E-01	
	BI-214	0.665	8.96E-01	1.30E-01	
	PB-214	0.926	9.99E-01	1.34E-01	
	RA-226	0.959	2.64E+00	5.00E+00	
	AC-228	0.897	1.05E+00	1.97E-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 1606038-03
CP-5018 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 11:38:10AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	1	76.94	3.58773E-01		
	5	99.21	1.78098E-02		
	6	129.37	1.67702E-02		
	7	153.83	3.25661E-02	Tol.	CS-136
	8	178.02	2.06273E-02	Sum	
	10	209.97	3.10969E-02	Tol.	CM-243
	11	239.71	3.42219E-01		
	12	270.76	3.36362E-02		
M	18	410.32	9.79013E-03	Tol.	HO-166M
m	19	422.62	6.79115E-03		
	20	464.67	2.42724E-02	Sum	
	21	511.09	3.32887E-02		
M	22	579.20	6.64021E-03	Sum	
	26	712.06	8.40675E-03	Tol.	HO-166M
M	27	728.25	2.40648E-02		
m	28	736.49	5.31527E-03	Tol.	PM-146
	29	755.94	6.30848E-03	Sum	
	30	773.26	7.65127E-03		
	31	795.89	1.66867E-02	Sum	
	32	805.90	7.54331E-03		
	35	933.16	1.30080E-02		
	37	1122.93	2.25685E-02		
	38	1238.29	8.69124E-03	Tol.	CO-56
	39	1378.49	5.12755E-03		
	40	1461.82	2.10524E-01		
	41	1495.20	3.07540E-03	Sum	
	42	1510.82	5.33260E-03		
	43	1520.71	1.86508E-03		
	44	1563.22	1.94444E-03		
	45	1587.80	4.08249E-03		
	46	1729.82	5.30983E-03		
	48	1929.89	2.77778E-03		
	49	1978.41	1.97531E-03		
	50	2104.54	4.51389E-03	S-Esc	
	51	2183.87	1.46825E-03		

Analysis Report for 1606038-03
CP-5018 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
53	2300.74	2.07071E-03	55.51		
54	2317.80	1.18056E-03	64.71		
55	2368.44	2.52525E-03	42.60		

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	1.16E-01	4.98E-01	4.98E-01
+	NA-22	1274.54	99.94	4.43E-03	7.14E-02	7.14E-02
+	NA-24	1368.53	99.99	-1.14E+02	2.59E+02	4.28E+02
		2754.09	99.86	7.22E+01		2.59E+02
+	AL-26	1808.65	99.76	9.68E-03	4.09E-02	4.09E-02
+	K-40	1460.81	10.67	1.52E+01	2.78E+00	2.78E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-5.00E-02	5.80E-02	5.80E-02
		78.34	96.00	1.11E-01		7.33E-02
+	SC-46	889.25	99.98	-4.60E-02	5.72E-02	5.72E-02
		1120.51	99.99	1.22E-01		1.06E-01
+	V-48	983.52	99.98	5.63E-03	8.14E-02	8.56E-02
		1312.10	97.50	1.40E-02		8.14E-02
+	CR-51	320.08	9.83	-2.11E-01	4.91E-01	4.91E-01
+	MN-54	834.83	99.97	-6.78E-03	6.00E-02	6.00E-02
+	CO-56	846.75	99.96	1.58E-02	5.93E-02	5.93E-02
		1037.75	14.03	1.38E-02		4.54E-01
		1238.25	67.00	7.93E-02		1.34E-01
		1771.40	15.51	1.76E-02		2.31E-01
		2598.48	16.90	-1.87E-02		1.73E-01
+	CO-57	122.06	85.51	-1.48E-03	4.50E-02	4.50E-02
		136.48	10.60	1.13E-01		3.97E-01
+	CO-58	810.76	99.40	-7.21E-03	5.86E-02	5.86E-02
+	FE-59	1099.22	56.50	-3.69E-02	1.17E-01	1.17E-01
		1291.56	43.20	-1.19E-01		1.50E-01
+	CO-60	1173.22	100.00	1.42E-02	6.03E-02	7.17E-02

Analysis Report for 1606038-03
CP-5018 00-02

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)	
	CO-60	1332.49	100.00	-2.75E-02	6.03E-02	6.03E-02
+	ZN-65	1115.52	50.75	8.13E-03	1.34E-01	1.34E-01
+	GA-67	93.31	* 35.70	1.54E+00	1.68E+00	1.68E+00
		208.95	2.24	1.09E+01		1.27E+01
		300.22	* 16.00	1.56E+00		2.89E+00
+	SE-75	121.11	16.70	-8.20E-02	6.92E-02	2.35E-01
		136.00	59.20	-9.61E-03		7.29E-02
		264.65	59.80	-9.83E-03		6.92E-02
		279.53	25.20	2.27E-01		1.86E-01
		400.65	11.40	-4.30E-02		3.82E-01
+	RB-82	776.52	13.00	-1.32E-01	5.33E-01	5.33E-01
+	RB-83	520.41	46.00	-5.11E-02	1.16E-01	1.16E-01
		529.64	30.30	1.87E-02		1.84E-01
		552.65	16.40	-5.48E-02		3.23E-01
+	KR-85	513.99	0.43	2.89E+01	1.80E+01	1.80E+01
+	SR-85	513.99	99.27	1.38E-01	8.59E-02	8.59E-02
+	Y-88	898.02	93.40	-1.35E-02	4.37E-02	5.91E-02
		1836.01	99.38	-1.10E-02		4.37E-02
+	NB-93M	16.57	9.43	-3.21E+01	5.82E+01	5.82E+01
+	NB-94	702.63	100.00	-7.50E-03	5.21E-02	5.98E-02
		871.10	100.00	-4.40E-02		5.21E-02
+	NB-95	765.79	99.81	-2.93E-03	7.68E-02	7.68E-02
+	NB-95M	235.69	25.00	-1.22E+01	9.47E-01	9.47E-01
+	ZR-95	724.18	43.70	3.83E-02	1.16E-01	1.43E-01
		756.72	55.30	4.11E-02		1.16E-01
+	MO-99	181.06	6.20	-9.25E-01	3.41E+00	5.22E+00
		739.58	12.80	5.59E-01		3.41E+00
		778.00	4.50	-3.54E+00		9.17E+00
+	RU-103	497.08	89.00	-2.36E-02	6.20E-02	6.20E-02
+	RU-106	621.84	9.80	-2.64E-02	5.30E-01	5.30E-01
+	AG-108M	433.93	89.90	3.68E-02	5.63E-02	5.63E-02
		614.37	90.40	-9.77E-03		6.57E-02
		722.95	90.50	1.62E-02		5.93E-02
+	CD-109	88.03	* 3.72	1.96E+00	2.89E+00	2.89E+00
+	AG-110M	657.75	93.14	1.15E-03	6.33E-02	6.33E-02
		677.61	10.53	1.11E-01		5.09E-01
		706.67	16.46	1.44E-01		3.30E-01
		763.93	21.98	-1.21E-01		2.78E-01
		884.67	71.63	4.43E-02		8.30E-02
		1384.27	23.94	8.07E-03		2.02E-01
+	CD-113M	263.70	0.02	-5.06E+01	1.67E+02	1.67E+02
+	SN-113	255.12	1.93	4.00E-01	6.74E-02	2.15E+00
		391.69	64.90	-1.66E-02		6.74E-02
+	TE123M	159.00	84.10	1.80E-03	4.98E-02	4.98E-02
+	SB-124	602.71	97.87	-8.34E-03	6.19E-02	6.19E-02
		645.85	7.26	2.41E-01		8.46E-01
		722.78	11.10	1.45E-01		5.31E-01
		1691.02	49.00	-3.33E-02		7.82E-02

Analysis Report for 1606038-03
CP-5018 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-125	35.49	6.49	6.63E-01	1.92E+00	1.92E+00
+	SB-125	176.33	6.89	2.45E-01	1.61E-01	6.33E-01
		427.89	29.33	-3.15E-02		1.61E-01
		463.38	10.35	5.75E-01		5.65E-01
		600.56	17.80	2.12E-01		3.28E-01
		635.90	11.32	9.41E-02		4.67E-01
+	SB-126	414.70	83.30	2.46E-03	9.71E-02	9.71E-02
		666.33	99.60	-2.25E-02		9.74E-02
		695.00	99.60	4.12E-02		1.01E-01
		720.50	53.80	4.31E-02		1.58E-01
+	SN-126	87.57	*	37.00	1.94E-01	2.87E-01
+	SB-127	473.00	25.00	-4.40E-01	6.05E-01	7.81E-01
		685.20	35.70	3.96E-02		6.05E-01
		783.80	14.70	5.21E-01		1.81E+00
+	I-129	29.78	57.00	-4.09E-01	3.51E-01	3.51E-01
		33.60	13.20	3.55E-01		1.03E+00
		39.58	7.52	-2.38E-01		1.14E+00
+	I-131	284.30	6.05	2.61E-01	9.85E-02	1.25E+00
		364.48	81.20	-1.40E-02		9.85E-02
		636.97	7.26	4.64E-01		1.46E+00
		722.89	1.80	1.64E+00		6.01E+00
+	TE-132	49.72	13.10	-1.08E+00	2.83E-01	2.67E+00
		228.16	88.00	1.33E-01		2.83E-01
+	BA-133	81.00	33.00	-8.53E-01	7.71E-02	1.59E-01
		302.84	17.80	-1.35E-03		2.63E-01
		356.01	60.00	-2.86E-01		7.71E-02
+	I-133	529.87	86.30	4.07E+00	4.01E+01	4.01E+01
+	XE-133	81.00	38.00	-2.16E+00	4.03E-01	4.03E-01
+	CS-134	563.23	8.38	2.11E-01	5.63E-02	6.38E-01
		569.32	15.43	-1.23E-01		3.28E-01
		604.70	97.60	-5.43E-01		5.63E-02
		795.84	85.40	1.05E-01		8.66E-02
		801.93	8.73	-8.27E-01		6.45E-01
+	CS-135	268.24	16.00	1.13E-01	2.96E-01	2.96E-01
+	I-135	1131.51	22.50	4.34E+07	1.88E+08	2.36E+08
		1260.41	28.60	6.56E+07		1.88E+08
		1678.03	9.54	-2.18E+07		3.08E+08
+	CS-136	153.22	7.46	5.58E-01	8.06E-02	9.16E-01
		163.89	4.61	-2.45E-01		1.36E+00
		176.55	13.56	1.90E-01		4.91E-01
		273.65	12.66	-6.29E-01		4.96E-01
		340.57	48.50	4.70E-01		2.04E-01
		818.50	99.70	-2.60E-02		8.06E-02
		1048.07	79.60	3.34E-02		1.20E-01
		1235.34	19.70	7.19E-02		6.34E-01
+	CS-137	661.65	*	85.12	6.76E-02	1.06E-01
+	LA-138	788.74	34.00	2.49E-02	6.54E-02	1.68E-01
		1435.80	66.00	-7.11E-03		6.54E-02
+	CE-139	165.85	80.35	2.56E-02	5.49E-02	5.49E-02

Analysis Report for 1606038-03
CP-5018 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BA-140	162.64	6.70	1.81E-01	3.20E-01	9.42E-01
		304.84	4.50	-2.76E-02		1.41E+00
		423.70	3.20	2.09E+00		2.44E+00
		437.55	2.00	7.34E-01		3.77E+00
		537.32	25.00	-1.98E-02		3.20E-01
+	LA-140	328.77	20.50	2.94E-02	9.70E-02	3.48E-01
		487.03	45.50	1.07E-01		1.74E-01
		815.85	23.50	-7.24E-02		3.48E-01
		1596.49	95.49	2.87E-03		9.70E-02
+	CE-141	145.44	48.40	-3.53E-05	9.88E-02	9.88E-02
+	CE-143	57.36	11.80	-1.02E+01	8.73E+00	2.91E+01
		293.26	42.00	1.72E+01		8.73E+00
		664.55	5.20	2.38E+01		7.49E+01
+	CE-144	133.54	10.80	2.01E-01	3.89E-01	3.89E-01
+	PM-144	476.78	42.00	-1.01E-02	5.68E-02	1.10E-01
		618.01	98.60	8.87E-03		5.68E-02
		696.49	99.49	1.17E-02		6.48E-02
+	PM-145	36.85	21.70	-4.54E-01	2.41E-01	4.44E-01
		37.36	39.70	-1.34E-01		2.41E-01
		42.30	15.10	-9.13E-02		5.00E-01
		72.40	2.31	-9.60E+00		2.52E+00
+	PM-146	453.90	39.94	1.39E-02	1.22E-01	1.22E-01
		735.90	14.01	2.92E-02		3.76E-01
		747.13	13.10	-5.65E-02		4.10E-01
+	ND-147	91.11	* 28.90	3.45E-01	6.10E-01	6.10E-01
		531.02	13.10	8.60E-04		6.59E-01
+	PM-149	285.90	3.10	2.76E+00	1.57E+01	1.57E+01
+	EU-152	121.78	20.50	-6.06E-03	1.84E-01	1.84E-01
		244.69	5.40	-7.02E-02		9.14E-01
		344.27	19.13	-3.19E-02		2.11E-01
		778.89	9.20	1.07E-01		6.07E-01
		964.01	10.40	2.75E-01		7.09E-01
		1085.78	7.22	-2.74E-01		8.69E-01
		1112.02	9.60	-1.80E-01		6.40E-01
		1407.95	14.94	6.10E-02		4.37E-01
+	GD-153	97.43	31.30	-1.13E-01	1.37E-01	1.37E-01
		103.18	22.20	-7.02E-03		1.82E-01
+	EU-154	123.07	40.50	-3.60E-02	9.39E-02	9.39E-02
		723.30	19.70	7.46E-02		2.73E-01
		873.19	11.50	-5.08E-02		4.64E-01
		996.32	10.30	-4.26E-02		5.53E-01
		1004.76	17.90	1.22E-02		3.07E-01
		1274.45	35.50	1.24E-02		2.00E-01
+	EU-155	86.50	30.90	2.76E-01	1.80E-01	1.80E-01
		105.30	20.70	3.44E-02		1.95E-01
+	EU-156	811.77	10.40	2.44E-01	7.68E-01	7.68E-01
		1153.47	7.20	5.10E-01		1.55E+00
		1230.71	8.90	3.99E-01		1.31E+00
+	HO-166M	184.41	72.60	6.44E-02	7.30E-02	7.30E-02

Analysis Report for 1606038-03
CP-5018 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	HO-166M	280.45	29.60	2.71E-04	7.30E-02	1.38E-01
		410.94	11.10	1.19E-01		4.70E-01
		711.69	54.10	-3.15E-02		9.87E-02
+	TM-171	66.72	0.14	-4.16E+01	4.12E+01	4.12E+01
+	HF-172	81.75	4.52	-3.13E+00	3.57E-01	1.09E+00
		125.81	11.30	7.22E-03		3.57E-01
+	LU-172	181.53	20.60	-3.17E-01	2.38E-01	4.57E-01
		810.06	16.63	-3.74E-01		7.90E-01
		912.12	15.25	4.68E+00		1.84E+00
		1093.66	62.50	-4.01E-03		2.38E-01
+	LU-173	100.72	5.24	6.92E-01	2.34E-01	7.98E-01
		272.11	21.20	3.31E-01		2.34E-01
+	HF-175	343.40	84.00	-5.07E-03	5.32E-02	5.32E-02
+	LU-176	88.34	13.30	3.38E-01	4.37E-02	4.13E-01
		201.83	86.00	-6.15E-03		5.08E-02
		306.78	94.00	8.03E-03		4.37E-02
+	TA-182	67.75	41.20	-1.21E-01	1.40E-01	1.40E-01
		1121.30	34.90	3.91E-01		3.00E-01
		1189.05	16.23	-2.17E-01		4.36E-01
		1221.41	26.98	7.85E-03		2.92E-01
		1231.02	11.44	2.25E-01		7.41E-01
+	IR-192	308.46	29.68	-1.74E-02	1.17E-01	1.43E-01
		468.07	48.10	7.64E-03		1.17E-01
+	HG-203	279.19	* 77.30	5.48E-02	8.94E-02	8.94E-02
+	BI-207	569.67	97.72	-6.86E-03	5.28E-02	5.28E-02
		1063.62	74.90	-6.95E-03		8.24E-02
+	TL-208	583.14	* 30.22	1.03E+00	9.94E-02	5.34E-01
		860.37	* 4.48	1.68E+00		1.29E+00
		2614.66	* 35.85	9.85E-01		9.94E-02
+	BI-210M	262.00	45.00	-5.56E-03	8.59E-02	8.59E-02
		300.00	23.00	-6.23E-01		2.03E-01
+	PB-210	46.50	4.25	1.37E+00	1.59E+00	1.59E+00
+	PB-211	404.84	2.90	1.02E+00	1.50E+00	1.50E+00
		831.96	2.90	-1.32E-01		2.04E+00
+	BI-212	727.17	11.80	7.81E-01	6.49E-01	6.49E-01
		1620.62	2.75	-7.52E-01		1.59E+00
+	PB-212	238.63	44.60	9.56E-01	2.17E-01	2.17E-01
		300.09	3.41	-4.20E+00		1.37E+00
+	BI-214	609.31	* 46.30	8.67E-01	1.41E-01	1.41E-01
		1120.29	15.10	7.57E-01		6.54E-01
		1764.49	* 15.80	9.57E-01		2.80E-01
		2204.22	* 4.98	1.40E+00		1.26E+00
+	PB-214	295.21	* 19.19	1.02E+00	2.49E-01	4.25E-01
		351.92	* 37.19	9.74E-01		2.49E-01
+	RN-219	401.80	6.50	2.06E-01	6.70E-01	6.70E-01
+	RA-223	323.87	3.88	5.20E-01	1.14E+00	1.14E+00
+	RA-224	240.98	3.95	1.62E+01	2.58E+00	2.58E+00
+	RA-225	40.00	31.00	-8.23E-02	3.94E-01	3.94E-01

Analysis Report for 1606038-03
CP-5018 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-226	186.21	*	3.28	2.64E+00	2.07E+00	2.07E+00
+	TH-227	50.10		8.40	-2.96E-01	4.33E-01	7.30E-01
		236.00		11.50	-5.56E+00		4.33E-01
		256.20		6.30	-1.88E-01		5.99E-01
+	AC-228	338.32	*	11.40	1.46E+00	3.44E-01	6.61E-01
		911.07	*	27.70	9.90E-01		3.44E-01
		969.11	*	16.60	8.69E-01		5.80E-01
+	TH-230	48.44		16.90	1.18E-01	3.85E-01	3.85E-01
		62.85		4.60	1.23E+00		1.33E+00
		67.67		0.37	-1.28E+01		1.48E+01
+	PA-231	283.67		1.60	-2.53E-01	2.03E+00	2.36E+00
		302.67		2.30	-1.04E-02		2.03E+00
+	TH-231	25.64		14.70	-3.26E+01	7.84E-01	3.41E+00
		84.21		6.40	-1.74E+00		7.84E-01
+	PA-233	311.98		38.60	-1.54E-02	1.24E-01	1.24E-01
+	PA-234	131.20		20.40	2.87E-02	2.08E-01	2.08E-01
		733.99		8.80	-8.57E-01		6.05E-01
		946.00		12.00	1.54E-01		5.15E-01
+	PA-234M	1001.03		0.92	-1.06E+00	6.27E+00	6.27E+00
+	TH-234	63.29		3.80	1.84E+00	1.61E+00	1.61E+00
+	U-235	143.76		10.50	1.35E-01	3.94E-01	3.94E-01
		163.35		4.70	-1.56E-01		8.70E-01
		205.31		4.70	2.25E-01		9.45E-01
+	NP-237	86.50		12.60	6.76E-01	4.40E-01	4.40E-01
+	NP-239	106.10		22.70	3.42E-01	1.94E+00	1.94E+00
		228.18		10.70	2.12E+00		4.51E+00
		277.60		14.10	1.40E+00		3.28E+00
+	AM-241	59.54		35.90	-1.18E-02	1.59E-01	1.59E-01
+	AM-243	74.67		66.00	-4.24E-01	1.03E-01	1.03E-01
+	CM-243	209.75		3.29	3.00E+00	3.03E-01	1.55E+00
		228.14		10.60	1.96E-01		4.18E-01
		277.60		14.00	1.29E-01		3.03E-01

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

Analysis Report for 1606038-03
CP-5018 00-02

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	4.98E-01	4.98E-01	1.16E-01	2.35E-01
NA-22	1274.54	99.94	7.14E-02	7.14E-02	4.43E-03	3.30E-02
NA-24	1368.53	99.99	4.28E+02	2.59E+02	-1.14E+02	1.91E+02
	2754.09	99.86	2.59E+02		7.22E+01	9.70E+01
AL-26	1808.65	99.76	4.09E-02	4.09E-02	9.68E-03	1.70E-02
K-40	1460.81	10.67	2.78E+00	2.78E+00	1.52E+01	1.36E+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	5.80E-02	5.80E-02	-5.00E-02	2.84E-02
	78.34	96.00	7.33E-02		1.11E-01	3.61E-02
SC-46	889.25	99.98	5.72E-02	5.72E-02	-4.60E-02	2.64E-02
	1120.51	99.99	1.06E-01		1.22E-01	5.01E-02
V-48	983.52	99.98	8.56E-02	8.14E-02	5.63E-03	3.96E-02
	1312.10	97.50	8.14E-02		1.40E-02	3.66E-02
CR-51	320.08	9.83	4.91E-01	4.91E-01	-2.11E-01	2.34E-01
MN-54	834.83	99.97	6.00E-02	6.00E-02	-6.78E-03	2.80E-02
CO-56	846.75	99.96	5.93E-02	5.93E-02	1.58E-02	2.75E-02
	1037.75	14.03	4.54E-01		1.38E-02	2.09E-01
	1238.25	67.00	1.34E-01		7.93E-02	6.29E-02
	1771.40	15.51	2.31E-01		1.76E-02	9.16E-02
	2598.48	16.90	1.73E-01		-1.87E-02	6.14E-02
CO-57	122.06	85.51	4.50E-02	4.50E-02	-1.48E-03	2.18E-02
	136.48	10.60	3.97E-01		1.13E-01	1.93E-01
CO-58	810.76	99.40	5.86E-02	5.86E-02	-7.21E-03	2.72E-02
FE-59	1099.22	56.50	1.17E-01	1.17E-01	-3.69E-02	5.35E-02
	1291.56	43.20	1.50E-01		-1.19E-01	6.75E-02
CO-60	1173.22	100.00	7.17E-02	6.03E-02	1.42E-02	3.33E-02
	1332.49	100.00	6.03E-02		-2.75E-02	2.73E-02
ZN-65	1115.52	50.75	1.34E-01	1.34E-01	8.13E-03	6.20E-02
+ GA-67	93.31	* 35.70	1.68E+00	1.68E+00	1.54E+00	8.30E-01
	208.95	2.24	1.27E+01		1.09E+01	6.18E+00
	300.22	* 16.00	2.89E+00		1.56E+00	1.41E+00
SE-75	121.11	16.70	2.35E-01	6.92E-02	-8.20E-02	1.14E-01
	136.00	59.20	7.29E-02		-9.61E-03	3.54E-02
	264.65	59.80	6.92E-02		-9.83E-03	3.31E-02
	279.53	25.20	1.86E-01		2.27E-01	8.93E-02
	400.65	11.40	3.82E-01		-4.30E-02	1.81E-01
RB-82	776.52	13.00	5.33E-01	5.33E-01	-1.32E-01	2.49E-01
RB-83	520.41	46.00	1.16E-01	1.16E-01	-5.11E-02	5.49E-02
	529.64	30.30	1.84E-01		1.87E-02	8.72E-02
	552.65	16.40	3.23E-01		-5.48E-02	1.52E-01
KR-85	513.99	0.43	1.80E+01	1.80E+01	2.89E+01	8.71E+00
SR-85	513.99	99.27	8.59E-02	8.59E-02	1.38E-01	4.15E-02
Y-88	898.02	93.40	5.91E-02	4.37E-02	-1.35E-02	2.72E-02
	1836.01	99.38	4.37E-02		-1.10E-02	1.81E-02
NB-93M	16.57	9.43	5.82E+01	5.82E+01	-3.21E+01	2.71E+01

Analysis Report for 1606038-03
CP-5018 00-02

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	5.98E-02	5.21E-02	-7.50E-03	2.82E-02
	871.10	100.00	5.21E-02		-4.40E-02	2.40E-02
NB-95	765.79	99.81	7.68E-02	7.68E-02	-2.93E-03	3.62E-02
NB-95M	235.69	25.00	9.47E-01	9.47E-01	-1.22E+01	4.59E-01
ZR-95	724.18	43.70	1.43E-01	1.16E-01	3.83E-02	6.71E-02
	756.72	55.30	1.16E-01		4.11E-02	5.46E-02
MO-99	181.06	6.20	5.22E+00	3.41E+00	-9.25E-01	2.53E+00
	739.58	12.80	3.41E+00		5.59E-01	1.60E+00
	778.00	4.50	9.17E+00		-3.54E+00	4.26E+00
RU-103	497.08	89.00	6.20E-02	6.20E-02	-2.36E-02	2.93E-02
RU-106	621.84	9.80	5.30E-01	5.30E-01	-2.64E-02	2.49E-01
AG-108M	433.93	89.90	5.63E-02	5.63E-02	3.68E-02	2.68E-02
	614.37	90.40	6.57E-02		-9.77E-03	3.11E-02
	722.95	90.50	5.93E-02		1.62E-02	2.77E-02
+ CD-109	88.03	* 3.72	2.89E+00	2.89E+00	1.96E+00	1.43E+00
AG-110M	657.75	93.14	6.33E-02	6.33E-02	1.15E-03	2.98E-02
	677.61	10.53	5.09E-01		1.11E-01	2.38E-01
	706.67	16.46	3.30E-01		1.44E-01	1.54E-01
	763.93	21.98	2.78E-01		-1.21E-01	1.30E-01
	884.67	71.63	8.30E-02		4.43E-02	3.86E-02
	1384.27	23.94	2.02E-01		8.07E-03	8.85E-02
CD-113M	263.70	0.02	1.67E+02	1.67E+02	-5.06E+01	8.01E+01
SN-113	255.12	1.93	2.15E+00	6.74E-02	4.00E-01	1.03E+00
	391.69	64.90	6.74E-02		-1.66E-02	3.19E-02
TE123M	159.00	84.10	4.98E-02	4.98E-02	1.80E-03	2.41E-02
SB-124	602.71	97.87	6.19E-02	6.19E-02	-8.34E-03	2.92E-02
	645.85	7.26	8.46E-01		2.41E-01	3.99E-01
	722.78	11.10	5.31E-01		1.45E-01	2.48E-01
	1691.02	49.00	7.82E-02		-3.33E-02	3.16E-02
I-125	35.49	6.49	1.92E+00	1.92E+00	6.63E-01	9.28E-01
SB-125	176.33	6.89	6.33E-01	1.61E-01	2.45E-01	3.07E-01
	427.89	29.33	1.61E-01		-3.15E-02	7.63E-02
	463.38	10.35	5.65E-01		5.75E-01	2.70E-01
	600.56	17.80	3.28E-01		2.12E-01	1.55E-01
	635.90	11.32	4.67E-01		9.41E-02	2.20E-01
SB-126	414.70	83.30	9.71E-02	9.71E-02	2.46E-03	4.64E-02
	666.33	99.60	9.74E-02		-2.25E-02	4.61E-02
	695.00	99.60	1.01E-01		4.12E-02	4.76E-02
	720.50	53.80	1.58E-01		4.31E-02	7.37E-02
+ SN-126	87.57	* 37.00	2.87E-01	2.87E-01	1.94E-01	1.42E-01
SB-127	473.00	25.00	7.81E-01	6.05E-01	-4.40E-01	3.68E-01
	685.20	35.70	6.05E-01		3.96E-02	2.82E-01
	783.80	14.70	1.81E+00		5.21E-01	8.51E-01
I-129	29.78	57.00	3.51E-01	3.51E-01	-4.09E-01	1.69E-01
	33.60	13.20	1.03E+00		3.55E-01	4.97E-01
	39.58	7.52	1.14E+00		-2.38E-01	5.53E-01
I-131	284.30	6.05	1.25E+00	9.85E-02	2.61E-01	5.97E-01
	364.48	81.20	9.85E-02		-1.40E-02	4.67E-02
	636.97	7.26	1.46E+00		4.64E-01	6.87E-01
	722.89	1.80	6.01E+00		1.64E+00	2.81E+00
TE-132	49.72	13.10	2.67E+00	2.83E-01	-1.08E+00	1.30E+00
	228.16	88.00	2.83E-01		1.33E-01	1.37E-01
BA-133	81.00	33.00	1.59E-01	7.71E-02	-8.53E-01	7.79E-02

Analysis Report for 1606038-03
CP-5018 00-02

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	2.63E-01	7.71E-02	-1.35E-03	1.26E-01
	356.01	60.00	7.71E-02		-2.86E-01	3.68E-02
I-133	529.87	86.30	4.01E+01	4.01E+01	4.07E+00	1.90E+01
XE-133	81.00	38.00	4.03E-01	4.03E-01	-2.16E+00	1.98E-01
CS-134	563.23	8.38	6.38E-01	5.63E-02	2.11E-01	3.02E-01
	569.32	15.43	3.28E-01		-1.23E-01	1.54E-01
	604.70	97.60	5.63E-02		-5.43E-01	2.66E-02
	795.84	85.40	8.66E-02		1.05E-01	4.10E-02
	801.93	8.73	6.45E-01		-8.27E-01	3.00E-01
	268.24	16.00	2.96E-01		2.96E-01	1.13E-01	1.43E-01
I-135	1131.51	22.50	2.36E+08	1.88E+08	4.34E+07	1.10E+08
	1260.41	28.60	1.88E+08		6.56E+07	8.71E+07
	1678.03	9.54	3.08E+08		-2.18E+07	1.28E+08
CS-136	153.22	7.46	9.16E-01	8.06E-02	5.58E-01	4.45E-01
	163.89	4.61	1.36E+00		-2.45E-01	6.61E-01
	176.55	13.56	4.91E-01		1.90E-01	2.38E-01
	273.65	12.66	4.96E-01		-6.29E-01	2.37E-01
	340.57	48.50	2.04E-01		4.70E-01	9.87E-02
	818.50	99.70	8.06E-02		-2.60E-02	3.73E-02
	1048.07	79.60	1.20E-01		3.34E-02	5.53E-02
	1235.34	19.70	6.34E-01		7.19E-02	2.96E-01
+ CS-137	661.65	*	1.06E-01	1.06E-01	6.76E-02	5.11E-02
	LA-138	788.74	34.00		1.68E-01	6.54E-02	2.49E-02
LA-138	1435.80	66.00	6.54E-02	5.49E-02	-7.11E-03	2.82E-02
	CE-139	165.85	80.35		5.49E-02	2.56E-02	2.66E-02
BA-140	162.64	6.70	9.42E-01	3.20E-01	1.81E-01	4.56E-01
	304.84	4.50	1.41E+00		-2.76E-02	6.72E-01
	423.70	3.20	2.44E+00		2.09E+00	1.17E+00
	437.55	2.00	3.77E+00		7.34E-01	1.79E+00
	537.32	25.00	3.20E-01		-1.98E-02	1.51E-01
LA-140	328.77	20.50	3.48E-01	9.70E-02	2.94E-02	1.66E-01
	487.03	45.50	1.74E-01		1.07E-01	8.26E-02
	815.85	23.50	3.48E-01		-7.24E-02	1.61E-01
	1596.49	95.49	9.70E-02		2.87E-03	4.33E-02
CE-141	145.44	48.40	9.88E-02	9.88E-02	-3.53E-05	4.80E-02
CE-143	57.36	11.80	2.91E+01	8.73E+00	-1.02E+01	1.42E+01
	293.26	42.00	8.73E+00		1.72E+01	4.23E+00
	664.55	5.20	7.49E+01		2.38E+01	3.55E+01
CE-144	133.54	10.80	3.89E-01	3.89E-01	2.01E-01	1.89E-01
PM-144	476.78	42.00	1.10E-01	5.68E-02	-1.01E-02	5.19E-02
	618.01	98.60	5.68E-02		8.87E-03	2.68E-02
	696.49	99.49	6.48E-02		1.17E-02	3.07E-02
PM-145	36.85	21.70	4.44E-01	2.41E-01	-4.54E-01	2.15E-01
	37.36	39.70	2.41E-01		-1.34E-01	1.17E-01
	42.30	15.10	5.00E-01		-9.13E-02	2.43E-01
	72.40	2.31	2.52E+00		-9.60E+00	1.24E+00
PM-146	453.90	39.94	1.22E-01	1.22E-01	1.39E-02	5.79E-02
	735.90	14.01	3.76E-01		2.92E-02	1.75E-01
	747.13	13.10	4.10E-01		-5.65E-02	1.91E-01
+ ND-147	91.11	*	6.10E-01	6.10E-01	3.45E-01	3.02E-01
	531.02	13.10	6.59E-01		8.60E-04	3.12E-01
PM-149	285.90	3.10	1.57E+01	1.57E+01	2.76E+00	7.48E+00
EU-152	121.78	20.50	1.84E-01	1.84E-01	-6.06E-03	8.92E-02

Analysis Report for 1606038-03
CP-5018 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	9.14E-01	1.84E-01	-7.02E-02	4.42E-01
	344.27	19.13	2.11E-01		-3.19E-02	1.00E-01
	778.89	9.20	6.07E-01		1.07E-01	2.83E-01
	964.01	10.40	7.09E-01		2.75E-01	3.33E-01
	1085.78	7.22	8.69E-01		-2.74E-01	4.01E-01
	1112.02	9.60	6.40E-01		-1.80E-01	2.94E-01
	1407.95	14.94	4.37E-01		6.10E-02	1.99E-01
GD-153	97.43	31.30	1.37E-01	1.37E-01	-1.13E-01	6.68E-02
	103.18	22.20	1.82E-01		-7.02E-03	8.84E-02
EU-154	123.07	40.50	9.39E-02	9.39E-02	-3.60E-02	4.56E-02
	723.30	19.70	2.73E-01		7.46E-02	1.28E-01
	873.19	11.50	4.64E-01		-5.08E-02	2.14E-01
	996.32	10.30	5.53E-01		-4.26E-02	2.54E-01
	1004.76	17.90	3.07E-01		1.22E-02	1.41E-01
EU-155	1274.45	35.50	2.00E-01		1.24E-02	9.24E-02
	86.50	30.90	1.80E-01	1.80E-01	2.76E-01	8.83E-02
EU-156	105.30	20.70	1.95E-01		3.44E-02	9.51E-02
	811.77	10.40	7.68E-01	7.68E-01	2.44E-01	3.57E-01
HO-166M	1153.47	7.20	1.55E+00		5.10E-01	7.26E-01
	1230.71	8.90	1.31E+00		3.99E-01	6.13E-01
	184.41	72.60	7.30E-02	7.30E-02	6.44E-02	3.56E-02
	280.45	29.60	1.38E-01		2.71E-04	6.60E-02
TM-171	410.94	11.10	4.70E-01		1.19E-01	2.25E-01
	711.69	54.10	9.87E-02		-3.15E-02	4.61E-02
HF-172	66.72	0.14	4.12E+01	4.12E+01	-4.16E+01	2.02E+01
LU-172	81.75	4.52	1.09E+00	3.57E-01	-3.13E+00	5.31E-01
	125.81	11.30	3.57E-01		7.22E-03	1.74E-01
LU-173	181.53	20.60	4.57E-01	2.38E-01	-3.17E-01	2.21E-01
	810.06	16.63	7.90E-01		-3.74E-01	3.68E-01
	912.12	15.25	1.84E+00		4.68E+00	8.87E-01
	1093.66	62.50	2.38E-01		-4.01E-03	1.10E-01
HF-175	100.72	5.24	7.98E-01	2.34E-01	6.92E-01	3.89E-01
	272.11	21.20	2.34E-01		3.31E-01	1.13E-01
LU-176	343.40	84.00	5.32E-02	5.32E-02	-5.07E-03	2.53E-02
	88.34	13.30	4.13E-01	4.37E-02	3.38E-01	2.02E-01
	201.83	86.00	5.08E-02		-6.15E-03	2.46E-02
TA-182	306.78	94.00	4.37E-02		8.03E-03	2.09E-02
	67.75	41.20	1.40E-01	1.40E-01	-1.21E-01	6.84E-02
	1121.30	34.90	3.00E-01		3.91E-01	1.42E-01
	1189.05	16.23	4.36E-01		-2.17E-01	2.01E-01
	1221.41	26.98	2.92E-01		7.85E-03	1.36E-01
IR-192	1231.02	11.44	7.41E-01		2.25E-01	3.46E-01
	308.46	29.68	1.43E-01	1.17E-01	-1.74E-02	6.82E-02
+ HG-203	468.07	48.10	1.17E-01		7.64E-03	5.55E-02
	279.19	* 77.30	8.94E-02	8.94E-02	5.48E-02	4.34E-02
BI-207	569.67	97.72	5.28E-02	5.28E-02	-6.86E-03	2.49E-02
	1063.62	74.90	8.24E-02		-6.95E-03	3.80E-02
+ TL-208	583.14	* 30.22	5.34E-01	9.94E-02	1.03E+00	2.62E-01
	860.37	* 4.48	1.29E+00		1.68E+00	6.00E-01
	2614.66	* 35.85	9.94E-02		9.85E-01	3.86E-02
BI-210M	262.00	45.00	8.59E-02	8.59E-02	-5.56E-03	4.11E-02
	300.00	23.00	2.03E-01		-6.23E-01	9.74E-02
PB-210	46.50	4.25	1.59E+00	1.59E+00	1.37E+00	7.76E-01

Analysis Report for 1606038-03
CP-5018 00-02

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	1.50E+00	1.50E+00	1.02E+00	7.09E-01
	831.96	2.90	2.04E+00		-1.32E-01	9.53E-01
BI-212	727.17	11.80	6.49E-01	6.49E-01	7.81E-01	3.10E-01
	1620.62	2.75	1.59E+00		-7.52E-01	6.76E-01
PB-212	238.63	44.60	2.17E-01	2.17E-01	9.56E-01	1.07E-01
	300.09	3.41	1.37E+00		-4.20E+00	6.57E-01
+ BI-214	609.31	* 46.30	1.41E-01	1.41E-01	8.67E-01	6.74E-02
	1120.29	15.10	6.54E-01		7.57E-01	3.10E-01
	1764.49	* 15.80	2.80E-01		9.57E-01	1.18E-01
	2204.22	* 4.98	1.26E+00		1.40E+00	5.55E-01
+ PB-214	295.21	* 19.19	4.25E-01	2.49E-01	1.02E+00	2.08E-01
	351.92	* 37.19	2.49E-01		9.74E-01	1.22E-01
RN-219	401.80	6.50	6.70E-01	6.70E-01	2.06E-01	3.17E-01
RA-223	323.87	3.88	1.14E+00	1.14E+00	5.20E-01	5.46E-01
RA-224	240.98	3.95	2.58E+00	2.58E+00	1.62E+01	1.27E+00
RA-225	40.00	31.00	3.94E-01	3.94E-01	-8.23E-02	1.91E-01
+ RA-226	186.21	* 3.28	2.07E+00	2.07E+00	2.64E+00	1.01E+00
TH-227	50.10	8.40	7.30E-01	4.33E-01	-2.96E-01	3.56E-01
	236.00	11.50	4.33E-01		-5.56E+00	2.10E-01
	256.20	6.30	5.99E-01		-1.88E-01	2.87E-01
+ AC-228	338.32	* 11.40	6.61E-01	3.44E-01	1.46E+00	3.22E-01
	911.07	* 27.70	3.44E-01		9.90E-01	1.64E-01
	969.11	* 16.60	5.80E-01		8.69E-01	2.76E-01
TH-230	48.44	16.90	3.85E-01	3.85E-01	1.18E-01	1.87E-01
	62.85	4.60	1.33E+00		1.23E+00	6.54E-01
	67.67	0.37	1.48E+01		-1.28E+01	7.26E+00
PA-231	283.67	1.60	2.36E+00	2.03E+00	-2.53E-01	1.13E+00
	302.67	2.30	2.03E+00		-1.04E-02	9.75E-01
TH-231	25.64	14.70	3.41E+00	7.84E-01	-3.26E+01	1.66E+00
	84.21	6.40	7.84E-01		-1.74E+00	3.84E-01
PA-233	311.98	38.60	1.24E-01	1.24E-01	-1.54E-02	5.90E-02
PA-234	131.20	20.40	2.08E-01	2.08E-01	2.87E-02	1.01E-01
	733.99	8.80	6.05E-01		-8.57E-01	2.82E-01
	946.00	12.00	5.15E-01		1.54E-01	2.39E-01
PA-234M	1001.03	0.92	6.27E+00	6.27E+00	-1.06E+00	2.89E+00
TH-234	63.29	3.80	1.61E+00	1.61E+00	1.84E+00	7.90E-01
U-235	143.76	10.50	3.94E-01	3.94E-01	1.35E-01	1.91E-01
	163.35	4.70	8.70E-01		-1.56E-01	4.22E-01
	205.31	4.70	9.45E-01		2.25E-01	4.57E-01
NP-237	86.50	12.60	4.40E-01	4.40E-01	6.76E-01	2.16E-01
NP-239	106.10	22.70	1.94E+00	1.94E+00	3.42E-01	9.45E-01
	228.18	10.70	4.51E+00		2.12E+00	2.18E+00
	277.60	14.10	3.28E+00		1.40E+00	1.58E+00
AM-241	59.54	35.90	1.59E-01	1.59E-01	-1.18E-02	7.76E-02
AM-243	74.67	66.00	1.03E-01	1.03E-01	-4.24E-01	5.09E-02
CM-243	209.75	3.29	1.55E+00	3.03E-01	3.00E+00	7.55E-01
	228.14	10.60	4.18E-01		1.96E-01	2.02E-01
	277.60	14.00	3.03E-01		1.29E-01	1.45E-01

Analysis Report for 1606038-03
CP-5018 00-02

- + = Nuclide identified during the nuclide identification
 - * = Energy line found in the spectrum
 - > = MDA value not calculated
 - @ = Half-life too short to be able to perform the decay correction
-

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

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: CP-5018 00-02

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	64	86	70	144	798	174
25:	60	64	58	58	56	49	65	50
33:	85	74	58	61	56	82	43	79
41:	85	67	88	71	70	80	101	132
49:	71	75	106	97	107	94	118	105
57:	117	116	126	137	136	128	119	248
65:	193	142	134	147	165	142	151	145
73:	149	173	268	406	263	609	244	139
81:	129	148	114	139	179	155	133	238
89:	184	131	189	150	204	345	157	105
97:	77	93	108	121	90	74	94	71
105:	84	115	104	82	83	99	87	94
113:	103	91	91	73	94	78	80	66
121:	73	67	81	81	70	92	80	86
129:	106	130	83	61	94	79	85	96
137:	85	63	78	74	85	69	79	85
145:	91	68	63	59	70	61	79	78
153:	72	95	112	72	70	68	68	64
161:	60	58	67	70	79	63	78	66
169:	60	65	69	65	61	60	56	73
177:	63	81	76	65	58	64	51	57
185:	67	104	222	103	74	76	65	72
193:	61	65	48	75	54	77	70	55
201:	60	58	62	67	57	66	54	62
209:	65	126	86	59	35	63	45	77
217:	56	53	51	57	50	39	47	41
225:	46	59	43	63	56	44	48	46
233:	48	51	55	63	62	93	439	537
241:	107	139	141	47	45	35	34	39
249:	31	43	43	30	43	25	34	32
257:	46	26	37	36	38	30	37	25
265:	36	35	38	34	39	50	85	65
273:	37	21	35	18	32	58	42	36
281:	28	41	22	25	30	24	39	25
289:	33	25	29	26	28	41	65	207
297:	80	27	30	34	63	49	25	31
305:	33	37	24	27	30	31	25	19
313:	30	26	29	25	33	27	25	22
321:	29	27	37	27	34	38	24	32
329:	56	36	24	33	30	27	28	23
337:	22	60	148	85	41	32	24	23
345:	20	30	26	24	28	28	41	163
353:	272	70	17	30	18	20	19	27
361:	11	23	24	23	17	17	28	33

369: 22 22 24 20 21 15 24 23

Sample Title: CP-5018 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	20	27	23	15	24	14	19	21
385:	24	17	26	25	38	21	20	22
393:	23	22	16	22	20	21	17	20
401:	23	19	25	27	19	21	20	12
409:	12	31	33	24	25	24	25	17
417:	20	19	17	13	21	18	27	18
425:	16	17	26	10	14	19	19	23
433:	22	15	19	21	20	14	12	20
441:	20	14	16	15	15	12	18	21
449:	12	22	22	10	21	16	14	24
457:	12	21	10	14	14	18	28	44
465:	27	25	12	25	9	11	22	14
473:	13	12	12	12	19	17	14	10
481:	17	13	13	14	16	16	12	21
489:	21	18	9	14	21	11	16	13
497:	13	12	20	15	19	14	20	11
505:	10	16	15	17	25	34	62	83
513:	51	23	13	17	16	17	16	15
521:	12	19	10	13	16	21	14	19
529:	15	17	11	10	23	11	13	14
537:	12	13	12	18	21	12	15	16
545:	19	12	9	11	9	17	16	13
553:	8	7	14	16	18	16	13	17
561:	8	16	17	17	14	13	9	12
569:	13	19	18	5	18	12	18	15
577:	10	8	23	10	12	12	79	160
585:	74	15	17	15	14	18	8	16
593:	16	15	13	12	13	13	19	18
601:	14	15	14	18	7	13	9	20
609:	46	211	108	31	10	15	14	13
617:	12	17	12	13	14	10	15	10
625:	6	12	8	15	15	9	12	4
633:	13	14	12	11	12	13	7	13
641:	11	10	15	14	7	18	15	11
649:	11	9	14	17	16	12	9	18
657:	11	10	13	16	17	27	20	17
665:	11	21	12	11	14	13	14	12
673:	11	9	13	13	8	8	11	10
681:	10	8	9	8	9	9	13	9
689:	8	8	13	14	14	13	18	18
697:	15	14	16	11	11	16	17	14
705:	13	9	17	9	4	4	18	17
713:	10	12	5	5	17	7	13	8
721:	13	13	10	6	8	11	18	47
729:	38	17	8	11	5	8	9	9
737:	16	10	7	5	11	9	16	4
745:	13	6	11	9	16	6	9	7
753:	6	9	10	21	15	6	9	8
761:	6	15	7	19	10	11	11	14
769:	23	21	13	19	27	15	12	9
777:	6	8	6	10	9	18	12	8
785:	9	14	11	13	9	6	8	7
793:	12	10	13	40	21	12	6	4

801: 10 7 8 14 14 12 20 9

Sample Title: CP-5018 00-02

Channel	1	2	3	4	5	6	7	8
809:	9	7	5	9	5	13	12	5
817:	3	10	6	9	11	9	9	3
825:	8	7	10	6	7	8	15	10
833:	7	8	12	10	13	6	7	11
841:	15	7	5	13	8	4	4	8
849:	7	12	4	10	4	3	8	5
857:	5	6	10	15	30	24	4	11
865:	7	13	10	7	12	4	4	10
873:	4	6	10	11	6	5	6	6
881:	3	7	9	13	7	6	8	8
889:	9	3	7	7	9	14	9	6
897:	7	5	7	6	5	1	9	7
905:	11	11	13	5	8	12	48	125
913:	49	11	5	13	4	6	12	5
921:	10	9	7	7	11	3	5	6
929:	10	11	3	7	12	11	13	8
937:	7	10	7	4	7	6	8	11
945:	8	5	12	5	10	8	6	6
953:	5	7	9	10	6	7	9	9
961:	7	4	10	4	23	26	9	11
969:	43	71	27	5	5	6	9	5
977:	7	8	5	5	6	4	8	9
985:	8	7	10	11	7	8	6	5
993:	5	3	5	8	11	8	5	4
1001:	12	6	10	1	8	4	4	8
1009:	4	4	7	4	10	7	5	4
1017:	8	6	6	5	10	4	10	7
1025:	3	4	7	8	2	3	4	6
1033:	2	6	6	10	6	8	5	5
1041:	6	11	5	2	3	8	3	10
1049:	7	9	10	6	10	6	7	8
1057:	7	9	7	7	4	8	8	7
1065:	7	8	6	5	10	11	10	3
1073:	6	16	4	7	3	6	11	11
1081:	7	8	6	9	10	5	10	5
1089:	3	12	6	7	5	7	10	8
1097:	7	8	6	4	6	1	7	6
1105:	9	2	3	9	4	3	8	11
1113:	7	6	5	12	6	4	12	25
1121:	33	28	12	8	8	4	13	7
1129:	13	9	8	7	8	6	6	7
1137:	6	7	8	8	4	6	2	7
1145:	5	9	6	5	9	8	8	9
1153:	8	10	14	11	10	7	6	12
1161:	13	3	7	3	3	3	2	6
1169:	4	4	11	10	6	9	6	10
1177:	5	12	7	7	8	11	9	8
1185:	5	2	5	12	7	6	8	8
1193:	11	13	6	11	5	5	6	12
1201:	9	7	7	11	4	4	11	10
1209:	10	6	6	6	12	6	9	11
1217:	10	10	6	5	8	6	9	14
1225:	3	9	6	12	9	8	9	15

1233: 8 6 4 12 10 13 12 12

Sample Title: CP-5018 00-02

Channel	1	2	3	4	5	6	7	8
1241:	9	6	7	8	10	7	8	6
1249:	6	3	10	6	3	3	2	6
1257:	10	4	6	4	10	6	10	8
1265:	5	4	7	6	2	8	9	6
1273:	10	5	5	11	2	11	4	9
1281:	6	9	7	4	6	10	8	3
1289:	6	2	4	6	6	2	5	7
1297:	10	6	6	6	4	3	4	6
1305:	4	3	3	4	3	5	6	5
1313:	1	4	3	2	4	5	6	1
1321:	5	6	4	3	4	2	4	8
1329:	5	2	5	8	4	4	3	7
1337:	6	3	3	3	5	7	5	4
1345:	5	4	4	2	4	4	1	3
1353:	4	2	5	1	2	2	4	2
1361:	2	6	5	1	2	4	2	4
1369:	3	3	4	5	5	6	2	7
1377:	4	11	12	4	4	1	2	2
1385:	3	4	1	5	0	1	0	1
1393:	1	3	2	6	5	2	5	2
1401:	0	6	7	1	4	2	6	5
1409:	5	8	4	4	5	2	3	0
1417:	3	3	0	1	2	1	0	2
1425:	3	2	0	3	6	3	5	1
1433:	1	2	3	2	1	2	2	0
1441:	3	2	2	3	5	2	3	2
1449:	3	1	6	3	2	4	3	6
1457:	2	4	14	69	252	326	97	10
1465:	11	9	2	2	2	0	2	3
1473:	1	4	3	5	1	2	2	3
1481:	1	1	1	3	2	2	2	3
1489:	2	1	0	0	2	2	3	7
1497:	0	2	2	1	4	6	2	2
1505:	2	2	2	4	5	6	8	2
1513:	2	4	2	1	2	2	0	5
1521:	6	1	1	1	1	3	1	2
1529:	3	2	2	0	0	4	1	2
1537:	2	1	6	2	3	2	2	1
1545:	4	3	2	1	5	0	2	1
1553:	0	0	2	2	0	1	0	0
1561:	0	3	3	3	0	0	0	2
1569:	1	3	2	4	1	1	2	4
1577:	1	1	2	2	4	1	1	1
1585:	2	5	2	12	6	3	2	5
1593:	4	6	2	3	4	1	3	2
1601:	4	2	4	1	2	0	0	0
1609:	0	2	3	1	2	4	2	2
1617:	0	0	5	1	2	3	0	2
1625:	5	1	1	1	1	2	3	6
1633:	1	1	2	1	1	2	3	1
1641:	2	1	1	0	1	1	2	0
1649:	0	1	1	1	1	1	4	0
1657:	1	2	0	1	0	2	1	1

1665: 2 0 2 1 0 0 0 3

Sample Title: CP-5018 00-02

Channel	1	2	3	4	5	6	7	8	9
1673:	1	0	5	0	0	1	2	0	
1681:	0	2	1	1	0	1	4	0	
1689:	2	0	1	1	1	1	1	1	
1697:	1	1	1	2	2	0	1	0	
1705:	1	0	0	1	1	2	2	1	
1713:	3	1	1	0	0	0	1	0	
1721:	1	0	0	1	1	2	0	1	
1729:	5	5	4	1	2	3	1	0	
1737:	2	0	0	1	1	2	0	2	
1745:	2	0	0	1	2	0	0	1	
1753:	2	2	1	1	1	1	1	0	
1761:	2	0	7	6	29	15	5	2	
1769:	0	1	0	1	0	1	0	0	
1777:	1	0	1	2	4	1	2	2	
1785:	1	2	3	0	0	2	1	2	
1793:	0	2	1	0	2	1	3	3	
1801:	0	1	0	0	1	1	1	2	
1809:	2	1	0	2	0	2	2	2	
1817:	1	2	3	1	2	2	0	3	
1825:	0	1	0	2	0	0	1	2	
1833:	0	2	0	1	1	1	3	3	
1841:	1	1	1	2	0	4	2	6	
1849:	5	3	1	0	5	0	0	1	
1857:	0	2	0	1	0	2	2	1	
1865:	2	0	0	2	2	2	1	1	
1873:	3	0	0	0	2	1	0	0	
1881:	2	2	1	0	2	0	1	2	
1889:	1	0	1	2	1	0	1	2	
1897:	1	0	1	1	1	2	2	2	
1905:	1	0	1	1	2	0	0	2	
1913:	2	1	1	2	1	1	0	2	
1921:	2	0	1	1	0	0	2	0	
1929:	4	4	2	1	2	0	2	1	
1937:	1	0	0	0	1	1	1	1	
1945:	4	0	3	2	2	0	1	2	
1953:	1	2	4	0	3	1	1	2	
1961:	3	0	1	0	0	1	0	1	
1969:	1	2	2	0	0	1	0	1	
1977:	0	3	4	0	0	0	1	1	
1985:	0	2	0	0	1	1	0	0	
1993:	1	0	0	1	0	0	1	1	
2001:	3	1	0	2	1	3	0	1	
2009:	0	1	3	0	1	0	2	1	
2017:	2	0	1	1	2	3	1	0	
2025:	1	2	0	1	3	0	2	2	
2033:	2	0	1	1	2	1	1	1	
2041:	0	0	1	0	3	0	2	1	
2049:	0	0	1	3	2	1	1	0	
2057:	0	0	4	0	0	1	0	3	
2065:	0	0	2	1	1	2	2	2	
2073:	0	0	0	0	1	2	0	0	
2081:	1	0	1	0	1	0	1	0	
2089:	2	0	1	0	0	1	1	0	

2097: 0 0 0 0 0 1 5 6

Sample Title: CP-5018 00-02

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

2529: 0 0 1 1 0 1 0 0

Sample Title: CP-5018 00-02

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	1	1	0	0	0	0	1
2545:	0	1	1	0	0	0	0	0	0
2553:	1	1	1	0	0	0	0	0	0
2561:	1	0	0	0	0	0	0	0	0
2569:	0	0	0	1	0	0	0	0	0
2577:	1	0	0	1	1	0	0	0	0
2585:	0	0	0	0	0	0	0	1	0
2593:	0	0	0	2	0	0	0	0	0
2601:	0	0	0	0	1	0	0	0	0
2609:	1	1	0	5	9	35	38	23	0
2617:	7	4	1	0	0	0	1	0	0
2625:	0	0	0	1	0	0	1	0	0
2633:	0	1	0	0	0	0	0	0	0
2641:	0	1	1	0	0	2	0	0	0
2649:	1	0	1	0	0	2	0	0	0
2657:	0	0	2	0	0	1	0	0	1
2665:	0	0	0	0	0	0	0	0	0
2673:	1	1	0	1	0	0	0	0	1
2681:	0	0	1	0	0	0	1	0	0
2689:	0	0	0	0	0	0	0	0	1
2697:	0	1	0	0	1	0	0	0	0
2705:	0	0	1	0	0	1	0	0	0
2713:	0	0	1	1	0	0	0	0	0
2721:	0	0	0	0	0	0	1	0	0
2729:	1	0	1	0	0	1	0	0	0
2737:	0	1	0	1	0	1	0	0	0
2745:	1	0	0	0	0	1	0	0	0
2753:	0	0	1	0	1	0	0	0	0
2761:	0	1	0	3	0	1	0	0	0
2769:	0	1	0	0	0	0	0	0	0
2777:	1	1	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0	0
2793:	0	1	0	0	0	0	0	0	1
2801:	0	0	0	0	1	0	0	0	0
2809:	2	0	1	0	0	0	0	0	0
2817:	1	0	1	0	0	1	0	0	0
2825:	0	0	0	0	0	1	0	0	0
2833:	0	0	1	0	0	1	0	0	0
2841:	1	0	0	0	0	0	0	0	0
2849:	1	0	0	0	0	0	0	0	0
2857:	0	1	0	0	0	0	0	0	0
2865:	1	0	0	0	0	0	0	0	0
2873:	0	0	0	1	0	1	0	0	0
2881:	0	0	0	0	0	1	1	0	0
2889:	1	0	1	0	1	0	0	0	0
2897:	0	0	0	0	0	0	1	0	0
2905:	0	0	0	0	0	0	0	0	1
2913:	1	0	0	0	1	0	0	0	1
2921:	0	0	0	0	0	0	1	0	1
2929:	0	0	0	1	0	1	0	0	2
2937:	2	0	0	0	0	0	1	0	1
2945:	0	0	0	0	2	0	0	0	1
2953:	0	1	0	1	0	1	0	0	0

2961: 1 0 0 0 0 1 1 0

Sample Title: CP-5018 00-02

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

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5018 00-02

Channel	1	0	0	0	1	1	0	0
3401:	1	0	0	0	1	1	0	0
3409:	0	0	0	0	1	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	1	0	0	1	0	0	1	0
3433:	0	1	1	0	0	0	0	0
3441:	0	1	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	1	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	1	0	0	1	0	0	0
3481:	0	0	0	0	0	0	1	0
3489:	0	0	0	0	1	0	1	0
3497:	0	0	2	0	0	0	0	1
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	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	1	1	0	1	0	1	1
3553:	0	0	0	1	1	0	0	1
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	1	0	0	0
3577:	0	1	0	0	0	1	0	1
3585:	0	0	0	0	1	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	1
3609:	0	0	0	0	0	0	0	1
3617:	1	0	0	0	1	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	1	1	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	1	0	0	0	0
3665:	0	0	0	1	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	1
3689:	0	0	0	0	0	1	0	0
3697:	0	0	0	0	1	0	0	0
3705:	0	1	0	0	1	0	0	0
3713:	0	0	0	0	0	1	0	0
3721:	1	0	0	1	0	0	0	0
3729:	0	0	0	0	1	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	1	0	0	0	0	0	1
3753:	0	0	0	0	0	0	0	0
3761:	0	1	0	0	0	0	0	0
3769:	0	0	0	0	1	1	0	0
3777:	0	0	0	0	0	1	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	1	0	0	0	0	0	0
3801:	0	1	0	0	1	0	0	0
3809:	0	0	0	0	1	0	0	0
3817:	0	0	0	0	1	0	0	0

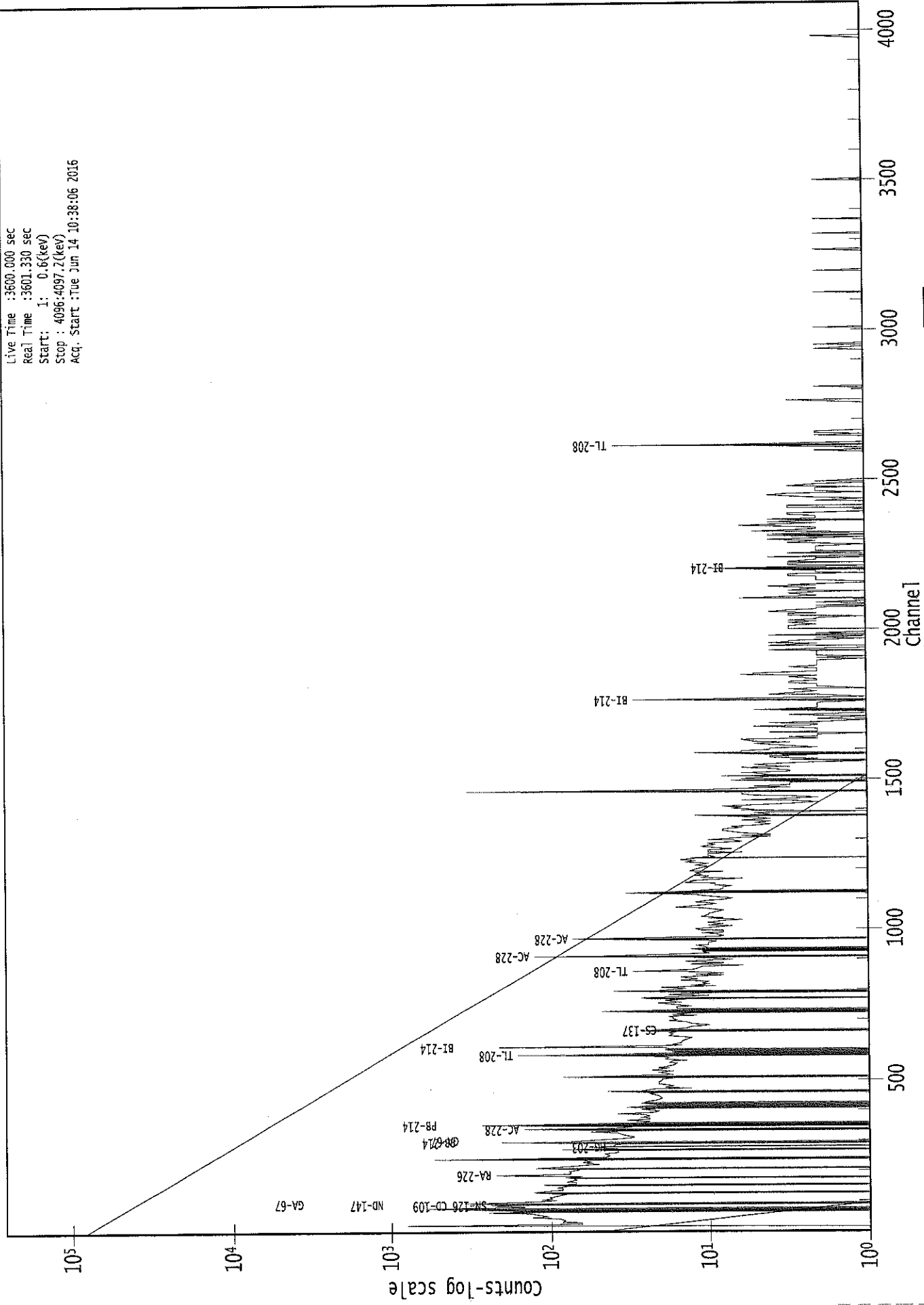
3825: 0 0 0 0 1 0 0 0

Sample Title: CP-5018 00-02

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

0000038814.CNF

Live Time : 3600.000 sec
Real Time : 3601.330 sec
Start : I: 0.6(keV)
Stop : 4096:4097.2(keV)
Acq. Start : Tue Jun 14 10:38:06 2016



KCB
6/14/16Analysis Report for 1606038-04
CP-5018 00-02

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-04
Sample Description : CP-5018 00-02
Sample Type : SOIL

Sample Size : 6.730E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 8:14:30AM
Acquisition Started : 6/14/2016 11:38:16AM

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 : 38821

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-04
CP-5018 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 12:38:20PM
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	46.94	47.29	0.0000	0.00
2	76.72	77.06	0.0000	0.00
3	93.25	93.59	0.0000	0.00
4	129.34	129.66	0.0000	0.00
5	154.98	155.30	0.0000	0.00
6	186.68	186.98	0.0000	0.00
7	210.06	210.35	0.0000	0.00
8	239.03	239.32	0.0000	0.00
9	242.39	242.68	0.0000	0.00
10	267.88	268.16	0.0000	0.00
11	270.88	271.16	0.0000	0.00
12	278.20	278.47	0.0000	0.00
13	286.84	287.11	0.0000	0.00
14	295.89	296.16	0.0000	0.00
15	300.74	301.01	0.0000	0.00
16	323.72	323.98	0.0000	0.00
17	339.15	339.41	0.0000	0.00
18	352.76	353.00	0.0000	0.00
19	410.03	410.26	0.0000	0.00
20	463.87	464.08	0.0000	0.00
21	511.37	511.56	0.0000	0.00
22	583.88	584.05	0.0000	0.00
23	609.99	610.15	0.0000	0.00
24	616.03	616.19	0.0000	0.00
25	663.67	663.81	0.0000	0.00
26	728.64	728.76	0.0000	0.00
27	770.25	770.36	0.0000	0.00
28	792.36	792.46	0.0000	0.00
29	795.82	795.92	0.0000	0.00
30	862.09	862.16	0.0000	0.00
31	883.94	884.00	0.0000	0.00
32	911.90	911.96	0.0000	0.00
33	915.75	915.80	0.0000	0.00
34	934.70	934.74	0.0000	0.00
35	959.97	960.00	0.0000	0.00
36	965.82	965.85	0.0000	0.00
37	969.84	969.87	0.0000	0.00
38	1016.32	1016.34	0.0000	0.00
39	1035.40	1035.41	0.0000	0.00
40	1121.73	1121.71	0.0000	0.00
41	1175.49	1175.45	0.0000	0.00
42	1229.28	1229.22	0.0000	0.00

Analysis Report for 1606038-04
CP-5018 00-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1239.08	1239.02	0.0000	0.00
44	1314.43	1314.34	0.0000	0.00
45	1409.11	1408.99	0.0000	0.00
46	1461.68	1461.54	0.0000	0.00
47	1509.32	1509.16	0.0000	0.00
48	1589.99	1589.80	0.0000	0.00
49	1695.38	1695.15	0.0000	0.00
50	1765.80	1765.55	0.0000	0.00
51	1787.26	1787.00	0.0000	0.00
52	1842.51	1842.22	0.0000	0.00
53	1848.66	1848.38	0.0000	0.00
54	1854.79	1854.50	0.0000	0.00
55	1911.81	1911.50	0.0000	0.00
56	1948.38	1948.06	0.0000	0.00
57	1972.60	1972.27	0.0000	0.00
58	2087.03	2086.66	0.0000	0.00
59	2096.31	2095.93	0.0000	0.00
60	2104.43	2104.05	0.0000	0.00
61	2205.66	2205.24	0.0000	0.00
62	2402.14	2401.64	0.0000	0.00
63	2436.24	2435.73	0.0000	0.00
64	2447.77	2447.25	0.0000	0.00
65	2615.50	2614.92	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-04
CP-5018 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 12:38:20PM

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	46.94	44 -	51	47.29	1.20E+02	87.48	1.20E+03	2.16
2	76.72	72 -	81	77.06	1.11E+03	152.40	2.68E+03	3.18
3	93.25	90 -	97	93.59	3.89E+02	119.21	2.06E+03	1.80
4	129.34	126 -	133	129.66	1.13E+02	91.48	1.31E+03	1.41
5	154.98	154 -	158	155.30	5.26E+01	55.97	6.49E+02	1.10
6	186.68	183 -	191	186.98	2.31E+02	90.41	1.11E+03	1.47
7	210.06	208 -	213	210.35	5.19E+01	61.64	7.16E+02	1.27
M 8	239.03	234 -	247	239.32	9.89E+02	83.91	4.95E+02	1.85
m 9	242.39	234 -	247	242.68	2.36E+02	73.93	4.72E+02	1.85
M 10	267.88	267 -	274	268.16	2.55E+01	27.49	1.87E+02	1.60
m 11	270.88	267 -	274	271.16	7.78E+01	42.94	3.48E+02	1.71
12	278.20	275 -	284	278.47	8.13E+01	68.96	6.15E+02	3.81
13	286.84	284 -	290	287.11	4.30E+01	46.84	3.68E+02	2.69
M 14	295.89	291 -	305	296.16	2.79E+02	47.07	2.40E+02	1.74
m 15	300.74	291 -	305	301.01	1.00E+02	39.84	2.20E+02	1.74
16	323.72	322 -	326	323.98	3.08E+01	36.19	2.68E+02	2.84
17	339.15	335 -	342	339.41	1.85E+02	60.13	4.78E+02	1.36
18	352.76	349 -	357	353.00	4.54E+02	65.74	3.83E+02	1.51
19	410.03	405 -	415	410.26	6.60E+01	58.30	4.18E+02	3.31
20	463.87	460 -	469	464.08	1.09E+02	46.40	2.47E+02	2.20
21	511.37	507 -	515	511.56	2.00E+02	53.08	3.11E+02	2.22
22	583.88	581 -	588	584.05	2.82E+02	50.08	2.35E+02	1.52
M 23	609.99	606 -	619	610.15	3.26E+02	43.81	1.37E+02	1.69
m 24	616.03	606 -	619	616.19	2.20E+01	36.11	1.63E+02	2.64
25	663.67	659 -	668	663.81	3.50E+01	36.01	1.66E+02	5.73
26	728.64	725 -	734	728.76	9.29E+01	38.79	1.54E+02	1.94
27	770.25	765 -	775	770.36	3.16E+01	39.63	1.93E+02	2.83
M 28	792.36	791 -	800	792.46	1.35E+01	13.29	3.30E+01	1.80
m 29	795.82	791 -	800	795.92	4.10E+01	24.39	8.36E+01	2.09
30	862.09	857 -	867	862.16	4.65E+01	39.86	1.87E+02	1.87
31	883.94	881 -	886	884.00	2.24E+01	18.57	5.13E+01	1.06
M 32	911.90	899 -	918	911.96	2.24E+02	33.79	5.50E+01	1.80
m 33	915.75	899 -	918	915.80	1.75E+01	23.79	6.60E+01	2.16
34	934.70	930 -	940	934.74	3.21E+01	32.15	1.20E+02	2.15
M 35	959.97	958 -	973	960.00	1.38E+01	16.54	6.37E+01	2.18
m 36	965.82	958 -	973	965.85	5.46E+01	28.66	8.19E+01	2.18
m 37	969.84	958 -	973	969.87	1.58E+02	31.02	6.13E+01	2.07
38	1016.32	1013 -	1021	1016.34	2.06E+01	25.23	8.48E+01	3.09
39	1035.40	1033 -	1038	1035.41	1.36E+01	17.46	4.87E+01	1.16
40	1121.73	1117 -	1126	1121.71	9.20E+01	29.29	7.00E+01	1.62

Analysis Report for 1606038-04

CP-5018 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1175.49	1172 -	1180	1175.45	2.40E+01	27.82	1.06E+02	2.59
42	1229.28	1226 -	1232	1229.22	1.85E+01	22.67	7.90E+01	1.53
43	1239.08	1235 -	1243	1239.02	3.40E+01	29.97	1.18E+02	3.97
44	1314.43	1311 -	1317	1314.34	1.92E+01	16.45	3.55E+01	3.82
45	1409.11	1405 -	1413	1408.99	2.29E+01	17.26	3.22E+01	1.66
46	1461.68	1456 -	1468	1461.54	7.70E+02	61.18	7.80E+01	2.29
47	1509.32	1506 -	1513	1509.16	1.93E+01	13.27	1.74E+01	1.46
48	1589.99	1586 -	1596	1589.80	2.69E+01	17.64	2.61E+01	2.23
49	1695.38	1689 -	1699	1695.15	1.42E+01	13.37	1.57E+01	3.36
50	1765.80	1762 -	1774	1765.55	5.71E+01	19.97	2.19E+01	3.19
51	1787.26	1784 -	1789	1787.00	6.00E+00	4.90	0.00E+00	2.88
52	1842.51	1838 -	1845	1842.22	1.00E+01	8.00	3.92E+00	2.77
53	1848.66	1846 -	1851	1848.38	8.00E+00	5.66	0.00E+00	1.10
54	1854.79	1852 -	1857	1854.50	6.00E+00	4.90	0.00E+00	1.16
55	1911.81	1907 -	1914	1911.50	8.00E+00	5.66	0.00E+00	1.88
56	1948.38	1944 -	1950	1948.06	7.11E+00	6.95	3.78E+00	1.38
57	1972.60	1969 -	1975	1972.27	9.45E+00	7.50	3.09E+00	2.31
58	2087.03	2081 -	2091	2086.66	8.93E+00	10.79	1.01E+01	1.09
59	2096.31	2093 -	2099	2095.93	6.50E+00	8.03	7.00E+00	1.18
60	2104.43	2100 -	2108	2104.05	2.20E+01	10.78	4.00E+00	2.47
61	2205.66	2201 -	2208	2205.24	1.55E+01	12.49	1.50E+01	3.03
62	2402.14	2398 -	2405	2401.64	1.10E+01	6.63	0.00E+00	1.66
63	2436.24	2433 -	2438	2435.73	4.42E+00	5.74	3.17E+00	1.88
64	2447.77	2444 -	2449	2447.25	8.45E+00	7.00	3.10E+00	1.26
65	2615.50	2609 -	2621	2614.92	1.24E+02	22.27	0.00E+00	2.55

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 : 6/14/2016 12:38:20PM

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	46.94	44 -	51	1.20E+02	87.48	1.20E+03	6.96E+01
2	76.72	72 -	81	1.11E+03	152.40	2.68E+03	1.13E+02
3	93.25	90 -	97	3.89E+02	119.21	2.06E+03	9.25E+01

Analysis Report for 1606038-04

CP-5018 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
4	129.34	126 -	133	1.13E+02	91.48	1.31E+03	7.31E+01	
5	154.98	154 -	158	5.26E+01	55.97	6.49E+02	4.44E+01	
6	186.68	183 -	191	2.31E+02	90.41	1.11E+03	7.00E+01	
7	210.06	208 -	213	5.19E+01	61.64	7.16E+02	4.93E+01	
M	8	239.03	234 -	247	9.89E+02	83.91	4.95E+02	3.66E+01
m	9	242.39	234 -	247	2.36E+02	73.93	4.72E+02	3.57E+01
M	10	267.88	267 -	274	2.55E+01	27.49	1.87E+02	2.25E+01
m	11	270.88	267 -	274	7.78E+01	42.94	3.48E+02	3.07E+01
	12	278.20	275 -	284	8.13E+01	68.96	6.15E+02	5.47E+01
	13	286.84	284 -	290	4.30E+01	46.84	3.68E+02	3.70E+01
M	14	295.89	291 -	305	2.79E+02	47.07	2.40E+02	2.55E+01
m	15	300.74	291 -	305	1.00E+02	39.84	2.20E+02	2.44E+01
	16	323.72	322 -	326	3.08E+01	36.19	2.68E+02	2.83E+01
	17	339.15	335 -	342	1.85E+02	60.13	4.78E+02	4.41E+01
	18	352.76	349 -	357	4.54E+02	65.74	3.83E+02	4.12E+01
	19	410.03	405 -	415	6.60E+01	58.30	4.18E+02	4.60E+01
	20	463.87	460 -	469	1.09E+02	46.40	2.47E+02	3.41E+01
	21	511.37	507 -	515	2.00E+02	53.08	3.11E+02	3.69E+01
	22	583.88	581 -	588	2.82E+02	50.08	2.35E+02	3.05E+01
M	23	609.99	606 -	619	3.26E+02	43.81	1.37E+02	1.92E+01
m	24	616.03	606 -	619	2.20E+01	36.11	1.63E+02	2.10E+01
	25	663.67	659 -	668	3.50E+01	36.01	1.66E+02	2.80E+01
	26	728.64	725 -	734	9.29E+01	38.79	1.54E+02	2.77E+01
	27	770.25	765 -	775	3.16E+01	39.63	1.93E+02	3.12E+01
M	28	792.36	791 -	800	1.35E+01	13.29	3.30E+01	9.44E+00
m	29	795.82	791 -	800	4.10E+01	24.39	8.36E+01	1.50E+01
	30	862.09	857 -	867	4.65E+01	39.86	1.87E+02	3.08E+01
	31	883.94	881 -	886	2.24E+01	18.57	5.13E+01	1.31E+01
M	32	911.90	899 -	918	2.24E+02	33.79	5.50E+01	1.22E+01
m	33	915.75	899 -	918	1.75E+01	23.79	6.60E+01	1.34E+01
	34	934.70	930 -	940	3.21E+01	32.15	1.20E+02	2.47E+01
M	35	959.97	958 -	973	1.38E+01	16.54	6.37E+01	1.31E+01
m	36	965.82	958 -	973	5.46E+01	28.66	8.19E+01	1.49E+01
m	37	969.84	958 -	973	1.58E+02	31.02	6.13E+01	1.29E+01
	38	1016.32	1013 -	1021	2.06E+01	25.23	8.48E+01	1.94E+01
	39	1035.40	1033 -	1038	1.36E+01	17.46	4.87E+01	1.30E+01
	40	1121.73	1117 -	1126	9.20E+01	29.29	7.00E+01	1.82E+01
	41	1175.49	1172 -	1180	2.40E+01	27.82	1.06E+02	2.14E+01
	42	1229.28	1226 -	1232	1.85E+01	22.67	7.90E+01	1.72E+01
	43	1239.08	1235 -	1243	3.40E+01	29.97	1.18E+02	2.27E+01
	44	1314.43	1311 -	1317	1.92E+01	16.45	3.55E+01	1.14E+01
	45	1409.11	1405 -	1413	2.29E+01	17.26	3.22E+01	1.18E+01
	46	1461.68	1456 -	1468	7.70E+02	61.18	7.80E+01	2.12E+01
	47	1509.32	1506 -	1513	1.93E+01	13.27	1.74E+01	8.17E+00
	48	1589.99	1586 -	1596	2.69E+01	17.64	2.61E+01	1.17E+01
	49	1695.38	1689 -	1699	1.42E+01	13.37	1.57E+01	9.08E+00
	50	1765.80	1762 -	1774	5.71E+01	19.97	2.19E+01	1.07E+01
	51	1787.26	1784 -	1789	6.00E+00	4.90	0.00E+00	0.00E+00
	52	1842.51	1838 -	1845	1.00E+01	8.00	3.92E+00	4.01E+00
	53	1848.66	1846 -	1851	8.00E+00	5.66	0.00E+00	0.00E+00
	54	1854.79	1852 -	1857	6.00E+00	4.90	0.00E+00	0.00E+00

Analysis Report for 1606038-04
CP-5018 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
55	1911.81	1907 -	1914	8.00E+00	5.66	0.00E+00	0.00E+00
56	1948.38	1944 -	1950	7.11E+00	6.95	3.78E+00	3.66E+00
57	1972.60	1969 -	1975	9.45E+00	7.50	3.09E+00	3.53E+00
58	2087.03	2081 -	2091	8.93E+00	10.79	1.01E+01	7.39E+00
59	2096.31	2093 -	2099	6.50E+00	8.03	7.00E+00	5.10E+00
60	2104.43	2100 -	2108	2.20E+01	10.78	4.00E+00	4.37E+00
61	2205.66	2201 -	2208	1.55E+01	12.49	1.50E+01	7.97E+00
62	2402.14	2398 -	2405	1.10E+01	6.63	0.00E+00	0.00E+00
63	2436.24	2433 -	2438	4.42E+00	5.74	3.17E+00	3.22E+00
64	2447.77	2444 -	2449	8.45E+00	7.00	3.10E+00	3.20E+00
65	2615.50	2609 -	2621	1.24E+02	22.27	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 : 6/14/2016 12:38:20PM

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	46.94	44 -	51	47.29	1.20E+02	87.48	1.20E+03	PB-210
2	76.72	72 -	81	77.06	1.11E+03	152.40	2.68E+03	.....
3	93.25	90 -	97	93.59	3.89E+02	119.21	2.06E+03	GA-67
4	129.34	126 -	133	129.66	1.13E+02	91.48	1.31E+03	.....
5	154.98	154 -	158	155.30	5.26E+01	55.97	6.49E+02	.....
6	186.68	183 -	191	186.98	2.31E+02	90.41	1.11E+03	RA-226
7	210.06	208 -	213	210.35	5.19E+01	61.64	7.16E+02	CM-243
M 8	239.03	234 -	247	239.32	9.89E+02	83.91	4.95E+02	PB-212
m 9	242.39	234 -	247	242.68	2.36E+02	73.93	4.72E+02	.....
M 10	267.88	267 -	274	268.16	2.55E+01	27.49	1.87E+02	CS-135
m 11	270.88	267 -	274	271.16	7.78E+01	42.94	3.48E+02	.....
12	278.20	275 -	284	278.47	8.13E+01	68.96	6.15E+02	CM-243 NP-239 HG-203
13	286.84	284 -	290	287.11	4.30E+01	46.84	3.68E+02	PM-149

Analysis Report for 1606038-04
 CP-5018 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	14	295.89	291 -	305	296.16	2.79E+02	47.07	2.40E+02	PB-214
m	15	300.74	291 -	305	301.01	1.00E+02	39.84	2.20E+02	GA-67
	16	323.72	322 -	326	323.98	3.08E+01	36.19	2.68E+02	PB-212
	17	339.15	335 -	342	339.41	1.85E+02	60.13	4.78E+02	BI-210M
	18	352.76	349 -	357	353.00	4.54E+02	65.74	3.83E+02	RA-223
	19	410.03	405 -	415	410.26	6.60E+01	58.30	4.18E+02	AC-228
	20	463.87	460 -	469	464.08	1.09E+02	46.40	2.47E+02	PB-214
	21	511.37	507 -	515	511.56	2.00E+02	53.08	3.11E+02	HO-166M
	22	583.88	581 -	588	584.05	2.82E+02	50.08	2.35E+02	SB-125
M	23	609.99	606 -	619	610.15	3.26E+02	43.81	1.37E+02	.....
m	24	616.03	606 -	619	616.19	2.20E+01	36.11	1.63E+02	TL-208
	25	663.67	659 -	668	663.81	3.50E+01	36.01	1.66E+02	BI-214
	26	728.64	725 -	734	728.76	9.29E+01	38.79	1.54E+02	.....
	27	770.25	765 -	775	770.36	3.16E+01	39.63	1.93E+02	.....
M	28	792.36	791 -	800	792.46	1.35E+01	13.29	3.30E+01	.....
m	29	795.82	791 -	800	795.92	4.10E+01	24.39	8.36E+01	.....
	30	862.09	857 -	867	862.16	4.65E+01	39.86	1.87E+02	CS-134
	31	883.94	881 -	886	884.00	2.24E+01	18.57	5.13E+01	.....
M	32	911.90	899 -	918	911.96	2.24E+02	33.79	5.50E+01	AG-110M
	33	915.75	899 -	918	915.80	1.75E+01	23.79	6.60E+01	LU-172
m	34	934.70	930 -	940	934.74	3.21E+01	32.15	1.20E+02	AC-228
M	35	959.97	958 -	973	960.00	1.38E+01	16.54	6.37E+01	.....
m	36	965.82	958 -	973	965.85	5.46E+01	28.66	8.19E+01	.....
m	37	969.84	958 -	973	969.87	1.58E+02	31.02	6.13E+01	AC-228
	38	1016.32	1013 -	1021	1016.34	2.06E+01	25.23	8.48E+01	.....
	39	1035.40	1033 -	1038	1035.41	1.36E+01	17.46	4.87E+01	.....
	40	1121.73	1117 -	1126	1121.71	9.20E+01	29.29	7.00E+01	TA-182
	41	1175.49	1172 -	1180	1175.45	2.40E+01	27.82	1.06E+02	.....
	42	1229.28	1226 -	1232	1229.22	1.85E+01	22.67	7.90E+01	.....
	43	1239.08	1235 -	1243	1239.02	3.40E+01	29.97	1.18E+02	CO-56
	44	1314.43	1311 -	1317	1314.34	1.92E+01	16.45	3.55E+01	.....
	45	1409.11	1405 -	1413	1408.99	2.29E+01	17.26	3.22E+01	.....
	46	1461.68	1456 -	1468	1461.54	7.70E+02	61.18	7.80E+01	K-40
	47	1509.32	1506 -	1513	1509.16	1.93E+01	13.27	1.74E+01	.....
	48	1589.99	1586 -	1596	1589.80	2.69E+01	17.64	2.61E+01	.....
	49	1695.38	1689 -	1699	1695.15	1.42E+01	13.37	1.57E+01	.....
	50	1765.80	1762 -	1774	1765.55	5.71E+01	19.97	2.19E+01	.....
	51	1787.26	1784 -	1789	1787.00	6.00E+00	4.90	0.00E+00	.....
	52	1842.51	1838 -	1845	1842.22	1.00E+01	8.00	3.92E+00	.....
	53	1848.66	1846 -	1851	1848.38	8.00E+00	5.66	0.00E+00	.....
	54	1854.79	1852 -	1857	1854.50	6.00E+00	4.90	0.00E+00	.....
	55	1911.81	1907 -	1914	1911.50	8.00E+00	5.66	0.00E+00	.....
	56	1948.38	1944 -	1950	1948.06	7.11E+00	6.95	3.78E+00	.....
	57	1972.60	1969 -	1975	1972.27	9.45E+00	7.50	3.09E+00	.....
	58	2087.03	2081 -	2091	2086.66	8.93E+00	10.79	1.01E+01	.....
	59	2096.31	2093 -	2099	2095.93	6.50E+00	8.03	7.00E+00	.....
	60	2104.43	2100 -	2108	2104.05	2.20E+01	10.78	4.00E+00	.....
	61	2205.66	2201 -	2208	2205.24	1.55E+01	12.49	1.50E+01	.....
	62	2402.14	2398 -	2405	2401.64	1.10E+01	6.63	0.00E+00	.....
	63	2436.24	2433 -	2438	2435.73	4.42E+00	5.74	3.17E+00	.....
	64	2447.77	2444 -	2449	2447.25	8.45E+00	7.00	3.10E+00	.....

Analysis Report for 1606038-04

CP-5018 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
65	2615.50	2609 -	2621	2614.92	1.24E+02	22.27	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 : 6/14/2016 12:38:20PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.94	1.20E+02	87.48	1.71E-02	1.78E-03
	2	76.72	1.11E+03	152.40	2.77E-02	2.36E-03
	3	93.25	3.89E+02	119.21	2.86E-02	2.64E-03
	4	129.34	1.13E+02	91.48	2.67E-02	2.09E-03
	5	154.98	5.26E+01	55.97	2.47E-02	2.15E-03
	6	186.68	2.31E+02	90.41	2.23E-02	2.02E-03
	7	210.06	5.19E+01	61.64	2.08E-02	1.85E-03
M	8	239.03	9.89E+02	83.91	1.92E-02	1.64E-03
m	9	242.39	2.36E+02	73.93	1.90E-02	1.61E-03
M	10	267.88	2.55E+01	27.49	1.78E-02	1.42E-03
m	11	270.88	7.78E+01	42.94	1.77E-02	1.40E-03
	12	278.20	8.13E+01	68.96	1.74E-02	1.35E-03
	13	286.84	4.30E+01	46.84	1.70E-02	1.32E-03
M	14	295.89	2.79E+02	47.07	1.67E-02	1.31E-03
m	15	300.74	1.00E+02	39.84	1.65E-02	1.30E-03
	16	323.72	3.08E+01	36.19	1.57E-02	1.25E-03
	17	339.15	1.85E+02	60.13	1.52E-02	1.22E-03
	18	352.76	4.54E+02	65.74	1.47E-02	1.19E-03
	19	410.03	6.60E+01	58.30	1.32E-02	1.09E-03
	20	463.87	1.09E+02	46.40	1.21E-02	1.04E-03
	21	511.37	2.00E+02	53.08	1.12E-02	9.90E-04
	22	583.88	2.82E+02	50.08	1.02E-02	9.15E-04
M	23	609.99	3.26E+02	43.81	9.82E-03	8.88E-04
m	24	616.03	2.20E+01	36.11	9.74E-03	8.81E-04
	25	663.67	3.50E+01	36.01	9.19E-03	8.32E-04
	26	728.64	9.29E+01	38.79	8.54E-03	7.74E-04
	27	770.25	3.16E+01	39.63	8.17E-03	7.37E-04
M	28	792.36	1.35E+01	13.29	7.99E-03	7.17E-04
m	29	795.82	4.10E+01	24.39	7.96E-03	7.14E-04

Analysis Report for 1606038-04
CP-5018 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	30	862.09	4.65E+01	39.86	7.47E-03	6.55E-04
	31	883.94	2.24E+01	18.57	7.32E-03	6.35E-04
M	32	911.90	2.24E+02	33.79	7.14E-03	6.15E-04
m	33	915.75	1.75E+01	23.79	7.12E-03	6.13E-04
	34	934.70	3.21E+01	32.15	7.00E-03	6.03E-04
M	35	959.97	1.38E+01	16.54	6.86E-03	5.90E-04
m	36	965.82	5.46E+01	28.66	6.82E-03	5.87E-04
m	37	969.84	1.58E+02	31.02	6.80E-03	5.85E-04
	38	1016.32	2.06E+01	25.23	6.55E-03	5.61E-04
	39	1035.40	1.36E+01	17.46	6.46E-03	5.51E-04
	40	1121.73	9.20E+01	29.29	6.06E-03	5.06E-04
	41	1175.49	2.40E+01	27.82	5.84E-03	4.79E-04
	42	1229.28	1.85E+01	22.67	5.65E-03	4.69E-04
	43	1239.08	3.40E+01	29.97	5.61E-03	4.68E-04
	44	1314.43	1.92E+01	16.45	5.37E-03	4.54E-04
	45	1409.11	2.29E+01	17.26	5.10E-03	4.32E-04
	46	1461.68	7.70E+02	61.18	4.97E-03	4.19E-04
	47	1509.32	1.93E+01	13.27	4.86E-03	4.07E-04
	48	1589.99	2.69E+01	17.64	4.69E-03	3.87E-04
	49	1695.38	1.42E+01	13.37	4.50E-03	3.61E-04
	50	1765.80	5.71E+01	19.97	4.39E-03	3.43E-04
	51	1787.26	6.00E+00	4.90	4.36E-03	3.38E-04
	52	1842.51	1.00E+01	8.00	4.29E-03	3.26E-04
	53	1848.66	8.00E+00	5.66	4.28E-03	3.26E-04
	54	1854.79	6.00E+00	4.90	4.27E-03	3.26E-04
	55	1911.81	8.00E+00	5.66	4.20E-03	3.26E-04
	56	1948.38	7.11E+00	6.95	4.16E-03	3.26E-04
	57	1972.60	9.45E+00	7.50	4.14E-03	3.26E-04
	58	2087.03	8.93E+00	10.79	4.03E-03	3.26E-04
	59	2096.31	6.50E+00	8.03	4.03E-03	3.26E-04
	60	2104.43	2.20E+01	10.78	4.02E-03	3.26E-04
	61	2205.66	1.55E+01	12.49	3.95E-03	3.26E-04
	62	2402.14	1.10E+01	6.63	3.85E-03	3.26E-04
	63	2436.24	4.42E+00	5.74	3.84E-03	3.26E-04
	64	2447.77	8.45E+00	7.00	3.83E-03	3.26E-04
	65	2615.50	1.24E+02	22.27	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 : 6/14/2016 12:38:20PM

Env. Background File : \\OR-GAMMA\ApexRoot\Countroom\Data\0000037619.CNF

: 00386

Analysis Report for 1606038-04
CP-5018 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	46.94	1.20E+02	87.48	4.67E+01	7.94E+00	7.36E+01	8.78E+01
2	76.72	1.11E+03	152.40	2.07E+01	1.05E+01	1.08E+03	1.53E+02
3	93.25	3.89E+02	119.21	1.48E+02	9.68E+00	2.42E+02	1.20E+02
4	129.34	1.13E+02	91.48			1.13E+02	9.15E+01
5	154.98	5.26E+01	55.97			5.26E+01	5.60E+01
6	186.68	2.31E+02	90.41	6.64E+01	1.07E+01	1.64E+02	9.10E+01
7	210.06	5.19E+01	61.64			5.19E+01	6.16E+01
M 8	239.03	9.89E+02	83.91	1.23E+01	5.65E+00	9.77E+02	8.41E+01
m 9	242.39	2.36E+02	73.93			2.36E+02	7.39E+01
M 10	267.88	2.55E+01	27.49			2.55E+01	2.75E+01
m 11	270.88	7.78E+01	42.94			7.78E+01	4.29E+01
12	278.20	8.13E+01	68.96			8.13E+01	6.90E+01
13	286.84	4.30E+01	46.84			4.30E+01	4.68E+01
M 14	295.89	2.79E+02	47.07	5.98E+00	5.34E+00	2.73E+02	4.74E+01
m 15	300.74	1.00E+02	39.84			1.00E+02	3.98E+01
16	323.72	3.08E+01	36.19			3.08E+01	3.62E+01
17	339.15	1.85E+02	60.13	4.42E+00	4.48E+00	1.80E+02	6.03E+01
18	352.76	4.54E+02	65.74	9.38E+00	4.37E+00	4.44E+02	6.59E+01
19	410.03	6.60E+01	58.30			6.60E+01	5.83E+01
20	463.87	1.09E+02	46.40			1.09E+02	4.64E+01
21	511.37	2.00E+02	53.08	8.60E+01	5.42E+00	1.13E+02	5.34E+01
22	583.88	2.82E+02	50.08	9.83E+00	3.55E+00	2.72E+02	5.02E+01
M 23	609.99	3.26E+02	43.81	4.88E+00	4.12E+00	3.21E+02	4.40E+01
m 24	616.03	2.20E+01	36.11			2.20E+01	3.61E+01
25	663.67	3.50E+01	36.01			3.50E+01	3.60E+01
26	728.64	9.29E+01	38.79			9.29E+01	3.88E+01
27	770.25	3.16E+01	39.63			3.16E+01	3.96E+01
M 28	792.36	1.35E+01	13.29			1.35E+01	1.33E+01
m 29	795.82	4.10E+01	24.39			4.10E+01	2.44E+01
30	862.09	4.65E+01	39.86			4.65E+01	3.99E+01
31	883.94	2.24E+01	18.57			2.24E+01	1.86E+01
M 32	911.90	2.24E+02	33.79	5.44E+00	2.47E+00	2.18E+02	3.39E+01
m 33	915.75	1.75E+01	23.79			1.75E+01	2.38E+01
34	934.70	3.21E+01	32.15			3.21E+01	3.21E+01
M 35	959.97	1.38E+01	16.54			1.38E+01	1.65E+01
m 36	965.82	5.46E+01	28.66			5.46E+01	2.87E+01
m 37	969.84	1.58E+02	31.02			1.58E+02	3.10E+01
38	1016.32	2.06E+01	25.23			2.06E+01	2.52E+01
39	1035.40	1.36E+01	17.46			1.36E+01	1.75E+01
40	1121.73	9.20E+01	29.29			9.20E+01	2.93E+01
41	1175.49	2.40E+01	27.82			2.40E+01	2.78E+01
42	1229.28	1.85E+01	22.67			1.85E+01	2.27E+01
43	1239.08	3.40E+01	29.97			3.40E+01	3.00E+01
44	1314.43	1.92E+01	16.45			1.92E+01	1.64E+01
45	1409.11	2.29E+01	17.26			2.29E+01	1.73E+01
46	1461.68	7.70E+02	61.18	6.04E+00	1.30E+00	7.64E+02	6.12E+01
47	1509.32	1.93E+01	13.27			1.93E+01	1.33E+01
48	1589.99	2.69E+01	17.64			2.69E+01	1.76E+01
49	1695.38	1.42E+01	13.37			1.42E+01	1.34E+01
50	1765.80	5.71E+01	19.97	1.45E+00	2.00E+00	5.56E+01	2.01E+01
51	1787.26	6.00E+00	4.90			6.00E+00	4.90E+00

Analysis Report for 1606038-04

CP-5018 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
52	1842.51	1.00E+01	8.00			1.00E+01	8.00E+00
53	1848.66	8.00E+00	5.66			8.00E+00	5.66E+00
54	1854.79	6.00E+00	4.90			6.00E+00	4.90E+00
55	1911.81	8.00E+00	5.66			8.00E+00	5.66E+00
56	1948.38	7.11E+00	6.95			7.11E+00	6.95E+00
57	1972.60	9.45E+00	7.50			9.45E+00	7.50E+00
58	2087.03	8.93E+00	10.79			8.93E+00	1.08E+01
59	2096.31	6.50E+00	8.03			6.50E+00	8.03E+00
60	2104.43	2.20E+01	10.78			2.20E+01	1.08E+01
61	2205.66	1.55E+01	12.49			1.55E+01	1.25E+01
62	2402.14	1.10E+01	6.63			1.10E+01	6.63E+00
63	2436.24	4.42E+00	5.74			4.42E+00	5.74E+00
64	2447.77	8.45E+00	7.00			8.45E+00	7.00E+00
65	2615.50	1.24E+02	22.27			1.24E+02	2.23E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/14/2016 12:38:20PM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037619.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	46.94	1.20E+02	87.48	4.67E+01	7.94E+00	7.36E+01	8.78E+01
2	76.72	1.11E+03	152.40	2.07E+01	1.05E+01	1.08E+03	1.53E+02
3	93.25	3.89E+02	119.21	1.48E+02	9.68E+00	2.42E+02	1.20E+02
4	129.34	1.13E+02	91.48			1.13E+02	9.15E+01
5	154.98	5.26E+01	55.97			5.26E+01	5.60E+01
6	186.68	2.31E+02	90.41	6.64E+01	1.07E+01	1.64E+02	9.10E+01
7	210.06	5.19E+01	61.64			5.19E+01	6.16E+01
M	8	239.03	9.89E+02	1.23E+01	5.65E+00	9.77E+02	8.41E+01
m	9	242.39	2.36E+02			2.36E+02	7.39E+01
M	10	267.88	2.55E+01			2.55E+01	2.75E+01
m	11	270.88	7.78E+01			7.78E+01	4.29E+01
	12	278.20	8.13E+01			8.13E+01	6.90E+01
	13	286.84	4.30E+01			4.30E+01	4.68E+01
M	14	295.89	2.79E+02	5.98E+00	5.34E+00	2.73E+02	4.74E+01

: 00388

Analysis Report for 1606038-04

CP-5018 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	15	300.74	1.00E+02	39.84			1.00E+02	3.98E+01
	16	323.72	3.08E+01	36.19			3.08E+01	3.62E+01
	17	339.15	1.85E+02	60.13	4.42E+00	4.48E+00	1.80E+02	6.03E+01
	18	352.76	4.54E+02	65.74	9.38E+00	4.37E+00	4.44E+02	6.59E+01
	19	410.03	6.60E+01	58.30			6.60E+01	5.83E+01
	20	463.87	1.09E+02	46.40			1.09E+02	4.64E+01
	21	511.37	2.00E+02	53.08	8.60E+01	5.42E+00	1.13E+02	5.34E+01
	22	583.88	2.82E+02	50.08	9.83E+00	3.55E+00	2.72E+02	5.02E+01
M	23	609.99	3.26E+02	43.81	4.88E+00	4.12E+00	3.21E+02	4.40E+01
m	24	616.03	2.20E+01	36.11			2.20E+01	3.61E+01
	25	663.67	3.50E+01	36.01			3.50E+01	3.60E+01
	26	728.64	9.29E+01	38.79			9.29E+01	3.88E+01
	27	770.25	3.16E+01	39.63			3.16E+01	3.96E+01
M	28	792.36	1.35E+01	13.29			1.35E+01	1.33E+01
m	29	795.82	4.10E+01	24.39			4.10E+01	2.44E+01
	30	862.09	4.65E+01	39.86			4.65E+01	3.99E+01
	31	883.94	2.24E+01	18.57			2.24E+01	1.86E+01
M	32	911.90	2.24E+02	33.79	5.44E+00	2.47E+00	2.18E+02	3.39E+01
m	33	915.75	1.75E+01	23.79			1.75E+01	2.38E+01
	34	934.70	3.21E+01	32.15			3.21E+01	3.21E+01
M	35	959.97	1.38E+01	16.54			1.38E+01	1.65E+01
m	36	965.82	5.46E+01	28.66			5.46E+01	2.87E+01
m	37	969.84	1.58E+02	31.02			1.58E+02	3.10E+01
	38	1016.32	2.06E+01	25.23			2.06E+01	2.52E+01
	39	1035.40	1.36E+01	17.46			1.36E+01	1.75E+01
	40	1121.73	9.20E+01	29.29			9.20E+01	2.93E+01
	41	1175.49	2.40E+01	27.82			2.40E+01	2.78E+01
	42	1229.28	1.85E+01	22.67			1.85E+01	2.27E+01
	43	1239.08	3.40E+01	29.97			3.40E+01	3.00E+01
	44	1314.43	1.92E+01	16.45			1.92E+01	1.64E+01
	45	1409.11	2.29E+01	17.26			2.29E+01	1.73E+01
	46	1461.68	7.70E+02	61.18	6.04E+00	1.30E+00	7.64E+02	6.12E+01
	47	1509.32	1.93E+01	13.27			1.93E+01	1.33E+01
	48	1589.99	2.69E+01	17.64			2.69E+01	1.76E+01
	49	1695.38	1.42E+01	13.37			1.42E+01	1.34E+01
	50	1765.80	5.71E+01	19.97	1.45E+00	2.00E+00	5.56E+01	2.01E+01
	51	1787.26	6.00E+00	4.90			6.00E+00	4.90E+00
	52	1842.51	1.00E+01	8.00			1.00E+01	8.00E+00
	53	1848.66	8.00E+00	5.66			8.00E+00	5.66E+00
	54	1854.79	6.00E+00	4.90			6.00E+00	4.90E+00
	55	1911.81	8.00E+00	5.66			8.00E+00	5.66E+00
	56	1948.38	7.11E+00	6.95			7.11E+00	6.95E+00
	57	1972.60	9.45E+00	7.50			9.45E+00	7.50E+00
	58	2087.03	8.93E+00	10.79			8.93E+00	1.08E+01
	59	2096.31	6.50E+00	8.03			6.50E+00	8.03E+00
	60	2104.43	2.20E+01	10.78			2.20E+01	1.08E+01
	61	2205.66	1.55E+01	12.49			1.55E+01	1.25E+01
	62	2402.14	1.10E+01	6.63			1.10E+01	6.63E+00
	63	2436.24	4.42E+00	5.74			4.42E+00	5.74E+00
	64	2447.77	8.45E+00	7.00			8.45E+00	7.00E+00
	65	2615.50	1.24E+02	22.27			1.24E+02	2.23E+01

Analysis Report for 1606038-04
CP-5018 00-02

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	0.885	1460.81 *	10.67	1.61E+01	1.90E+00
GA-67	0.897	93.31 *	35.70	1.50E+00	2.43E+00
		208.95	2.24		
		300.22 *	16.00	2.41E+00	3.85E+00
CS-135	0.979	268.24 *	16.00	9.97E-02	1.08E-01
PM-149	0.812	285.90 *	3.10	1.18E+01	1.28E+01
TL-208	0.799	583.14 *	30.22	9.88E-01	2.03E-01
		860.37	4.48		
		2614.66 *	35.85	1.02E+00	2.02E-01
PB-210	0.970	46.50 *	4.25	1.13E+00	1.36E+00
PB-212	0.971	238.63 *	44.60	1.27E+00	1.54E-01
		300.09 *	3.41	2.00E+00	8.07E-01
BI-214	0.390	609.31 *	46.30	7.88E-01	1.29E-01
		1120.29	15.10		
		1764.49	15.80		
		2204.22	4.98		
PB-214	0.906	295.21 *	19.19	9.51E-01	1.81E-01
		351.92 *	37.19	9.04E-01	1.53E-01
RA-223	0.996	323.87 *	3.88	5.65E-01	6.66E-01
RA-226	0.966	186.21 *	3.28	2.50E+00	4.78E+00
AC-228	0.902	338.32 *	11.40	1.16E+00	4.00E-01
		911.07 *	27.70	1.23E+00	2.18E-01
		969.11 *	16.60	1.56E+00	3.35E-01
CM-243	0.344	209.75 *	3.29	8.46E-01	1.01E+00
		228.14	10.60		
		277.60 *	14.00	3.73E-01	3.18E-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 1606038-04
CP-5018 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 12:38:20PM
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	76.72	3.01312E-01	7.04		
4	129.34	3.14066E-02	40.45		
5	154.98	1.46150E-02	53.19		
m 9	242.39	6.55763E-02	15.66		
m 11	270.88	2.15998E-02	27.61		
19	410.03	1.83333E-02	44.17	Tol.	HO-166M
20	463.87	3.01796E-02	21.35	Sum	
21	511.37	3.15163E-02	23.51	Sum	
m 24	616.03	6.11313E-03	82.04		
25	663.67	9.71398E-03	51.49	Sum	
26	728.64	2.57982E-02	20.89		
27	770.25	8.77062E-03	62.76	Sum	
M 28	792.36	3.75658E-03	49.15		
m 29	795.82	1.13802E-02	29.77	Sum	
30	862.09	1.29167E-02	42.86	Sum	
31	883.94	6.21528E-03	41.51	Sum	
m 33	915.75	4.85921E-03	68.00		
34	934.70	8.92210E-03	50.04	Sum	
M 35	959.97	3.84560E-03	59.73		
m 36	965.82	1.51573E-02	26.26		
38	1016.32	5.72090E-03	61.26	Sum	
39	1035.40	3.79021E-03	64.00		
40	1121.73	2.55556E-02	15.92	Sum	
41	1175.49	6.65404E-03	58.06		
42	1229.28	5.13889E-03	61.26		
43	1239.08	9.43100E-03	44.14		
44	1314.43	5.34535E-03	42.73		
45	1409.11	6.35684E-03	37.70		
47	1509.32	5.35714E-03	34.39	Sum	
48	1589.99	7.48264E-03	32.75		
49	1695.38	3.93308E-03	47.21		
50	1765.80	1.54452E-02	18.05		
51	1787.26	1.66667E-03	40.82		
52	1842.51	2.78935E-03	39.83		
53	1848.66	2.22222E-03	35.36		
54	1854.79	1.66667E-03	40.82		
55	1911.81	2.22222E-03	35.36		
56	1948.38	1.97531E-03	48.84		
57	1972.60	2.62626E-03	39.66		
58	2087.03	2.48016E-03	60.44		
59	2096.31	1.80556E-03	61.78		
60	2104.43	6.11111E-03	24.50	S-Esc	

Analysis Report for 1606038-04
 CP-5018 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
61	2205.66	4.31159E-03	40.23		
62	2402.14	3.05556E-03	30.15		
63	2436.24	1.22685E-03	65.03		
64	2447.77	2.34722E-03	41.42		

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	0.88	1460.81 *	10.67	1.61E+01	1.90E+00
GA-67	0.89	93.31 *	35.70	1.50E+00	2.43E+00
		208.95	2.24		
		300.22 *	16.00	2.41E+00	3.85E+00
CS-135	0.97	268.24 *	16.00	9.97E-02	1.08E-01
PM-149	0.81	285.90 *	3.10	1.18E+01	1.28E+01
TL-208	0.79	583.14 *	30.22	9.88E-01	2.03E-01
		860.37	4.48		
		2614.66 *	35.85	1.02E+00	2.02E-01
		46.50 *	4.25	1.13E+00	1.36E+00
PB-210	0.97	238.63 *	44.60	1.27E+00	1.54E-01
PB-212	0.97	300.09 *	3.41	2.00E+00	8.07E-01
		609.31 *	46.30	7.88E-01	1.29E-01
BI-214	0.39	1120.29	15.10		
		1764.49	15.80		
		2204.22	4.98		
		295.21 *	19.19	9.51E-01	1.81E-01
PB-214	0.90	351.92 *	37.19	9.04E-01	1.53E-01
		323.87 *	3.88	5.65E-01	6.66E-01
RA-223	0.99	186.21 *	3.28	2.50E+00	4.78E+00
RA-226	0.96	338.32 *	11.40	1.16E+00	4.00E-01
AC-228	0.90	911.07 *	27.70	1.23E+00	2.18E-01
		969.11 *	16.60	1.56E+00	3.35E-01
		209.75 *	3.29	8.46E-01	1.01E+00
CM-243	0.34				

Analysis Report for 1606038-04
CP-5018 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CM-243	0.34	228.14 277.60 *	10.60 14.00	3.73E-01	3.18E-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	0.885	1.61E+01	1.90E+00
	GA-67	0.897	1.27E+00	1.48E+00
	CS-135	0.979	9.97E-02	1.08E-01
	PM-149	0.812	1.18E+01	1.28E+01
X	HG-203	0.854		
	TL-208	0.799	1.00E+00	1.43E-01
	PB-210	0.970	1.13E+00	1.36E+00
	PB-212	0.971	1.26E+00	1.52E-01
	BI-214	0.390	7.88E-01	1.29E-01
	PB-214	0.906	9.24E-01	1.17E-01
	RA-223	0.996	5.65E-01	6.66E-01
	RA-226	0.966	2.50E+00	4.78E+00
	AC-228	0.902	1.30E+00	1.66E-01
	CM-243	0.344	4.16E-01	3.03E-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 1606038-04
CP-5018 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 12:38:20PM
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	76.72	3.01312E-01	7.04		
4	129.34	3.14066E-02	40.45		
5	154.98	1.46150E-02	53.19		
m 9	242.39	6.55763E-02	15.66		
m 11	270.88	2.15998E-02	27.61		
19	410.03	1.83333E-02	44.17	Tol.	HO-166M
20	463.87	3.01796E-02	21.35	Sum	
21	511.37	3.15163E-02	23.51	Sum	
m 24	616.03	6.11313E-03	82.04		
25	663.67	9.71398E-03	51.49	Sum	
26	728.64	2.57982E-02	20.89		
27	770.25	8.77062E-03	62.76	Sum	
M 28	792.36	3.75658E-03	49.15		
m 29	795.82	1.13802E-02	29.77	Sum	
30	862.09	1.29167E-02	42.86	Sum	
31	883.94	6.21528E-03	41.51	Sum	
m 33	915.75	4.85921E-03	68.00		
34	934.70	8.92210E-03	50.04	Sum	
M 35	959.97	3.84560E-03	59.73		
m 36	965.82	1.51573E-02	26.26		
38	1016.32	5.72090E-03	61.26	Sum	
39	1035.40	3.79021E-03	64.00		
40	1121.73	2.55556E-02	15.92	Sum	
41	1175.49	6.65404E-03	58.06		
42	1229.28	5.13889E-03	61.26		
43	1239.08	9.43100E-03	44.14		
44	1314.43	5.34535E-03	42.73		
45	1409.11	6.35684E-03	37.70		
47	1509.32	5.35714E-03	34.39	Sum	
48	1589.99	7.48264E-03	32.75		
49	1695.38	3.93308E-03	47.21		
50	1765.80	1.54452E-02	18.05		
51	1787.26	1.66667E-03	40.82		
52	1842.51	2.78935E-03	39.83		
53	1848.66	2.22222E-03	35.36		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	1854.79	1.66667E-03	40.82		
55	1911.81	2.22222E-03	35.36		
56	1948.38	1.97531E-03	48.84		
57	1972.60	2.62626E-03	39.66		
58	2087.03	2.48016E-03	60.44		
59	2096.31	1.80556E-03	61.78		
60	2104.43	6.11111E-03	24.50	S-Esc	
61	2205.66	4.31159E-03	40.23		
62	2402.14	3.05556E-03	30.15		
63	2436.24	1.22685E-03	65.03		
64	2447.77	2.34722E-03	41.42		

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	-1.57E-01	5.32E-01	5.32E-01
+	NA-22	1274.54	99.94	3.86E-02	6.86E-02	6.86E-02
+	NA-24	1368.53	99.99	1.04E+02	1.85E+02	4.83E+02
		2754.09	99.86	2.52E+01		1.85E+02
+	AL-26	1808.65	99.76	-1.08E-02	3.38E-02	3.38E-02
+	K-40	1460.81	* 10.67	1.61E+01	9.65E-01	9.65E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-8.16E-02	5.53E-02	5.53E-02
		78.34	96.00	7.39E-02		7.14E-02
+	SC-46	889.25	99.98	-3.49E-02	5.50E-02	5.50E-02
		1120.51	99.99	8.28E-02		9.60E-02
+	V-48	983.52	99.98	-1.55E-03	8.50E-02	8.50E-02
		1312.10	97.50	-1.21E-03		8.81E-02
+	CR-51	320.08	9.83	-1.19E-01	4.85E-01	4.85E-01
+	MN-54	834.83	99.97	4.05E-02	6.49E-02	6.49E-02
+	CO-56	846.75	99.96	7.97E-03	5.99E-02	5.99E-02
		1037.75	14.03	0.00E+00		4.50E-01

Analysis Report for 1606038-04
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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
CO-56	1238.25	67.00	1.04E-01	5.99E-02	1.41E-01
	1771.40	15.51	-3.72E-01		3.20E-01
	2598.48	16.90	-1.87E-02		2.24E-01
+ CO-57	122.06	85.51	-1.22E-03	4.67E-02	4.67E-02
	136.48	10.60	-5.36E-02		3.84E-01
+ CO-58	810.76	99.40	-2.74E-02	5.41E-02	5.41E-02
+ FE-59	1099.22	56.50	-4.94E-02	1.30E-01	1.30E-01
	1291.56	43.20	-1.38E-01		1.40E-01
+ CO-60	1173.22	100.00	1.67E-02	5.94E-02	7.52E-02
	1332.49	100.00	1.20E-02		5.94E-02
+ ZN-65	1115.52	50.75	-2.63E-02	1.19E-01	1.19E-01
+ GA-67	93.31	* 35.70	1.50E+00	1.20E+00	1.20E+00
	208.95	2.24	6.82E+00		1.25E+01
	300.22	* 16.00	2.41E+00		3.05E+00
+ SE-75	121.11	16.70	1.15E-01	6.90E-02	2.45E-01
	136.00	59.20	-6.78E-03		7.03E-02
	264.65	59.80	-1.62E-02		6.90E-02
	279.53	25.20	1.05E-01		1.86E-01
	400.65	11.40	1.00E-01		3.94E-01
+ RB-82	776.52	13.00	2.11E-01	5.53E-01	5.53E-01
+ RB-83	520.41	46.00	-2.80E-03	1.16E-01	1.16E-01
	529.64	30.30	1.67E-03		1.74E-01
	552.65	16.40	-9.88E-02		3.26E-01
+ KR-85	513.99	0.43	1.82E+00	1.94E+01	1.94E+01
+ SR-85	513.99	99.27	8.67E-03	9.24E-02	9.24E-02
+ Y-88	898.02	93.40	-6.91E-03	3.89E-02	6.43E-02
	1836.01	99.38	-8.95E-03		3.89E-02
+ NB-93M	16.57	9.43	-3.64E+01	5.60E+01	5.60E+01
+ NB-94	702.63	100.00	-1.63E-02	5.69E-02	5.69E-02
	871.10	100.00	-2.20E-02		5.79E-02
+ NB-95	765.79	99.81	-4.32E-03	6.61E-02	6.61E-02
+ NB-95M	235.69	25.00	-1.20E+01	9.54E-01	9.54E-01
+ ZR-95	724.18	43.70	3.11E-03	1.08E-01	1.55E-01
	756.72	55.30	2.38E-03		1.08E-01
+ MO-99	181.06	6.20	-1.07E+00	3.49E+00	5.19E+00
	739.58	12.80	-3.80E-01		3.49E+00
	778.00	4.50	-1.19E+00		9.55E+00
+ RU-103	497.08	89.00	-2.26E-02	6.71E-02	6.71E-02
+ RU-106	621.84	9.80	-5.25E-02	5.04E-01	5.04E-01
+ AG-108M	433.93	89.90	2.61E-02	5.49E-02	5.49E-02
	614.37	90.40	-4.61E-01		6.22E-02
	722.95	90.50	-5.69E-03		6.43E-02
+ CD-109	88.03	3.72	7.52E-01	1.48E+00	1.48E+00
+ AG-110M	657.75	93.14	7.52E-03	5.25E-02	5.25E-02
	677.61	10.53	6.59E-02		5.34E-01
	706.67	16.46	9.30E-02		3.59E-01
	763.93	21.98	-1.07E-02		2.46E-01
	884.67	71.63	-1.58E-02		8.03E-02

Analysis Report for 1606038-04
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AG-110M	1384.27	23.94	-1.39E-01	5.25E-02	2.17E-01
+	CD-113M	263.70	0.02	-5.29E+01	1.74E+02	1.74E+02
+	SN-113	255.12	1.93	-1.87E+00	6.77E-02	2.13E+00
		391.69	64.90	-1.38E-02		6.77E-02
+	TE123M	159.00	84.10	-1.07E-02	5.02E-02	5.02E-02
+	SB-124	602.71	97.87	8.35E-03	6.39E-02	6.39E-02
		645.85	7.26	5.39E-03		7.48E-01
		722.78	11.10	-5.09E-02		5.76E-01
		1691.02	49.00	-4.85E-03		1.04E-01
+	I-125	35.49	6.49	-3.69E-01	1.91E+00	1.91E+00
+	SB-125	176.33	6.89	1.64E-01	1.49E-01	6.19E-01
		427.89	29.33	-6.41E-02		1.49E-01
		463.38	10.35	9.73E-01		6.09E-01
		600.56	17.80	-1.19E-01		3.08E-01
		635.90	11.32	4.42E-02		4.73E-01
+	SB-126	414.70	83.30	-1.32E-03	8.99E-02	9.85E-02
		666.33	99.60	1.41E-02		8.99E-02
		695.00	99.60	1.81E-02		9.04E-02
		720.50	53.80	6.99E-02		1.72E-01
+	SN-126	87.57	37.00	7.48E-02	1.47E-01	1.47E-01
+	SB-127	473.00	25.00	3.06E-01	6.64E-01	8.71E-01
		685.20	35.70	-3.56E-01		6.64E-01
		783.80	14.70	-2.80E-01		1.67E+00
+	I-129	29.78	57.00	-1.75E-01	3.66E-01	3.66E-01
		33.60	13.20	-9.18E-01		1.01E+00
		39.58	7.52	-4.24E-01		1.14E+00
+	I-131	284.30	6.05	-6.28E-01	1.01E-01	1.32E+00
		364.48	81.20	2.68E-02		1.01E-01
		636.97	7.26	5.71E-01		1.50E+00
		722.89	1.80	-5.78E-01		6.53E+00
+	TE-132	49.72	13.10	-9.27E-01	2.74E-01	2.59E+00
		228.16	88.00	-2.66E-02		2.74E-01
+	BA-133	81.00	33.00	6.16E-02	8.24E-02	1.59E-01
		302.84	17.80	2.08E-01		2.68E-01
		356.01	60.00	-2.49E-01		8.24E-02
+	I-133	529.87	86.30	3.75E-01	3.92E+01	3.92E+01
+	XE-133	81.00	38.00	1.57E-01	4.05E-01	4.05E-01
+	CS-134	563.23	8.38	2.98E-02	5.82E-02	6.53E-01
		569.32	15.43	-2.08E-01		3.58E-01
		604.70	97.60	-1.80E-03		5.82E-02
		795.84	85.40	6.05E-02		8.10E-02
		801.93	8.73	1.80E-01		6.54E-01
+	CS-135	268.24	* 16.00	9.97E-02	3.35E-01	3.35E-01
+	I-135	1131.51	22.50	-3.65E+07	1.78E+08	2.16E+08
		1260.41	28.60	-1.94E+08		1.78E+08
		1678.03	9.54	1.08E+07		2.59E+08
+	CS-136	153.22	7.46	1.03E-01	8.62E-02	8.79E-01
		163.89	4.61	2.47E-01		1.40E+00
		176.55	13.56	1.27E-01		4.81E-01

Analysis Report for 1606038-04
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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
CS-136	273.65	12.66	-4.16E-01	8.62E-02	5.49E-01
	340.57	48.50	4.69E-01		2.04E-01
	818.50	99.70	-7.86E-03		8.62E-02
	1048.07	79.60	-5.05E-02		1.19E-01
	1235.34	19.70	6.80E-02		5.56E-01
+ CS-137	661.65	85.12	-3.26E-03	6.38E-02	6.38E-02
+ LA-138	788.74	34.00	2.21E-02	7.72E-02	1.71E-01
	1435.80	66.00	-6.72E-03		7.72E-02
+ CE-139	165.85	80.35	1.76E-02	5.44E-02	5.44E-02
+ BA-140	162.64	6.70	-3.28E-01	3.33E-01	9.56E-01
	304.84	4.50	2.28E-01		1.37E+00
	423.70	3.20	1.22E+00		2.43E+00
	437.55	2.00	9.57E-01		3.93E+00
	537.32	25.00	1.85E-01		3.33E-01
+ LA-140	328.77	20.50	5.57E-02	6.77E-02	3.60E-01
	487.03	45.50	-5.20E-02		1.71E-01
	815.85	23.50	5.68E-03		3.81E-01
	1596.49	95.49	0.00E+00		6.77E-02
+ CE-141	145.44	48.40	2.07E-02	9.84E-02	9.84E-02
+ CE-143	57.36	11.80	2.28E+01	8.67E+00	2.95E+01
	293.26	42.00	1.36E+01		8.67E+00
	664.55	5.20	1.66E+01		6.80E+01
+ CE-144	133.54	10.80	7.93E-02	3.83E-01	3.83E-01
+ PM-144	476.78	42.00	-3.52E-02	5.54E-02	1.18E-01
	618.01	98.60	3.55E-03		5.54E-02
	696.49	99.49	-2.70E-02		5.60E-02
+ PM-145	36.85	21.70	9.75E-02	2.51E-01	4.74E-01
	37.36	39.70	-6.92E-02		2.51E-01
	42.30	15.10	8.64E-02		4.95E-01
	72.40	2.31	-1.11E+01		2.46E+00
+ PM-146	453.90	39.94	7.05E-02	1.18E-01	1.18E-01
	735.90	14.01	-1.45E-01		3.59E-01
	747.13	13.10	1.53E-01		4.70E-01
+ ND-147	91.11	28.90	-1.15E+00	3.22E-01	3.22E-01
	531.02	13.10	-2.85E-01		6.21E-01
+ PM-149	285.90	* 3.10	1.18E+01	2.09E+01	2.09E+01
+ EU-152	121.78	20.50	-4.98E-03	1.91E-01	1.91E-01
	244.69	5.40	2.02E-01		9.54E-01
	344.27	19.13	-3.01E-02		2.17E-01
	778.89	9.20	-2.16E-02		6.07E-01
	964.01	10.40	-4.59E-01		7.48E-01
	1085.78	7.22	3.37E-01		9.49E-01
	1112.02	9.60	5.33E-01		7.61E-01
	1407.95	14.94	1.36E-01		4.25E-01
	97.43	31.30	-1.54E-02	1.40E-01	1.40E-01
	103.18	22.20	-5.22E-02		1.87E-01
+ EU-154	123.07	40.50	-7.73E-02	9.58E-02	9.58E-02
	723.30	19.70	-2.62E-02		2.96E-01
	873.19	11.50	1.18E-01		5.28E-01

Analysis Report for 1606038-04
CP-5018 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	996.32	10.30	2.79E-01	9.58E-02	6.51E-01
		1004.76	17.90	-1.68E-02		3.36E-01
		1274.45	35.50	1.08E-01		1.92E-01
+	EU-155	86.50	30.90	3.01E-01	1.81E-01	1.81E-01
		105.30	20.70	7.27E-02		1.97E-01
+	EU-156	811.77	10.40	2.19E-01	7.63E-01	7.63E-01
		1153.47	7.20	-8.59E-01		1.19E+00
		1230.71	8.90	1.42E-01		1.24E+00
+	HO-166M	184.41	72.60	5.72E-02	7.36E-02	7.36E-02
		280.45	29.60	2.51E-02		1.42E-01
		410.94	11.10	2.96E-01		5.02E-01
		711.69	54.10	-5.51E-03		9.39E-02
+	TM-171	66.72	0.14	-3.34E+01	4.02E+01	4.02E+01
+	HF-172	81.75	4.52	-7.69E-01	3.66E-01	1.05E+00
		125.81	11.30	-6.86E-02		3.66E-01
+	LU-172	181.53	20.60	3.86E-02	2.30E-01	4.68E-01
		810.06	16.63	-4.49E-01		6.67E-01
		912.12	15.25	5.00E+00		1.89E+00
		1093.66	62.50	-1.96E-02		2.30E-01
+	LU-173	100.72	5.24	-6.58E-02	2.32E-01	7.99E-01
		272.11	21.20	9.09E-02		2.32E-01
+	HF-175	343.40	84.00	-1.08E-02	5.40E-02	5.40E-02
+	LU-176	88.34	13.30	3.39E-01	3.84E-02	4.20E-01
		201.83	86.00	-2.73E-02		4.82E-02
		306.78	94.00	-1.99E-03		3.84E-02
+	TA-182	67.75	41.20	-1.97E-01	1.33E-01	1.33E-01
		1121.30	34.90	3.55E-01		2.79E-01
		1189.05	16.23	-3.39E-02		4.05E-01
		1221.41	26.98	1.41E-02		2.94E-01
		1231.02	11.44	7.98E-02		6.99E-01
+	IR-192	308.46	29.68	-3.36E-02	1.17E-01	1.36E-01
		468.07	48.10	-8.34E-03		1.17E-01
+	HG-203	279.19	* 77.30	7.63E-02	1.05E-01	1.05E-01
+	BI-207	569.67	97.72	-1.08E-02	5.68E-02	5.68E-02
		1063.62	74.90	2.64E-02		8.16E-02
+	TL-208	583.14	* 30.22	9.88E-01	2.22E-02	2.36E-01
		860.37	4.48	5.16E-01		1.59E+00
		2614.66	* 35.85	1.02E+00		2.22E-02
+	BI-210M	262.00	45.00	-3.58E-03	9.21E-02	9.21E-02
		300.00	23.00	-4.04E-01		2.24E-01
+	PB-210	46.50	* 4.25	1.13E+00	2.22E+00	2.22E+00
+	PB-211	404.84	2.90	-2.38E-01	1.44E+00	1.44E+00
		831.96	2.90	-2.38E-02		1.97E+00
+	BI-212	727.17	11.80	6.06E-01	6.40E-01	6.40E-01
		1620.62	2.75	1.27E-01		1.59E+00
+	PB-212	238.63	* 44.60	1.27E+00	2.09E-01	2.09E-01
		300.09	* 3.41	2.00E+00		2.53E+00
+	BI-214	609.31	* 46.30	7.88E-01	2.28E-01	2.28E-01

Analysis Report for 1606038-04
CP-5018 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	1120.29	15.10	5.13E-01	2.28E-01	5.94E-01
		1764.49	15.80	6.97E-01		6.13E-01
		2204.22	4.98	1.29E+00		1.47E+00
+	PB-214	295.21	* 19.19	9.51E-01	1.75E-01	4.47E-01
		351.92	* 37.19	9.04E-01		1.75E-01
+	RN-219	401.80	6.50	-5.75E-02	6.38E-01	6.38E-01
+	RA-223	323.87	* 3.88	5.65E-01	1.09E+00	1.09E+00
+	RA-224	240.98	3.95	1.60E+01	2.59E+00	2.59E+00
+	RA-225	40.00	31.00	-1.47E-01	3.94E-01	3.94E-01
+	RA-226	186.21	* 3.28	2.50E+00	2.23E+00	2.23E+00
+	TH-227	50.10	8.40	-2.52E-01	4.33E-01	7.02E-01
		236.00	11.50	-5.45E+00		4.33E-01
		256.20	6.30	-4.28E-01		6.35E-01
+	AC-228	338.32	* 11.40	1.16E+00	4.64E-01	5.91E-01
		911.07	* 27.70	1.23E+00		4.64E-01
		969.11	* 16.60	1.56E+00		6.63E-01
+	TH-230	48.44	16.90	1.89E-01	3.84E-01	3.84E-01
		62.85	4.60	2.08E+00		1.34E+00
		67.67	0.37	-2.08E+01		1.41E+01
+	PA-231	283.67	1.60	-1.24E+00	2.07E+00	2.50E+00
		302.67	2.30	1.61E+00		2.07E+00
+	TH-231	25.64	14.70	-3.37E+01	7.85E-01	3.52E+00
		84.21	6.40	-1.88E+00		7.85E-01
+	PA-233	311.98	38.60	6.38E-02	1.32E-01	1.32E-01
+	PA-234	131.20	20.40	3.95E-02	2.11E-01	2.11E-01
		733.99	8.80	7.52E-02		6.21E-01
		946.00	12.00	-2.82E-02		4.40E-01
+	PA-234M	1001.03	0.92	1.97E+00	7.19E+00	7.19E+00
+	TH-234	63.29	3.80	2.37E+00	1.62E+00	1.62E+00
+	U-235	143.76	10.50	-1.16E-01	3.75E-01	3.75E-01
		163.35	4.70	1.57E-01		8.92E-01
		205.31	4.70	7.39E-01		9.60E-01
+	NP-237	86.50	12.60	7.37E-01	4.43E-01	4.43E-01
+	NP-239	106.10	22.70	7.31E-01	1.98E+00	1.98E+00
		228.18	10.70	-4.25E-01		4.39E+00
		277.60	14.10	2.51E+00		3.67E+00
+	AM-241	59.54	35.90	-6.28E-02	1.54E-01	1.54E-01
+	AM-243	74.67	66.00	-3.31E-01	1.03E-01	1.03E-01
+	CM-243	209.75	* 3.29	8.46E-01	4.01E-01	1.65E+00
		228.14	10.60	-3.89E-02		4.01E-01
		277.60	* 14.00	3.73E-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

Analysis Report for 1606038-04
CP-5018 00-02

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
BE-7	477.59	10.42	5.32E-01	5.32E-01	-1.57E-01	2.52E-01	
NA-22	1274.54	99.94	6.86E-02	6.86E-02	3.86E-02	3.16E-02	
NA-24	1368.53	99.99	4.83E+02	1.85E+02	1.04E+02	2.17E+02	
	2754.09	99.86	1.85E+02		2.52E+01	5.86E+01	
AL-26	1808.65	99.76	3.38E-02	3.38E-02	-1.08E-02	1.34E-02	
+ K-40	1460.81	*	10.67	9.65E-01	9.65E-01	1.61E+01	4.54E-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	5.53E-02	5.53E-02	-8.16E-02	2.70E-02	
	78.34	96.00	7.14E-02		7.39E-02	3.51E-02	
SC-46	889.25	99.98	5.50E-02	5.50E-02	-3.49E-02	2.53E-02	
	1120.51	99.99	9.60E-02		8.28E-02	4.53E-02	
V-48	983.52	99.98	8.50E-02	8.50E-02	-1.55E-03	3.93E-02	
	1312.10	97.50	8.81E-02		-1.21E-03	3.99E-02	
CR-51	320.08	9.83	4.85E-01	4.85E-01	-1.19E-01	2.30E-01	
MN-54	834.83	99.97	6.49E-02	6.49E-02	4.05E-02	3.05E-02	
CO-56	846.75	99.96	5.99E-02	5.99E-02	7.97E-03	2.78E-02	
	1037.75	14.03	4.50E-01		0.00E+00	2.07E-01	
	1238.25	67.00	1.41E-01		1.04E-01	6.63E-02	
	1771.40	15.51	3.20E-01		-3.72E-01	1.36E-01	
	2598.48	16.90	2.24E-01		-1.87E-02	8.69E-02	
CO-57	122.06	85.51	4.67E-02	4.67E-02	-1.22E-03	2.27E-02	
	136.48	10.60	3.84E-01		-5.36E-02	1.86E-01	
CO-58	810.76	99.40	5.41E-02	5.41E-02	-2.74E-02	2.50E-02	
FE-59	1099.22	56.50	1.30E-01	1.30E-01	-4.94E-02	5.99E-02	
	1291.56	43.20	1.40E-01		-1.38E-01	6.27E-02	
CO-60	1173.22	100.00	7.52E-02	5.94E-02	1.67E-02	3.50E-02	
	1332.49	100.00	5.94E-02		1.20E-02	2.68E-02	
ZN-65	1115.52	50.75	1.19E-01	1.19E-01	-2.63E-02	5.44E-02	
+ GA-67	93.31	*	35.70	1.20E+00	1.50E+00	5.89E-01	
	208.95	2.24	1.25E+01		6.82E+00	6.08E+00	
	300.22	*	16.00	3.05E+00	2.41E+00	1.49E+00	
SE-75	121.11	16.70	2.45E-01	6.90E-02	1.15E-01	1.19E-01	
	136.00	59.20	7.03E-02		-6.78E-03	3.41E-02	
	264.65	59.80	6.90E-02		-1.62E-02	3.30E-02	
	279.53	25.20	1.86E-01		1.05E-01	8.93E-02	
	400.65	11.40	3.94E-01		1.00E-01	1.87E-01	

Analysis Report for 1606038-04
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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-82	776.52	13.00	5.53E-01	5.53E-01	2.11E-01	2.58E-01
RB-83	520.41	46.00	1.16E-01	1.16E-01	-2.80E-03	5.46E-02
	529.64	30.30	1.74E-01		1.67E-03	8.23E-02
	552.65	16.40	3.26E-01		-9.88E-02	1.54E-01
KR-85	513.99	0.43	1.94E+01	1.94E+01	1.82E+00	9.39E+00
SR-85	513.99	99.27	9.24E-02	9.24E-02	8.67E-03	4.47E-02
Y-88	898.02	93.40	6.43E-02	3.89E-02	-6.91E-03	2.98E-02
	1836.01	99.38	3.89E-02		-8.95E-03	1.57E-02
NB-93M	16.57	9.43	5.60E+01	5.60E+01	-3.64E+01	2.60E+01
NB-94	702.63	100.00	5.69E-02	5.69E-02	-1.63E-02	2.67E-02
	871.10	100.00	5.79E-02		-2.20E-02	2.69E-02
NB-95	765.79	99.81	6.61E-02	6.61E-02	-4.32E-03	3.09E-02
NB-95M	235.69	25.00	9.54E-01	9.54E-01	-1.20E+01	4.62E-01
ZR-95	724.18	43.70	1.55E-01	1.08E-01	3.11E-03	7.33E-02
	756.72	55.30	1.08E-01		2.38E-03	5.06E-02
MO-99	181.06	6.20	5.19E+00	3.49E+00	-1.07E+00	2.51E+00
	739.58	12.80	3.49E+00		-3.80E-01	1.64E+00
	778.00	4.50	9.55E+00		-1.19E+00	4.45E+00
RU-103	497.08	89.00	6.71E-02	6.71E-02	-2.26E-02	3.19E-02
RU-106	621.84	9.80	5.04E-01	5.04E-01	-5.25E-02	2.36E-01
AG-108M	433.93	89.90	5.49E-02	5.49E-02	2.61E-02	2.61E-02
	614.37	90.40	6.22E-02		-4.61E-01	2.94E-02
	722.95	90.50	6.43E-02		-5.69E-03	3.02E-02
CD-109	88.03	3.72	1.48E+00	1.48E+00	7.52E-01	7.27E-01
AG-110M	657.75	93.14	5.25E-02	5.25E-02	7.52E-03	2.44E-02
	677.61	10.53	5.34E-01		6.59E-02	2.51E-01
	706.67	16.46	3.59E-01		9.30E-02	1.69E-01
	763.93	21.98	2.46E-01		-1.07E-02	1.15E-01
	884.67	71.63	8.03E-02		-1.58E-02	3.72E-02
	1384.27	23.94	2.17E-01		-1.39E-01	9.60E-02
CD-113M	263.70	0.02	1.74E+02	1.74E+02	-5.29E+01	8.32E+01
SN-113	255.12	1.93	2.13E+00	6.77E-02	-1.87E+00	1.02E+00
	391.69	64.90	6.77E-02		-1.38E-02	3.21E-02
TE123M	159.00	84.10	5.02E-02	5.02E-02	-1.07E-02	2.43E-02
SB-124	602.71	97.87	6.39E-02	6.39E-02	8.35E-03	3.03E-02
	645.85	7.26	7.48E-01		5.39E-03	3.50E-01
	722.78	11.10	5.76E-01		-5.09E-02	2.71E-01
	1691.02	49.00	1.04E-01		-4.85E-03	4.47E-02
I-125	35.49	6.49	1.91E+00	1.91E+00	-3.69E-01	9.26E-01
SB-125	176.33	6.89	6.19E-01	1.49E-01	1.64E-01	3.00E-01
	427.89	29.33	1.49E-01		-6.41E-02	7.04E-02
	463.38	10.35	6.09E-01		9.73E-01	2.93E-01
	600.56	17.80	3.08E-01		-1.19E-01	1.45E-01
	635.90	11.32	4.73E-01		4.42E-02	2.22E-01
SB-126	414.70	83.30	9.85E-02	8.99E-02	-1.32E-03	4.71E-02
	666.33	99.60	8.99E-02		1.41E-02	4.23E-02
	695.00	99.60	9.04E-02		1.81E-02	4.25E-02
	720.50	53.80	1.72E-01		6.99E-02	8.10E-02
SN-126	87.57	37.00	1.47E-01	1.47E-01	7.48E-02	7.23E-02
SB-127	473.00	25.00	8.71E-01	6.64E-01	3.06E-01	4.13E-01
	685.20	35.70	6.64E-01		-3.56E-01	3.11E-01
	783.80	14.70	1.67E+00		-2.80E-01	7.79E-01
I-129	29.78	57.00	3.66E-01	3.66E-01	-1.75E-01	1.77E-01

Analysis Report for 1606038-04
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
I-129	33.60	13.20	1.01E+00	3.66E-01	-9.18E-01	4.88E-01		
	39.58	7.52	1.14E+00		-4.24E-01	5.52E-01		
I-131	284.30	6.05	1.32E+00	1.01E-01	-6.28E-01	6.31E-01		
	364.48	81.20	1.01E-01		2.68E-02	4.81E-02		
	636.97	7.26	1.50E+00		5.71E-01	7.06E-01		
	722.89	1.80	6.53E+00		-5.78E-01	3.07E+00		
	49.72	13.10	2.59E+00		2.74E-01	-9.27E-01	1.26E+00	
TE-132	228.16	88.00	2.74E-01	8.24E-02	-2.66E-02	1.32E-01		
	81.00	33.00	1.59E-01		6.16E-02	7.77E-02		
BA-133	302.84	17.80	2.68E-01	3.92E+01	2.08E-01	1.29E-01		
	356.01	60.00	8.24E-02		-2.49E-01	3.95E-02		
	529.87	86.30	3.92E+01		3.75E-01	1.85E+01		
XE-133	81.00	38.00	4.05E-01	4.05E-01	1.57E-01	1.98E-01		
CS-134	563.23	8.38	6.53E-01	5.82E-02	2.98E-02	3.09E-01		
	569.32	15.43	3.58E-01		-2.08E-01	1.69E-01		
	604.70	97.60	5.82E-02		-1.80E-03	2.75E-02		
	795.84	85.40	8.10E-02		6.05E-02	3.83E-02		
	801.93	8.73	6.54E-01		1.80E-01	3.05E-01		
+ CS-135	268.24	* 16.00	3.35E-01	3.35E-01	9.97E-02	1.62E-01		
I-135	1131.51	22.50	2.16E+08	1.78E+08	-3.65E+07	9.85E+07		
	1260.41	28.60	1.78E+08		-1.94E+08	8.08E+07		
	1678.03	9.54	2.59E+08		1.08E+07	1.00E+08		
	153.22	7.46	8.79E-01		8.62E-02	1.03E-01	4.27E-01	
CS-136	163.89	4.61	1.40E+00	8.62E-02	2.47E-01	6.79E-01		
	176.55	13.56	4.81E-01		1.27E-01	2.33E-01		
	273.65	12.66	5.49E-01		-4.16E-01	2.64E-01		
	340.57	48.50	2.04E-01		4.69E-01	9.87E-02		
	818.50	99.70	8.62E-02		-7.86E-03	4.01E-02		
	1048.07	79.60	1.19E-01		-5.05E-02	5.49E-02		
	1235.34	19.70	5.56E-01		6.80E-02	2.57E-01		
	661.65	85.12	6.38E-02		6.38E-02	-3.26E-03	3.00E-02	
	LA-138	788.74	34.00		1.71E-01	7.72E-02	2.21E-02	8.02E-02
		1435.80	66.00		7.72E-02		-6.72E-03	3.41E-02
CE-139	165.85	80.35	5.44E-02	5.44E-02	1.76E-02	2.64E-02		
BA-140	162.64	6.70	9.56E-01	3.33E-01	-3.28E-01	4.63E-01		
	304.84	4.50	1.37E+00		2.28E-01	6.51E-01		
	423.70	3.20	2.43E+00		1.22E+00	1.16E+00		
	437.55	2.00	3.93E+00		9.57E-01	1.87E+00		
	537.32	25.00	3.33E-01		1.85E-01	1.58E-01		
	328.77	20.50	3.60E-01		6.77E-02	5.57E-02	1.73E-01	
LA-140	487.03	45.50	1.71E-01	6.77E-02	-5.20E-02	8.10E-02		
	815.85	23.50	3.81E-01		5.68E-03	1.77E-01		
	1596.49	95.49	6.77E-02		0.00E+00	2.86E-02		
	145.44	48.40	9.84E-02		9.84E-02	2.07E-02	4.77E-02	
CE-143	57.36	11.80	2.95E+01	8.67E+00	2.28E+01	1.44E+01		
	293.26	42.00	8.67E+00		1.36E+01	4.20E+00		
	664.55	5.20	6.80E+01		1.66E+01	3.21E+01		
CE-144	133.54	10.80	3.83E-01	3.83E-01	7.93E-02	1.86E-01		
PM-144	476.78	42.00	1.18E-01	5.54E-02	-3.52E-02	5.61E-02		
	618.01	98.60	5.54E-02		3.55E-03	2.61E-02		
	696.49	99.49	5.60E-02		-2.70E-02	2.63E-02		
PM-145	36.85	21.70	4.74E-01	2.51E-01	9.75E-02	2.30E-01		
	37.36	39.70	2.51E-01		-6.92E-02	1.22E-01		

Analysis Report for 1606038-04
CP-5018 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
PM-145	42.30	15.10	4.95E-01	2.51E-01	8.64E-02	2.40E-01	
	72.40	2.31	2.46E+00		-1.11E+01	1.21E+00	
PM-146	453.90	39.94	1.18E-01	1.18E-01	7.05E-02	5.61E-02	
	735.90	14.01	3.59E-01		-1.45E-01	1.67E-01	
	747.13	13.10	4.70E-01		1.53E-01	2.21E-01	
ND-147	91.11	28.90	3.22E-01	3.22E-01	-1.15E+00	1.58E-01	
	531.02	13.10	6.21E-01		-2.85E-01	2.93E-01	
+ PM-149	285.90	*	2.09E+01	2.09E+01	1.18E+01	1.01E+01	
EU-152	121.78	20.50	1.91E-01	1.91E-01	-4.98E-03	9.26E-02	
	244.69	5.40	9.54E-01		2.02E-01	4.62E-01	
	344.27	19.13	2.17E-01		-3.01E-02	1.03E-01	
	778.89	9.20	6.07E-01		-2.16E-02	2.83E-01	
	964.01	10.40	7.48E-01		-4.59E-01	3.53E-01	
	1085.78	7.22	9.49E-01		3.37E-01	4.41E-01	
	1112.02	9.60	7.61E-01		5.33E-01	3.55E-01	
	1407.95	14.94	4.25E-01		1.36E-01	1.93E-01	
	GD-153	97.43	31.30	1.40E-01	1.40E-01	-1.54E-02	6.82E-02
		103.18	22.20	1.87E-01		-5.22E-02	9.11E-02
EU-154	123.07	40.50	9.58E-02	9.58E-02	-7.73E-02	4.65E-02	
	723.30	19.70	2.96E-01		-2.62E-02	1.39E-01	
	873.19	11.50	5.28E-01		1.18E-01	2.46E-01	
	996.32	10.30	6.51E-01		2.79E-01	3.03E-01	
	1004.76	17.90	3.36E-01		-1.68E-02	1.55E-01	
EU-155	1274.45	35.50	1.92E-01		1.08E-01	8.84E-02	
	86.50	30.90	1.81E-01	1.81E-01	3.01E-01	8.89E-02	
EU-156	105.30	20.70	1.97E-01		7.27E-02	9.58E-02	
	811.77	10.40	7.63E-01	7.63E-01	2.19E-01	3.55E-01	
HO-166M	1153.47	7.20	1.19E+00		-8.59E-01	5.44E-01	
	1230.71	8.90	1.24E+00		1.42E-01	5.76E-01	
	184.41	72.60	7.36E-02	7.36E-02	5.72E-02	3.59E-02	
	280.45	29.60	1.42E-01		2.51E-02	6.81E-02	
TM-171	410.94	11.10	5.02E-01		2.96E-01	2.41E-01	
	711.69	54.10	9.39E-02		-5.51E-03	4.38E-02	
	66.72	0.14	4.02E+01	4.02E+01	-3.34E+01	1.97E+01	
HF-172	81.75	4.52	1.05E+00	3.66E-01	-7.69E-01	5.12E-01	
	125.81	11.30	3.66E-01		-6.86E-02	1.78E-01	
LU-172	181.53	20.60	4.68E-01	2.30E-01	3.86E-02	2.27E-01	
	810.06	16.63	6.67E-01		-4.49E-01	3.07E-01	
	912.12	15.25	1.89E+00		5.00E+00	9.11E-01	
	1093.66	62.50	2.30E-01		-1.96E-02	1.06E-01	
LU-173	100.72	5.24	7.99E-01	2.32E-01	-6.58E-02	3.89E-01	
	272.11	21.20	2.32E-01		9.09E-02	1.12E-01	
HF-175	343.40	84.00	5.40E-02	5.40E-02	-1.08E-02	2.57E-02	
LU-176	88.34	13.30	4.20E-01	3.84E-02	3.39E-01	2.06E-01	
	201.83	86.00	4.82E-02		-2.73E-02	2.33E-02	
	306.78	94.00	3.84E-02		-1.99E-03	1.82E-02	
TA-182	67.75	41.20	1.33E-01	1.33E-01	-1.97E-01	6.51E-02	
	1121.30	34.90	2.79E-01		3.55E-01	1.32E-01	
	1189.05	16.23	4.05E-01		-3.39E-02	1.86E-01	
	1221.41	26.98	2.94E-01		1.41E-02	1.37E-01	
	1231.02	11.44	6.99E-01		7.98E-02	3.25E-01	
IR-192	308.46	29.68	1.36E-01	1.17E-01	-3.36E-02	6.47E-02	
	468.07	48.10	1.17E-01		-8.34E-03	5.55E-02	

Analysis Report for 1606038-04
CP-5018 00-02

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
HG-203	279.19	*	77.30	1.05E-01	1.05E-01	7.63E-02	5.14E-02
BI-207	569.67		97.72	5.68E-02	5.68E-02	-1.08E-02	2.69E-02
	1063.62		74.90	8.16E-02		2.64E-02	3.76E-02
+ TL-208	583.14	*	30.22	2.36E-01	2.22E-02	9.88E-01	1.13E-01
	860.37		4.48	1.59E+00		5.16E-01	7.51E-01
	2614.66	*	35.85	2.22E-02		1.02E+00	0.00E+00
BI-210M	262.00		45.00	9.21E-02	9.21E-02	-3.58E-03	4.42E-02
	300.00		23.00	2.24E-01		-4.04E-01	1.08E-01
+ PB-210	46.50	*	4.25	2.22E+00	2.22E+00	1.13E+00	1.09E+00
PB-211	404.84		2.90	1.44E+00	1.44E+00	-2.38E-01	6.80E-01
	831.96		2.90	1.97E+00		-2.38E-02	9.17E-01
BI-212	727.17		11.80	6.40E-01	6.40E-01	6.06E-01	3.05E-01
	1620.62		2.75	1.59E+00		1.27E-01	6.76E-01
+ PB-212	238.63	*	44.60	2.09E-01	2.09E-01	1.27E+00	1.03E-01
	300.09	*	3.41	2.53E+00		2.00E+00	1.24E+00
+ BI-214	609.31	*	46.30	2.28E-01	2.28E-01	7.88E-01	1.11E-01
	1120.29		15.10	5.94E-01		5.13E-01	2.80E-01
	1764.49		15.80	6.13E-01		6.97E-01	2.85E-01
	2204.22		4.98	1.47E+00		1.29E+00	6.60E-01
+ PB-214	295.21	*	19.19	4.47E-01	1.75E-01	9.51E-01	2.19E-01
	351.92	*	37.19	1.75E-01		9.04E-01	8.47E-02
RN-219	401.80		6.50	6.38E-01	6.38E-01	-5.75E-02	3.02E-01
+ RA-223	323.87	*	3.88	1.09E+00	1.09E+00	5.65E-01	5.20E-01
RA-224	240.98		3.95	2.59E+00	2.59E+00	1.60E+01	1.28E+00
RA-225	40.00		31.00	3.94E-01	3.94E-01	-1.47E-01	1.91E-01
+ RA-226	186.21	*	3.28	2.23E+00	2.23E+00	2.50E+00	1.09E+00
TH-227	50.10		8.40	7.02E-01	4.33E-01	-2.52E-01	3.42E-01
	236.00		11.50	4.33E-01		-5.45E+00	2.10E-01
	256.20		6.30	6.35E-01		-4.28E-01	3.04E-01
+ AC-228	338.32	*	11.40	5.91E-01	4.64E-01	1.16E+00	2.87E-01
	911.07	*	27.70	4.64E-01		1.23E+00	2.24E-01
	969.11	*	16.60	6.63E-01		1.56E+00	3.18E-01
TH-230	48.44		16.90	3.84E-01	3.84E-01	1.89E-01	1.87E-01
	62.85		4.60	1.34E+00		2.08E+00	6.55E-01
	67.67		0.37	1.41E+01		-2.08E+01	6.91E+00
PA-231	283.67		1.60	2.50E+00	2.07E+00	-1.24E+00	1.19E+00
	302.67		2.30	2.07E+00		1.61E+00	9.94E-01
TH-231	25.64		14.70	3.52E+00	7.85E-01	-3.37E+01	1.71E+00
	84.21		6.40	7.85E-01		-1.88E+00	3.84E-01
PA-233	311.98		38.60	1.32E-01	1.32E-01	6.38E-02	6.28E-02
PA-234	131.20		20.40	2.11E-01	2.11E-01	3.95E-02	1.03E-01
	733.99		8.80	6.21E-01		7.52E-02	2.91E-01
	946.00		12.00	4.40E-01		-2.82E-02	2.02E-01
PA-234M	1001.03		0.92	7.19E+00	7.19E+00	1.97E+00	3.35E+00
TH-234	63.29		3.80	1.62E+00	1.62E+00	2.37E+00	7.96E-01
U-235	143.76		10.50	3.75E-01	3.75E-01	-1.16E-01	1.82E-01
	163.35		4.70	8.92E-01		1.57E-01	4.33E-01
	205.31		4.70	9.60E-01		7.39E-01	4.65E-01
NP-237	86.50		12.60	4.43E-01	4.43E-01	7.37E-01	2.17E-01
NP-239	106.10		22.70	1.98E+00	1.98E+00	7.31E-01	9.63E-01
	228.18		10.70	4.39E+00		-4.25E-01	2.12E+00
	277.60		14.10	3.67E+00		2.51E+00	1.77E+00
AM-241	59.54		35.90	1.54E-01	1.54E-01	-6.28E-02	7.54E-02

Analysis Report for 1606038-04
CP-5018 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AM-243	74.67	66.00	1.03E-01	1.03E-01	-3.31E-01	5.07E-02
+ CM-243	209.75 *	3.29	1.65E+00	4.01E-01	8.46E-01	8.03E-01
	228.14	10.60	4.01E-01		-3.89E-02	1.93E-01
	277.60 *	14.00	5.15E-01		3.73E-01	2.51E-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: CP-5018 00-02

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	59	84	73	129	821	191
25:	55	70	70	56	66	50	66	66
33:	68	55	67	60	87	60	70	72
41:	80	73	71	68	81	90	122	121
49:	76	88	75	84	81	107	97	106
57:	109	117	133	127	103	126	145	245
65:	208	119	146	113	157	126	141	146
73:	153	161	242	430	267	553	265	122
81:	105	146	132	116	185	155	133	247
89:	181	145	198	141	233	306	173	119
97:	102	106	96	102	107	86	97	95
105:	79	108	93	88	77	83	95	76
113:	79	83	77	83	92	77	66	97
121:	78	79	77	66	88	90	95	91
129:	106	134	83	91	78	75	79	78
137:	67	79	77	81	81	65	71	72
145:	89	56	73	72	67	86	76	90
153:	62	69	104	68	73	63	66	65
161:	69	78	64	59	73	81	67	69
169:	64	65	74	81	57	70	67	67
177:	64	76	60	57	62	66	59	64
185:	59	113	215	108	64	51	55	68
193:	63	47	47	68	55	61	65	56
201:	55	52	58	50	62	80	78	46
209:	62	111	77	53	61	55	62	51
217:	61	38	43	46	56	54	46	52
225:	59	60	48	41	42	53	43	51
233:	45	43	56	66	78	81	486	478
241:	113	153	146	66	39	38	41	36
249:	40	36	38	41	35	35	39	34
257:	34	42	61	41	36	37	37	41
265:	33	28	31	48	34	47	82	48
273:	39	37	39	54	39	55	47	34
281:	31	38	30	22	30	39	34	49
289:	28	25	28	38	28	31	61	189
297:	82	44	37	46	82	41	36	31
305:	19	22	32	20	22	24	25	39
313:	24	36	27	25	25	27	23	34
321:	18	24	38	31	45	27	35	36
329:	55	28	30	27	41	36	31	30
337:	23	34	158	82	36	30	23	21
345:	29	30	27	24	23	20	26	139
353:	282	68	38	33	16	23	27	20
361:	21	17	24	25	20	24	22	27

369: 15 29 11 23 28 22 26 24

Sample Title: CP-5018 00-02

Channel	1	2	3	4	5	6	7	8
377:	24	22	16	15	17	18	27	23
385:	25	31	23	26	23	24	20	22
393:	26	17	26	21	24	17	26	19
401:	24	24	18	18	20	23	24	24
409:	25	33	30	32	19	22	23	15
417:	24	23	20	20	27	20	24	21
425:	15	19	15	11	16	12	15	18
433:	11	20	24	18	26	17	15	15
441:	22	21	17	18	11	11	14	18
449:	7	15	11	20	15	23	14	21
457:	8	9	15	8	15	24	34	50
465:	29	27	18	13	14	12	18	13
473:	24	13	20	19	19	11	10	20
481:	17	19	19	15	19	15	24	10
489:	17	13	17	19	21	13	23	18
497:	22	11	14	17	25	13	24	17
505:	11	20	12	23	19	37	76	99
513:	47	26	16	21	23	17	17	14
521:	16	16	12	9	9	11	14	17
529:	11	14	15	14	12	10	23	15
537:	10	17	17	14	16	12	13	16
545:	16	8	14	12	15	22	10	9
553:	20	10	9	13	16	17	14	10
561:	15	19	14	18	13	18	18	11
569:	8	18	20	14	21	24	13	13
577:	13	12	8	20	4	18	65	187
585:	81	10	14	20	13	15	16	15
593:	12	13	5	11	18	15	12	13
601:	19	16	7	15	21	15	14	15
609:	69	191	99	20	11	9	14	22
617:	9	15	6	13	11	14	7	13
625:	8	10	15	15	5	13	18	11
633:	7	11	7	10	15	12	22	9
641:	7	14	12	11	5	10	6	7
649:	19	12	7	17	8	13	6	12
657:	12	8	6	7	12	15	19	9
665:	14	12	16	8	11	15	6	6
673:	10	7	13	9	13	11	11	13
681:	11	16	9	11	15	12	9	6
689:	20	12	10	13	15	10	12	12
697:	12	10	11	10	17	11	12	17
705:	9	6	14	17	15	6	8	11
713:	8	8	7	4	7	18	8	12
721:	12	13	8	13	8	16	24	44
729:	27	9	13	15	11	3	9	9
737:	10	7	9	22	8	10	10	11
745:	16	11	11	14	14	10	10	11
753:	11	9	11	16	10	6	10	5
761:	7	10	6	9	8	10	11	5
769:	20	13	17	12	14	11	7	11
777:	13	11	12	6	4	9	13	7
785:	11	11	12	10	14	5	5	14
793:	10	9	22	28	11	8	11	7

801: 10 10 6 13 8 8 4 3

Sample Title: CP-5018 00-02

Channel	1	2	3	4	5	6	7	8
809:	7	8	7	6	9	8	14	11
817:	9	7	7	10	12	5	8	8
825:	6	5	5	3	8	3	12	7
833:	10	11	11	15	12	12	7	7
841:	15	14	6	16	5	7	7	12
849:	6	4	7	5	5	5	9	10
857:	7	7	12	11	22	26	9	13
865:	13	12	8	9	7	5	4	12
873:	11	11	9	13	9	7	9	4
881:	4	8	9	6	17	4	5	5
889:	9	7	9	5	9	11	9	9
897:	9	5	6	11	5	4	9	15
905:	12	11	4	12	10	8	60	123
913:	50	11	8	14	4	5	6	7
921:	6	3	8	5	8	6	4	4
929:	8	4	6	9	11	12	17	8
937:	8	5	5	7	3	8	5	3
945:	7	7	7	7	6	10	4	7
953:	6	3	6	3	9	4	6	13
961:	6	5	6	8	23	32	13	10
969:	46	79	37	6	4	5	7	4
977:	9	5	8	9	6	8	5	10
985:	7	9	6	5	8	5	8	2
993:	7	14	5	11	6	13	8	7
1001:	9	6	10	9	6	7	7	5
1009:	7	7	6	6	4	3	13	9
1017:	13	7	5	5	4	5	4	8
1025:	8	8	5	3	7	7	9	5
1033:	5	5	14	6	6	2	5	7
1041:	5	5	8	8	8	4	6	8
1049:	12	7	4	12	8	11	4	5
1057:	4	3	5	4	9	10	4	5
1065:	7	6	6	7	4	6	6	10
1073:	7	5	5	10	7	7	6	3
1081:	9	9	13	11	7	9	9	5
1089:	4	6	4	9	6	7	9	5
1097:	6	8	9	4	12	6	12	8
1105:	8	6	7	9	13	9	14	7
1113:	7	6	8	1	6	6	6	15
1121:	35	16	14	13	11	5	2	6
1129:	5	2	7	5	5	8	6	11
1137:	8	6	9	6	4	5	2	9
1145:	9	5	5	14	6	7	4	3
1153:	6	3	6	9	8	7	5	7
1161:	6	9	4	7	8	6	5	6
1169:	3	12	4	4	3	17	9	13
1177:	7	7	11	6	9	7	15	6
1185:	4	4	5	5	5	3	12	7
1193:	10	5	7	8	9	9	13	8
1201:	9	8	8	5	8	6	11	6
1209:	12	5	8	5	8	9	5	13
1217:	8	9	9	9	9	4	12	7
1225:	5	8	5	7	15	10	8	5

1233: 5 9 2 6 16 8 16 21

Sample Title: CP-5018 00-02

Channel	1	2	3	4	5	6	7	8	9
1241:	11	8	5	10	11	7	13	8	
1249:	4	6	7	5	3	7	10	10	
1257:	2	8	7	3	4	5	6	7	
1265:	12	5	8	5	7	4	9	5	
1273:	9	6	7	5	3	3	2	4	
1281:	7	8	5	8	7	3	5	7	
1289:	3	4	3	1	4	3	7	11	
1297:	2	3	9	5	4	4	9	6	
1305:	5	5	7	2	4	1	3	2	
1313:	8	6	8	8	2	4	6	6	
1321:	4	5	3	4	4	2	2	6	
1329:	2	3	7	4	5	4	5	3	
1337:	3	7	4	4	4	6	3	5	
1345:	4	1	3	4	4	5	5	0	
1353:	3	3	1	3	2	3	3	4	
1361:	1	6	2	5	4	6	2	4	
1369:	2	5	3	3	2	4	0	2	
1377:	6	7	4	4	6	5	1	2	
1385:	0	3	3	3	8	3	1	2	
1393:	4	4	3	4	3	2	3	2	
1401:	4	2	5	1	1	3	4	5	
1409:	10	5	4	5	2	3	1	2	
1417:	3	1	2	5	1	3	0	5	
1425:	0	7	4	2	3	2	3	3	
1433:	5	1	0	2	3	4	4	2	
1441:	4	1	1	1	1	2	2	4	
1449:	3	1	4	2	3	0	5	1	
1457:	1	3	20	80	296	277	99	16	
1465:	6	3	5	2	4	3	2	1	
1473:	0	1	1	3	0	1	3	0	
1481:	4	3	4	1	3	2	1	1	
1489:	3	0	2	3	2	3	0	2	
1497:	2	2	0	1	2	2	4	3	
1505:	0	0	4	4	4	9	3	1	
1513:	3	1	2	0	2	4	1	0	
1521:	1	1	1	3	1	1	1	2	
1529:	1	0	0	4	4	2	0	4	
1537:	1	0	3	5	4	1	2	4	
1545:	3	1	1	0	2	2	3	5	
1553:	1	3	5	2	3	2	2	2	
1561:	0	3	0	3	0	2	1	0	
1569:	0	2	1	3	1	2	1	2	
1577:	1	0	5	3	3	1	3	3	
1585:	2	1	1	8	11	6	2	4	
1593:	2	3	1	1	1	1	1	1	
1601:	1	0	1	0	0	0	0	1	
1609:	6	1	4	2	1	1	0	4	
1617:	1	2	2	2	4	0	0	0	
1625:	2	4	0	1	3	4	5	3	
1633:	1	0	1	1	1	1	2	1	
1641:	0	1	2	0	0	3	0	1	
1649:	2	1	3	2	1	0	0	0	
1657:	2	3	2	1	1	3	2	4	

1665: 1 0 3 2 1 0 4 1

Sample Title: CP-5018 00-02

Channel	1	0	3	2	1	0	4	1
1673:	1	0	0	0	0	2	0	1
1681:	1	0	1	4	1	0	1	2
1689:	1	1	2	3	0	3	6	0
1697:	4	2	0	0	1	0	1	1
1705:	0	2	2	0	1	0	1	3
1713:	0	0	0	1	1	0	2	1
1721:	0	1	2	1	1	3	4	1
1729:	3	4	7	1	1	1	1	4
1737:	0	2	2	2	0	3	0	2
1745:	2	1	1	0	0	2	1	1
1753:	0	2	1	1	1	2	0	3
1761:	1	0	0	15	16	18	8	3
1769:	3	1	1	1	1	1	1	1
1777:	1	1	1	1	1	1	0	0
1785:	0	2	2	2	0	0	1	0
1793:	1	0	1	3	0	1	3	0
1801:	1	0	0	1	0	1	1	1
1809:	1	0	1	2	2	1	1	1
1817:	1	0	1	0	0	0	1	3
1825:	2	1	2	1	1	3	3	1
1833:	1	0	0	3	0	1	1	0
1841:	1	5	1	3	0	0	0	6
1849:	1	1	0	0	0	4	1	1
1857:	0	0	1	3	2	2	2	2
1865:	0	1	1	0	1	0	2	1
1873:	0	1	1	0	1	0	1	2
1881:	2	0	3	1	1	0	1	2
1889:	1	0	3	1	3	1	1	1
1897:	3	4	1	0	3	1	1	0
1905:	0	0	0	1	1	0	0	3
1913:	3	0	0	0	1	2	1	0
1921:	2	1	1	0	0	0	2	0
1929:	0	1	1	2	0	0	0	1
1937:	3	1	1	1	0	0	1	0
1945:	1	1	1	2	4	0	0	1
1953:	1	0	0	0	1	1	3	1
1961:	3	0	2	4	1	2	0	0
1969:	1	0	2	3	4	1	0	0
1977:	1	3	0	1	0	0	0	0
1985:	5	0	0	2	0	2	2	2
1993:	0	2	0	0	1	1	4	3
2001:	0	3	0	0	0	1	1	1
2009:	0	0	1	0	2	3	0	2
2017:	2	0	1	0	1	3	0	0
2025:	0	0	0	0	0	2	0	1
2033:	0	0	1	2	2	0	2	1
2041:	0	3	1	2	1	2	0	3
2049:	0	0	0	3	0	2	0	0
2057:	2	0	1	0	0	0	0	0
2065:	0	0	1	0	0	0	1	3
2073:	0	0	0	0	0	0	0	1
2081:	1	0	0	1	5	1	2	2
2089:	1	1	0	0	1	0	2	5

2097: 0 1 1 0 0 4 4 7

Sample Title: CP-5018 00-02

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

2529: 1 0 0 0 0 1 0 1

Sample Title: CP-5018 00-02

Channel	1	2	3	4	5	6	7	8	9
2537:	0	1	1	1	0	1	0	0	
2545:	0	0	0	1	1	0	0	0	
2553:	0	0	0	1	0	1	0	1	
2561:	1	0	0	0	0	0	0	1	
2569:	0	0	2	0	2	0	0	0	
2577:	0	1	1	0	3	0	0	0	
2585:	0	0	1	2	2	1	0	0	
2593:	0	0	0	1	0	1	2	0	
2601:	0	0	1	1	1	0	1	0	
2609:	0	1	1	2	10	32	43	23	
2617:	6	3	2	1	0	0	0	0	
2625:	0	0	1	0	1	0	0	0	
2633:	1	1	0	1	0	2	0	0	
2641:	0	0	0	0	0	0	1	0	
2649:	0	0	0	0	0	0	1	0	
2657:	1	0	0	0	0	2	0	0	
2665:	0	0	0	0	0	1	1	1	
2673:	0	0	0	0	0	1	1	0	
2681:	2	0	0	0	0	0	1	0	
2689:	1	1	0	0	0	0	0	0	
2697:	0	0	0	0	0	0	0	0	
2705:	1	0	0	0	0	0	0	2	
2713:	0	0	0	0	0	0	0	0	
2721:	0	0	1	0	0	0	0	0	
2729:	0	0	0	0	0	0	0	1	
2737:	0	1	0	0	0	1	0	1	
2745:	0	0	0	0	0	0	0	0	
2753:	0	0	0	1	0	0	0	0	
2761:	1	0	0	1	0	1	0	0	
2769:	0	0	1	0	1	0	0	0	
2777:	0	0	1	1	0	0	1	0	
2785:	0	1	0	0	0	0	0	0	
2793:	0	0	0	1	1	0	0	0	
2801:	0	0	1	1	1	0	1	0	
2809:	0	1	0	1	0	1	0	0	
2817:	0	0	0	2	0	1	0	0	
2825:	1	0	0	0	0	0	0	0	
2833:	0	0	0	0	0	1	0	0	
2841:	0	1	0	0	2	0	0	0	
2849:	0	0	1	0	0	1	0	0	
2857:	1	0	0	3	0	0	0	0	
2865:	0	1	0	1	0	0	0	0	
2873:	0	0	0	0	1	0	0	1	
2881:	0	0	0	0	0	0	0	1	
2889:	0	0	0	0	2	1	0	0	
2897:	0	0	1	1	0	0	0	0	
2905:	1	0	0	0	0	0	0	0	
2913:	0	0	1	0	0	0	1	0	
2921:	1	0	0	0	1	0	0	0	
2929:	0	1	1	0	0	1	0	0	
2937:	0	0	0	0	0	0	0	0	
2945:	0	1	0	0	0	0	1	0	
2953:	1	1	0	0	0	0	1	0	

2961: 0 0 0 0 0 0 1 1 0

Sample Title: CP-5018 00-02

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

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5018 00-02

Channel	1	2	3	4	5	6	7	8	9
3401:	0	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0	1
3417:	0	0	0	0	0	0	0	0	0
3425:	0	0	1	0	1	0	0	0	0
3433:	0	0	0	0	0	2	0	0	0
3441:	0	0	0	0	0	1	0	0	0
3449:	0	0	0	0	0	0	0	0	0
3457:	1	0	0	1	0	0	0	0	0
3465:	1	0	0	0	0	1	1	0	0
3473:	0	0	0	0	0	0	0	0	1
3481:	1	0	0	0	0	0	0	0	1
3489:	0	1	0	0	1	0	0	0	0
3497:	0	0	0	0	0	0	0	0	1
3505:	0	0	0	0	0	0	2	0	0
3513:	1	0	0	0	0	1	1	0	0
3521:	1	0	0	0	0	0	1	0	0
3529:	0	0	0	0	0	1	1	0	0
3537:	0	1	0	0	0	2	0	0	0
3545:	0	0	0	0	0	0	0	0	0
3553:	0	0	0	1	0	0	0	0	0
3561:	0	1	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	1	0	0	0	0	0	0
3593:	0	0	1	0	1	0	0	0	0
3601:	0	1	0	0	0	0	0	0	0
3609:	0	0	0	1	0	1	1	0	0
3617:	0	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	1	0	0	0
3641:	0	0	1	0	0	1	0	0	0
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	1	0	0
3681:	0	0	0	0	0	1	0	0	0
3689:	0	0	0	0	0	0	0	0	1
3697:	0	0	1	0	1	0	0	0	0
3705:	1	1	0	0	0	1	0	0	0
3713:	0	1	0	0	0	0	0	0	0
3721:	0	1	0	0	0	0	2	0	1
3729:	1	0	0	0	0	1	0	0	0
3737:	0	0	0	0	0	0	0	0	0
3745:	0	0	0	0	2	0	2	0	0
3753:	1	0	0	0	0	0	0	0	1
3761:	0	0	0	1	2	0	0	0	0
3769:	0	0	0	1	1	0	0	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0	0
3817:	0	1	0	0	0	0	0	0	1

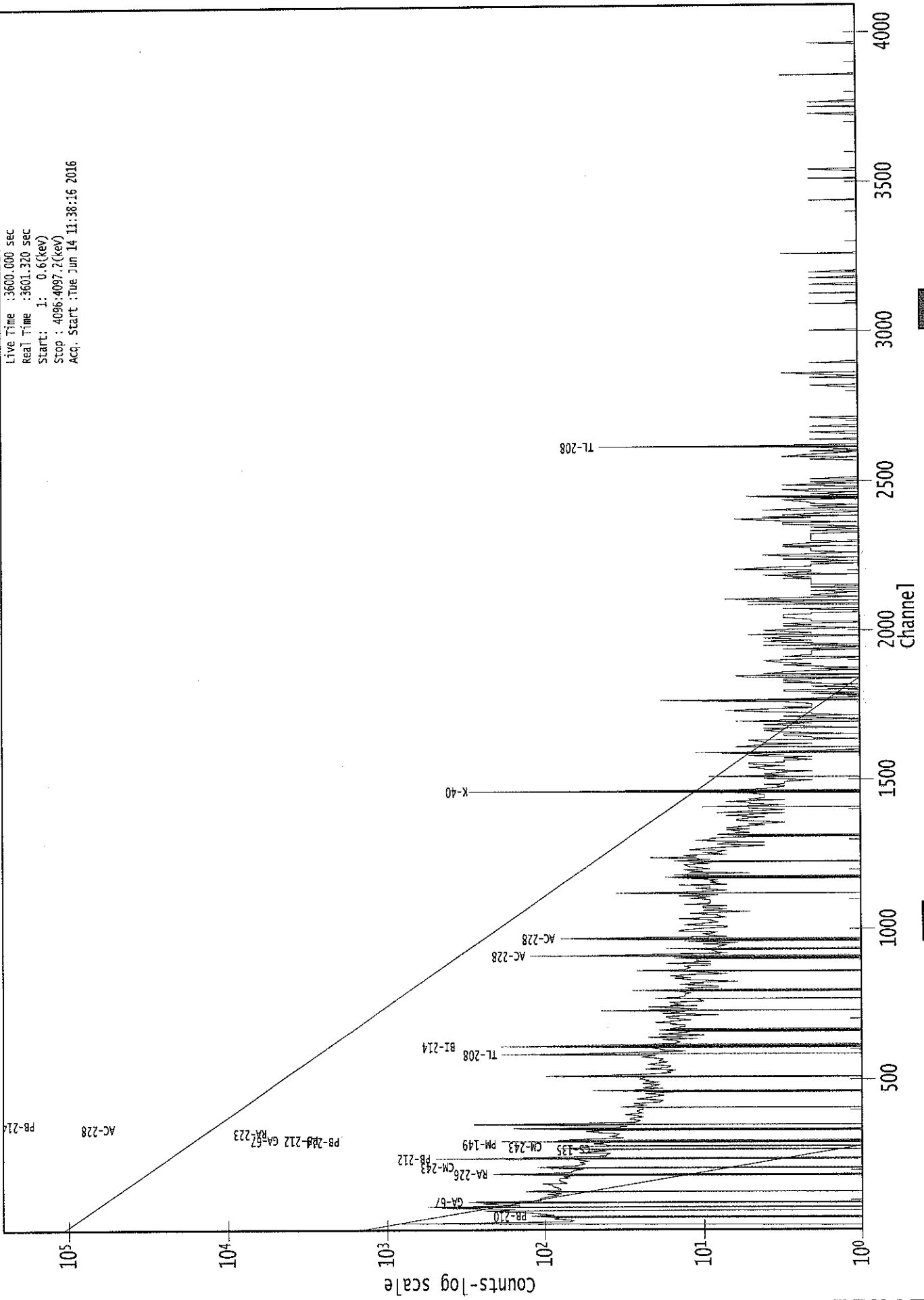
3825: 0 0 0 0 0 1 0 0

Sample Title: CP-5018 00-02

Channel								
3833:	0	0	1	0	0	0	1	0
3841:	1	0	0	0	0	0	1	0
3849:	0	0	0	0	0	0	0	0
3857:	3	1	0	0	0	0	0	0
3865:	0	0	0	0	0	1	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	1	0	0	0	0	0
3897:	0	0	0	0	0	1	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	0	0	1	0	0	0	0
3937:	0	0	0	1	0	0	0	0
3945:	0	0	0	0	0	1	0	0
3953:	0	0	0	0	0	0	1	0
3961:	0	0	2	0	0	0	0	0
3969:	0	0	1	0	0	1	0	0
3977:	0	0	0	0	1	0	0	0
3985:	0	1	0	0	0	0	0	1
3993:	0	0	0	1	0	0	0	0
4001:	0	0	0	0	0	0	0	1
4009:	0	0	0	0	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	0
4041:	0	0	0	1	0	0	0	0
4049:	0	0	0	0	0	0	1	0
4057:	0	0	0	0	0	0	0	1
4065:	0	0	1	0	0	0	0	0
4073:	0	0	1	0	0	0	0	0
4081:	1	1	1	0	0	1	0	0
4089:	0	0	0	0	0	0	0	0

0000038821.CNF

Live Time : 3600.000 sec
Real Time : 3601.320 sec
Start: 1: 0.6(keV)
Stop : 4096.4097.2(keV)
Acq. Start : Tue Jun 14 11:38:16 2016



KB
6/14/16Analysis Report for 1606038-05
CP-5018 02-05

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-05
Sample Description : CP-5018 02-05
Sample Type : SOIL

Sample Size : 6.101E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 8:14:57AM
Acquisition Started : 6/14/2016 8:20:21AM

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 : 38800

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-05
CP-5018 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 9:20:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	47.29	47.64	0.0000	0.00
2	60.78	61.13	0.0000	0.00
3	73.68	74.02	0.0000	0.00
4	77.51	77.85	0.0000	0.00
5	87.80	88.13	0.0000	0.00
6	90.80	91.14	0.0000	0.00
7	144.18	144.50	0.0000	0.00
8	186.53	186.83	0.0000	0.00
9	209.90	210.20	0.0000	0.00
10	239.59	239.87	0.0000	0.00
11	270.77	271.05	0.0000	0.00
12	278.82	279.10	0.0000	0.00
13	285.71	285.98	0.0000	0.00
14	295.82	296.09	0.0000	0.00
15	300.28	300.54	0.0000	0.00
16	313.05	313.31	0.0000	0.00
17	338.82	339.07	0.0000	0.00
18	352.38	352.63	0.0000	0.00
19	463.13	463.34	0.0000	0.00
20	511.36	511.56	0.0000	0.00
21	583.94	584.11	0.0000	0.00
22	610.10	610.26	0.0000	0.00
23	727.66	727.78	0.0000	0.00
24	795.61	795.71	0.0000	0.00
25	860.65	860.73	0.0000	0.00
26	911.98	912.03	0.0000	0.00
27	916.14	916.20	0.0000	0.00
28	934.25	934.30	0.0000	0.00
29	969.80	969.84	0.0000	0.00
30	1087.85	1087.84	0.0000	0.00
31	1121.15	1121.13	0.0000	0.00
32	1148.30	1148.28	0.0000	0.00
33	1173.67	1173.63	0.0000	0.00
34	1238.92	1238.86	0.0000	0.00
35	1354.26	1354.16	0.0000	0.00
36	1363.35	1363.24	0.0000	0.00
37	1408.57	1408.44	0.0000	0.00
38	1438.85	1438.71	0.0000	0.00
39	1456.92	1456.78	0.0000	0.00
40	1461.74	1461.60	0.0000	0.00
41	1496.43	1496.27	0.0000	0.00
42	1527.78	1527.61	0.0000	0.00

Analysis Report for 1606038-05
CP-5018 02-05

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1579.25	1579.06	0.0000	0.00
44	1589.41	1589.22	0.0000	0.00
45	1593.42	1593.22	0.0000	0.00
46	1630.50	1630.29	0.0000	0.00
47	1639.24	1639.03	0.0000	0.00
48	1726.29	1726.05	0.0000	0.00
49	1730.86	1730.62	0.0000	0.00
50	1765.27	1765.02	0.0000	0.00
51	1837.82	1837.54	0.0000	0.00
52	1882.41	1882.11	0.0000	0.00
53	1906.84	1906.53	0.0000	0.00
54	1940.96	1940.64	0.0000	0.00
55	2103.27	2102.88	0.0000	0.00
56	2203.49	2203.07	0.0000	0.00
57	2592.27	2591.69	0.0000	0.00
58	2615.60	2615.01	0.0000	0.00
59	3199.19	3198.38	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-05
CP-5018 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 9:20:25AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	47.29	44 - 51	47.64	1.24E+02	88.48	1.23E+03	1.82
M	2	60.78	60 - 69	61.13	5.43E+01	39.09	4.51E+02	1.27
M	3	73.68	72 - 83	74.02	1.50E+02	88.37	1.41E+03	2.34
m	4	77.51	72 - 83	77.85	1.02E+03	120.00	1.78E+03	2.31
m	5	87.80	83 - 98	88.13	2.24E+02	66.90	8.93E+02	1.48
m	6	90.80	83 - 98	91.14	1.91E+02	66.24	8.48E+02	1.49
	7	144.18	143 - 146	144.50	6.18E+01	47.75	5.10E+02	1.73
	8	186.53	183 - 191	186.83	3.18E+02	87.65	9.87E+02	1.63
	9	209.90	206 - 213	210.20	7.68E+01	75.84	9.06E+02	1.37
	10	239.59	234 - 245	239.87	1.19E+03	114.68	1.05E+03	1.99
	11	270.77	268 - 275	271.05	9.98E+01	63.37	6.08E+02	1.74
	12	278.82	277 - 282	279.10	4.58E+01	44.23	3.46E+02	1.74
	13	285.71	283 - 291	285.98	4.86E+01	55.58	4.45E+02	2.99
M	14	295.82	292 - 304	296.09	2.53E+02	47.07	2.69E+02	1.59
m	15	300.28	292 - 304	300.54	5.70E+01	46.45	3.47E+02	2.11
	16	313.05	311 - 316	313.31	3.00E+01	37.88	2.66E+02	1.00
	17	338.82	335 - 342	339.07	2.28E+02	59.60	4.40E+02	1.36
	18	352.38	348 - 356	352.63	4.47E+02	67.17	4.19E+02	1.50
	19	463.13	459 - 466	463.34	6.78E+01	43.36	2.68E+02	1.27
	20	511.36	506 - 516	511.56	2.06E+02	57.44	3.30E+02	2.30
	21	583.94	580 - 588	584.11	3.08E+02	53.91	2.59E+02	1.65
	22	610.10	606 - 615	610.26	3.03E+02	54.85	2.47E+02	1.85
	23	727.66	723 - 732	727.78	7.18E+01	41.53	2.06E+02	1.59
	24	795.61	791 - 803	795.71	3.88E+01	43.29	2.04E+02	1.93
	25	860.65	858 - 863	860.73	2.03E+01	22.74	8.75E+01	1.42
M	26	911.98	908 - 926	912.03	2.43E+02	35.72	6.00E+01	2.15
m	27	916.14	908 - 926	916.20	2.47E+01	25.85	6.00E+01	2.16
	28	934.25	931 - 937	934.30	3.05E+01	23.36	7.70E+01	1.71
	29	969.80	966 - 973	969.84	6.87E+01	42.61	2.51E+02	1.63
	30	1087.85	1083 - 1091	1087.84	2.12E+01	26.41	9.35E+01	2.72
	31	1121.15	1118 - 1125	1121.13	4.93E+01	29.26	1.05E+02	1.95
	32	1148.30	1146 - 1150	1148.28	1.46E+01	18.12	5.67E+01	2.02
	33	1173.67	1170 - 1176	1173.63	2.40E+01	21.75	6.60E+01	2.36
	34	1238.92	1235 - 1242	1238.86	4.84E+01	28.57	1.03E+02	1.54
	35	1354.26	1350 - 1360	1354.16	2.57E+01	17.30	2.27E+01	3.29
	36	1363.35	1361 - 1365	1363.24	9.77E+00	9.22	1.05E+01	1.23
	37	1408.57	1405 - 1412	1408.44	1.44E+01	14.83	2.51E+01	3.11
	38	1438.85	1435 - 1443	1438.71	1.38E+01	11.86	1.25E+01	5.25
M	39	1456.92	1447 - 1471	1456.78	1.59E+01	13.62	1.35E+00	2.41
m	40	1461.74	1447 - 1471	1461.60	8.03E+02	57.35	2.08E+01	2.39

Analysis Report for 1606038-05

CP-5018 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1496.43	1492 - 1500		1496.27	1.75E+01	11.34	9.00E+00	5.07
42	1527.78	1525 - 1529		1527.61	6.75E+00	6.18	2.50E+00	1.24
43	1579.25	1576 - 1582		1579.06	7.50E+00	8.28	7.00E+00	2.23
M	44	1583 - 1597		1589.22	1.41E+01	12.22	1.51E+01	2.47
m	45	1583 - 1597		1593.22	1.48E+01	12.70	2.33E+01	2.47
	46	1628 - 1632		1630.29	1.17E+01	7.63	2.69E+00	2.03
	47	1635 - 1641		1639.03	7.18E+00	8.28	7.64E+00	1.92
M	48	1725 - 1733		1726.05	5.94E+00	4.77	3.32E+00	3.69
m	49	1725 - 1733		1730.62	1.38E+01	10.62	1.13E+01	2.41
	50	1760 - 1771		1765.02	5.92E+01	20.59	2.17E+01	3.17
	51	1837 - 1842		1837.54	7.92E+00	10.10	1.02E+01	6.46
	52	1878 - 1885		1882.11	9.00E+00	6.00	0.00E+00	1.33
	53	1902 - 1911		1906.53	7.00E+00	9.90	1.00E+01	6.38
	54	1937 - 1944		1940.64	7.55E+00	8.72	6.91E+00	5.01
	55	2099 - 2107		2102.88	1.10E+01	11.52	1.39E+01	2.72
	56	2198 - 2208		2203.07	1.26E+01	13.22	1.68E+01	4.68
	57	2588 - 2594		2591.69	4.17E+00	6.02	3.67E+00	1.89
	58	2610 - 2623		2615.01	1.55E+02	24.90	0.00E+00	3.17
	59	3194 - 3201		3198.38	8.00E+00	5.66	0.00E+00	3.48

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 : 6/14/2016 9:20:25AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	44 - 51		1.24E+02	88.48	1.23E+03	7.04E+01
M	2	60 - 69		5.43E+01	39.09	4.51E+02	3.49E+01
M	3	72 - 83		1.50E+02	88.37	1.41E+03	6.18E+01
m	4	72 - 83		1.02E+03	120.00	1.78E+03	6.93E+01
m	5	83 - 98		2.24E+02	66.90	8.93E+02	4.91E+01
m	6	83 - 98		1.91E+02	66.24	8.48E+02	4.79E+01
	7	143 - 146		6.18E+01	47.75	5.10E+02	3.71E+01
	8	183 - 191		3.18E+02	87.65	9.87E+02	6.58E+01
	9	206 - 213		7.68E+01	75.84	9.06E+02	6.07E+01

: 00422

Analysis Report for 1606038-05
CP-5018 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
10	239.59	234 -	245	1.19E+03	114.68	1.05E+03	7.53E+01
11	270.77	268 -	275	9.98E+01	63.37	6.08E+02	4.94E+01
12	278.82	277 -	282	4.58E+01	44.23	3.46E+02	3.46E+01
13	285.71	283 -	291	4.86E+01	55.58	4.45E+02	4.42E+01
M 14	295.82	292 -	304	2.53E+02	47.07	2.69E+02	2.70E+01
m 15	300.28	292 -	304	5.70E+01	46.45	3.47E+02	3.06E+01
16	313.05	311 -	316	3.00E+01	37.88	2.66E+02	2.98E+01
17	338.82	335 -	342	2.28E+02	59.60	4.40E+02	4.22E+01
18	352.38	348 -	356	4.47E+02	67.17	4.19E+02	4.29E+01
19	463.13	459 -	466	6.78E+01	43.36	2.68E+02	3.30E+01
20	511.36	506 -	516	2.06E+02	57.44	3.30E+02	4.09E+01
21	583.94	580 -	588	3.08E+02	53.91	2.59E+02	3.36E+01
22	610.10	606 -	615	3.03E+02	54.85	2.47E+02	3.48E+01
23	727.66	723 -	732	7.18E+01	41.53	2.06E+02	3.12E+01
24	795.61	791 -	803	3.88E+01	43.29	2.04E+02	1.57E+01
25	860.65	858 -	863	2.03E+01	22.74	8.75E+01	1.72E+01
M 26	911.98	908 -	926	2.43E+02	35.72	6.00E+01	1.27E+01
m 27	916.14	908 -	926	2.47E+01	25.85	6.00E+01	1.27E+01
28	934.25	931 -	937	3.05E+01	23.36	7.70E+01	1.69E+01
29	969.80	966 -	973	6.87E+01	42.61	2.51E+02	3.23E+01
30	1087.85	1083 -	1091	2.12E+01	26.41	9.35E+01	2.03E+01
31	1121.15	1118 -	1125	4.93E+01	29.26	1.05E+02	2.11E+01
32	1148.30	1146 -	1150	1.46E+01	18.12	5.67E+01	1.35E+01
33	1173.67	1170 -	1176	2.40E+01	21.75	6.60E+01	1.60E+01
34	1238.92	1235 -	1242	4.84E+01	28.57	1.03E+02	2.05E+01
35	1354.26	1350 -	1360	2.57E+01	17.30	2.27E+01	1.15E+01
36	1363.35	1361 -	1365	9.77E+00	9.22	1.05E+01	5.57E+00
37	1408.57	1405 -	1412	1.44E+01	14.83	2.51E+01	1.05E+01
38	1438.85	1435 -	1443	1.38E+01	11.86	1.25E+01	7.61E+00
M 39	1456.92	1447 -	1471	1.59E+01	13.62	1.35E+00	1.91E+00
m 40	1461.74	1447 -	1471	8.03E+02	57.35	2.08E+01	7.49E+00
41	1496.43	1492 -	1500	1.75E+01	11.34	9.00E+00	6.29E+00
42	1527.78	1525 -	1529	6.75E+00	6.18	2.50E+00	2.76E+00
43	1579.25	1576 -	1582	7.50E+00	8.28	7.00E+00	5.10E+00
M 44	1589.41	1583 -	1597	1.41E+01	12.22	1.51E+01	6.40E+00
m 45	1593.42	1583 -	1597	1.48E+01	12.70	2.33E+01	7.93E+00
46	1630.50	1628 -	1632	1.17E+01	7.63	2.69E+00	2.80E+00
47	1639.24	1635 -	1641	7.18E+00	8.28	7.64E+00	5.18E+00
M 48	1726.29	1725 -	1733	5.94E+00	4.77	3.32E+00	2.99E+00
m 49	1730.86	1725 -	1733	1.38E+01	10.62	1.13E+01	5.53E+00
50	1765.27	1760 -	1771	5.92E+01	20.59	2.17E+01	1.13E+01
51	1837.82	1833 -	1842	7.92E+00	10.10	1.02E+01	6.89E+00
52	1882.41	1878 -	1885	9.00E+00	6.00	0.00E+00	0.00E+00
53	1906.84	1902 -	1911	7.00E+00	9.90	1.00E+01	6.88E+00
54	1940.96	1937 -	1944	7.55E+00	8.72	6.91E+00	5.56E+00
55	2103.27	2099 -	2107	1.10E+01	11.52	1.39E+01	7.74E+00
56	2203.49	2198 -	2208	1.26E+01	13.22	1.68E+01	9.16E+00
57	2592.27	2588 -	2594	4.17E+00	6.02	3.67E+00	3.64E+00
58	2615.60	2610 -	2623	1.55E+02	24.90	0.00E+00	0.00E+00
59	3199.19	3194 -	3201	8.00E+00	5.66	0.00E+00	0.00E+00

Analysis Report for 1606038-05
CP-5018 02-05

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 : 6/14/2016 9:20:25AM

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

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	44 -	51	47.64	1.24E+02	88.48	1.23E+03	PB-210
M	2	60 -	69	61.13	5.43E+01	39.09	4.51E+02	.....
M	3	72 -	83	74.02	1.50E+02	88.37	1.41E+03	AM-243
m	4	72 -	83	77.85	1.02E+03	120.00	1.78E+03	TI-44
m	5	83 -	98	88.13	2.24E+02	66.90	8.93E+02	SN-126 CD-109 LU-176
m	6	83 -	98	91.14	1.91E+02	66.24	8.48E+02	ND-147
	7	143 -	146	144.50	6.18E+01	47.75	5.10E+02	U-235
	8	183 -	191	186.83	3.18E+02	87.65	9.87E+02	RA-226
	9	206 -	213	210.20	7.68E+01	75.84	9.06E+02	CM-243 GA-67
	10	234 -	245	239.87	1.19E+03	114.68	1.05E+03	PB-212
	11	268 -	275	271.05	9.98E+01	63.37	6.08E+02	.....
	12	277 -	282	279.10	4.58E+01	44.23	3.46E+02	HG-203 SE-75
	13	283 -	291	285.98	4.86E+01	55.58	4.45E+02	PM-149
M	14	292 -	304	296.09	2.53E+02	47.07	2.69E+02	PB-214
m	15	292 -	304	300.54	5.70E+01	46.45	3.47E+02	GA-67 PB-212 BI-210M
	16	311 -	316	313.31	3.00E+01	37.88	2.66E+02	.....
	17	335 -	342	339.07	2.28E+02	59.60	4.40E+02	AC-228
	18	348 -	356	352.63	4.47E+02	67.17	4.19E+02	PB-214
	19	459 -	466	463.34	6.78E+01	43.36	2.68E+02	SB-125
	20	506 -	516	511.56	2.06E+02	57.44	3.30E+02	.....
	21	580 -	588	584.11	3.08E+02	53.91	2.59E+02	TL-208
	22	606 -	615	610.26	3.03E+02	54.85	2.47E+02	BI-214
	23	723 -	732	727.78	7.18E+01	41.53	2.06E+02	BI-212
	24	791 -	803	795.71	3.88E+01	43.29	2.04E+02	CS-134

Analysis Report for 1606038-05

CP-5018 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	25	860.65	858 -	863	860.73	2.03E+01	22.74	8.75E+01	TL-208
M	26	911.98	908 -	926	912.03	2.43E+02	35.72	6.00E+01	LU-172 AC-228
m	27	916.14	908 -	926	916.20	2.47E+01	25.85	6.00E+01	.....
	28	934.25	931 -	937	934.30	3.05E+01	23.36	7.70E+01	.....
	29	969.80	966 -	973	969.84	6.87E+01	42.61	2.51E+02	AC-228
	30	1087.85	1083 -	1091	1087.84	2.12E+01	26.41	9.35E+01	.....
	31	1121.15	1118 -	1125	1121.13	4.93E+01	29.26	1.05E+02	TA-182 SC-46 BI-214
	32	1148.30	1146 -	1150	1148.28	1.46E+01	18.12	5.67E+01	.....
	33	1173.67	1170 -	1176	1173.63	2.40E+01	21.75	6.60E+01	CO-60
	34	1238.92	1235 -	1242	1238.86	4.84E+01	28.57	1.03E+02	CO-56
	35	1354.26	1350 -	1360	1354.16	2.57E+01	17.30	2.27E+01	.....
	36	1363.35	1361 -	1365	1363.24	9.77E+00	9.22	1.05E+01	.....
	37	1408.57	1405 -	1412	1408.44	1.44E+01	14.83	2.51E+01	EU-152
	38	1438.85	1435 -	1443	1438.71	1.38E+01	11.86	1.25E+01	.....
M	39	1456.92	1447 -	1471	1456.78	1.59E+01	13.62	1.35E+00	.....
m	40	1461.74	1447 -	1471	1461.60	8.03E+02	57.35	2.08E+01	K-40
	41	1496.43	1492 -	1500	1496.27	1.75E+01	11.34	9.00E+00	.....
	42	1527.78	1525 -	1529	1527.61	6.75E+00	6.18	2.50E+00	.....
	43	1579.25	1576 -	1582	1579.06	7.50E+00	8.28	7.00E+00	.....
M	44	1589.41	1583 -	1597	1589.22	1.41E+01	12.22	1.51E+01	.....
m	45	1593.42	1583 -	1597	1593.22	1.48E+01	12.70	2.33E+01	.....
	46	1630.50	1628 -	1632	1630.29	1.17E+01	7.63	2.69E+00	.....
	47	1639.24	1635 -	1641	1639.03	7.18E+00	8.28	7.64E+00	.....
M	48	1726.29	1725 -	1733	1726.05	5.94E+00	4.77	3.32E+00	.....
m	49	1730.86	1725 -	1733	1730.62	1.38E+01	10.62	1.13E+01	.....
	50	1765.27	1760 -	1771	1765.02	5.92E+01	20.59	2.17E+01	BI-214
	51	1837.82	1833 -	1842	1837.54	7.92E+00	10.10	1.02E+01	.....
	52	1882.41	1878 -	1885	1882.11	9.00E+00	6.00	0.00E+00	.....
	53	1906.84	1902 -	1911	1906.53	7.00E+00	9.90	1.00E+01	.....
	54	1940.96	1937 -	1944	1940.64	7.55E+00	8.72	6.91E+00	.....
	55	2103.27	2099 -	2107	2102.88	1.10E+01	11.52	1.39E+01	.....
	56	2203.49	2198 -	2208	2203.07	1.26E+01	13.22	1.68E+01	BI-214
	57	2592.27	2588 -	2594	2591.69	4.17E+00	6.02	3.67E+00	.....
	58	2615.60	2610 -	2623	2615.01	1.55E+02	24.90	0.00E+00	TL-208
	59	3199.19	3194 -	3201	3198.38	8.00E+00	5.66	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 1606038-05
CP-5018 02-05

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/14/2016 9:20:25AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	47.29	1.24E+02	88.48	1.73E-02	1.78E-03
M	2	60.78	5.43E+01	39.09	2.41E-02	1.82E-03
M	3	73.68	1.50E+02	88.37	2.73E-02	2.26E-03
m	4	77.51	1.02E+03	120.00	2.78E-02	2.39E-03
m	5	87.80	2.24E+02	66.90	2.85E-02	2.73E-03
m	6	90.80	1.91E+02	66.24	2.86E-02	2.69E-03
	7	144.18	6.18E+01	47.75	2.55E-02	2.12E-03
	8	186.53	3.18E+02	87.65	2.24E-02	2.02E-03
	9	209.90	7.68E+01	75.84	2.08E-02	1.85E-03
	10	239.59	1.19E+03	114.68	1.92E-02	1.63E-03
	11	270.77	9.98E+01	63.37	1.77E-02	1.40E-03
	12	278.82	4.58E+01	44.23	1.73E-02	1.34E-03
	13	285.71	4.86E+01	55.58	1.71E-02	1.33E-03
M	14	295.82	2.53E+02	47.07	1.67E-02	1.31E-03
m	15	300.28	5.70E+01	46.45	1.65E-02	1.30E-03
	16	313.05	3.00E+01	37.88	1.60E-02	1.27E-03
	17	338.82	2.28E+02	59.60	1.52E-02	1.22E-03
	18	352.38	4.47E+02	67.17	1.48E-02	1.19E-03
	19	463.13	6.78E+01	43.36	1.21E-02	1.04E-03
	20	511.36	2.06E+02	57.44	1.12E-02	9.90E-04
	21	583.94	3.08E+02	53.91	1.02E-02	9.15E-04
	22	610.10	3.03E+02	54.85	9.82E-03	8.88E-04
	23	727.66	7.18E+01	41.53	8.55E-03	7.75E-04
	24	795.61	3.88E+01	43.29	7.97E-03	7.14E-04
	25	860.65	2.03E+01	22.74	7.48E-03	6.56E-04
M	26	911.98	2.43E+02	35.72	7.14E-03	6.15E-04
m	27	916.14	2.47E+01	25.85	7.12E-03	6.13E-04
	28	934.25	3.05E+01	23.36	7.01E-03	6.03E-04
	29	969.80	6.87E+01	42.61	6.80E-03	5.85E-04
	30	1087.85	2.12E+01	26.41	6.21E-03	5.24E-04
	31	1121.15	4.93E+01	29.26	6.06E-03	5.06E-04
	32	1148.30	1.46E+01	18.12	5.95E-03	4.92E-04
	33	1173.67	2.40E+01	21.75	5.85E-03	4.79E-04
	34	1238.92	4.84E+01	28.57	5.61E-03	4.68E-04
	35	1354.26	2.57E+01	17.30	5.25E-03	4.46E-04
	36	1363.35	9.77E+00	9.22	5.22E-03	4.43E-04
	37	1408.57	1.44E+01	14.83	5.10E-03	4.32E-04
	38	1438.85	1.38E+01	11.86	5.02E-03	4.25E-04
M	39	1456.92	1.59E+01	13.62	4.98E-03	4.20E-04
m	40	1461.74	8.03E+02	57.35	4.97E-03	4.19E-04
	41	1496.43	1.75E+01	11.34	4.89E-03	4.10E-04
	42	1527.78	6.75E+00	6.18	4.82E-03	4.03E-04
	43	1579.25	7.50E+00	8.28	4.71E-03	3.90E-04
M	44	1589.41	1.41E+01	12.22	4.69E-03	3.87E-04
m	45	1593.42	1.48E+01	12.70	4.68E-03	3.86E-04

Analysis Report for 1606038-05
CP-5018 02-05

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	46	1630.50	1.17E+01	7.63	4.62E-03	3.77E-04
	47	1639.24	7.18E+00	8.28	4.60E-03	3.75E-04
M	48	1726.29	5.94E+00	4.77	4.45E-03	3.53E-04
m	49	1730.86	1.38E+01	10.62	4.45E-03	3.52E-04
	50	1765.27	5.92E+01	20.59	4.39E-03	3.43E-04
	51	1837.82	7.92E+00	10.10	4.29E-03	3.26E-04
	52	1882.41	9.00E+00	6.00	4.24E-03	3.26E-04
	53	1906.84	7.00E+00	9.90	4.21E-03	3.26E-04
	54	1940.96	7.55E+00	8.72	4.17E-03	3.26E-04
	55	2103.27	1.10E+01	11.52	4.02E-03	3.26E-04
	56	2203.49	1.26E+01	13.22	3.95E-03	3.26E-04
	57	2592.27	4.17E+00	6.02	3.80E-03	3.26E-04
	58	2615.60	1.55E+02	24.90	3.79E-03	3.26E-04
	59	3199.19	8.00E+00	5.66	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 : 6/14/2016 9:20:25AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037619.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	47.29	1.24E+02	88.48	4.67E+01	7.94E+00	7.75E+01	8.88E+01
M	2	60.78	5.43E+01	39.09			5.43E+01	3.91E+01
M	3	73.68	1.50E+02	88.37			1.50E+02	8.84E+01
m	4	77.51	1.02E+03	120.00	2.07E+01	1.05E+01	9.99E+02	1.20E+02
m	5	87.80	2.24E+02	66.90	6.70E+00	2.87E+00	2.17E+02	6.70E+01
m	6	90.80	1.91E+02	66.24			1.91E+02	6.62E+01
	7	144.18	6.18E+01	47.75	1.58E+01	8.85E+00	4.60E+01	4.86E+01
	8	186.53	3.18E+02	87.65	6.64E+01	1.07E+01	2.52E+02	8.83E+01
	9	209.90	7.68E+01	75.84			7.68E+01	7.58E+01
	10	239.59	1.19E+03	114.68	1.23E+01	5.65E+00	1.18E+03	1.15E+02
	11	270.77	9.98E+01	63.37			9.98E+01	6.34E+01
	12	278.82	4.58E+01	44.23			4.58E+01	4.42E+01
	13	285.71	4.86E+01	55.58			4.86E+01	5.56E+01
M	14	295.82	2.53E+02	47.07	5.98E+00	5.34E+00	2.47E+02	4.74E+01
m	15	300.28	5.70E+01	46.45			5.70E+01	4.65E+01
	16	313.05	3.00E+01	37.88			3.00E+01	3.79E+01

Analysis Report for 1606038-05

CP-5018 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
17	338.82	2.28E+02	59.60	4.42E+00	4.48E+00	2.24E+02	5.98E+01
18	352.38	4.47E+02	67.17	9.38E+00	4.37E+00	4.38E+02	6.73E+01
19	463.13	6.78E+01	43.36			6.78E+01	4.34E+01
20	511.36	2.06E+02	57.44	8.60E+01	5.42E+00	1.20E+02	5.77E+01
21	583.94	3.08E+02	53.91	9.83E+00	3.55E+00	2.99E+02	5.40E+01
22	610.10	3.03E+02	54.85	4.88E+00	4.12E+00	2.99E+02	5.50E+01
23	727.66	7.18E+01	41.53			7.18E+01	4.15E+01
24	795.61	3.88E+01	43.29			3.88E+01	4.33E+01
25	860.65	2.03E+01	22.74			2.03E+01	2.27E+01
M 26	911.98	2.43E+02	35.72	5.44E+00	2.47E+00	2.37E+02	3.58E+01
m 27	916.14	2.47E+01	25.85			2.47E+01	2.58E+01
28	934.25	3.05E+01	23.36			3.05E+01	2.34E+01
29	969.80	6.87E+01	42.61			6.87E+01	4.26E+01
30	1087.85	2.12E+01	26.41			2.12E+01	2.64E+01
31	1121.15	4.93E+01	29.26			4.93E+01	2.93E+01
32	1148.30	1.46E+01	18.12			1.46E+01	1.81E+01
33	1173.67	2.40E+01	21.75			2.40E+01	2.17E+01
34	1238.92	4.84E+01	28.57			4.84E+01	2.86E+01
35	1354.26	2.57E+01	17.30			2.57E+01	1.73E+01
36	1363.35	9.77E+00	9.22			9.77E+00	9.22E+00
37	1408.57	1.44E+01	14.83			1.44E+01	1.48E+01
38	1438.85	1.38E+01	11.86			1.38E+01	1.19E+01
M 39	1456.92	1.59E+01	13.62			1.59E+01	1.36E+01
m 40	1461.74	8.03E+02	57.35	6.04E+00	1.30E+00	7.97E+02	5.74E+01
41	1496.43	1.75E+01	11.34			1.75E+01	1.13E+01
42	1527.78	6.75E+00	6.18			6.75E+00	6.18E+00
43	1579.25	7.50E+00	8.28			7.50E+00	8.28E+00
M 44	1589.41	1.41E+01	12.22			1.41E+01	1.22E+01
m 45	1593.42	1.48E+01	12.70			1.48E+01	1.27E+01
46	1630.50	1.17E+01	7.63			1.17E+01	7.63E+00
47	1639.24	7.18E+00	8.28			7.18E+00	8.28E+00
M 48	1726.29	5.94E+00	4.77			5.94E+00	4.77E+00
m 49	1730.86	1.38E+01	10.62			1.38E+01	1.06E+01
50	1765.27	5.92E+01	20.59	1.45E+00	2.00E+00	5.77E+01	2.07E+01
51	1837.82	7.92E+00	10.10			7.92E+00	1.01E+01
52	1882.41	9.00E+00	6.00			9.00E+00	6.00E+00
53	1906.84	7.00E+00	9.90			7.00E+00	9.90E+00
54	1940.96	7.55E+00	8.72			7.55E+00	8.72E+00
55	2103.27	1.10E+01	11.52			1.10E+01	1.15E+01
56	2203.49	1.26E+01	13.22			1.26E+01	1.32E+01
57	2592.27	4.17E+00	6.02			4.17E+00	6.02E+00
58	2615.60	1.55E+02	24.90			1.55E+02	2.49E+01
59	3199.19	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 1606038-05
CP-5018 02-05

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/14/2016 9:20:25AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037619.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	47.29	1.24E+02	88.48	4.67E+01	7.94E+00	7.75E+01	8.88E+01
M	2	60.78	5.43E+01	39.09			5.43E+01	3.91E+01
M	3	73.68	1.50E+02	88.37			1.50E+02	8.84E+01
m	4	77.51	1.02E+03	120.00	2.07E+01	1.05E+01	9.99E+02	1.20E+02
m	5	87.80	2.24E+02	66.90	6.70E+00	2.87E+00	2.17E+02	6.70E+01
m	6	90.80	1.91E+02	66.24			1.91E+02	6.62E+01
	7	144.18	6.18E+01	47.75	1.58E+01	8.85E+00	4.60E+01	4.86E+01
	8	186.53	3.18E+02	87.65	6.64E+01	1.07E+01	2.52E+02	8.83E+01
	9	209.90	7.68E+01	75.84			7.68E+01	7.58E+01
	10	239.59	1.19E+03	114.68	1.23E+01	5.65E+00	1.18E+03	1.15E+02
	11	270.77	9.98E+01	63.37			9.98E+01	6.34E+01
	12	278.82	4.58E+01	44.23			4.58E+01	4.42E+01
	13	285.71	4.86E+01	55.58			4.86E+01	5.56E+01
M	14	295.82	2.53E+02	47.07	5.98E+00	5.34E+00	2.47E+02	4.74E+01
m	15	300.28	5.70E+01	46.45			5.70E+01	4.65E+01
	16	313.05	3.00E+01	37.88			3.00E+01	3.79E+01
	17	338.82	2.28E+02	59.60	4.42E+00	4.48E+00	2.24E+02	5.98E+01
	18	352.38	4.47E+02	67.17	9.38E+00	4.37E+00	4.38E+02	6.73E+01
	19	463.13	6.78E+01	43.36			6.78E+01	4.34E+01
	20	511.36	2.06E+02	57.44	8.60E+01	5.42E+00	1.20E+02	5.77E+01
	21	583.94	3.08E+02	53.91	9.83E+00	3.55E+00	2.99E+02	5.40E+01
	22	610.10	3.03E+02	54.85	4.88E+00	4.12E+00	2.99E+02	5.50E+01
	23	727.66	7.18E+01	41.53			7.18E+01	4.15E+01
	24	795.61	3.88E+01	43.29			3.88E+01	4.33E+01
	25	860.65	2.03E+01	22.74			2.03E+01	2.27E+01
M	26	911.98	2.43E+02	35.72	5.44E+00	2.47E+00	2.37E+02	3.58E+01
m	27	916.14	2.47E+01	25.85			2.47E+01	2.58E+01
	28	934.25	3.05E+01	23.36			3.05E+01	2.34E+01
	29	969.80	6.87E+01	42.61			6.87E+01	4.26E+01
	30	1087.85	2.12E+01	26.41			2.12E+01	2.64E+01
	31	1121.15	4.93E+01	29.26			4.93E+01	2.93E+01
	32	1148.30	1.46E+01	18.12			1.46E+01	1.81E+01
	33	1173.67	2.40E+01	21.75			2.40E+01	2.17E+01
	34	1238.92	4.84E+01	28.57			4.84E+01	2.86E+01
	35	1354.26	2.57E+01	17.30			2.57E+01	1.73E+01
	36	1363.35	9.77E+00	9.22			9.77E+00	9.22E+00
	37	1408.57	1.44E+01	14.83			1.44E+01	1.48E+01
	38	1438.85	1.38E+01	11.86			1.38E+01	1.19E+01
M	39	1456.92	1.59E+01	13.62			1.59E+01	1.36E+01
m	40	1461.74	8.03E+02	57.35	6.04E+00	1.30E+00	7.97E+02	5.74E+01
	41	1496.43	1.75E+01	11.34			1.75E+01	1.13E+01

Analysis Report for 1606038-05

CP-5018 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	42 1527.78	6.75E+00	6.18			6.75E+00	6.18E+00
	43 1579.25	7.50E+00	8.28			7.50E+00	8.28E+00
M	44 1589.41	1.41E+01	12.22			1.41E+01	1.22E+01
m	45 1593.42	1.48E+01	12.70			1.48E+01	1.27E+01
	46 1630.50	1.17E+01	7.63			1.17E+01	7.63E+00
	47 1639.24	7.18E+00	8.28			7.18E+00	8.28E+00
M	48 1726.29	5.94E+00	4.77			5.94E+00	4.77E+00
m	49 1730.86	1.38E+01	10.62			1.38E+01	1.06E+01
	50 1765.27	5.92E+01	20.59	1.45E+00	2.00E+00	5.77E+01	2.07E+01
	51 1837.82	7.92E+00	10.10			7.92E+00	1.01E+01
	52 1882.41	9.00E+00	6.00			9.00E+00	6.00E+00
	53 1906.84	7.00E+00	9.90			7.00E+00	9.90E+00
	54 1940.96	7.55E+00	8.72			7.55E+00	8.72E+00
	55 2103.27	1.10E+01	11.52			1.10E+01	1.15E+01
	56 2203.49	1.26E+01	13.22			1.26E+01	1.32E+01
	57 2592.27	4.17E+00	6.02			4.17E+00	6.02E+00
	58 2615.60	1.55E+02	24.90			1.55E+02	2.49E+01
	59 3199.19	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

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	0.871	1460.81 *	10.67	1.85E+01	2.09E+00
CD-109	0.991	88.03 *	3.72	2.55E+00	8.38E-01
SN-126	0.992	87.57 *	37.00	2.53E-01	8.18E-02
ND-147	0.638	91.11 *	28.90	4.73E-01	1.70E-01
		531.02	13.10		
PM-149	0.931	285.90 *	3.10	1.40E+01	1.60E+01
HG-203	0.979	279.19 *	77.30	4.74E-02	4.59E-02
TL-208	0.890	583.14 *	30.22	1.20E+00	2.42E-01
		860.37 *	4.48	7.44E-01	8.37E-01
		2614.66 *	35.85	1.40E+00	2.55E-01
PB-210	0.906	46.50 *	4.25	1.30E+00	1.49E+00
BI-212	0.735	727.17 *	11.80	8.76E-01	5.13E-01
		1620.62	2.75		

Analysis Report for 1606038-05
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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.872	238.63 *	44.60	1.69E+00	2.19E-01
		300.09 *	3.41	1.25E+00	1.02E+00
BI-214	0.904	609.31 *	46.30	8.08E-01	1.66E-01
		1120.29 *	15.10	6.62E-01	3.97E-01
		1764.49 *	15.80	1.02E+00	3.75E-01
		2204.22 *	4.98	7.90E-01	8.30E-01
PB-214	0.959	295.21 *	19.19	9.50E-01	1.97E-01
		351.92 *	37.19	9.82E-01	1.71E-01
RA-226	0.984	186.21 *	3.28	4.23E+00	7.89E+00
AC-228	0.908	338.32 *	11.40	1.59E+00	4.44E-01
		911.07 *	27.70	1.48E+00	2.56E-01
		969.11 *	16.60	7.49E-01	4.69E-01
AM-243	0.854	74.67 *	66.00	1.03E-01	6.10E-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 : 6/14/2016 9:20:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 2	60.78	1.50761E-02	36.01		
m 4	77.51	2.77393E-01	6.03	Tol.	TI-44
7	144.18	1.27760E-02	52.79	Tol.	U-235
9	209.90	2.13352E-02	49.37	Tol.	CM-243
11	270.77	2.77131E-02	31.76		
16	313.05	8.34356E-03	63.06	Sum	
19	463.13	1.88435E-02	31.96	Tol.	SB-125
20	511.36	3.33199E-02	24.05		
24	795.61	1.07890E-02	55.72	Tol.	CS-134
m 27	916.14	6.86039E-03	52.32		
28	934.25	8.47222E-03	38.29	Sum	
30	1087.85	5.89869E-03	62.17		
32	1148.30	4.06331E-03	61.93		
33	1173.67	6.66667E-03	45.31	Tol.	CO-60
34	1238.92	1.34500E-02	29.50		

Analysis Report for 1606038-05
CP-5018 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
35	1354.26	7.12838E-03	33.70		
36	1363.35	2.71296E-03	47.20		
37	1408.57	4.01235E-03	51.34	Tol.	EU-152
38	1438.85	3.81944E-03	43.14		
M 39	1456.92	4.40514E-03	42.94		
41	1496.43	4.86111E-03	32.39	Sum	
42	1527.78	1.87500E-03	45.81		
43	1579.25	2.08333E-03	55.18	Sum	
M 44	1589.41	3.91031E-03	43.39		
m 45	1593.42	4.11312E-03	42.88	D-Esc	
46	1630.50	3.23718E-03	32.75		
47	1639.24	1.99495E-03	57.62	Sum	
M 48	1726.29	1.65000E-03	40.15		
m 49	1730.86	3.83914E-03	38.41	Sum	
51	1837.82	2.20085E-03	63.73		
52	1882.41	2.50000E-03	33.33	Sum	
53	1906.84	1.94444E-03	70.71		
54	1940.96	2.09596E-03	57.77		
55	2103.27	3.06327E-03	52.24	Sum	
57	2592.27	1.15741E-03	72.25		
59	3199.19	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
K-40	0.87	1460.81 *	10.67	1.85E+01	2.09E+00
CD-109	0.99	88.03 *	3.72	2.55E+00	8.38E-01
SN-126	0.99	87.57 *	37.00	2.53E-01	8.18E-02
ND-147	0.63	91.11 *	28.90	4.73E-01	1.70E-01
		531.02	13.10		
PM-149	0.93	285.90 *	3.10	1.40E+01	1.60E+01
HG-203	0.97	279.19 *	77.30	4.74E-02	4.59E-02

Analysis Report for 1606038-05
CP-5018 02-05

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.89	583.14 *		30.22	1.20E+00	2.42E-01
		860.37 *		4.48	7.44E-01	8.37E-01
		2614.66 *		35.85	1.40E+00	2.55E-01
PB-210	0.90	46.50 *		4.25	1.30E+00	1.49E+00
		BI-212	0.73	727.17 *		11.80	8.76E-01	5.13E-01
				1620.62		2.75
PB-212	0.87	238.63 *		44.60	1.69E+00	2.19E-01
		300.09 *		3.41	1.25E+00	1.02E+00
BI-214	0.90	609.31 *		46.30	8.08E-01	1.66E-01
		1120.29 *		15.10	6.62E-01	3.97E-01
		1764.49 *		15.80	1.02E+00	3.75E-01
		2204.22 *		4.98	7.90E-01	8.30E-01
PB-214	0.95	295.21 *		19.19	9.50E-01	1.97E-01
		351.92 *		37.19	9.82E-01	1.71E-01
RA-226	0.98	186.21 *		3.28	4.23E+00	7.89E+00
AC-228	0.90	338.32 *		11.40	1.59E+00	4.44E-01
		911.07 *		27.70	1.48E+00	2.56E-01
		969.11 *		16.60	7.49E-01	4.69E-01
AM-243	0.85	74.67 *		66.00	1.03E-01	6.10E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.871	1.85E+01	2.09E+00
?	CD-109	0.991	2.55E+00	8.38E-01
?	SN-126	0.992	2.53E-01	8.18E-02
	ND-147	0.638	4.73E-01	1.70E-01
	PM-149	0.931	1.40E+01	1.60E+01
	HG-203	0.979	4.74E-02	4.59E-02
	TL-208	0.890	1.27E+00	1.72E-01
	PB-210	0.906	1.30E+00	1.49E+00

Analysis Report for 1606038-05
CP-5018 02-05

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-212	0.735	8.76E-01	5.13E-01	
PB-212	0.872	1.67E+00	2.14E-01	
BI-214	0.904	8.19E-01	1.40E-01	
PB-214	0.959	9.69E-01	1.29E-01	
RA-226	0.984	4.23E+00	7.89E+00	
AC-228	0.908	1.37E+00	2.01E-01	
AM-243	0.854	1.03E-01	6.10E-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 1606038-05
CP-5018 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 9:20:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	2	60.78	1.50761E-02	36.01		
m	4	77.51	2.77393E-01	6.03	Tol.	TI-44
	7	144.18	1.27760E-02	52.79	Tol.	U-235
	9	209.90	2.13352E-02	49.37	Tol.	CM-243
	11	270.77	2.77131E-02	31.76		
	16	313.05	8.34356E-03	63.06	Sum	
	19	463.13	1.88435E-02	31.96	Tol.	SB-125
	20	511.36	3.33199E-02	24.05		
	24	795.61	1.07890E-02	55.72	Tol.	CS-134
m	27	916.14	6.86039E-03	52.32		
	28	934.25	8.47222E-03	38.29	Sum	
	30	1087.85	5.89869E-03	62.17		
	32	1148.30	4.06331E-03	61.93		
	33	1173.67	6.66667E-03	45.31	Tol.	CO-60
	34	1238.92	1.34500E-02	29.50		
	35	1354.26	7.12838E-03	33.70		
	36	1363.35	2.71296E-03	47.20		
	37	1408.57	4.01235E-03	51.34	Tol.	EU-152
	38	1438.85	3.81944E-03	43.14		
M	39	1456.92	4.40514E-03	42.94		
	41	1496.43	4.86111E-03	32.39	Sum	
	42	1527.78	1.87500E-03	45.81		
	43	1579.25	2.08333E-03	55.18	Sum	
M	44	1589.41	3.91031E-03	43.39		
m	45	1593.42	4.11312E-03	42.88	D-Esc	
	46	1630.50	3.23718E-03	32.75		
	47	1639.24	1.99495E-03	57.62	Sum	
M	48	1726.29	1.65000E-03	40.15		
m	49	1730.86	3.83914E-03	38.41	Sum	
	51	1837.82	2.20085E-03	63.73		
	52	1882.41	2.50000E-03	33.33	Sum	
	53	1906.84	1.94444E-03	70.71		
	54	1940.96	2.09596E-03	57.77		
	55	2103.27	3.06327E-03	52.24	Sum	

Analysis Report for 1606038-05
CP-5018 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
57	2592.27	1.15741E-03	72.25		
59	3199.19	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 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	-2.13E-01	5.46E-01	5.46E-01
+	NA-22	1274.54	99.94	5.64E-03	6.73E-02	6.73E-02
+	NA-24	1368.53	99.99	-9.34E+01	2.87E+02	3.59E+02
		2754.09	99.86	6.36E+01		2.87E+02
+	AL-26	1808.65	99.76	5.95E-03	5.16E-02	5.16E-02
+	K-40	1460.81	* 10.67	1.85E+01	1.27E+00	1.27E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-6.99E-02	6.16E-02	6.16E-02
		78.34	96.00	1.07E-01		7.90E-02
+	SC-46	889.25	99.98	-2.75E-02	6.37E-02	6.37E-02
		1120.51	99.99	1.40E-01		1.10E-01
+	V-48	983.52	99.98	6.48E-04	8.52E-02	8.52E-02
		1312.10	97.50	2.99E-02		1.08E-01
+	CR-51	320.08	9.83	-2.42E-01	5.33E-01	5.33E-01
+	MN-54	834.83	99.97	3.31E-02	7.54E-02	7.54E-02
+	CO-56	846.75	99.96	-2.35E-02	6.38E-02	6.38E-02
		1037.75	14.03	-3.21E-01		5.15E-01
		1238.25	67.00	1.56E-01		1.69E-01
		1771.40	15.51	-1.46E-02		2.74E-01
		2598.48	16.90	-8.00E-02		2.22E-01
+	CO-57	122.06	85.51	-8.65E-03	5.25E-02	5.25E-02
		136.48	10.60	-3.74E-01		4.16E-01
+	CO-58	810.76	99.40	-1.94E-02	6.61E-02	6.61E-02
+	FE-59	1099.22	56.50	3.24E-02	1.49E-01	1.49E-01
		1291.56	43.20	-7.36E-03		1.60E-01
+	CO-60	1173.22	100.00	5.17E-02	6.65E-02	7.98E-02
		1332.49	100.00	1.01E-02		6.65E-02

Analysis Report for 1606038-05
CP-5018 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52	50.75	2.35E-02	1.53E-01	1.53E-01
+	GA-67	93.31	35.70	1.38E+00	9.59E-01	9.59E-01
		208.95	2.24	1.04E+01		1.32E+01
		300.22	16.00	-3.98E+00		1.81E+00
+	SE-75	121.11	16.70	2.14E-01	7.69E-02	2.78E-01
		136.00	59.20	3.14E-02		7.91E-02
		264.65	59.80	-8.25E-03		7.69E-02
		279.53	25.20	8.55E-02		1.97E-01
		400.65	11.40	4.92E-03		4.23E-01
+	RB-82	776.52	13.00	-4.34E-01	5.48E-01	5.48E-01
+	RB-83	520.41	46.00	-1.55E-02	1.28E-01	1.28E-01
		529.64	30.30	-3.96E-02		1.97E-01
		552.65	16.40	-5.99E-02		3.23E-01
+	KR-85	513.99	0.43	3.90E+01	2.07E+01	2.07E+01
+	SR-85	513.99	99.27	1.85E-01	9.85E-02	9.85E-02
+	Y-88	898.02	93.40	-4.93E-02	4.82E-02	6.44E-02
		1836.01	99.38	-8.35E-03		4.82E-02
+	NB-93M	16.57	9.43	-3.05E+01	6.13E+01	6.13E+01
+	NB-94	702.63	100.00	4.62E-02	6.28E-02	7.30E-02
		871.10	100.00	-2.78E-03		6.28E-02
+	NB-95	765.79	99.81	2.69E-02	8.37E-02	8.37E-02
+	NB-95M	235.69	25.00	-1.29E+01	9.99E-01	9.99E-01
+	ZR-95	724.18	43.70	-1.98E-02	1.34E-01	1.60E-01
		756.72	55.30	6.59E-02		1.34E-01
+	MO-99	181.06	6.20	1.94E+00	3.58E+00	5.45E+00
		739.58	12.80	6.84E-01		3.58E+00
		778.00	4.50	-5.46E+00		1.00E+01
+	RU-103	497.08	89.00	-3.06E-03	7.02E-02	7.02E-02
+	RU-106	621.84	9.80	-7.61E-02	6.14E-01	6.14E-01
+	AG-108M	433.93	89.90	1.81E-02	6.08E-02	6.08E-02
		614.37	90.40	6.82E-03		6.39E-02
		722.95	90.50	-9.13E-03		6.32E-02
+	CD-109	88.03	*	3.72	3.33E+00	3.33E+00
+	AG-110M	657.75	93.14	-3.14E-02	6.87E-02	6.87E-02
		677.61	10.53	-1.82E-01		5.99E-01
		706.67	16.46	7.36E-02		4.11E-01
		763.93	21.98	-1.21E-01		3.05E-01
		884.67	71.63	3.17E-02		8.78E-02
		1384.27	23.94	9.28E-02		2.99E-01
+	CD-113M	263.70	0.02	2.06E+00	1.89E+02	1.89E+02
+	SN-113	255.12	1.93	-2.38E-01	7.81E-02	2.52E+00
		391.69	64.90	2.13E-03		7.81E-02
+	TE123M	159.00	84.10	-3.66E-03	5.69E-02	5.69E-02
+	SB-124	602.71	97.87	-1.70E-02	6.72E-02	6.72E-02
		645.85	7.26	-4.12E-01		8.30E-01
		722.78	11.10	-8.16E-02		5.65E-01
		1691.02	49.00	-7.94E-03		1.06E-01
+	I-125	35.49	6.49	2.42E-02	2.03E+00	2.03E+00

Analysis Report for 1606038-05
CP-5018 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-125	176.33	6.89	-3.34E-01	1.81E-01	6.66E-01
		427.89	29.33	-2.47E-02		1.81E-01
		463.38	10.35	8.52E-01		6.56E-01
		600.56	17.80	-1.50E-01		3.31E-01
		635.90	11.32	-1.44E-03		5.55E-01
+	SB-126	414.70	83.30	-1.16E-01	9.90E-02	9.90E-02
		666.33	99.60	-1.70E-03		1.04E-01
		695.00	99.60	-1.23E-02		1.03E-01
		720.50	53.80	-2.50E-02		1.73E-01
+	SN-126	87.57	* 37.00	2.53E-01	3.31E-01	3.31E-01
+	SB-127	473.00	25.00	2.87E-01	7.14E-01	8.63E-01
		685.20	35.70	-5.68E-02		7.14E-01
		783.80	14.70	1.13E+00		1.97E+00
+	I-129	29.78	57.00	1.26E-01	4.22E-01	4.22E-01
		33.60	13.20	1.79E-02		1.10E+00
		39.58	7.52	-4.09E-01		1.22E+00
+	I-131	284.30	6.05	1.79E-01	1.06E-01	1.48E+00
		364.48	81.20	1.54E-03		1.06E-01
		636.97	7.26	5.13E-01		1.80E+00
		722.89	1.80	-9.16E-01		6.34E+00
+	TE-132	49.72	13.10	-2.90E+00	3.11E-01	2.81E+00
		228.16	88.00	2.43E-01		3.11E-01
+	BA-133	81.00	33.00	-5.13E-01	8.29E-02	1.69E-01
		302.84	17.80	6.55E-02		2.82E-01
		356.01	60.00	2.60E-02		8.29E-02
+	I-133	529.87	86.30	-7.99E+00	3.97E+01	3.97E+01
+	XE-133	81.00	38.00	-1.29E+00	4.23E-01	4.23E-01
+	CS-134	563.23	8.38	3.16E-02	6.05E-02	6.71E-01
		569.32	15.43	-5.99E-02		3.82E-01
		604.70	97.60	-1.41E-02		6.05E-02
		795.84	85.40	3.19E-02		8.40E-02
		801.93	8.73	-6.04E-02		7.00E-01
+	CS-135	268.24	16.00	1.31E-01	3.29E-01	3.29E-01
+	I-135	1131.51	22.50	1.90E+07	1.35E+08	1.91E+08
		1260.41	28.60	-9.27E+07		1.35E+08
		1678.03	9.54	-2.40E+07		2.52E+08
+	CS-136	153.22	7.46	3.88E-01	9.93E-02	9.41E-01
		163.89	4.61	9.53E-01		1.50E+00
		176.55	13.56	-2.58E-01		5.14E-01
		273.65	12.66	-2.54E-01		6.17E-01
		340.57	48.50	4.96E-01		2.23E-01
		818.50	99.70	2.10E-02		9.93E-02
		1048.07	79.60	1.97E-02		1.42E-01
		1235.34	19.70	-5.42E-03		6.82E-01
+	CS-137	661.65	85.12	-7.31E-03	7.80E-02	7.80E-02
+	LA-138	788.74	34.00	1.54E-02	8.32E-02	1.85E-01
		1435.80	66.00	3.71E-04		8.32E-02
+	CE-139	165.85	80.35	2.92E-02	5.93E-02	5.93E-02
+	BA-140	162.64	6.70	1.08E-01	3.38E-01	1.05E+00

Analysis Report for 1606038-05
CP-5018 02-05

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)		
BA-140	304.84	4.50	2.00E-01	3.38E-01	1.59E+00		
	423.70	3.20	-1.43E+00		2.54E+00		
	437.55	2.00	-7.53E-02		4.14E+00		
	537.32	25.00	1.22E-01		3.38E-01		
+ LA-140	328.77	20.50	1.91E-01	1.04E-01	3.94E-01		
	487.03	45.50	-3.69E-02		1.78E-01		
	815.85	23.50	-2.16E-01		3.92E-01		
+ CE-141	1596.49	95.49	1.77E-02	1.16E-01	1.04E-01		
	145.44	48.40	2.13E-02		1.16E-01		
+ CE-143	57.36	11.80	-1.58E+01	8.52E+00	2.72E+01		
	293.26	42.00	1.38E+01		8.52E+00		
	664.55	5.20	3.92E+01		7.65E+01		
+ CE-144	133.54	10.80	1.01E-01	4.37E-01	4.37E-01		
	+ PM-144	476.78	42.00		-6.07E-02	6.08E-02	1.24E-01
618.01		98.60	5.20E-03	6.08E-02			
696.49		99.49	-4.97E-02	6.54E-02			
+ PM-145	36.85	21.70	-1.35E-01	2.63E-01	4.93E-01		
	37.36	39.70	-1.71E-01		2.63E-01		
	42.30	15.10	1.05E-01		5.46E-01		
	72.40	2.31	-1.25E+01		2.76E+00		
+ PM-146	453.90	39.94	-3.05E-02	1.31E-01	1.31E-01		
	735.90	14.01	-2.38E-02		4.58E-01		
	747.13	13.10	-1.56E-02		4.36E-01		
+ ND-147	91.11	*	28.90	7.00E-01	7.00E-01		
	531.02	13.10	-3.24E-02		7.19E-01		
+ PM-149	285.90	*	3.10	2.62E+01	2.62E+01		
+ EU-152	121.78	20.50	-3.54E-02	2.13E-01	2.15E-01		
	244.69	5.40	-1.40E-01		9.92E-01		
	344.27	19.13	-1.17E-01		2.13E-01		
	778.89	9.20	-2.17E-01		6.60E-01		
	964.01	10.40	-3.76E-02		7.50E-01		
	1085.78	7.22	6.05E-01		1.04E+00		
	1112.02	9.60	-3.40E-01		7.69E-01		
	1407.95	14.94	1.76E-01		4.34E-01		
	+ GD-153	97.43	31.30		1.06E-02	1.49E-01	1.49E-01
		103.18	22.20		-1.41E-01		1.96E-01
+ EU-154	123.07	40.50	3.81E-02	1.10E-01	1.10E-01		
	723.30	19.70	-4.20E-02		2.91E-01		
	873.19	11.50	2.49E-01		5.53E-01		
	996.32	10.30	-1.87E-01		5.91E-01		
	1004.76	17.90	4.15E-02		3.71E-01		
	1274.45	35.50	1.58E-02		1.89E-01		
	+ EU-155	86.50	30.90		2.51E-01	1.94E-01	1.94E-01
+ EU-156	105.30	20.70	-8.45E-02	8.03E-01	2.06E-01		
	811.77	10.40	-5.60E-01		8.03E-01		
	1153.47	7.20	3.31E-01		1.56E+00		
+ HO-166M	1230.71	8.90	3.16E-01	8.27E-02	1.36E+00		
	184.41	72.60	1.26E-01		8.27E-02		
	280.45	29.60	-7.88E-02		1.48E-01		

Analysis Report for 1606038-05
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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
HO-166M	410.94	11.10	4.21E-01	8.27E-02	5.20E-01
	711.69	54.10	-5.20E-02		1.07E-01
+ TM-171	66.72	0.14	-8.84E+01	4.34E+01	4.34E+01
+ HF-172	81.75	4.52	-3.38E+00	3.88E-01	1.13E+00
	125.81	11.30	-1.06E-01		3.88E-01
+ LU-172	181.53	20.60	2.21E-01	2.58E-01	5.08E-01
	810.06	16.63	1.59E-01		8.88E-01
	912.12	15.25	5.60E+00		2.09E+00
	1093.66	62.50	5.24E-02		2.58E-01
+ LU-173	100.72	5.24	6.85E-01	2.71E-01	8.60E-01
	272.11	21.20	2.82E-01		2.71E-01
+ HF-175	343.40	84.00	-1.43E-02	5.58E-02	5.58E-02
+ LU-176	88.34	13.30	8.77E-01	4.81E-02	4.70E-01
	201.83	86.00	2.74E-02		5.68E-02
	306.78	94.00	2.38E-02		4.81E-02
+ TA-182	67.75	41.20	-1.68E-01	1.48E-01	1.48E-01
	1121.30	34.90	2.73E-01		2.95E-01
	1189.05	16.23	1.24E-01		5.16E-01
	1221.41	26.98	-7.66E-03		3.39E-01
	1231.02	11.44	1.79E-01		7.70E-01
+ IR-192	308.46	29.68	-3.24E-02	1.16E-01	1.49E-01
	468.07	48.10	-4.03E-02		1.16E-01
+ HG-203	279.19	* 77.30	4.74E-02	7.44E-02	7.44E-02
+ BI-207	569.67	97.72	4.63E-03	6.10E-02	6.10E-02
	1063.62	74.90	-5.43E-03		8.91E-02
+ TL-208	583.14	* 30.22	1.20E+00	2.45E-02	2.85E-01
	860.37	* 4.48	7.44E-01		1.36E+00
	2614.66	* 35.85	1.40E+00		2.45E-02
+ BI-210M	262.00	45.00	-5.49E-02	9.53E-02	9.53E-02
	300.00	23.00	-5.02E-01		2.29E-01
+ PB-210	46.50	* 4.25	1.30E+00	2.44E+00	2.44E+00
+ PB-211	404.84	2.90	4.50E-01	1.61E+00	1.61E+00
	831.96	2.90	-1.62E+00		2.16E+00
+ BI-212	727.17	* 11.80	8.76E-01	7.94E-01	7.94E-01
	1620.62	2.75	1.11E+00		2.27E+00
+ PB-212	238.63	* 44.60	1.69E+00	2.22E-01	2.22E-01
	300.09	* 3.41	1.25E+00		2.69E+00
+ BI-214	609.31	* 46.30	8.08E-01	1.98E-01	1.98E-01
	1120.29	* 15.10	6.62E-01		6.04E-01
	1764.49	* 15.80	1.02E+00		4.57E-01
	2204.22	* 4.98	7.90E-01		1.32E+00
+ PB-214	295.21	* 19.19	9.50E-01	2.01E-01	4.69E-01
	351.92	* 37.19	9.82E-01		2.01E-01
+ RN-219	401.80	6.50	-3.40E-02	7.04E-01	7.04E-01
+ RA-223	323.87	3.88	-1.21E-01	1.28E+00	1.28E+00
+ RA-224	240.98	3.95	1.70E+01	2.79E+00	2.79E+00
+ RA-225	40.00	31.00	-1.41E-01	4.21E-01	4.21E-01
+ RA-226	186.21	* 3.28	4.23E+00	2.32E+00	2.32E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10	8.40	-8.11E-01	4.66E-01	7.86E-01
		236.00	11.50	-5.99E+00		4.66E-01
		256.20	6.30	1.09E-01		7.41E-01
+	AC-228	338.32 *	11.40	1.59E+00	4.69E-01	6.25E-01
		911.07 *	27.70	1.48E+00		4.69E-01
		969.11 *	16.60	7.49E-01		7.33E-01
+	TH-230	48.44	16.90	4.30E-01	4.37E-01	4.37E-01
		62.85	4.60	2.64E+00		1.51E+00
		67.67	0.37	-1.79E+01		1.57E+01
+	PA-231	283.67	1.60	4.78E-01	2.18E+00	2.79E+00
		302.67	2.30	5.06E-01		2.18E+00
+	TH-231	25.64	14.70	-4.87E+01	8.15E-01	3.66E+00
		84.21	6.40	-2.71E+00		8.15E-01
+	PA-233	311.98	38.60	6.43E-03	1.36E-01	1.36E-01
+	PA-234	131.20	20.40	2.34E-01	2.41E-01	2.41E-01
		733.99	8.80	1.60E-01		7.38E-01
		946.00	12.00	-6.72E-02		5.01E-01
+	PA-234M	1001.03	0.92	3.17E+00	7.94E+00	7.94E+00
+	TH-234	63.29	3.80	2.29E+00	1.81E+00	1.81E+00
+	U-235	143.76	10.50	1.61E-03	4.29E-01	4.29E-01
		163.35	4.70	6.11E-01		9.65E-01
		205.31	4.70	-3.07E-02		9.72E-01
+	NP-237	86.50	12.60	6.14E-01	4.75E-01	4.75E-01
+	NP-239	106.10	22.70	-8.16E-01	1.99E+00	1.99E+00
		228.18	10.70	3.84E+00		4.93E+00
		277.60	14.10	8.73E-01		3.62E+00
+	AM-241	59.54	35.90	-1.36E-02	1.67E-01	1.67E-01
+	AM-243	74.67 *	66.00	1.03E-01	1.66E-01	1.66E-01
+	CM-243	209.75	3.29	1.70E+00	3.44E-01	1.64E+00
		228.14	10.60	3.66E-01		4.69E-01
		277.60	14.00	8.29E-02		3.44E-01

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

Analysis Report for 1606038-05
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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	5.46E-01	5.46E-01	-2.13E-01	2.58E-01
NA-22	1274.54	99.94	6.73E-02	6.73E-02	5.64E-03	3.06E-02
NA-24	1368.53	99.99	3.59E+02	2.87E+02	-9.34E+01	1.56E+02
	2754.09	99.86	2.87E+02		6.36E+01	1.11E+02
AL-26	1808.65	99.76	5.16E-02	5.16E-02	5.95E-03	2.20E-02
+ K-40	1460.81	* 10.67	1.27E+00	1.27E+00	1.85E+01	6.05E-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	6.16E-02	6.16E-02	-6.99E-02	3.01E-02
	78.34	96.00	7.90E-02		1.07E-01	3.89E-02
SC-46	889.25	99.98	6.37E-02	6.37E-02	-2.75E-02	2.94E-02
	1120.51	99.99	1.10E-01		1.40E-01	5.19E-02
V-48	983.52	99.98	8.52E-02	8.52E-02	6.48E-04	3.91E-02
	1312.10	97.50	1.08E-01		2.99E-02	4.96E-02
CR-51	320.08	9.83	5.33E-01	5.33E-01	-2.42E-01	2.53E-01
MN-54	834.83	99.97	7.54E-02	7.54E-02	3.31E-02	3.55E-02
CO-56	846.75	99.96	6.38E-02	6.38E-02	-2.35E-02	2.95E-02
	1037.75	14.03	5.15E-01		-3.21E-01	2.38E-01
	1238.25	67.00	1.69E-01		1.56E-01	7.96E-02
	1771.40	15.51	2.74E-01		-1.46E-02	1.11E-01
	2598.48	16.90	2.22E-01		-8.00E-02	8.29E-02
CO-57	122.06	85.51	5.25E-02	5.25E-02	-8.65E-03	2.55E-02
	136.48	10.60	4.16E-01		-3.74E-01	2.02E-01
CO-58	810.76	99.40	6.61E-02	6.61E-02	-1.94E-02	3.08E-02
FE-59	1099.22	56.50	1.49E-01	1.49E-01	3.24E-02	6.91E-02
	1291.56	43.20	1.60E-01		-7.36E-03	7.17E-02
CO-60	1173.22	100.00	7.98E-02	6.65E-02	5.17E-02	3.70E-02
	1332.49	100.00	6.65E-02		1.01E-02	3.01E-02
ZN-65	1115.52	50.75	1.53E-01	1.53E-01	2.35E-02	7.09E-02
GA-67	93.31	35.70	9.59E-01	9.59E-01	1.38E+00	4.71E-01
	208.95	2.24	1.32E+01		1.04E+01	6.38E+00
	300.22	16.00	1.81E+00		-3.98E+00	8.71E-01
SE-75	121.11	16.70	2.78E-01	7.69E-02	2.14E-01	1.35E-01
	136.00	59.20	7.91E-02		3.14E-02	3.84E-02
	264.65	59.80	7.69E-02		-8.25E-03	3.68E-02
	279.53	25.20	1.97E-01		8.55E-02	9.45E-02
	400.65	11.40	4.23E-01		4.92E-03	2.00E-01
RB-82	776.52	13.00	5.48E-01	5.48E-01	-4.34E-01	2.54E-01
RB-83	520.41	46.00	1.28E-01	1.28E-01	-1.55E-02	6.08E-02
	529.64	30.30	1.97E-01		-3.96E-02	9.30E-02
	552.65	16.40	3.23E-01		-5.99E-02	1.51E-01
KR-85	513.99	0.43	2.07E+01	2.07E+01	3.90E+01	1.00E+01
SR-85	513.99	99.27	9.85E-02	9.85E-02	1.85E-01	4.76E-02
Y-88	898.02	93.40	6.44E-02	4.82E-02	-4.93E-02	2.96E-02
	1836.01	99.38	4.82E-02		-8.35E-03	2.00E-02
NB-93M	16.57	9.43	6.13E+01	6.13E+01	-3.05E+01	2.85E+01

Analysis Report for 1606038-05
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	7.30E-02	6.28E-02	4.62E-02	3.46E-02
	871.10	100.00	6.28E-02		-2.78E-03	2.92E-02
NB-95	765.79	99.81	8.37E-02	8.37E-02	2.69E-02	3.95E-02
NB-95M	235.69	25.00	9.99E-01	9.99E-01	-1.29E+01	4.83E-01
ZR-95	724.18	43.70	1.60E-01	1.34E-01	-1.98E-02	7.54E-02
	756.72	55.30	1.34E-01		6.59E-02	6.28E-02
MO-99	181.06	6.20	5.45E+00	3.58E+00	1.94E+00	2.63E+00
	739.58	12.80	3.58E+00		6.84E-01	1.67E+00
	778.00	4.50	1.00E+01		-5.46E+00	4.67E+00
RU-103	497.08	89.00	7.02E-02	7.02E-02	-3.06E-03	3.32E-02
RU-106	621.84	9.80	6.14E-01	6.14E-01	-7.61E-02	2.89E-01
AG-108M	433.93	89.90	6.08E-02	6.08E-02	1.81E-02	2.89E-02
	614.37	90.40	6.39E-02		6.82E-03	3.01E-02
	722.95	90.50	6.32E-02		-9.13E-03	2.94E-02
+ CD-109	88.03	*	3.33E+00	3.33E+00	2.55E+00	1.65E+00
AG-110M	657.75	93.14	6.87E-02	6.87E-02	-3.14E-02	3.24E-02
	677.61	10.53	5.99E-01		-1.82E-01	2.82E-01
	706.67	16.46	4.11E-01		7.36E-02	1.94E-01
	763.93	21.98	3.05E-01		-1.21E-01	1.43E-01
	884.67	71.63	8.78E-02		3.17E-02	4.06E-02
	1384.27	23.94	2.99E-01		9.28E-02	1.36E-01
CD-113M	263.70	0.02	1.89E+02	1.89E+02	2.06E+00	9.05E+01
SN-113	255.12	1.93	2.52E+00	7.81E-02	-2.38E-01	1.21E+00
	391.69	64.90	7.81E-02		2.13E-03	3.71E-02
TE123M	159.00	84.10	5.69E-02	5.69E-02	-3.66E-03	2.76E-02
SB-124	602.71	97.87	6.72E-02	6.72E-02	-1.70E-02	3.17E-02
	645.85	7.26	8.30E-01		-4.12E-01	3.88E-01
	722.78	11.10	5.65E-01		-8.16E-02	2.63E-01
	1691.02	49.00	1.06E-01		-7.94E-03	4.49E-02
I-125	35.49	6.49	2.03E+00	2.03E+00	2.42E-02	9.83E-01
SB-125	176.33	6.89	6.66E-01	1.81E-01	-3.34E-01	3.22E-01
	427.89	29.33	1.81E-01		-2.47E-02	8.62E-02
	463.38	10.35	6.56E-01		8.52E-01	3.14E-01
	600.56	17.80	3.31E-01		-1.50E-01	1.56E-01
	635.90	11.32	5.55E-01		-1.44E-03	2.62E-01
SB-126	414.70	83.30	9.90E-02	9.90E-02	-1.16E-01	4.71E-02
	666.33	99.60	1.04E-01		-1.70E-03	4.94E-02
	695.00	99.60	1.03E-01		-1.23E-02	4.87E-02
	720.50	53.80	1.73E-01		-2.50E-02	8.09E-02
+ SN-126	87.57	*	3.31E-01	3.31E-01	2.53E-01	1.64E-01
SB-127	473.00	25.00	8.63E-01	7.14E-01	2.87E-01	4.08E-01
	685.20	35.70	7.14E-01		-5.68E-02	3.35E-01
	783.80	14.70	1.97E+00		1.13E+00	9.28E-01
I-129	29.78	57.00	4.22E-01	4.22E-01	1.26E-01	2.04E-01
	33.60	13.20	1.10E+00		1.79E-02	5.33E-01
	39.58	7.52	1.22E+00		-4.09E-01	5.93E-01
I-131	284.30	6.05	1.48E+00	1.06E-01	1.79E-01	7.07E-01
	364.48	81.20	1.06E-01		1.54E-03	5.03E-02
	636.97	7.26	1.80E+00		5.13E-01	8.50E-01
	722.89	1.80	6.34E+00		-9.16E-01	2.96E+00
TE-132	49.72	13.10	2.81E+00	3.11E-01	-2.90E+00	1.37E+00
	228.16	88.00	3.11E-01		2.43E-01	1.50E-01
BA-133	81.00	33.00	1.69E-01	8.29E-02	-5.13E-01	8.27E-02

Analysis Report for 1606038-05
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	2.82E-01	8.29E-02	6.55E-02	1.35E-01
	356.01	60.00	8.29E-02		2.60E-02	3.96E-02
I-133	529.87	86.30	3.97E+01	3.97E+01	-7.99E+00	1.88E+01
XE-133	81.00	38.00	4.23E-01	4.23E-01	-1.29E+00	2.07E-01
CS-134	563.23	8.38	6.71E-01	6.05E-02	3.16E-02	3.16E-01
	569.32	15.43	3.82E-01		-5.99E-02	1.80E-01
	604.70	97.60	6.05E-02		-1.41E-02	2.85E-02
	795.84	85.40	8.40E-02		3.19E-02	3.95E-02
	801.93	8.73	7.00E-01		-6.04E-02	3.26E-01
CS-135	268.24	16.00	3.29E-01	3.29E-01	1.31E-01	1.59E-01
I-135	1131.51	22.50	1.91E+08	1.35E+08	1.90E+07	8.81E+07
	1260.41	28.60	1.35E+08		-9.27E+07	6.12E+07
	1678.03	9.54	2.52E+08		-2.40E+07	1.03E+08
CS-136	153.22	7.46	9.41E-01	9.93E-02	3.88E-01	4.57E-01
	163.89	4.61	1.50E+00		9.53E-01	7.29E-01
	176.55	13.56	5.14E-01		-2.58E-01	2.49E-01
	273.65	12.66	6.17E-01		-2.54E-01	2.97E-01
	340.57	48.50	2.23E-01		4.96E-01	1.08E-01
	818.50	99.70	9.93E-02		2.10E-02	4.64E-02
	1048.07	79.60	1.42E-01		1.97E-02	6.59E-02
	1235.34	19.70	6.82E-01		-5.42E-03	3.18E-01
CS-137	661.65	85.12	7.80E-02	7.80E-02	-7.31E-03	3.69E-02
LA-138	788.74	34.00	1.85E-01	8.32E-02	1.54E-02	8.66E-02
	1435.80	66.00	8.32E-02		3.71E-04	3.66E-02
CE-139	165.85	80.35	5.93E-02	5.93E-02	2.92E-02	2.87E-02
BA-140	162.64	6.70	1.05E+00	3.38E-01	1.08E-01	5.07E-01
	304.84	4.50	1.59E+00		2.00E-01	7.62E-01
	423.70	3.20	2.54E+00		-1.43E+00	1.21E+00
	437.55	2.00	4.14E+00		-7.53E-02	1.97E+00
	537.32	25.00	3.38E-01		1.22E-01	1.59E-01
LA-140	328.77	20.50	3.94E-01	1.04E-01	1.91E-01	1.89E-01
	487.03	45.50	1.78E-01		-3.69E-02	8.42E-02
	815.85	23.50	3.92E-01		-2.16E-01	1.82E-01
	1596.49	95.49	1.04E-01		1.77E-02	4.64E-02
CE-141	145.44	48.40	1.16E-01	1.16E-01	2.13E-02	5.63E-02
CE-143	57.36	11.80	2.72E+01	8.52E+00	-1.58E+01	1.33E+01
	293.26	42.00	8.52E+00		1.38E+01	4.12E+00
	664.55	5.20	7.65E+01		3.92E+01	3.62E+01
CE-144	133.54	10.80	4.37E-01	4.37E-01	1.01E-01	2.13E-01
PM-144	476.78	42.00	1.24E-01	6.08E-02	-6.07E-02	5.87E-02
	618.01	98.60	6.08E-02		5.20E-03	2.86E-02
	696.49	99.49	6.54E-02		-4.97E-02	3.08E-02
PM-145	36.85	21.70	4.93E-01	2.63E-01	-1.35E-01	2.39E-01
	37.36	39.70	2.63E-01		-1.71E-01	1.27E-01
	42.30	15.10	5.46E-01		1.05E-01	2.65E-01
	72.40	2.31	2.76E+00		-1.25E+01	1.35E+00
PM-146	453.90	39.94	1.31E-01	1.31E-01	-3.05E-02	6.19E-02
	735.90	14.01	4.58E-01		-2.38E-02	2.15E-01
	747.13	13.10	4.36E-01		-1.56E-02	2.03E-01
+ ND-147	91.11	*	28.90	7.00E-01	4.73E-01	3.46E-01
	531.02		13.10		-3.24E-02	3.40E-01
+ PM-149	285.90	*	3.10	2.62E+01	1.40E+01	1.27E+01
	EU-152		20.50		2.15E-01	2.13E-01	-3.54E-02	1.04E-01

Analysis Report for 1606038-05

CP-5018 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	9.92E-01	2.13E-01	-1.40E-01	4.80E-01
	344.27	19.13	2.13E-01		-1.17E-01	1.01E-01
	778.89	9.20	6.60E-01		-2.17E-01	3.08E-01
	964.01	10.40	7.50E-01		-3.76E-02	3.52E-01
	1085.78	7.22	1.04E+00		6.05E-01	4.82E-01
	1112.02	9.60	7.69E-01		-3.40E-01	3.56E-01
	1407.95	14.94	4.34E-01		1.76E-01	1.95E-01
GD-153	97.43	31.30	1.49E-01	1.49E-01	1.06E-02	7.27E-02
	103.18	22.20	1.96E-01		-1.41E-01	9.52E-02
EU-154	123.07	40.50	1.10E-01	1.10E-01	3.81E-02	5.36E-02
	723.30	19.70	2.91E-01		-4.20E-02	1.36E-01
	873.19	11.50	5.53E-01		2.49E-01	2.57E-01
	996.32	10.30	5.91E-01		-1.87E-01	2.71E-01
	1004.76	17.90	3.71E-01		4.15E-02	1.71E-01
EU-155	1274.45	35.50	1.89E-01	1.94E-01	1.58E-02	8.58E-02
	86.50	30.90	1.94E-01		2.51E-01	9.53E-02
	105.30	20.70	2.06E-01		-8.45E-02	1.00E-01
EU-156	811.77	10.40	8.03E-01	8.03E-01	-5.60E-01	3.72E-01
	1153.47	7.20	1.56E+00		3.31E-01	7.24E-01
	1230.71	8.90	1.36E+00		3.16E-01	6.32E-01
HO-166M	184.41	72.60	8.27E-02	8.27E-02	1.26E-01	4.03E-02
	280.45	29.60	1.48E-01		-7.88E-02	7.06E-02
	410.94	11.10	5.20E-01		4.21E-01	2.48E-01
	711.69	54.10	1.07E-01		-5.20E-02	4.98E-02
TM-171	66.72	0.14	4.34E+01	4.34E+01	-8.84E+01	2.12E+01
HF-172	81.75	4.52	1.13E+00	3.88E-01	-3.38E+00	5.52E-01
	125.81	11.30	3.88E-01		-1.06E-01	1.89E-01
LU-172	181.53	20.60	5.08E-01	2.58E-01	2.21E-01	2.46E-01
	810.06	16.63	8.88E-01		1.59E-01	4.15E-01
	912.12	15.25	2.09E+00		5.60E+00	1.01E+00
	1093.66	62.50	2.58E-01		5.24E-02	1.19E-01
LU-173	100.72	5.24	8.60E-01	2.71E-01	6.85E-01	4.19E-01
	272.11	21.20	2.71E-01		2.82E-01	1.31E-01
HF-175	343.40	84.00	5.58E-02	5.58E-02	-1.43E-02	2.65E-02
LU-176	88.34	13.30	4.70E-01	4.81E-02	8.77E-01	2.30E-01
	201.83	86.00	5.68E-02		2.74E-02	2.75E-02
	306.78	94.00	4.81E-02		2.38E-02	2.29E-02
TA-182	67.75	41.20	1.48E-01	1.48E-01	-1.68E-01	7.26E-02
	1121.30	34.90	2.95E-01		2.73E-01	1.39E-01
	1189.05	16.23	5.16E-01		1.24E-01	2.39E-01
	1221.41	26.98	3.39E-01		-7.66E-03	1.58E-01
	1231.02	11.44	7.70E-01		1.79E-01	3.58E-01
IR-192	308.46	29.68	1.49E-01	1.16E-01	-3.24E-02	7.09E-02
	468.07	48.10	1.16E-01		-4.03E-02	5.50E-02
+ HG-203	279.19	* 77.30	7.44E-02	7.44E-02	4.74E-02	3.58E-02
	BI-207	569.67	97.72		6.10E-02	6.10E-02	2.89E-02
+ TL-208	1063.62	74.90	8.91E-02	2.45E-02	-5.43E-03	4.10E-02
	583.14	* 30.22	2.85E-01		1.20E+00	1.37E-01
	860.37	* 4.48	1.36E+00		7.44E-01	6.30E-01
BI-210M	2614.66	* 35.85	2.45E-02	9.53E-02	1.40E+00	0.00E+00
	262.00	45.00	9.53E-02		-5.49E-02	4.56E-02
	300.00	23.00	2.29E-01		-5.02E-01	1.10E-01
+ PB-210	46.50	* 4.25	2.44E+00	2.44E+00	1.30E+00	1.20E+00

Analysis Report for 1606038-05
CP-5018 02-05

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	1.61E+00	1.61E+00	4.50E-01	7.61E-01
	831.96	2.90	2.16E+00		-1.62E+00	1.00E+00
+ BI-212	727.17 *	11.80	7.94E-01	7.94E-01	8.76E-01	3.80E-01
	1620.62	2.75	2.27E+00		1.11E+00	1.00E+00
+ PB-212	238.63 *	44.60	2.22E-01	2.22E-01	1.69E+00	1.09E-01
	300.09 *	3.41	2.69E+00		1.25E+00	1.32E+00
+ BI-214	609.31 *	46.30	1.98E-01	1.98E-01	8.08E-01	9.53E-02
	1120.29 *	15.10	6.04E-01		6.62E-01	2.84E-01
	1764.49 *	15.80	4.57E-01		1.02E+00	2.05E-01
	2204.22 *	4.98	1.32E+00		7.90E-01	5.74E-01
+ PB-214	295.21 *	19.19	4.69E-01	2.01E-01	9.50E-01	2.29E-01
	351.92 *	37.19	2.01E-01		9.82E-01	9.72E-02
RN-219	401.80	6.50	7.04E-01	7.04E-01	-3.40E-02	3.33E-01
RA-223	323.87	3.88	1.28E+00	1.28E+00	-1.21E-01	6.11E-01
RA-224	240.98	3.95	2.79E+00	2.79E+00	1.70E+01	1.37E+00
RA-225	40.00	31.00	4.21E-01	4.21E-01	-1.41E-01	2.04E-01
+ RA-226	186.21 *	3.28	2.32E+00	2.32E+00	4.23E+00	1.14E+00
TH-227	50.10	8.40	7.86E-01	4.66E-01	-8.11E-01	3.82E-01
	236.00	11.50	4.66E-01		-5.99E+00	2.25E-01
	256.20	6.30	7.41E-01		1.09E-01	3.56E-01
+ AC-228	338.32 *	11.40	6.25E-01	4.69E-01	1.59E+00	3.03E-01
	911.07 *	27.70	4.69E-01		1.48E+00	2.26E-01
	969.11 *	16.60	7.33E-01		7.49E-01	3.52E-01
TH-230	48.44	16.90	4.37E-01	4.37E-01	4.30E-01	2.13E-01
	62.85	4.60	1.51E+00		2.64E+00	7.40E-01
	67.67	0.37	1.57E+01		-1.79E+01	7.70E+00
PA-231	283.67	1.60	2.79E+00	2.18E+00	4.78E-01	1.34E+00
	302.67	2.30	2.18E+00		5.06E-01	1.05E+00
TH-231	25.64	14.70	3.66E+00	8.15E-01	-4.87E+01	1.78E+00
	84.21	6.40	8.15E-01		-2.71E+00	3.98E-01
PA-233	311.98	38.60	1.36E-01	1.36E-01	6.43E-03	6.49E-02
PA-234	131.20	20.40	2.41E-01	2.41E-01	2.34E-01	1.17E-01
	733.99	8.80	7.38E-01		1.60E-01	3.47E-01
	946.00	12.00	5.01E-01		-6.72E-02	2.31E-01
PA-234M	1001.03	0.92	7.94E+00	7.94E+00	3.17E+00	3.69E+00
TH-234	63.29	3.80	1.81E+00	1.81E+00	2.29E+00	8.86E-01
U-235	143.76	10.50	4.29E-01	4.29E-01	1.61E-03	2.08E-01
	163.35	4.70	9.65E-01		6.11E-01	4.68E-01
	205.31	4.70	9.72E-01		-3.07E-02	4.69E-01
NP-237	86.50	12.60	4.75E-01	4.75E-01	6.14E-01	2.33E-01
NP-239	106.10	22.70	1.99E+00	1.99E+00	-8.16E-01	9.68E-01
	228.18	10.70	4.93E+00		3.84E+00	2.38E+00
	277.60	14.10	3.62E+00		8.73E-01	1.74E+00
+ AM-241	59.54	35.90	1.67E-01	1.67E-01	-1.36E-02	8.17E-02
+ AM-243	74.67 *	66.00	1.66E-01	1.66E-01	1.03E-01	8.22E-02
CM-243	209.75	3.29	1.64E+00	3.44E-01	1.70E+00	7.97E-01
	228.14	10.60	4.69E-01		3.66E-01	2.27E-01
	277.60	14.00	3.44E-01		8.29E-02	1.65E-01

Analysis Report for 1606038-05
CP-5018 02-05

- + = 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: CP-5018 02-05

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	58	77	78	142	830	134
25:	59	74	62	62	87	68	47	69
33:	61	62	58	60	71	55	61	68
41:	85	68	75	71	74	77	142	130
49:	78	90	75	84	96	91	108	82
57:	91	82	112	106	151	135	126	273
65:	184	140	126	128	134	148	149	151
73:	179	155	238	423	272	573	236	123
81:	119	136	103	113	158	128	135	260
89:	170	151	215	135	231	306	147	108
97:	102	82	105	94	100	76	89	73
105:	88	92	96	68	93	98	90	88
113:	99	90	84	96	86	59	83	79
121:	88	81	90	76	88	77	75	81
129:	81	122	101	96	80	93	76	85
137:	69	71	66	88	81	65	57	100
145:	102	58	73	83	73	74	77	68
153:	64	68	90	85	60	80	79	77
161:	60	64	62	93	63	59	55	71
169:	58	71	74	46	63	64	58	81
177:	59	63	56	77	54	59	49	68
185:	72	132	209	89	71	65	57	54
193:	72	43	56	62	50	52	49	69
201:	71	61	54	56	57	59	51	42
209:	61	122	83	56	56	55	46	55
217:	58	47	37	49	49	44	46	39
225:	33	60	47	50	62	56	50	44
233:	44	45	57	56	60	89	467	487
241:	92	142	123	51	44	42	32	36
249:	47	38	37	35	46	32	44	43
257:	40	48	45	32	39	31	24	42
265:	41	33	34	32	42	55	86	61
273:	40	44	44	40	30	52	46	29
281:	34	28	22	39	35	40	28	32
289:	31	22	22	27	21	28	55	184
297:	79	36	36	49	60	32	37	28
305:	33	33	29	28	27	16	22	29
313:	23	41	22	26	23	24	18	26
321:	30	28	38	31	40	31	34	45
329:	50	28	27	28	27	28	27	22
337:	30	63	176	70	28	32	23	24
345:	21	16	18	25	22	25	41	156
353:	301	51	19	17	33	27	23	20
361:	28	20	29	24	19	15	19	27

369: 12 30 19 21 24 23 21 20

Sample Title: CP-5018 02-05

Channel	1	2	3	4	5	6	7	8
377:	19	27	28	21	22	21	20	27
385:	23	25	26	28	28	29	28	13
393:	22	28	22	20	19	21	24	17
401:	19	19	26	22	21	19	18	14
409:	22	38	27	13	20	28	17	11
417:	24	19	22	28	21	24	16	18
425:	16	15	17	26	16	16	21	18
433:	24	20	20	13	17	15	19	24
441:	18	16	14	15	18	15	21	14
449:	16	24	16	14	11	23	20	14
457:	14	19	13	17	21	27	31	56
465:	17	20	15	11	17	10	16	21
473:	12	19	13	9	11	10	21	18
481:	18	20	17	16	17	14	18	16
489:	14	7	19	10	12	14	20	17
497:	11	19	12	13	24	13	11	20
505:	15	15	21	12	23	32	79	93
513:	45	21	20	10	20	16	17	10
521:	12	20	15	13	15	17	9	15
529:	16	12	19	16	15	12	20	14
537:	10	15	10	11	15	10	9	12
545:	19	8	13	12	12	10	11	11
553:	15	9	10	8	11	12	12	16
561:	6	9	19	15	13	14	12	15
569:	14	13	17	15	18	15	15	13
577:	14	16	13	12	13	12	69	190
585:	96	15	12	19	13	17	12	8
593:	9	13	11	13	17	14	16	18
601:	11	9	10	14	14	20	9	15
609:	54	171	109	17	10	11	11	7
617:	15	15	11	10	20	14	13	11
625:	10	13	12	14	17	16	9	15
633:	12	21	10	10	16	13	14	21
641:	9	16	13	15	8	10	5	10
649:	10	10	17	11	13	12	16	11
657:	16	15	8	13	12	23	14	16
665:	16	16	14	13	12	12	13	8
673:	19	10	8	10	17	11	10	12
681:	16	15	12	10	7	10	13	11
689:	8	12	7	19	19	7	15	11
697:	13	8	16	17	13	19	13	19
705:	17	15	11	11	7	11	8	11
713:	13	10	7	13	14	13	11	11
721:	7	8	9	11	7	11	29	51
729:	20	15	12	10	14	13	11	12
737:	10	11	8	13	11	9	8	11
745:	3	11	5	10	6	14	10	8
753:	11	8	13	18	11	13	11	11
761:	11	6	7	14	16	10	14	12
769:	20	16	11	12	18	8	6	12
777:	7	9	7	8	13	8	14	14
785:	6	13	14	10	7	6	8	10
793:	9	11	24	18	12	7	6	15

801: 6 7 8 9 10 6 19 13

Sample Title: CP-5018 02-05

Channel	6	7	8	9	10	6	19	13
809:	6	4	12	8	6	11	7	10
817:	5	8	10	11	13	11	8	8
825:	10	10	10	6	2	11	7	8
833:	14	13	6	17	18	11	9	11
841:	11	11	8	9	4	7	5	10
849:	9	9	12	7	12	5	12	8
857:	7	7	8	13	21	9	6	9
865:	6	9	10	8	6	8	13	6
873:	5	11	5	10	4	6	9	6
881:	6	10	8	10	5	11	3	6
889:	7	4	9	9	11	10	8	5
897:	3	6	7	7	8	6	13	4
905:	14	8	6	4	7	16	58	112
913:	68	13	7	17	8	9	6	2
921:	9	5	11	5	16	4	6	8
929:	8	5	6	11	4	14	21	9
937:	4	7	9	7	2	8	5	11
945:	7	5	4	6	7	5	12	8
953:	10	12	5	13	11	10	7	7
961:	6	4	5	10	23	18	10	11
969:	45	70	25	8	7	17	7	11
977:	3	8	3	5	5	5	8	6
985:	5	8	5	10	5	6	6	4
993:	5	1	5	8	8	9	6	8
1001:	12	7	13	7	6	5	5	7
1009:	6	3	9	5	7	8	10	7
1017:	6	6	7	4	8	4	9	9
1025:	6	10	7	11	7	6	8	14
1033:	10	6	9	9	4	10	4	8
1041:	5	11	12	9	8	8	7	11
1049:	8	10	7	4	7	6	6	6
1057:	2	13	12	5	6	8	6	3
1065:	8	4	11	5	6	3	9	7
1073:	9	6	8	11	9	7	5	8
1081:	4	5	7	4	7	7	10	8
1089:	14	7	4	5	8	5	9	10
1097:	8	9	5	8	8	7	4	9
1105:	9	8	7	11	9	8	11	4
1113:	1	13	7	7	14	4	10	18
1121:	33	21	6	4	6	4	7	9
1129:	8	4	9	4	4	12	7	8
1137:	8	9	10	10	6	4	5	7
1145:	10	7	9	13	11	3	5	7
1153:	12	5	9	15	7	9	6	8
1161:	4	5	6	6	7	10	6	4
1169:	7	7	5	8	12	14	8	3
1177:	3	5	10	5	7	8	8	5
1185:	9	8	7	8	10	7	12	4
1193:	4	9	7	9	5	10	6	8
1201:	6	12	11	9	6	8	8	7
1209:	7	7	10	11	7	7	7	12
1217:	8	9	10	10	10	10	7	9
1225:	15	3	9	8	7	11	8	8

1233: 12 5 9 7 9 15 31 15

Sample Title: CP-5018 02-05

Channel	1	2	3	4	5	6	7	8	9
1241:	9	5	7	5	10	8	7	7	
1249:	5	7	7	9	6	4	6	11	
1257:	6	4	3	6	8	3	3	8	
1265:	6	5	8	3	3	6	5	6	
1273:	7	2	2	6	6	4	5	4	
1281:	5	5	7	7	5	3	4	2	
1289:	3	3	8	5	1	5	3	6	
1297:	7	3	4	6	4	8	5	7	
1305:	6	5	3	5	4	7	7	6	
1313:	8	3	6	4	6	8	4	1	
1321:	2	3	3	8	6	6	3	3	
1329:	4	3	4	7	3	4	6	2	
1337:	7	5	5	1	5	2	3	2	
1345:	2	1	3	7	2	2	4	6	
1353:	7	5	3	3	3	3	1	0	
1361:	1	3	3	7	1	2	1	1	
1369:	5	2	3	2	3	3	3	4	
1377:	6	7	7	1	6	6	3	4	
1385:	5	3	6	1	5	0	5	1	
1393:	1	2	3	2	3	2	2	1	
1401:	4	3	5	3	2	3	5	5	
1409:	7	4	1	0	2	1	5	3	
1417:	2	3	0	1	2	3	2	0	
1425:	5	2	2	0	0	2	2	2	
1433:	4	1	1	4	1	3	4	4	
1441:	2	1	0	1	2	0	0	3	
1449:	1	4	4	4	1	3	1	4	
1457:	7	3	9	88	268	315	104	17	
1465:	9	4	2	1	2	5	2	4	
1473:	3	2	1	3	2	5	2	2	
1481:	2	2	2	3	2	3	0	1	
1489:	3	2	1	0	2	2	4	4	
1497:	4	3	3	0	1	4	3	1	
1505:	2	1	0	1	7	3	3	3	
1513:	4	3	3	1	2	2	3	2	
1521:	2	1	1	1	0	1	2	5	
1529:	0	0	0	0	2	2	1	3	
1537:	2	3	2	2	0	1	0	4	
1545:	2	3	2	3	3	1	1	0	
1553:	0	1	0	4	0	0	3	0	
1561:	0	0	1	0	2	2	0	4	
1569:	3	0	3	2	1	0	0	1	
1577:	0	2	4	3	1	0	1	2	
1585:	1	2	2	3	6	5	2	2	
1593:	8	5	2	1	0	4	2	1	
1601:	1	1	1	2	4	2	4	1	
1609:	1	2	3	2	0	0	1	1	
1617:	2	1	1	1	6	5	4	0	
1625:	3	1	0	0	2	5	6	0	
1633:	1	2	0	0	2	2	3	4	
1641:	0	0	3	1	0	2	0	1	
1649:	1	2	3	0	0	4	0	0	
1657:	1	1	1	0	0	2	2	2	

1665: 0 0 2 1 0 0 1 2

Sample Title: CP-5018 02-05

Channel	1	2	3	4	5	6	7	8
1673:	2	2	0	1	1	2	1	2
1681:	0	0	1	2	0	0	2	1
1689:	2	2	3	0	0	2	3	1
1697:	1	1	3	1	1	4	1	0
1705:	3	1	1	1	0	0	3	0
1713:	0	0	0	3	0	1	3	0
1721:	0	1	2	1	0	3	1	0
1729:	2	10	5	1	0	2	0	3
1737:	1	0	0	0	1	1	0	0
1745:	1	1	2	1	1	1	2	1
1753:	3	2	0	0	2	1	1	2
1761:	2	1	6	18	17	15	5	2
1769:	1	1	0	1	1	0	1	1
1777:	0	0	1	1	3	1	0	4
1785:	1	4	1	1	2	2	1	1
1793:	3	0	1	0	0	1	2	1
1801:	0	0	0	2	0	3	2	1
1809:	1	3	1	2	1	0	0	2
1817:	0	0	3	0	1	1	1	0
1825:	1	1	0	0	0	2	1	0
1833:	0	1	3	1	0	1	2	3
1841:	2	0	2	0	1	0	4	5
1849:	3	2	0	2	4	0	0	1
1857:	1	1	0	0	1	1	0	2
1865:	1	1	0	0	1	0	2	0
1873:	2	2	1	1	0	0	1	0
1881:	2	1	4	1	0	0	0	0
1889:	0	0	1	1	1	1	0	2
1897:	1	2	2	2	0	1	2	1
1905:	0	0	3	2	2	1	0	1
1913:	1	0	2	0	0	1	0	0
1921:	1	3	1	0	2	1	1	1
1929:	1	3	0	3	1	0	1	2
1937:	0	3	0	2	2	3	1	0
1945:	0	3	2	0	1	2	1	1
1953:	1	0	2	1	1	1	1	2
1961:	0	1	0	2	1	0	0	1
1969:	3	0	2	1	1	0	4	0
1977:	2	1	1	0	0	1	1	0
1985:	1	0	1	1	1	1	1	0
1993:	1	0	0	0	0	0	1	1
2001:	1	1	0	1	2	0	3	1
2009:	0	1	0	0	0	0	2	1
2017:	1	0	1	2	1	0	4	3
2025:	1	0	1	3	1	2	0	1
2033:	1	0	0	0	4	3	0	1
2041:	1	1	0	0	0	2	0	0
2049:	0	1	0	2	1	2	1	2
2057:	3	0	0	1	2	1	1	3
2065:	1	2	1	0	2	0	1	2
2073:	0	0	0	1	1	1	1	0
2081:	2	1	0	1	2	1	3	0
2089:	0	1	1	2	2	1	2	0

2097: 2 1 0 1 2 3 5 4

Sample Title: CP-5018 02-05

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

2529: 0 0 0 0 0 0 0 1 1

Sample Title: CP-5018 02-05

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	0	0	0	0	0	1	1
2545:	1	1	1	0	0	0	0	0	1
2553:	0	0	0	1	0	0	0	0	1
2561:	0	0	0	0	0	0	0	0	1
2569:	0	0	0	0	0	0	0	1	0
2577:	0	1	0	0	0	0	0	1	0
2585:	0	0	1	0	0	0	0	3	2
2593:	1	0	0	0	0	0	1	1	0
2601:	0	1	2	0	0	2	1	1	2
2609:	0	0	1	6	17	31	45	38	0
2617:	11	1	2	1	1	1	0	0	0
2625:	0	0	0	0	0	0	1	0	0
2633:	0	0	0	0	2	0	0	0	2
2641:	0	0	0	0	2	0	0	0	0
2649:	0	0	0	2	1	0	0	0	0
2657:	0	0	0	0	0	0	1	1	1
2665:	0	0	0	0	0	0	0	0	0
2673:	1	0	0	0	1	2	1	0	0
2681:	1	0	1	1	1	1	0	0	0
2689:	0	0	1	1	0	0	0	0	1
2697:	0	1	0	0	0	0	0	0	0
2705:	0	0	2	1	0	1	0	0	1
2713:	0	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	1	0	0	0
2729:	0	0	1	0	0	0	0	0	0
2737:	1	0	0	1	0	0	0	0	0
2745:	0	0	0	0	1	0	0	0	0
2753:	0	0	1	2	0	1	0	0	0
2761:	0	0	0	0	0	0	1	0	0
2769:	1	0	0	0	0	0	0	0	0
2777:	1	0	1	2	3	1	0	0	1
2785:	0	0	0	0	1	0	0	0	1
2793:	0	0	0	0	0	0	0	0	0
2801:	0	0	0	1	1	0	0	0	1
2809:	0	1	0	0	0	0	0	0	1
2817:	0	0	0	0	0	0	0	0	0
2825:	0	0	0	0	0	0	0	0	1
2833:	1	0	0	1	0	0	1	1	1
2841:	1	0	0	0	0	0	0	0	1
2849:	0	0	1	1	0	1	0	0	1
2857:	2	0	1	0	0	0	0	0	0
2865:	1	0	0	0	0	1	0	0	0
2873:	1	0	1	0	0	0	0	0	0
2881:	0	0	1	2	1	0	1	0	0
2889:	0	0	0	1	0	0	0	0	0
2897:	0	1	0	0	0	0	0	0	1
2905:	0	0	0	0	0	0	0	0	0
2913:	1	2	1	0	0	1	0	0	0
2921:	0	0	0	0	1	0	0	0	0
2929:	1	1	1	1	1	0	0	0	0
2937:	2	0	0	0	1	0	1	1	1
2945:	0	0	1	0	0	1	0	0	0
2953:	0	1	0	0	0	0	2	1	1

2961: 0 0 0 0 0 0 0 1 0

Sample Title: CP-5018 02-05

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

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5018 02-05

Channel	1	2	3	4	5	6	7	8	9
3401:	0	1	0	0	0	1	0	0	
3409:	0	1	0	0	0	1	0	1	
3417:	1	0	0	1	0	0	0	0	
3425:	1	0	0	0	0	0	0	0	
3433:	1	0	0	0	0	0	1	0	
3441:	0	0	0	0	0	0	0	0	
3449:	0	1	0	0	0	0	1	1	
3457:	0	1	0	1	0	0	0	2	
3465:	0	1	0	0	0	0	0	0	
3473:	0	0	0	0	0	0	1	1	
3481:	0	1	0	0	1	0	0	1	
3489:	0	0	0	0	0	0	0	0	
3497:	0	0	0	0	0	0	0	0	
3505:	0	0	0	0	0	0	0	0	
3513:	1	0	0	0	0	1	0	1	
3521:	0	0	1	0	0	0	0	0	
3529:	0	0	0	1	1	1	0	0	
3537:	1	0	0	0	0	0	0	0	
3545:	0	0	0	0	1	0	1	1	
3553:	0	0	0	0	0	0	0	0	
3561:	0	0	1	0	1	0	0	0	
3569:	0	0	0	0	0	0	0	0	
3577:	0	0	0	0	0	0	0	1	
3585:	0	0	0	0	0	0	0	0	
3593:	0	0	0	0	0	1	0	0	
3601:	0	2	0	0	0	0	1	1	
3609:	0	0	0	0	0	0	0	0	
3617:	1	0	0	0	0	0	0	0	
3625:	0	0	0	1	0	0	0	0	
3633:	0	0	0	1	0	0	0	0	
3641:	0	0	0	0	0	0	0	0	
3649:	0	0	0	0	0	0	0	0	
3657:	0	0	0	0	0	0	0	1	
3665:	0	0	0	0	0	1	0	0	
3673:	0	0	0	0	1	0	0	0	
3681:	0	0	0	0	0	0	0	0	
3689:	0	0	0	0	0	0	0	0	
3697:	1	0	0	0	0	0	0	0	
3705:	0	0	0	0	0	0	0	0	
3713:	0	0	0	0	0	0	0	1	
3721:	0	1	1	0	0	0	0	0	
3729:	0	0	0	0	0	0	0	0	
3737:	1	0	0	0	0	0	0	1	
3745:	0	1	0	0	1	0	0	0	
3753:	0	1	1	0	0	0	0	0	
3761:	0	0	0	0	0	0	0	0	
3769:	0	0	1	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	1	0	0	0	0	0	0	
3801:	0	0	0	1	1	0	0	0	
3809:	0	0	0	0	0	0	0	0	
3817:	0	0	0	0	0	0	0	0	

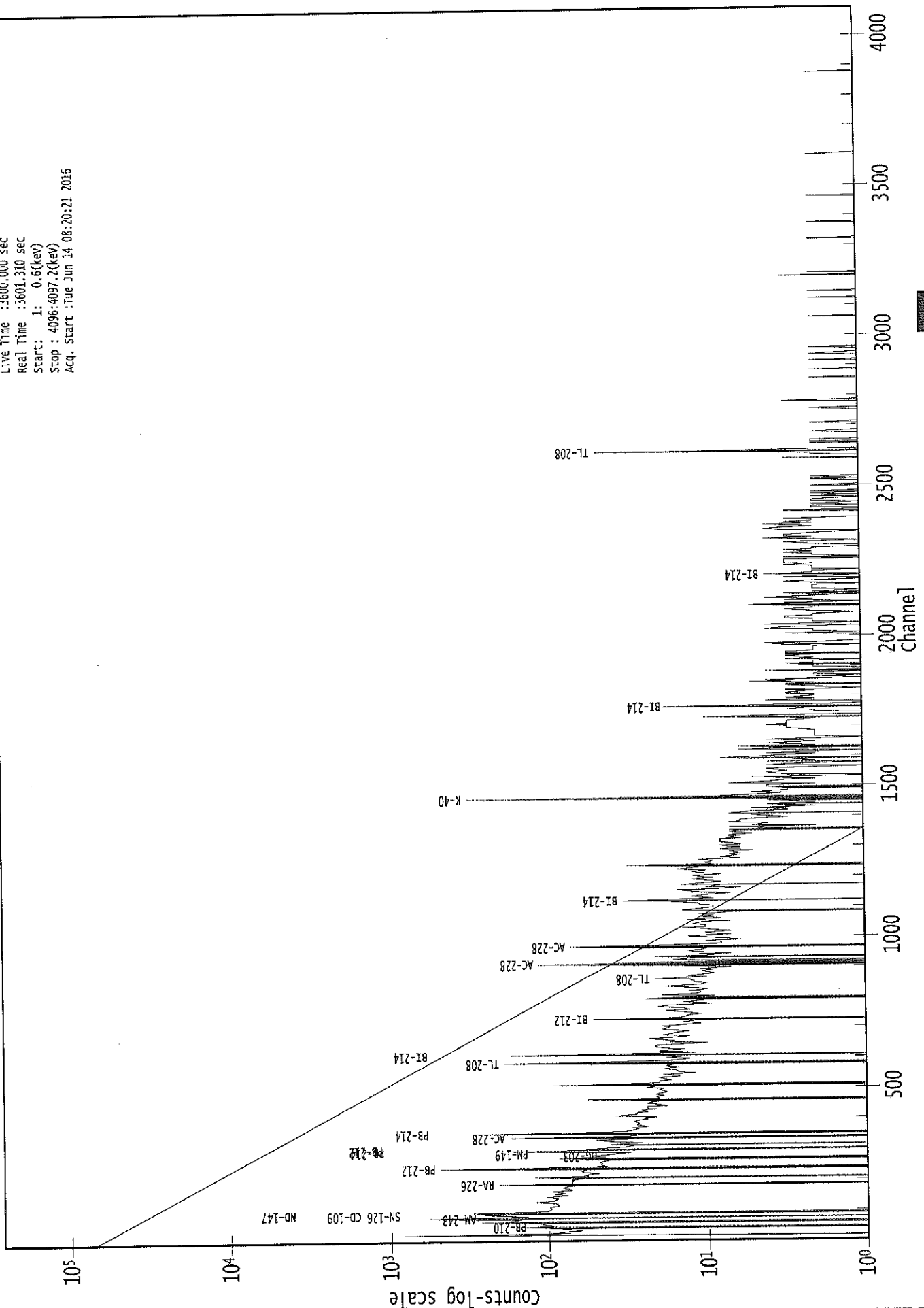
3825: 0 0 0 0 0 1 0 0

Sample Title: CP-5018 02-05

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

0000038800.CNF

Live Time : 3600.000 sec
Real Time : 3601.310 sec
Start: 1: 0.5(keV)
Stop : 4096.4097.2(keV)
Acq. Start : Tue Jun 14 08:20:21 2016



ROI Type: 1

ROI Type: 2



CB
6/14/16

Analysis Report for 1606038-06
CP-5018 05-10

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-06
Sample Description : CP-5018 05-10
Sample Type : SOIL

Sample Size : 3.393E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 8:15:26AM
Acquisition Started : 6/14/2016 8:20:29AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.4 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 6 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 4/6/2016
Efficiency Calibration Description :

Sample Number : 38801

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-06
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PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 9:20:44AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	12.46	12.58	0.0000	0.00
2	51.67	51.77	0.0000	0.00
3	64.32	64.41	0.0000	0.00
4	76.11	76.20	0.0000	0.00
5	90.02	90.10	0.0000	0.00
6	93.02	93.10	0.0000	0.00
7	112.76	112.83	0.0000	0.00
8	129.61	129.67	0.0000	0.00
9	143.01	143.06	0.0000	0.00
10	153.56	153.61	0.0000	0.00
11	185.89	185.92	0.0000	0.00
12	208.68	208.69	0.0000	0.00
13	239.07	239.07	0.0000	0.00
14	270.45	270.43	0.0000	0.00
15	277.38	277.35	0.0000	0.00
16	295.06	295.03	0.0000	0.00
17	299.90	299.86	0.0000	0.00
18	338.74	338.68	0.0000	0.00
19	351.79	351.73	0.0000	0.00
20	410.52	410.43	0.0000	0.00
21	510.98	510.84	0.0000	0.00
22	534.59	534.44	0.0000	0.00
23	583.12	582.94	0.0000	0.00
24	609.30	609.11	0.0000	0.00
25	644.27	644.07	0.0000	0.00
26	665.79	665.58	0.0000	0.00
27	727.75	727.50	0.0000	0.00
28	768.08	767.82	0.0000	0.00
29	772.43	772.16	0.0000	0.00
30	795.73	795.46	0.0000	0.00
31	861.20	860.89	0.0000	0.00
32	904.13	903.81	0.0000	0.00
33	911.29	910.97	0.0000	0.00
34	916.20	915.87	0.0000	0.00
35	964.30	963.95	0.0000	0.00
36	969.04	968.69	0.0000	0.00
37	1032.52	1032.15	0.0000	0.00
38	1120.24	1119.83	0.0000	0.00
39	1154.97	1154.55	0.0000	0.00
40	1175.17	1174.74	0.0000	0.00
41	1239.43	1238.98	0.0000	0.00
42	1375.53	1375.03	0.0000	0.00

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Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1455.33	1454.81	0.0000	0.00
44	1460.91	1460.39	0.0000	0.00
45	1473.78	1473.26	0.0000	0.00
46	1495.80	1495.27	0.0000	0.00
47	1509.19	1508.65	0.0000	0.00
48	1588.32	1587.76	0.0000	0.00
49	1728.74	1728.14	0.0000	0.00
50	1764.20	1763.60	0.0000	0.00
51	1846.33	1845.70	0.0000	0.00
52	1915.89	1915.25	0.0000	0.00
53	2103.25	2102.58	0.0000	0.00
54	2204.79	2204.10	0.0000	0.00
55	2243.12	2242.42	0.0000	0.00
56	2614.57	2613.83	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-06
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PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 9:20:44AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	12.46	11 -	15	12.58	1.83E+03	138.30	2.26E+03	1.71
2	51.67	50 -	54	51.77	4.76E+01	57.86	7.01E+02	4.59
3	64.32	59 -	69	64.41	1.47E+02	122.29	1.92E+03	1.98
4	76.11	72 -	79	76.20	8.34E+02	107.98	1.38E+03	2.99
M 5	90.02	89 -	96	90.10	1.19E+02	19.82	1.90E+02	1.11
m 6	93.02	89 -	96	93.10	1.59E+02	48.07	4.52E+02	1.12
7	112.76	110 -	115	112.83	5.28E+01	57.21	6.08E+02	1.70
8	129.61	126 -	133	129.67	9.32E+01	71.69	7.92E+02	1.02
9	143.01	140 -	146	143.06	5.56E+01	60.97	6.33E+02	1.31
10	153.56	150 -	156	153.61	6.47E+01	59.15	5.85E+02	2.46
11	185.89	183 -	188	185.92	1.59E+02	55.18	4.79E+02	1.19
12	208.68	205 -	211	208.69	1.02E+02	55.60	4.85E+02	1.42
13	239.07	233 -	244	239.07	9.33E+02	95.41	6.70E+02	1.83
14	270.45	268 -	274	270.43	4.01E+01	46.06	3.56E+02	1.52
15	277.38	274 -	280	277.35	4.11E+01	43.01	3.04E+02	2.57
M 16	295.06	292 -	304	295.03	2.17E+02	37.95	1.67E+02	1.50
m 17	299.90	292 -	304	299.86	4.36E+01	33.57	2.06E+02	1.50
18	338.74	334 -	343	338.68	1.30E+02	57.34	3.85E+02	1.40
19	351.79	348 -	355	351.73	2.97E+02	50.99	2.33E+02	1.40
20	410.52	407 -	414	410.43	3.71E+01	39.65	2.32E+02	1.84
21	510.98	506 -	515	510.84	1.50E+02	45.81	2.13E+02	2.17
22	534.59	531 -	542	534.44	3.33E+01	39.19	1.79E+02	3.67
23	583.12	579 -	586	582.94	2.16E+02	40.10	1.24E+02	1.26
24	609.30	605 -	612	609.11	2.25E+02	40.84	1.28E+02	1.32
25	644.27	641 -	647	644.07	2.40E+01	24.38	8.99E+01	3.77
26	665.79	659 -	673	665.58	6.05E+01	38.94	1.31E+02	9.25
27	727.75	723 -	732	727.50	6.31E+01	35.92	1.44E+02	1.65
M 28	768.08	764 -	774	767.82	3.23E+01	23.69	8.48E+01	2.02
m 29	772.43	764 -	774	772.16	1.78E+01	22.74	9.23E+01	2.03
30	795.73	792 -	799	795.46	2.50E+01	26.38	9.81E+01	1.76
31	861.20	857 -	866	860.89	3.25E+01	30.64	1.17E+02	1.89
M 32	904.13	901 -	925	903.81	1.27E+01	16.82	5.79E+01	2.14
m 33	911.29	901 -	925	910.97	1.82E+02	30.45	4.58E+01	2.14
m 34	916.20	901 -	925	915.87	1.46E+01	16.82	3.50E+01	2.15
M 35	964.30	956 -	974	963.95	3.29E+01	26.90	7.57E+01	2.91
m 36	969.04	956 -	974	968.69	6.57E+01	24.64	4.19E+01	2.14
37	1032.52	1029 -	1036	1032.15	2.04E+01	18.55	4.31E+01	3.60
38	1120.24	1115 -	1124	1119.83	6.08E+01	30.72	1.00E+02	1.65
39	1154.97	1151 -	1158	1154.55	1.77E+01	22.98	7.67E+01	4.76
40	1175.17	1171 -	1180	1174.74	2.32E+01	25.61	8.17E+01	3.91

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1239.43	1233 - 1246	1238.98	4.40E+01	34.41	1.12E+02	9.25
	42	1375.53	1368 - 1381	1375.03	3.20E+01	15.94	1.40E+01	1.33
M	43	1455.33	1454 - 1466	1454.81	8.38E+00	5.57	6.01E+00	2.79
m	44	1460.91	1454 - 1466	1460.39	5.22E+02	46.94	2.16E+01	1.89
	45	1473.78	1470 - 1475	1473.26	7.05E+00	8.43	7.91E+00	2.05
	46	1495.80	1492 - 1497	1495.27	6.00E+00	7.35	6.00E+00	1.62
	47	1509.19	1506 - 1511	1508.65	1.25E+01	9.54	6.94E+00	2.52
	48	1588.32	1584 - 1593	1587.76	2.02E+01	14.97	2.17E+01	1.90
	49	1728.74	1723 - 1732	1728.14	2.06E+01	13.67	1.48E+01	1.88
	50	1764.20	1760 - 1767	1763.60	3.48E+01	14.56	1.24E+01	1.55
	51	1846.33	1841 - 1849	1845.70	9.75E+00	8.26	4.50E+00	1.67
	52	1915.89	1912 - 1918	1915.25	8.00E+00	5.66	0.00E+00	1.00
	53	2103.25	2098 - 2109	2102.58	1.36E+01	14.14	1.88E+01	1.17
	54	2204.79	2200 - 2209	2204.10	1.26E+01	12.12	1.08E+01	0.96
	55	2243.12	2238 - 2245	2242.42	6.25E+00	6.93	3.50E+00	2.86
	56	2614.57	2609 - 2619	2613.83	8.70E+01	18.65	0.00E+00	2.43

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 : 6/14/2016 9:20:44AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	12.46	11 - 15	1.83E+03	138.30	2.26E+03	1.01E+02
	2	51.67	50 - 54	4.76E+01	57.86	7.01E+02	4.62E+01
	3	64.32	59 - 69	1.47E+02	122.29	1.92E+03	9.85E+01
	4	76.11	72 - 79	8.34E+02	107.98	1.38E+03	7.50E+01
M	5	90.02	89 - 96	1.19E+02	19.82	1.90E+02	2.26E+01
m	6	93.02	89 - 96	1.59E+02	48.07	4.52E+02	3.50E+01
	7	112.76	110 - 115	5.28E+01	57.21	6.08E+02	4.55E+01
	8	129.61	126 - 133	9.32E+01	71.69	7.92E+02	5.68E+01
	9	143.01	140 - 146	5.56E+01	60.97	6.33E+02	4.86E+01
	10	153.56	150 - 156	6.47E+01	59.15	5.85E+02	4.68E+01
	11	185.89	183 - 188	1.59E+02	55.18	4.79E+02	4.03E+01
	12	208.68	205 - 211	1.02E+02	55.60	4.85E+02	4.26E+01

Analysis Report for 1606038-06

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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
13	239.07	233 -	244	9.33E+02	95.41	6.70E+02	6.02E+01
14	270.45	268 -	274	4.01E+01	46.06	3.56E+02	3.64E+01
15	277.38	274 -	280	4.11E+01	43.01	3.04E+02	3.37E+01
M 16	295.06	292 -	304	2.17E+02	37.95	1.67E+02	2.12E+01
m 17	299.90	292 -	304	4.36E+01	33.57	2.06E+02	2.36E+01
18	338.74	334 -	343	1.30E+02	57.34	3.85E+02	4.33E+01
19	351.79	348 -	355	2.97E+02	50.99	2.33E+02	3.09E+01
20	410.52	407 -	414	3.71E+01	39.65	2.32E+02	3.10E+01
21	510.98	506 -	515	1.50E+02	45.81	2.13E+02	3.18E+01
22	534.59	531 -	542	3.33E+01	39.19	1.79E+02	3.08E+01
23	583.12	579 -	586	2.16E+02	40.10	1.24E+02	2.24E+01
24	609.30	605 -	612	2.25E+02	40.84	1.28E+02	2.28E+01
25	644.27	641 -	647	2.40E+01	24.38	8.99E+01	1.83E+01
26	665.79	659 -	673	6.05E+01	38.94	1.31E+02	2.93E+01
27	727.75	723 -	732	6.31E+01	35.92	1.44E+02	2.65E+01
M 28	768.08	764 -	774	3.23E+01	23.69	8.48E+01	1.51E+01
m 29	772.43	764 -	774	1.78E+01	22.74	9.23E+01	1.58E+01
30	795.73	792 -	799	2.50E+01	26.38	9.81E+01	2.01E+01
31	861.20	857 -	866	3.25E+01	30.64	1.17E+02	2.34E+01
M 32	904.13	901 -	925	1.27E+01	16.82	5.79E+01	1.25E+01
m 33	911.29	901 -	925	1.82E+02	30.45	4.58E+01	1.11E+01
m 34	916.20	901 -	925	1.46E+01	16.82	3.50E+01	9.72E+00
M 35	964.30	956 -	974	3.29E+01	26.90	7.57E+01	1.43E+01
m 36	969.04	956 -	974	6.57E+01	24.64	4.19E+01	1.06E+01
37	1032.52	1029 -	1036	2.04E+01	18.55	4.31E+01	1.33E+01
38	1120.24	1115 -	1124	6.08E+01	30.72	1.00E+02	2.18E+01
39	1154.97	1151 -	1158	1.77E+01	22.98	7.67E+01	1.76E+01
40	1175.17	1171 -	1180	2.32E+01	25.61	8.17E+01	1.95E+01
41	1239.43	1233 -	1246	4.40E+01	34.41	1.12E+02	2.61E+01
42	1375.53	1368 -	1381	3.20E+01	15.94	1.40E+01	9.23E+00
M 43	1455.33	1454 -	1466	8.38E+00	5.57	6.01E+00	4.03E+00
m 44	1460.91	1454 -	1466	5.22E+02	46.94	2.16E+01	7.65E+00
45	1473.78	1470 -	1475	7.05E+00	8.43	7.91E+00	5.38E+00
46	1495.80	1492 -	1497	6.00E+00	7.35	6.00E+00	4.50E+00
47	1509.19	1506 -	1511	1.25E+01	9.54	6.94E+00	5.26E+00
48	1588.32	1584 -	1593	2.02E+01	14.97	2.17E+01	9.84E+00
49	1728.74	1723 -	1732	2.06E+01	13.67	1.48E+01	8.40E+00
50	1764.20	1760 -	1767	3.48E+01	14.56	1.24E+01	7.02E+00
51	1846.33	1841 -	1849	9.75E+00	8.26	4.50E+00	4.45E+00
52	1915.89	1912 -	1918	8.00E+00	5.66	0.00E+00	0.00E+00
53	2103.25	2098 -	2109	1.36E+01	14.14	1.88E+01	9.92E+00
54	2204.79	2200 -	2209	1.26E+01	12.12	1.08E+01	8.08E+00
55	2243.12	2238 -	2245	6.25E+00	6.93	3.50E+00	3.94E+00
56	2614.57	2609 -	2619	8.70E+01	18.65	0.00E+00	0.00E+00

Analysis Report for 1606038-06
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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 WITH NID REPORT

Peak Analysis Performed on : 6/14/2016 9:20:44AM

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

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	12.46	11 -	15	12.58	1.83E+03	138.30	2.26E+03	.....
2	51.67	50 -	54	51.77	4.76E+01	57.86	7.01E+02	.....
3	64.32	59 -	69	64.41	1.47E+02	122.29	1.92E+03	.....
4	76.11	72 -	79	76.20	8.34E+02	107.98	1.38E+03	.....
M	5	89 -	96	90.10	1.19E+02	19.82	1.90E+02	.....
m	6	89 -	96	93.10	1.59E+02	48.07	4.52E+02	GA-67
7	112.76	110 -	115	112.83	5.28E+01	57.21	6.08E+02	.....
8	129.61	126 -	133	129.67	9.32E+01	71.69	7.92E+02	.....
9	143.01	140 -	146	143.06	5.56E+01	60.97	6.33E+02	U-235
10	153.56	150 -	156	153.61	6.47E+01	59.15	5.85E+02	CS-136
11	185.89	183 -	188	185.92	1.59E+02	55.18	4.79E+02	RA-226
12	208.68	205 -	211	208.69	1.02E+02	55.60	4.85E+02	GA-67
13	239.07	233 -	244	239.07	9.33E+02	95.41	6.70E+02	PB-212
14	270.45	268 -	274	270.43	4.01E+01	46.06	3.56E+02	.....
15	277.38	274 -	280	277.35	4.11E+01	43.01	3.04E+02	CM-243 NP-239
M	16	292 -	304	295.03	2.17E+02	37.95	1.67E+02	PB-214
m	17	292 -	304	299.86	4.36E+01	33.57	2.06E+02	BI-210M PB-212 GA-67
18	338.74	334 -	343	338.68	1.30E+02	57.34	3.85E+02	AC-228
19	351.79	348 -	355	351.73	2.97E+02	50.99	2.33E+02	PB-214
20	410.52	407 -	414	410.43	3.71E+01	39.65	2.32E+02	HO-166M
21	510.98	506 -	515	510.84	1.50E+02	45.81	2.13E+02	.....
22	534.59	531 -	542	534.44	3.33E+01	39.19	1.79E+02	.....
23	583.12	579 -	586	582.94	2.16E+02	40.10	1.24E+02	TL-208
24	609.30	605 -	612	609.11	2.25E+02	40.84	1.28E+02	BI-214
25	644.27	641 -	647	644.07	2.40E+01	24.38	8.99E+01	.....
26	665.79	659 -	673	665.58	6.05E+01	38.94	1.31E+02	SB-126
27	727.75	723 -	732	727.50	6.31E+01	35.92	1.44E+02	BI-212

Analysis Report for 1606038-06

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	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	28	768.08	764 -	774	767.82	3.23E+01	23.69	8.48E+01	.....
m	29	772.43	764 -	774	772.16	1.78E+01	22.74	9.23E+01	.....
	30	795.73	792 -	799	795.46	2.50E+01	26.38	9.81E+01	CS-134
	31	861.20	857 -	866	860.89	3.25E+01	30.64	1.17E+02	TL-208
M	32	904.13	901 -	925	903.81	1.27E+01	16.82	5.79E+01	.....
m	33	911.29	901 -	925	910.97	1.82E+02	30.45	4.58E+01	AC-228 LU-172
m	34	916.20	901 -	925	915.87	1.46E+01	16.82	3.50E+01	.....
M	35	964.30	956 -	974	963.95	3.29E+01	26.90	7.57E+01	EU-152
m	36	969.04	956 -	974	968.69	6.57E+01	24.64	4.19E+01	AC-228
	37	1032.52	1029 -	1036	1032.15	2.04E+01	18.55	4.31E+01	.....
	38	1120.24	1115 -	1124	1119.83	6.08E+01	30.72	1.00E+02	BI-214 SC-46
	39	1154.97	1151 -	1158	1154.55	1.77E+01	22.98	7.67E+01	.....
	40	1175.17	1171 -	1180	1174.74	2.32E+01	25.61	8.17E+01	.....
	41	1239.43	1233 -	1246	1238.98	4.40E+01	34.41	1.12E+02	.....
	42	1375.53	1368 -	1381	1375.03	3.20E+01	15.94	1.40E+01	.....
M	43	1455.33	1454 -	1466	1454.81	8.38E+00	5.57	6.01E+00	.....
m	44	1460.91	1454 -	1466	1460.39	5.22E+02	46.94	2.16E+01	K-40
	45	1473.78	1470 -	1475	1473.26	7.05E+00	8.43	7.91E+00	.....
	46	1495.80	1492 -	1497	1495.27	6.00E+00	7.35	6.00E+00	.....
	47	1509.19	1506 -	1511	1508.65	1.25E+01	9.54	6.94E+00	.....
	48	1588.32	1584 -	1593	1587.76	2.02E+01	14.97	2.17E+01	.....
	49	1728.74	1723 -	1732	1728.14	2.06E+01	13.67	1.48E+01	.....
	50	1764.20	1760 -	1767	1763.60	3.48E+01	14.56	1.24E+01	BI-214
	51	1846.33	1841 -	1849	1845.70	9.75E+00	8.26	4.50E+00	.....
	52	1915.89	1912 -	1918	1915.25	8.00E+00	5.66	0.00E+00	.....
	53	2103.25	2098 -	2109	2102.58	1.36E+01	14.14	1.88E+01	.....
	54	2204.79	2200 -	2209	2204.10	1.26E+01	12.12	1.08E+01	BI-214
	55	2243.12	2238 -	2245	2242.42	6.25E+00	6.93	3.50E+00	.....
	56	2614.57	2609 -	2619	2613.83	8.70E+01	18.65	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 : 6/14/2016 9:20:44AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
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Analysis Report for 1606038-06
CP-5018 05-10

	1	12.46	1.83E+03	138.30	7.46E-06	1.66E-03
	2	51.67	4.76E+01	57.86	1.97E-02	1.66E-03
	3	64.32	1.47E+02	122.29	2.39E-02	1.76E-03
	4	76.11	8.34E+02	107.98	2.56E-02	2.02E-03
M	5	90.02	1.19E+02	19.82	2.60E-02	2.27E-03
m	6	93.02	1.59E+02	48.07	2.60E-02	2.27E-03
	7	112.76	5.28E+01	57.21	2.51E-02	2.27E-03
	8	129.61	9.32E+01	71.69	2.39E-02	2.29E-03
	9	143.01	5.56E+01	60.97	2.29E-02	2.35E-03
	10	153.56	6.47E+01	59.15	2.21E-02	2.39E-03
	11	185.89	1.59E+02	55.18	1.99E-02	2.40E-03
	12	208.68	1.02E+02	55.60	1.86E-02	2.36E-03
	13	239.07	9.33E+02	95.41	1.70E-02	2.31E-03
	14	270.45	4.01E+01	46.06	1.56E-02	2.26E-03
	15	277.38	4.11E+01	43.01	1.54E-02	2.24E-03
M	16	295.06	2.17E+02	37.95	1.47E-02	2.21E-03
m	17	299.90	4.36E+01	33.57	1.46E-02	2.21E-03
	18	338.74	1.30E+02	57.34	1.33E-02	2.14E-03
	19	351.79	2.97E+02	50.99	1.30E-02	2.12E-03
	20	410.52	3.71E+01	39.65	1.16E-02	1.95E-03
	21	510.98	1.50E+02	45.81	9.77E-03	1.43E-03
	22	534.59	3.33E+01	39.19	9.42E-03	1.31E-03
	23	583.12	2.16E+02	40.10	8.79E-03	1.06E-03
	24	609.30	2.25E+02	40.84	8.48E-03	9.23E-04
	25	644.27	2.40E+01	24.38	8.11E-03	7.42E-04
	26	665.79	6.05E+01	38.94	7.89E-03	6.57E-04
	27	727.75	6.31E+01	35.92	7.34E-03	7.37E-04
M	28	768.08	3.23E+01	23.69	7.02E-03	7.88E-04
m	29	772.43	1.78E+01	22.74	6.99E-03	7.94E-04
	30	795.73	2.50E+01	26.38	6.82E-03	8.24E-04
	31	861.20	3.25E+01	30.64	6.38E-03	9.08E-04
M	32	904.13	1.27E+01	16.82	6.13E-03	9.43E-04
m	33	911.29	1.82E+02	30.45	6.09E-03	9.29E-04
m	34	916.20	1.46E+01	16.82	6.07E-03	9.19E-04
M	35	964.30	3.29E+01	26.90	5.82E-03	8.21E-04
m	36	969.04	6.57E+01	24.64	5.79E-03	8.12E-04
	37	1032.52	2.04E+01	18.55	5.50E-03	6.83E-04
	38	1120.24	6.08E+01	30.72	5.15E-03	5.06E-04
	39	1154.97	1.77E+01	22.98	5.03E-03	4.36E-04
	40	1175.17	2.32E+01	25.61	4.96E-03	3.98E-04
	41	1239.43	4.40E+01	34.41	4.77E-03	3.84E-04
	42	1375.53	3.20E+01	15.94	4.41E-03	3.66E-04
M	43	1455.33	8.38E+00	5.57	4.24E-03	3.72E-04
m	44	1460.91	5.22E+02	46.94	4.23E-03	3.72E-04
	45	1473.78	7.05E+00	8.43	4.21E-03	3.73E-04
	46	1495.80	6.00E+00	7.35	4.17E-03	3.75E-04
	47	1509.19	1.25E+01	9.54	4.14E-03	3.76E-04
	48	1588.32	2.02E+01	14.97	4.01E-03	3.82E-04
	49	1728.74	2.06E+01	13.67	3.81E-03	3.93E-04
	50	1764.20	3.48E+01	14.56	3.77E-03	3.95E-04
	51	1846.33	9.75E+00	8.26	3.69E-03	4.01E-04
	52	1915.89	8.00E+00	5.66	3.63E-03	4.01E-04
	53	2103.25	1.36E+01	14.14	3.50E-03	4.01E-04
	54	2204.79	1.26E+01	12.12	3.45E-03	4.01E-04
	55	2243.12	6.25E+00	6.93	3.44E-03	4.01E-04
	56	2614.57	8.70E+01	18.65	3.40E-03	4.01E-04

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CP-5018 05-10

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 : 6/14/2016 9:20:44AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037620.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	1.83E+03	138.30	8.66E+02	3.93E+01	9.67E+02	1.44E+02
	2	4.76E+01	57.86			4.76E+01	5.79E+01
	3	1.47E+02	122.29			1.47E+02	1.22E+02
	4	8.34E+02	107.98			8.34E+02	1.08E+02
M	5	1.19E+02	19.82			1.19E+02	1.98E+01
m	6	1.59E+02	48.07	5.23E+01	6.82E+00	1.07E+02	4.86E+01
	7	5.28E+01	57.21			5.28E+01	5.72E+01
	8	9.32E+01	71.69			9.32E+01	7.17E+01
	9	5.56E+01	60.97	6.27E+00	6.84E+00	4.94E+01	6.14E+01
	10	6.47E+01	59.15			6.47E+01	5.91E+01
	11	1.59E+02	55.18	2.52E+01	6.98E+00	1.34E+02	5.56E+01
	12	1.02E+02	55.60			1.02E+02	5.56E+01
	13	9.33E+02	95.41	8.15E+00	6.18E+00	9.25E+02	9.56E+01
	14	4.01E+01	46.06			4.01E+01	4.61E+01
	15	4.11E+01	43.01			4.11E+01	4.30E+01
M	16	2.17E+02	37.95	4.80E+00	5.42E+00	2.12E+02	3.83E+01
m	17	4.36E+01	33.57			4.36E+01	3.36E+01
	18	1.30E+02	57.34			1.30E+02	5.73E+01
	19	2.97E+02	50.99	1.16E+01	4.76E+00	2.86E+02	5.12E+01
	20	3.71E+01	39.65			3.71E+01	3.96E+01
	21	1.50E+02	45.81	7.18E+01	4.99E+00	7.79E+01	4.61E+01
	22	3.33E+01	39.19			3.33E+01	3.92E+01
	23	2.16E+02	40.10			2.16E+02	4.01E+01
	24	2.25E+02	40.84	7.00E+00	3.58E+00	2.18E+02	4.10E+01
	25	2.40E+01	24.38			2.40E+01	2.44E+01
	26	6.05E+01	38.94			6.05E+01	3.89E+01
	27	6.31E+01	35.92			6.31E+01	3.59E+01
M	28	3.23E+01	23.69			3.23E+01	2.37E+01
m	29	1.78E+01	22.74			1.78E+01	2.27E+01
	30	2.50E+01	26.38			2.50E+01	2.64E+01
	31	3.25E+01	30.64			3.25E+01	3.06E+01
M	32	1.27E+01	16.82			1.27E+01	1.68E+01
m	33	1.82E+02	30.45	1.26E+00	2.67E+00	1.81E+02	3.06E+01
m	34	1.46E+01	16.82			1.46E+01	1.68E+01
M	35	3.29E+01	26.90			3.29E+01	2.69E+01

Analysis Report for 1606038-06

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	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	36	969.04	6.57E+01	24.64			6.57E+01	2.46E+01
	37	1032.52	2.04E+01	18.55			2.04E+01	1.85E+01
	38	1120.24	6.08E+01	30.72			6.08E+01	3.07E+01
	39	1154.97	1.77E+01	22.98			1.77E+01	2.30E+01
	40	1175.17	2.32E+01	25.61			2.32E+01	2.56E+01
	41	1239.43	4.40E+01	34.41			4.40E+01	3.44E+01
	42	1375.53	3.20E+01	15.94			3.20E+01	1.59E+01
M	43	1455.33	8.38E+00	5.57			8.38E+00	5.57E+00
m	44	1460.91	5.22E+02	46.94	3.84E+00	1.88E+00	5.18E+02	4.70E+01
	45	1473.78	7.05E+00	8.43			7.05E+00	8.43E+00
	46	1495.80	6.00E+00	7.35			6.00E+00	7.35E+00
	47	1509.19	1.25E+01	9.54			1.25E+01	9.54E+00
	48	1588.32	2.02E+01	14.97			2.02E+01	1.50E+01
	49	1728.74	2.06E+01	13.67			2.06E+01	1.37E+01
	50	1764.20	3.48E+01	14.56	1.55E+00	1.49E+00	3.32E+01	1.46E+01
	51	1846.33	9.75E+00	8.26			9.75E+00	8.26E+00
	52	1915.89	8.00E+00	5.66			8.00E+00	5.66E+00
	53	2103.25	1.36E+01	14.14			1.36E+01	1.41E+01
	54	2204.79	1.26E+01	12.12	5.23E-01	9.79E-01	1.21E+01	1.22E+01
	55	2243.12	6.25E+00	6.93			6.25E+00	6.93E+00
	56	2614.57	8.70E+01	18.65	3.94E+00	1.42E+00	8.31E+01	1.87E+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 : 6/14/2016 9:20:44AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countrm\Data\0000037620.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	12.46	1.83E+03	138.30	8.66E+02	3.93E+01	9.67E+02	1.44E+02
	2	51.67	4.76E+01	57.86			4.76E+01	5.79E+01
	3	64.32	1.47E+02	122.29			1.47E+02	1.22E+02
	4	76.11	8.34E+02	107.98			8.34E+02	1.08E+02
M	5	90.02	1.19E+02	19.82			1.19E+02	1.98E+01
m	6	93.02	1.59E+02	48.07	5.23E+01	6.82E+00	1.07E+02	4.86E+01
	7	112.76	5.28E+01	57.21			5.28E+01	5.72E+01

Analysis Report for 1606038-06

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	8	129.61	9.32E+01	71.69		9.32E+01	7.17E+01
	9	143.01	5.56E+01	60.97	6.27E+00	4.94E+01	6.14E+01
	10	153.56	6.47E+01	59.15		6.47E+01	5.91E+01
	11	185.89	1.59E+02	55.18	2.52E+01	1.34E+02	5.56E+01
	12	208.68	1.02E+02	55.60		1.02E+02	5.56E+01
	13	239.07	9.33E+02	95.41	8.15E+00	9.25E+02	9.56E+01
	14	270.45	4.01E+01	46.06		4.01E+01	4.61E+01
	15	277.38	4.11E+01	43.01		4.11E+01	4.30E+01
M	16	295.06	2.17E+02	37.95	4.80E+00	2.12E+02	3.83E+01
m	17	299.90	4.36E+01	33.57		4.36E+01	3.36E+01
	18	338.74	1.30E+02	57.34		1.30E+02	5.73E+01
	19	351.79	2.97E+02	50.99	1.16E+01	2.86E+02	5.12E+01
	20	410.52	3.71E+01	39.65		3.71E+01	3.96E+01
	21	510.98	1.50E+02	45.81	7.18E+01	7.79E+01	4.61E+01
	22	534.59	3.33E+01	39.19		3.33E+01	3.92E+01
	23	583.12	2.16E+02	40.10		2.16E+02	4.01E+01
	24	609.30	2.25E+02	40.84	7.00E+00	2.18E+02	4.10E+01
	25	644.27	2.40E+01	24.38		2.40E+01	2.44E+01
	26	665.79	6.05E+01	38.94		6.05E+01	3.89E+01
	27	727.75	6.31E+01	35.92		6.31E+01	3.59E+01
M	28	768.08	3.23E+01	23.69		3.23E+01	2.37E+01
m	29	772.43	1.78E+01	22.74		1.78E+01	2.27E+01
	30	795.73	2.50E+01	26.38		2.50E+01	2.64E+01
	31	861.20	3.25E+01	30.64		3.25E+01	3.06E+01
M	32	904.13	1.27E+01	16.82		1.27E+01	1.68E+01
m	33	911.29	1.82E+02	30.45	1.26E+00	1.81E+02	3.06E+01
m	34	916.20	1.46E+01	16.82		1.46E+01	1.68E+01
M	35	964.30	3.29E+01	26.90		3.29E+01	2.69E+01
m	36	969.04	6.57E+01	24.64		6.57E+01	2.46E+01
	37	1032.52	2.04E+01	18.55		2.04E+01	1.85E+01
	38	1120.24	6.08E+01	30.72		6.08E+01	3.07E+01
	39	1154.97	1.77E+01	22.98		1.77E+01	2.30E+01
	40	1175.17	2.32E+01	25.61		2.32E+01	2.56E+01
	41	1239.43	4.40E+01	34.41		4.40E+01	3.44E+01
	42	1375.53	3.20E+01	15.94		3.20E+01	1.59E+01
M	43	1455.33	8.38E+00	5.57		8.38E+00	5.57E+00
m	44	1460.91	5.22E+02	46.94	3.84E+00	5.18E+02	4.70E+01
	45	1473.78	7.05E+00	8.43		7.05E+00	8.43E+00
	46	1495.80	6.00E+00	7.35		6.00E+00	7.35E+00
	47	1509.19	1.25E+01	9.54		1.25E+01	9.54E+00
	48	1588.32	2.02E+01	14.97		2.02E+01	1.50E+01
	49	1728.74	2.06E+01	13.67		2.06E+01	1.37E+01
	50	1764.20	3.48E+01	14.56	1.55E+00	3.32E+01	1.46E+01
	51	1846.33	9.75E+00	8.26		9.75E+00	8.26E+00
	52	1915.89	8.00E+00	5.66		8.00E+00	5.66E+00
	53	2103.25	1.36E+01	14.14		1.36E+01	1.41E+01
	54	2204.79	1.26E+01	12.12	5.23E-01	1.21E+01	1.22E+01
	55	2243.12	6.25E+00	6.93		6.25E+00	6.93E+00
	56	2614.57	8.70E+01	18.65	3.94E+00	8.31E+01	1.87E+01

Analysis Report for 1606038-06
CP-5018 05-10

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	0.998	1460.81	*	10.67	2.54E+01	3.25E+00
GA-67	0.957	93.31	*	35.70	1.40E+00	2.24E+00
		208.95	*	2.24	2.98E+01	3.53E+01
		300.22	*	16.00	2.28E+00	3.93E+00
TL-208	0.992	583.14	*	30.22	1.80E+00	3.98E-01
		860.37	*	4.48	2.52E+00	2.40E+00
		2614.66	*	35.85	1.51E+00	3.84E-01
BI-212	0.723	727.17	*	11.80	1.61E+00	9.32E-01
		1620.62		2.75		
PB-212	0.971	238.63	*	44.60	2.70E+00	4.61E-01
		300.09	*	3.41	1.94E+00	1.53E+00
BI-214	0.994	609.31	*	46.30	1.23E+00	2.67E-01
		1120.29	*	15.10	1.73E+00	8.90E-01
		1764.49	*	15.80	1.23E+00	5.59E-01
		2204.22	*	4.98	1.55E+00	1.58E+00
PB-214	0.997	295.21	*	19.19	1.66E+00	3.90E-01
		351.92	*	37.19	1.31E+00	3.18E-01
RA-226	0.984	186.21	*	3.28	4.55E+00	8.55E+00
AC-228	0.990	338.32	*	11.40	1.88E+00	8.88E-01
		911.07	*	27.70	2.37E+00	5.39E-01
		969.11	*	16.60	1.51E+00	6.05E-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 1606038-06
CP-5018 05-10

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 9:20:44AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	12.46	2.68504E-01	7.44		
2	51.67	1.32091E-02	60.84		
3	64.32	4.08725E-02	41.56		
4	76.11	2.31658E-01	6.47		
M 5	90.02	3.30787E-02	8.32		
7	112.76	1.46654E-02	54.18		
8	129.61	2.58887E-02	38.46		
9	143.01	1.37139E-02	62.14	Tol.	U-235
10	153.56	1.79680E-02	45.72		
14	270.45	1.11251E-02	57.50		
15	277.38	1.14177E-02	52.32	Tol.	NP-239 CM-243
20	410.52	1.02996E-02	53.47	Tol.	HO-166M
21	510.98	2.16298E-02	29.59		
22	534.59	9.23781E-03	58.92	Sum	
25	644.27	6.67874E-03	50.70		
26	665.79	1.67923E-02	32.21	Tol.	SB-126
M 28	768.08	8.98215E-03	36.62	Sum	
m 29	772.43	4.95002E-03	63.80		
30	795.73	6.93131E-03	52.86	Sum	
M 32	904.13	3.52978E-03	66.19	Sum	
m 34	916.20	4.05700E-03	57.59		
M 35	964.30	9.14604E-03	40.85	Tol.	EU-152
37	1032.52	5.67791E-03	45.37		
39	1154.97	4.90575E-03	65.05	Sum	
40	1175.17	6.43229E-03	55.30		
41	1239.43	1.22222E-02	39.10		
42	1375.53	8.88889E-03	24.90		
M 43	1455.33	2.32774E-03	33.22	Sum	
45	1473.78	1.95707E-03	59.80		
46	1495.80	1.66667E-03	61.24		
47	1509.19	3.48090E-03	38.06		
48	1588.32	5.60036E-03	37.12	Sum	
49	1728.74	5.72917E-03	33.15	Sum	
51	1846.33	2.70833E-03	42.37		
52	1915.89	2.22222E-03	35.36		
53	2103.25	3.77415E-03	52.04	S-Esc	
55	2243.12	1.73611E-03	55.43		

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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
K-40	0.99	1460.81	*	10.67	2.54E+01	3.25E+00
GA-67	0.95	93.31	*	35.70	1.40E+00	2.24E+00
		208.95	*	2.24	2.98E+01	3.53E+01
		300.22	*	16.00	2.28E+00	3.93E+00
TL-208	0.99	583.14	*	30.22	1.80E+00	3.98E-01
		860.37	*	4.48	2.52E+00	2.40E+00
		2614.66	*	35.85	1.51E+00	3.84E-01
BI-212	0.72	727.17	*	11.80	1.61E+00	9.32E-01
		1620.62		2.75		
PB-212	0.97	238.63	*	44.60	2.70E+00	4.61E-01
		300.09	*	3.41	1.94E+00	1.53E+00
BI-214	0.99	609.31	*	46.30	1.23E+00	2.67E-01
		1120.29	*	15.10	1.73E+00	8.90E-01
		1764.49	*	15.80	1.23E+00	5.59E-01
		2204.22	*	4.98	1.55E+00	1.58E+00
PB-214	0.99	295.21	*	19.19	1.66E+00	3.90E-01
		351.92	*	37.19	1.31E+00	3.18E-01
RA-226	0.98	186.21	*	3.28	4.55E+00	8.55E+00
AC-228	0.99	338.32	*	11.40	1.88E+00	8.88E-01
		911.07	*	27.70	2.37E+00	5.39E-01
		969.11	*	16.60	1.51E+00	6.05E-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

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INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.998	2.54E+01	3.25E+00	
GA-67	0.957	1.19E+00	1.39E+00	
TL-208	0.992	1.66E+00	2.74E-01	
BI-212	0.723	1.61E+00	9.32E-01	
PB-212	0.971	2.55E+00	4.43E-01	
BI-214	0.994	1.27E+00	2.30E-01	
PB-214	0.997	1.45E+00	2.46E-01	
RA-226	0.984	4.55E+00	8.55E+00	
AC-228	0.990	1.97E+00	3.67E-01	

- ? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 9:20:44AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	12.46	2.68504E-01	7.44		
2	51.67	1.32091E-02	60.84		
3	64.32	4.08725E-02	41.56		
4	76.11	2.31658E-01	6.47		
M 5	90.02	3.30787E-02	8.32		
7	112.76	1.46654E-02	54.18		
8	129.61	2.58887E-02	38.46		
9	143.01	1.37139E-02	62.14	Tol.	U-235
10	153.56	1.79680E-02	45.72		
14	270.45	1.11251E-02	57.50		
15	277.38	1.14177E-02	52.32	Tol.	NP-239 CM-243
20	410.52	1.02996E-02	53.47	Tol.	HO-166M
21	510.98	2.16298E-02	29.59		
22	534.59	9.23781E-03	58.92	Sum	
25	644.27	6.67874E-03	50.70		
26	665.79	1.67923E-02	32.21	Tol.	SB-126
M 28	768.08	8.98215E-03	36.62	Sum	
m 29	772.43	4.95002E-03	63.80		
30	795.73	6.93131E-03	52.86	Sum	
M 32	904.13	3.52978E-03	66.19	Sum	
m 34	916.20	4.05700E-03	57.59		
M 35	964.30	9.14604E-03	40.85	Tol.	EU-152
37	1032.52	5.67791E-03	45.37		
39	1154.97	4.90575E-03	65.05	Sum	
40	1175.17	6.43229E-03	55.30		
41	1239.43	1.22222E-02	39.10		
42	1375.53	8.88889E-03	24.90		
M 43	1455.33	2.32774E-03	33.22	Sum	
45	1473.78	1.95707E-03	59.80		
46	1495.80	1.66667E-03	61.24		
47	1509.19	3.48090E-03	38.06		
48	1588.32	5.60036E-03	37.12	Sum	
49	1728.74	5.72917E-03	33.15	Sum	
51	1846.33	2.70833E-03	42.37		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
52	1915.89	2.22222E-03	35.36		
53	2103.25	3.77415E-03	52.04	S-Esc	
55	2243.12	1.73611E-03	55.43		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-9.15E-02	9.14E-01	9.14E-01
+	NA-22	1274.54	99.94	-1.14E-03	1.19E-01	1.19E-01
+	NA-24	1368.53	99.99	-3.20E+01	4.41E+02	7.59E+02
		2754.09	99.86	-1.90E+02		4.41E+02
+	AL-26	1808.65	99.76	1.19E-02	9.45E-02	9.45E-02
+	K-40	1460.81	* 10.67	2.54E+01	1.66E+00	1.66E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	4.11E-02	8.07E-02	8.07E-02
		78.34	96.00	3.88E-01		1.11E-01
+	SC-46	889.25	99.98	3.32E-02	1.28E-01	1.28E-01
		1120.51	99.99	2.28E-01		2.17E-01
+	V-48	983.52	99.98	5.05E-02	1.78E-01	1.78E-01
		1312.10	97.50	4.45E-02		1.92E-01
+	CR-51	320.08	9.83	6.58E-01	1.06E+00	1.06E+00
+	MN-54	834.83	99.97	4.66E-02	1.30E-01	1.30E-01
+	CO-56	846.75	99.96	-4.15E-03	1.15E-01	1.15E-01
		1037.75	14.03	1.45E-02		8.30E-01
		1238.25	67.00	2.63E-01		2.99E-01
		1771.40	15.51	-3.56E-01		5.74E-01
		2598.48	16.90	8.27E-02		4.97E-01
+	CO-57	122.06	85.51	-1.33E-02	8.18E-02	8.18E-02
		136.48	10.60	7.45E-02		6.83E-01
+	CO-58	810.76	99.40	2.87E-02	1.25E-01	1.25E-01
+	FE-59	1099.22	56.50	4.22E-02	2.63E-01	2.63E-01
		1291.56	43.20	9.82E-02		3.43E-01
+	CO-60	1173.22	100.00	4.17E-02	1.51E-01	1.59E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-60	1332.49	100.00	7.37E-02	1.51E-01	1.51E-01
+	ZN-65	1115.52	50.75	-9.70E-03	2.83E-01	2.83E-01
+	GA-67	93.31	* 35.70	1.40E+00	1.72E+00	1.72E+00
		208.95	* 2.24	2.98E+01		2.58E+01
		300.22	* 16.00	2.28E+00		5.53E+00
+	SE-75	121.11	16.70	-1.17E-01	1.25E-01	4.36E-01
		136.00	59.20	-7.70E-03		1.25E-01
		264.65	59.80	1.16E-01		1.45E-01
		279.53	25.20	3.62E-02		3.18E-01
		400.65	11.40	-3.40E-01		6.99E-01
+	RB-82	776.52	13.00	-7.99E-02	1.17E+00	1.17E+00
+	RB-83	520.41	46.00	1.28E-01	2.07E-01	2.07E-01
		529.64	30.30	-2.38E-02		2.87E-01
		552.65	16.40	-7.10E-02		5.69E-01
+	KR-85	513.99	0.43	-2.74E+01	2.31E+01	2.31E+01
+	SR-85	513.99	99.27	-1.30E-01	1.10E-01	1.10E-01
+	Y-88	898.02	93.40	2.11E-02	1.11E-01	1.25E-01
		1836.01	99.38	2.24E-02		1.11E-01
+	NB-93M	16.57	9.43	1.41E+02	1.47E+02	1.47E+02
+	NB-94	702.63	100.00	4.69E-02	1.14E-01	1.34E-01
		871.10	100.00	-1.39E-02		1.14E-01
+	NB-95	765.79	99.81	1.02E-01	1.66E-01	1.66E-01
+	NB-95M	235.69	25.00	-8.12E+00	2.56E+00	2.56E+00
+	ZR-95	724.18	43.70	3.78E-02	2.21E-01	3.74E-01
		756.72	55.30	-1.21E-01		2.21E-01
+	MO-99	181.06	6.20	3.26E-01	6.65E+00	9.07E+00
		739.58	12.80	2.37E+00		6.65E+00
		778.00	4.50	-1.17E+00		2.01E+01
+	RU-103	497.08	89.00	-1.54E-02	1.09E-01	1.09E-01
+	RU-106	621.84	9.80	-3.06E-01	1.02E+00	1.02E+00
+	AG-108M	433.93	89.90	-5.69E-03	8.40E-02	8.40E-02
		614.37	90.40	-3.48E-02		1.14E-01
		722.95	90.50	3.51E-02		1.48E-01
+	CD-109	88.03	3.72	3.23E+00	2.84E+00	2.84E+00
+	AG-110M	657.75	93.14	1.60E-02	1.07E-01	1.07E-01
		677.61	10.53	-9.01E-02		9.46E-01
		706.67	16.46	-2.88E-01		7.76E-01
		763.93	21.98	6.27E-02		5.70E-01
		884.67	71.63	-4.45E-03		1.73E-01
		1384.27	23.94	6.62E-03		4.19E-01
+	CD-113M	263.70	0.02	-2.11E+02	3.48E+02	3.48E+02
+	SN-113	255.12	1.93	-4.80E-01	1.24E-01	4.00E+00
		391.69	64.90	-4.38E-02		1.24E-01
+	TE123M	159.00	84.10	-1.97E-02	9.20E-02	9.20E-02
+	SB-124	602.71	97.87	1.85E-02	1.20E-01	1.20E-01
		645.85	7.26	1.94E-01		1.75E+00
		722.78	11.10	3.14E-01		1.32E+00
		1691.02	49.00	-3.85E-02		1.81E-01

Analysis Report for 1606038-06
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-125	35.49	6.49	7.09E-01	2.61E+00	2.61E+00
+	SB-125	176.33	6.89	4.69E-01	2.68E-01	1.18E+00
		427.89	29.33	-7.52E-02		2.68E-01
		463.38	10.35	1.16E-01		9.04E-01
		600.56	17.80	-1.08E-01		6.02E-01
		635.90	11.32	2.74E-01		8.85E-01
+	SB-126	414.70	83.30	-5.26E-02	1.51E-01	1.51E-01
		666.33	99.60	2.31E-02		1.80E-01
		695.00	99.60	2.44E-02		1.95E-01
		720.50	53.80	1.68E-01		3.79E-01
+	SN-126	87.57	37.00	3.21E-01	2.82E-01	2.82E-01
+	SB-127	473.00	25.00	-4.88E-01	1.25E+00	1.44E+00
		685.20	35.70	-3.14E-01		1.25E+00
		783.80	14.70	2.12E+00		3.67E+00
+	I-129	29.78	57.00	-7.17E-02	4.25E-01	4.25E-01
		33.60	13.20	-6.68E-01		1.27E+00
		39.58	7.52	2.97E-01		1.52E+00
+	I-131	284.30	6.05	-8.51E-01	1.89E-01	2.37E+00
		364.48	81.20	8.08E-02		1.89E-01
		636.97	7.26	1.11E-01		2.77E+00
		722.89	1.80	3.52E+00		1.48E+01
+	TE-132	49.72	13.10	3.67E-01	5.23E-01	3.60E+00
		228.16	88.00	3.39E-01		5.23E-01
+	BA-133	81.00	33.00	1.20E-01	1.26E-01	2.02E-01
		302.84	17.80	-5.33E-01		4.55E-01
		356.01	60.00	2.58E-02		1.26E-01
+	I-133	529.87	86.30	-1.22E+01	5.78E+01	5.78E+01
+	XE-133	81.00	38.00	3.00E-01	5.07E-01	5.07E-01
+	CS-134	563.23	8.38	1.82E-01	1.26E-01	1.10E+00
		569.32	15.43	8.06E-03		6.00E-01
		604.70	97.60	8.33E-03		1.26E-01
		795.84	85.40	3.61E-02		1.56E-01
		801.93	8.73	3.22E-02		1.27E+00
+	CS-135	268.24	16.00	6.02E-02	5.28E-01	5.28E-01
+	I-135	1131.51	22.50	1.16E+08	2.65E+08	3.64E+08
		1260.41	28.60	5.16E+07		2.65E+08
		1678.03	9.54	8.81E+07		5.29E+08
+	CS-136	153.22	7.46	1.39E+00	1.52E-01	1.63E+00
		163.89	4.61	1.81E+00		2.68E+00
		176.55	13.56	6.62E-02		8.77E-01
		273.65	12.66	-1.74E+00		9.26E-01
		340.57	48.50	-3.03E-01		2.96E-01
		818.50	99.70	-2.29E-02		1.52E-01
		1048.07	79.60	0.00E+00		2.36E-01
		1235.34	19.70	3.41E-01		1.34E+00
+	CS-137	661.65	85.12	-4.61E-02	1.28E-01	1.28E-01
+	LA-138	788.74	34.00	1.36E-01	1.84E-01	3.59E-01
		1435.80	66.00	3.09E-02		1.84E-01
+	CE-139	165.85	80.35	4.48E-02	1.03E-01	1.03E-01

Analysis Report for 1606038-06
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BA-140	162.64	6.70	-8.50E-01	5.42E-01	1.80E+00
		304.84	4.50	3.35E-01		2.87E+00
		423.70	3.20	2.62E-01		4.14E+00
		437.55	2.00	-8.01E-01		5.82E+00
		537.32	25.00	1.08E-01		5.42E-01
+	LA-140	328.77	20.50	3.67E-01	1.86E-01	6.85E-01
		487.03	45.50	-2.58E-02		2.85E-01
		815.85	23.50	-1.83E-02		6.76E-01
		1596.49	95.49	-1.79E-02		1.86E-01
+	CE-141	145.44	48.40	1.94E-03	1.85E-01	1.85E-01
+	CE-143	57.36	11.80	1.88E+00	1.59E+01	3.53E+01
		293.26	42.00	1.12E+01		1.59E+01
		664.55	5.20	1.46E+02		1.37E+02
+	CE-144	133.54	10.80	-1.94E-01	6.78E-01	6.78E-01
+	PM-144	476.78	42.00	-2.08E-02	1.05E-01	2.07E-01
		618.01	98.60	2.99E-02		1.05E-01
		696.49	99.49	1.72E-02		1.32E-01
+	PM-145	36.85	21.70	3.44E-01	3.46E-01	6.55E-01
		37.36	39.70	1.82E-01		3.46E-01
		42.30	15.10	4.10E-01		6.70E-01
		72.40	2.31	-9.22E-01		3.22E+00
+	PM-146	453.90	39.94	5.09E-02	1.98E-01	1.98E-01
		735.90	14.01	1.52E-01		7.68E-01
		747.13	13.10	-5.27E-01		7.67E-01
+	ND-147	91.11	28.90	3.38E-01	5.98E-01	5.98E-01
		531.02	13.10	-2.54E-01		9.93E-01
+	PM-149	285.90	3.10	8.99E+00	3.01E+01	3.01E+01
+	EU-152	121.78	20.50	-5.43E-02	3.34E-01	3.34E-01
		244.69	5.40	1.18E-01		1.43E+00
		344.27	19.13	-1.30E-01		3.94E-01
		778.89	9.20	-1.74E-01		1.25E+00
		964.01	10.40	-4.02E+00		1.49E+00
		1085.78	7.22	-1.32E+00		1.56E+00
		1112.02	9.60	-1.03E-01		1.43E+00
		1407.95	14.94	1.06E-01		7.28E-01
		97.43	31.30	1.92E-01	2.41E-01	2.41E-01
+	GD-153	103.18	22.20	-4.54E-01		3.21E-01
+	EU-154	123.07	40.50	-5.35E-02	1.69E-01	1.69E-01
		723.30	19.70	1.61E-01		6.80E-01
		873.19	11.50	3.51E-01		1.00E+00
		996.32	10.30	-1.05E+00		1.12E+00
		1004.76	17.90	3.10E-01		7.62E-01
+	EU-155	1274.45	35.50	-3.20E-03		3.35E-01
		86.50	30.90	2.89E-01	3.21E-01	3.21E-01
+	EU-156	105.30	20.70	-5.37E-03		3.54E-01
		811.77	10.40	-4.51E-01	1.54E+00	1.54E+00
		1153.47	7.20	7.18E-01		3.13E+00
+	HO-166M	1230.71	8.90	3.75E-01		2.35E+00
		184.41	72.60	2.16E-01	1.39E-01	1.39E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	HO-166M	280.45	29.60	2.95E-02	1.39E-01	2.59E-01
		410.94	11.10	6.47E-01		8.69E-01
		711.69	54.10	-3.43E-02		2.04E-01
+	TM-171	66.72	0.14	1.25E+01	5.49E+01	5.49E+01
+	HF-172	81.75	4.52	-1.85E+00	6.17E-01	1.48E+00
		125.81	11.30	-1.18E-01		6.17E-01
+	LU-172	181.53	20.60	2.17E-01	5.45E-01	8.44E-01
		810.06	16.63	3.64E-01		1.59E+00
		912.12	15.25	8.74E+00		3.78E+00
		1093.66	62.50	2.23E-01		5.45E-01
+	LU-173	100.72	5.24	6.08E-01	4.39E-01	1.41E+00
		272.11	21.20	3.54E-01		4.39E-01
+	HF-175	343.40	84.00	-3.72E-04	9.85E-02	9.85E-02
+	LU-176	88.34	13.30	8.92E-01	8.39E-02	7.85E-01
		201.83	86.00	-1.24E-03		8.92E-02
		306.78	94.00	-1.97E-02		8.39E-02
+	TA-182	67.75	41.20	9.90E-02	1.94E-01	1.94E-01
		1121.30	34.90	8.29E-01		6.18E-01
		1189.05	16.23	-3.34E-01		9.46E-01
		1221.41	26.98	-1.73E-02		6.06E-01
		1231.02	11.44	5.01E-01		1.31E+00
+	IR-192	308.46	29.68	1.52E-01	1.99E-01	2.96E-01
		468.07	48.10	2.58E-02		1.99E-01
+	HG-203	279.19	77.30	7.05E-02	1.22E-01	1.22E-01
+	BI-207	569.67	97.72	1.26E-03	9.41E-02	9.41E-02
		1063.62	74.90	1.85E-02		1.64E-01
+	TL-208	583.14	* 30.22	1.80E+00	1.75E-01	3.96E-01
		860.37	* 4.48	2.52E+00		3.83E+00
		2614.66	* 35.85	1.51E+00		1.75E-01
+	BI-210M	262.00	45.00	4.34E-02	1.87E-01	1.87E-01
		300.00	23.00	1.01E-01		3.97E-01
+	PB-210	46.50	4.25	2.30E+00	2.39E+00	2.39E+00
+	PB-211	404.84	2.90	9.13E-01	2.93E+00	2.93E+00
		831.96	2.90	-3.90E-01		4.10E+00
+	BI-212	727.17	* 11.80	1.61E+00	1.42E+00	1.42E+00
		1620.62	2.75	1.42E+00		4.33E+00
+	PB-212	238.63	* 44.60	2.70E+00	3.62E-01	3.62E-01
		300.09	* 3.41	1.94E+00		4.71E+00
+	BI-214	609.31	* 46.30	1.23E+00	2.79E-01	2.79E-01
		1120.29	* 15.10	1.73E+00		1.31E+00
		1764.49	* 15.80	1.23E+00		6.51E-01
		2204.22	* 4.98	1.55E+00		2.46E+00
+	PB-214	295.21	* 19.19	1.66E+00	3.03E-01	8.25E-01
		351.92	* 37.19	1.31E+00		3.03E-01
+	RN-219	401.80	6.50	-3.30E-01	1.21E+00	1.21E+00
+	RA-223	323.87	3.88	-1.91E-01	2.07E+00	2.07E+00
+	RA-224	240.98	3.95	8.96E+00	4.22E+00	4.22E+00
+	RA-225	40.00	31.00	1.02E-01	5.25E-01	5.25E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-226	186.21	*	3.28	4.55E+00	2.91E+00	2.91E+00
+	TH-227	50.10		8.40	1.03E-01	1.01E+00	1.01E+00
		236.00		11.50	-3.79E+00		1.19E+00
		256.20		6.30	5.55E-01		1.20E+00
+	AC-228	338.32	*	11.40	1.88E+00	1.10E+00	1.30E+00
		911.07	*	27.70	2.37E+00		1.10E+00
		969.11	*	16.60	1.51E+00		1.50E+00
+	TH-230	48.44		16.90	-3.79E-01	5.01E-01	5.01E-01
		62.85		4.60	2.23E+00		1.90E+00
		67.67		0.37	1.05E+01		2.06E+01
+	PA-231	283.67		1.60	-1.61E+00	3.51E+00	4.48E+00
		302.67		2.30	-4.11E+00		3.51E+00
+	TH-231	25.64		14.70	3.60E-01	1.14E+00	3.33E+00
		84.21		6.40	1.12E+00		1.14E+00
+	PA-233	311.98		38.60	-3.16E-03	2.37E-01	2.37E-01
+	PA-234	131.20		20.40	5.78E-01	4.04E-01	4.04E-01
		733.99		8.80	-6.53E-01		1.10E+00
		946.00		12.00	2.22E-01		1.05E+00
+	PA-234M	1001.03		0.92	-2.12E+00	1.42E+01	1.42E+01
+	TH-234	63.29		3.80	2.68E+00	2.29E+00	2.29E+00
+	U-235	143.76		10.50	2.49E-01	7.27E-01	7.27E-01
		163.35		4.70	-7.86E-01		1.67E+00
		205.31		4.70	-1.13E-01		1.69E+00
+	NP-237	86.50		12.60	7.06E-01	7.86E-01	7.86E-01
+	NP-239	106.10		22.70	2.08E+00	3.48E+00	3.48E+00
		228.18		10.70	5.36E+00		8.28E+00
		277.60		14.10	3.52E+00		6.32E+00
+	AM-241	59.54		35.90	-1.24E-01	2.01E-01	2.01E-01
+	AM-243	74.67		66.00	-5.19E-01	1.57E-01	1.57E-01
+	CM-243	209.75		3.29	1.87E+00	6.01E-01	2.81E+00
		228.14		10.60	5.11E-01		7.88E-01
		277.60		14.00	3.34E-01		6.01E-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

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NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	9.14E-01	9.14E-01	-9.15E-02	4.26E-01
NA-22	1274.54	99.94	1.19E-01	1.19E-01	-1.14E-03	5.33E-02
NA-24	1368.53	99.99	7.59E+02	4.41E+02	-3.20E+01	3.30E+02
	2754.09	99.86	4.41E+02		-1.90E+02	1.56E+02
AL-26	1808.65	99.76	9.45E-02	9.45E-02	1.19E-02	3.92E-02
+ K-40	1460.81	* 10.67	1.66E+00	1.66E+00	2.54E+01	7.63E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	8.07E-02	8.07E-02	4.11E-02	3.90E-02
	78.34	96.00	1.11E-01		3.88E-01	5.45E-02
SC-46	889.25	99.98	1.28E-01	1.28E-01	3.32E-02	5.87E-02
	1120.51	99.99	2.17E-01		2.28E-01	1.02E-01
V-48	983.52	99.98	1.78E-01	1.78E-01	5.05E-02	8.16E-02
	1312.10	97.50	1.92E-01		4.45E-02	8.67E-02
CR-51	320.08	9.83	1.06E+00	1.06E+00	6.58E-01	5.03E-01
MN-54	834.83	99.97	1.30E-01	1.30E-01	4.66E-02	6.04E-02
CO-56	846.75	99.96	1.15E-01	1.15E-01	-4.15E-03	5.26E-02
	1037.75	14.03	8.30E-01		1.45E-02	3.73E-01
	1238.25	67.00	2.99E-01		2.63E-01	1.39E-01
	1771.40	15.51	5.74E-01		-3.56E-01	2.32E-01
	2598.48	16.90	4.97E-01		8.27E-02	1.92E-01
CO-57	122.06	85.51	8.18E-02	8.18E-02	-1.33E-02	3.94E-02
	136.48	10.60	6.83E-01		7.45E-02	3.29E-01
CO-58	810.76	99.40	1.25E-01	1.25E-01	2.87E-02	5.78E-02
FE-59	1099.22	56.50	2.63E-01	2.63E-01	4.22E-02	1.20E-01
	1291.56	43.20	3.43E-01		9.82E-02	1.55E-01
CO-60	1173.22	100.00	1.59E-01	1.51E-01	4.17E-02	7.34E-02
	1332.49	100.00	1.51E-01		7.37E-02	6.86E-02
ZN-65	1115.52	50.75	2.83E-01	2.83E-01	-9.70E-03	1.30E-01
+ GA-67	93.31	* 35.70	1.72E+00	1.72E+00	1.40E+00	8.41E-01
	208.95	* 2.24	2.58E+01		2.98E+01	1.25E+01
	300.22	* 16.00	5.53E+00		2.28E+00	2.69E+00
SE-75	121.11	16.70	4.36E-01	1.25E-01	-1.17E-01	2.10E-01
	136.00	59.20	1.25E-01		-7.70E-03	6.00E-02
	264.65	59.80	1.45E-01		1.16E-01	6.93E-02
	279.53	25.20	3.18E-01		3.62E-02	1.51E-01
	400.65	11.40	6.99E-01		-3.40E-01	3.26E-01
RB-82	776.52	13.00	1.17E+00	1.17E+00	-7.99E-02	5.44E-01
RB-83	520.41	46.00	2.07E-01	2.07E-01	1.28E-01	9.61E-02
	529.64	30.30	2.87E-01		-2.38E-02	1.32E-01
	552.65	16.40	5.69E-01		-7.10E-02	2.63E-01
KR-85	513.99	0.43	2.31E+01	2.31E+01	-2.74E+01	1.09E+01
SR-85	513.99	99.27	1.10E-01	1.10E-01	-1.30E-01	5.17E-02
Y-88	898.02	93.40	1.25E-01	1.11E-01	2.11E-02	5.73E-02
	1836.01	99.38	1.11E-01		2.24E-02	4.67E-02
NB-93M	16.57	9.43	1.47E+02	1.47E+02	1.41E+02	7.13E+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)	
NB-94	702.63	100.00	1.34E-01	1.14E-01	4.69E-02	6.32E-02	
	871.10	100.00	1.14E-01		-1.39E-02	5.21E-02	
NB-95	765.79	99.81	1.66E-01	1.66E-01	1.02E-01	7.78E-02	
NB-95M	235.69	25.00	2.56E+00	2.56E+00	-8.12E+00	1.25E+00	
ZR-95	724.18	43.70	3.74E-01	2.21E-01	3.78E-02	1.77E-01	
	756.72	55.30	2.21E-01		-1.21E-01	1.02E-01	
MO-99	181.06	6.20	9.07E+00	6.65E+00	3.26E-01	4.35E+00	
	739.58	12.80	6.65E+00		2.37E+00	3.08E+00	
	778.00	4.50	2.01E+01		-1.17E+00	9.31E+00	
RU-103	497.08	89.00	1.09E-01	1.09E-01	-1.54E-02	5.04E-02	
RU-106	621.84	9.80	1.02E+00	1.02E+00	-3.06E-01	4.74E-01	
AG-108M	433.93	89.90	8.40E-02	8.40E-02	-5.69E-03	3.90E-02	
	614.37	90.40	1.14E-01		-3.48E-02	5.32E-02	
	722.95	90.50	1.48E-01		3.51E-02	6.94E-02	
CD-109	88.03	3.72	2.84E+00	2.84E+00	3.23E+00	1.39E+00	
AG-110M	657.75	93.14	1.07E-01	1.07E-01	1.60E-02	4.96E-02	
	677.61	10.53	9.46E-01		-9.01E-02	4.36E-01	
	706.67	16.46	7.76E-01		-2.88E-01	3.63E-01	
	763.93	21.98	5.70E-01		6.27E-02	2.65E-01	
	884.67	71.63	1.73E-01		-4.45E-03	7.98E-02	
CD-113M	1384.27	23.94	4.19E-01		6.62E-03	1.80E-01	
	263.70	0.02	3.48E+02	3.48E+02	-2.11E+02	1.66E+02	
	SN-113	255.12	1.93	4.00E+00	1.24E-01	-4.80E-01	1.90E+00
TE123M	391.69	64.90	1.24E-01		-4.38E-02	5.77E-02	
	159.00	84.10	9.20E-02	9.20E-02	-1.97E-02	4.43E-02	
	SB-124	602.71	97.87	1.20E-01	1.20E-01	1.85E-02	5.60E-02
SB-124	645.85	7.26	1.75E+00		1.94E-01	8.21E-01	
	722.78	11.10	1.32E+00		3.14E-01	6.20E-01	
	1691.02	49.00	1.81E-01		-3.85E-02	7.31E-02	
	I-125	35.49	6.49	2.61E+00	2.61E+00	7.09E-01	1.25E+00
	SB-125	176.33	6.89	1.18E+00	2.68E-01	4.69E-01	5.67E-01
SB-126	427.89	29.33	2.68E-01		-7.52E-02	1.25E-01	
	463.38	10.35	9.04E-01		1.16E-01	4.24E-01	
	600.56	17.80	6.02E-01		-1.08E-01	2.81E-01	
	635.90	11.32	8.85E-01		2.74E-01	4.10E-01	
	414.70	83.30	1.51E-01	1.51E-01	-5.26E-02	7.05E-02	
SN-126	666.33	99.60	1.80E-01		2.31E-02	8.40E-02	
	695.00	99.60	1.95E-01		2.44E-02	9.14E-02	
	720.50	53.80	3.79E-01		1.68E-01	1.78E-01	
SB-127	87.57	37.00	2.82E-01	2.82E-01	3.21E-01	1.38E-01	
SB-127	473.00	25.00	1.44E+00	1.25E+00	-4.88E-01	6.73E-01	
	685.20	35.70	1.25E+00		-3.14E-01	5.77E-01	
	783.80	14.70	3.67E+00		2.12E+00	1.71E+00	
I-129	29.78	57.00	4.25E-01	4.25E-01	-7.17E-02	2.03E-01	
	33.60	13.20	1.27E+00		-6.68E-01	6.09E-01	
	39.58	7.52	1.52E+00		2.97E-01	7.28E-01	
I-131	284.30	6.05	2.37E+00	1.89E-01	-8.51E-01	1.12E+00	
	364.48	81.20	1.89E-01		8.08E-02	8.85E-02	
	636.97	7.26	2.77E+00		1.11E-01	1.28E+00	
	722.89	1.80	1.48E+01		3.52E+00	6.97E+00	
TE-132	49.72	13.10	3.60E+00	5.23E-01	3.67E-01	1.73E+00	
	228.16	88.00	5.23E-01		3.39E-01	2.51E-01	
BA-133	81.00	33.00	2.02E-01	1.26E-01	1.20E-01	9.76E-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	4.55E-01	1.26E-01	-5.33E-01	2.16E-01
	356.01	60.00	1.26E-01		2.58E-02	5.90E-02
I-133	529.87	86.30	5.78E+01	5.78E+01	-1.22E+01	2.67E+01
XE-133	81.00	38.00	5.07E-01	5.07E-01	3.00E-01	2.45E-01
CS-134	563.23	8.38	1.10E+00	1.26E-01	1.82E-01	5.12E-01
	569.32	15.43	6.00E-01		8.06E-03	2.78E-01
	604.70	97.60	1.26E-01		8.33E-03	5.94E-02
	795.84	85.40	1.56E-01		3.61E-02	7.29E-02
	801.93	8.73	1.27E+00		3.22E-02	5.82E-01
CS-135	268.24	16.00	5.28E-01	5.28E-01	6.02E-02	2.52E-01
I-135	1131.51	22.50	3.64E+08	2.65E+08	1.16E+08	1.67E+08
	1260.41	28.60	2.65E+08		5.16E+07	1.19E+08
	1678.03	9.54	5.29E+08		8.81E+07	2.17E+08
CS-136	153.22	7.46	1.63E+00	1.52E-01	1.39E+00	7.87E-01
	163.89	4.61	2.68E+00		1.81E+00	1.29E+00
	176.55	13.56	8.77E-01		6.62E-02	4.22E-01
	273.65	12.66	9.26E-01		-1.74E+00	4.40E-01
	340.57	48.50	2.96E-01		-3.03E-01	1.41E-01
	818.50	99.70	1.52E-01		-2.29E-02	6.90E-02
	1048.07	79.60	2.36E-01		0.00E+00	1.07E-01
	1235.34	19.70	1.34E+00		3.41E-01	6.19E-01
CS-137	661.65	85.12	1.28E-01	1.28E-01	-4.61E-02	5.96E-02
LA-138	788.74	34.00	3.59E-01	1.84E-01	1.36E-01	1.66E-01
	1435.80	66.00	1.84E-01		3.09E-02	8.15E-02
CE-139	165.85	80.35	1.03E-01	1.03E-01	4.48E-02	4.98E-02
BA-140	162.64	6.70	1.80E+00	5.42E-01	-8.50E-01	8.69E-01
	304.84	4.50	2.87E+00		3.35E-01	1.36E+00
	423.70	3.20	4.14E+00		2.62E-01	1.94E+00
	437.55	2.00	5.82E+00		-8.01E-01	2.70E+00
	537.32	25.00	5.42E-01		1.08E-01	2.51E-01
LA-140	328.77	20.50	6.85E-01	1.86E-01	3.67E-01	3.26E-01
	487.03	45.50	2.85E-01		-2.58E-02	1.32E-01
	815.85	23.50	6.76E-01		-1.83E-02	3.08E-01
	1596.49	95.49	1.86E-01		-1.79E-02	8.07E-02
CE-141	145.44	48.40	1.85E-01	1.85E-01	1.94E-03	8.94E-02
CE-143	57.36	11.80	3.53E+01	1.59E+01	1.88E+00	1.70E+01
	293.26	42.00	1.59E+01		1.12E+01	7.66E+00
	664.55	5.20	1.37E+02		1.46E+02	6.44E+01
CE-144	133.54	10.80	6.78E-01	6.78E-01	-1.94E-01	3.27E-01
PM-144	476.78	42.00	2.07E-01	1.05E-01	-2.08E-02	9.66E-02
	618.01	98.60	1.05E-01		2.99E-02	4.90E-02
	696.49	99.49	1.32E-01		1.72E-02	6.18E-02
PM-145	36.85	21.70	6.55E-01	3.46E-01	3.44E-01	3.15E-01
	37.36	39.70	3.46E-01		1.82E-01	1.66E-01
	42.30	15.10	6.70E-01		4.10E-01	3.21E-01
	72.40	2.31	3.22E+00		-9.22E-01	1.56E+00
PM-146	453.90	39.94	1.98E-01	1.98E-01	5.09E-02	9.19E-02
	735.90	14.01	7.68E-01		1.52E-01	3.55E-01
	747.13	13.10	7.67E-01		-5.27E-01	3.51E-01
ND-147	91.11	28.90	5.98E-01	5.98E-01	3.38E-01	2.92E-01
	531.02	13.10	9.93E-01		-2.54E-01	4.57E-01
PM-149	285.90	3.10	3.01E+01	3.01E+01	8.99E+00	1.42E+01
EU-152	121.78	20.50	3.34E-01	3.34E-01	-5.43E-02	1.61E-01

Analysis Report for 1606038-06
CP-5018 05-10

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	1.43E+00	3.34E-01	1.18E-01	6.79E-01
	344.27	19.13	3.94E-01		-1.30E-01	1.85E-01
	778.89	9.20	1.25E+00		-1.74E-01	5.77E-01
	964.01	10.40	1.49E+00		-4.02E+00	6.97E-01
	1085.78	7.22	1.56E+00		-1.32E+00	7.02E-01
	1112.02	9.60	1.43E+00		-1.03E-01	6.55E-01
	1407.95	14.94	7.28E-01		1.06E-01	3.18E-01
GD-153	97.43	31.30	2.41E-01	2.41E-01	1.92E-01	1.17E-01
	103.18	22.20	3.21E-01		-4.54E-01	1.55E-01
EU-154	123.07	40.50	1.69E-01	1.69E-01	-5.35E-02	8.16E-02
	723.30	19.70	6.80E-01		1.61E-01	3.19E-01
	873.19	11.50	1.00E+00		3.51E-01	4.60E-01
	996.32	10.30	1.12E+00		-1.05E+00	5.08E-01
	1004.76	17.90	7.62E-01		3.10E-01	3.51E-01
EU-155	1274.45	35.50	3.35E-01	3.21E-01	-3.20E-03	1.49E-01
	86.50	30.90	3.21E-01		2.89E-01	1.57E-01
	105.30	20.70	3.54E-01		-5.37E-03	1.72E-01
EU-156	811.77	10.40	1.54E+00	1.54E+00	-4.51E-01	7.06E-01
	1153.47	7.20	3.13E+00		7.18E-01	1.45E+00
	1230.71	8.90	2.35E+00		3.75E-01	1.07E+00
HO-166M	184.41	72.60	1.39E-01	1.39E-01	2.16E-01	6.76E-02
	280.45	29.60	2.59E-01		2.95E-02	1.23E-01
	410.94	11.10	8.69E-01		6.47E-01	4.11E-01
	711.69	54.10	2.04E-01		-3.43E-02	9.44E-02
TM-171	66.72	0.14	5.49E+01	5.49E+01	1.25E+01	2.66E+01
HF-172	81.75	4.52	1.48E+00	6.17E-01	-1.85E+00	7.14E-01
	125.81	11.30	6.17E-01		-1.18E-01	2.97E-01
LU-172	181.53	20.60	8.44E-01	5.45E-01	2.17E-01	4.06E-01
	810.06	16.63	1.59E+00		3.64E-01	7.32E-01
	912.12	15.25	3.78E+00		8.74E+00	1.82E+00
	1093.66	62.50	5.45E-01		2.23E-01	2.52E-01
LU-173	100.72	5.24	1.41E+00	4.39E-01	6.08E-01	6.83E-01
	272.11	21.20	4.39E-01		3.54E-01	2.10E-01
HF-175	343.40	84.00	9.85E-02	9.85E-02	-3.72E-04	4.63E-02
LU-176	88.34	13.30	7.85E-01	8.39E-02	8.92E-01	3.84E-01
	201.83	86.00	8.92E-02		-1.24E-03	4.28E-02
	306.78	94.00	8.39E-02		-1.97E-02	3.97E-02
TA-182	67.75	41.20	1.94E-01	1.94E-01	9.90E-02	9.40E-02
	1121.30	34.90	6.18E-01		8.29E-01	2.91E-01
	1189.05	16.23	9.46E-01		-3.34E-01	4.33E-01
	1221.41	26.98	6.06E-01		-1.73E-02	2.79E-01
	1231.02	11.44	1.31E+00		5.01E-01	6.00E-01
IR-192	308.46	29.68	2.96E-01	1.99E-01	1.52E-01	1.41E-01
	468.07	48.10	1.99E-01		2.58E-02	9.29E-02
HG-203	279.19	77.30	1.22E-01	1.22E-01	7.05E-02	5.80E-02
BI-207	569.67	97.72	9.41E-02	9.41E-02	1.26E-03	4.36E-02
	1063.62	74.90	1.64E-01		1.85E-02	7.46E-02
+ TL-208	583.14	* 30.22	3.96E-01	1.75E-01	1.80E+00	1.87E-01
	860.37	* 4.48	3.83E+00		2.52E+00	1.81E+00
	2614.66	* 35.85	1.75E-01		1.51E+00	6.30E-02
BI-210M	262.00	45.00	1.87E-01	1.87E-01	4.34E-02	8.94E-02
	300.00	23.00	3.97E-01		1.01E-01	1.90E-01
PB-210	46.50	4.25	2.39E+00	2.39E+00	2.30E+00	1.16E+00

Analysis Report for 1606038-06
CP-5018 05-10

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	2.93E+00	2.93E+00	9.13E-01	1.38E+00
	831.96	2.90	4.10E+00		-3.90E-01	1.89E+00
+ BI-212	727.17 *	11.80	1.42E+00	1.42E+00	1.61E+00	6.77E-01
	1620.62	2.75	4.33E+00		1.42E+00	1.89E+00
+ PB-212	238.63 *	44.60	3.62E-01	3.62E-01	2.70E+00	1.77E-01
	300.09 *	3.41	4.71E+00		1.94E+00	2.30E+00
+ BI-214	609.31 *	46.30	2.79E-01	2.79E-01	1.23E+00	1.32E-01
	1120.29 *	15.10	1.31E+00		1.73E+00	6.19E-01
	1764.49 *	15.80	6.51E-01		1.23E+00	2.75E-01
	2204.22 *	4.98	2.46E+00		1.55E+00	1.06E+00
+ PB-214	295.21 *	19.19	8.25E-01	3.03E-01	1.66E+00	4.02E-01
	351.92 *	37.19	3.03E-01		1.31E+00	1.45E-01
RN-219	401.80	6.50	1.21E+00	1.21E+00	-3.30E-01	5.64E-01
RA-223	323.87	3.88	2.07E+00	2.07E+00	-1.91E-01	9.77E-01
RA-224	240.98	3.95	4.22E+00	4.22E+00	8.96E+00	2.07E+00
RA-225	40.00	31.00	5.25E-01	5.25E-01	1.02E-01	2.51E-01
+ RA-226	186.21 *	3.28	2.91E+00	2.91E+00	4.55E+00	1.41E+00
TH-227	50.10	8.40	1.01E+00	1.01E+00	1.03E-01	4.85E-01
	236.00	11.50	1.19E+00		-3.79E+00	5.82E-01
	256.20	6.30	1.20E+00		5.55E-01	5.72E-01
+ AC-228	338.32 *	11.40	1.30E+00	1.10E+00	1.88E+00	6.30E-01
	911.07 *	27.70	1.10E+00		2.37E+00	5.33E-01
	969.11 *	16.60	1.50E+00		1.51E+00	7.18E-01
TH-230	48.44	16.90	5.01E-01	5.01E-01	-3.79E-01	2.41E-01
	62.85	4.60	1.90E+00		2.23E+00	9.21E-01
	67.67	0.37	2.06E+01		1.05E+01	9.97E+00
PA-231	283.67	1.60	4.48E+00	3.51E+00	-1.61E+00	2.12E+00
	302.67	2.30	3.51E+00		-4.11E+00	1.67E+00
TH-231	25.64	14.70	3.33E+00	1.14E+00	3.60E-01	1.60E+00
	84.21	6.40	1.14E+00		1.12E+00	5.53E-01
PA-233	311.98	38.60	2.37E-01	2.37E-01	-3.16E-03	1.12E-01
PA-234	131.20	20.40	4.04E-01	4.04E-01	5.78E-01	1.96E-01
	733.99	8.80	1.10E+00		-6.53E-01	5.01E-01
	946.00	12.00	1.05E+00		2.22E-01	4.82E-01
PA-234M	1001.03	0.92	1.42E+01	1.42E+01	-2.12E+00	6.50E+00
TH-234	63.29	3.80	2.29E+00	2.29E+00	2.68E+00	1.11E+00
U-235	143.76	10.50	7.27E-01	7.27E-01	2.49E-01	3.51E-01
	163.35	4.70	1.67E+00		-7.86E-01	8.04E-01
	205.31	4.70	1.69E+00		-1.13E-01	8.12E-01
NP-237	86.50	12.60	7.86E-01	7.86E-01	7.06E-01	3.84E-01
NP-239	106.10	22.70	3.48E+00	3.48E+00	2.08E+00	1.68E+00
	228.18	10.70	8.28E+00		5.36E+00	3.97E+00
	277.60	14.10	6.32E+00		3.52E+00	3.02E+00
AM-241	59.54	35.90	2.01E-01	2.01E-01	-1.24E-01	9.70E-02
AM-243	74.67	66.00	1.57E-01	1.57E-01	-5.19E-01	7.68E-02
CM-243	209.75	3.29	2.81E+00	6.01E-01	1.87E+00	1.36E+00
	228.14	10.60	7.88E-01		5.11E-01	3.78E-01
	277.60	14.00	6.01E-01		3.34E-01	2.86E-01

Analysis Report for 1606038-06
CP-5018 05-10

- + = 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: CP-5018 05-10

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	2	261	1029
9:	1047	548	348	1102	1292	121	97	173
17:	115	119	108	101	90	63	50	60
25:	68	52	50	52	52	46	50	53
33:	56	56	51	71	68	58	55	55
41:	69	54	62	45	65	86	115	63
49:	62	80	83	78	85	72	67	68
57:	69	87	77	76	82	97	145	134
65:	93	93	105	108	97	87	103	100
73:	109	125	369	135	460	155	70	75
81:	99	88	73	138	109	73	219	118
89:	79	178	89	111	205	119	84	53
97:	57	61	72	79	48	63	51	52
105:	67	79	59	61	55	54	59	62
113:	73	57	52	44	53	66	57	50
121:	41	54	53	48	48	56	51	42
129:	114	58	52	64	52	43	41	52
137:	53	49	46	49	56	51	54	71
145:	47	44	43	52	49	43	52	45
153:	58	65	54	40	37	42	51	50
161:	45	54	49	48	51	61	40	51
169:	40	47	36	32	50	54	46	48
177:	45	47	37	37	37	51	35	44
185:	66	167	53	34	41	49	45	40
193:	41	21	42	32	47	52	32	37
201:	35	37	37	37	40	44	35	53
209:	92	49	31	32	44	32	35	34
217:	34	27	32	35	27	35	44	35
225:	31	41	29	38	38	40	27	36
233:	27	33	36	40	33	354	435	43
241:	112	93	35	27	22	31	27	24
249:	21	31	26	28	17	31	17	34
257:	23	24	23	31	36	24	30	35
265:	32	18	34	18	22	60	45	25
273:	22	26	24	24	44	24	32	19
281:	21	20	17	18	21	23	25	22
289:	20	32	23	19	23	34	163	57
297:	23	26	30	51	23	22	30	24
305:	17	26	26	19	20	24	18	16
313:	21	14	18	25	16	18	25	26
321:	24	26	18	18	22	19	20	34
329:	28	25	24	21	27	25	11	23
337:	23	106	57	21	17	23	16	12
345:	17	14	21	12	16	22	100	211
353:	28	13	12	14	25	14	16	24
361:	9	11	17	16	17	17	14	17

369: 20 7 25 8 14 22 20 20

Sample Title: CP-5018 05-10

Channel	1	2	3	4	5	6	7	8
377:	15	15	20	15	12	18	18	20
385:	16	14	14	18	15	9	18	14
393:	12	16	18	12	9	19	12	15
401:	17	11	11	16	19	21	15	18
409:	30	25	15	20	15	15	9	18
417:	13	18	22	14	18	19	17	14
425:	15	13	14	15	15	6	24	6
433:	14	14	9	14	12	7	14	12
441:	10	13	12	21	14	12	12	17
449:	15	11	12	10	13	13	17	5
457:	14	3	11	15	11	19	28	11
465:	11	17	15	8	14	17	14	15
473:	10	12	13	17	14	13	7	18
481:	12	15	9	20	15	14	13	10
489:	7	12	11	8	10	12	12	9
497:	13	10	13	16	11	12	11	7
505:	13	11	12	14	20	64	70	28
513:	13	19	5	14	5	11	10	12
521:	16	11	4	7	11	9	14	12
529:	10	4	8	14	8	18	16	8
537:	10	11	10	7	8	5	12	7
545:	9	13	5	14	8	13	9	9
553:	10	11	8	15	12	10	15	9
561:	13	8	9	13	13	10	7	13
569:	16	11	8	11	10	21	9	15
577:	6	6	10	14	11	33	150	40
585:	14	6	9	11	9	8	10	5
593:	10	9	15	11	11	10	10	12
601:	9	8	9	14	5	12	5	38
609:	157	50	13	9	4	10	12	11
617:	3	8	12	8	6	6	8	9
625:	6	12	12	10	8	11	5	5
633:	7	7	8	6	7	10	9	8
641:	6	12	10	11	16	9	5	7
649:	15	9	10	9	12	4	7	11
657:	3	7	4	5	12	12	9	12
665:	14	15	7	2	8	10	4	8
673:	4	3	6	8	8	5	7	9
681:	10	6	12	10	7	5	7	6
689:	7	10	6	8	18	9	13	6
697:	13	7	14	8	18	8	17	11
705:	10	13	7	7	8	11	14	7
713:	3	5	12	4	13	12	7	14
721:	12	11	8	9	10	17	36	20
729:	14	9	7	5	6	6	4	9
737:	2	11	11	4	8	9	8	5
745:	4	4	11	6	6	5	9	10
753:	8	4	13	7	6	6	7	11
761:	10	6	8	5	6	9	17	24
769:	13	6	9	17	14	5	11	5
777:	12	7	5	7	9	6	9	7
785:	12	9	11	6	5	7	7	7
793:	3	9	22	15	9	6	3	8

801: 10 5 7 4 7 8 8 10

Sample Title: CP-5018 05-10

Channel	1	2	3	4	5	6	7	8	9	10
809:	7	1	8	7	7	4	5	10		
817:	1	4	6	4	4	6	5	3		
825:	3	5	4	6	6	12	3	5		
833:	5	7	11	14	5	10	4	6		
841:	6	8	5	9	3	5	4	2		
849:	10	5	4	2	6	4	6	6		
857:	3	8	6	18	17	6	7	10		
865:	9	7	7	8	3	6	4	9		
873:	7	4	5	7	4	3	2	6		
881:	8	9	4	5	7	9	4	13		
889:	4	6	3	5	6	3	8	5		
897:	4	6	4	7	3	7	7	11		
905:	5	4	2	5	9	49	92	37		
913:	6	6	5	10	5	5	6	2		
921:	6	5	7	7	2	3	7	5		
929:	6	7	5	2	8	9	5	12		
937:	3	4	3	7	5	5	5	4		
945:	9	6	5	9	6	2	9	3		
953:	6	3	6	4	5	4	7	4		
961:	5	8	9	19	14	7	5	34		
969:	47	11	7	10	2	1	4	3		
977:	3	6	2	5	4	7	4	9		
985:	6	6	3	7	7	6	8	5		
993:	4	6	6	7	4	3	3	10		
1001:	10	7	3	7	6	10	4	3		
1009:	4	1	4	4	6	5	9	5		
1017:	3	5	3	4	8	6	6	3		
1025:	5	4	13	3	3	6	7	9		
1033:	7	5	4	1	4	2	4	7		
1041:	4	7	3	7	6	7	6	6		
1049:	3	4	3	4	6	6	9	4		
1057:	7	2	4	6	2	4	4	7		
1065:	9	2	7	4	12	5	6	4		
1073:	6	5	4	4	8	4	7	7		
1081:	9	6	3	3	3	6	3	3		
1089:	8	5	7	6	10	9	5	7		
1097:	4	5	8	6	2	5	3	3		
1105:	12	2	6	8	5	9	4	7		
1113:	8	1	6	5	6	9	14	29		
1121:	15	10	9	8	5	2	5	3		
1129:	4	8	2	8	9	6	3	7		
1137:	11	4	6	3	3	6	7	2		
1145:	7	8	6	6	8	4	5	6		
1153:	9	10	9	7	9	1	9	3		
1161:	4	5	10	6	5	2	5	7		
1169:	6	3	4	4	10	9	9	11		
1177:	4	6	5	2	7	2	9	7		
1185:	7	2	7	6	5	5	6	10		
1193:	10	6	7	5	3	6	6	6		
1201:	2	2	8	6	7	8	3	6		
1209:	6	9	9	8	4	5	5	5		
1217:	6	8	2	5	7	8	8	7		
1225:	7	8	3	6	8	11	2	4		

1233: 4 2 8 12 12 13 7 6

Sample Title: CP-5018 05-10

Channel	1	2	3	4	5	6	7	8
1241:	7	4	6	10	7	2	6	6
1249:	3	5	5	2	4	4	4	3
1257:	2	3	4	6	4	5	4	4
1265:	2	9	3	1	3	3	4	3
1273:	5	6	1	1	3	3	4	6
1281:	5	4	6	4	2	5	2	9
1289:	5	0	2	2	4	6	1	4
1297:	7	4	9	5	3	4	3	3
1305:	5	1	4	4	6	4	3	3
1313:	4	5	3	1	4	4	4	2
1321:	7	6	7	4	2	10	2	4
1329:	6	2	6	4	7	2	9	4
1337:	2	4	3	1	3	3	1	2
1345:	4	2	1	3	3	2	5	4
1353:	2	2	4	4	0	4	2	2
1361:	0	3	3	1	2	1	1	0
1369:	3	4	4	2	1	1	1	2
1377:	11	4	5	1	0	1	0	6
1385:	3	0	3	6	1	3	2	1
1393:	1	2	1	3	3	4	3	2
1401:	4	2	0	2	0	3	6	2
1409:	1	2	3	2	3	3	1	1
1417:	2	0	2	3	2	1	1	5
1425:	1	1	0	0	4	2	2	4
1433:	2	3	3	3	1	4	4	1
1441:	1	0	3	0	2	6	4	3
1449:	2	1	2	4	2	1	5	3
1457:	2	6	60	228	204	34	3	2
1465:	1	2	2	1	2	1	1	2
1473:	4	3	0	0	0	0	2	1
1481:	3	1	2	3	1	0	0	0
1489:	0	0	1	0	0	1	5	3
1497:	0	1	2	0	3	3	1	5
1505:	1	2	1	6	4	3	0	0
1513:	3	3	1	2	1	1	1	3
1521:	1	1	2	2	2	2	2	0
1529:	4	1	0	2	1	4	1	1
1537:	3	1	1	1	0	3	6	1
1545:	2	1	0	3	0	0	2	2
1553:	2	0	0	1	2	1	1	0
1561:	1	1	0	1	0	0	1	2
1569:	0	3	2	3	3	1	1	3
1577:	1	1	4	0	2	2	0	0
1585:	3	1	7	9	2	2	1	3
1593:	3	1	1	3	0	1	2	1
1601:	1	0	0	2	1	0	0	1
1609:	2	0	0	1	1	1	1	0
1617:	2	3	1	1	3	2	2	2
1625:	1	1	0	0	3	2	1	0
1633:	0	0	0	1	1	2	2	0
1641:	1	1	1	1	3	1	1	2
1649:	1	2	1	2	0	0	3	0
1657:	0	1	0	2	2	3	2	0

1665: 2 0 4 0 0 0 0 1

Sample Title: CP-5018 05-10

Channel	1	2	3	4	5	6	7	8	9
1673:	2	2	0	0	2	0	1	0	
1681:	0	1	0	0	2	1	1	0	
1689:	1	1	0	1	0	1	1	1	
1697:	3	0	0	0	3	0	0	0	
1705:	2	3	2	1	2	1	0	1	
1713:	1	0	0	0	0	0	0	2	
1721:	0	1	0	1	3	3	2	3	
1729:	8	5	2	1	1	1	2	0	
1737:	0	2	1	1	0	2	0	1	
1745:	2	1	0	2	2	2	2	0	
1753:	0	0	3	1	1	5	0	1	
1761:	4	3	7	17	6	3	0	2	
1769:	1	0	1	0	1	1	0	0	
1777:	4	2	0	0	2	1	1	0	
1785:	1	1	1	1	0	3	1	0	
1793:	0	2	0	0	0	0	0	0	
1801:	0	0	2	1	2	2	2	0	
1809:	0	0	1	0	2	0	0	1	
1817:	1	0	2	1	2	0	2	2	
1825:	0	1	0	0	1	0	2	0	
1833:	0	2	1	3	1	1	0	1	
1841:	0	2	1	0	0	5	3	1	
1849:	0	0	0	1	1	0	0	0	
1857:	0	3	2	1	1	0	3	0	
1865:	2	0	1	1	0	1	0	0	
1873:	0	1	0	1	0	1	1	0	
1881:	2	0	0	2	1	2	2	0	
1889:	2	1	0	1	0	1	1	0	
1897:	0	0	1	1	1	0	1	1	
1905:	0	1	3	1	0	1	0	0	
1913:	1	0	5	0	2	0	0	2	
1921:	0	0	0	0	1	0	1	2	
1929:	0	0	3	1	1	3	3	1	
1937:	0	3	1	1	1	2	1	2	
1945:	2	0	0	1	0	0	1	1	
1953:	0	2	0	0	1	0	0	2	
1961:	0	1	2	1	1	1	0	0	
1969:	1	2	0	1	2	1	0	1	
1977:	1	0	2	2	0	1	1	1	
1985:	3	1	0	0	0	2	1	1	
1993:	3	0	0	0	1	0	2	3	
2001:	1	1	0	3	0	1	0	0	
2009:	1	1	0	0	1	1	0	1	
2017:	1	2	0	0	3	0	0	0	
2025:	0	1	1	0	1	0	0	2	
2033:	0	0	1	1	1	0	1	0	
2041:	0	0	3	0	0	0	1	1	
2049:	3	0	1	2	1	0	0	0	
2057:	1	1	1	1	1	0	0	0	
2065:	0	1	1	0	0	0	1	0	
2073:	1	2	0	0	0	0	2	1	
2081:	2	0	1	0	2	3	1	0	
2089:	1	1	0	0	2	1	0	0	

2097: 1 0 1 0 3 3 10 1

Sample Title: CP-5018 05-10

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

2529: 0 1 0 0 1 0 0 0

Sample Title: CP-5018 05-10

Channel	1	2	3	4	5	6	7	8
2537:	0	0	0	1	0	0	1	0
2545:	0	0	0	2	0	2	1	0
2553:	0	0	0	1	1	1	0	0
2561:	0	0	0	0	0	0	0	0
2569:	0	0	0	0	1	0	0	0
2577:	1	1	0	0	0	0	0	0
2585:	0	0	0	0	0	0	1	0
2593:	0	0	0	0	0	0	2	1
2601:	0	1	0	0	0	0	1	0
2609:	0	1	1	10	22	31	14	5
2617:	2	1	0	0	0	0	0	0
2625:	0	0	0	0	0	0	1	0
2633:	0	1	0	1	0	1	0	1
2641:	0	1	0	0	0	0	0	0
2649:	0	0	0	0	0	0	1	1
2657:	0	0	0	0	0	0	0	2
2665:	1	0	0	0	0	0	0	0
2673:	0	0	0	1	0	1	0	0
2681:	0	0	0	0	0	0	1	1
2689:	0	1	0	0	1	0	0	0
2697:	0	0	1	0	0	0	0	0
2705:	1	1	1	1	0	1	0	1
2713:	1	1	0	0	0	0	0	1
2721:	0	1	0	0	0	2	0	0
2729:	1	1	1	0	0	0	1	0
2737:	0	1	0	0	0	0	0	0
2745:	0	0	1	1	0	1	0	0
2753:	0	0	1	0	0	0	1	1
2761:	1	0	1	0	0	0	0	0
2769:	1	0	0	0	0	1	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	1	0	0	1
2793:	0	0	0	0	1	0	2	0
2801:	0	0	0	1	0	0	0	0
2809:	0	0	0	0	0	1	0	1
2817:	0	0	0	0	0	1	0	1
2825:	0	0	0	0	0	1	0	0
2833:	0	0	0	0	0	1	0	0
2841:	0	1	0	0	0	1	0	1
2849:	1	0	1	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	1	0	0	0	0	1	0	0
2881:	0	0	0	1	0	0	0	0
2889:	0	2	0	0	1	0	0	0
2897:	0	0	0	0	0	1	0	0
2905:	0	0	0	1	0	0	0	1
2913:	0	0	0	0	0	0	0	0
2921:	1	0	0	0	0	0	0	0
2929:	0	0	1	1	0	0	0	1
2937:	0	1	0	0	1	1	0	0
2945:	0	1	0	1	0	0	1	1
2953:	0	0	1	1	0	0	1	0

2961: 1 0 0 0 0 0 0 0 0

Sample Title: CP-5018 05-10

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

3393: 0 0 0 0 0 0 0 1 0

Sample Title: CP-5018 05-10

Channel								
3401:	0	0	1	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	1	0	1	0	0	0	0	0
3425:	0	1	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	1	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	1	0
3489:	1	0	0	0	0	0	0	0
3497:	0	1	0	0	0	2	1	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	1	0
3521:	1	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	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	1
3569:	0	0	0	0	0	0	0	0
3577:	2	0	1	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	1	1
3601:	0	0	0	0	0	0	1	0
3609:	0	0	1	0	0	0	1	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	1	0	0
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	1	0	0	0	0	0	0
3681:	0	0	0	0	0	1	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	1	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	2	0	0
3721:	0	0	0	0	1	0	0	0
3729:	0	0	0	1	0	0	0	0
3737:	0	0	0	0	0	1	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	1	0	1	0	0	0	1
3761:	0	0	1	0	0	0	1	1
3769:	1	0	1	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	1	1	0	0	0	0
3793:	0	0	0	1	1	1	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	1	1	0	0
3817:	0	0	0	1	0	0	0	0

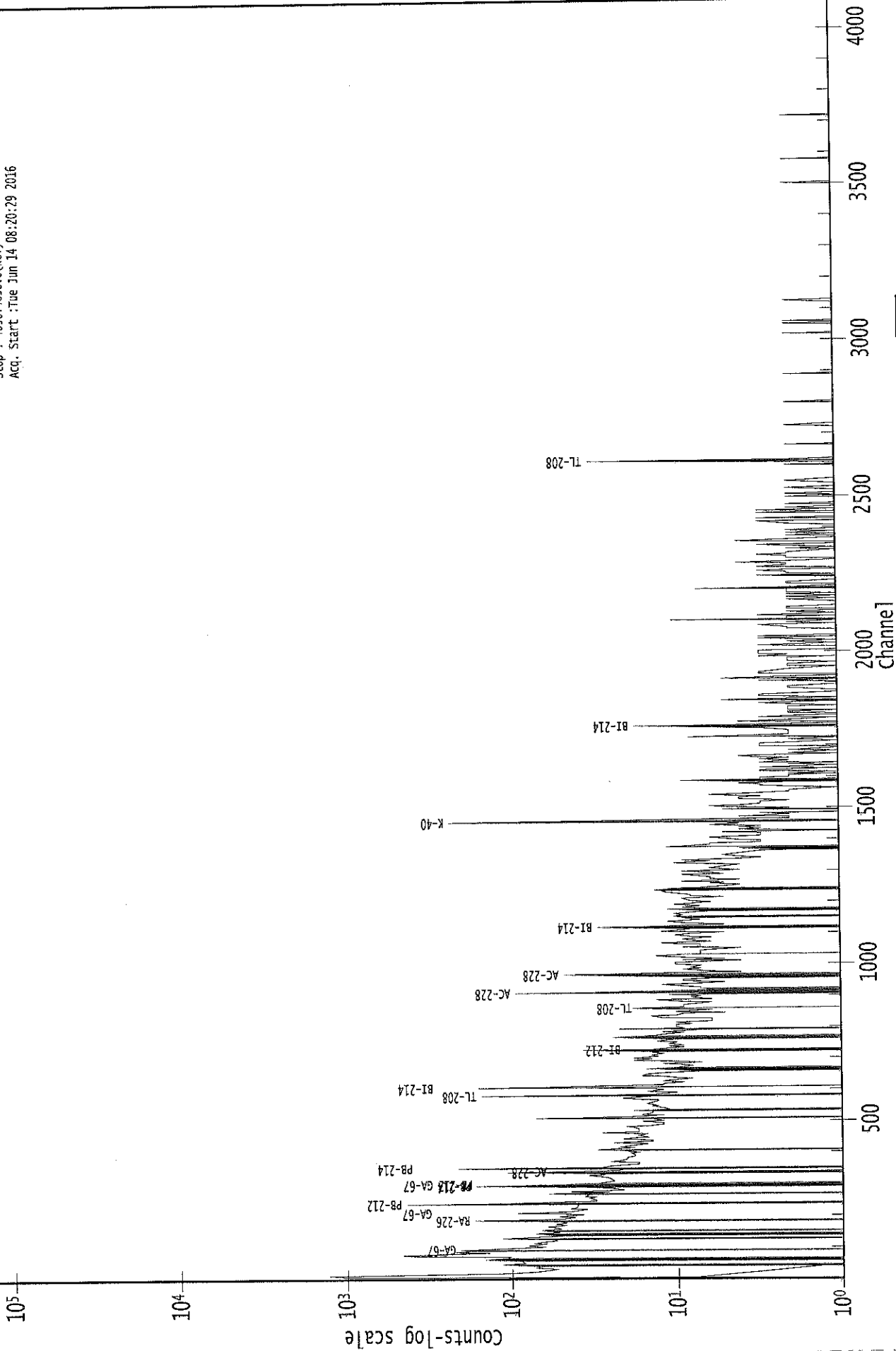
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5018 05-10

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

0000038801.CNF

Live Time :3600.000 sec
Real Time :3601.390 sec
Start: 1: 0.9(kev)
Stop : 4096.4096.6(kev)
Acq. Start :Tue Jun 14 08:20:29 2016



WJ
6/14/16Analysis Report for 1606038-07
CP-5018 10-15

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-07
Sample Description : CP-5018 10-15
Sample Type : SOIL

Sample Size : 2.806E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 8:15:51AM
Acquisition Started : 6/14/2016 8:20:37AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3612.7 seconds

Dead Time : 0.35 %

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 : 38802

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-07
 CP-5018 10-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 9:21:01AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096
 Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.82	47.05	0.0000	0.00
2	62.87	63.10	0.0000	0.00
3	74.94	75.15	0.0000	0.00
4	77.63	77.85	0.0000	0.00
5	88.23	88.44	0.0000	0.00
6	94.33	94.54	0.0000	0.00
7	128.68	128.87	0.0000	0.00
8	186.39	186.54	0.0000	0.00
9	209.82	209.96	0.0000	0.00
10	239.52	239.64	0.0000	0.00
11	270.97	271.08	0.0000	0.00
12	277.98	278.09	0.0000	0.00
13	295.77	295.87	0.0000	0.00
14	328.41	328.49	0.0000	0.00
15	339.00	339.08	0.0000	0.00
16	352.36	352.43	0.0000	0.00
17	439.15	439.18	0.0000	0.00
18	463.81	463.82	0.0000	0.00
19	492.23	492.23	0.0000	0.00
20	511.59	511.58	0.0000	0.00
21	583.44	583.40	0.0000	0.00
22	609.60	609.54	0.0000	0.00
23	642.60	642.53	0.0000	0.00
24	696.08	695.98	0.0000	0.00
25	727.29	727.18	0.0000	0.00
26	795.32	795.17	0.0000	0.00
27	840.94	840.77	0.0000	0.00
28	911.63	911.43	0.0000	0.00
29	960.44	960.22	0.0000	0.00
30	965.22	965.00	0.0000	0.00
31	969.44	969.22	0.0000	0.00
32	972.22	972.00	0.0000	0.00
33	976.22	976.00	0.0000	0.00
34	987.66	987.43	0.0000	0.00
35	1120.80	1120.52	0.0000	0.00
36	1166.54	1166.24	0.0000	0.00
37	1238.05	1237.71	0.0000	0.00
38	1384.12	1383.73	0.0000	0.00
39	1430.43	1430.02	0.0000	0.00
40	1434.65	1434.24	0.0000	0.00
41	1461.18	1460.76	0.0000	0.00
42	1509.44	1509.00	0.0000	0.00

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Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1538.88	1538.43	0.0000	0.00
44	1544.94	1544.49	0.0000	0.00
45	1638.25	1637.77	0.0000	0.00
46	1691.89	1691.38	0.0000	0.00
47	1764.97	1764.44	0.0000	0.00
48	1783.82	1783.28	0.0000	0.00
49	1847.31	1846.75	0.0000	0.00
50	1950.97	1950.38	0.0000	0.00
51	2166.68	2166.02	0.0000	0.00
52	2325.59	2324.89	0.0000	0.00
53	2446.69	2445.95	0.0000	0.00
54	2614.66	2613.88	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1606038-07
CP-5018 10-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 9:21:01AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	44 -	49	47.05	1.21E+02	62.35	6.81E+02	1.60
	2	59 -	66	63.10	2.06E+02	92.46	1.29E+03	1.28
M	3	72 -	83	75.15	3.00E+02	80.43	1.03E+03	1.66
m	4	72 -	83	77.85	5.12E+02	87.62	9.81E+02	1.67
	5	86 -	91	88.44	1.26E+02	79.76	1.17E+03	1.48
	6	91 -	102	94.54	1.95E+02	126.24	1.67E+03	1.71
	7	125 -	133	128.87	6.57E+01	75.43	8.41E+02	2.14
	8	183 -	190	186.54	1.20E+02	66.45	6.57E+02	1.64
	9	207 -	213	209.96	5.73E+01	52.35	4.53E+02	1.55
	10	235 -	244	239.64	7.34E+02	84.89	6.11E+02	1.51
M	11	267 -	282	271.08	7.64E+01	40.20	2.71E+02	1.94
m	12	267 -	282	278.09	3.48E+01	37.84	2.55E+02	2.12
	13	292 -	299	295.87	1.63E+02	48.79	2.87E+02	1.82
	14	325 -	332	328.49	5.03E+01	42.05	2.63E+02	1.54
	15	334 -	343	339.08	1.50E+02	54.41	3.30E+02	1.75
	16	348 -	356	352.43	2.38E+02	57.09	3.54E+02	1.96
	17	437 -	442	439.18	2.56E+01	24.60	1.03E+02	2.85
	18	461 -	466	463.82	3.49E+01	27.39	1.16E+02	1.85
	19	489 -	495	492.23	2.39E+01	26.91	1.12E+02	1.28
	20	507 -	517	511.58	1.30E+02	46.50	2.17E+02	1.89
	21	579 -	589	583.40	1.44E+02	44.68	1.96E+02	2.13
	22	606 -	614	609.54	1.94E+02	40.34	1.33E+02	1.71
	23	637 -	650	642.53	5.56E+01	38.57	1.43E+02	6.85
	24	690 -	703	695.98	6.49E+01	41.27	1.58E+02	4.84
	25	722 -	731	727.18	3.14E+01	32.73	1.35E+02	2.05
	26	791 -	799	795.17	3.15E+01	26.09	8.51E+01	1.86
	27	838 -	844	840.77	1.92E+01	22.03	6.96E+01	3.08
	28	908 -	914	911.43	1.27E+02	29.32	8.33E+01	2.14
M	29	957 -	983	960.22	2.19E+01	16.81	3.50E+01	2.41
m	30	957 -	983	965.00	3.37E+01	20.75	3.50E+01	2.20
m	31	957 -	983	969.22	7.48E+01	23.03	3.50E+01	2.42
m	32	957 -	983	972.00	1.70E+01	21.22	3.50E+01	2.20
m	33	957 -	983	976.00	1.28E+01	15.44	3.50E+01	2.20
	34	984 -	990	987.43	1.38E+01	16.94	4.25E+01	2.60
	35	1116 -	1126	1120.52	4.41E+01	30.96	1.04E+02	2.07
	36	1163 -	1168	1166.24	1.59E+01	14.04	2.62E+01	1.25
	37	1233 -	1244	1237.71	3.65E+01	30.33	9.91E+01	6.61
	38	1377 -	1390	1383.73	1.74E+01	19.21	2.73E+01	9.75
M	39	1428 -	1438	1430.02	6.72E+00	7.21	1.22E+01	2.64
m	40	1428 -	1438	1434.24	1.09E+01	12.00	1.22E+01	2.65

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1461.18	1454 - 1465	1460.76	4.51E+02	44.72	2.54E+01	2.27
	42	1509.44	1506 - 1511	1509.00	6.00E+00	7.35	6.00E+00	2.42
M	43	1538.88	1531 - 1547	1538.43	9.47E+00	10.87	4.46E+00	3.58
m	44	1544.94	1531 - 1547	1544.49	6.40E+00	7.50	6.00E+00	2.96
	45	1638.25	1634 - 1640	1637.77	7.22E+00	6.95	3.56E+00	1.90
	46	1691.89	1686 - 1697	1691.38	9.00E+00	11.49	1.20E+01	5.95
	47	1764.97	1760 - 1768	1764.44	3.03E+01	14.45	1.34E+01	1.97
	48	1783.82	1779 - 1786	1783.28	7.36E+00	8.72	7.27E+00	2.40
	49	1847.31	1843 - 1849	1846.75	8.40E+00	7.23	3.20E+00	3.05
	50	1950.97	1946 - 1954	1950.38	9.50E+00	9.82	9.00E+00	3.17
	51	2166.68	2163 - 2168	2166.02	5.57E+00	6.08	2.86E+00	2.68
	52	2325.59	2321 - 2328	2324.89	9.00E+00	6.00	0.00E+00	1.00
	53	2446.69	2441 - 2449	2445.95	7.70E+00	7.76	4.60E+00	2.49
	54	2614.66	2609 - 2617	2613.88	5.80E+01	15.23	0.00E+00	3.40

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 : 6/14/2016 9:21:01AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.82	44 - 49	1.21E+02	62.35	6.81E+02	4.80E+01
	2	62.87	59 - 66	2.06E+02	92.46	1.29E+03	7.23E+01
M	3	74.94	72 - 83	3.00E+02	80.43	1.03E+03	5.29E+01
m	4	77.63	72 - 83	5.12E+02	87.62	9.81E+02	5.15E+01
	5	88.23	86 - 91	1.26E+02	79.76	1.17E+03	6.29E+01
	6	94.33	91 - 102	1.95E+02	126.24	1.67E+03	5.00E+01
	7	128.68	125 - 133	6.57E+01	75.43	8.41E+02	6.06E+01
	8	186.39	183 - 190	1.20E+02	66.45	6.57E+02	5.16E+01
	9	209.82	207 - 213	5.73E+01	52.35	4.53E+02	4.12E+01
	10	239.52	235 - 244	7.34E+02	84.89	6.11E+02	5.37E+01
M	11	270.97	267 - 282	7.64E+01	40.20	2.71E+02	2.71E+01
m	12	277.98	267 - 282	3.48E+01	37.84	2.55E+02	2.62E+01
	13	295.77	292 - 299	1.63E+02	48.79	2.87E+02	3.42E+01
	14	328.41	325 - 332	5.03E+01	42.05	2.63E+02	3.25E+01

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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
15	339.00	334 -	343	1.50E+02	54.41	3.30E+02	3.99E+01
16	352.36	348 -	356	2.38E+02	57.09	3.54E+02	3.95E+01
17	439.15	437 -	442	2.56E+01	24.60	1.03E+02	1.84E+01
18	463.81	461 -	466	3.49E+01	27.39	1.16E+02	2.03E+01
19	492.23	489 -	495	2.39E+01	26.91	1.12E+02	2.06E+01
20	511.59	507 -	517	1.30E+02	46.50	2.17E+02	3.33E+01
21	583.44	579 -	589	1.44E+02	44.68	1.96E+02	3.10E+01
22	609.60	606 -	614	1.94E+02	40.34	1.33E+02	2.40E+01
23	642.60	637 -	650	5.56E+01	38.57	1.43E+02	2.92E+01
24	696.08	690 -	703	6.49E+01	41.27	1.58E+02	3.12E+01
25	727.29	722 -	731	3.14E+01	32.73	1.35E+02	2.53E+01
26	795.32	791 -	799	3.15E+01	26.09	8.51E+01	1.94E+01
27	840.94	838 -	844	1.92E+01	22.03	6.96E+01	1.66E+01
28	911.63	908 -	914	1.27E+02	29.32	8.33E+01	2.00E+01
M 29	960.44	957 -	983	2.19E+01	16.81	3.50E+01	9.73E+00
m 30	965.22	957 -	983	3.37E+01	20.75	3.50E+01	9.73E+00
m 31	969.44	957 -	983	7.48E+01	23.03	3.50E+01	9.73E+00
m 32	972.22	957 -	983	1.70E+01	21.22	3.50E+01	9.73E+00
m 33	976.22	957 -	983	1.28E+01	15.44	3.50E+01	9.73E+00
34	987.66	984 -	990	1.38E+01	16.94	4.25E+01	1.25E+01
35	1120.80	1116 -	1126	4.41E+01	30.96	1.04E+02	2.30E+01
36	1166.54	1163 -	1168	1.59E+01	14.04	2.62E+01	9.49E+00
37	1238.05	1233 -	1244	3.65E+01	30.33	9.91E+01	2.29E+01
38	1384.12	1377 -	1390	1.74E+01	19.21	2.73E+01	1.42E+01
M 39	1430.43	1428 -	1438	6.72E+00	7.21	1.22E+01	5.73E+00
m 40	1434.65	1428 -	1438	1.09E+01	12.00	1.22E+01	5.73E+00
41	1461.18	1454 -	1465	4.51E+02	44.72	2.54E+01	1.15E+01
42	1509.44	1506 -	1511	6.00E+00	7.35	6.00E+00	4.50E+00
M 43	1538.88	1531 -	1547	9.47E+00	10.87	4.46E+00	3.47E+00
m 44	1544.94	1531 -	1547	6.40E+00	7.50	6.00E+00	4.03E+00
45	1638.25	1634 -	1640	7.22E+00	6.95	3.56E+00	3.62E+00
46	1691.89	1686 -	1697	9.00E+00	11.49	1.20E+01	8.05E+00
47	1764.97	1760 -	1768	3.03E+01	14.45	1.34E+01	7.69E+00
48	1783.82	1779 -	1786	7.36E+00	8.72	7.27E+00	5.61E+00
49	1847.31	1843 -	1849	8.40E+00	7.23	3.20E+00	3.55E+00
50	1950.97	1946 -	1954	9.50E+00	9.82	9.00E+00	6.29E+00
51	2166.68	2163 -	2168	5.57E+00	6.08	2.86E+00	3.15E+00
52	2325.59	2321 -	2328	9.00E+00	6.00	0.00E+00	0.00E+00
53	2446.69	2441 -	2449	7.70E+00	7.76	4.60E+00	4.46E+00
54	2614.66	2609 -	2617	5.80E+01	15.23	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 1606038-07
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PEAK WITH NID REPORT

Peak Analysis Performed on : 6/14/2016 9:21:01AM

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

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.82	44 -	49	47.05	1.21E+02	62.35	6.81E+02	PB-210
2	62.87	59 -	66	63.10	2.06E+02	92.46	1.29E+03	TH-230 TH-234
M 3	74.94	72 -	83	75.15	3.00E+02	80.43	1.03E+03	AM-243
m 4	77.63	72 -	83	77.85	5.12E+02	87.62	9.81E+02	TI-44
5	88.23	86 -	91	88.44	1.26E+02	79.76	1.17E+03	LU-176 CD-109 SN-126
6	94.33	91 -	102	94.54	1.95E+02	126.24	1.67E+03	.....
7	128.68	125 -	133	128.87	6.57E+01	75.43	8.41E+02	.....
8	186.39	183 -	190	186.54	1.20E+02	66.45	6.57E+02	RA-226
9	209.82	207 -	213	209.96	5.73E+01	52.35	4.53E+02	CM-243 GA-67
M 10	239.52	235 -	244	239.64	7.34E+02	84.89	6.11E+02	PB-212
m 11	270.97	267 -	282	271.08	7.64E+01	40.20	2.71E+02	.....
12	277.98	267 -	282	278.09	3.48E+01	37.84	2.55E+02	CM-243 NP-239
13	295.77	292 -	299	295.87	1.63E+02	48.79	2.87E+02	PB-214
14	328.41	325 -	332	328.49	5.03E+01	42.05	2.63E+02	LA-140
15	339.00	334 -	343	339.08	1.50E+02	54.41	3.30E+02	AC-228
16	352.36	348 -	356	352.43	2.38E+02	57.09	3.54E+02	PB-214
17	439.15	437 -	442	439.18	2.56E+01	24.60	1.03E+02	.....
18	463.81	461 -	466	463.82	3.49E+01	27.39	1.16E+02	SB-125
19	492.23	489 -	495	492.23	2.39E+01	26.91	1.12E+02	.....
20	511.59	507 -	517	511.58	1.30E+02	46.50	2.17E+02	.....
21	583.44	579 -	589	583.40	1.44E+02	44.68	1.96E+02	TL-208
22	609.60	606 -	614	609.54	1.94E+02	40.34	1.33E+02	BI-214
23	642.60	637 -	650	642.53	5.56E+01	38.57	1.43E+02	.....
24	696.08	690 -	703	695.98	6.49E+01	41.27	1.58E+02	PM-144
25	727.29	722 -	731	727.18	3.14E+01	32.73	1.35E+02	BI-212
26	795.32	791 -	799	795.17	3.15E+01	26.09	8.51E+01	CS-134
27	840.94	838 -	844	840.77	1.92E+01	22.03	6.96E+01	.....
28	911.63	908 -	914	911.43	1.27E+02	29.32	8.33E+01	LU-172 AC-228
M 29	960.44	957 -	983	960.22	2.19E+01	16.81	3.50E+01	.....
m 30	965.22	957 -	983	965.00	3.37E+01	20.75	3.50E+01	.....
m 31	969.44	957 -	983	969.22	7.48E+01	23.03	3.50E+01	AC-228
m 32	972.22	957 -	983	972.00	1.70E+01	21.22	3.50E+01	.....
m 33	976.22	957 -	983	976.00	1.28E+01	15.44	3.50E+01	.....
34	987.66	984 -	990	987.43	1.38E+01	16.94	4.25E+01
35	1120.80	1116 -	1126	1120.52	4.41E+01	30.96	1.04E+02	SC-46

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								TA-182
								BI-214
	36	1163 -	1168	1166.24	1.59E+01	14.04	2.62E+01	.....
	37	1233 -	1244	1237.71	3.65E+01	30.33	9.91E+01	CO-56
	38	1377 -	1390	1383.73	1.74E+01	19.21	2.73E+01	AG-110M
M	39	1428 -	1438	1430.02	6.72E+00	7.21	1.22E+01	.....
m	40	1428 -	1438	1434.24	1.09E+01	12.00	1.22E+01	.....
	41	1454 -	1465	1460.76	4.51E+02	44.72	2.54E+01	K-40
	42	1506 -	1511	1509.00	6.00E+00	7.35	6.00E+00	.....
M	43	1531 -	1547	1538.43	9.47E+00	10.87	4.46E+00	.....
m	44	1531 -	1547	1544.49	6.40E+00	7.50	6.00E+00	.....
	45	1634 -	1640	1637.77	7.22E+00	6.95	3.56E+00	.....
	46	1686 -	1697	1691.38	9.00E+00	11.49	1.20E+01	SB-124
	47	1760 -	1768	1764.44	3.03E+01	14.45	1.34E+01	BI-214
	48	1779 -	1786	1783.28	7.36E+00	8.72	7.27E+00	.....
	49	1843 -	1849	1846.75	8.40E+00	7.23	3.20E+00	.....
	50	1946 -	1954	1950.38	9.50E+00	9.82	9.00E+00	.....
	51	2163 -	2168	2166.02	5.57E+00	6.08	2.86E+00	.....
	52	2321 -	2328	2324.89	9.00E+00	6.00	0.00E+00	.....
	53	2441 -	2449	2445.95	7.70E+00	7.76	4.60E+00	.....
	54	2609 -	2617	2613.88	5.80E+01	15.23	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 : 6/14/2016 9:21:01AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	1.21E+02	62.35	1.52E-02	1.58E-03
	2	2.06E+02	92.46	2.15E-02	1.69E-03
M	3	3.00E+02	80.43	2.36E-02	2.09E-03
m	4	5.12E+02	87.62	2.39E-02	2.18E-03
	5	1.26E+02	79.76	2.44E-02	2.52E-03
	6	1.95E+02	126.24	2.44E-02	2.38E-03
	7	6.57E+01	75.43	2.26E-02	1.70E-03
	8	1.20E+02	66.45	1.83E-02	1.42E-03
	9	5.73E+01	52.35	1.68E-02	1.31E-03

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	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	10	239.52	7.34E+02	84.89	1.52E-02	1.18E-03
M	11	270.97	7.64E+01	40.20	1.38E-02	1.03E-03
m	12	277.98	3.48E+01	37.84	1.35E-02	1.00E-03
	13	295.77	1.63E+02	48.79	1.28E-02	9.73E-04
	14	328.41	5.03E+01	42.05	1.17E-02	9.27E-04
	15	339.00	1.50E+02	54.41	1.14E-02	9.12E-04
	16	352.36	2.38E+02	57.09	1.10E-02	8.93E-04
	17	439.15	2.56E+01	24.60	9.14E-03	7.90E-04
	18	463.81	3.49E+01	27.39	8.72E-03	7.65E-04
	19	492.23	2.39E+01	26.91	8.28E-03	7.37E-04
	20	511.59	1.30E+02	46.50	8.00E-03	7.18E-04
	21	583.44	1.44E+02	44.68	7.14E-03	6.46E-04
	22	609.60	1.94E+02	40.34	6.87E-03	6.20E-04
	23	642.60	5.56E+01	38.57	6.56E-03	5.87E-04
	24	696.08	6.49E+01	41.27	6.12E-03	5.40E-04
	25	727.29	3.14E+01	32.73	5.89E-03	5.14E-04
	26	795.32	3.15E+01	26.09	5.45E-03	4.59E-04
	27	840.94	1.92E+01	22.03	5.20E-03	4.21E-04
	28	911.63	1.27E+02	29.32	4.85E-03	3.72E-04
M	29	960.44	2.19E+01	16.81	4.64E-03	3.63E-04
m	30	965.22	3.37E+01	20.75	4.62E-03	3.62E-04
m	31	969.44	7.48E+01	23.03	4.60E-03	3.61E-04
m	32	972.22	1.70E+01	21.22	4.59E-03	3.61E-04
m	33	976.22	1.28E+01	15.44	4.58E-03	3.60E-04
	34	987.66	1.38E+01	16.94	4.53E-03	3.58E-04
	35	1120.80	4.41E+01	30.96	4.08E-03	3.33E-04
	36	1166.54	1.59E+01	14.04	3.94E-03	3.25E-04
	37	1238.05	3.65E+01	30.33	3.76E-03	3.09E-04
	38	1384.12	1.74E+01	19.21	3.43E-03	2.81E-04
M	39	1430.43	6.72E+00	7.21	3.35E-03	2.74E-04
m	40	1434.65	1.09E+01	12.00	3.34E-03	2.73E-04
	41	1461.18	4.51E+02	44.72	3.29E-03	2.69E-04
	42	1509.44	6.00E+00	7.35	3.21E-03	2.62E-04
M	43	1538.88	9.47E+00	10.87	3.16E-03	2.58E-04
m	44	1544.94	6.40E+00	7.50	3.15E-03	2.57E-04
	45	1638.25	7.22E+00	6.95	3.02E-03	2.43E-04
	46	1691.89	9.00E+00	11.49	2.95E-03	2.35E-04
	47	1764.97	3.03E+01	14.45	2.86E-03	2.24E-04
	48	1783.82	7.36E+00	8.72	2.84E-03	2.21E-04
	49	1847.31	8.40E+00	7.23	2.77E-03	2.13E-04
	50	1950.97	9.50E+00	9.82	2.66E-03	2.13E-04
	51	2166.68	5.57E+00	6.08	2.49E-03	2.13E-04
	52	2325.59	9.00E+00	6.00	2.39E-03	2.13E-04
	53	2446.69	7.70E+00	7.76	2.32E-03	2.13E-04
	54	2614.66	5.80E+01	15.23	2.24E-03	2.13E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/14/2016 9:21:01AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037621.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
	1	46.82	1.21E+02	62.35	4.44E+01	1.35E+00	7.63E+01	6.24E+01
	2	62.87	2.06E+02	92.46			2.06E+02	9.25E+01
M	3	74.94	3.00E+02	80.43			3.00E+02	8.04E+01
m	4	77.63	5.12E+02	87.62	2.41E+00	1.27E+01	5.10E+02	8.85E+01
	5	88.23	1.26E+02	79.76			1.26E+02	7.98E+01
	6	94.33	1.95E+02	126.24			1.95E+02	1.26E+02
	7	128.68	6.57E+01	75.43			6.57E+01	7.54E+01
	8	186.39	1.20E+02	66.45	3.79E+01	5.70E+00	8.17E+01	6.67E+01
	9	209.82	5.73E+01	52.35			5.73E+01	5.24E+01
	10	239.52	7.34E+02	84.89	1.16E+01	5.57E+00	7.22E+02	8.51E+01
M	11	270.97	7.64E+01	40.20			7.64E+01	4.02E+01
m	12	277.98	3.48E+01	37.84			3.48E+01	3.78E+01
	13	295.77	1.63E+02	48.79	1.82E+00	4.34E+00	1.61E+02	4.90E+01
	14	328.41	5.03E+01	42.05			5.03E+01	4.20E+01
	15	339.00	1.50E+02	54.41			1.50E+02	5.44E+01
	16	352.36	2.38E+02	57.09	4.15E+00	3.98E+00	2.34E+02	5.72E+01
	17	439.15	2.56E+01	24.60			2.56E+01	2.46E+01
	18	463.81	3.49E+01	27.39			3.49E+01	2.74E+01
	19	492.23	2.39E+01	26.91			2.39E+01	2.69E+01
	20	511.59	1.30E+02	46.50	6.27E+01	4.94E+00	6.69E+01	4.68E+01
	21	583.44	1.44E+02	44.68	2.16E+00	3.21E+00	1.42E+02	4.48E+01
	22	609.60	1.94E+02	40.34	5.95E+00	3.88E+00	1.88E+02	4.05E+01
	23	642.60	5.56E+01	38.57			5.56E+01	3.86E+01
	24	696.08	6.49E+01	41.27			6.49E+01	4.13E+01
	25	727.29	3.14E+01	32.73			3.14E+01	3.27E+01
	26	795.32	3.15E+01	26.09			3.15E+01	2.61E+01
	27	840.94	1.92E+01	22.03			1.92E+01	2.20E+01
	28	911.63	1.27E+02	29.32	1.86E+00	2.46E+00	1.25E+02	2.94E+01
M	29	960.44	2.19E+01	16.81			2.19E+01	1.68E+01
m	30	965.22	3.37E+01	20.75			3.37E+01	2.07E+01
m	31	969.44	7.48E+01	23.03			7.48E+01	2.30E+01
m	32	972.22	1.70E+01	21.22			1.70E+01	2.12E+01
m	33	976.22	1.28E+01	15.44			1.28E+01	1.54E+01
	34	987.66	1.38E+01	16.94			1.38E+01	1.69E+01
	35	1120.80	4.41E+01	30.96			4.41E+01	3.10E+01

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	36	1166.54	1.59E+01	14.04		1.59E+01	1.40E+01
	37	1238.05	3.65E+01	30.33		3.65E+01	3.03E+01
	38	1384.12	1.74E+01	19.21		1.74E+01	1.92E+01
M	39	1430.43	6.72E+00	7.21		6.72E+00	7.21E+00
m	40	1434.65	1.09E+01	12.00		1.09E+01	1.20E+01
	41	1461.18	4.51E+02	44.72	2.56E+00 2.02E+00	4.49E+02	4.48E+01
	42	1509.44	6.00E+00	7.35		6.00E+00	7.35E+00
M	43	1538.88	9.47E+00	10.87		9.47E+00	1.09E+01
m	44	1544.94	6.40E+00	7.50		6.40E+00	7.50E+00
	45	1638.25	7.22E+00	6.95		7.22E+00	6.95E+00
	46	1691.89	9.00E+00	11.49		9.00E+00	1.15E+01
	47	1764.97	3.03E+01	14.45		3.03E+01	1.44E+01
	48	1783.82	7.36E+00	8.72		7.36E+00	8.72E+00
	49	1847.31	8.40E+00	7.23		8.40E+00	7.23E+00
	50	1950.97	9.50E+00	9.82		9.50E+00	9.82E+00
	51	2166.68	5.57E+00	6.08		5.57E+00	6.08E+00
	52	2325.59	9.00E+00	6.00		9.00E+00	6.00E+00
	53	2446.69	7.70E+00	7.76		7.70E+00	7.76E+00
	54	2614.66	5.80E+01	15.23	3.45E+00 1.23E+00	5.46E+01	1.53E+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 : 6/14/2016 9:21:01AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037621.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	46.82	1.21E+02	62.35	4.44E+01 1.35E+00	7.63E+01	6.24E+01
	2	62.87	2.06E+02	92.46		2.06E+02	9.25E+01
M	3	74.94	3.00E+02	80.43		3.00E+02	8.04E+01
m	4	77.63	5.12E+02	87.62	2.41E+00 1.27E+01	5.10E+02	8.85E+01
	5	88.23	1.26E+02	79.76		1.26E+02	7.98E+01
	6	94.33	1.95E+02	126.24		1.95E+02	1.26E+02
	7	128.68	6.57E+01	75.43		6.57E+01	7.54E+01
	8	186.39	1.20E+02	66.45	3.79E+01 5.70E+00	8.17E+01	6.67E+01
	9	209.82	5.73E+01	52.35		5.73E+01	5.24E+01

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	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	10	239.52	7.34E+02	84.89	1.16E+01	5.57E+00	7.22E+02	8.51E+01
M	11	270.97	7.64E+01	40.20			7.64E+01	4.02E+01
m	12	277.98	3.48E+01	37.84			3.48E+01	3.78E+01
	13	295.77	1.63E+02	48.79	1.82E+00	4.34E+00	1.61E+02	4.90E+01
	14	328.41	5.03E+01	42.05			5.03E+01	4.20E+01
	15	339.00	1.50E+02	54.41			1.50E+02	5.44E+01
	16	352.36	2.38E+02	57.09	4.15E+00	3.98E+00	2.34E+02	5.72E+01
	17	439.15	2.56E+01	24.60			2.56E+01	2.46E+01
	18	463.81	3.49E+01	27.39			3.49E+01	2.74E+01
	19	492.23	2.39E+01	26.91			2.39E+01	2.69E+01
	20	511.59	1.30E+02	46.50	6.27E+01	4.94E+00	6.69E+01	4.68E+01
	21	583.44	1.44E+02	44.68	2.16E+00	3.21E+00	1.42E+02	4.48E+01
	22	609.60	1.94E+02	40.34	5.95E+00	3.88E+00	1.88E+02	4.05E+01
	23	642.60	5.56E+01	38.57			5.56E+01	3.86E+01
	24	696.08	6.49E+01	41.27			6.49E+01	4.13E+01
	25	727.29	3.14E+01	32.73			3.14E+01	3.27E+01
	26	795.32	3.15E+01	26.09			3.15E+01	2.61E+01
	27	840.94	1.92E+01	22.03			1.92E+01	2.20E+01
	28	911.63	1.27E+02	29.32	1.86E+00	2.46E+00	1.25E+02	2.94E+01
M	29	960.44	2.19E+01	16.81			2.19E+01	1.68E+01
m	30	965.22	3.37E+01	20.75			3.37E+01	2.07E+01
m	31	969.44	7.48E+01	23.03			7.48E+01	2.30E+01
m	32	972.22	1.70E+01	21.22			1.70E+01	2.12E+01
m	33	976.22	1.28E+01	15.44			1.28E+01	1.54E+01
	34	987.66	1.38E+01	16.94			1.38E+01	1.69E+01
	35	1120.80	4.41E+01	30.96			4.41E+01	3.10E+01
	36	1166.54	1.59E+01	14.04			1.59E+01	1.40E+01
	37	1238.05	3.65E+01	30.33			3.65E+01	3.03E+01
	38	1384.12	1.74E+01	19.21			1.74E+01	1.92E+01
M	39	1430.43	6.72E+00	7.21			6.72E+00	7.21E+00
m	40	1434.65	1.09E+01	12.00			1.09E+01	1.20E+01
	41	1461.18	4.51E+02	44.72	2.56E+00	2.02E+00	4.49E+02	4.48E+01
	42	1509.44	6.00E+00	7.35			6.00E+00	7.35E+00
M	43	1538.88	9.47E+00	10.87			9.47E+00	1.09E+01
m	44	1544.94	6.40E+00	7.50			6.40E+00	7.50E+00
	45	1638.25	7.22E+00	6.95			7.22E+00	6.95E+00
	46	1691.89	9.00E+00	11.49			9.00E+00	1.15E+01
	47	1764.97	3.03E+01	14.45			3.03E+01	1.44E+01
	48	1783.82	7.36E+00	8.72			7.36E+00	8.72E+00
	49	1847.31	8.40E+00	7.23			8.40E+00	7.23E+00
	50	1950.97	9.50E+00	9.82			9.50E+00	9.82E+00
	51	2166.68	5.57E+00	6.08			5.57E+00	6.08E+00
	52	2325.59	9.00E+00	6.00			9.00E+00	6.00E+00
	53	2446.69	7.70E+00	7.76			7.70E+00	7.76E+00
	54	2614.66	5.80E+01	15.23	3.45E+00	1.23E+00	5.46E+01	1.53E+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 1606038-07
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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
K-40	0.978	1460.81	*	10.67	3.42E+01	4.47E+00
CD-109	0.993	88.03	*	3.72	3.77E+00	2.42E+00
SN-126	0.932	87.57	*	37.00	3.74E-01	2.39E-01
TL-208	0.882	583.14	*	30.22	1.76E+00	5.78E-01
		860.37		4.48		
		2614.66	*	35.85	1.82E+00	5.38E-01
PB-210	0.984	46.50	*	4.25	3.16E+00	2.61E+00
BI-212	0.769	727.17	*	11.80	1.21E+00	1.26E+00
		1620.62		2.75		
PB-212	0.786	238.63	*	44.60	2.85E+00	4.03E-01
		300.09		3.41		
BI-214	0.911	609.31	*	46.30	1.58E+00	3.69E-01
		1120.29	*	15.10	1.92E+00	1.36E+00
		1764.49	*	15.80	1.80E+00	8.68E-01
		2204.22		4.98		
PB-214	0.964	295.21	*	19.19	1.76E+00	5.50E-01
		351.92	*	37.19	1.52E+00	3.92E-01
RA-226	0.995	186.21	*	3.28	3.65E+00	7.31E+00
AC-228	0.956	338.32	*	11.40	3.09E+00	1.15E+00
		911.07	*	27.70	2.50E+00	6.17E-01
		969.11	*	16.60	2.62E+00	8.32E-01
TH-234	0.973	63.29	*	3.80	6.74E+00	3.08E+00
AM-243	0.989	74.67	*	66.00	5.15E-01	1.45E-01
CM-243	0.359	209.75	*	3.29	2.78E+00	2.55E+00
		228.14		10.60		
		277.60	*	14.00	4.94E-01	5.38E-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 1606038-07
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 9:21:01AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
m	4	77.63	1.41579E-01	8.69	Tol.	TI-44
	6	94.33	5.41435E-02	32.38	Sum	
	7	128.68	1.82510E-02	57.40		
M	11	270.97	2.12213E-02	26.31		PM-144
	14	328.41	1.39843E-02	41.76	Sum	
	17	439.15	7.12121E-03	47.97	D-Esc	
	18	463.81	9.69534E-03	39.23	Sum	
	19	492.23	6.64236E-03	56.27		
	20	511.59	1.85864E-02	34.94		
	23	642.60	1.54571E-02	34.66		
	24	696.08	1.80411E-02	31.77	Tol.	
	26	795.32	8.74249E-03	41.45	Sum	
	27	840.94	5.33436E-03	57.37		
M	29	960.44	6.07284E-03	38.44		SB-124
m	30	965.22	9.37110E-03	30.75		
m	32	972.22	4.73576E-03	62.25		
m	33	976.22	3.56364E-03	60.19		
	34	987.66	3.82143E-03	61.57		
	36	1166.54	4.42050E-03	44.10	Sum	
	37	1238.05	1.01292E-02	41.59		
	38	1384.12	4.82527E-03	55.29		
M	39	1430.43	1.86612E-03	53.67		
m	40	1434.65	3.03592E-03	54.90		
	42	1509.44	1.66667E-03	61.24		
M	43	1538.88	2.63088E-03	57.41		
m	44	1544.94	1.77891E-03	58.56		
	45	1638.25	2.00617E-03	48.09	Sum	
	46	1691.89	2.50000E-03	63.83	Tol.	
	48	1783.82	2.04545E-03	59.19		
	49	1847.31	2.33333E-03	43.03	Sum	
	50	1950.97	2.63889E-03	51.70	Sum	
	51	2166.68	1.54762E-03	54.59		
	52	2325.59	2.50000E-03	33.33		
	53	2446.69	2.13889E-03	50.40		

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

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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
K-40	0.97	1460.81	*	10.67	3.42E+01	4.47E+00
CD-109	0.99	88.03	*	3.72	3.77E+00	2.42E+00
SN-126	0.93	87.57	*	37.00	3.74E-01	2.39E-01
TL-208	0.88	583.14	*	30.22	1.76E+00	5.78E-01
		860.37		4.48		
		2614.66	*	35.85	1.82E+00	5.38E-01
PB-210	0.98	46.50	*	4.25	3.16E+00	2.61E+00
BI-212	0.76	727.17	*	11.80	1.21E+00	1.26E+00
		1620.62		2.75		
PB-212	0.78	238.63	*	44.60	2.85E+00	4.03E-01
		300.09		3.41		
BI-214	0.91	609.31	*	46.30	1.58E+00	3.69E-01
		1120.29	*	15.10	1.92E+00	1.36E+00
		1764.49	*	15.80	1.80E+00	8.68E-01
		2204.22		4.98		
PB-214	0.96	295.21	*	19.19	1.76E+00	5.50E-01
		351.92	*	37.19	1.52E+00	3.92E-01
RA-226	0.99	186.21	*	3.28	3.65E+00	7.31E+00
AC-228	0.95	338.32	*	11.40	3.09E+00	1.15E+00
		911.07	*	27.70	2.50E+00	6.17E-01
		969.11	*	16.60	2.62E+00	8.32E-01
TH-234	0.97	63.29	*	3.80	6.74E+00	3.08E+00
AM-243	0.98	74.67	*	66.00	5.15E-01	1.45E-01
CM-243	0.35	209.75	*	3.29	2.78E+00	2.55E+00
		228.14		10.60		
		277.60	*	14.00	4.94E-01	5.38E-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

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INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	3.42E+01	4.47E+00	
?	CD-109	3.77E+00	2.42E+00	
?	SN-126	3.74E-01	2.39E-01	
	TL-208	1.79E+00	3.94E-01	
	PB-210	3.16E+00	2.61E+00	
	BI-212	1.21E+00	1.26E+00	
	PB-212	2.85E+00	4.03E-01	
	BI-214	1.63E+00	3.30E-01	
	PB-214	1.60E+00	3.19E-01	
	RA-226	3.65E+00	7.31E+00	
	AC-228	2.63E+00	4.55E-01	
	TH-234	6.74E+00	3.08E+00	
	AM-243	5.15E-01	1.45E-01	
	CM-243	5.91E-01	5.27E-01	

- ? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 9:21:01AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
m	4	77.63	1.41579E-01	8.69	Tol.	TI-44
	6	94.33	5.41435E-02	32.38	Sum	
	7	128.68	1.82510E-02	57.40		
M	11	270.97	2.12213E-02	26.31		
	14	328.41	1.39843E-02	41.76	Sum	
	17	439.15	7.12121E-03	47.97	D-Esc	
	18	463.81	9.69534E-03	39.23	Sum	
	19	492.23	6.64236E-03	56.27		
	20	511.59	1.85864E-02	34.94		
	23	642.60	1.54571E-02	34.66		
	24	696.08	1.80411E-02	31.77	Tol.	PM-144
	26	795.32	8.74249E-03	41.45	Sum	
	27	840.94	5.33436E-03	57.37		
M	29	960.44	6.07284E-03	38.44		
m	30	965.22	9.37110E-03	30.75		
m	32	972.22	4.73576E-03	62.25		
m	33	976.22	3.56364E-03	60.19		
	34	987.66	3.82143E-03	61.57		
	36	1166.54	4.42050E-03	44.10	Sum	
	37	1238.05	1.01292E-02	41.59		
	38	1384.12	4.82527E-03	55.29		
M	39	1430.43	1.86612E-03	53.67		
m	40	1434.65	3.03592E-03	54.90		
	42	1509.44	1.66667E-03	61.24		
M	43	1538.88	2.63088E-03	57.41		
m	44	1544.94	1.77891E-03	58.56		
	45	1638.25	2.00617E-03	48.09	Sum	
	46	1691.89	2.50000E-03	63.83	Tol.	SB-124
	48	1783.82	2.04545E-03	59.19		
	49	1847.31	2.33333E-03	43.03	Sum	
	50	1950.97	2.63889E-03	51.70	Sum	
	51	2166.68	1.54762E-03	54.59		
	52	2325.59	2.50000E-03	33.33		
	53	2446.69	2.13889E-03	50.40		

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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	3.96E-01	1.51E+00	1.51E+00
+ NA-22	1274.54	99.94	-7.56E-04	2.19E-01	2.19E-01
+ NA-24	1368.53	99.99	-2.83E+02	8.34E+02	1.39E+03
	2754.09	99.86	5.99E+01		8.34E+02
+ AL-26	1808.65	99.76	-3.93E-02	1.03E-01	1.03E-01
+ K-40	1460.81	* 10.67	3.42E+01	2.02E+00	2.02E+00
+ @ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+ TI-44	67.88	94.40	-1.13E-03	1.31E-01	1.31E-01
	78.34	96.00	3.89E-01		1.71E-01
+ SC-46	889.25	99.98	-5.23E-02	1.72E-01	1.72E-01
	1120.51	99.99	3.02E-01		3.07E-01
+ V-48	983.52	99.98	-1.30E-01	2.20E-01	2.20E-01
	1312.10	97.50	-9.76E-02		2.92E-01
+ CR-51	320.08	9.83	1.12E+00	1.62E+00	1.62E+00
+ MN-54	834.83	99.97	-6.42E-02	1.87E-01	1.87E-01
+ CO-56	846.75	99.96	5.98E-02	1.85E-01	1.85E-01
	1037.75	14.03	-2.46E-01		1.31E+00
	1238.25	67.00	1.78E-01		4.35E-01
	1771.40	15.51	7.46E-02		1.27E+00
	2598.48	16.90	-1.26E-02		9.08E-01
+ CO-57	122.06	85.51	-1.62E-02	9.79E-02	9.79E-02
	136.48	10.60	-1.70E-01		8.81E-01
+ CO-58	810.76	99.40	-1.08E-01	1.53E-01	1.53E-01
+ FE-59	1099.22	56.50	-8.06E-02	3.71E-01	3.71E-01
	1291.56	43.20	1.91E-01		5.84E-01
+ CO-60	1173.22	100.00	1.05E-01	2.14E-01	2.15E-01
	1332.49	100.00	-1.39E-03		2.14E-01
+ ZN-65	1115.52	50.75	-9.38E-03	4.28E-01	4.28E-01
+ GA-67	93.31	35.70	2.94E+00	1.94E+00	1.94E+00
	208.95	2.24	2.66E+01		3.22E+01
	300.22	16.00	4.33E-01		4.49E+00
+ SE-75	121.11	16.70	-7.99E-02	1.64E-01	5.17E-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	3.56E-02	1.64E-01	1.64E-01
		264.65	59.80	1.17E-02		2.06E-01
		279.53	25.20	4.30E-01		5.41E-01
		400.65	11.40	-3.11E-01		1.25E+00
+	RB-82	776.52	13.00	2.61E-03	1.54E+00	1.54E+00
+	RB-83	520.41	46.00	-6.82E-02	3.14E-01	3.14E-01
		529.64	30.30	1.08E-01		5.12E-01
		552.65	16.40	2.79E-01		1.04E+00
+	KR-85	513.99	0.43	7.63E+01	4.98E+01	4.98E+01
+	SR-85	513.99	99.27	3.63E-01	2.37E-01	2.37E-01
+	Y-88	898.02	93.40	-1.11E-01	1.62E-01	1.81E-01
		1836.01	99.38	5.10E-02		1.62E-01
+	NB-93M	16.57	9.43	3.34E+01	1.60E+02	1.60E+02
+	NB-94	702.63	100.00	6.61E-03	1.58E-01	1.60E-01
		871.10	100.00	-9.93E-02		1.58E-01
+	NB-95	765.79	99.81	7.66E-02	2.19E-01	2.19E-01
+	NB-95M	235.69	25.00	1.32E-01	3.93E+00	3.93E+00
+	ZR-95	724.18	43.70	3.14E-02	3.36E-01	4.54E-01
		756.72	55.30	-3.56E-02		3.36E-01
+	MO-99	181.06	6.20	1.32E+00	9.86E+00	1.19E+01
		739.58	12.80	2.34E+00		9.86E+00
		778.00	4.50	-4.10E+00		2.66E+01
+	RU-103	497.08	89.00	1.17E-02	1.65E-01	1.65E-01
+	RU-106	621.84	9.80	5.39E-01	1.63E+00	1.63E+00
+	AG-108M	433.93	89.90	-3.75E-02	1.36E-01	1.36E-01
		614.37	90.40	-8.44E-03		1.84E-01
		722.95	90.50	-8.40E-03		1.84E-01
+	CD-109	88.03	* 3.72	3.77E+00	3.83E+00	3.83E+00
+	AG-110M	657.75	93.14	-3.15E-02	1.84E-01	1.84E-01
		677.61	10.53	4.62E-01		1.64E+00
		706.67	16.46	3.25E-01		1.02E+00
		763.93	21.98	-7.12E-01		7.63E-01
		884.67	71.63	2.70E-02		2.52E-01
		1384.27	23.94	5.41E-02		7.82E-01
+	CD-113M	263.70	0.02	9.50E+01	5.16E+02	5.16E+02
+	SN-113	255.12	1.93	-9.10E-02	2.24E-01	6.47E+00
		391.69	64.90	8.49E-02		2.24E-01
+	TE123M	159.00	84.10	1.87E-02	1.19E-01	1.19E-01
+	SB-124	602.71	97.87	-1.75E-02	1.61E-01	1.61E-01
		645.85	7.26	1.74E+00		2.63E+00
		722.78	11.10	-7.51E-02		1.65E+00
		1691.02	49.00	1.63E-01		4.09E-01
+	I-125	35.49	6.49	-8.73E-01	4.36E+00	4.36E+00
+	SB-125	176.33	6.89	5.47E-01	4.45E-01	1.46E+00
		427.89	29.33	5.87E-02		4.45E-01
		463.38	10.35	9.18E-01		1.55E+00
		600.56	17.80	2.97E-01		8.01E-01
		635.90	11.32	-5.67E-02		1.34E+00

Analysis Report for 1606038-07
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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	1.87E-02	2.54E-01	2.60E-01
		666.33	99.60	-2.67E-02		2.54E-01
		695.00	99.60	2.62E-01		3.25E-01
		720.50	53.80	1.80E-02		4.45E-01
+	SN-126	87.57	* 37.00	3.74E-01	3.81E-01	3.81E-01
+	SB-127	473.00	25.00	-2.80E-01	1.82E+00	2.25E+00
		685.20	35.70	-1.22E-01		1.82E+00
		783.80	14.70	9.11E-01		4.98E+00
+	I-129	29.78	57.00	2.71E-01	8.00E-01	8.00E-01
		33.60	13.20	-1.58E+00		2.29E+00
		39.58	7.52	-1.37E+00		2.61E+00
+	I-131	284.30	6.05	-6.10E-01	3.13E-01	3.87E+00
		364.48	81.20	-7.27E-03		3.13E-01
		636.97	7.26	-7.57E-01		4.18E+00
		722.89	1.80	-8.43E-01		1.85E+01
+	TE-132	49.72	13.10	8.61E-01	7.61E-01	5.96E+00
		228.16	88.00	-8.47E-02		7.61E-01
+	BA-133	81.00	33.00	-1.53E+00	3.04E-01	3.48E-01
		302.84	17.80	1.63E-01		6.95E-01
		356.01	60.00	-2.09E-02		3.04E-01
+	I-133	529.87	86.30	2.19E+01	1.03E+02	1.03E+02
+	XE-133	81.00	38.00	-3.84E+00	8.72E-01	8.72E-01
+	CS-134	563.23	8.38	-6.77E-01	1.72E-01	1.86E+00
		569.32	15.43	2.53E-01		1.09E+00
		604.70	97.60	-1.20E-02		1.72E-01
		795.84	85.40	1.55E-01		2.30E-01
		801.93	8.73	-3.08E-01		1.83E+00
+	CS-135	268.24	16.00	4.49E-02	8.63E-01	8.63E-01
+	I-135	1131.51	22.50	2.50E+07	3.87E+08	5.24E+08
		1260.41	28.60	-7.27E+07		3.87E+08
		1678.03	9.54	2.79E+07		7.31E+08
+	CS-136	153.22	7.46	4.63E-01	2.17E-01	1.95E+00
		163.89	4.61	-3.14E-01		3.16E+00
		176.55	13.56	4.86E-02		1.10E+00
		273.65	12.66	-5.28E-01		1.66E+00
		340.57	48.50	9.00E-01		5.65E-01
		818.50	99.70	8.98E-03		2.17E-01
		1048.07	79.60	1.09E-01		3.60E-01
		1235.34	19.70	-1.03E+00		1.87E+00
+	CS-137	661.65	85.12	1.97E-02	2.02E-01	2.02E-01
+	LA-138	788.74	34.00	5.51E-02	2.59E-01	4.91E-01
		1435.80	66.00	3.15E-02		2.59E-01
+	CE-139	165.85	80.35	2.64E-03	1.23E-01	1.23E-01
+	BA-140	162.64	6.70	1.49E-01	8.67E-01	2.22E+00
		304.84	4.50	-2.70E+00		4.00E+00
		423.70	3.20	-2.74E-01		6.18E+00
		437.55	2.00	-2.39E+00		1.01E+01
		537.32	25.00	8.29E-04		8.67E-01
+	LA-140	328.77	20.50	6.03E-01	3.08E-01	1.07E+00

Analysis Report for 1606038-07
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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	-6.08E-02	3.08E-01	4.56E-01
		815.85	23.50	-6.03E-02		9.15E-01
		1596.49	95.49	1.11E-01		3.08E-01
+	CE-141	145.44	48.40	2.73E-02	2.34E-01	2.34E-01
+	CE-143	57.36	11.80	3.08E+01	2.23E+01	6.16E+01
		293.26	42.00	6.08E-01		2.23E+01
		664.55	5.20	4.50E+01		1.87E+02
+	CE-144	133.54	10.80	6.05E-02	8.63E-01	8.63E-01
+	PM-144	476.78	42.00	5.11E-02	1.60E-01	3.39E-01
		618.01	98.60	-3.01E-02		1.60E-01
		696.49	99.49	1.46E-01		2.12E-01
+	PM-145	36.85	21.70	-1.89E-01	5.87E-01	1.09E+00
		37.36	39.70	1.92E-01		5.87E-01
		42.30	15.10	-2.28E-02		1.14E+00
		72.40	2.31	-4.67E+00		6.42E+00
+	PM-146	453.90	39.94	-1.83E-02	3.35E-01	3.35E-01
		735.90	14.01	2.56E-01		1.16E+00
		747.13	13.10	-9.22E-01		1.05E+00
+	ND-147	91.11	28.90	-6.94E-01	7.31E-01	7.31E-01
		531.02	13.10	3.54E-01		1.86E+00
+	PM-149	285.90	3.10	1.09E+01	4.84E+01	4.84E+01
+	EU-152	121.78	20.50	-6.61E-02	4.00E-01	4.00E-01
		244.69	5.40	-6.59E-01		2.75E+00
		344.27	19.13	5.43E-02		6.82E-01
		778.89	9.20	2.05E-01		1.78E+00
		964.01	10.40	-3.94E+00		2.14E+00
		1085.78	7.22	-9.31E-01		2.68E+00
		1112.02	9.60	4.36E-01		2.33E+00
		1407.95	14.94	6.08E-02		1.49E+00
+	GD-153	97.43	31.30	-3.59E-01	2.99E-01	2.99E-01
		103.18	22.20	-1.39E-02		3.89E-01
+	EU-154	123.07	40.50	1.58E-02	2.05E-01	2.05E-01
		723.30	19.70	-3.87E-02		8.48E-01
		873.19	11.50	1.15E-01		1.44E+00
		996.32	10.30	-1.39E+00		1.68E+00
		1004.76	17.90	-3.31E-01		9.73E-01
		1274.45	35.50	-2.12E-03		6.14E-01
+	EU-155	86.50	30.90	1.35E-01	4.10E-01	4.10E-01
		105.30	20.70	6.39E-02		4.35E-01
+	EU-156	811.77	10.40	-1.07E+00	1.98E+00	1.98E+00
		1153.47	7.20	8.49E-01		4.38E+00
		1230.71	8.90	4.59E-01		3.69E+00
+	HO-166M	184.41	72.60	2.25E-01	1.74E-01	1.74E-01
		280.45	29.60	1.17E-02		4.33E-01
		410.94	11.10	1.99E-01		1.26E+00
		711.69	54.10	-1.05E-01		2.77E-01
+	TM-171	66.72	0.14	2.64E+01	9.10E+01	9.10E+01
+	HF-172	81.75	4.52	-9.97E+00	7.81E-01	2.47E+00
		125.81	11.30	-6.72E-01		7.81E-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	2.61E-01	7.67E-01	1.07E+00
		810.06	16.63	-1.39E-01		2.18E+00
		912.12	15.25	1.11E+01		5.32E+00
		1093.66	62.50	2.24E-01		7.67E-01
+	LU-173	100.72	5.24	-6.37E-01	6.75E-01	1.65E+00
		272.11	21.20	4.86E-01		6.75E-01
+	HF-175	343.40	84.00	-2.19E-02	1.79E-01	1.79E-01
+	LU-176	88.34	13.30	1.06E+00	1.29E-01	9.91E-01
		201.83	86.00	9.56E-03		1.38E-01
		306.78	94.00	4.33E-02		1.29E-01
+	TA-182	67.75	41.20	-2.72E-03	3.16E-01	3.16E-01
		1121.30	34.90	7.82E-01		8.49E-01
		1189.05	16.23	4.89E-01		1.56E+00
		1221.41	26.98	2.00E-01		9.49E-01
		1231.02	11.44	-2.06E-01		2.04E+00
+	IR-192	308.46	29.68	-1.74E-01	3.04E-01	4.32E-01
		468.07	48.10	1.58E-01		3.04E-01
+	HG-203	279.19	77.30	9.04E-02	1.91E-01	1.91E-01
+	BI-207	569.67	97.72	-2.12E-02	1.68E-01	1.68E-01
		1063.62	74.90	-2.08E-02		2.73E-01
+	TL-208	583.14	* 30.22	1.76E+00	3.05E-01	8.08E-01
		860.37	4.48	2.16E+00		4.61E+00
		2614.66	* 35.85	1.82E+00		3.05E-01
+	BI-210M	262.00	45.00	1.21E-02	2.59E-01	2.59E-01
		300.00	23.00	5.47E-02		5.68E-01
+	PB-210	46.50	* 4.25	3.16E+00	4.20E+00	4.20E+00
+	PB-211	404.84	2.90	3.88E-01	4.82E+00	4.82E+00
		831.96	2.90	1.03E+00		6.76E+00
+	BI-212	727.17	* 11.80	1.21E+00	2.05E+00	2.05E+00
		1620.62	2.75	4.68E-01		6.23E+00
+	PB-212	238.63	* 44.60	2.85E+00	4.39E-01	4.39E-01
		300.09	3.41	3.69E-01		3.83E+00
+	BI-214	609.31	* 46.30	1.58E+00	4.36E-01	4.36E-01
		1120.29	* 15.10	1.92E+00		2.12E+00
		1764.49	* 15.80	1.80E+00		1.07E+00
		2204.22	4.98	1.53E+00		3.80E+00
+	PB-214	295.21	* 19.19	1.76E+00	5.36E-01	7.79E-01
		351.92	* 37.19	1.52E+00		5.36E-01
+	RN-219	401.80	6.50	6.49E-01	2.17E+00	2.17E+00
+	RA-223	323.87	3.88	-9.25E-02	3.18E+00	3.18E+00
+	RA-224	240.98	3.95	3.26E+01	6.52E+00	6.52E+00
+	RA-225	40.00	31.00	-4.73E-01	8.99E-01	8.99E-01
+	RA-226	186.21	* 3.28	3.65E+00	4.84E+00	4.84E+00
+	TH-227	50.10	8.40	2.41E-01	1.67E+00	1.67E+00
		236.00	11.50	6.13E-02		1.83E+00
		256.20	6.30	4.06E-01		1.92E+00
+	AC-228	338.32	* 11.40	3.09E+00	8.60E-01	1.70E+00
		911.07	* 27.70	2.50E+00		8.60E-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	2.62E+00	8.60E-01	2.60E+00
+	TH-230	48.44		16.90	2.21E-01	9.56E-01	9.56E-01
		62.85		4.60	5.68E+00		3.22E+00
		67.67		0.37	-2.89E-01		3.35E+01
+	PA-231	283.67		1.60	-1.15E+00	5.37E+00	7.31E+00
		302.67		2.30	1.26E+00		5.37E+00
+	TH-231	25.64		14.70	-9.69E-02	1.76E+00	5.77E+00
		84.21		6.40	4.68E-01		1.76E+00
+	PA-233	311.98		38.60	7.11E-03	3.92E-01	3.92E-01
+	PA-234	131.20		20.40	6.09E-02	4.79E-01	4.79E-01
		733.99		8.80	-2.06E-01		1.84E+00
		946.00		12.00	-2.20E-01		1.30E+00
+	PA-234M	1001.03		0.92	1.07E+01	2.16E+01	2.16E+01
+	TH-234	63.29	*	3.80	6.74E+00	4.83E+00	4.83E+00
+	U-235	143.76		10.50	1.87E-01	9.01E-01	9.01E-01
		163.35		4.70	-2.01E-01		2.02E+00
		205.31		4.70	-2.38E-01		2.45E+00
+	NP-237	86.50		12.60	3.29E-01	1.00E+00	1.00E+00
+	NP-239	106.10		22.70	2.42E+00	4.26E+00	4.26E+00
		228.18		10.70	-1.34E+00		1.20E+01
		277.60		14.10	2.46E+00		9.72E+00
+	AM-241	59.54		35.90	-3.61E-01	3.53E-01	3.53E-01
+	AM-243	74.67	*	66.00	5.15E-01	3.66E-01	3.66E-01
+	CM-243	209.75	*	3.29	2.78E+00	1.15E+00	4.13E+00
		228.14		10.60	-1.28E-01		1.15E+00
		277.60	*	14.00	4.94E-01		1.87E+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

: 00521

Analysis Report for 1606038-07
CP-5018 10-15

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	1.51E+00	1.51E+00	3.96E-01	7.11E-01
NA-22	1274.54	99.94	2.19E-01	2.19E-01	-7.56E-04	9.96E-02
NA-24	1368.53	99.99	1.39E+03	8.34E+02	-2.83E+02	6.17E+02
	2754.09	99.86	8.34E+02		5.99E+01	2.96E+02
AL-26	1808.65	99.76	1.03E-01	1.03E-01	-3.93E-02	3.85E-02
+ K-40	1460.81	* 10.67	2.02E+00	2.02E+00	3.42E+01	9.06E-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	1.31E-01	1.31E-01	-1.13E-03	6.39E-02
	78.34	96.00	1.71E-01		3.89E-01	8.39E-02
SC-46	889.25	99.98	1.72E-01	1.72E-01	-5.23E-02	7.83E-02
	1120.51	99.99	3.07E-01		3.02E-01	1.44E-01
V-48	983.52	99.98	2.20E-01	2.20E-01	-1.30E-01	9.89E-02
	1312.10	97.50	2.92E-01		-9.76E-02	1.31E-01
CR-51	320.08	9.83	1.62E+00	1.62E+00	1.12E+00	7.75E-01
MN-54	834.83	99.97	1.87E-01	1.87E-01	-6.42E-02	8.65E-02
CO-56	846.75	99.96	1.85E-01	1.85E-01	5.98E-02	8.48E-02
	1037.75	14.03	1.31E+00		-2.46E-01	5.90E-01
	1238.25	67.00	4.35E-01		1.78E-01	2.02E-01
	1771.40	15.51	1.27E+00		7.46E-02	5.45E-01
	2598.48	16.90	9.08E-01		-1.26E-02	3.52E-01
CO-57	122.06	85.51	9.79E-02	9.79E-02	-1.62E-02	4.71E-02
	136.48	10.60	8.81E-01		-1.70E-01	4.25E-01
CO-58	810.76	99.40	1.53E-01	1.53E-01	-1.08E-01	6.92E-02
FE-59	1099.22	56.50	3.71E-01	3.71E-01	-8.06E-02	1.68E-01
	1291.56	43.20	5.84E-01		1.91E-01	2.66E-01
CO-60	1173.22	100.00	2.15E-01	2.14E-01	1.05E-01	9.80E-02
	1332.49	100.00	2.14E-01		-1.39E-03	9.66E-02
ZN-65	1115.52	50.75	4.28E-01	4.28E-01	-9.38E-03	1.96E-01
GA-67	93.31	35.70	1.94E+00	1.94E+00	2.94E+00	9.49E-01
	208.95	2.24	3.22E+01		2.66E+01	1.56E+01
	300.22	16.00	4.49E+00		4.33E-01	2.15E+00
SE-75	121.11	16.70	5.17E-01	1.64E-01	-7.99E-02	2.49E-01
	136.00	59.20	1.64E-01		3.56E-02	7.93E-02
	264.65	59.80	2.06E-01		1.17E-02	9.87E-02
	279.53	25.20	5.41E-01		4.30E-01	2.60E-01
	400.65	11.40	1.25E+00		-3.11E-01	5.92E-01
RB-82	776.52	13.00	1.54E+00	1.54E+00	2.61E-03	7.09E-01
RB-83	520.41	46.00	3.14E-01	3.14E-01	-6.82E-02	1.46E-01
	529.64	30.30	5.12E-01		1.08E-01	2.39E-01
	552.65	16.40	1.04E+00		2.79E-01	4.90E-01
KR-85	513.99	0.43	4.98E+01	4.98E+01	7.63E+01	2.38E+01
SR-85	513.99	99.27	2.37E-01	2.37E-01	3.63E-01	1.13E-01
Y-88	898.02	93.40	1.81E-01	1.62E-01	-1.11E-01	8.21E-02
	1836.01	99.38	1.62E-01		5.10E-02	6.72E-02
NB-93M	16.57	9.43	1.60E+02	1.60E+02	3.34E+01	7.76E+01
NB-94	702.63	100.00	1.60E-01	1.58E-01	6.61E-03	7.39E-02
	871.10	100.00	1.58E-01		-9.93E-02	7.20E-02
NB-95	765.79	99.81	2.19E-01	2.19E-01	7.66E-02	1.02E-01
NB-95M	235.69	25.00	3.93E+00	3.93E+00	1.32E-01	1.92E+00
ZR-95	724.18	43.70	4.54E-01	3.36E-01	3.14E-02	2.12E-01
	756.72	55.30	3.36E-01		-3.56E-02	1.56E-01

Analysis Report for 1606038-07
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
MO-99	181.06	6.20	1.19E+01	9.86E+00	1.32E+00	5.71E+00	
	739.58	12.80	9.86E+00		2.34E+00	4.56E+00	
	778.00	4.50	2.66E+01		-4.10E+00	1.22E+01	
RU-103	497.08	89.00	1.65E-01	1.65E-01	1.17E-02	7.67E-02	
RU-106	621.84	9.80	1.63E+00	1.63E+00	5.39E-01	7.58E-01	
AG-108M	433.93	89.90	1.36E-01	1.36E-01	-3.75E-02	6.36E-02	
	614.37	90.40	1.84E-01		-8.44E-03	8.62E-02	
	722.95	90.50	1.84E-01		-8.40E-03	8.54E-02	
+ CD-109	88.03	* 3.72	3.83E+00	3.83E+00	3.77E+00	1.88E+00	
AG-110M	657.75	93.14	1.84E-01	1.84E-01	-3.15E-02	8.57E-02	
	677.61	10.53	1.64E+00		4.62E-01	7.66E-01	
	706.67	16.46	1.02E+00		3.25E-01	4.75E-01	
	763.93	21.98	7.63E-01		-7.12E-01	3.52E-01	
	884.67	71.63	2.52E-01		2.70E-02	1.16E-01	
	1384.27	23.94	7.82E-01		5.41E-02	3.46E-01	
	263.70	0.02	5.16E+02		5.16E+02	9.50E+01	2.47E+02
SN-113	255.12	1.93	6.47E+00	2.24E-01	-9.10E-02	3.10E+00	
TE123M	391.69	64.90	2.24E-01	1.19E-01	8.49E-02	1.06E-01	
	159.00	84.10	1.19E-01		1.87E-02	5.75E-02	
	602.71	97.87	1.61E-01		1.61E-01	-1.75E-02	7.46E-02
SB-124	645.85	7.26	2.63E+00	1.61E-01	1.74E+00	1.23E+00	
	722.78	11.10	1.65E+00		-7.51E-02	7.63E-01	
	1691.02	49.00	4.09E-01		1.63E-01	1.77E-01	
I-125	35.49	6.49	4.36E+00	4.36E+00	-8.73E-01	2.11E+00	
SB-125	176.33	6.89	1.46E+00	4.45E-01	5.47E-01	7.04E-01	
	427.89	29.33	4.45E-01		5.87E-02	2.09E-01	
	463.38	10.35	1.55E+00		9.18E-01	7.34E-01	
	600.56	17.80	8.01E-01		2.97E-01	3.71E-01	
	635.90	11.32	1.34E+00		-5.67E-02	6.19E-01	
	414.70	83.30	2.60E-01		2.54E-01	1.87E-02	1.23E-01
	666.33	99.60	2.54E-01		-2.67E-02	1.18E-01	
695.00	99.60	3.25E-01	2.62E-01	1.53E-01			
720.50	53.80	4.45E-01	1.80E-02	2.05E-01			
+ SN-126	87.57	* 37.00	3.81E-01	3.81E-01	3.74E-01	1.86E-01	
SB-127	473.00	25.00	2.25E+00	1.82E+00	-2.80E-01	1.05E+00	
	685.20	35.70	1.82E+00		-1.22E-01	8.43E-01	
	783.80	14.70	4.98E+00		9.11E-01	2.30E+00	
I-129	29.78	57.00	8.00E-01	8.00E-01	2.71E-01	3.87E-01	
	33.60	13.20	2.29E+00		-1.58E+00	1.11E+00	
	39.58	7.52	2.61E+00		-1.37E+00	1.26E+00	
I-131	284.30	6.05	3.87E+00	3.13E-01	-6.10E-01	1.84E+00	
	364.48	81.20	3.13E-01		-7.27E-03	1.48E-01	
	636.97	7.26	4.18E+00		-7.57E-01	1.94E+00	
	722.89	1.80	1.85E+01		-8.43E-01	8.57E+00	
TE-132	49.72	13.10	5.96E+00	7.61E-01	8.61E-01	2.89E+00	
	228.16	88.00	7.61E-01		-8.47E-02	3.66E-01	
BA-133	81.00	33.00	3.48E-01	3.04E-01	-1.53E+00	1.70E-01	
	302.84	17.80	6.95E-01		1.63E-01	3.31E-01	
	356.01	60.00	3.04E-01		-2.09E-02	1.47E-01	
I-133	529.87	86.30	1.03E+02	1.03E+02	2.19E+01	4.83E+01	
XE-133	81.00	38.00	8.72E-01	8.72E-01	-3.84E+00	4.25E-01	
CS-134	563.23	8.38	1.86E+00	1.72E-01	-6.77E-01	8.69E-01	
	569.32	15.43	1.09E+00		2.53E-01	5.11E-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	1.72E-01	1.72E-01	-1.20E-02	8.04E-02
	795.84	85.40	2.30E-01		1.55E-01	1.07E-01
	801.93	8.73	1.83E+00		-3.08E-01	8.39E-01
CS-135	268.24	16.00	8.63E-01	8.63E-01	4.49E-02	4.15E-01
I-135	1131.51	22.50	5.24E+08	3.87E+08	2.50E+07	2.38E+08
	1260.41	28.60	3.87E+08		-7.27E+07	1.73E+08
	1678.03	9.54	7.31E+08		2.79E+07	2.90E+08
CS-136	153.22	7.46	1.95E+00	2.17E-01	4.63E-01	9.38E-01
	163.89	4.61	3.16E+00		-3.14E-01	1.52E+00
	176.55	13.56	1.10E+00		4.86E-02	5.31E-01
	273.65	12.66	1.66E+00		-5.28E-01	8.00E-01
	340.57	48.50	5.65E-01		9.00E-01	2.72E-01
	818.50	99.70	2.17E-01		8.98E-03	9.81E-02
	1048.07	79.60	3.60E-01		1.09E-01	1.64E-01
	1235.34	19.70	1.87E+00		-1.03E+00	8.60E-01
CS-137	661.65	85.12	2.02E-01	2.02E-01	1.97E-02	9.43E-02
LA-138	788.74	34.00	4.91E-01	2.59E-01	5.51E-02	2.26E-01
	1435.80	66.00	2.59E-01		3.15E-02	1.13E-01
CE-139	165.85	80.35	1.23E-01	1.23E-01	2.64E-03	5.90E-02
BA-140	162.64	6.70	2.22E+00	8.67E-01	1.49E-01	1.07E+00
	304.84	4.50	4.00E+00		-2.70E+00	1.90E+00
	423.70	3.20	6.18E+00		-2.74E-01	2.90E+00
	437.55	2.00	1.01E+01		-2.39E+00	4.75E+00
	537.32	25.00	8.67E-01		8.29E-04	4.04E-01
	537.32	25.00	8.67E-01		8.29E-04	4.04E-01
LA-140	328.77	20.50	1.07E+00	3.08E-01	6.03E-01	5.14E-01
	487.03	45.50	4.56E-01		-6.08E-02	2.13E-01
	815.85	23.50	9.15E-01		-6.03E-02	4.13E-01
	1596.49	95.49	3.08E-01		1.11E-01	1.35E-01
CE-141	145.44	48.40	2.34E-01	2.34E-01	2.73E-02	1.13E-01
CE-143	57.36	11.80	6.16E+01	2.23E+01	3.08E+01	2.99E+01
	293.26	42.00	2.23E+01		6.08E-01	1.08E+01
	664.55	5.20	1.87E+02		4.50E+01	8.72E+01
CE-144	133.54	10.80	8.63E-01	8.63E-01	6.05E-02	4.16E-01
PM-144	476.78	42.00	3.39E-01	1.60E-01	5.11E-02	1.59E-01
	618.01	98.60	1.60E-01		-3.01E-02	7.44E-02
	696.49	99.49	2.12E-01		1.46E-01	1.00E-01
PM-145	36.85	21.70	1.09E+00	5.87E-01	-1.89E-01	5.27E-01
	37.36	39.70	5.87E-01		1.92E-01	2.84E-01
	42.30	15.10	1.14E+00		-2.28E-02	5.49E-01
	72.40	2.31	6.42E+00		-4.67E+00	3.14E+00
PM-146	453.90	39.94	3.35E-01	3.35E-01	-1.83E-02	1.57E-01
	735.90	14.01	1.16E+00		2.56E-01	5.35E-01
	747.13	13.10	1.05E+00		-9.22E-01	4.76E-01
ND-147	91.11	28.90	7.31E-01	7.31E-01	-6.94E-01	3.57E-01
	531.02	13.10	1.86E+00		3.54E-01	8.70E-01
PM-149	285.90	3.10	4.84E+01	4.84E+01	1.09E+01	2.31E+01
EU-152	121.78	20.50	4.00E-01	4.00E-01	-6.61E-02	1.92E-01
	244.69	5.40	2.75E+00		-6.59E-01	1.33E+00
	344.27	19.13	6.82E-01		5.43E-02	3.24E-01
	778.89	9.20	1.78E+00		2.05E-01	8.19E-01
	964.01	10.40	2.14E+00		-3.94E+00	9.95E-01
	1085.78	7.22	2.68E+00		-9.31E-01	1.22E+00
	1112.02	9.60	2.33E+00		4.36E-01	1.07E+00

Analysis Report for 1606038-07
CP-5018 10-15

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	1.49E+00	4.00E-01	6.08E-02	6.74E-01
GD-153	97.43	31.30	2.99E-01	2.99E-01	-3.59E-01	1.45E-01
	103.18	22.20	3.89E-01		-1.39E-02	1.88E-01
EU-154	123.07	40.50	2.05E-01	2.05E-01	1.58E-02	9.87E-02
	723.30	19.70	8.48E-01		-3.87E-02	3.93E-01
	873.19	11.50	1.44E+00		1.15E-01	6.55E-01
	996.32	10.30	1.68E+00		-1.39E+00	7.61E-01
	1004.76	17.90	9.73E-01		-3.31E-01	4.41E-01
	1274.45	35.50	6.14E-01		-2.12E-03	2.79E-01
EU-155	86.50	30.90	4.10E-01	4.10E-01	1.35E-01	2.00E-01
	105.30	20.70	4.35E-01		6.39E-02	2.10E-01
EU-156	811.77	10.40	1.98E+00	1.98E+00	-1.07E+00	8.97E-01
	1153.47	7.20	4.38E+00		8.49E-01	2.01E+00
	1230.71	8.90	3.69E+00		4.59E-01	1.69E+00
HO-166M	184.41	72.60	1.74E-01	1.74E-01	2.25E-01	8.42E-02
	280.45	29.60	4.33E-01		1.17E-02	2.07E-01
	410.94	11.10	1.26E+00		1.99E-01	5.96E-01
	711.69	54.10	2.77E-01		-1.05E-01	1.27E-01
TM-171	66.72	0.14	9.10E+01	9.10E+01	2.64E+01	4.43E+01
HF-172	81.75	4.52	2.47E+00	7.81E-01	-9.97E+00	1.20E+00
	125.81	11.30	7.81E-01		-6.72E-01	3.76E-01
LU-172	181.53	20.60	1.07E+00	7.67E-01	2.61E-01	5.14E-01
	810.06	16.63	2.18E+00		-1.39E-01	9.99E-01
	912.12	15.25	5.32E+00		1.11E+01	2.55E+00
	1093.66	62.50	7.67E-01		2.24E-01	3.52E-01
LU-173	100.72	5.24	1.65E+00	6.75E-01	-6.37E-01	7.97E-01
	272.11	21.20	6.75E-01		4.86E-01	3.25E-01
HF-175	343.40	84.00	1.79E-01	1.79E-01	-2.19E-02	8.55E-02
LU-176	88.34	13.30	9.91E-01	1.29E-01	1.06E+00	4.85E-01
	201.83	86.00	1.38E-01		9.56E-03	6.67E-02
	306.78	94.00	1.29E-01		4.33E-02	6.13E-02
TA-182	67.75	41.20	3.16E-01	3.16E-01	-2.72E-03	1.54E-01
	1121.30	34.90	8.49E-01		7.82E-01	3.98E-01
	1189.05	16.23	1.56E+00		4.89E-01	7.19E-01
	1221.41	26.98	9.49E-01		2.00E-01	4.37E-01
	1231.02	11.44	2.04E+00		-2.06E-01	9.33E-01
IR-192	308.46	29.68	4.32E-01	3.04E-01	-1.74E-01	2.05E-01
	468.07	48.10	3.04E-01		1.58E-01	1.42E-01
HG-203	279.19	77.30	1.91E-01	1.91E-01	9.04E-02	9.14E-02
BI-207	569.67	97.72	1.68E-01	1.68E-01	-2.12E-02	7.87E-02
	1063.62	74.90	2.73E-01		-2.08E-02	1.25E-01
+ TL-208	583.14	* 30.22	8.08E-01	3.05E-01	1.76E+00	3.87E-01
	860.37	4.48	4.61E+00		2.16E+00	2.15E+00
	2614.66	* 35.85	3.05E-01		1.82E+00	1.07E-01
BI-210M	262.00	45.00	2.59E-01	2.59E-01	1.21E-02	1.24E-01
	300.00	23.00	5.68E-01		5.47E-02	2.71E-01
+ PB-210	46.50	* 4.25	4.20E+00	4.20E+00	3.16E+00	2.04E+00
PB-211	404.84	2.90	4.82E+00	4.82E+00	3.88E-01	2.28E+00
	831.96	2.90	6.76E+00		1.03E+00	3.14E+00
+ BI-212	727.17	* 11.80	2.05E+00	2.05E+00	1.21E+00	9.73E-01
	1620.62	2.75	6.23E+00		4.68E-01	2.68E+00
+ PB-212	238.63	* 44.60	4.39E-01	4.39E-01	2.85E+00	2.14E-01
	300.09	3.41	3.83E+00		3.69E-01	1.83E+00

Analysis Report for 1606038-07
CP-5018 10-15

	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	4.36E-01	4.36E-01	1.58E+00	2.07E-01
		1120.29 *		15.10	2.12E+00		1.92E+00	1.00E+00
		1764.49 *		15.80	1.07E+00		1.80E+00	4.56E-01
		2204.22		4.98	3.80E+00		1.53E+00	1.60E+00
+	PB-214	295.21 *		19.19	7.79E-01	5.36E-01	1.76E+00	3.75E-01
		351.92 *		37.19	5.36E-01		1.52E+00	2.59E-01
	RN-219	401.80		6.50	2.17E+00	2.17E+00	6.49E-01	1.03E+00
	RA-223	323.87		3.88	3.18E+00	3.18E+00	-9.25E-02	1.51E+00
	RA-224	240.98		3.95	6.52E+00	6.52E+00	3.26E+01	3.20E+00
	RA-225	40.00		31.00	8.99E-01	8.99E-01	-4.73E-01	4.34E-01
+	RA-226	186.21 *		3.28	4.84E+00	4.84E+00	3.65E+00	2.36E+00
	TH-227	50.10		8.40	1.67E+00	1.67E+00	2.41E-01	8.09E-01
		236.00		11.50	1.83E+00		6.13E-02	8.97E-01
		256.20		6.30	1.92E+00		4.06E-01	9.21E-01
+	AC-228	338.32 *		11.40	1.70E+00	8.60E-01	3.09E+00	8.21E-01
		911.07 *		27.70	8.60E-01		2.50E+00	4.03E-01
		969.11 *		16.60	2.60E+00		2.62E+00	1.25E+00
	TH-230	48.44		16.90	9.56E-01	9.56E-01	2.21E-01	4.65E-01
		62.85		4.60	3.22E+00		5.68E+00	1.57E+00
		67.67		0.37	3.35E+01		-2.89E-01	1.63E+01
	PA-231	283.67		1.60	7.31E+00	5.37E+00	-1.15E+00	3.49E+00
		302.67		2.30	5.37E+00		1.26E+00	2.56E+00
	TH-231	25.64		14.70	5.77E+00	1.76E+00	-9.69E-02	2.79E+00
		84.21		6.40	1.76E+00		4.68E-01	8.56E-01
	PA-233	311.98		38.60	3.92E-01	3.92E-01	7.11E-03	1.87E-01
	PA-234	131.20		20.40	4.79E-01	4.79E-01	6.09E-02	2.32E-01
		733.99		8.80	1.84E+00		-2.06E-01	8.47E-01
		946.00		12.00	1.30E+00		-2.20E-01	5.84E-01
	PA-234M	1001.03		0.92	2.16E+01	2.16E+01	1.07E+01	9.90E+00
+	TH-234	63.29 *		3.80	4.83E+00	4.83E+00	6.74E+00	2.37E+00
	U-235	143.76		10.50	9.01E-01	9.01E-01	1.87E-01	4.35E-01
		163.35		4.70	2.02E+00		-2.01E-01	9.74E-01
		205.31		4.70	2.45E+00		-2.38E-01	1.18E+00
	NP-237	86.50		12.60	1.00E+00	1.00E+00	3.29E-01	4.90E-01
	NP-239	106.10		22.70	4.26E+00	4.26E+00	2.42E+00	2.06E+00
		228.18		10.70	1.20E+01		-1.34E+00	5.80E+00
		277.60		14.10	9.72E+00		2.46E+00	4.66E+00
	AM-241	59.54		35.90	3.53E-01	3.53E-01	-3.61E-01	1.72E-01
+	AM-243	74.67 *		66.00	3.66E-01	3.66E-01	5.15E-01	1.81E-01
+	CM-243	209.75 *		3.29	4.13E+00	1.15E+00	2.78E+00	2.00E+00
		228.14		10.60	1.15E+00		-1.28E-01	5.52E-01
		277.60 *		14.00	1.87E+00		4.94E-01	9.15E-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 1606038-07
CP-5018 10-15

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: CP-5018 10-15

Elapsed Live time: 3600
 Elapsed Real Time: 3613

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	3	143	141	108	91	81	100	73
17:	78	76	73	73	60	67	74	62
25:	63	57	40	56	45	55	66	55
33:	57	51	53	59	66	46	59	65
41:	54	52	62	52	61	76	131	91
49:	50	63	74	60	67	77	65	83
57:	84	69	62	89	104	89	117	207
65:	107	78	112	101	91	97	113	107
73:	114	129	276	230	245	405	140	87
81:	85	88	70	109	117	74	139	169
89:	85	128	118	81	183	191	70	58
97:	59	61	50	72	55	34	48	57
105:	56	63	57	56	65	42	65	52
113:	66	64	43	56	50	53	44	39
121:	44	42	48	40	43	42	56	57
129:	69	76	48	49	46	56	54	42
137:	47	52	47	46	57	45	39	76
145:	49	37	46	39	51	50	59	51
153:	34	45	43	39	38	46	43	48
161:	50	38	50	43	39	44	39	43
169:	37	42	47	39	38	48	37	42
177:	52	37	38	37	41	44	37	31
185:	53	85	120	46	40	36	47	42
193:	30	42	33	38	34	38	51	46
201:	29	29	29	39	30	39	31	34
209:	51	67	35	37	29	32	31	32
217:	40	35	30	41	26	40	41	33
225:	27	33	36	29	37	26	31	27
233:	31	34	26	36	35	89	396	199
241:	79	81	65	33	29	29	23	37
249:	20	30	30	21	23	27	34	28
257:	20	22	26	17	28	21	26	20
265:	22	27	20	25	24	41	60	30
273:	26	28	16	24	28	38	30	24
281:	20	19	22	21	14	28	17	27
289:	21	19	20	17	16	18	72	107
297:	40	22	15	20	34	15	15	18
305:	22	17	21	15	24	15	15	19
313:	17	27	16	16	23	22	27	12
321:	21	19	20	11	17	18	19	26
329:	40	23	21	18	19	25	22	16
337:	17	53	90	42	16	25	9	15
345:	25	13	23	20	17	17	35	139
353:	130	23	17	17	19	16	17	17
361:	23	15	13	16	10	21	17	16

369: 10 14 22 10 19 16 18 17

Sample Title: CP-5018 10-15

Channel	10	14	22	10	19	16	18	17
377:	16	12	11	20	17	16	8	14
385:	10	19	14	11	15	17	12	15
393:	18	13	23	14	14	13	13	15
401:	19	16	13	16	20	18	10	16
409:	15	12	19	15	16	13	14	14
417:	17	13	13	13	14	9	12	12
425:	12	12	12	10	13	15	10	13
433:	8	19	9	4	9	14	14	20
441:	12	8	12	13	13	9	8	12
449:	11	15	16	5	17	16	9	8
457:	9	11	11	19	10	12	24	30
465:	13	4	9	15	12	11	14	11
473:	3	10	14	10	9	10	17	11
481:	12	15	11	8	10	11	8	14
489:	6	14	13	11	19	9	8	5
497:	10	3	12	14	10	6	5	8
505:	9	13	9	14	11	29	65	40
513:	20	14	14	12	10	8	8	8
521:	9	12	9	17	3	12	9	11
529:	15	14	8	5	10	10	10	7
537:	11	15	4	8	10	11	10	14
545:	11	16	8	14	6	12	17	8
553:	11	7	13	14	11	9	14	10
561:	8	18	8	6	11	12	10	17
569:	8	12	13	12	9	15	11	13
577:	8	6	2	11	10	15	63	73
585:	28	9	8	9	14	12	9	9
593:	6	13	12	4	6	6	6	6
601:	8	9	6	13	8	5	18	16
609:	65	110	24	7	9	6	10	11
617:	6	10	11	9	5	9	14	8
625:	7	7	6	13	9	14	5	12
633:	11	8	8	4	2	14	8	12
641:	5	6	14	14	6	10	11	7
649:	11	7	7	11	11	9	7	9
657:	7	13	9	10	10	11	10	7
665:	11	7	10	8	6	9	7	6
673:	11	9	8	12	7	10	9	7
681:	10	1	10	7	6	10	6	10
689:	6	7	10	6	12	17	17	11
697:	18	11	7	7	11	6	4	6
705:	9	9	10	8	7	6	8	6
713:	4	8	5	6	9	4	8	4
721:	7	6	7	7	10	13	15	20
729:	4	10	7	7	4	11	2	11
737:	7	8	6	5	5	10	5	7
745:	5	4	5	2	6	4	11	7
753:	7	7	10	11	11	6	4	3
761:	9	8	5	9	6	6	4	12
769:	20	6	4	8	7	8	2	5
777:	7	8	7	7	6	5	7	6
785:	9	9	8	5	6	7	3	8
793:	6	6	20	16	6	6	3	6

801: 4 2 8 9 8 7 12 6

Sample Title: CP-5018 10-15

Channel	4	2	8	9	8	7	12	6
809:	2	5	5	5	4	3	7	4
817:	5	3	3	3	5	7	2	8
825:	11	8	7	7	9	8	14	6
833:	4	8	10	8	8	7	9	11
841:	11	8	5	3	4	8	8	8
849:	8	4	5	6	5	3	6	5
857:	3	4	5	14	17	13	6	6
865:	8	7	10	7	4	8	5	3
873:	5	2	6	8	5	4	8	8
881:	5	9	9	5	5	6	3	4
889:	4	9	6	2	5	9	5	7
897:	4	4	6	2	5	7	8	5
905:	7	4	6	1	3	20	61	65
913:	17	2	6	6	8	4	7	8
921:	5	9	4	6	7	5	2	4
929:	7	8	2	4	2	5	7	6
937:	3	1	9	4	3	5	7	6
945:	2	3	5	3	2	6	4	6
953:	10	4	4	3	2	6	4	12
961:	2	6	8	17	17	5	4	20
969:	35	24	4	10	3	4	2	8
977:	2	2	8	6	5	3	1	4
985:	4	3	6	7	8	3	4	3
993:	7	3	8	4	3	5	2	8
1001:	13	7	4	4	4	4	5	4
1009:	3	3	4	5	6	6	4	7
1017:	6	5	5	5	5	3	7	3
1025:	5	8	8	3	3	3	6	6
1033:	8	5	3	4	1	7	7	3
1041:	4	7	0	6	8	7	6	4
1049:	7	2	1	5	3	5	6	2
1057:	3	6	7	7	3	9	6	5
1065:	4	7	8	4	8	4	3	2
1073:	3	1	5	5	12	3	6	2
1081:	3	10	3	9	7	4	3	3
1089:	6	4	9	3	8	8	2	7
1097:	5	4	2	8	2	3	5	6
1105:	2	2	2	7	6	7	7	8
1113:	5	7	6	4	9	2	8	18
1121:	25	12	4	6	4	4	5	8
1129:	3	6	4	3	4	7	7	3
1137:	6	3	3	6	4	9	5	9
1145:	3	4	5	2	9	6	6	3
1153:	5	7	8	6	5	4	4	4
1161:	3	2	4	4	2	6	12	1
1169:	2	5	3	9	7	5	4	5
1177:	4	5	7	9	5	8	5	5
1185:	5	8	5	6	9	10	4	6
1193:	6	5	4	8	9	5	6	8
1201:	4	5	11	11	4	7	5	5
1209:	4	13	2	1	6	4	2	8
1217:	4	9	8	9	6	8	5	2
1225:	7	4	10	5	5	10	5	2

1233: 3 8 6 5 11 10 11 11

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Channel	3	8	6	5	11	10	11	11
1241:	4	6	7	4	7	6	5	4
1249:	7	5	3	3	8	3	1	7
1257:	2	5	3	2	4	6	3	5
1265:	4	3	8	2	4	0	5	3
1273:	4	8	5	2	3	4	3	6
1281:	5	7	2	5	2	3	3	6
1289:	2	5	4	6	5	2	2	3
1297:	3	5	4	3	0	4	5	3
1305:	4	6	2	2	7	3	2	6
1313:	3	1	0	3	3	5	3	2
1321:	3	7	5	3	4	2	4	11
1329:	4	2	2	1	4	3	1	2
1337:	4	3	2	2	3	1	2	4
1345:	3	3	3	1	0	2	1	4
1353:	2	0	2	0	2	2	3	1
1361:	3	2	4	3	2	1	4	3
1369:	2	3	3	1	2	4	0	3
1377:	2	4	2	6	1	2	2	2
1385:	2	1	2	2	3	0	0	5
1393:	1	3	4	2	1	3	2	5
1401:	4	3	5	0	3	5	3	7
1409:	4	3	1	4	3	2	0	2
1417:	7	1	3	1	1	2	4	2
1425:	3	3	2	2	2	4	1	1
1433:	1	5	2	5	1	0	0	1
1441:	0	1	2	2	1	0	2	1
1449:	1	1	2	0	2	1	2	3
1457:	2	8	20	148	186	81	10	3
1465:	0	1	0	2	2	1	3	0
1473:	0	2	1	1	1	1	0	1
1481:	1	1	1	1	1	0	0	1
1489:	4	2	0	3	0	2	2	4
1497:	3	2	3	0	3	3	1	1
1505:	1	0	1	2	3	3	0	1
1513:	0	3	0	0	1	1	0	1
1521:	1	4	0	1	1	0	0	0
1529:	2	0	0	1	1	1	2	1
1537:	1	4	2	4	1	2	3	1
1545:	3	1	0	1	0	1	0	1
1553:	1	0	2	0	3	4	0	1
1561:	1	1	0	1	1	0	0	1
1569:	0	0	1	1	1	1	0	1
1577:	2	0	2	2	2	2	2	0
1585:	0	0	3	4	4	3	2	7
1593:	2	2	0	2	0	3	1	0
1601:	1	0	0	1	1	3	0	1
1609:	0	2	1	2	1	0	1	0
1617:	2	1	3	2	0	2	1	2
1625:	2	2	1	1	2	0	2	0
1633:	0	1	0	0	2	4	2	0
1641:	0	1	0	0	0	0	1	2
1649:	0	1	2	0	0	0	0	1
1657:	2	1	0	2	1	2	2	0

1665: 1 0 0 1 0 0 2 0

Sample Title: CP-5018 10-15

Channel	1	2	3	4	5	6	7	8
1673:	1	1	0	0	1	0	1	2
1681:	0	0	0	1	1	0	1	3
1689:	1	0	1	2	4	1	1	1
1697:	0	1	1	1	3	1	0	0
1705:	1	0	1	0	0	2	0	1
1713:	1	3	0	0	0	1	1	1
1721:	2	0	0	0	2	2	0	0
1729:	3	2	1	1	1	1	0	0
1737:	0	1	0	1	1	0	0	0
1745:	1	1	3	0	2	0	1	0
1753:	1	1	1	0	1	1	0	0
1761:	1	0	4	13	15	0	4	0
1769:	3	1	1	1	0	1	2	0
1777:	2	1	1	2	0	1	2	3
1785:	2	0	0	1	0	0	1	0
1793:	0	0	0	1	1	2	1	2
1801:	2	0	1	1	0	0	0	0
1809:	2	0	0	0	1	0	1	0
1817:	0	1	0	2	0	1	0	0
1825:	0	2	1	0	1	0	0	0
1833:	0	2	0	1	4	1	0	0
1841:	1	0	0	0	1	3	3	3
1849:	0	1	2	1	2	0	0	2
1857:	0	0	0	0	0	1	0	0
1865:	1	2	1	1	2	1	0	1
1873:	0	0	0	0	0	0	1	1
1881:	1	0	0	2	0	1	0	1
1889:	0	2	1	2	0	2	0	1
1897:	1	0	1	0	0	3	2	1
1905:	2	0	0	0	2	1	0	1
1913:	0	0	3	1	3	1	0	1
1921:	0	1	1	2	0	2	0	0
1929:	1	1	0	0	0	1	0	0
1937:	0	1	0	0	0	0	1	2
1945:	1	0	1	2	1	4	1	4
1953:	1	0	1	0	0	1	1	1
1961:	1	1	0	0	1	1	0	1
1969:	0	1	2	2	0	0	1	0
1977:	1	0	1	0	1	0	0	1
1985:	1	1	0	1	0	1	0	0
1993:	0	0	1	0	0	2	0	0
2001:	1	0	1	0	0	1	2	2
2009:	0	0	1	1	1	0	0	1
2017:	1	1	1	1	0	0	1	0
2025:	0	0	5	1	1	3	1	2
2033:	1	1	1	0	0	3	0	1
2041:	2	1	0	0	0	1	1	0
2049:	0	1	0	0	1	0	0	0
2057:	0	1	0	0	0	2	2	0
2065:	0	0	0	0	0	0	0	0
2073:	0	0	1	0	1	0	0	0
2081:	0	1	1	0	0	2	1	1
2089:	1	1	2	1	2	0	0	0

2097: 0 1 0 3 1 4 2 2

Sample Title: CP-5018 10-15

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

2529: 1 0 0 0 0 0 0 0 0

Sample Title: CP-5018 10-15

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	0	0	0	0	0	0	0
2545:	1	1	1	0	1	0	0	0	0
2553:	0	0	1	0	1	1	1	0	0
2561:	1	0	0	0	0	0	0	0	1
2569:	0	1	0	0	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0	0
2585:	1	0	1	0	2	0	1	1	1
2593:	0	0	0	0	2	2	0	0	0
2601:	0	0	0	0	1	1	1	0	0
2609:	0	1	1	5	15	16	15	5	5
2617:	0	0	0	0	0	0	0	0	0
2625:	1	0	2	1	0	0	0	0	0
2633:	0	0	0	0	1	0	0	0	0
2641:	0	1	0	0	0	0	0	0	0
2649:	0	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	2	0	0	0
2665:	0	0	2	0	0	1	0	0	0
2673:	0	0	1	0	0	0	0	0	0
2681:	0	1	0	0	0	1	0	1	1
2689:	0	0	0	0	1	0	1	1	1
2697:	0	1	0	0	0	1	0	0	0
2705:	0	1	0	0	0	0	0	0	0
2713:	1	0	0	0	0	0	0	0	0
2721:	0	1	0	0	0	1	0	0	0
2729:	0	0	2	0	0	0	1	0	0
2737:	1	0	0	0	0	0	1	0	0
2745:	1	0	0	0	0	0	0	0	1
2753:	0	0	0	1	0	0	0	0	1
2761:	1	0	0	0	0	0	0	0	0
2769:	0	0	0	0	0	1	0	0	0
2777:	1	1	1	1	0	0	0	0	0
2785:	0	0	1	0	0	0	0	0	1
2793:	0	0	0	1	0	1	0	0	0
2801:	0	0	0	0	0	0	0	0	0
2809:	0	1	0	0	1	0	1	0	0
2817:	0	0	0	0	0	0	0	0	0
2825:	0	0	0	0	1	0	0	0	0
2833:	2	0	0	0	0	0	0	0	0
2841:	1	1	0	0	0	0	0	1	1
2849:	0	0	0	0	1	0	1	0	0
2857:	0	0	0	0	0	1	0	0	0
2865:	0	0	0	1	0	0	0	0	0
2873:	0	0	0	1	0	0	0	1	1
2881:	0	0	0	0	0	1	0	0	0
2889:	0	1	0	2	1	0	0	0	0
2897:	0	0	0	0	0	0	0	0	0
2905:	0	1	0	1	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0	0
2921:	0	1	0	0	1	0	0	0	0
2929:	0	1	0	1	1	1	2	0	0
2937:	0	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	1	0	0	0
2953:	1	0	0	0	1	0	0	1	1

2961: 1 1 0 0 0 0 0 1

Sample Title: CP-5018 10-15

Channel	1	2	3	4	5	6	7	8
2969:	0	0	1	0	0	0	0	0
2977:	0	0	0	0	1	1	0	0
2985:	0	0	0	0	1	0	0	0
2993:	0	1	0	0	0	0	0	0
3001:	0	0	0	0	1	1	0	0
3009:	0	0	0	0	0	0	0	0
3017:	1	1	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	1
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	1	0	0	0
3065:	0	0	0	0	0	2	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	1	0	0
3097:	1	2	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	0	0	1
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	1	0	1	0	0
3145:	0	0	0	0	0	0	0	0
3153:	1	0	0	0	0	0	0	1
3161:	0	0	1	0	1	0	0	0
3169:	1	0	0	0	0	0	0	0
3177:	0	0	0	1	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	1	2	0	0	0
3201:	0	0	0	0	0	0	0	1
3209:	0	1	1	0	0	0	0	0
3217:	0	0	0	0	1	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	1	2	0
3241:	0	1	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	1	0	1	0	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	1	0	0
3289:	0	0	1	0	1	0	0	0
3297:	0	0	0	0	0	0	0	1
3305:	0	0	1	1	0	0	0	0
3313:	0	0	0	0	1	0	0	0
3321:	0	0	0	0	1	0	0	0
3329:	0	0	0	0	0	0	0	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	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	2	1

3393: 1 1 0 1 0 0 0 0

Sample Title: CP-5018 10-15

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	0	0	0	0
3409:	0	0	1	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	1	0
3425:	0	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0	1
3441:	0	0	2	0	0	0	0	0	0
3449:	0	0	0	0	0	1	0	1	1
3457:	0	0	0	0	1	0	0	0	0
3465:	0	0	0	0	0	0	0	0	1
3473:	0	0	1	0	0	0	0	0	0
3481:	0	0	1	0	1	0	0	0	0
3489:	0	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0	0
3513:	0	1	0	0	0	0	0	0	0
3521:	0	0	2	0	0	0	0	0	0
3529:	0	1	1	0	0	0	0	0	0
3537:	0	1	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0	1
3553:	0	0	0	2	1	0	0	0	0
3561:	1	0	0	1	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0	1
3577:	0	0	0	1	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0	0
3593:	0	0	0	1	0	0	1	0	0
3601:	0	0	0	0	0	0	1	0	0
3609:	0	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0	0
3633:	0	0	0	0	1	0	0	0	0
3641:	0	1	0	1	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	0	0	2	0	0	0	0
3665:	2	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0	0
3681:	1	0	0	2	0	0	0	0	0
3689:	1	0	0	0	0	0	0	1	0
3697:	0	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0	0
3721:	1	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	1	1
3737:	0	0	0	0	0	0	0	0	1
3745:	0	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	1	0	1	0
3761:	0	0	0	0	0	3	0	0	0
3769:	0	0	0	0	0	0	0	1	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	0	1	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	1	0
3801:	0	0	0	0	0	0	0	0	1
3809:	0	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0	0

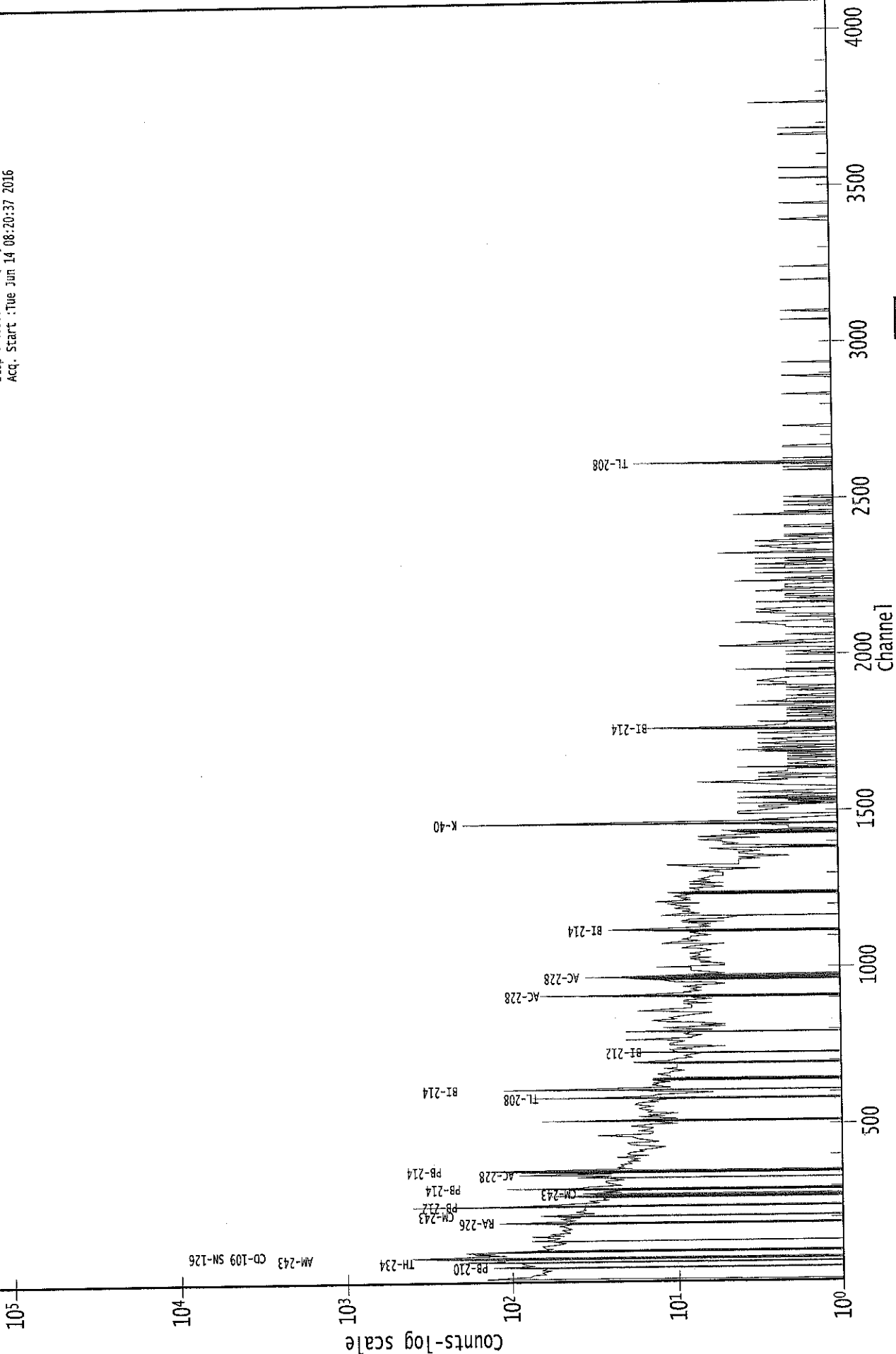
3825: 0 0 0 0 0 0 0 0

Sample Title: CP-5018 10-15

Channel								
3833:	0	0	0	1	0	0	0	1
3841:	0	0	0	0	0	1	0	0
3849:	0	1	0	0	0	0	1	0
3857:	1	0	0	0	0	0	0	0
3865:	0	1	0	0	0	0	0	0
3873:	0	0	0	0	0	1	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	1	0	0	0	0	1
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	1	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	1
3945:	0	0	0	0	0	1	0	0
3953:	0	0	0	0	0	0	1	0
3961:	0	0	0	0	0	1	0	0
3969:	0	0	0	0	1	0	0	0
3977:	0	0	0	1	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:	1	0	0	0	0	0	0	1
4017:	0	0	0	0	0	0	0	0
4025:	0	1	0	0	0	0	1	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	1	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	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

0000038802.CNF

Live Time : 3600.000 sec
Real Time : 3612.690 sec
Start : 1: 0.7(keV)
Stop : 4096:4097.0(keV)
Acq. Start : Tue Jun 14 08:20:37 2016



Analysis Report for 1606038-08
CP-5019 00-02

6114

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-08
Sample Description : CP-5019 00-02
Sample Type : SOIL

Sample Size : 4.958E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 8:16:15AM
Acquisition Started : 6/14/2016 9:36:30AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.0 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

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

Sample Number : 38806

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Ag
6/14/16

Analysis Report for 1606038-08
CP-5019 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 10:36:35AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096
 Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	32.59	32.95	0.0000	0.00
2	76.65	76.99	0.0000	0.00
3	87.80	88.13	0.0000	0.00
4	90.80	91.14	0.0000	0.00
5	99.15	99.49	0.0000	0.00
6	186.55	186.85	0.0000	0.00
7	210.12	210.42	0.0000	0.00
8	217.77	218.07	0.0000	0.00
9	239.92	240.21	0.0000	0.00
10	270.32	270.59	0.0000	0.00
11	295.87	296.14	0.0000	0.00
12	300.77	301.03	0.0000	0.00
13	328.91	329.17	0.0000	0.00
14	338.80	339.06	0.0000	0.00
15	352.45	352.70	0.0000	0.00
16	452.63	452.85	0.0000	0.00
17	476.37	476.57	0.0000	0.00
18	511.47	511.67	0.0000	0.00
19	566.30	566.48	0.0000	0.00
20	583.65	583.82	0.0000	0.00
21	609.89	610.05	0.0000	0.00
22	662.80	662.94	0.0000	0.00
23	727.22	727.34	0.0000	0.00
24	742.41	742.53	0.0000	0.00
25	754.45	754.56	0.0000	0.00
26	795.73	795.82	0.0000	0.00
27	884.43	884.49	0.0000	0.00
28	912.07	912.12	0.0000	0.00
29	933.87	933.91	0.0000	0.00
30	936.54	936.59	0.0000	0.00
31	965.16	965.20	0.0000	0.00
32	969.77	969.80	0.0000	0.00
33	1072.11	1072.11	0.0000	0.00
34	1121.68	1121.66	0.0000	0.00
35	1287.97	1287.89	0.0000	0.00
36	1315.16	1315.07	0.0000	0.00
37	1330.46	1330.36	0.0000	0.00
38	1336.22	1336.12	0.0000	0.00
39	1402.78	1402.66	0.0000	0.00
40	1408.31	1408.19	0.0000	0.00
41	1461.57	1461.43	0.0000	0.00
42	1532.57	1532.40	0.0000	0.00

Analysis Report for 1606038-08
CP-5019 00-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1570.26	1570.08	0.0000	0.00
44	1588.07	1587.88	0.0000	0.00
45	1593.83	1593.64	0.0000	0.00
46	1664.04	1663.82	0.0000	0.00
47	1712.71	1712.47	0.0000	0.00
48	1761.48	1761.22	0.0000	0.00
49	1765.65	1765.40	0.0000	0.00
50	1848.37	1848.08	0.0000	0.00
51	1943.84	1943.52	0.0000	0.00
52	2104.42	2104.04	0.0000	0.00
53	2119.01	2118.62	0.0000	0.00
54	2205.20	2204.78	0.0000	0.00
55	2615.45	2614.87	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-08
CP-5019 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 10:36:35AM

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	32.59	31 -	35	32.95	5.45E+01	48.01	4.53E+02	2.18
2	76.65	72 -	81	76.99	6.71E+02	126.46	1.90E+03	3.03
m 3	87.80	83 -	97	88.13	1.38E+02	56.67	6.89E+02	1.48
m 4	90.80	83 -	97	91.14	1.28E+02	55.10	6.21E+02	1.49
5	99.15	98 -	102	99.49	5.34E+01	52.15	5.53E+02	2.20
6	186.55	183 -	190	186.85	2.10E+02	70.82	6.97E+02	1.70
7	210.12	208 -	213	210.42	3.89E+01	48.14	4.28E+02	1.58
8	217.77	214 -	225	218.07	8.69E+01	80.52	7.64E+02	4.96
9	239.92	234 -	245	240.21	6.65E+02	94.59	7.86E+02	1.92
10	270.32	268 -	274	270.59	3.83E+01	46.10	3.61E+02	1.24
M 11	295.87	284 -	304	296.14	2.06E+02	41.69	2.08E+02	1.66
m 12	300.77	284 -	304	301.03	4.19E+01	33.14	2.22E+02	1.74
13	328.91	326 -	332	329.17	3.79E+01	40.98	2.80E+02	1.91
14	338.80	335 -	342	339.06	1.14E+02	49.72	3.36E+02	1.35
15	352.45	348 -	358	352.70	3.76E+02	67.26	4.06E+02	1.83
16	452.63	449 -	456	452.85	3.94E+01	33.41	1.59E+02	2.61
17	476.37	474 -	480	476.57	2.78E+01	28.16	1.26E+02	3.58
18	511.47	506 -	517	511.67	1.44E+02	53.18	2.80E+02	3.10
19	566.30	560 -	573	566.48	4.94E+01	44.32	1.97E+02	7.42
20	583.65	579 -	588	583.82	1.68E+02	42.72	1.64E+02	1.62
21	609.89	606 -	614	610.05	2.66E+02	43.81	1.34E+02	1.50
22	662.80	656 -	669	662.94	9.60E+01	48.99	2.24E+02	2.01
23	727.22	723 -	730	727.34	6.72E+01	28.64	9.16E+01	2.44
24	742.41	739 -	746	742.53	3.05E+01	22.00	6.11E+01	2.57
25	754.45	752 -	760	754.56	2.14E+01	26.41	9.33E+01	2.62
26	795.73	793 -	801	795.82	2.58E+01	25.71	8.65E+01	2.33
27	884.43	880 -	888	884.49	2.91E+01	24.66	7.38E+01	3.58
28	912.07	908 -	917	912.12	9.78E+01	36.48	1.32E+02	1.82
M 29	933.87	929 -	947	933.91	1.61E+01	25.54	8.10E+01	2.88
m 30	936.54	929 -	947	936.59	1.56E+01	21.55	6.30E+01	2.39
M 31	965.16	961 -	974	965.20	2.32E+01	22.20	6.84E+01	2.18
m 32	969.77	961 -	974	969.80	8.15E+01	25.04	5.60E+01	1.88
33	1072.11	1065 -	1078	1072.11	3.40E+01	29.80	8.20E+01	7.90
34	1121.68	1118 -	1126	1121.66	5.47E+01	30.30	1.07E+02	1.78
35	1287.97	1275 -	1300	1287.89	4.87E+01	54.02	1.79E+02	15.33
36	1315.16	1312 -	1318	1315.07	1.30E+01	14.35	2.80E+01	2.88
37	1330.46	1328 -	1333	1330.36	1.26E+01	13.45	2.48E+01	2.82
38	1336.22	1334 -	1339	1336.12	1.69E+01	11.87	1.42E+01	3.56
M 39	1402.78	1400 -	1410	1402.66	1.08E+01	8.87	1.18E+01	2.89
m 40	1408.31	1400 -	1410	1408.19	1.68E+01	11.52	6.50E+00	2.49

Analysis Report for 1606038-08

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1461.57	1455 - 1467		1461.43	6.16E+02	55.92	7.79E+01	2.27
42	1532.57	1529 - 1535		1532.40	1.12E+01	8.02	3.54E+00	3.56
43	1570.26	1567 - 1573		1570.08	5.50E+00	7.78	7.00E+00	2.73
44	1588.07	1586 - 1590		1587.88	9.96E+00	8.65	8.07E+00	2.54
45	1593.83	1591 - 1596		1593.64	9.24E+00	10.63	1.55E+01	2.76
46	1664.04	1661 - 1666		1663.82	8.70E+00	7.00	2.60E+00	2.48
47	1712.71	1708 - 1715		1712.47	7.00E+00	8.72	8.00E+00	2.83
M 48	1761.48	1760 - 1768		1761.22	8.37E+00	4.24	2.00E+00	2.79
m 49	1765.65	1760 - 1768		1765.40	4.21E+01	14.44	7.00E+00	2.39
50	1848.37	1844 - 1851		1848.08	1.20E+01	6.93	0.00E+00	1.90
51	1943.84	1939 - 1946		1943.52	7.27E+00	8.72	7.45E+00	2.49
52	2104.42	2100 - 2111		2104.04	1.06E+01	13.71	1.89E+01	1.07
53	2119.01	2114 - 2121		2118.62	5.36E+00	6.63	3.29E+00	1.24
54	2205.20	2201 - 2207		2204.78	1.80E+01	8.49	0.00E+00	2.60
55	2615.45	2611 - 2619		2614.87	5.75E+01	16.13	5.08E+00	1.47

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 10:36:35AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	32.59	31 -	35	5.45E+01	48.01	4.53E+02	3.76E+01
2	76.65	72 -	81	6.71E+02	126.46	1.90E+03	9.48E+01
m 3	87.80	83 -	97	1.38E+02	56.67	6.89E+02	4.31E+01
m 4	90.80	83 -	97	1.28E+02	55.10	6.21E+02	4.10E+01
5	99.15	98 -	102	5.34E+01	52.15	5.53E+02	4.12E+01
6	186.55	183 -	190	2.10E+02	70.82	6.97E+02	5.31E+01
7	210.12	208 -	213	3.89E+01	48.14	4.28E+02	3.82E+01
8	217.77	214 -	225	8.69E+01	80.52	7.64E+02	6.44E+01
9	239.92	234 -	245	6.65E+02	94.59	7.86E+02	6.52E+01
10	270.32	268 -	274	3.83E+01	46.10	3.61E+02	3.65E+01
M 11	295.87	284 -	304	2.06E+02	41.69	2.08E+02	2.37E+01
m 12	300.77	284 -	304	4.19E+01	33.14	2.22E+02	2.45E+01
13	328.91	326 -	332	3.79E+01	40.98	2.80E+02	3.21E+01

Analysis Report for 1606038-08

CP-5019 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
14	338.80	335 -	342	1.14E+02	49.72	3.36E+02	3.69E+01
15	352.45	348 -	358	3.76E+02	67.26	4.06E+02	4.52E+01
16	452.63	449 -	456	3.94E+01	33.41	1.59E+02	2.54E+01
17	476.37	474 -	480	2.78E+01	28.16	1.26E+02	2.15E+01
18	511.47	506 -	517	1.44E+02	53.18	2.80E+02	3.90E+01
19	566.30	560 -	573	4.94E+01	44.32	1.97E+02	1.57E+01
20	583.65	579 -	588	1.68E+02	42.72	1.64E+02	2.79E+01
21	609.89	606 -	614	2.66E+02	43.81	1.34E+02	2.40E+01
22	662.80	656 -	669	9.60E+01	48.99	2.24E+02	1.61E+01
23	727.22	723 -	730	6.72E+01	28.64	9.16E+01	1.93E+01
24	742.41	739 -	746	3.05E+01	22.00	6.11E+01	1.56E+01
25	754.45	752 -	760	2.14E+01	26.41	9.33E+01	2.03E+01
26	795.73	793 -	801	2.58E+01	25.71	8.65E+01	1.94E+01
27	884.43	880 -	888	2.91E+01	24.66	7.38E+01	1.82E+01
28	912.07	908 -	917	9.78E+01	36.48	1.32E+02	2.52E+01
M 29	933.87	929 -	947	1.61E+01	25.54	8.10E+01	1.48E+01
m 30	936.54	929 -	947	1.56E+01	21.55	6.30E+01	1.30E+01
M 31	965.16	961 -	974	2.32E+01	22.20	6.84E+01	1.36E+01
m 32	969.77	961 -	974	8.15E+01	25.04	5.60E+01	1.23E+01
33	1072.11	1065 -	1078	3.40E+01	29.80	8.20E+01	1.19E+01
34	1121.68	1118 -	1126	5.47E+01	30.30	1.07E+02	2.17E+01
35	1287.97	1275 -	1300	4.87E+01	54.02	1.79E+02	4.29E+01
36	1315.16	1312 -	1318	1.30E+01	14.35	2.80E+01	1.02E+01
37	1330.46	1328 -	1333	1.26E+01	13.45	2.48E+01	9.40E+00
38	1336.22	1334 -	1339	1.69E+01	11.87	1.42E+01	7.04E+00
M 39	1402.78	1400 -	1410	1.08E+01	8.87	1.18E+01	5.66E+00
m 40	1408.31	1400 -	1410	1.68E+01	11.52	6.50E+00	4.19E+00
41	1461.57	1455 -	1467	6.16E+02	55.92	7.79E+01	2.12E+01
42	1532.57	1529 -	1535	1.12E+01	8.02	3.54E+00	3.61E+00
43	1570.26	1567 -	1573	5.50E+00	7.78	7.00E+00	5.10E+00
44	1588.07	1586 -	1590	9.96E+00	8.65	8.07E+00	4.86E+00
45	1593.83	1591 -	1596	9.24E+00	10.63	1.55E+01	7.17E+00
46	1664.04	1661 -	1666	8.70E+00	7.00	2.60E+00	3.10E+00
47	1712.71	1708 -	1715	7.00E+00	8.72	8.00E+00	5.70E+00
M 48	1761.48	1760 -	1768	8.37E+00	4.24	2.00E+00	2.33E+00
m 49	1765.65	1760 -	1768	4.21E+01	14.44	7.00E+00	4.35E+00
50	1848.37	1844 -	1851	1.20E+01	6.93	0.00E+00	0.00E+00
51	1943.84	1939 -	1946	7.27E+00	8.72	7.45E+00	5.63E+00
52	2104.42	2100 -	2111	1.06E+01	13.71	1.89E+01	9.92E+00
53	2119.01	2114 -	2121	5.36E+00	6.63	3.29E+00	3.91E+00
54	2205.20	2201 -	2207	1.80E+01	8.49	0.00E+00	0.00E+00
55	2615.45	2611 -	2619	5.75E+01	16.13	5.08E+00	4.53E+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 1606038-08
CP-5019 00-02

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/14/2016 10:36:35AM

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

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	31 -	35	32.95	5.45E+01	48.01	4.53E+02	.....
	2	72 -	81	76.99	6.71E+02	126.46	1.90E+03	.....
m	3	83 -	97	88.13	1.38E+02	56.67	6.89E+02	SN-126 CD-109 LU-176
	4	83 -	97	91.14	1.28E+02	55.10	6.21E+02	ND-147
m	5	98 -	102	99.49	5.34E+01	52.15	5.53E+02	.....
	6	183 -	190	186.85	2.10E+02	70.82	6.97E+02	RA-226
	7	208 -	213	210.42	3.89E+01	48.14	4.28E+02	CM-243
	8	214 -	225	218.07	8.69E+01	80.52	7.64E+02	.....
	9	234 -	245	240.21	6.65E+02	94.59	7.86E+02	.....
	10	268 -	274	270.59	3.83E+01	46.10	3.61E+02	.....
M	11	284 -	304	296.14	2.06E+02	41.69	2.08E+02	PB-214
m	12	284 -	304	301.03	4.19E+01	33.14	2.22E+02	GA-67 PB-212 BI-210M
	13	326 -	332	329.17	3.79E+01	40.98	2.80E+02	LA-140
	14	335 -	342	339.06	1.14E+02	49.72	3.36E+02	AC-228
	15	348 -	358	352.70	3.76E+02	67.26	4.06E+02	PB-214
	16	449 -	456	452.85	3.94E+01	33.41	1.59E+02	.....
	17	474 -	480	476.57	2.78E+01	28.16	1.26E+02	PM-144
	18	506 -	517	511.67	1.44E+02	53.18	2.80E+02	.....
	19	560 -	573	566.48	4.94E+01	44.32	1.97E+02	.....
	20	579 -	588	583.82	1.68E+02	42.72	1.64E+02	TL-208
	21	606 -	614	610.05	2.66E+02	43.81	1.34E+02	BI-214
	22	656 -	669	662.94	9.60E+01	48.99	2.24E+02	.....
	23	723 -	730	727.34	6.72E+01	28.64	9.16E+01	BI-212
	24	739 -	746	742.53	3.05E+01	22.00	6.11E+01	.....
	25	752 -	760	754.56	2.14E+01	26.41	9.33E+01	.....
	26	793 -	801	795.82	2.58E+01	25.71	8.65E+01	CS-134
	27	880 -	888	884.49	2.91E+01	24.66	7.38E+01	AG-110M
	28	908 -	917	912.12	9.78E+01	36.48	1.32E+02	LU-172 AC-228
M	29	929 -	947	933.91	1.61E+01	25.54	8.10E+01	.....
m	30	929 -	947	936.59	1.56E+01	21.55	6.30E+01	.....
M	31	961 -	974	965.20	2.32E+01	22.20	6.84E+01	.....
m	32	961 -	974	969.80	8.15E+01	25.04	5.60E+01	AC-228
	33	1065 -	1078	1072.11	3.40E+01	29.80	8.20E+01	.....

Analysis Report for 1606038-08
CP-5019 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	34	1121.68	1118 - 1126	1121.66	5.47E+01	30.30	1.07E+02	TA-182
	35	1287.97	1275 - 1300	1287.89	4.87E+01	54.02	1.79E+02	.....
	36	1315.16	1312 - 1318	1315.07	1.30E+01	14.35	2.80E+01	.....
	37	1330.46	1328 - 1333	1330.36	1.26E+01	13.45	2.48E+01	.....
	38	1336.22	1334 - 1339	1336.12	1.69E+01	11.87	1.42E+01	.....
M	39	1402.78	1400 - 1410	1402.66	1.08E+01	8.87	1.18E+01	.....
m	40	1408.31	1400 - 1410	1408.19	1.68E+01	11.52	6.50E+00	EU-152
	41	1461.57	1455 - 1467	1461.43	6.16E+02	55.92	7.79E+01	K-40
	42	1532.57	1529 - 1535	1532.40	1.12E+01	8.02	3.54E+00	.....
	43	1570.26	1567 - 1573	1570.08	5.50E+00	7.78	7.00E+00	.....
	44	1588.07	1586 - 1590	1587.88	9.96E+00	8.65	8.07E+00	.....
	45	1593.83	1591 - 1596	1593.64	9.24E+00	10.63	1.55E+01	.....
	46	1664.04	1661 - 1666	1663.82	8.70E+00	7.00	2.60E+00	.....
	47	1712.71	1708 - 1715	1712.47	7.00E+00	8.72	8.00E+00	.....
M	48	1761.48	1760 - 1768	1761.22	8.37E+00	4.24	2.00E+00	.....
m	49	1765.65	1760 - 1768	1765.40	4.21E+01	14.44	7.00E+00	.....
	50	1848.37	1844 - 1851	1848.08	1.20E+01	6.93	0.00E+00	.....
	51	1943.84	1939 - 1946	1943.52	7.27E+00	8.72	7.45E+00	.....
	52	2104.42	2100 - 2111	2104.04	1.06E+01	13.71	1.89E+01	.....
	53	2119.01	2114 - 2121	2118.62	5.36E+00	6.63	3.29E+00	.....
	54	2205.20	2201 - 2207	2204.78	1.80E+01	8.49	0.00E+00	BI-214
	55	2615.45	2611 - 2619	2614.87	5.75E+01	16.13	5.08E+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 : 6/14/2016 10:36:35AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
	1	32.59	5.45E+01	48.01	6.42E-03	1.78E-03
	2	76.65	6.71E+02	126.46	2.77E-02	2.36E-03
m	3	87.80	1.38E+02	56.67	2.85E-02	2.73E-03
m	4	90.80	1.28E+02	55.10	2.86E-02	2.69E-03
	5	99.15	5.34E+01	52.15	2.85E-02	2.52E-03
	6	186.55	2.10E+02	70.82	2.24E-02	2.02E-03
	7	210.12	3.89E+01	48.14	2.08E-02	1.85E-03
	8	217.77	8.69E+01	80.52	2.04E-02	1.79E-03

Analysis Report for 1606038-08
CP-5019 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	9	239.92	6.65E+02	94.59	1.92E-02	1.63E-03
	10	270.32	3.83E+01	46.10	1.77E-02	1.40E-03
M	11	295.87	2.06E+02	41.69	1.67E-02	1.31E-03
m	12	300.77	4.19E+01	33.14	1.65E-02	1.30E-03
	13	328.91	3.79E+01	40.98	1.55E-02	1.24E-03
	14	338.80	1.14E+02	49.72	1.52E-02	1.22E-03
	15	352.45	3.76E+02	67.26	1.48E-02	1.19E-03
	16	452.63	3.94E+01	33.41	1.23E-02	1.05E-03
	17	476.37	2.78E+01	28.16	1.18E-02	1.03E-03
	18	511.47	1.44E+02	53.18	1.12E-02	9.90E-04
	19	566.30	4.94E+01	44.32	1.04E-02	9.33E-04
	20	583.65	1.68E+02	42.72	1.02E-02	9.15E-04
	21	609.89	2.66E+02	43.81	9.82E-03	8.88E-04
	22	662.80	9.60E+01	48.99	9.20E-03	8.33E-04
	23	727.22	6.72E+01	28.64	8.56E-03	7.75E-04
	24	742.41	3.05E+01	22.00	8.42E-03	7.62E-04
	25	754.45	2.14E+01	26.41	8.31E-03	7.51E-04
	26	795.73	2.58E+01	25.71	7.96E-03	7.14E-04
	27	884.43	2.91E+01	24.66	7.32E-03	6.35E-04
	28	912.07	9.78E+01	36.48	7.14E-03	6.15E-04
M	29	933.87	1.61E+01	25.54	7.01E-03	6.04E-04
m	30	936.54	1.56E+01	21.55	6.99E-03	6.02E-04
M	31	965.16	2.32E+01	22.20	6.83E-03	5.87E-04
m	32	969.77	8.15E+01	25.04	6.80E-03	5.85E-04
	33	1072.11	3.40E+01	29.80	6.28E-03	5.32E-04
	34	1121.68	5.47E+01	30.30	6.06E-03	5.06E-04
	35	1287.97	4.87E+01	54.02	5.45E-03	4.59E-04
	36	1315.16	1.30E+01	14.35	5.36E-03	4.54E-04
	37	1330.46	1.26E+01	13.45	5.32E-03	4.52E-04
	38	1336.22	1.69E+01	11.87	5.30E-03	4.50E-04
M	39	1402.78	1.08E+01	8.87	5.12E-03	4.34E-04
m	40	1408.31	1.68E+01	11.52	5.10E-03	4.32E-04
	41	1461.57	6.16E+02	55.92	4.97E-03	4.19E-04
	42	1532.57	1.12E+01	8.02	4.81E-03	4.01E-04
	43	1570.26	5.50E+00	7.78	4.73E-03	3.92E-04
	44	1588.07	9.96E+00	8.65	4.70E-03	3.88E-04
	45	1593.83	9.24E+00	10.63	4.68E-03	3.86E-04
	46	1664.04	8.70E+00	7.00	4.56E-03	3.69E-04
	47	1712.71	7.00E+00	8.72	4.47E-03	3.57E-04
M	48	1761.48	8.37E+00	4.24	4.40E-03	3.44E-04
m	49	1765.65	4.21E+01	14.44	4.39E-03	3.43E-04
	50	1848.37	1.20E+01	6.93	4.28E-03	3.26E-04
	51	1943.84	7.27E+00	8.72	4.17E-03	3.26E-04
	52	2104.42	1.06E+01	13.71	4.02E-03	3.26E-04
	53	2119.01	5.36E+00	6.63	4.01E-03	3.26E-04
	54	2205.20	1.80E+01	8.49	3.95E-03	3.26E-04
	55	2615.45	5.75E+01	16.13	3.79E-03	3.26E-04

Analysis Report for 1606038-08
CP-5019 00-02

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 : 6/14/2016 10:36:35AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037619.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	32.59	5.45E+01			5.45E+01	4.80E+01
	2	76.65	6.71E+02			6.71E+02	1.26E+02
m	3	87.80	1.38E+02	56.67	6.70E+00	2.87E+00	1.31E+02
m	4	90.80	1.28E+02	55.10			1.28E+02
	5	99.15	5.34E+01	52.15			5.34E+01
	6	186.55	2.10E+02	70.82	6.64E+01	1.07E+01	1.43E+02
	7	210.12	3.89E+01	48.14			3.89E+01
	8	217.77	8.69E+01	80.52			8.69E+01
	9	239.92	6.65E+02	94.59	1.23E+01	5.65E+00	6.53E+02
	10	270.32	3.83E+01	46.10			3.83E+01
M	11	295.87	2.06E+02	41.69	5.98E+00	5.34E+00	2.00E+02
m	12	300.77	4.19E+01	33.14			4.19E+01
	13	328.91	3.79E+01	40.98			3.79E+01
	14	338.80	1.14E+02	49.72	4.42E+00	4.48E+00	1.10E+02
	15	352.45	3.76E+02	67.26	9.38E+00	4.37E+00	3.67E+02
	16	452.63	3.94E+01	33.41			3.94E+01
	17	476.37	2.78E+01	28.16			2.78E+01
	18	511.47	1.44E+02	53.18	8.60E+01	5.42E+00	5.81E+01
	19	566.30	4.94E+01	44.32			4.94E+01
	20	583.65	1.68E+02	42.72	9.83E+00	3.55E+00	1.58E+02
	21	609.89	2.66E+02	43.81	4.88E+00	4.12E+00	2.61E+02
	22	662.80	9.60E+01	48.99			9.60E+01
	23	727.22	6.72E+01	28.64			6.72E+01
	24	742.41	3.05E+01	22.00			3.05E+01
	25	754.45	2.14E+01	26.41			2.14E+01
	26	795.73	2.58E+01	25.71			2.58E+01
	27	884.43	2.91E+01	24.66			2.91E+01
	28	912.07	9.78E+01	36.48	5.44E+00	2.47E+00	9.24E+01
M	29	933.87	1.61E+01	25.54			1.61E+01
m	30	936.54	1.56E+01	21.55			1.56E+01
M	31	965.16	2.32E+01	22.20			2.32E+01
m	32	969.77	8.15E+01	25.04			8.15E+01
	33	1072.11	3.40E+01	29.80			3.40E+01
	34	1121.68	5.47E+01	30.30			5.47E+01
	35	1287.97	4.87E+01	54.02			4.87E+01

Analysis Report for 1606038-08

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	36	1315.16	1.30E+01	14.35		1.30E+01	1.44E+01
	37	1330.46	1.26E+01	13.45		1.26E+01	1.35E+01
	38	1336.22	1.69E+01	11.87		1.69E+01	1.19E+01
M	39	1402.78	1.08E+01	8.87		1.08E+01	8.87E+00
m	40	1408.31	1.68E+01	11.52		1.68E+01	1.15E+01
	41	1461.57	6.16E+02	55.92	6.04E+00 1.30E+00	6.10E+02	5.59E+01
	42	1532.57	1.12E+01	8.02		1.12E+01	8.02E+00
	43	1570.26	5.50E+00	7.78		5.50E+00	7.78E+00
	44	1588.07	9.96E+00	8.65		9.96E+00	8.65E+00
	45	1593.83	9.24E+00	10.63		9.24E+00	1.06E+01
	46	1664.04	8.70E+00	7.00		8.70E+00	7.00E+00
	47	1712.71	7.00E+00	8.72		7.00E+00	8.72E+00
M	48	1761.48	8.37E+00	4.24		8.37E+00	4.24E+00
m	49	1765.65	4.21E+01	14.44	1.45E+00 2.00E+00	4.07E+01	1.46E+01
	50	1848.37	1.20E+01	6.93		1.20E+01	6.93E+00
	51	1943.84	7.27E+00	8.72		7.27E+00	8.72E+00
	52	2104.42	1.06E+01	13.71		1.06E+01	1.37E+01
	53	2119.01	5.36E+00	6.63		5.36E+00	6.63E+00
	54	2205.20	1.80E+01	8.49		1.80E+01	8.49E+00
	55	2615.45	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 : 6/14/2016 10:36:35AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037619.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	32.59	5.45E+01	48.01		5.45E+01	4.80E+01
	2	76.65	6.71E+02	126.46		6.71E+02	1.26E+02
m	3	87.80	1.38E+02	56.67	6.70E+00 2.87E+00	1.31E+02	5.67E+01
m	4	90.80	1.28E+02	55.10		1.28E+02	5.51E+01
	5	99.15	5.34E+01	52.15		5.34E+01	5.22E+01
	6	186.55	2.10E+02	70.82	6.64E+01 1.07E+01	1.43E+02	7.16E+01
	7	210.12	3.89E+01	48.14		3.89E+01	4.81E+01
	8	217.77	8.69E+01	80.52		8.69E+01	8.05E+01

: 00549

Analysis Report for 1606038-08

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	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	9	239.92	6.65E+02	94.59	1.23E+01	5.65E+00	6.53E+02	9.48E+01
	10	270.32	3.83E+01	46.10			3.83E+01	4.61E+01
M	11	295.87	2.06E+02	41.69	5.98E+00	5.34E+00	2.00E+02	4.20E+01
m	12	300.77	4.19E+01	33.14			4.19E+01	3.31E+01
	13	328.91	3.79E+01	40.98			3.79E+01	4.10E+01
	14	338.80	1.14E+02	49.72	4.42E+00	4.48E+00	1.10E+02	4.99E+01
	15	352.45	3.76E+02	67.26	9.38E+00	4.37E+00	3.67E+02	6.74E+01
	16	452.63	3.94E+01	33.41			3.94E+01	3.34E+01
	17	476.37	2.78E+01	28.16			2.78E+01	2.82E+01
	18	511.47	1.44E+02	53.18	8.60E+01	5.42E+00	5.81E+01	5.35E+01
	19	566.30	4.94E+01	44.32			4.94E+01	4.43E+01
	20	583.65	1.68E+02	42.72	9.83E+00	3.55E+00	1.58E+02	4.29E+01
	21	609.89	2.66E+02	43.81	4.88E+00	4.12E+00	2.61E+02	4.40E+01
	22	662.80	9.60E+01	48.99			9.60E+01	4.90E+01
	23	727.22	6.72E+01	28.64			6.72E+01	2.86E+01
	24	742.41	3.05E+01	22.00			3.05E+01	2.20E+01
	25	754.45	2.14E+01	26.41			2.14E+01	2.64E+01
	26	795.73	2.58E+01	25.71			2.58E+01	2.57E+01
	27	884.43	2.91E+01	24.66			2.91E+01	2.47E+01
	28	912.07	9.78E+01	36.48	5.44E+00	2.47E+00	9.24E+01	3.66E+01
M	29	933.87	1.61E+01	25.54			1.61E+01	2.55E+01
m	30	936.54	1.56E+01	21.55			1.56E+01	2.16E+01
M	31	965.16	2.32E+01	22.20			2.32E+01	2.22E+01
m	32	969.77	8.15E+01	25.04			8.15E+01	2.50E+01
	33	1072.11	3.40E+01	29.80			3.40E+01	2.98E+01
	34	1121.68	5.47E+01	30.30			5.47E+01	3.03E+01
	35	1287.97	4.87E+01	54.02			4.87E+01	5.40E+01
	36	1315.16	1.30E+01	14.35			1.30E+01	1.44E+01
	37	1330.46	1.26E+01	13.45			1.26E+01	1.35E+01
	38	1336.22	1.69E+01	11.87			1.69E+01	1.19E+01
M	39	1402.78	1.08E+01	8.87			1.08E+01	8.87E+00
m	40	1408.31	1.68E+01	11.52			1.68E+01	1.15E+01
	41	1461.57	6.16E+02	55.92	6.04E+00	1.30E+00	6.10E+02	5.59E+01
	42	1532.57	1.12E+01	8.02			1.12E+01	8.02E+00
	43	1570.26	5.50E+00	7.78			5.50E+00	7.78E+00
	44	1588.07	9.96E+00	8.65			9.96E+00	8.65E+00
	45	1593.83	9.24E+00	10.63			9.24E+00	1.06E+01
	46	1664.04	8.70E+00	7.00			8.70E+00	7.00E+00
	47	1712.71	7.00E+00	8.72			7.00E+00	8.72E+00
M	48	1761.48	8.37E+00	4.24			8.37E+00	4.24E+00
m	49	1765.65	4.21E+01	14.44	1.45E+00	2.00E+00	4.07E+01	1.46E+01
	50	1848.37	1.20E+01	6.93			1.20E+01	6.93E+00
	51	1943.84	7.27E+00	8.72			7.27E+00	8.72E+00
	52	2104.42	1.06E+01	13.71			1.06E+01	1.37E+01
	53	2119.01	5.36E+00	6.63			5.36E+00	6.63E+00
	54	2205.20	1.80E+01	8.49			1.80E+01	8.49E+00
	55	2615.45	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

Analysis Report for 1606038-08
CP-5019 00-02

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.911	1460.81 *	10.67	1.74E+01	2.20E+00
CD-109	0.991	88.03 *	3.72	1.90E+00	8.48E-01
SN-126	0.992	87.57 *	37.00	1.88E-01	8.35E-02
ND-147	0.638	91.11 *	28.90	3.92E-01	1.72E-01
		531.02	13.10		
TL-208	0.824	583.14 *	30.22	7.80E-01	2.23E-01
		860.37	4.48		
		2614.66 *	35.85	6.40E-01	1.88E-01
BI-212	0.765	727.17 *	11.80	1.01E+00	4.39E-01
		1620.62	2.75		
BI-214	0.462	609.31 *	46.30	8.70E-01	1.66E-01
		1120.29	15.10		
		1764.49	15.80		
		2204.22 *	4.98	1.39E+00	6.63E-01
PB-214	0.948	295.21 *	19.19	9.46E-01	2.12E-01
		351.92 *	37.19	1.01E+00	2.03E-01
RA-226	0.982	186.21 *	3.28	2.96E+00	5.62E+00
AC-228	0.898	338.32 *	11.40	9.61E-01	4.44E-01
		911.07 *	27.70	7.07E-01	2.86E-01
		969.11 *	16.60	1.09E+00	3.49E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 10:36:35AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1606038-08
CP-5019 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
1	32.59	1.51349E-02	44.06			
2	76.65	1.86310E-01	9.43			
5	99.15	1.48316E-02	48.84			
7	210.12	1.08103E-02	61.84	Tol.	CM-243	
8	217.77	2.41394E-02	46.33			
9	239.92	1.81307E-01	7.26			
10	270.32	1.06437E-02	60.16			
m	12	300.77	1.16355E-02	39.56	Tol.	GA-67 BI-210M PB-212
13	328.91	1.05181E-02	54.12	Tol.	LA-140	
16	452.63	1.09500E-02	42.37			
17	476.37	7.71825E-03	50.67	Tol.	PM-144	
18	511.47	1.61305E-02	46.03			
19	566.30	1.37162E-02	44.87			
22	662.80	2.66667E-02	25.52			
24	742.41	8.46084E-03	36.11			
25	754.45	5.93341E-03	61.81			
26	795.73	7.15580E-03	49.89	Sum		
27	884.43	8.07660E-03	42.41	Tol.	AG-110M	
M	29	933.87	4.48209E-03	79.15		
m	30	936.54	4.34488E-03	68.89	Sum	
M	31	965.16	6.43401E-03	47.92		
33	1072.11	9.44074E-03	43.84			
34	1121.68	1.51878E-02	27.71	Tol.	TA-182	
35	1287.97	1.35386E-02	55.42			
36	1315.16	3.61111E-03	55.20			
37	1330.46	3.49444E-03	53.47			
38	1336.22	4.69907E-03	35.10	Sum		
M	39	1402.78	2.99991E-03	41.09		
m	40	1408.31	4.66971E-03	34.27	Tol.	EU-152
42	1532.57	3.11966E-03	35.69			
43	1570.26	1.52778E-03	70.71			
44	1588.07	2.76786E-03	43.38			
45	1593.83	2.56536E-03	57.55	D-Esc		
46	1664.04	2.41667E-03	40.23			
47	1712.71	1.94444E-03	62.27			
M	48	1761.48	2.32530E-03	25.34		
m	49	1765.65	1.13014E-02	17.92		
50	1848.37	3.33333E-03	28.87			
51	1943.84	2.02020E-03	59.93			
52	2104.42	2.93750E-03	64.83	S-Esc		
53	2119.01	1.48810E-03	61.91			

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 1606038-08
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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
K-40	0.91	1460.81	*	10.67	1.74E+01	2.20E+00
CD-109	0.99	88.03	*	3.72	1.90E+00	8.48E-01
SN-126	0.99	87.57	*	37.00	1.88E-01	8.35E-02
ND-147	0.63	91.11	*	28.90	3.92E-01	1.72E-01
		531.02		13.10		
TL-208	0.82	583.14	*	30.22	7.80E-01	2.23E-01
		860.37		4.48		
		2614.66	*	35.85	6.40E-01	1.88E-01
BI-212	0.76	727.17	*	11.80	1.01E+00	4.39E-01
		1620.62		2.75		
BI-214	0.46	609.31	*	46.30	8.70E-01	1.66E-01
		1120.29		15.10		
		1764.49		15.80		
		2204.22	*	4.98	1.39E+00	6.63E-01
PB-214	0.94	295.21	*	19.19	9.46E-01	2.12E-01
		351.92	*	37.19	1.01E+00	2.03E-01
RA-226	0.98	186.21	*	3.28	2.96E+00	5.62E+00
AC-228	0.89	338.32	*	11.40	9.61E-01	4.44E-01
		911.07	*	27.70	7.07E-01	2.86E-01
		969.11	*	16.60	1.09E+00	3.49E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.00sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1606038-08
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	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.911	1.74E+01	2.20E+00	
?	CD-109	0.991	1.90E+00	8.48E-01	
?	SN-126	0.992	1.88E-01	8.35E-02	
	ND-147	0.638	3.92E-01	1.72E-01	
	TL-208	0.824	6.98E-01	1.44E-01	
	BI-212	0.765	1.01E+00	4.39E-01	
	BI-214	0.462	9.01E-01	1.61E-01	
	PB-214	0.948	9.81E-01	1.47E-01	
	RA-226	0.982	2.96E+00	5.62E+00	
	AC-228	0.898	8.82E-01	1.98E-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 1606038-08
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 10:36:35AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	32.59	1.51349E-02	44.06		
2	76.65	1.86310E-01	9.43		
5	99.15	1.48316E-02	48.84		
7	210.12	1.08103E-02	61.84	Tol.	CM-243
8	217.77	2.41394E-02	46.33		
9	239.92	1.81307E-01	7.26		
10	270.32	1.06437E-02	60.16		
m 12	300.77	1.16355E-02	39.56	Tol.	GA-67 BI-210M PB-212
13	328.91	1.05181E-02	54.12	Tol.	LA-140
16	452.63	1.09500E-02	42.37		
17	476.37	7.71825E-03	50.67	Tol.	PM-144
18	511.47	1.61305E-02	46.03		
19	566.30	1.37162E-02	44.87		
22	662.80	2.66667E-02	25.52		
24	742.41	8.46084E-03	36.11		
25	754.45	5.93341E-03	61.81		
26	795.73	7.15580E-03	49.89	Sum	
27	884.43	8.07660E-03	42.41	Tol.	AG-110M
M 29	933.87	4.48209E-03	79.15		
m 30	936.54	4.34488E-03	68.89	Sum	
M 31	965.16	6.43401E-03	47.92		
33	1072.11	9.44074E-03	43.84		
34	1121.68	1.51878E-02	27.71	Tol.	TA-182
35	1287.97	1.35386E-02	55.42		
36	1315.16	3.61111E-03	55.20		
37	1330.46	3.49444E-03	53.47		
38	1336.22	4.69907E-03	35.10	Sum	
M 39	1402.78	2.99991E-03	41.09		
m 40	1408.31	4.66971E-03	34.27	Tol.	EU-152
42	1532.57	3.11966E-03	35.69		
43	1570.26	1.52778E-03	70.71		
44	1588.07	2.76786E-03	43.38		
45	1593.83	2.56536E-03	57.55	D-Esc	

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	46	1664.04	2.41667E-03	40.23	
	47	1712.71	1.94444E-03	62.27	
M	48	1761.48	2.32530E-03	25.34	
m	49	1765.65	1.13014E-02	17.92	
	50	1848.37	3.33333E-03	28.87	
	51	1943.84	2.02020E-03	59.93	
	52	2104.42	2.93750E-03	64.83	S-Esc
	53	2119.01	1.48810E-03	61.91	

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	4.47E-01	6.65E-01	6.65E-01
+	NA-22	1274.54	99.94	-1.24E-02	7.33E-02	7.33E-02
+	NA-24	1368.53	99.99	9.71E+01	8.42E+01	5.65E+02
		2754.09	99.86	0.00E+00		8.42E+01
+	AL-26	1808.65	99.76	4.38E-03	4.21E-02	4.21E-02
+	K-40	1460.81	* 10.67	1.74E+01	1.31E+00	1.31E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-3.74E-02	6.39E-02	6.39E-02
		78.34	96.00	6.02E-02		7.99E-02
+	SC-46	889.25	99.98	7.96E-03	7.06E-02	7.06E-02
		1120.51	99.99	1.33E-01		1.28E-01
+	V-48	983.52	99.98	2.85E-03	1.04E-01	1.04E-01
		1312.10	97.50	6.90E-03		1.10E-01
+	CR-51	320.08	9.83	-2.02E-01	5.71E-01	5.71E-01
+	MN-54	834.83	99.97	-3.49E-03	7.61E-02	7.61E-02
+	CO-56	846.75	99.96	2.70E-02	7.50E-02	7.50E-02
		1037.75	14.03	3.21E-02		4.91E-01
		1238.25	67.00	2.59E-02		1.70E-01
		1771.40	15.51	-3.59E-02		2.87E-01
		2598.48	16.90	0.00E+00		2.73E-01

Analysis Report for 1606038-08
CP-5019 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-57	122.06	85.51	1.83E-02	5.64E-02	5.64E-02
		136.48	10.60	-4.04E-02		4.52E-01
+	CO-58	810.76	99.40	-1.32E-02	7.20E-02	7.20E-02
+	FE-59	1099.22	56.50	3.74E-02	1.71E-01	1.71E-01
		1291.56	43.20	-4.81E-02		2.06E-01
+	CO-60	1173.22	100.00	8.39E-03	8.53E-02	8.98E-02
		1332.49	100.00	3.13E-02		8.53E-02
+	ZN-65	1115.52	50.75	-2.04E-02	1.56E-01	1.56E-01
+	GA-67	93.31	35.70	1.94E+00	1.02E+00	1.02E+00
		208.95	2.24	8.99E+00		1.34E+01
		300.22	16.00	-4.73E+00		1.89E+00
+	SE-75	121.11	16.70	6.55E-02	8.28E-02	2.98E-01
		136.00	59.20	-3.89E-02		8.28E-02
		264.65	59.80	-7.01E-03		8.33E-02
		279.53	25.20	1.38E-01		2.11E-01
		400.65	11.40	1.33E-01		4.72E-01
+	RB-82	776.52	13.00	-2.84E-01	6.24E-01	6.24E-01
+	RB-83	520.41	46.00	-3.50E-02	1.33E-01	1.33E-01
		529.64	30.30	-1.63E-02		2.17E-01
		552.65	16.40	2.83E-02		4.05E-01
+	KR-85	513.99	0.43	3.07E+01	2.12E+01	2.12E+01
+	SR-85	513.99	99.27	1.46E-01	1.01E-01	1.01E-01
+	Y-88	898.02	93.40	6.84E-03	5.61E-02	8.18E-02
		1836.01	99.38	1.31E-02		5.61E-02
+	NB-93M	16.57	9.43	-7.12E+01	5.82E+01	5.82E+01
+	NB-94	702.63	100.00	4.69E-03	7.00E-02	7.22E-02
		871.10	100.00	-1.16E-03		7.00E-02
+	NB-95	765.79	99.81	3.59E-02	9.61E-02	9.61E-02
+	NB-95M	235.69	25.00	-9.13E+00	9.95E-01	9.95E-01
+	ZR-95	724.18	43.70	-4.54E-03	1.30E-01	1.93E-01
		756.72	55.30	-4.67E-03		1.30E-01
+	MO-99	181.06	6.20	2.41E-01	3.71E+00	6.04E+00
		739.58	12.80	-4.75E-01		3.71E+00
		778.00	4.50	-6.42E+00		1.11E+01
+	RU-103	497.08	89.00	-2.46E-03	7.57E-02	7.57E-02
+	RU-106	621.84	9.80	-1.67E-01	6.80E-01	6.80E-01
+	AG-108M	433.93	89.90	-1.92E-02	5.56E-02	5.56E-02
		614.37	90.40	-1.72E-02		7.05E-02
		722.95	90.50	3.86E-03		7.94E-02
+	CD-109	88.03	* 3.72	1.90E+00	3.34E+00	3.34E+00
+	AG-110M	657.75	93.14	-2.55E-01	6.68E-02	6.68E-02
		677.61	10.53	3.35E-01		6.35E-01
		706.67	16.46	1.67E-01		4.62E-01
		763.93	21.98	-1.00E-01		3.37E-01
		884.67	71.63	4.71E-02		1.08E-01
		1384.27	23.94	-2.93E-02		3.07E-01
+	CD-113M	263.70	0.02	5.20E+01	2.12E+02	2.12E+02

Analysis Report for 1606038-08
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SN-113	255.12	1.93	1.23E-01	8.77E-02	2.62E+00
		391.69	64.90	3.01E-02		8.77E-02
+	TE123M	159.00	84.10	2.66E-02	5.89E-02	5.89E-02
+	SB-124	602.71	97.87	-1.38E-02	6.32E-02	6.32E-02
		645.85	7.26	2.11E-01		9.44E-01
		722.78	11.10	3.45E-02		7.10E-01
		1691.02	49.00	-1.20E-02		9.86E-02
+	I-125	35.49	6.49	8.34E-01	2.28E+00	2.28E+00
+	SB-125	176.33	6.89	-2.59E-02	1.83E-01	6.91E-01
		427.89	29.33	3.00E-02		1.83E-01
		463.38	10.35	1.18E-01		6.55E-01
		600.56	17.80	1.98E-01		3.54E-01
		635.90	11.32	1.06E-01		5.52E-01
+	SB-126	414.70	83.30	-6.12E-02	1.04E-01	1.11E-01
		666.33	99.60	2.36E-02		1.38E-01
		695.00	99.60	-1.57E-02		1.04E-01
		720.50	53.80	3.38E-02		2.09E-01
+	SN-126	87.57	* 37.00	1.88E-01	3.32E-01	3.32E-01
+	SB-127	473.00	25.00	1.21E-01	7.14E-01	1.00E+00
		685.20	35.70	-1.08E-01		7.14E-01
		783.80	14.70	7.32E-01		2.10E+00
+	I-129	29.78	57.00	6.50E-02	4.84E-01	4.84E-01
		33.60	13.20	-1.01E-01		1.26E+00
		39.58	7.52	1.40E-02		1.40E+00
+	I-131	284.30	6.05	-8.29E-01	1.22E-01	1.52E+00
		364.48	81.20	7.48E-02		1.22E-01
		636.97	7.26	-1.59E-01		1.71E+00
		722.89	1.80	3.89E-01		8.01E+00
+	TE-132	49.72	13.10	-2.60E+00	3.22E-01	3.06E+00
		228.16	88.00	-6.34E-03		3.22E-01
+	BA-133	81.00	33.00	-5.04E-01	1.00E-01	1.86E-01
		302.84	17.80	2.11E-01		3.03E-01
		356.01	60.00	-3.14E-01		1.00E-01
+	I-133	529.87	86.30	-3.43E+00	4.57E+01	4.57E+01
+	XE-133	81.00	38.00	-1.27E+00	4.69E-01	4.69E-01
+	CS-134	563.23	8.38	7.89E-02	5.88E-02	7.40E-01
		569.32	15.43	9.19E-02		4.26E-01
		604.70	97.60	-1.79E-03		5.88E-02
		795.84	85.40	7.07E-02		8.76E-02
		801.93	8.73	-2.38E-02		6.93E-01
+	CS-135	268.24	16.00	2.84E-02	3.22E-01	3.22E-01
+	I-135	1131.51	22.50	-4.21E+07	1.86E+08	2.41E+08
		1260.41	28.60	-3.40E+07		1.86E+08
		1678.03	9.54	-2.09E+07		3.92E+08
+	CS-136	153.22	7.46	3.37E-01	9.37E-02	9.43E-01
		163.89	4.61	-5.03E-02		1.54E+00
		176.55	13.56	-2.00E-02		5.35E-01
		273.65	12.66	-1.07E-01		5.91E-01
		340.57	48.50	2.74E-01		2.18E-01

Analysis Report for 1606038-08
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	818.50	99.70	-8.32E-03	9.37E-02	9.37E-02
		1048.07	79.60	3.33E-02		1.43E-01
		1235.34	19.70	-6.58E-01		7.09E-01
+	CS-137	661.65	85.12	1.60E-01	1.15E-01	1.15E-01
+	LA-138	788.74	34.00	1.47E-01	9.17E-02	2.12E-01
		1435.80	66.00	-2.28E-03		9.17E-02
+	CE-139	165.85	80.35	2.41E-03	6.29E-02	6.29E-02
+	BA-140	162.64	6.70	-2.41E-01	3.54E-01	1.06E+00
		304.84	4.50	4.84E-01		1.59E+00
		423.70	3.20	-4.18E-01		2.66E+00
		437.55	2.00	-1.24E+00		4.24E+00
		537.32	25.00	-5.95E-03		3.54E-01
+	LA-140	328.77	20.50	2.78E-01	1.21E-01	4.24E-01
		487.03	45.50	-7.25E-02		1.95E-01
		815.85	23.50	3.32E-02		4.34E-01
		1596.49	95.49	1.31E-02		1.21E-01
+	CE-141	145.44	48.40	2.77E-02	1.20E-01	1.20E-01
+	CE-143	57.36	11.80	6.08E+00	9.56E+00	3.15E+01
		293.26	42.00	9.37E+00		9.56E+00
		664.55	5.20	1.76E+02		1.13E+02
+	CE-144	133.54	10.80	-1.03E-01	4.51E-01	4.51E-01
+	PM-144	476.78	42.00	2.76E-02	6.64E-02	1.46E-01
		618.01	98.60	3.71E-03		6.64E-02
		696.49	99.49	1.75E-02		7.07E-02
+	PM-145	36.85	21.70	-2.87E-01	3.05E-01	5.44E-01
		37.36	39.70	2.13E-01		3.05E-01
		42.30	15.10	-3.41E-01		5.73E-01
		72.40	2.31	-8.04E+00		2.76E+00
+	PM-146	453.90	39.94	5.91E-02	1.55E-01	1.55E-01
		735.90	14.01	-7.31E-04		4.01E-01
		747.13	13.10	1.25E-01		5.06E-01
+	ND-147	91.11	* 28.90	3.92E-01	7.03E-01	7.03E-01
		531.02	13.10	-1.17E-01		7.67E-01
+	PM-149	285.90	3.10	-1.21E+00	1.96E+01	1.96E+01
+	EU-152	121.78	20.50	7.48E-02	2.31E-01	2.31E-01
		244.69	5.40	2.05E-01		1.16E+00
		344.27	19.13	5.82E-02		2.65E-01
		778.89	9.20	-5.27E-02		7.18E-01
		964.01	10.40	-3.68E-01		8.39E-01
		1085.78	7.22	5.40E-01		1.21E+00
		1112.02	9.60	-3.68E-01		7.72E-01
		1407.95	14.94	1.86E-01		4.78E-01
+	GD-153	97.43	31.30	-8.64E-02	1.57E-01	1.57E-01
		103.18	22.20	9.09E-02		2.01E-01
+	EU-154	123.07	40.50	-4.68E-02	1.13E-01	1.13E-01
		723.30	19.70	1.78E-02		3.66E-01
		873.19	11.50	1.56E-01		6.05E-01
		996.32	10.30	-9.93E-03		7.03E-01
		1004.76	17.90	2.11E-01		4.21E-01

Analysis Report for 1606038-08
CP-5019 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	1274.45	35.50	-3.47E-02	1.13E-01	2.06E-01
+	EU-155	86.50	30.90	4.16E-01	2.06E-01	2.06E-01
		105.30	20.70	-6.25E-02		2.14E-01
+	EU-156	811.77	10.40	-2.77E-01	9.01E-01	9.01E-01
		1153.47	7.20	-1.50E-02		1.79E+00
		1230.71	8.90	-2.61E-01		1.49E+00
+	HO-166M	184.41	72.60	9.77E-02	8.82E-02	8.82E-02
		280.45	29.60	1.58E-02		1.61E-01
		410.94	11.10	1.33E-01		5.67E-01
		711.69	54.10	2.95E-02		1.32E-01
+	TM-171	66.72	0.14	-5.61E+01	4.57E+01	4.57E+01
+	HF-172	81.75	4.52	-3.32E+00	4.20E-01	1.26E+00
		125.81	11.30	1.69E-01		4.20E-01
+	LU-172	181.53	20.60	1.61E-02	2.94E-01	5.39E-01
		810.06	16.63	-2.67E-02		9.34E-01
		912.12	15.25	3.53E+00		1.91E+00
		1093.66	62.50	5.76E-02		2.94E-01
+	LU-173	100.72	5.24	3.80E-01	2.54E-01	8.94E-01
		272.11	21.20	1.12E-01		2.54E-01
+	HF-175	343.40	84.00	5.12E-03	6.55E-02	6.55E-02
+	LU-176	88.34	13.30	3.56E-01	4.90E-02	4.68E-01
		201.83	86.00	2.50E-03		5.98E-02
		306.78	94.00	1.28E-03		4.90E-02
+	TA-182	67.75	41.20	-9.00E-02	1.54E-01	1.54E-01
		1121.30	34.90	2.49E-01		3.54E-01
		1189.05	16.23	-2.48E-01		5.50E-01
		1221.41	26.98	1.61E-01		3.90E-01
		1231.02	11.44	-1.47E-01		8.45E-01
+	IR-192	308.46	29.68	-6.07E-02	1.45E-01	1.62E-01
		468.07	48.10	-2.12E-02		1.45E-01
+	HG-203	279.19	77.30	6.14E-02	7.68E-02	7.68E-02
+	BI-207	569.67	97.72	4.40E-03	6.44E-02	6.44E-02
		1063.62	74.90	2.00E-03		8.46E-02
+	TL-208	583.14	* 30.22	7.80E-01	1.31E-01	2.95E-01
		860.37	4.48	1.48E+00		1.83E+00
		2614.66	* 35.85	6.40E-01		1.31E-01
+	BI-210M	262.00	45.00	-3.97E-02	1.05E-01	1.05E-01
		300.00	23.00	-5.91E-01		2.37E-01
+	PB-210	46.50	4.25	3.13E+00	1.99E+00	1.99E+00
+	PB-211	404.84	2.90	-3.95E-01	1.63E+00	1.63E+00
		831.96	2.90	-6.79E-01		2.42E+00
+	BI-212	727.17	* 11.80	1.01E+00	6.20E-01	6.20E-01
		1620.62	2.75	1.07E+00		2.32E+00
+	PB-212	238.63	44.60	4.83E-01	2.14E-01	2.14E-01
		300.09	3.41	-3.99E+00		1.60E+00
+	BI-214	609.31	* 46.30	8.70E-01	1.73E-01	1.73E-01
		1120.29	15.10	8.22E-01		7.94E-01
		1764.49	15.80	1.01E+00		7.76E-01

Analysis Report for 1606038-08
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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	1.39E+00	1.73E-01	2.08E-01
+	PB-214	295.21	*	19.19	9.46E-01	2.59E-01	7.68E-01
		351.92	*	37.19	1.01E+00		2.59E-01
+	RN-219	401.80		6.50	-1.20E-01	7.41E-01	7.41E-01
+	RA-223	323.87		3.88	2.24E-01	1.23E+00	1.23E+00
+	RA-224	240.98		3.95	1.20E+01	2.68E+00	2.68E+00
+	RA-225	40.00		31.00	4.83E-03	4.81E-01	4.81E-01
+	RA-226	186.21	*	3.28	2.96E+00	2.35E+00	2.35E+00
+	TH-227	50.10		8.40	-7.18E-01	4.59E-01	8.47E-01
		236.00		11.50	-4.21E+00		4.59E-01
		256.20		6.30	-1.51E-01		7.56E-01
+	AC-228	338.32	*	11.40	9.61E-01	4.12E-01	6.76E-01
		911.07	*	27.70	7.07E-01		4.12E-01
		969.11	*	16.60	1.09E+00		7.49E-01
+	TH-230	48.44		16.90	4.87E-01	4.73E-01	4.73E-01
		62.85		4.60	2.40E+00		1.55E+00
		67.67		0.37	-9.55E+00		1.63E+01
+	PA-231	283.67		1.60	-2.21E-01	2.34E+00	2.65E+00
		302.67		2.30	1.63E+00		2.34E+00
+	TH-231	25.64		14.70	-4.66E+01	8.95E-01	4.52E+00
		84.21		6.40	-2.16E+00		8.95E-01
+	PA-233	311.98		38.60	1.51E-02	1.54E-01	1.54E-01
+	PA-234	131.20		20.40	2.20E-01	2.51E-01	2.51E-01
		733.99		8.80	2.88E-02		6.87E-01
		946.00		12.00	3.15E-02		6.23E-01
+	PA-234M	1001.03		0.92	6.07E+00	8.67E+00	8.67E+00
+	TH-234	63.29		3.80	2.22E+00	1.87E+00	1.87E+00
+	U-235	143.76		10.50	-3.35E-02	4.54E-01	4.54E-01
		163.35		4.70	-3.22E-02		9.88E-01
		205.31		4.70	4.19E-01		1.06E+00
+	NP-237	86.50		12.60	1.02E+00	5.04E-01	5.04E-01
+	NP-239	106.10		22.70	-6.13E-01	2.09E+00	2.09E+00
		228.18		10.70	-1.01E-01		5.13E+00
		277.60		14.10	1.83E+00		3.97E+00
+	AM-241	59.54		35.90	-2.73E-02	1.77E-01	1.77E-01
+	AM-243	74.67		66.00	-3.00E-01	1.13E-01	1.13E-01
+	CM-243	209.75		3.29	7.64E-01	3.71E-01	1.59E+00
		228.14		10.60	-9.45E-03		4.80E-01
		277.60		14.00	1.71E-01		3.71E-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	6.65E-01	6.65E-01	4.47E-01	3.14E-01
NA-22	1274.54	99.94	7.33E-02	7.33E-02	-1.24E-02	3.29E-02
NA-24	1368.53	99.99	5.65E+02	8.42E+01	9.71E+01	2.52E+02
	2754.09	99.86	8.42E+01		0.00E+00	0.00E+00
AL-26	1808.65	99.76	4.21E-02	4.21E-02	4.38E-03	1.63E-02
+ K-40	1460.81	* 10.67	1.31E+00	1.31E+00	1.74E+01	6.16E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	6.39E-02	6.39E-02	-3.74E-02	3.11E-02
	78.34	96.00	7.99E-02		6.02E-02	3.92E-02
SC-46	889.25	99.98	7.06E-02	7.06E-02	7.96E-03	3.23E-02
	1120.51	99.99	1.28E-01		1.33E-01	6.05E-02
V-48	983.52	99.98	1.04E-01	1.04E-01	2.85E-03	4.76E-02
	1312.10	97.50	1.10E-01		6.90E-03	4.96E-02
CR-51	320.08	9.83	5.71E-01	5.71E-01	-2.02E-01	2.69E-01
MN-54	834.83	99.97	7.61E-02	7.61E-02	-3.49E-03	3.53E-02
CO-56	846.75	99.96	7.50E-02	7.50E-02	2.70E-02	3.46E-02
	1037.75	14.03	4.91E-01		3.21E-02	2.21E-01
	1238.25	67.00	1.70E-01		2.59E-02	7.92E-02
	1771.40	15.51	2.87E-01		-3.59E-02	1.11E-01
	2598.48	16.90	2.73E-01		0.00E+00	1.02E-01
CO-57	122.06	85.51	5.64E-02	5.64E-02	1.83E-02	2.73E-02
	136.48	10.60	4.52E-01		-4.04E-02	2.19E-01
CO-58	810.76	99.40	7.20E-02	7.20E-02	-1.32E-02	3.32E-02
FE-59	1099.22	56.50	1.71E-01	1.71E-01	3.74E-02	7.87E-02
	1291.56	43.20	2.06E-01		-4.81E-02	9.31E-02
CO-60	1173.22	100.00	8.98E-02	8.53E-02	8.39E-03	4.14E-02
	1332.49	100.00	8.53E-02		3.13E-02	3.88E-02
ZN-65	1115.52	50.75	1.56E-01	1.56E-01	-2.04E-02	7.10E-02
GA-67	93.31	35.70	1.02E+00	1.02E+00	1.94E+00	5.01E-01
	208.95	2.24	1.34E+01		8.99E+00	6.44E+00
	300.22	16.00	1.89E+00		-4.73E+00	9.04E-01
SE-75	121.11	16.70	2.98E-01	8.28E-02	6.55E-02	1.44E-01
	136.00	59.20	8.28E-02		-3.89E-02	4.00E-02
	264.65	59.80	8.33E-02		-7.01E-03	3.96E-02
	279.53	25.20	2.11E-01		1.38E-01	1.00E-01
	400.65	11.40	4.72E-01		1.33E-01	2.22E-01
RB-82	776.52	13.00	6.24E-01	6.24E-01	-2.84E-01	2.88E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RB-83	520.41	46.00	1.33E-01	1.33E-01	-3.50E-02	6.21E-02
	529.64	30.30	2.17E-01		-1.63E-02	1.02E-01
	552.65	16.40	4.05E-01		2.83E-02	1.90E-01
KR-85	513.99	0.43	2.12E+01	2.12E+01	3.07E+01	1.02E+01
SR-85	513.99	99.27	1.01E-01	1.01E-01	1.46E-01	4.85E-02
Y-88	898.02	93.40	8.18E-02	5.61E-02	6.84E-03	3.77E-02
	1836.01	99.38	5.61E-02		1.31E-02	2.30E-02
NB-93M	16.57	9.43	5.82E+01	5.82E+01	-7.12E+01	2.64E+01
NB-94	702.63	100.00	7.22E-02	7.00E-02	4.69E-03	3.38E-02
	871.10	100.00	7.00E-02		-1.16E-03	3.22E-02
NB-95	765.79	99.81	9.61E-02	9.61E-02	3.59E-02	4.51E-02
NB-95M	235.69	25.00	9.95E-01	9.95E-01	-9.13E+00	4.78E-01
ZR-95	724.18	43.70	1.93E-01	1.30E-01	-4.54E-03	9.05E-02
	756.72	55.30	1.30E-01		-4.67E-03	5.99E-02
MO-99	181.06	6.20	6.04E+00	3.71E+00	2.41E-01	2.91E+00
	739.58	12.80	3.71E+00		-4.75E-01	1.71E+00
	778.00	4.50	1.11E+01		-6.42E+00	5.12E+00
RU-103	497.08	89.00	7.57E-02	7.57E-02	-2.46E-03	3.56E-02
RU-106	621.84	9.80	6.80E-01	6.80E-01	-1.67E-01	3.18E-01
AG-108M	433.93	89.90	5.56E-02	5.56E-02	-1.92E-02	2.60E-02
	614.37	90.40	7.05E-02		-1.72E-02	3.29E-02
	722.95	90.50	7.94E-02		3.86E-03	3.71E-02
+ CD-109	88.03	* 3.72	3.34E+00	3.34E+00	1.90E+00	1.65E+00
AG-110M	657.75	93.14	6.68E-02	6.68E-02	-2.55E-01	3.10E-02
	677.61	10.53	6.35E-01		3.35E-01	2.95E-01
	706.67	16.46	4.62E-01		1.67E-01	2.17E-01
	763.93	21.98	3.37E-01		-1.00E-01	1.57E-01
	884.67	71.63	1.08E-01		4.71E-02	5.00E-02
	1384.27	23.94	3.07E-01		-2.93E-02	1.37E-01
CD-113M	263.70	0.02	2.12E+02	2.12E+02	5.20E+01	1.01E+02
SN-113	255.12	1.93	2.62E+00	8.77E-02	1.23E-01	1.25E+00
	391.69	64.90	8.77E-02		3.01E-02	4.15E-02
	TE123M	159.00	84.10	5.89E-02	5.89E-02	2.66E-02	2.84E-02
SB-124	602.71	97.87	6.32E-02	6.32E-02	-1.38E-02	2.93E-02
	645.85	7.26	9.44E-01		2.11E-01	4.39E-01
	722.78	11.10	7.10E-01		3.45E-02	3.32E-01
	1691.02	49.00	9.86E-02		-1.20E-02	3.91E-02
I-125	35.49	6.49	2.28E+00	2.28E+00	8.34E-01	1.10E+00
SB-125	176.33	6.89	6.91E-01	1.83E-01	-2.59E-02	3.33E-01
	427.89	29.33	1.83E-01		3.00E-02	8.58E-02
	463.38	10.35	6.55E-01		1.18E-01	3.11E-01
	600.56	17.80	3.54E-01		1.98E-01	1.65E-01
	635.90	11.32	5.52E-01		1.06E-01	2.57E-01
SB-126	414.70	83.30	1.11E-01	1.04E-01	-6.12E-02	5.24E-02
	666.33	99.60	1.38E-01		2.36E-02	6.53E-02
	695.00	99.60	1.04E-01		-1.57E-02	4.81E-02
	720.50	53.80	2.09E-01		3.38E-02	9.77E-02
+ SN-126	87.57	* 37.00	3.32E-01	3.32E-01	1.88E-01	1.64E-01
SB-127	473.00	25.00	1.00E+00	7.14E-01	1.21E-01	4.72E-01
	685.20	35.70	7.14E-01		-1.08E-01	3.30E-01
	783.80	14.70	2.10E+00		7.32E-01	9.77E-01
I-129	29.78	57.00	4.84E-01	4.84E-01	6.50E-02	2.34E-01
	33.60	13.20	1.26E+00		-1.01E-01	6.08E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-129	39.58	7.52	1.40E+00	4.84E-01	1.40E-02	6.75E-01
I-131	284.30	6.05	1.52E+00	1.22E-01	-8.29E-01	7.19E-01
	364.48	81.20	1.22E-01		7.48E-02	5.76E-02
	636.97	7.26	1.71E+00		-1.59E-01	7.94E-01
	722.89	1.80	8.01E+00		3.89E-01	3.74E+00
TE-132	49.72	13.10	3.06E+00	3.22E-01	-2.60E+00	1.49E+00
	228.16	88.00	3.22E-01		-6.34E-03	1.55E-01
BA-133	81.00	33.00	1.86E-01	1.00E-01	-5.04E-01	9.08E-02
	302.84	17.80	3.03E-01		2.11E-01	1.45E-01
	356.01	60.00	1.00E-01		-3.14E-01	4.78E-02
I-133	529.87	86.30	4.57E+01	4.57E+01	-3.43E+00	2.15E+01
XE-133	81.00	38.00	4.69E-01	4.69E-01	-1.27E+00	2.29E-01
CS-134	563.23	8.38	7.40E-01	5.88E-02	7.89E-02	3.47E-01
	569.32	15.43	4.26E-01		9.19E-02	2.00E-01
	604.70	97.60	5.88E-02		-1.79E-03	2.73E-02
	795.84	85.40	8.76E-02		7.07E-02	4.08E-02
	801.93	8.73	6.93E-01		-2.38E-02	3.17E-01
CS-135	268.24	16.00	3.22E-01	3.22E-01	2.84E-02	1.54E-01
I-135	1131.51	22.50	2.41E+08	1.86E+08	-4.21E+07	1.11E+08
	1260.41	28.60	1.86E+08		-3.40E+07	8.46E+07
	1678.03	9.54	3.92E+08		-2.09E+07	1.64E+08
CS-136	153.22	7.46	9.43E-01	9.37E-02	3.37E-01	4.55E-01
	163.89	4.61	1.54E+00		-5.03E-02	7.44E-01
	176.55	13.56	5.35E-01		-2.00E-02	2.57E-01
	273.65	12.66	5.91E-01		-1.07E-01	2.82E-01
	340.57	48.50	2.18E-01		2.74E-01	1.05E-01
	818.50	99.70	9.37E-02		-8.32E-03	4.28E-02
	1048.07	79.60	1.43E-01		3.33E-02	6.53E-02
	1235.34	19.70	7.09E-01		-6.58E-01	3.26E-01
CS-137	661.65	85.12	1.15E-01	1.15E-01	1.60E-01	5.50E-02
LA-138	788.74	34.00	2.12E-01	9.17E-02	1.47E-01	9.84E-02
	1435.80	66.00	9.17E-02		-2.28E-03	3.97E-02
CE-139	165.85	80.35	6.29E-02	6.29E-02	2.41E-03	3.03E-02
BA-140	162.64	6.70	1.06E+00	3.54E-01	-2.41E-01	5.12E-01
	304.84	4.50	1.59E+00		4.84E-01	7.54E-01
	423.70	3.20	2.66E+00		-4.18E-01	1.25E+00
	437.55	2.00	4.24E+00		-1.24E+00	1.99E+00
	537.32	25.00	3.54E-01		-5.95E-03	1.65E-01
LA-140	328.77	20.50	4.24E-01	1.21E-01	2.78E-01	2.02E-01
	487.03	45.50	1.95E-01		-7.25E-02	9.15E-02
	815.85	23.50	4.34E-01		3.32E-02	2.00E-01
	1596.49	95.49	1.21E-01		1.31E-02	5.32E-02
CE-141	145.44	48.40	1.20E-01	1.20E-01	2.77E-02	5.82E-02
CE-143	57.36	11.80	3.15E+01	9.56E+00	6.08E+00	1.53E+01
	293.26	42.00	9.56E+00		9.37E+00	4.61E+00
	664.55	5.20	1.13E+02		1.76E+02	5.40E+01
CE-144	133.54	10.80	4.51E-01	4.51E-01	-1.03E-01	2.18E-01
PM-144	476.78	42.00	1.46E-01	6.64E-02	2.76E-02	6.86E-02
	618.01	98.60	6.64E-02		3.71E-03	3.10E-02
	696.49	99.49	7.07E-02		1.75E-02	3.30E-02
PM-145	36.85	21.70	5.44E-01	3.05E-01	-2.87E-01	2.62E-01
	37.36	39.70	3.05E-01		2.13E-01	1.48E-01
	42.30	15.10	5.73E-01		-3.41E-01	2.77E-01

Analysis Report for 1606038-08
CP-5019 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-145	72.40	2.31	2.76E+00	3.05E-01	-8.04E+00	1.35E+00
PM-146	453.90	39.94	1.55E-01	1.55E-01	5.91E-02	7.34E-02
	735.90	14.01	4.01E-01		-7.31E-04	1.83E-01
	747.13	13.10	5.06E-01		1.25E-01	2.34E-01
+ ND-147	91.11 *	28.90	7.03E-01	7.03E-01	3.92E-01	3.48E-01
	531.02	13.10	7.67E-01		-1.17E-01	3.60E-01
PM-149	285.90	3.10	1.96E+01	1.96E+01	-1.21E+00	9.33E+00
EU-152	121.78	20.50	2.31E-01	2.31E-01	7.48E-02	1.12E-01
	244.69	5.40	1.16E+00		2.05E-01	5.58E-01
	344.27	19.13	2.65E-01		5.82E-02	1.25E-01
	778.89	9.20	7.18E-01		-5.27E-02	3.31E-01
	964.01	10.40	8.39E-01		-3.68E-01	3.91E-01
	1085.78	7.22	1.21E+00		5.40E-01	5.61E-01
	1112.02	9.60	7.72E-01		-3.68E-01	3.51E-01
	1407.95	14.94	4.78E-01		1.86E-01	2.12E-01
GD-153	97.43	31.30	1.57E-01	1.57E-01	-8.64E-02	7.61E-02
	103.18	22.20	2.01E-01		9.09E-02	9.74E-02
EU-154	123.07	40.50	1.13E-01	1.13E-01	-4.68E-02	5.46E-02
	723.30	19.70	3.66E-01		1.78E-02	1.71E-01
	873.19	11.50	6.05E-01		1.56E-01	2.78E-01
	996.32	10.30	7.03E-01		-9.93E-03	3.21E-01
	1004.76	17.90	4.21E-01		2.11E-01	1.93E-01
	1274.45	35.50	2.06E-01		-3.47E-02	9.23E-02
EU-155	86.50	30.90	2.06E-01	2.06E-01	4.16E-01	1.01E-01
	105.30	20.70	2.14E-01		-6.25E-02	1.03E-01
EU-156	811.77	10.40	9.01E-01	9.01E-01	-2.77E-01	4.14E-01
	1153.47	7.20	1.79E+00		-1.50E-02	8.26E-01
	1230.71	8.90	1.49E+00		-2.61E-01	6.88E-01
HO-166M	184.41	72.60	8.82E-02	8.82E-02	9.77E-02	4.29E-02
	280.45	29.60	1.61E-01		1.58E-02	7.64E-02
	410.94	11.10	5.67E-01		1.33E-01	2.70E-01
	711.69	54.10	1.32E-01		2.95E-02	6.17E-02
TM-171	66.72	0.14	4.57E+01	4.57E+01	-5.61E+01	2.23E+01
HF-172	81.75	4.52	1.26E+00	4.20E-01	-3.32E+00	6.14E-01
	125.81	11.30	4.20E-01		1.69E-01	2.03E-01
LU-172	181.53	20.60	5.39E-01	2.94E-01	1.61E-02	2.59E-01
	810.06	16.63	9.34E-01		-2.67E-02	4.31E-01
	912.12	15.25	1.91E+00		3.53E+00	9.10E-01
	1093.66	62.50	2.94E-01		5.76E-02	1.35E-01
LU-173	100.72	5.24	8.94E-01	2.54E-01	3.80E-01	4.33E-01
	272.11	21.20	2.54E-01		1.12E-01	1.21E-01
HF-175	343.40	84.00	6.55E-02	6.55E-02	5.12E-03	3.10E-02
LU-176	88.34	13.30	4.68E-01	4.90E-02	3.56E-01	2.29E-01
	201.83	86.00	5.98E-02		2.50E-03	2.88E-02
	306.78	94.00	4.90E-02		1.28E-03	2.32E-02
TA-182	67.75	41.20	1.54E-01	1.54E-01	-9.00E-02	7.50E-02
	1121.30	34.90	3.54E-01		2.49E-01	1.67E-01
	1189.05	16.23	5.50E-01		-2.48E-01	2.52E-01
	1221.41	26.98	3.90E-01		1.61E-01	1.81E-01
	1231.02	11.44	8.45E-01		-1.47E-01	3.89E-01
IR-192	308.46	29.68	1.62E-01	1.45E-01	-6.07E-02	7.62E-02
	468.07	48.10	1.45E-01		-2.12E-02	6.87E-02
HG-203	279.19	77.30	7.68E-02	7.68E-02	6.14E-02	3.67E-02

Analysis Report for 1606038-08
CP-5019 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BI-207	569.67	97.72	6.44E-02	6.44E-02	4.40E-03	3.02E-02
	1063.62	74.90	8.46E-02		2.00E-03	3.80E-02
+ TL-208	583.14 *	30.22	2.95E-01	1.31E-01	7.80E-01	1.41E-01
	860.37	4.48	1.83E+00		1.48E+00	8.54E-01
	2614.66 *	35.85	1.31E-01		6.40E-01	5.05E-02
BI-210M	262.00	45.00	1.05E-01	1.05E-01	-3.97E-02	4.99E-02
	300.00	23.00	2.37E-01		-5.91E-01	1.13E-01
PB-210	46.50	4.25	1.99E+00	1.99E+00	3.13E+00	9.67E-01
PB-211	404.84	2.90	1.63E+00	1.63E+00	-3.95E-01	7.61E-01
	831.96	2.90	2.42E+00		-6.79E-01	1.12E+00
+ BI-212	727.17 *	11.80	6.20E-01	6.20E-01	1.01E+00	2.90E-01
	1620.62	2.75	2.32E+00		1.07E+00	9.97E-01
PB-212	238.63	44.60	2.14E-01	2.14E-01	4.83E-01	1.05E-01
	300.09	3.41	1.60E+00		-3.99E+00	7.62E-01
+ BI-214	609.31 *	46.30	1.73E-01	1.73E-01	8.70E-01	8.18E-02
	1120.29	15.10	7.94E-01		8.22E-01	3.75E-01
	1764.49	15.80	7.76E-01		1.01E+00	3.59E-01
	2204.22 *	4.98	2.08E-01		1.39E+00	0.00E+00
+ PB-214	295.21 *	19.19	7.68E-01	2.59E-01	9.46E-01	3.78E-01
	351.92 *	37.19	2.59E-01		1.01E+00	1.26E-01
RN-219	401.80	6.50	7.41E-01	7.41E-01	-1.20E-01	3.47E-01
RA-223	323.87	3.88	1.23E+00	1.23E+00	2.24E-01	5.83E-01
RA-224	240.98	3.95	2.68E+00	2.68E+00	1.20E+01	1.31E+00
RA-225	40.00	31.00	4.81E-01	4.81E-01	4.83E-03	2.33E-01
+ RA-226	186.21 *	3.28	2.35E+00	2.35E+00	2.96E+00	1.15E+00
TH-227	50.10	8.40	8.47E-01	4.59E-01	-7.18E-01	4.11E-01
	236.00	11.50	4.59E-01		-4.21E+00	2.20E-01
	256.20	6.30	7.56E-01		-1.51E-01	3.61E-01
+ AC-228	338.32 *	11.40	6.76E-01	4.12E-01	9.61E-01	3.26E-01
	911.07 *	27.70	4.12E-01		7.07E-01	1.96E-01
	969.11 *	16.60	7.49E-01		1.09E+00	3.56E-01
TH-230	48.44	16.90	4.73E-01	4.73E-01	4.87E-01	2.30E-01
	62.85	4.60	1.55E+00		2.40E+00	7.56E-01
	67.67	0.37	1.63E+01		-9.55E+00	7.95E+00
PA-231	283.67	1.60	2.65E+00	2.34E+00	-2.21E-01	1.25E+00
	302.67	2.30	2.34E+00		1.63E+00	1.12E+00
TH-231	25.64	14.70	4.52E+00	8.95E-01	-4.66E+01	2.19E+00
	84.21	6.40	8.95E-01		-2.16E+00	4.36E-01
PA-233	311.98	38.60	1.54E-01	1.54E-01	1.51E-02	7.30E-02
PA-234	131.20	20.40	2.51E-01	2.51E-01	2.20E-01	1.22E-01
	733.99	8.80	6.87E-01		2.88E-02	3.16E-01
	946.00	12.00	6.23E-01		3.15E-02	2.87E-01
PA-234M	1001.03	0.92	8.67E+00	8.67E+00	6.07E+00	4.00E+00
TH-234	63.29	3.80	1.87E+00	1.87E+00	2.22E+00	9.11E-01
U-235	143.76	10.50	4.54E-01	4.54E-01	-3.35E-02	2.20E-01
	163.35	4.70	9.88E-01		-3.22E-02	4.76E-01
	205.31	4.70	1.06E+00		4.19E-01	5.12E-01
NP-237	86.50	12.60	5.04E-01	5.04E-01	1.02E+00	2.46E-01
NP-239	106.10	22.70	2.09E+00	2.09E+00	-6.13E-01	1.01E+00
	228.18	10.70	5.13E+00		-1.01E-01	2.46E+00
	277.60	14.10	3.97E+00		1.83E+00	1.90E+00
AM-241	59.54	35.90	1.77E-01	1.77E-01	-2.73E-02	8.61E-02
AM-243	74.67	66.00	1.13E-01	1.13E-01	-3.00E-01	5.52E-02

Analysis Report for 1606038-08
 CP-5019 00-02

<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Line MDA (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Activity (pCi/grams)</i>	<i>Dec. Level (pCi/grams)</i>
CM-243	209.75	3.29	1.59E+00	3.71E-01	7.64E-01	7.67E-01
	228.14	10.60	4.80E-01		-9.45E-03	2.30E-01
	277.60	14.00	3.71E-01		1.71E-01	1.77E-01

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = MDA value not calculated
- @ = Half-life too short to be able to perform the decay correction

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP-5019 00-02

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	33	69	45	135	774	148
25:	64	67	53	62	54	56	54	62
33:	70	56	39	40	55	63	46	75
41:	49	55	59	46	60	55	110	99
49:	59	48	80	62	70	82	64	72
57:	68	79	95	82	84	89	103	185
65:	138	85	98	95	101	97	86	96
73:	101	129	158	252	166	351	170	115
81:	85	113	88	85	142	102	88	180
89:	115	72	150	104	167	220	110	77
97:	53	64	81	80	60	45	62	55
105:	61	66	56	54	64	74	48	64
113:	77	67	58	64	52	54	67	74
121:	59	67	50	63	51	59	57	74
129:	57	85	73	66	67	60	53	53
137:	58	58	62	57	56	58	47	56
145:	67	52	58	60	60	63	44	54
153:	38	49	48	55	43	56	55	52
161:	43	35	44	67	40	47	50	47
169:	53	58	42	45	46	44	36	47
177:	38	52	50	46	49	43	43	42
185:	49	102	159	76	47	40	48	44
193:	32	54	46	60	37	49	48	48
201:	47	35	48	47	42	40	48	31
209:	33	69	55	35	30	36	49	52
217:	44	41	45	38	29	39	32	41
225:	23	39	38	40	42	29	48	35
233:	27	38	38	36	37	45	238	273
241:	57	104	118	39	35	31	38	25
249:	23	28	26	28	32	29	34	23
257:	26	28	30	31	25	27	27	23
265:	38	26	19	28	29	28	51	33
273:	23	27	28	24	30	36	41	19
281:	27	18	18	17	21	21	34	31
289:	34	30	18	21	20	22	47	137
297:	78	24	18	27	47	32	18	18
305:	28	22	17	14	20	20	22	23
313:	17	27	26	21	21	21	16	14
321:	22	21	17	29	14	20	16	27
329:	37	29	29	20	25	27	16	28
337:	18	34	94	45	23	24	17	19
345:	26	19	23	10	20	21	32	139
353:	215	61	16	23	21	21	19	17
361:	13	17	26	13	18	21	13	9

369: 13 17 11 13 15 24 15 19

Sample Title: CP-5019 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	16	20	10	13	24	19	11	16
385:	25	13	12	24	13	17	11	18
393:	19	34	10	19	23	17	21	17
401:	14	15	18	10	12	17	13	15
409:	19	23	21	17	12	19	20	14
417:	16	9	15	20	16	15	13	8
425:	13	14	11	14	9	12	10	7
433:	15	10	8	11	10	9	18	17
441:	12	15	16	10	11	16	14	11
449:	10	13	14	21	20	15	15	11
457:	8	10	15	14	12	16	18	28
465:	15	16	16	15	19	15	13	17
473:	7	5	13	17	17	18	10	11
481:	12	11	12	14	11	11	12	14
489:	10	7	13	17	9	11	9	14
497:	6	12	17	11	9	12	14	15
505:	16	10	11	12	20	34	59	44
513:	39	16	15	13	11	10	9	11
521:	9	10	10	12	12	11	15	8
529:	9	10	10	15	14	11	14	8
537:	16	8	5	6	10	7	9	21
545:	9	16	13	12	14	11	13	18
553:	6	10	10	9	8	10	7	5
561:	7	11	12	18	8	12	7	15
569:	9	17	9	12	6	10	11	6
577:	13	7	11	12	14	15	34	93
585:	46	9	9	7	8	5	8	15
593:	7	2	7	6	11	8	16	6
601:	11	10	9	8	3	7	8	10
609:	49	158	65	15	8	13	6	4
617:	12	10	11	10	16	7	10	11
625:	6	11	13	12	4	12	4	13
633:	7	9	10	8	13	7	7	6
641:	8	9	9	9	10	6	10	8
649:	8	10	3	9	4	3	10	6
657:	6	6	5	7	15	47	53	14
665:	9	9	17	7	7	9	11	10
673:	7	4	7	10	6	8	9	9
681:	12	5	7	6	9	8	7	7
689:	4	7	6	7	9	10	4	12
697:	6	11	14	9	9	7	10	18
705:	9	9	10	5	11	13	8	9
713:	8	13	6	12	6	9	12	12
721:	12	5	8	9	12	9	23	30
729:	19	3	7	6	8	7	5	8
737:	4	3	3	8	5	13	11	9
745:	8	4	5	6	8	13	3	8
753:	9	10	10	14	5	4	5	3
761:	7	7	10	11	9	6	12	16
769:	16	10	12	7	17	8	5	7
777:	10	6	2	10	8	6	9	7
785:	4	11	14	6	8	10	5	4
793:	5	3	15	17	11	5	5	4

801: 4 6 8 4 7 7 9 9

Sample Title: CP-5019 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	3	4	4	10	9	7	7	7
817:	6	3	6	5	6	5	6	4
825:	7	8	8	4	7	5	9	8
833:	8	7	6	10	11	7	8	11
841:	7	9	5	3	6	11	2	5
849:	7	14	5	1	7	7	4	4
857:	7	7	4	11	11	20	6	4
865:	7	10	8	6	5	9	10	5
873:	6	5	6	4	7	3	7	4
881:	9	6	7	12	7	12	7	2
889:	4	5	3	6	2	4	5	9
897:	7	5	4	8	9	11	7	8
905:	11	1	8	7	2	9	24	65
913:	40	6	3	4	4	8	5	8
921:	10	4	9	4	8	5	3	6
929:	3	6	4	6	12	8	11	9
937:	12	4	5	4	10	3	7	7
945:	7	9	3	6	7	4	7	5
953:	6	9	4	5	10	4	5	5
961:	5	4	7	10	16	9	11	8
969:	28	50	13	4	7	3	6	5
977:	3	5	5	7	4	5	4	11
985:	4	8	5	8	3	10	4	5
993:	4	9	7	1	4	8	6	10
1001:	3	4	10	7	3	5	5	8
1009:	1	2	6	8	8	7	6	7
1017:	7	6	8	4	3	5	6	4
1025:	5	2	6	8	2	4	4	3
1033:	4	6	6	3	7	3	1	5
1041:	3	1	5	5	7	5	6	5
1049:	9	2	4	4	4	5	4	5
1057:	8	3	4	6	4	1	7	4
1065:	4	2	4	2	12	7	11	7
1073:	1	7	3	9	4	2	2	9
1081:	5	5	7	3	8	5	10	14
1089:	4	7	3	6	9	8	1	8
1097:	6	4	5	11	8	5	11	2
1105:	4	5	5	5	6	5	6	7
1113:	4	2	4	7	9	4	7	16
1121:	30	17	12	5	10	7	4	4
1129:	2	8	6	5	8	7	6	9
1137:	8	9	1	7	3	5	7	4
1145:	10	8	9	3	8	8	8	6
1153:	3	6	7	10	11	5	5	4
1161:	6	6	8	8	5	7	4	4
1169:	6	9	11	3	4	9	8	3
1177:	6	8	4	4	3	7	8	10
1185:	11	9	5	9	5	4	4	5
1193:	3	10	6	11	4	5	9	3
1201:	8	5	7	4	12	9	3	10
1209:	10	13	1	9	3	5	7	4
1217:	7	6	13	10	4	4	9	10
1225:	4	8	8	9	4	11	4	2

1233: 5 11 7 7 5 8 16 12

Sample Title: CP-5019 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	7	10	6	6	2	7	5	9
1249:	5	6	7	3	3	10	7	6
1257:	3	1	2	8	8	2	8	4
1265:	4	5	6	3	3	9	4	2
1273:	3	6	3	5	3	6	2	7
1281:	11	10	9	8	5	5	3	1
1289:	3	3	7	5	9	2	8	5
1297:	6	4	5	3	2	5	4	3
1305:	3	6	4	3	5	5	1	3
1313:	3	4	6	6	4	1	3	4
1321:	3	0	6	2	3	2	4	2
1329:	8	1	10	3	1	2	9	3
1337:	4	5	1	1	4	1	6	2
1345:	3	5	4	3	1	3	1	3
1353:	2	3	7	6	3	2	1	1
1361:	2	2	3	4	6	3	0	3
1369:	1	4	6	3	1	2	1	3
1377:	4	11	8	3	3	3	5	3
1385:	2	1	5	2	2	1	3	7
1393:	2	1	1	2	3	3	2	1
1401:	1	6	4	3	2	2	2	9
1409:	6	0	0	1	0	1	5	3
1417:	0	1	3	4	1	1	5	1
1425:	4	5	1	3	4	4	3	5
1433:	3	2	1	4	2	1	1	1
1441:	1	0	3	1	1	2	1	2
1449:	1	1	0	4	3	2	0	4
1457:	6	3	7	68	237	236	70	10
1465:	7	2	5	5	1	5	4	2
1473:	2	1	2	2	2	0	3	5
1481:	2	0	3	3	1	2	2	2
1489:	1	3	1	0	0	1	2	4
1497:	4	1	2	0	2	1	1	2
1505:	2	2	1	3	3	3	0	4
1513:	2	2	3	3	1	3	2	2
1521:	1	0	1	1	3	2	2	0
1529:	0	0	3	4	3	3	0	1
1537:	2	1	0	2	0	1	2	3
1545:	0	2	0	1	2	2	0	1
1553:	0	2	3	1	3	1	1	1
1561:	1	0	2	2	0	0	1	0
1569:	2	2	3	1	0	1	2	1
1577:	0	0	2	2	6	3	3	1
1585:	1	0	5	5	4	0	2	2
1593:	4	4	5	0	3	0	3	0
1601:	1	1	0	0	3	1	3	1
1609:	1	1	0	2	0	2	2	0
1617:	0	1	2	2	3	1	4	0
1625:	0	3	0	1	2	1	5	1
1633:	3	0	2	3	0	3	2	2
1641:	0	0	0	5	1	0	0	1
1649:	1	1	3	2	2	2	0	1
1657:	1	2	3	0	1	1	2	3

1665: 3 0 0 0 3 0 1 0

Sample Title: CP-5019 00-02

Channel	1	2	3	4	5	6	7	8	9
1673:	2	2	1	2	0	3	1	1	
1681:	1	1	1	2	1	1	2	0	
1689:	0	0	1	2	1	1	0	0	
1697:	2	1	0	1	0	0	0	2	
1705:	2	2	0	1	0	0	1	4	
1713:	2	3	0	1	0	0	1	1	
1721:	1	1	1	1	2	3	0	1	
1729:	2	5	6	3	2	1	1	1	
1737:	1	0	1	0	2	2	1	0	
1745:	1	2	0	1	0	1	1	3	
1753:	0	0	1	0	0	0	1	0	
1761:	4	0	2	6	21	13	4	0	
1769:	1	0	1	0	1	1	0	0	
1777:	2	1	1	0	0	1	0	0	
1785:	1	0	0	0	2	0	1	0	
1793:	0	1	2	3	0	3	0	0	
1801:	2	1	0	0	0	0	1	0	
1809:	1	1	1	0	2	1	0	1	
1817:	0	2	2	1	0	1	1	0	
1825:	1	3	0	1	0	2	0	1	
1833:	0	0	0	2	1	3	1	1	
1841:	0	2	0	0	2	0	0	5	
1849:	3	2	0	0	1	0	0	1	
1857:	0	1	2	0	0	0	0	0	
1865:	0	3	0	1	0	0	0	1	
1873:	1	1	0	0	0	1	3	0	
1881:	0	0	0	0	1	1	2	3	
1889:	0	1	5	2	1	0	1	1	
1897:	1	3	0	1	2	1	0	2	
1905:	2	0	0	1	1	0	2	1	
1913:	0	1	1	3	1	0	1	0	
1921:	0	0	0	0	2	1	0	1	
1929:	2	0	1	0	1	1	2	3	
1937:	2	1	1	1	2	0	2	2	
1945:	3	0	0	0	0	1	1	0	
1953:	1	1	0	0	1	0	1	0	
1961:	2	0	0	0	1	1	1	0	
1969:	1	2	1	0	1	3	0	0	
1977:	0	0	0	0	1	1	1	1	
1985:	1	0	3	1	2	0	0	1	
1993:	1	2	0	1	1	1	0	1	
2001:	3	1	1	1	2	1	2	0	
2009:	0	0	0	2	1	2	0	1	
2017:	5	0	0	0	1	2	1	0	
2025:	1	1	2	0	2	1	1	2	
2033:	3	0	0	1	1	0	0	1	
2041:	0	1	0	1	0	0	1	1	
2049:	0	2	1	0	0	0	0	0	
2057:	0	0	0	0	1	1	0	0	
2065:	0	0	1	0	0	1	0	0	
2073:	2	0	3	0	1	0	1	3	
2081:	2	2	1	1	1	0	2	0	
2089:	1	1	0	0	1	0	2	0	

2097: 2 0 0 1 0 1 6 1

Sample Title: CP-5019 00-02

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

2529: 0 0 0 0 1 0 0 1

Sample Title: CP-5019 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	1	0	0	0	0	0
2545:	1	0	0	0	0	0	0	1
2553:	1	0	0	0	0	0	1	0
2561:	0	0	1	0	0	0	0	0
2569:	0	0	0	0	0	0	0	1
2577:	0	0	1	0	0	0	0	1
2585:	0	0	1	1	0	1	1	0
2593:	0	0	1	0	1	1	1	0
2601:	0	0	0	1	0	1	0	0
2609:	1	0	0	0	9	11	27	6
2617:	3	4	0	1	0	0	1	0
2625:	0	0	0	0	1	1	0	1
2633:	0	0	0	0	0	0	0	0
2641:	1	0	0	0	0	0	0	0
2649:	0	0	1	0	1	0	1	0
2657:	0	0	0	1	1	0	0	0
2665:	0	0	1	0	0	1	0	0
2673:	1	0	0	0	1	0	0	1
2681:	0	0	0	1	0	0	1	0
2689:	1	0	0	0	0	1	0	1
2697:	0	0	0	0	0	1	0	1
2705:	1	0	1	0	0	0	1	0
2713:	0	1	1	0	1	0	0	0
2721:	0	0	0	0	0	0	1	0
2729:	1	1	1	0	0	1	0	0
2737:	0	0	0	0	1	1	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	1	1
2769:	0	0	0	1	0	0	0	0
2777:	0	0	0	0	0	0	0	1
2785:	0	0	1	2	0	0	0	0
2793:	0	1	2	1	2	0	0	0
2801:	0	0	0	0	0	2	0	0
2809:	0	0	0	0	0	0	0	1
2817:	1	0	1	0	0	1	1	0
2825:	1	0	0	1	0	0	1	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	1	0	0	0	0	0
2849:	1	0	0	0	0	0	0	0
2857:	0	1	1	0	0	0	0	0
2865:	1	0	1	0	2	1	0	2
2873:	0	0	0	0	0	1	0	0
2881:	0	0	0	0	0	0	0	1
2889:	1	0	0	0	0	1	0	0
2897:	0	0	0	0	0	2	0	0
2905:	0	0	0	3	0	1	0	0
2913:	0	0	0	0	0	0	1	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	2	0	1	0	0	0	0
2945:	0	1	0	1	0	0	0	1
2953:	0	1	0	1	1	0	0	0

2961: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5019 00-02

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

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5019 00-02

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	1	0	1	0	0
3409:	0	0	0	0	0	0	1	0	0
3417:	0	0	0	1	0	0	1	1	0
3425:	0	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	1	1	0	0
3441:	0	0	0	0	0	0	0	2	0
3449:	0	1	1	0	0	1	0	0	0
3457:	0	0	0	0	1	0	0	0	0
3465:	0	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	1	0	0	0
3481:	0	0	0	0	0	0	0	0	0
3489:	0	0	0	0	1	0	0	0	0
3497:	0	0	0	0	1	0	1	0	0
3505:	0	0	1	0	0	0	1	0	0
3513:	0	0	0	0	0	0	0	0	0
3521:	0	0	0	1	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0	0
3537:	0	1	0	0	0	0	0	0	0
3545:	2	0	0	1	0	0	0	0	1
3553:	0	0	0	0	0	0	0	0	0
3561:	1	0	0	0	0	0	0	0	0
3569:	1	0	1	0	1	1	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	1	0	0	0	0	0
3601:	0	0	1	0	1	0	0	0	0
3609:	0	0	0	1	0	0	0	0	0
3617:	0	0	0	0	1	0	0	2	0
3625:	1	0	0	0	0	1	0	0	0
3633:	0	1	0	0	0	0	0	0	1
3641:	0	0	0	1	0	2	0	0	0
3649:	0	0	0	0	0	0	1	1	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	1	1	0
3673:	1	0	0	0	1	0	0	0	0
3681:	0	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	1	0	1	0
3697:	0	0	0	0	0	1	0	0	0
3705:	0	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0	0
3729:	0	2	0	0	0	0	1	0	0
3737:	0	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	1	0	0	0
3753:	0	0	1	0	0	0	1	0	0
3761:	0	0	0	0	0	0	1	0	0
3769:	0	0	0	0	1	0	0	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	1	0	0	0	0	0	0	0	0
3793:	0	1	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0	0
3817:	1	0	0	0	0	0	1	0	0

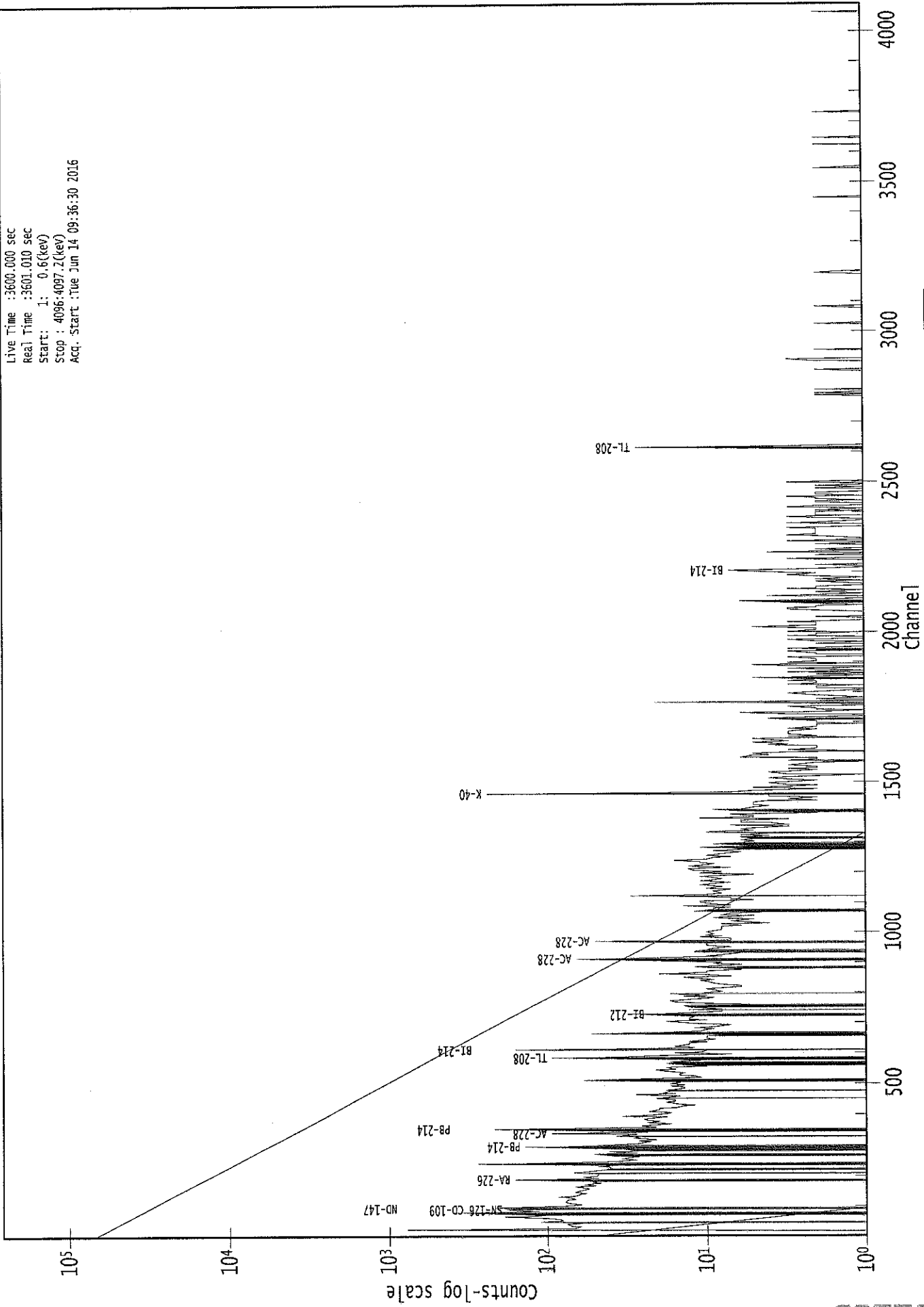
3825: 0 0 1 0 0 0 1 0

Sample Title: CP-5019 00-02

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

0000038806.CNF

Live Time :3600.000 sec
Real Time :3601.010 sec
Start: 1: 0.5(keV)
Stop : 4096.4097.2(keV)
Acq. Start :Tue Jun 14 09:36:30 2016



Analysis Report for 1606038-09
CP-5019 02-05

6114

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-09
Sample Description : CP-5019 02-05
Sample Type : SOIL

Sample Size : 5.574E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 8:16:40AM
Acquisition Started : 6/14/2016 9:36:37AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
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) : 6 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 4/6/2016
Efficiency Calibration Description :

Sample Number : 38807

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-09
CP-5019 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 10:36:54AM
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	12.52	12.64	0.0000	0.00
2	19.52	19.64	0.0000	0.00
3	27.93	28.05	0.0000	0.00
4	64.13	64.22	0.0000	0.00
5	76.07	76.16	0.0000	0.00
6	93.22	93.30	0.0000	0.00
7	99.77	99.84	0.0000	0.00
8	185.78	185.80	0.0000	0.00
9	209.34	209.35	0.0000	0.00
10	239.09	239.09	0.0000	0.00
11	270.69	270.67	0.0000	0.00
12	277.44	277.41	0.0000	0.00
13	295.03	294.99	0.0000	0.00
14	300.13	300.10	0.0000	0.00
15	327.50	327.45	0.0000	0.00
16	338.27	338.22	0.0000	0.00
17	351.87	351.81	0.0000	0.00
18	402.39	402.30	0.0000	0.00
19	410.22	410.13	0.0000	0.00
20	462.32	462.20	0.0000	0.00
21	488.40	488.27	0.0000	0.00
22	510.50	510.35	0.0000	0.00
23	549.20	549.04	0.0000	0.00
24	583.16	582.98	0.0000	0.00
25	609.33	609.14	0.0000	0.00
26	633.83	633.63	0.0000	0.00
27	727.33	727.09	0.0000	0.00
28	769.47	769.21	0.0000	0.00
29	795.19	794.92	0.0000	0.00
30	851.95	851.65	0.0000	0.00
31	860.43	860.13	0.0000	0.00
32	911.35	911.03	0.0000	0.00
33	934.29	933.95	0.0000	0.00
34	969.09	968.74	0.0000	0.00
35	980.16	979.81	0.0000	0.00
36	1089.50	1089.11	0.0000	0.00
37	1120.22	1119.81	0.0000	0.00
38	1154.80	1154.38	0.0000	0.00
39	1171.82	1171.40	0.0000	0.00
40	1366.56	1366.07	0.0000	0.00
41	1406.60	1406.10	0.0000	0.00
42	1460.94	1460.41	0.0000	0.00

Analysis Report for 1606038-09
CP-5019 02-05

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1465.94	1465.41	0.0000	0.00
44	1510.16	1509.62	0.0000	0.00
45	1590.45	1589.89	0.0000	0.00
46	1629.05	1628.48	0.0000	0.00
47	1636.54	1635.97	0.0000	0.00
48	1677.99	1677.41	0.0000	0.00
49	1684.30	1683.72	0.0000	0.00
50	1728.27	1727.68	0.0000	0.00
51	1764.89	1764.28	0.0000	0.00
52	1873.23	1872.60	0.0000	0.00
53	2037.39	2036.73	0.0000	0.00
54	2203.69	2203.00	0.0000	0.00
55	2265.23	2264.52	0.0000	0.00
56	2381.94	2381.22	0.0000	0.00
57	2614.34	2613.60	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-09
CP-5019 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 10:36:54AM

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	12.52	11 -	15	12.64	1.78E+03	138.09	2.34E+03	1.57	
2	19.52	17 -	21	19.64	6.49E+01	68.40	9.34E+02	1.21	
3	27.93	26 -	30	28.05	4.50E+01	47.48	4.56E+02	2.76	
4	64.13	60 -	68	64.22	1.15E+02	106.87	1.69E+03	1.72	
5	76.07	71 -	79	76.16	8.74E+02	126.55	1.93E+03	3.01	
6	93.22	91 -	97	93.30	2.22E+02	88.37	1.18E+03	1.53	
7	99.77	98 -	102	99.84	5.45E+01	54.04	6.01E+02	2.30	
8	185.78	182 -	189	185.80	2.30E+02	69.34	6.47E+02	1.42	
9	209.34	206 -	212	209.35	7.43E+01	59.14	5.71E+02	1.57	
10	239.09	234 -	243	239.09	7.98E+02	88.59	6.65E+02	1.78	
11	270.69	267 -	274	270.67	8.79E+01	53.29	4.12E+02	1.73	
12	277.44	275 -	281	277.41	5.47E+01	44.30	3.15E+02	2.88	
M	13	295.03	292 -	303	294.99	2.25E+02	39.34	1.77E+02	1.50
m	14	300.13	292 -	303	300.10	3.98E+01	35.09	2.62E+02	1.50
15	327.50	324 -	330	327.45	6.28E+01	43.47	2.98E+02	1.28	
16	338.27	335 -	341	338.22	1.19E+02	46.15	3.00E+02	1.35	
17	351.87	348 -	355	351.81	3.42E+02	56.28	3.00E+02	1.33	
18	402.39	398 -	406	402.30	8.31E+01	36.83	1.58E+02	5.44	
19	410.22	408 -	413	410.13	3.24E+01	30.33	1.61E+02	1.55	
20	462.32	458 -	465	462.20	7.48E+01	35.16	1.56E+02	1.60	
21	488.40	486 -	491	488.27	2.44E+01	25.14	1.05E+02	3.23	
22	510.50	507 -	514	510.35	1.30E+02	39.80	1.80E+02	1.54	
23	549.20	545 -	552	549.04	3.60E+01	30.00	1.22E+02	2.83	
24	583.16	579 -	587	582.98	2.36E+02	43.36	1.45E+02	1.54	
25	609.33	605 -	612	609.14	2.74E+02	47.16	1.88E+02	1.35	
26	633.83	630 -	637	633.63	2.83E+01	27.86	1.07E+02	4.70	
27	727.33	724 -	731	727.09	3.39E+01	32.50	1.48E+02	1.80	
28	769.47	764 -	774	769.21	6.28E+01	32.63	1.04E+02	6.48	
29	795.19	793 -	799	794.92	2.62E+01	20.98	6.36E+01	1.81	
30	851.95	849 -	856	851.65	2.38E+01	20.30	5.44E+01	2.86	
31	860.43	857 -	863	860.13	3.20E+01	20.88	5.60E+01	1.46	
32	911.35	906 -	914	911.03	1.45E+02	38.99	1.46E+02	1.56	
33	934.29	930 -	937	933.95	2.59E+01	22.45	6.43E+01	3.62	
34	969.09	965 -	971	968.74	7.21E+01	33.98	1.76E+02	1.84	
35	980.16	977 -	983	979.81	1.90E+01	19.29	5.00E+01	2.01	
36	1089.50	1085 -	1093	1089.11	2.65E+01	20.66	4.90E+01	2.55	
37	1120.22	1114 -	1124	1119.81	7.48E+01	30.23	8.04E+01	2.28	
38	1154.80	1150 -	1158	1154.38	1.89E+01	21.34	5.82E+01	1.22	
39	1171.82	1167 -	1176	1171.40	2.38E+01	24.12	6.84E+01	5.27	
40	1366.56	1363 -	1369	1366.07	1.15E+01	12.71	2.10E+01	3.98	

Analysis Report for 1606038-09
CP-5019 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1406.60	1400 - 1409		1406.10	1.64E+01	18.55	3.91E+01	1.99
M	42	1460.94	1456 - 1469		1460.41	6.13E+02	50.01	1.63E+01	2.12
m	43	1465.94	1456 - 1469		1465.41	1.09E+01	35.57	9.49E+00	3.73
	44	1510.16	1505 - 1517		1509.62	3.01E+01	15.38	1.57E+01	4.36
	45	1590.45	1583 - 1601		1589.89	4.00E+01	21.97	2.60E+01	6.08
	46	1629.05	1624 - 1633		1628.48	1.59E+01	12.92	1.42E+01	3.42
	47	1636.54	1634 - 1638		1635.97	6.95E+00	7.92	8.09E+00	1.71
	48	1677.99	1674 - 1681		1677.41	7.80E+00	7.48	4.40E+00	1.57
	49	1684.30	1681 - 1686		1683.72	9.68E+00	7.28	2.64E+00	2.76
	50	1728.27	1724 - 1730		1727.68	8.75E+00	8.51	6.50E+00	1.63
	51	1764.89	1760 - 1771		1764.28	4.87E+01	17.20	1.46E+01	2.81
	52	1873.23	1869 - 1875		1872.60	5.00E+00	4.47	0.00E+00	1.24
	53	2037.39	2033 - 2039		2036.73	6.31E+00	6.65	3.38E+00	1.72
	54	2203.69	2198 - 2206		2203.00	2.10E+01	9.17	0.00E+00	2.60
	55	2265.23	2261 - 2267		2264.52	5.29E+00	6.34	3.43E+00	2.84
	56	2381.94	2377 - 2384		2381.22	9.00E+00	6.00	0.00E+00	2.00
	57	2614.34	2609 - 2618		2613.60	8.20E+01	18.11	0.00E+00	3.34

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 : 6/14/2016 10:36:54AM

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	12.52	11 -	15	1.78E+03	138.09	2.34E+03	1.36E+02
2	19.52	17 -	21	6.49E+01	68.40	9.34E+02	5.46E+01
3	27.93	26 -	30	4.50E+01	47.48	4.56E+02	3.74E+01
4	64.13	60 -	68	1.15E+02	106.87	1.69E+03	8.61E+01
5	76.07	71 -	79	8.74E+02	126.55	1.93E+03	9.20E+01
6	93.22	91 -	97	2.22E+02	88.37	1.18E+03	6.84E+01
7	99.77	98 -	102	5.45E+01	54.04	6.01E+02	4.27E+01
8	185.78	182 -	189	2.30E+02	69.34	6.47E+02	5.12E+01
9	209.34	206 -	212	7.43E+01	59.14	5.71E+02	4.65E+01
10	239.09	234 -	243	7.98E+02	88.59	6.65E+02	5.61E+01
11	270.69	267 -	274	8.79E+01	53.29	4.12E+02	4.10E+01

Analysis Report for 1606038-09
CP-5019 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	12	277.44	275 -	281	5.47E+01	44.30	3.15E+02	3.43E+01
M	13	295.03	292 -	303	2.25E+02	39.34	1.77E+02	2.19E+01
m	14	300.13	292 -	303	3.98E+01	35.09	2.62E+02	2.66E+01
	15	327.50	324 -	330	6.28E+01	43.47	2.98E+02	3.33E+01
	16	338.27	335 -	341	1.19E+02	46.15	3.00E+02	3.34E+01
	17	351.87	348 -	355	3.42E+02	56.28	3.00E+02	3.49E+01
	18	402.39	398 -	406	8.31E+01	36.83	1.58E+02	2.63E+01
	19	410.22	408 -	413	3.24E+01	30.33	1.61E+02	2.31E+01
	20	462.32	458 -	465	7.48E+01	35.16	1.56E+02	2.52E+01
	21	488.40	486 -	491	2.44E+01	25.14	1.05E+02	1.90E+01
	22	510.50	507 -	514	1.30E+02	39.80	1.80E+02	2.68E+01
	23	549.20	545 -	552	3.60E+01	30.00	1.22E+02	2.26E+01
	24	583.16	579 -	587	2.36E+02	43.36	1.45E+02	2.52E+01
	25	609.33	605 -	612	2.74E+02	47.16	1.88E+02	2.76E+01
	26	633.83	630 -	637	2.83E+01	27.86	1.07E+02	2.12E+01
	27	727.33	724 -	731	3.39E+01	32.50	1.48E+02	2.49E+01
	28	769.47	764 -	774	6.28E+01	32.63	1.04E+02	2.34E+01
	29	795.19	793 -	799	2.62E+01	20.98	6.36E+01	1.51E+01
	30	851.95	849 -	856	2.38E+01	20.30	5.44E+01	1.46E+01
	31	860.43	857 -	863	3.20E+01	20.88	5.60E+01	1.44E+01
	32	911.35	906 -	914	1.45E+02	38.99	1.46E+02	2.52E+01
	33	934.29	930 -	937	2.59E+01	22.45	6.43E+01	1.65E+01
	34	969.09	965 -	971	7.21E+01	33.98	1.76E+02	2.92E+01
	35	980.16	977 -	983	1.90E+01	19.29	5.00E+01	1.41E+01
	36	1089.50	1085 -	1093	2.65E+01	20.66	4.90E+01	1.47E+01
	37	1120.22	1114 -	1124	7.48E+01	30.23	8.04E+01	2.04E+01
	38	1154.80	1150 -	1158	1.89E+01	21.34	5.82E+01	1.60E+01
	39	1171.82	1167 -	1176	2.38E+01	24.12	6.84E+01	1.81E+01
	40	1366.56	1363 -	1369	1.15E+01	12.71	2.10E+01	8.83E+00
	41	1406.60	1400 -	1409	1.64E+01	18.55	3.91E+01	1.37E+01
M	42	1460.94	1456 -	1469	6.13E+02	50.01	1.63E+01	6.63E+00
m	43	1465.94	1456 -	1469	1.09E+01	35.57	9.49E+00	5.06E+00
	44	1510.16	1505 -	1517	3.01E+01	15.38	1.57E+01	8.85E+00
	45	1590.45	1583 -	1601	4.00E+01	21.97	2.60E+01	1.48E+01
	46	1629.05	1624 -	1633	1.59E+01	12.92	1.42E+01	8.36E+00
	47	1636.54	1634 -	1638	6.95E+00	7.92	8.09E+00	4.86E+00
	48	1677.99	1674 -	1681	7.80E+00	7.48	4.40E+00	4.09E+00
	49	1684.30	1681 -	1686	9.68E+00	7.28	2.64E+00	3.11E+00
	50	1728.27	1724 -	1730	8.75E+00	8.51	6.50E+00	5.03E+00
	51	1764.89	1760 -	1771	4.87E+01	17.20	1.46E+01	8.27E+00
	52	1873.23	1869 -	1875	5.00E+00	4.47	0.00E+00	0.00E+00
	53	2037.39	2033 -	2039	6.31E+00	6.65	3.38E+00	3.58E+00
	54	2203.69	2198 -	2206	2.10E+01	9.17	0.00E+00	0.00E+00
	55	2265.23	2261 -	2267	5.29E+00	6.34	3.43E+00	3.59E+00
	56	2381.94	2377 -	2384	9.00E+00	6.00	0.00E+00	0.00E+00
	57	2614.34	2609 -	2618	8.20E+01	18.11	0.00E+00	0.00E+00

Analysis Report for 1606038-09
CP-5019 02-05

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 : 6/14/2016 10:36:54AM

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	12.52	11 -	15	12.64	1.78E+03	138.09	2.34E+03	.....
2	19.52	17 -	21	19.64	6.49E+01	68.40	9.34E+02	.....
3	27.93	26 -	30	28.05	4.50E+01	47.48	4.56E+02	.....
4	64.13	60 -	68	64.22	1.15E+02	106.87	1.69E+03	TH-234
5	76.07	71 -	79	76.16	8.74E+02	126.55	1.93E+03	.....
6	93.22	91 -	97	93.30	2.22E+02	88.37	1.18E+03	GA-67
7	99.77	98 -	102	99.84	5.45E+01	54.04	6.01E+02	LU-173
8	185.78	182 -	189	185.80	2.30E+02	69.34	6.47E+02	RA-226
9	209.34	206 -	212	209.35	7.43E+01	59.14	5.71E+02	GA-67
								CM-243
10	239.09	234 -	243	239.09	7.98E+02	88.59	6.65E+02	PB-212
11	270.69	267 -	274	270.67	8.79E+01	53.29	4.12E+02	.....
12	277.44	275 -	281	277.41	5.47E+01	44.30	3.15E+02	CM-243
								NP-239
M	13	292 -	303	294.99	2.25E+02	39.34	1.77E+02	PB-214
m	14	292 -	303	300.10	3.98E+01	35.09	2.62E+02	PB-212
								GA-67
								BI-210M
15	327.50	324 -	330	327.45	6.28E+01	43.47	2.98E+02	.....
16	338.27	335 -	341	338.22	1.19E+02	46.15	3.00E+02	AC-228
17	351.87	348 -	355	351.81	3.42E+02	56.28	3.00E+02	PB-214
18	402.39	398 -	406	402.30	8.31E+01	36.83	1.58E+02	RN-219
19	410.22	408 -	413	410.13	3.24E+01	30.33	1.61E+02	HO-166M
20	462.32	458 -	465	462.20	7.48E+01	35.16	1.56E+02	.....
21	488.40	486 -	491	488.27	2.44E+01	25.14	1.05E+02	.....
22	510.50	507 -	514	510.35	1.30E+02	39.80	1.80E+02	.....
23	549.20	545 -	552	549.04	3.60E+01	30.00	1.22E+02	.....
24	583.16	579 -	587	582.98	2.36E+02	43.36	1.45E+02	TL-208
25	609.33	605 -	612	609.14	2.74E+02	47.16	1.88E+02	BI-214
26	633.83	630 -	637	633.63	2.83E+01	27.86	1.07E+02	.....

Analysis Report for 1606038-09
CP-5019 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
27	727.33	724 -	731	727.09	3.39E+01	32.50	1.48E+02	BI-212
28	769.47	764 -	774	769.21	6.28E+01	32.63	1.04E+02	.....
29	795.19	793 -	799	794.92	2.62E+01	20.98	6.36E+01	CS-134
30	851.95	849 -	856	851.65	2.38E+01	20.30	5.44E+01	.....
31	860.43	857 -	863	860.13	3.20E+01	20.88	5.60E+01	TL-208
32	911.35	906 -	914	911.03	1.45E+02	38.99	1.46E+02	AC-228 LU-172
33	934.29	930 -	937	933.95	2.59E+01	22.45	6.43E+01	.....
34	969.09	965 -	971	968.74	7.21E+01	33.98	1.76E+02	AC-228
35	980.16	977 -	983	979.81	1.90E+01	19.29	5.00E+01	.....
36	1089.50	1085 -	1093	1089.11	2.65E+01	20.66	4.90E+01	.....
37	1120.22	1114 -	1124	1119.81	7.48E+01	30.23	8.04E+01	BI-214 SC-46
38	1154.80	1150 -	1158	1154.38	1.89E+01	21.34	5.82E+01	.....
39	1171.82	1167 -	1176	1171.40	2.38E+01	24.12	6.84E+01	.....
40	1366.56	1363 -	1369	1366.07	1.15E+01	12.71	2.10E+01	.....
41	1406.60	1400 -	1409	1406.10	1.64E+01	18.55	3.91E+01	.....
M 42	1460.94	1456 -	1469	1460.41	6.13E+02	50.01	1.63E+01	K-40
m 43	1465.94	1456 -	1469	1465.41	1.09E+01	35.57	9.49E+00	.....
44	1510.16	1505 -	1517	1509.62	3.01E+01	15.38	1.57E+01	.....
45	1590.45	1583 -	1601	1589.89	4.00E+01	21.97	2.60E+01	.....
46	1629.05	1624 -	1633	1628.48	1.59E+01	12.92	1.42E+01	.....
47	1636.54	1634 -	1638	1635.97	6.95E+00	7.92	8.09E+00	.....
48	1677.99	1674 -	1681	1677.41	7.80E+00	7.48	4.40E+00	I-135
49	1684.30	1681 -	1686	1683.72	9.68E+00	7.28	2.64E+00	.....
50	1728.27	1724 -	1730	1727.68	8.75E+00	8.51	6.50E+00	.....
51	1764.89	1760 -	1771	1764.28	4.87E+01	17.20	1.46E+01	BI-214
52	1873.23	1869 -	1875	1872.60	5.00E+00	4.47	0.00E+00	.....
53	2037.39	2033 -	2039	2036.73	6.31E+00	6.65	3.38E+00	.....
54	2203.69	2198 -	2206	2203.00	2.10E+01	9.17	0.00E+00	BI-214
55	2265.23	2261 -	2267	2264.52	5.29E+00	6.34	3.43E+00	.....
56	2381.94	2377 -	2384	2381.22	9.00E+00	6.00	0.00E+00	.....
57	2614.34	2609 -	2618	2613.60	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 : 6/14/2016 10:36:54AM

Analysis Report for 1606038-09
CP-5019 02-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
1	12.52	1.78E+03	138.09	7.89E-06	1.66E-03	
2	19.52	6.49E+01	68.40	5.72E-04	1.66E-03	
3	27.93	4.50E+01	47.48	4.20E-03	1.66E-03	
4	64.13	1.15E+02	106.87	2.39E-02	1.76E-03	
5	76.07	8.74E+02	126.55	2.56E-02	2.02E-03	
6	93.22	2.22E+02	88.37	2.60E-02	2.27E-03	
7	99.77	5.45E+01	54.04	2.58E-02	2.27E-03	
8	185.78	2.30E+02	69.34	1.99E-02	2.40E-03	
9	209.34	7.43E+01	59.14	1.85E-02	2.36E-03	
10	239.09	7.98E+02	88.59	1.70E-02	2.31E-03	
11	270.69	8.79E+01	53.29	1.56E-02	2.26E-03	
12	277.44	5.47E+01	44.30	1.54E-02	2.24E-03	
M	13	295.03	2.25E+02	39.34	1.47E-02	2.21E-03
m	14	300.13	3.98E+01	35.09	1.45E-02	2.21E-03
15	327.50	6.28E+01	43.47	1.37E-02	2.16E-03	
16	338.27	1.19E+02	46.15	1.34E-02	2.14E-03	
17	351.87	3.42E+02	56.28	1.30E-02	2.12E-03	
18	402.39	8.31E+01	36.83	1.17E-02	1.99E-03	
19	410.22	3.24E+01	30.33	1.16E-02	1.95E-03	
20	462.32	7.48E+01	35.16	1.06E-02	1.68E-03	
21	488.40	2.44E+01	25.14	1.01E-02	1.55E-03	
22	510.50	1.30E+02	39.80	9.77E-03	1.43E-03	
23	549.20	3.60E+01	30.00	9.22E-03	1.23E-03	
24	583.16	2.36E+02	43.36	8.79E-03	1.06E-03	
25	609.33	2.74E+02	47.16	8.48E-03	9.23E-04	
26	633.83	2.83E+01	27.86	8.22E-03	7.96E-04	
27	727.33	3.39E+01	32.50	7.34E-03	7.36E-04	
28	769.47	6.28E+01	32.63	7.01E-03	7.90E-04	
29	795.19	2.62E+01	20.98	6.82E-03	8.23E-04	
30	851.95	2.38E+01	20.30	6.44E-03	8.96E-04	
31	860.43	3.20E+01	20.88	6.39E-03	9.07E-04	
32	911.35	1.45E+02	38.99	6.09E-03	9.28E-04	
33	934.29	2.59E+01	22.45	5.97E-03	8.82E-04	
34	969.09	7.21E+01	33.98	5.79E-03	8.12E-04	
35	980.16	1.90E+01	19.29	5.74E-03	7.89E-04	
36	1089.50	2.65E+01	20.66	5.27E-03	5.68E-04	
37	1120.22	7.48E+01	30.23	5.15E-03	5.06E-04	
38	1154.80	1.89E+01	21.34	5.03E-03	4.36E-04	
39	1171.82	2.38E+01	24.12	4.98E-03	4.02E-04	
40	1366.56	1.15E+01	12.71	4.43E-03	3.65E-04	
41	1406.60	1.64E+01	18.55	4.34E-03	3.68E-04	
M	42	1460.94	6.13E+02	50.01	4.23E-03	3.72E-04
m	43	1465.94	1.09E+01	35.57	4.22E-03	3.73E-04
44	1510.16	3.01E+01	15.38	4.14E-03	3.76E-04	
45	1590.45	4.00E+01	21.97	4.00E-03	3.82E-04	
46	1629.05	1.59E+01	12.92	3.95E-03	3.85E-04	
47	1636.54	6.95E+00	7.92	3.94E-03	3.86E-04	
48	1677.99	7.80E+00	7.48	3.88E-03	3.89E-04	
49	1684.30	9.68E+00	7.28	3.87E-03	3.89E-04	
50	1728.27	8.75E+00	8.51	3.81E-03	3.93E-04	
51	1764.89	4.87E+01	17.20	3.77E-03	3.96E-04	
52	1873.23	5.00E+00	4.47	3.66E-03	4.01E-04	
53	2037.39	6.31E+00	6.65	3.54E-03	4.01E-04	

Analysis Report for 1606038-09
CP-5019 02-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2203.69	2.10E+01	9.17	3.45E-03	4.01E-04
55	2265.23	5.29E+00	6.34	3.43E-03	4.01E-04
56	2381.94	9.00E+00	6.00	3.41E-03	4.01E-04
57	2614.34	8.20E+01	18.11	3.40E-03	4.01E-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 : 6/14/2016 10:36:54AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037620.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	12.52	1.78E+03	138.09	8.66E+02	3.93E+01	9.16E+02	1.44E+02	
2	19.52	6.49E+01	68.40			6.49E+01	6.84E+01	
3	27.93	4.50E+01	47.48			4.50E+01	4.75E+01	
4	64.13	1.15E+02	106.87			1.15E+02	1.07E+02	
5	76.07	8.74E+02	126.55			8.74E+02	1.27E+02	
6	93.22	2.22E+02	88.37	5.23E+01	6.82E+00	1.70E+02	8.86E+01	
7	99.77	5.45E+01	54.04			5.45E+01	5.40E+01	
8	185.78	2.30E+02	69.34	2.52E+01	6.98E+00	2.05E+02	6.97E+01	
9	209.34	7.43E+01	59.14			7.43E+01	5.91E+01	
10	239.09	7.98E+02	88.59	8.15E+00	6.18E+00	7.90E+02	8.88E+01	
11	270.69	8.79E+01	53.29			8.79E+01	5.33E+01	
12	277.44	5.47E+01	44.30			5.47E+01	4.43E+01	
M	13	295.03	2.25E+02	39.34	4.80E+00	5.42E+00	2.21E+02	3.97E+01
m	14	300.13	3.98E+01	35.09			3.98E+01	3.51E+01
	15	327.50	6.28E+01	43.47			6.28E+01	4.35E+01
	16	338.27	1.19E+02	46.15			1.19E+02	4.61E+01
	17	351.87	3.42E+02	56.28	1.16E+01	4.76E+00	3.30E+02	5.65E+01
	18	402.39	8.31E+01	36.83			8.31E+01	3.68E+01
	19	410.22	3.24E+01	30.33			3.24E+01	3.03E+01
	20	462.32	7.48E+01	35.16			7.48E+01	3.52E+01
	21	488.40	2.44E+01	25.14			2.44E+01	2.51E+01
	22	510.50	1.30E+02	39.80	7.18E+01	4.99E+00	5.80E+01	4.01E+01
	23	549.20	3.60E+01	30.00			3.60E+01	3.00E+01
	24	583.16	2.36E+02	43.36			2.36E+02	4.34E+01
	25	609.33	2.74E+02	47.16	7.00E+00	3.58E+00	2.67E+02	4.73E+01
	26	633.83	2.83E+01	27.86			2.83E+01	2.79E+01

Analysis Report for 1606038-09

CP-5019 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
27	727.33	3.39E+01	32.50			3.39E+01	3.25E+01	
28	769.47	6.28E+01	32.63			6.28E+01	3.26E+01	
29	795.19	2.62E+01	20.98			2.62E+01	2.10E+01	
30	851.95	2.38E+01	20.30			2.38E+01	2.03E+01	
31	860.43	3.20E+01	20.88			3.20E+01	2.09E+01	
32	911.35	1.45E+02	38.99	1.26E+00	2.67E+00	1.44E+02	3.91E+01	
33	934.29	2.59E+01	22.45			2.59E+01	2.24E+01	
34	969.09	7.21E+01	33.98			7.21E+01	3.40E+01	
35	980.16	1.90E+01	19.29			1.90E+01	1.93E+01	
36	1089.50	2.65E+01	20.66			2.65E+01	2.07E+01	
37	1120.22	7.48E+01	30.23			7.48E+01	3.02E+01	
38	1154.80	1.89E+01	21.34			1.89E+01	2.13E+01	
39	1171.82	2.38E+01	24.12			2.38E+01	2.41E+01	
40	1366.56	1.15E+01	12.71			1.15E+01	1.27E+01	
41	1406.60	1.64E+01	18.55			1.64E+01	1.85E+01	
M	42	1460.94	6.13E+02	50.01	3.84E+00	1.88E+00	6.09E+02	5.00E+01
m	43	1465.94	1.09E+01	35.57			1.09E+01	3.56E+01
44	1510.16	3.01E+01	15.38			3.01E+01	1.54E+01	
45	1590.45	4.00E+01	21.97			4.00E+01	2.20E+01	
46	1629.05	1.59E+01	12.92			1.59E+01	1.29E+01	
47	1636.54	6.95E+00	7.92			6.95E+00	7.92E+00	
48	1677.99	7.80E+00	7.48			7.80E+00	7.48E+00	
49	1684.30	9.68E+00	7.28			9.68E+00	7.28E+00	
50	1728.27	8.75E+00	8.51			8.75E+00	8.51E+00	
51	1764.89	4.87E+01	17.20	1.55E+00	1.49E+00	4.72E+01	1.73E+01	
52	1873.23	5.00E+00	4.47			5.00E+00	4.47E+00	
53	2037.39	6.31E+00	6.65			6.31E+00	6.65E+00	
54	2203.69	2.10E+01	9.17	5.23E-01	9.79E-01	2.05E+01	9.22E+00	
55	2265.23	5.29E+00	6.34			5.29E+00	6.34E+00	
56	2381.94	9.00E+00	6.00			9.00E+00	6.00E+00	
57	2614.34	8.20E+01	18.11	3.94E+00	1.42E+00	7.81E+01	1.82E+01	

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/14/2016 10:36:54AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037620.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1606038-09

CP-5019 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
1	12.52	1.78E+03	138.09	8.66E+02	3.93E+01	9.16E+02	1.44E+02	
2	19.52	6.49E+01	68.40			6.49E+01	6.84E+01	
3	27.93	4.50E+01	47.48			4.50E+01	4.75E+01	
4	64.13	1.15E+02	106.87			1.15E+02	1.07E+02	
5	76.07	8.74E+02	126.55			8.74E+02	1.27E+02	
6	93.22	2.22E+02	88.37	5.23E+01	6.82E+00	1.70E+02	8.86E+01	
7	99.77	5.45E+01	54.04			5.45E+01	5.40E+01	
8	185.78	2.30E+02	69.34	2.52E+01	6.98E+00	2.05E+02	6.97E+01	
9	209.34	7.43E+01	59.14			7.43E+01	5.91E+01	
10	239.09	7.98E+02	88.59	8.15E+00	6.18E+00	7.90E+02	8.88E+01	
11	270.69	8.79E+01	53.29			8.79E+01	5.33E+01	
12	277.44	5.47E+01	44.30			5.47E+01	4.43E+01	
M	13	295.03	2.25E+02	39.34	4.80E+00	5.42E+00	2.21E+02	3.97E+01
m	14	300.13	3.98E+01	35.09			3.98E+01	3.51E+01
15	327.50	6.28E+01	43.47			6.28E+01	4.35E+01	
16	338.27	1.19E+02	46.15			1.19E+02	4.61E+01	
17	351.87	3.42E+02	56.28	1.16E+01	4.76E+00	3.30E+02	5.65E+01	
18	402.39	8.31E+01	36.83			8.31E+01	3.68E+01	
19	410.22	3.24E+01	30.33			3.24E+01	3.03E+01	
20	462.32	7.48E+01	35.16			7.48E+01	3.52E+01	
21	488.40	2.44E+01	25.14			2.44E+01	2.51E+01	
22	510.50	1.30E+02	39.80	7.18E+01	4.99E+00	5.80E+01	4.01E+01	
23	549.20	3.60E+01	30.00			3.60E+01	3.00E+01	
24	583.16	2.36E+02	43.36			2.36E+02	4.34E+01	
25	609.33	2.74E+02	47.16	7.00E+00	3.58E+00	2.67E+02	4.73E+01	
26	633.83	2.83E+01	27.86			2.83E+01	2.79E+01	
27	727.33	3.39E+01	32.50			3.39E+01	3.25E+01	
28	769.47	6.28E+01	32.63			6.28E+01	3.26E+01	
29	795.19	2.62E+01	20.98			2.62E+01	2.10E+01	
30	851.95	2.38E+01	20.30			2.38E+01	2.03E+01	
31	860.43	3.20E+01	20.88			3.20E+01	2.09E+01	
32	911.35	1.45E+02	38.99	1.26E+00	2.67E+00	1.44E+02	3.91E+01	
33	934.29	2.59E+01	22.45			2.59E+01	2.24E+01	
34	969.09	7.21E+01	33.98			7.21E+01	3.40E+01	
35	980.16	1.90E+01	19.29			1.90E+01	1.93E+01	
36	1089.50	2.65E+01	20.66			2.65E+01	2.07E+01	
37	1120.22	7.48E+01	30.23			7.48E+01	3.02E+01	
38	1154.80	1.89E+01	21.34			1.89E+01	2.13E+01	
39	1171.82	2.38E+01	24.12			2.38E+01	2.41E+01	
40	1366.56	1.15E+01	12.71			1.15E+01	1.27E+01	
41	1406.60	1.64E+01	18.55			1.64E+01	1.85E+01	
M	42	1460.94	6.13E+02	50.01	3.84E+00	1.88E+00	6.09E+02	5.00E+01
m	43	1465.94	1.09E+01	35.57			1.09E+01	3.56E+01
44	1510.16	3.01E+01	15.38			3.01E+01	1.54E+01	
45	1590.45	4.00E+01	21.97			4.00E+01	2.20E+01	
46	1629.05	1.59E+01	12.92			1.59E+01	1.29E+01	
47	1636.54	6.95E+00	7.92			6.95E+00	7.92E+00	
48	1677.99	7.80E+00	7.48			7.80E+00	7.48E+00	
49	1684.30	9.68E+00	7.28			9.68E+00	7.28E+00	
50	1728.27	8.75E+00	8.51			8.75E+00	8.51E+00	
51	1764.89	4.87E+01	17.20	1.55E+00	1.49E+00	4.72E+01	1.73E+01	
52	1873.23	5.00E+00	4.47			5.00E+00	4.47E+00	
53	2037.39	6.31E+00	6.65			6.31E+00	6.65E+00	
54	2203.69	2.10E+01	9.17	5.23E-01	9.79E-01	2.05E+01	9.22E+00	

Analysis Report for 1606038-09

CP-5019 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2265.23	5.29E+00	6.34			5.29E+00	6.34E+00
56	2381.94	9.00E+00	6.00			9.00E+00	6.00E+00
57	2614.34	8.20E+01	18.11	3.94E+00	1.42E+00	7.81E+01	1.82E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.998	1460.81 *	10.67	1.82E+01	2.22E+00
GA-67	0.968	93.31 *	35.70	1.37E+00	2.23E+00
		208.95 *	2.24	1.34E+01	1.78E+01
		300.22 *	16.00	1.28E+00	2.28E+00
TL-208	0.992	583.14 *	30.22	1.19E+00	2.63E-01
		860.37 *	4.48	1.51E+00	1.01E+00
BI-212	0.763	2614.66 *	35.85	8.63E-01	2.25E-01
		727.17 *	11.80	5.27E-01	5.08E-01
PB-212	0.968	1620.62	2.75		
		238.63 *	44.60	1.40E+00	2.48E-01
BI-214	0.992	300.09 *	3.41	1.08E+00	9.67E-01
		609.31 *	46.30	9.16E-01	1.90E-01
PB-214	0.998	1120.29 *	15.10	1.29E+00	5.38E-01
		1764.49 *	15.80	1.07E+00	4.06E-01
		2204.22 *	4.98	1.60E+00	7.45E-01
RN-219	0.946	295.21 *	19.19	1.05E+00	2.47E-01
		351.92 *	37.19	9.22E-01	2.18E-01
RA-226	0.970	401.80 *	6.50	1.47E+00	6.96E-01
AC-228	0.994	186.21 *	3.28	4.23E+00	7.89E+00
		338.32 *	11.40	1.05E+00	4.42E-01
		911.07 *	27.70	1.15E+00	3.58E-01
TH-234	0.894	969.11 *	16.60	1.01E+00	4.96E-01
		63.29 *	3.80	1.71E+00	1.59E+00
CM-243	0.369	209.75 *	3.29	1.64E+00	1.32E+00
		228.14	10.60		
		277.60 *	14.00	3.43E-01	2.82E-01

Analysis Report for 1606038-09
CP-5019 02-05

* = 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 : 6/14/2016 10:36:54AM
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	12.52	2.54443E-01	7.84		
2	19.52	1.80237E-02	52.71		
3	27.93	1.24995E-02	52.76		
5	76.07	2.42725E-01	7.24		
7	99.77	1.51295E-02	49.61	Tol.	LU-173
11	270.69	2.44104E-02	30.32		
15	327.50	1.74496E-02	34.60		
19	410.22	8.99951E-03	46.81	Tol.	HO-166M
20	462.32	2.07734E-02	23.51	Sum	
21	488.40	6.76407E-03	51.62		
22	510.50	1.61166E-02	34.57		
23	549.20	1.00115E-02	41.62		
26	633.83	7.85908E-03	49.23	Sum	
28	769.47	1.74444E-02	25.98	Sum	
29	795.19	7.28448E-03	40.01	Sum	
30	851.95	6.61765E-03	42.60		
33	934.29	7.18630E-03	43.39	Sum	
35	980.16	5.27778E-03	50.76		
36	1089.50	7.35839E-03	38.99		
38	1154.80	5.25463E-03	56.40	Sum	
39	1171.82	6.61398E-03	50.66		
40	1366.56	3.19444E-03	55.25		
41	1406.60	4.56790E-03	56.39		
m 43	1465.94	3.01966E-03	163.61		
44	1510.16	8.36988E-03	25.52		
45	1590.45	1.11137E-02	27.46		
46	1629.05	4.42029E-03	40.60		
47	1636.54	1.93182E-03	56.95		
48	1677.99	2.16667E-03	47.97	Tol.	I-135
49	1684.30	2.68939E-03	37.60		
50	1728.27	2.43056E-03	48.66		
52	1873.23	1.38889E-03	44.72		
53	2037.39	1.75347E-03	52.69		
55	2265.23	1.46825E-03	60.01		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	2381.94	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	0.99	1460.81 *	10.67	1.82E+01	2.22E+00
GA-67	0.96	93.31 *	35.70	1.37E+00	2.23E+00
		208.95 *	2.24	1.34E+01	1.78E+01
		300.22 *	16.00	1.28E+00	2.28E+00
TL-208	0.99	583.14 *	30.22	1.19E+00	2.63E-01
		860.37 *	4.48	1.51E+00	1.01E+00
		2614.66 *	35.85	8.63E-01	2.25E-01
BI-212	0.76	727.17 *	11.80	5.27E-01	5.08E-01
		1620.62 *	2.75		
PB-212	0.96	238.63 *	44.60	1.40E+00	2.48E-01
		300.09 *	3.41	1.08E+00	9.67E-01
BI-214	0.99	609.31 *	46.30	9.16E-01	1.90E-01
		1120.29 *	15.10	1.29E+00	5.38E-01
		1764.49 *	15.80	1.07E+00	4.06E-01
		2204.22 *	4.98	1.60E+00	7.45E-01
PB-214	0.99	295.21 *	19.19	1.05E+00	2.47E-01
		351.92 *	37.19	9.22E-01	2.18E-01
RN-219	0.94	401.80 *	6.50	1.47E+00	6.96E-01
RA-226	0.97	186.21 *	3.28	4.23E+00	7.89E+00
AC-228	0.99	338.32 *	11.40	1.05E+00	4.42E-01
		911.07 *	27.70	1.15E+00	3.58E-01
		969.11 *	16.60	1.01E+00	4.96E-01
TH-234	0.89	63.29 *	3.80	1.71E+00	1.59E+00
CM-243	0.36	209.75 *	3.29	1.64E+00	1.32E+00
		228.14 *	10.60		
		277.60 *	14.00	3.43E-01	2.82E-01

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* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 1.000 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.998	1.82E+01	2.22E+00	
GA-67	0.968	9.23E-01	1.15E+00	
TL-208	0.992	1.02E+00	1.69E-01	
BI-212	0.763	5.27E-01	5.08E-01	
PB-212	0.968	1.34E+00	2.42E-01	
BI-214	0.992	1.00E+00	1.60E-01	
PB-214	0.998	9.79E-01	1.63E-01	
RN-219	0.946	1.47E+00	6.96E-01	
RA-226	0.970	4.23E+00	7.89E+00	
AC-228	0.994	1.09E+00	2.43E-01	
TH-234	0.894	1.71E+00	1.59E+00	
CM-243	0.369	3.94E-01	2.76E-01	

? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 10:36:54AM
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	12.52	2.54443E-01	7.84		
2	19.52	1.80237E-02	52.71		
3	27.93	1.24995E-02	52.76		
5	76.07	2.42725E-01	7.24		
7	99.77	1.51295E-02	49.61	Tol.	LU-173
11	270.69	2.44104E-02	30.32		
15	327.50	1.74496E-02	34.60		
19	410.22	8.99951E-03	46.81	Tol.	HO-166M
20	462.32	2.07734E-02	23.51	Sum	
21	488.40	6.76407E-03	51.62		
22	510.50	1.61166E-02	34.57		
23	549.20	1.00115E-02	41.62		
26	633.83	7.85908E-03	49.23	Sum	
28	769.47	1.74444E-02	25.98	Sum	
29	795.19	7.28448E-03	40.01	Sum	
30	851.95	6.61765E-03	42.60		
33	934.29	7.18630E-03	43.39	Sum	
35	980.16	5.27778E-03	50.76		
36	1089.50	7.35839E-03	38.99		
38	1154.80	5.25463E-03	56.40	Sum	
39	1171.82	6.61398E-03	50.66		
40	1366.56	3.19444E-03	55.25		
41	1406.60	4.56790E-03	56.39		
m 43	1465.94	3.01966E-03	163.61		
44	1510.16	8.36988E-03	25.52		
45	1590.45	1.11137E-02	27.46		
46	1629.05	4.42029E-03	40.60		
47	1636.54	1.93182E-03	56.95		
48	1677.99	2.16667E-03	47.97	Tol.	I-135
49	1684.30	2.68939E-03	37.60		
50	1728.27	2.43056E-03	48.66		
52	1873.23	1.38889E-03	44.72		
53	2037.39	1.75347E-03	52.69		
55	2265.23	1.46825E-03	60.01		
56	2381.94	2.50000E-03	33.33		

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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	-3.14E-01	5.19E-01	5.19E-01
+	NA-22	1274.54	99.94	2.54E-02	8.19E-02	8.19E-02
+	NA-24	1368.53	99.99	-2.66E+01	2.25E+02	5.91E+02
		2754.09	99.86	3.06E+01		2.25E+02
+	AL-26	1808.65	99.76	-1.89E-02	6.04E-02	6.04E-02
+	K-40	1460.81	* 10.67	1.82E+01	9.26E-01	9.26E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-8.82E-03	4.99E-02	4.99E-02
		78.34	96.00	2.67E-01		7.35E-02
+	SC-46	889.25	99.98	-4.68E-02	7.61E-02	7.61E-02
		1120.51	99.99	1.87E-01		1.34E-01
+	V-48	983.52	99.98	2.13E-02	1.10E-01	1.10E-01
		1312.10	97.50	3.30E-02		1.17E-01
+	CR-51	320.08	9.83	2.91E-01	6.65E-01	6.65E-01
+	MN-54	834.83	99.97	-1.95E-02	7.79E-02	7.79E-02
+	CO-56	846.75	99.96	4.51E-03	8.10E-02	8.10E-02
		1037.75	14.03	-1.90E-01		5.06E-01
		1238.25	67.00	3.65E-02		1.67E-01
		1771.40	15.51	-2.48E-02		4.49E-01
		2598.48	16.90	2.52E-02		2.34E-01
+	CO-57	122.06	85.51	1.35E-02	5.51E-02	5.51E-02
		136.48	10.60	-9.05E-02		4.36E-01
+	CO-58	810.76	99.40	1.09E-03	7.41E-02	7.41E-02
+	FE-59	1099.22	56.50	-2.16E-02	1.68E-01	1.68E-01
		1291.56	43.20	5.29E-02		2.19E-01
+	CO-60	1173.22	100.00	1.59E-02	6.20E-02	8.93E-02
		1332.49	100.00	-2.42E-02		6.20E-02
+	ZN-65	1115.52	50.75	-3.64E-02	1.67E-01	1.67E-01
+	GA-67	93.31	* 35.70	1.37E+00	1.15E+00	1.15E+00
		208.95	* 2.24	1.34E+01		1.73E+01
		300.22	* 16.00	1.28E+00		3.40E+00
+	SE-75	121.11	16.70	-1.21E-01	8.02E-02	2.83E-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	-1.76E-02	8.02E-02
		264.65	59.80	1.38E-02	8.44E-02
		279.53	25.20	-1.74E-01	2.09E-01
		400.65	11.40	4.35E-01	5.25E-01
+	RB-82	776.52	13.00	1.30E-01	6.35E-01
+	RB-83	520.41	46.00	-6.49E-02	1.20E-01
		529.64	30.30	1.46E-02	1.81E-01
		552.65	16.40	1.59E-02	3.46E-01
+	KR-85	513.99	0.43	1.54E+00	1.45E+01
+	SR-85	513.99	99.27	7.35E-03	6.90E-02
+	Y-88	898.02	93.40	-5.23E-02	4.64E-02
		1836.01	99.38	-1.51E-02	4.64E-02
+	NB-93M	16.57	9.43	7.91E+01	8.70E+01
+	NB-94	702.63	100.00	1.29E-02	7.44E-02
		871.10	100.00	1.20E-02	7.44E-02
+	NB-95	765.79	99.81	1.69E-02	9.91E-02
+	NB-95M	235.69	25.00	-5.45E+00	1.50E+00
+	ZR-95	724.18	43.70	1.30E-02	1.55E-01
		756.72	55.30	9.35E-03	1.55E-01
+	MO-99	181.06	6.20	4.44E-01	4.14E+00
		739.58	12.80	2.07E-01	4.14E+00
		778.00	4.50	-6.13E+00	1.07E+01
+	RU-103	497.08	89.00	-5.30E-02	6.39E-02
+	RU-106	621.84	9.80	-1.61E-02	6.91E-01
+	AG-108M	433.93	89.90	3.79E-03	5.85E-02
		614.37	90.40	-7.96E-03	6.96E-02
		722.95	90.50	-6.15E-03	8.34E-02
+	CD-109	88.03	3.72	3.33E+00	1.75E+00
+	AG-110M	657.75	93.14	-6.73E-03	7.57E-02
		677.61	10.53	2.59E-01	6.95E-01
		706.67	16.46	-1.55E-01	4.60E-01
		763.93	21.98	2.60E-02	3.55E-01
		884.67	71.63	-1.40E-02	1.06E-01
		1384.27	23.94	2.03E-01	3.75E-01
+	CD-113M	263.70	0.02	3.34E+01	2.14E+02
+	SN-113	255.12	1.93	-1.45E-01	8.56E-02
		391.69	64.90	1.82E-02	8.56E-02
+	TE123M	159.00	84.10	4.68E-02	5.84E-02
+	SB-124	602.71	97.87	-2.20E-02	7.54E-02
		645.85	7.26	2.08E-01	1.07E+00
		722.78	11.10	-5.50E-02	7.46E-01
		1691.02	49.00	7.19E-02	1.62E-01
+	I-125	35.49	6.49	4.90E-01	1.51E+00
+	SB-125	176.33	6.89	-1.06E-01	1.76E-01
		427.89	29.33	5.09E-03	1.76E-01
		463.38	10.35	7.33E-01	6.56E-01
		600.56	17.80	-1.24E-01	3.86E-01
		635.90	11.32	-7.82E-02	5.87E-01

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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	5.20E-03	1.05E-01	1.05E-01
		666.33	99.60	4.47E-02		1.18E-01
		695.00	99.60	1.93E-02		1.22E-01
		720.50	53.80	5.32E-02		2.14E-01
+	SN-126	87.57	37.00	3.30E-01	1.74E-01	1.74E-01
+	SB-127	473.00	25.00	2.44E-01	7.39E-01	8.68E-01
		685.20	35.70	-1.82E-01		7.39E-01
		783.80	14.70	5.60E-01		2.18E+00
+	I-129	29.78	57.00	-1.85E-02	2.61E-01	2.61E-01
		33.60	13.20	-1.36E-02		7.75E-01
		39.58	7.52	-1.04E-01		9.03E-01
+	I-131	284.30	6.05	1.39E+00	1.27E-01	1.68E+00
		364.48	81.20	5.37E-02		1.27E-01
		636.97	7.26	-3.06E-01		1.82E+00
		722.89	1.80	-6.20E-01		8.41E+00
+	TE-132	49.72	13.10	1.07E+00	3.30E-01	2.20E+00
		228.16	88.00	4.84E-02		3.30E-01
+	BA-133	81.00	33.00	3.83E-02	8.10E-02	1.35E-01
		302.84	17.80	1.02E-01		2.98E-01
		356.01	60.00	1.03E-02		8.10E-02
+	I-133	529.87	86.30	-6.29E+00	3.67E+01	3.67E+01
+	XE-133	81.00	38.00	9.65E-02	3.40E-01	3.40E-01
+	CS-134	563.23	8.38	1.68E-01	8.20E-02	7.36E-01
		569.32	15.43	2.18E-02		3.62E-01
		604.70	97.60	-4.33E-03		8.20E-02
		795.84	85.40	2.47E-02		8.89E-02
		801.93	8.73	6.09E-02		7.94E-01
+	CS-135	268.24	16.00	1.07E-01	3.53E-01	3.53E-01
+	I-135	1131.51	22.50	1.55E+07	1.95E+08	2.67E+08
		1260.41	28.60	-7.86E+07		1.95E+08
		1678.03	9.54	-1.91E+08		4.26E+08
+	CS-136	153.22	7.46	5.34E-01	1.12E-01	9.95E-01
		163.89	4.61	-5.61E-01		1.57E+00
		176.55	13.56	-3.28E-02		5.50E-01
		273.65	12.66	-6.41E-01		6.40E-01
		340.57	48.50	-3.33E-02		1.82E-01
		818.50	99.70	-3.07E-03		1.12E-01
		1048.07	79.60	0.00E+00		1.44E-01
		1235.34	19.70	1.00E+00		9.12E-01
+	CS-137	661.65	85.12	2.52E-02	8.95E-02	8.95E-02
+	LA-138	788.74	34.00	1.93E-01	1.02E-01	2.34E-01
		1435.80	66.00	-4.80E-02		1.02E-01
+	CE-139	165.85	80.35	-1.99E-02	5.97E-02	5.97E-02
+	BA-140	162.64	6.70	-6.22E-02	3.14E-01	1.09E+00
		304.84	4.50	1.34E+00		1.71E+00
		423.70	3.20	8.20E-01		2.62E+00
		437.55	2.00	-1.89E+00		3.94E+00
		537.32	25.00	1.33E-01		3.14E-01
+	LA-140	328.77	20.50	-1.00E-02	1.23E-01	4.62E-01

Analysis Report for 1606038-09
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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	4.17E-02	1.23E-01	1.87E-01	
	815.85	23.50	5.06E-02		4.86E-01	
	1596.49	95.49	1.50E-02		1.23E-01	
+ CE-141	145.44	48.40	3.16E-02	1.23E-01	1.23E-01	
+ CE-143	57.36	11.80	-1.64E+01	1.00E+01	2.09E+01	
	293.26	42.00	8.03E+00		1.00E+01	
	664.55	5.20	9.80E+00		8.51E+01	
+ CE-144	133.54	10.80	3.96E-01	4.55E-01	4.55E-01	
+ PM-144	476.78	42.00	-7.11E-02	6.41E-02	1.18E-01	
	618.01	98.60	-3.28E-02		6.41E-02	
	696.49	99.49	4.89E-03		7.91E-02	
+ PM-145	36.85	21.70	-4.95E-02	1.95E-01	3.69E-01	
	37.36	39.70	-2.61E-02		1.95E-01	
	42.30	15.10	-5.71E-02		3.93E-01	
	72.40	2.31	-1.01E+00		2.06E+00	
+ PM-146	453.90	39.94	3.60E-02	1.31E-01	1.31E-01	
	735.90	14.01	1.27E-01		5.06E-01	
	747.13	13.10	1.57E-02		5.69E-01	
+ ND-147	91.11	28.90	2.75E-01	3.82E-01	3.82E-01	
	531.02	13.10	-3.08E-02		6.37E-01	
+ PM-149	285.90	3.10	-1.40E+01	1.84E+01	1.84E+01	
+ EU-152	121.78	20.50	5.51E-02	2.25E-01	2.25E-01	
	244.69	5.40	6.67E-02		9.04E-01	
	344.27	19.13	1.23E-01		2.75E-01	
	778.89	9.20	2.59E-01		7.45E-01	
	964.01	10.40	2.23E-02		9.88E-01	
	1085.78	7.22	2.12E-02		9.81E-01	
	1112.02	9.60	1.07E-01		8.80E-01	
	1407.95	14.94	2.70E-01		5.59E-01	
	97.43	31.30	-1.35E-01		1.53E-01	1.53E-01
	103.18	22.20	-4.22E-02		2.09E-01	
+ EU-154	123.07	40.50	-1.65E-02	1.14E-01	1.14E-01	
	723.30	19.70	-2.83E-02		3.84E-01	
	873.19	11.50	6.34E-02		6.24E-01	
	996.32	10.30	-4.80E-01		6.90E-01	
	1004.76	17.90	1.69E-01		5.03E-01	
+ EU-155	1274.45	35.50	7.11E-02	1.98E-01	2.30E-01	
	86.50	30.90	-3.86E-01		1.98E-01	
+ EU-156	105.30	20.70	1.25E-01	9.85E-01	2.26E-01	
	811.77	10.40	2.22E-01		9.85E-01	
	1153.47	7.20	1.13E+00		1.76E+00	
+ HO-166M	1230.71	8.90	-3.78E-01	8.87E-02	1.48E+00	
	184.41	72.60	1.18E-01		8.87E-02	
	280.45	29.60	-1.42E-01		1.70E-01	
	410.94	11.10	3.22E-01		5.24E-01	
+ TM-171	711.69	54.10	8.68E-02	3.47E+01	1.43E-01	
	66.72	0.14	1.51E+01		3.47E+01	
+ HF-172	81.75	4.52	-9.85E-01	4.27E-01	9.77E-01	
	125.81	11.30	-5.71E-01		4.27E-01	

Analysis Report for 1606038-09
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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	-7.60E-02	2.86E-01	5.42E-01
		810.06	16.63	1.39E-02		9.43E-01
		912.12	15.25	5.70E+00		2.30E+00
		1093.66	62.50	-3.07E-02		2.86E-01
+	LU-173	100.72	5.24	8.74E-01	2.85E-01	9.16E-01
		272.11	21.20	2.71E-01		2.85E-01
+	HF-175	343.40	84.00	2.18E-02	6.74E-02	6.74E-02
+	LU-176	88.34	13.30	9.19E-01	4.59E-02	4.83E-01
		201.83	86.00	3.28E-03		6.12E-02
		306.78	94.00	-5.16E-02		4.59E-02
+	TA-182	67.75	41.20	-2.12E-02	1.20E-01	1.20E-01
		1121.30	34.90	3.91E-01		3.67E-01
		1189.05	16.23	-3.85E-01		5.63E-01
		1221.41	26.98	2.24E-02		4.01E-01
		1231.02	11.44	-1.05E-01		8.75E-01
+	IR-192	308.46	29.68	-7.52E-02	1.14E-01	1.60E-01
		468.07	48.10	7.54E-03		1.14E-01
+	HG-203	279.19	77.30	1.33E-02	7.76E-02	7.76E-02
+	BI-207	569.67	97.72	3.42E-03	5.68E-02	5.68E-02
		1063.62	74.90	5.30E-02		1.14E-01
+	TL-208	583.14	* 30.22	1.19E+00	1.07E-01	2.69E-01
		860.37	* 4.48	1.51E+00		1.49E+00
		2614.66	* 35.85	8.63E-01		1.07E-01
+	BI-210M	262.00	45.00	3.35E-02	1.12E-01	1.12E-01
		300.00	23.00	1.50E-01		2.48E-01
+	PB-210	46.50	4.25	1.24E+00	1.46E+00	1.46E+00
+	PB-211	404.84	2.90	8.14E-01	1.81E+00	1.81E+00
		831.96	2.90	3.69E-01		2.59E+00
+	BI-212	727.17	* 11.80	5.27E-01	8.18E-01	8.18E-01
		1620.62	2.75	3.71E-01		2.64E+00
+	PB-212	238.63	* 44.60	1.40E+00	2.06E-01	2.06E-01
		300.09	* 3.41	1.08E+00		2.87E+00
+	BI-214	609.31	* 46.30	9.16E-01	2.02E-01	2.02E-01
		1120.29	* 15.10	1.29E+00		7.52E-01
		1764.49	* 15.80	1.07E+00		4.50E-01
		2204.22	* 4.98	1.60E+00		4.37E-01
+	PB-214	295.21	* 19.19	1.05E+00	2.06E-01	4.95E-01
		351.92	* 37.19	9.22E-01		2.06E-01
+	RN-219	401.80	* 6.50	1.47E+00	9.77E-01	9.77E-01
+	RA-223	323.87	3.88	3.76E-01	1.38E+00	1.38E+00
+	RA-224	240.98	3.95	5.32E+00	2.50E+00	2.50E+00
+	RA-225	40.00	31.00	-3.61E-02	3.12E-01	3.12E-01
+	RA-226	186.21	* 3.28	4.23E+00	2.21E+00	2.21E+00
+	TH-227	50.10	8.40	2.96E-01	6.09E-01	6.09E-01
		236.00	11.50	-2.52E+00		6.92E-01
		256.20	6.30	-1.77E-01		7.66E-01
+	AC-228	338.32	* 11.40	1.05E+00	4.27E-01	6.16E-01
		911.07	* 27.70	1.15E+00		4.27E-01

Analysis Report for 1606038-09
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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	1.01E+00	4.27E-01	8.57E-01
+	TH-230	48.44		16.90	-2.04E-01	3.09E-01	3.09E-01
		62.85		4.60	1.12E+00		1.15E+00
		67.67		0.37	-2.25E+00		1.27E+01
+	PA-231	283.67		1.60	2.61E+00	2.30E+00	3.16E+00
		302.67		2.30	7.89E-01		2.30E+00
+	TH-231	25.64		14.70	-1.37E-01	7.32E-01	2.02E+00
		84.21		6.40	7.87E-01		7.32E-01
+	PA-233	311.98		38.60	1.01E-01	1.62E-01	1.62E-01
+	PA-234	131.20		20.40	2.12E-01	2.54E-01	2.54E-01
		733.99		8.80	2.58E-01		8.08E-01
		946.00		12.00	-7.02E-02		5.96E-01
+	PA-234M	1001.03		0.92	3.21E+00	9.74E+00	9.74E+00
+	TH-234	63.29	*	3.80	1.71E+00	2.60E+00	2.60E+00
+	U-235	143.76		10.50	2.19E-01	4.83E-01	4.83E-01
		163.35		4.70	-5.74E-02		1.01E+00
		205.31		4.70	4.90E-01		1.16E+00
+	NP-237	86.50		12.60	-9.43E-01	4.84E-01	4.84E-01
+	NP-239	106.10		22.70	2.69E-02	2.20E+00	2.20E+00
		228.18		10.70	7.70E-01		5.25E+00
		277.60		14.10	5.12E+00		4.27E+00
+	AM-241	59.54		35.90	-2.15E-02	1.29E-01	1.29E-01
+	AM-243	74.67		66.00	-3.93E-01	9.95E-02	9.95E-02
+	CM-243	209.75	*	3.29	1.64E+00	4.47E-01	2.12E+00
		228.14		10.60	7.22E-02		4.92E-01
		277.60	*	14.00	3.43E-01		4.47E-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

: 00601

Analysis Report for 1606038-09
CP-5019 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	5.19E-01	5.19E-01	-3.14E-01	2.40E-01
NA-22	1274.54	99.94	8.19E-02	8.19E-02	2.54E-02	3.70E-02
NA-24	1368.53	99.99	5.91E+02	2.25E+02	-2.66E+01	2.63E+02
	2754.09	99.86	2.25E+02		3.06E+01	7.12E+01
AL-26	1808.65	99.76	6.04E-02	6.04E-02	-1.89E-02	2.53E-02
+ K-40	1460.81	* 10.67	9.26E-01	9.26E-01	1.82E+01	4.22E-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	4.99E-02	4.99E-02	-8.82E-03	2.41E-02
	78.34	96.00	7.35E-02		2.67E-01	3.60E-02
SC-46	889.25	99.98	7.61E-02	7.61E-02	-4.68E-02	3.49E-02
	1120.51	99.99	1.34E-01		1.87E-01	6.30E-02
V-48	983.52	99.98	1.10E-01	1.10E-01	2.13E-02	5.04E-02
	1312.10	97.50	1.17E-01		3.30E-02	5.29E-02
CR-51	320.08	9.83	6.65E-01	6.65E-01	2.91E-01	3.16E-01
MN-54	834.83	99.97	7.79E-02	7.79E-02	-1.95E-02	3.61E-02
CO-56	846.75	99.96	8.10E-02	8.10E-02	4.51E-03	3.75E-02
	1037.75	14.03	5.06E-01		-1.90E-01	2.27E-01
	1238.25	67.00	1.67E-01		3.65E-02	7.74E-02
	1771.40	15.51	4.49E-01		-2.48E-02	1.91E-01
	2598.48	16.90	2.34E-01		2.52E-02	8.29E-02
CO-57	122.06	85.51	5.51E-02	5.51E-02	1.35E-02	2.66E-02
	136.48	10.60	4.36E-01		-9.05E-02	2.10E-01
CO-58	810.76	99.40	7.41E-02	7.41E-02	1.09E-03	3.41E-02
FE-59	1099.22	56.50	1.68E-01	1.68E-01	-2.16E-02	7.69E-02
	1291.56	43.20	2.19E-01		5.29E-02	9.91E-02
CO-60	1173.22	100.00	8.93E-02	6.20E-02	1.59E-02	4.10E-02
	1332.49	100.00	6.20E-02		-2.42E-02	2.70E-02
ZN-65	1115.52	50.75	1.67E-01	1.67E-01	-3.64E-02	7.63E-02
+ GA-67	93.31	* 35.70	1.15E+00	1.15E+00	1.37E+00	5.63E-01
	208.95	* 2.24	1.73E+01		1.34E+01	8.41E+00
	300.22	* 16.00	3.40E+00		1.28E+00	1.66E+00
SE-75	121.11	16.70	2.83E-01	8.02E-02	-1.21E-01	1.37E-01
	136.00	59.20	8.02E-02		-1.76E-02	3.87E-02
	264.65	59.80	8.44E-02		1.38E-02	4.02E-02
	279.53	25.20	2.09E-01		-1.74E-01	9.94E-02
	400.65	11.40	5.25E-01		4.35E-01	2.48E-01
RB-82	776.52	13.00	6.35E-01	6.35E-01	1.30E-01	2.93E-01
RB-83	520.41	46.00	1.20E-01	1.20E-01	-6.49E-02	5.55E-02
	529.64	30.30	1.81E-01		1.46E-02	8.38E-02
	552.65	16.40	3.46E-01		1.59E-02	1.60E-01
KR-85	513.99	0.43	1.45E+01	1.45E+01	1.54E+00	6.82E+00
SR-85	513.99	99.27	6.90E-02	6.90E-02	7.35E-03	3.24E-02
Y-88	898.02	93.40	7.25E-02	4.64E-02	-5.23E-02	3.29E-02
	1836.01	99.38	4.64E-02		-1.51E-02	1.80E-02
NB-93M	16.57	9.43	8.70E+01	8.70E+01	7.91E+01	4.23E+01
NB-94	702.63	100.00	7.86E-02	7.44E-02	1.29E-02	3.69E-02
	871.10	100.00	7.44E-02		1.20E-02	3.43E-02
NB-95	765.79	99.81	9.91E-02	9.91E-02	1.69E-02	4.65E-02
NB-95M	235.69	25.00	1.50E+00	1.50E+00	-5.45E+00	7.30E-01
ZR-95	724.18	43.70	2.20E-01	1.55E-01	1.30E-02	1.04E-01
	756.72	55.30	1.55E-01		9.35E-03	7.23E-02

Analysis Report for 1606038-09
CP-5019 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	6.04E+00	4.14E+00	4.44E-01	2.91E+00
	739.58	12.80	4.14E+00		2.07E-01	1.92E+00
	778.00	4.50	1.07E+01		-6.13E+00	4.91E+00
RU-103	497.08	89.00	6.39E-02	6.39E-02	-5.30E-02	2.96E-02
RU-106	621.84	9.80	6.91E-01	6.91E-01	-1.61E-02	3.23E-01
AG-108M	433.93	89.90	5.85E-02	5.85E-02	3.79E-03	2.74E-02
	614.37	90.40	6.96E-02		-7.96E-03	3.24E-02
	722.95	90.50	8.34E-02		-6.15E-03	3.90E-02
CD-109	88.03	3.72	1.75E+00	1.75E+00	3.33E+00	8.55E-01
AG-110M	657.75	93.14	7.57E-02	7.57E-02	-6.73E-03	3.53E-02
	677.61	10.53	6.95E-01		2.59E-01	3.25E-01
	706.67	16.46	4.60E-01		-1.55E-01	2.15E-01
	763.93	21.98	3.55E-01		2.60E-02	1.65E-01
	884.67	71.63	1.06E-01		-1.40E-02	4.86E-02
	1384.27	23.94	3.75E-01		2.03E-01	1.70E-01
CD-113M	263.70	0.02	2.14E+02	2.14E+02	3.34E+01	1.02E+02
SN-113	255.12	1.93	2.61E+00	8.56E-02	-1.45E-01	1.24E+00
	391.69	64.90	8.56E-02		1.82E-02	4.03E-02
TE123M	159.00	84.10	5.84E-02	5.84E-02	4.68E-02	2.81E-02
SB-124	602.71	97.87	7.54E-02	7.54E-02	-2.20E-02	3.53E-02
	645.85	7.26	1.07E+00		2.08E-01	5.00E-01
	722.78	11.10	7.46E-01		-5.50E-02	3.49E-01
	1691.02	49.00	1.62E-01		7.19E-02	7.04E-02
I-125	35.49	6.49	1.51E+00	1.51E+00	4.90E-01	7.25E-01
SB-125	176.33	6.89	6.94E-01	1.76E-01	-1.06E-01	3.34E-01
	427.89	29.33	1.76E-01		5.09E-03	8.24E-02
	463.38	10.35	6.56E-01		7.33E-01	3.11E-01
	600.56	17.80	3.86E-01		-1.24E-01	1.81E-01
	635.90	11.32	5.87E-01		-7.82E-02	2.74E-01
SB-126	414.70	83.30	1.05E-01	1.05E-01	5.20E-03	4.94E-02
	666.33	99.60	1.18E-01		4.47E-02	5.53E-02
	695.00	99.60	1.22E-01		1.93E-02	5.73E-02
	720.50	53.80	2.14E-01		5.32E-02	9.97E-02
SN-126	87.57	37.00	1.74E-01	1.74E-01	3.30E-01	8.49E-02
SB-127	473.00	25.00	8.68E-01	7.39E-01	2.44E-01	4.04E-01
	685.20	35.70	7.39E-01		-1.82E-01	3.41E-01
	783.80	14.70	2.18E+00		5.60E-01	1.02E+00
I-129	29.78	57.00	2.61E-01	2.61E-01	-1.85E-02	1.25E-01
	33.60	13.20	7.75E-01		-1.36E-02	3.71E-01
	39.58	7.52	9.03E-01		-1.04E-01	4.32E-01
I-131	284.30	6.05	1.68E+00	1.27E-01	1.39E+00	7.99E-01
	364.48	81.20	1.27E-01		5.37E-02	6.00E-02
	636.97	7.26	1.82E+00		-3.06E-01	8.46E-01
	722.89	1.80	8.41E+00		-6.20E-01	3.93E+00
TE-132	49.72	13.10	2.20E+00	3.30E-01	1.07E+00	1.06E+00
	228.16	88.00	3.30E-01		4.84E-02	1.59E-01
BA-133	81.00	33.00	1.35E-01	8.10E-02	3.83E-02	6.53E-02
	302.84	17.80	2.98E-01		1.02E-01	1.42E-01
	356.01	60.00	8.10E-02		1.03E-02	3.81E-02
I-133	529.87	86.30	3.67E+01	3.67E+01	-6.29E+00	1.69E+01
XE-133	81.00	38.00	3.40E-01	3.40E-01	9.65E-02	1.65E-01
CS-134	563.23	8.38	7.36E-01	8.20E-02	1.68E-01	3.44E-01
	569.32	15.43	3.62E-01		2.18E-02	1.68E-01

Analysis Report for 1606038-09
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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	8.20E-02	8.20E-02	-4.33E-03	3.88E-02		
	795.84	85.40	8.89E-02		2.47E-02	4.13E-02		
	801.93	8.73	7.94E-01		6.09E-02	3.66E-01		
CS-135	268.24	16.00	3.53E-01	3.53E-01	1.07E-01	1.69E-01		
	1131.51	22.50	2.67E+08		1.95E+08	1.55E+07	1.23E+08	
I-135	1260.41	28.60	1.95E+08	1.12E-01	-7.86E+07	8.85E+07		
	1678.03	9.54	4.26E+08		-1.91E+08	1.80E+08		
	153.22	7.46	9.95E-01		5.34E-01	4.81E-01		
CS-136	163.89	4.61	1.57E+00	1.12E-01	-5.61E-01	7.55E-01		
	176.55	13.56	5.50E-01		-3.28E-02	2.65E-01		
	273.65	12.66	6.40E-01		-6.41E-01	3.06E-01		
	340.57	48.50	1.82E-01		-3.33E-02	8.64E-02		
	818.50	99.70	1.12E-01		-3.07E-03	5.16E-02		
	1048.07	79.60	1.44E-01		0.00E+00	6.55E-02		
	1235.34	19.70	9.12E-01		1.00E+00	4.26E-01		
	661.65	85.12	8.95E-02		8.95E-02	2.52E-02	4.20E-02	
LA-138	788.74	34.00	2.34E-01	1.02E-01	1.93E-01	1.09E-01		
	1435.80	66.00	1.02E-01		-4.80E-02	4.43E-02		
CE-139	165.85	80.35	5.97E-02	5.97E-02	-1.99E-02	2.88E-02		
	BA-140	162.64	6.70		1.09E+00	3.14E-01	-6.22E-02	5.26E-01
BA-140	304.84	4.50	1.71E+00	3.14E-01	1.34E+00	8.11E-01		
	423.70	3.20	2.62E+00		8.20E-01	1.23E+00		
	437.55	2.00	3.94E+00		-1.89E+00	1.84E+00		
	537.32	25.00	3.14E-01		1.33E-01	1.45E-01		
	LA-140	328.77	20.50		4.62E-01	1.23E-01	-1.00E-02	2.21E-01
	487.03	45.50	1.87E-01		4.17E-02	8.74E-02		
CE-141	815.85	23.50	4.86E-01	1.23E-01	5.06E-02	2.25E-01		
	1596.49	95.49	1.23E-01		1.50E-02	5.40E-02		
	145.44	48.40	1.23E-01		1.23E-01	3.16E-02	5.96E-02	
CE-143	57.36	11.80	2.09E+01	1.00E+01	-1.64E+01	1.00E+01		
	293.26	42.00	1.00E+01		8.03E+00	4.83E+00		
	664.55	5.20	8.51E+01		9.80E+00	4.00E+01		
CE-144	133.54	10.80	4.55E-01	4.55E-01	3.96E-01	2.20E-01		
PM-144	476.78	42.00	1.18E-01	6.41E-02	-7.11E-02	5.45E-02		
	618.01	98.60	6.41E-02		-3.28E-02	2.98E-02		
	696.49	99.49	7.91E-02		4.89E-03	3.71E-02		
PM-145	36.85	21.70	3.69E-01	1.95E-01	-4.95E-02	1.76E-01		
	37.36	39.70	1.95E-01		-2.61E-02	9.31E-02		
	42.30	15.10	3.93E-01		-5.71E-02	1.88E-01		
	72.40	2.31	2.06E+00		-1.01E+00	1.00E+00		
PM-146	453.90	39.94	1.31E-01	1.31E-01	3.60E-02	6.14E-02		
	735.90	14.01	5.06E-01		1.27E-01	2.35E-01		
	747.13	13.10	5.69E-01		1.57E-02	2.65E-01		
ND-147	91.11	28.90	3.82E-01	3.82E-01	2.75E-01	1.87E-01		
	531.02	13.10	6.37E-01		-3.08E-02	2.94E-01		
PM-149	285.90	3.10	1.84E+01	1.84E+01	-1.40E+01	8.73E+00		
EU-152	121.78	20.50	2.25E-01	2.25E-01	5.51E-02	1.09E-01		
	244.69	5.40	9.04E-01		6.67E-02	4.32E-01		
	344.27	19.13	2.75E-01		1.23E-01	1.30E-01		
	778.89	9.20	7.45E-01		2.59E-01	3.44E-01		
	964.01	10.40	9.88E-01		2.23E-02	4.64E-01		
	1085.78	7.22	9.81E-01		2.12E-02	4.43E-01		
	1112.02	9.60	8.80E-01		1.07E-01	4.04E-01		

Analysis Report for 1606038-09

CP-5019 02-05

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	5.59E-01	2.25E-01	2.70E-01	2.51E-01
GD-153	97.43	31.30	1.53E-01	1.53E-01	-1.35E-01	7.41E-02
	103.18	22.20	2.09E-01		-4.22E-02	1.01E-01
EU-154	123.07	40.50	1.14E-01	1.14E-01	-1.65E-02	5.52E-02
	723.30	19.70	3.84E-01		-2.83E-02	1.79E-01
	873.19	11.50	6.24E-01		6.34E-02	2.87E-01
	996.32	10.30	6.90E-01		-4.80E-01	3.14E-01
	1004.76	17.90	5.03E-01		1.69E-01	2.33E-01
	1274.45	35.50	2.30E-01		7.11E-02	1.04E-01
EU-155	86.50	30.90	1.98E-01	1.98E-01	-3.86E-01	9.68E-02
	105.30	20.70	2.26E-01		1.25E-01	1.10E-01
EU-156	811.77	10.40	9.85E-01	9.85E-01	2.22E-01	4.55E-01
	1153.47	7.20	1.76E+00		1.13E+00	8.09E-01
	1230.71	8.90	1.48E+00		-3.78E-01	6.80E-01
HO-166M	184.41	72.60	8.87E-02	8.87E-02	1.18E-01	4.31E-02
	280.45	29.60	1.70E-01		-1.42E-01	8.09E-02
	410.94	11.10	5.24E-01		3.22E-01	2.48E-01
	711.69	54.10	1.43E-01		8.68E-02	6.71E-02
TM-171	66.72	0.14	3.47E+01	3.47E+01	1.51E+01	1.68E+01
HF-172	81.75	4.52	9.77E-01	4.27E-01	-9.85E-01	4.73E-01
	125.81	11.30	4.27E-01		-5.71E-01	2.07E-01
LU-172	181.53	20.60	5.42E-01	2.86E-01	-7.60E-02	2.61E-01
	810.06	16.63	9.43E-01		1.39E-02	4.34E-01
	912.12	15.25	2.30E+00		5.70E+00	1.11E+00
	1093.66	62.50	2.86E-01		-3.07E-02	1.30E-01
LU-173	100.72	5.24	9.16E-01	2.85E-01	8.74E-01	4.44E-01
	272.11	21.20	2.85E-01		2.71E-01	1.37E-01
HF-175	343.40	84.00	6.74E-02	6.74E-02	2.18E-02	3.19E-02
LU-176	88.34	13.30	4.83E-01	4.59E-02	9.19E-01	2.36E-01
	201.83	86.00	6.12E-02		3.28E-03	2.95E-02
	306.78	94.00	4.59E-02		-5.16E-02	2.16E-02
TA-182	67.75	41.20	1.20E-01	1.20E-01	-2.12E-02	5.81E-02
	1121.30	34.90	3.67E-01		3.91E-01	1.73E-01
	1189.05	16.23	5.63E-01		-3.85E-01	2.57E-01
	1221.41	26.98	4.01E-01		2.24E-02	1.86E-01
	1231.02	11.44	8.75E-01		-1.05E-01	4.03E-01
IR-192	308.46	29.68	1.60E-01	1.14E-01	-7.52E-02	7.53E-02
	468.07	48.10	1.14E-01		7.54E-03	5.29E-02
HG-203	279.19	77.30	7.76E-02	7.76E-02	1.33E-02	3.71E-02
BI-207	569.67	97.72	5.68E-02	5.68E-02	3.42E-03	2.63E-02
	1063.62	74.90	1.14E-01		5.30E-02	5.23E-02
+ TL-208	583.14	* 30.22	2.69E-01	1.07E-01	1.19E+00	1.28E-01
	860.37	* 4.48	1.49E+00		1.51E+00	6.79E-01
	2614.66	* 35.85	1.07E-01		8.63E-01	3.83E-02
BI-210M	262.00	45.00	1.12E-01	1.12E-01	3.35E-02	5.35E-02
	300.00	23.00	2.48E-01		1.50E-01	1.19E-01
PB-210	46.50	4.25	1.46E+00	1.46E+00	1.24E+00	7.03E-01
PB-211	404.84	2.90	1.81E+00	1.81E+00	8.14E-01	8.52E-01
	831.96	2.90	2.59E+00		3.69E-01	1.20E+00
+ BI-212	727.17	* 11.80	8.18E-01	8.18E-01	5.27E-01	3.88E-01
	1620.62	2.75	2.64E+00		3.71E-01	1.15E+00
+ PB-212	238.63	* 44.60	2.06E-01	2.06E-01	1.40E+00	1.00E-01
	300.09	* 3.41	2.87E+00		1.08E+00	1.40E+00

Analysis Report for 1606038-09
CP-5019 02-05

	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	2.02E-01	2.02E-01	9.16E-01	9.64E-02
		1120.29	*	15.10	7.52E-01		1.29E+00	3.53E-01
		1764.49	*	15.80	4.50E-01		1.07E+00	1.95E-01
		2204.22	*	4.98	4.37E-01		1.60E+00	1.13E-01
+	PB-214	295.21	*	19.19	4.95E-01	2.06E-01	1.05E+00	2.41E-01
		351.92	*	37.19	2.06E-01		9.22E-01	9.93E-02
+	RN-219	401.80	*	6.50	9.77E-01	9.77E-01	1.47E+00	4.65E-01
	RA-223	323.87		3.88	1.38E+00	1.38E+00	3.76E-01	6.58E-01
	RA-224	240.98		3.95	2.50E+00	2.50E+00	5.32E+00	1.23E+00
	RA-225	40.00		31.00	3.12E-01	3.12E-01	-3.61E-02	1.49E-01
+	RA-226	186.21	*	3.28	2.21E+00	2.21E+00	4.23E+00	1.08E+00
	TH-227	50.10		8.40	6.09E-01	6.09E-01	2.96E-01	2.93E-01
		236.00		11.50	6.92E-01		-2.52E+00	3.37E-01
		256.20		6.30	7.66E-01		-1.77E-01	3.65E-01
+	AC-228	338.32	*	11.40	6.16E-01	4.27E-01	1.05E+00	2.96E-01
		911.07	*	27.70	4.27E-01		1.15E+00	2.02E-01
		969.11	*	16.60	8.57E-01		1.01E+00	4.09E-01
	TH-230	48.44		16.90	3.09E-01	3.09E-01	-2.04E-01	1.48E-01
		62.85		4.60	1.15E+00		1.12E+00	5.56E-01
		67.67		0.37	1.27E+01		-2.25E+00	6.17E+00
	PA-231	283.67		1.60	3.16E+00	2.30E+00	2.61E+00	1.50E+00
		302.67		2.30	2.30E+00		7.89E-01	1.09E+00
	TH-231	25.64		14.70	2.02E+00	7.32E-01	-1.37E-01	9.65E-01
		84.21		6.40	7.32E-01		7.87E-01	3.55E-01
	PA-233	311.98		38.60	1.62E-01	1.62E-01	1.01E-01	7.67E-02
	PA-234	131.20		20.40	2.54E-01	2.54E-01	2.12E-01	1.23E-01
		733.99		8.80	8.08E-01		2.58E-01	3.75E-01
		946.00		12.00	5.96E-01		-7.02E-02	2.72E-01
	PA-234M	1001.03		0.92	9.74E+00	9.74E+00	3.21E+00	4.52E+00
+	TH-234	63.29	*	3.80	2.60E+00	2.60E+00	1.71E+00	1.28E+00
	U-235	143.76		10.50	4.83E-01	4.83E-01	2.19E-01	2.34E-01
		163.35		4.70	1.01E+00		-5.74E-02	4.85E-01
		205.31		4.70	1.16E+00		4.90E-01	5.60E-01
	NP-237	86.50		12.60	4.84E-01	4.84E-01	-9.43E-01	2.37E-01
	NP-239	106.10		22.70	2.20E+00	2.20E+00	2.69E-02	1.07E+00
		228.18		10.70	5.25E+00		7.70E-01	2.52E+00
		277.60		14.10	4.27E+00		5.12E+00	2.04E+00
	AM-241	59.54		35.90	1.29E-01	1.29E-01	-2.15E-02	6.23E-02
	AM-243	74.67		66.00	9.95E-02	9.95E-02	-3.93E-01	4.86E-02
+	CM-243	209.75	*	3.29	2.12E+00	4.47E-01	1.64E+00	1.03E+00
		228.14		10.60	4.92E-01		7.22E-02	2.36E-01
		277.60	*	14.00	4.47E-01		3.43E-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 1606038-09
CP-5019 02-05

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: CP-5019 02-05

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	6	308	1141
9:	1135	580	330	995	1373	147	105	148
17:	121	117	98	118	78	61	64	60
25:	55	46	67	56	66	38	47	50
33:	55	55	53	57	62	48	61	62
41:	47	64	60	59	58	95	110	59
49:	69	82	71	64	63	71	71	57
57:	51	93	94	76	92	91	130	149
65:	94	109	116	105	99	113	108	115
73:	123	139	424	119	519	187	103	104
81:	119	94	95	143	118	82	183	141
89:	90	186	67	153	232	132	104	66
97:	59	60	80	85	72	58	63	51
105:	79	77	69	58	69	59	59	58
113:	69	63	74	68	65	57	60	56
121:	58	64	54	71	54	67	59	69
129:	109	66	40	82	67	51	56	53
137:	51	56	50	60	60	65	59	72
145:	62	63	54	53	56	54	59	45
153:	50	73	47	41	43	55	49	41
161:	57	34	60	41	51	55	51	28
169:	44	49	46	60	41	40	52	59
177:	39	35	51	53	34	48	45	45
185:	83	178	79	43	33	47	41	45
193:	47	48	38	42	52	46	34	51
201:	37	42	49	56	55	43	45	51
209:	87	61	43	30	40	45	36	36
217:	44	38	42	43	42	45	48	49
225:	44	37	41	52	34	32	33	41
233:	32	34	36	38	44	297	395	39
241:	99	108	41	26	26	26	36	18
249:	25	29	34	30	27	20	33	33
257:	28	28	34	32	32	30	29	28
265:	22	33	23	31	37	61	43	41
273:	33	25	23	35	44	41	31	21
281:	17	26	33	21	26	29	18	13
289:	27	27	19	20	25	31	172	65
297:	30	26	22	54	32	27	21	34
305:	21	17	24	10	14	24	23	16
313:	31	24	19	21	16	23	20	29
321:	26	29	24	17	24	32	32	59
329:	27	21	23	33	17	21	23	17
337:	26	108	56	21	18	24	16	27
345:	24	19	17	20	15	13	107	263
353:	42	12	20	18	19	19	15	12
361:	10	17	32	17	13	17	18	14

369: 10 21 10 18 24 18 15 28

Sample Title: CP-5019 02-05

Channel	1	2	3	4	5	6	7	8
377:	21	27	21	18	15	13	16	17
385:	13	19	16	26	15	22	11	24
393:	13	21	17	19	11	6	16	18
401:	28	19	22	17	28	8	10	10
409:	28	22	15	17	21	11	23	24
417:	13	20	12	10	16	20	23	14
425:	8	19	16	13	15	11	17	16
433:	20	16	11	13	15	15	16	20
441:	16	15	13	16	15	14	9	14
449:	16	17	15	13	15	18	11	13
457:	7	11	15	11	19	25	44	20
465:	8	13	8	18	14	9	7	14
473:	21	10	9	9	9	11	17	20
481:	11	19	15	14	12	8	17	20
489:	12	14	6	10	14	12	11	12
497:	9	11	10	21	17	14	10	15
505:	12	12	3	18	32	39	73	24
513:	17	14	15	14	10	12	12	9
521:	12	9	21	12	16	9	12	7
529:	12	10	11	8	8	14	7	10
537:	6	18	8	3	4	11	11	10
545:	11	11	13	12	16	17	12	5
553:	6	12	7	9	6	11	12	14
561:	16	15	13	13	11	8	14	4
569:	12	8	16	12	10	12	5	8
577:	7	8	7	13	8	53	142	57
585:	10	8	10	7	9	8	11	14
593:	12	5	17	9	16	14	10	11
601:	7	9	10	12	14	11	10	39
609:	198	77	7	12	9	7	8	16
617:	3	11	8	11	3	14	13	11
625:	9	16	9	4	13	5	12	14
633:	10	17	6	13	5	5	9	9
641:	11	10	17	11	7	11	9	11
649:	7	10	7	9	9	7	8	7
657:	6	12	13	9	12	11	13	12
665:	16	9	7	10	11	9	5	13
673:	8	5	17	9	10	9	7	12
681:	6	5	7	3	10	7	4	13
689:	8	7	6	11	10	11	11	11
697:	14	10	11	15	10	12	9	8
705:	14	8	10	9	11	16	9	8
713:	10	12	6	5	17	4	12	3
721:	7	10	12	12	7	18	30	19
729:	9	7	6	9	13	3	8	9
737:	11	6	8	5	8	8	8	10
745:	9	6	13	4	9	12	12	7
753:	8	12	13	9	7	14	6	8
761:	11	6	9	5	11	9	13	16
769:	16	12	12	8	10	3	3	7
777:	4	12	7	5	3	11	9	5
785:	9	10	12	7	9	15	4	4
793:	2	12	19	9	6	5	5	6

801: 11 6 6 11 2 9 6 10

Sample Title: CP-5019 02-05

Channel	1	2	3	4	5	6	7	8
809:	6	4	3	7	9	10	4	5
817:	11	5	9	8	9	5	6	4
825:	2	10	5	7	4	8	8	10
833:	9	7	7	5	10	7	6	14
841:	16	9	9	9	10	13	6	3
849:	2	9	11	9	6	5	6	3
857:	5	4	8	22	11	6	4	4
865:	8	5	10	8	6	6	8	8
873:	5	7	4	6	4	6	8	7
881:	9	5	4	4	10	8	6	6
889:	8	7	3	4	13	7	2	7
897:	6	5	4	3	6	6	6	8
905:	13	11	3	6	11	41	98	39
913:	5	4	4	5	4	7	5	7
921:	3	6	11	9	6	1	8	6
929:	8	4	9	4	11	12	7	9
937:	2	3	6	3	5	4	8	8
945:	2	3	5	2	10	5	9	7
953:	8	5	6	4	5	5	7	5
961:	6	7	6	19	16	9	17	42
969:	56	19	1	6	4	6	10	5
977:	6	3	12	13	6	4	0	5
985:	7	7	8	3	8	4	3	5
993:	5	5	5	6	5	3	5	11
1001:	10	5	8	14	7	7	5	7
1009:	3	4	4	5	2	4	9	6
1017:	10	8	7	7	7	8	6	4
1025:	5	7	6	1	4	10	3	5
1033:	4	1	3	4	7	6	4	2
1041:	7	5	6	4	5	5	1	3
1049:	8	5	8	4	6	3	5	8
1057:	5	4	7	7	5	3	5	9
1065:	11	5	4	2	5	1	2	4
1073:	4	7	7	6	8	5	4	3
1081:	1	1	5	4	2	6	4	7
1089:	11	9	5	5	2	3	7	4
1097:	9	5	8	3	7	5	8	7
1105:	6	4	9	3	3	5	16	2
1113:	5	6	4	9	7	6	19	32
1121:	21	4	5	2	2	7	4	9
1129:	9	6	7	5	5	4	8	5
1137:	5	3	8	12	7	2	8	2
1145:	4	5	5	3	3	4	2	5
1153:	7	4	14	6	3	3	3	3
1161:	4	4	7	4	8	3	5	3
1169:	8	11	7	3	7	7	6	1
1177:	5	5	7	5	4	7	12	9
1185:	4	6	9	4	7	4	5	4
1193:	12	8	5	9	3	7	1	5
1201:	8	3	2	8	6	4	8	6
1209:	8	7	6	6	4	10	8	6
1217:	12	7	2	9	8	14	5	9
1225:	5	7	5	5	5	6	3	9

1233: 8 9 7 9 12 16 2 3

Sample Title: CP-5019 02-05

Channel	1	2	3	4	5	6	7	8	9
1241:	5	7	4	5	7	4	9	7	
1249:	2	4	5	7	9	5	6	13	
1257:	7	8	2	4	3	6	2	5	
1265:	4	3	6	3	1	4	5	3	
1273:	5	2	3	6	6	2	5	9	
1281:	6	7	2	6	4	3	1	5	
1289:	6	3	4	2	6	5	6	3	
1297:	4	5	4	3	4	8	4	2	
1305:	6	2	4	3	6	4	3	2	
1313:	5	5	3	3	2	3	1	6	
1321:	7	1	1	6	3	5	4	2	
1329:	3	3	1	2	1	3	2	4	
1337:	3	1	5	5	4	4	1	5	
1345:	4	3	0	1	4	5	3	3	
1353:	2	2	2	1	1	3	3	4	
1361:	1	3	0	3	7	4	2	6	
1369:	0	3	1	5	0	2	1	4	
1377:	10	8	1	4	5	3	4	5	
1385:	7	3	4	1	3	1	6	1	
1393:	5	1	1	2	4	3	3	3	
1401:	4	3	1	3	5	4	6	7	
1409:	0	2	2	2	1	4	3	2	
1417:	1	4	1	1	2	1	1	4	
1425:	5	4	3	2	4	3	3	1	
1433:	1	3	3	2	2	4	4	5	
1441:	2	2	2	0	2	2	3	2	
1449:	4	2	3	3	4	7	2	2	
1457:	5	7	66	258	224	54	3	5	
1465:	1	1	2	1	0	1	0	0	
1473:	2	2	1	2	2	2	1	1	
1481:	1	3	2	2	2	1	2	2	
1489:	4	1	0	1	1	0	2	3	
1497:	2	1	3	1	3	0	1	0	
1505:	0	3	5	4	7	5	3	2	
1513:	3	1	3	2	0	2	1	2	
1521:	3	0	0	0	0	1	4	0	
1529:	2	3	3	1	2	3	0	4	
1537:	3	0	1	1	3	3	1	4	
1545:	1	0	1	0	1	0	0	1	
1553:	1	0	1	1	1	3	1	2	
1561:	4	3	2	2	0	2	0	1	
1569:	0	0	1	2	1	1	3	1	
1577:	0	1	1	3	3	0	2	3	
1585:	1	2	8	7	2	5	5	6	
1593:	3	2	2	1	1	1	1	1	
1601:	0	1	1	1	2	2	0	0	
1609:	5	1	0	2	0	2	1	2	
1617:	2	2	0	4	3	1	1	1	
1625:	2	3	2	5	2	5	2	1	
1633:	0	1	2	5	3	0	2	2	
1641:	0	1	1	1	2	0	0	0	
1649:	0	2	2	0	0	0	1	1	
1657:	2	1	0	3	1	3	1	2	

1665: 0 2 1 3 1 0 0 2

Sample Title: CP-5019 02-05

Channel	1	2	3	4	5	6	7	8
1673:	0	0	1	1	2	4	1	1
1681:	0	1	5	2	3	0	0	3
1689:	1	2	2	4	2	1	0	0
1697:	0	1	3	0	2	2	0	3
1705:	0	2	0	0	2	3	1	1
1713:	2	1	0	1	1	0	1	0
1721:	0	0	0	0	1	2	0	5
1729:	4	0	2	1	0	1	0	1
1737:	0	1	3	1	1	0	1	1
1745:	2	1	1	0	1	2	2	2
1753:	2	0	3	0	4	1	0	0
1761:	1	2	11	15	16	3	2	3
1769:	1	1	1	1	2	0	0	0
1777:	2	0	1	0	1	1	2	0
1785:	2	1	0	0	1	1	1	1
1793:	0	2	2	2	1	2	2	4
1801:	1	1	1	2	0	1	0	1
1809:	2	3	0	0	2	1	3	2
1817:	0	2	0	2	2	1	0	1
1825:	2	1	0	0	2	0	1	0
1833:	1	1	0	0	0	0	1	0
1841:	2	1	1	0	2	2	0	0
1849:	1	2	2	2	0	0	0	2
1857:	0	1	1	2	0	1	0	1
1865:	0	1	0	0	0	0	0	3
1873:	1	1	0	0	0	2	0	0
1881:	0	0	1	0	0	3	1	2
1889:	1	2	0	0	1	0	0	3
1897:	1	0	0	0	4	2	0	1
1905:	2	3	1	2	0	0	2	0
1913:	0	0	1	1	2	0	0	0
1921:	0	0	0	1	0	1	1	2
1929:	2	1	0	1	0	2	0	3
1937:	2	3	1	1	0	2	0	0
1945:	2	2	1	0	1	0	1	1
1953:	0	0	1	1	1	0	0	0
1961:	0	0	1	0	1	1	1	2
1969:	0	0	0	0	1	1	0	1
1977:	0	0	1	1	1	0	1	0
1985:	1	1	1	0	2	0	2	5
1993:	0	1	0	1	1	1	0	2
2001:	4	1	2	0	3	0	1	1
2009:	0	1	0	0	1	0	2	0
2017:	0	0	0	1	1	1	1	2
2025:	1	1	0	2	0	1	0	0
2033:	1	1	0	1	2	3	0	0
2041:	0	2	2	1	0	0	1	0
2049:	2	0	1	0	1	1	0	0
2057:	1	0	0	0	1	1	0	0
2065:	0	0	1	0	1	0	1	0
2073:	2	1	1	0	1	0	0	0
2081:	0	0	0	0	1	0	2	0
2089:	0	1	0	0	3	0	0	0

2097: 0 2 0 0 4 3 3 5

Sample Title: CP-5019 02-05

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

2529: 1 0 0 0 0 0 0 0 0

Sample Title: CP-5019 02-05

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	2	0	0	0	0	0	0
2545:	0	0	1	0	2	0	1	0	0
2553:	1	0	1	2	0	1	1	0	0
2561:	0	0	1	1	0	0	0	0	0
2569:	1	0	0	0	1	0	0	0	0
2577:	0	0	0	0	1	3	0	0	0
2585:	1	2	0	0	0	0	0	0	0
2593:	0	0	0	0	0	0	1	0	0
2601:	1	0	0	1	0	0	0	0	0
2609:	0	0	3	14	24	21	14	4	1
2617:	2	0	0	0	1	0	1	1	0
2625:	0	0	0	0	1	1	0	0	0
2633:	1	0	1	0	0	0	0	0	0
2641:	0	0	0	0	0	0	3	1	2
2649:	0	0	0	0	0	0	0	1	2
2657:	0	0	0	0	0	0	0	1	2
2665:	0	0	0	0	0	0	0	2	0
2673:	0	0	0	0	0	0	0	0	0
2681:	0	0	0	1	1	0	1	0	0
2689:	0	0	1	0	0	1	0	2	1
2697:	0	0	0	2	0	0	0	1	0
2705:	0	0	0	0	1	1	0	0	1
2713:	0	1	0	0	0	1	0	0	1
2721:	0	1	1	0	0	0	1	0	1
2729:	1	0	0	0	0	0	0	1	0
2737:	1	0	0	0	0	1	0	0	0
2745:	0	1	0	0	1	0	0	0	0
2753:	0	0	0	0	0	0	0	0	0
2761:	0	0	1	0	0	0	0	0	0
2769:	0	0	0	1	0	1	0	0	0
2777:	0	0	0	0	0	1	1	1	1
2785:	0	0	0	0	3	0	1	1	1
2793:	0	1	0	0	0	0	0	1	1
2801:	1	0	0	0	0	0	0	1	0
2809:	0	0	0	0	0	0	0	0	0
2817:	0	0	0	1	0	0	0	0	0
2825:	0	1	0	0	0	0	0	0	0
2833:	0	1	0	0	0	0	0	1	0
2841:	0	0	0	0	0	0	0	0	0
2849:	0	1	0	0	0	0	0	0	0
2857:	0	0	1	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	1	0
2873:	0	0	0	1	1	0	0	0	1
2881:	1	0	1	0	0	0	1	1	0
2889:	0	0	1	1	0	1	0	0	0
2897:	0	0	0	0	0	0	0	0	0
2905:	0	1	0	1	0	0	1	0	0
2913:	0	0	0	0	0	1	1	0	0
2921:	0	0	1	0	0	0	0	1	0
2929:	0	0	0	1	0	0	1	0	0
2937:	0	0	0	1	2	0	0	0	0
2945:	1	0	0	0	1	0	0	0	0
2953:	0	0	0	0	1	0	0	0	0

2961: 0 2 0 0 0 0 0 0

Sample Title: CP-5019 02-05

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

3393: 0 0 0 1 0 0 0 0

Sample Title: CP-5019 02-05

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	1	1	1	0
3417:	0	0	1	0	0	0	0	0
3425:	0	0	0	1	1	0	0	1
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	1	0	0	0	0
3449:	0	0	0	0	0	1	0	0
3457:	0	0	1	0	0	0	1	0
3465:	0	2	1	0	0	0	0	0
3473:	0	0	0	0	1	0	0	0
3481:	0	0	0	0	0	0	1	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	1	0	0	0
3505:	0	1	1	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	1	0	0	0	0	0
3529:	0	0	0	1	1	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	1	0	1	0	0
3553:	0	0	0	0	0	0	0	0
3561:	1	0	0	0	0	0	2	0
3569:	0	0	1	0	0	0	0	0
3577:	0	0	0	0	0	0	0	1
3585:	0	0	0	0	0	0	0	1
3593:	0	0	0	0	0	0	0	1
3601:	0	0	0	0	0	0	1	0
3609:	0	0	0	0	0	1	0	0
3617:	1	1	0	0	0	1	0	1
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	1
3649:	0	0	1	0	0	0	0	0
3657:	0	1	0	0	1	0	0	1
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	1	0	0	1	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	1	0	0	0	0
3697:	0	0	0	1	1	0	0	0
3705:	0	0	0	1	0	1	0	0
3713:	0	0	0	0	1	0	0	0
3721:	0	0	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	1	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	1	0	0	0	2
3777:	0	0	0	1	0	0	0	0
3785:	1	1	0	0	0	0	0	0
3793:	0	0	0	1	0	0	1	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	1	0	0	0	0
3817:	0	0	0	1	0	0	0	0

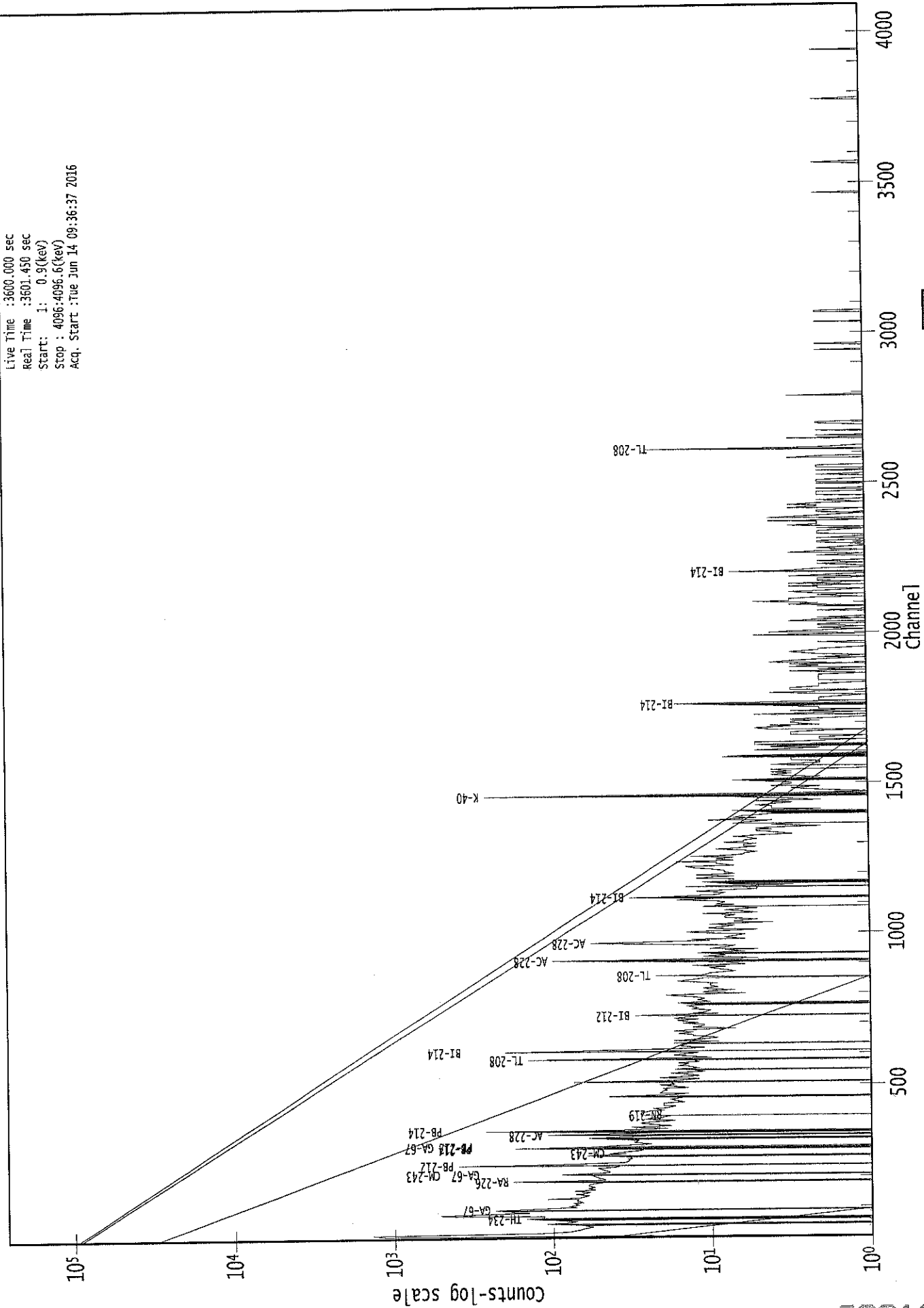
3825: 0 0 0 1 0 0 0 0

Sample Title: CP-5019 02-05

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

0000038807.CNF

Live Time : 3600.000 sec
Real Time : 3601.450 sec
Start: 1: 0.9(keV)
Stop : 4096:4096.6(keV)
Acq. Start : Tue Jun 14 09:36:37 2016



ROI Type: 1

ROI Type: 2

010000

Analysis Report for 1606038-10
CP-5019 05-10

C
6/14

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-10
Sample Description : CP-5019 05-10
Sample Type : SOIL

Sample Size : 3.566E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 8:17:05AM
Acquisition Started : 6/14/2016 9:36:46AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3613.1 seconds

Dead Time : 0.36 %

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 : 38808

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Ap
6/14/16

Analysis Report for 1606038-10
CP-5019 05-10

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 10:37:11AM
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	23.03	23.27	0.0000	0.00
2	46.73	46.97	0.0000	0.00
3	63.96	64.18	0.0000	0.00
4	75.10	75.32	0.0000	0.00
5	77.47	77.68	0.0000	0.00
6	84.60	84.81	0.0000	0.00
7	88.11	88.32	0.0000	0.00
8	93.47	93.68	0.0000	0.00
9	129.97	130.15	0.0000	0.00
10	186.63	186.79	0.0000	0.00
11	209.72	209.87	0.0000	0.00
12	239.04	239.17	0.0000	0.00
13	242.05	242.17	0.0000	0.00
14	270.08	270.19	0.0000	0.00
15	295.78	295.88	0.0000	0.00
16	300.53	300.63	0.0000	0.00
17	327.99	328.08	0.0000	0.00
18	338.81	338.89	0.0000	0.00
19	352.37	352.44	0.0000	0.00
20	410.73	410.77	0.0000	0.00
21	463.08	463.09	0.0000	0.00
22	511.37	511.36	0.0000	0.00
23	583.59	583.54	0.0000	0.00
24	609.70	609.64	0.0000	0.00
25	727.91	727.80	0.0000	0.00
26	738.07	737.95	0.0000	0.00
27	785.97	785.83	0.0000	0.00
28	796.19	796.05	0.0000	0.00
29	859.17	859.00	0.0000	0.00
30	863.18	863.00	0.0000	0.00
31	897.89	897.70	0.0000	0.00
32	911.58	911.38	0.0000	0.00
33	965.31	965.09	0.0000	0.00
34	969.44	969.22	0.0000	0.00
35	1120.98	1120.69	0.0000	0.00
36	1155.52	1155.22	0.0000	0.00
37	1235.69	1235.36	0.0000	0.00
38	1281.52	1281.17	0.0000	0.00
39	1288.32	1287.96	0.0000	0.00
40	1415.55	1415.15	0.0000	0.00
41	1461.23	1460.80	0.0000	0.00
42	1466.18	1465.76	0.0000	0.00

Analysis Report for 1606038-10
CP-5019 05-10

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1593.47	1593.00	0.0000	0.00
44	1729.65	1729.14	0.0000	0.00
45	1764.86	1764.33	0.0000	0.00
46	1796.92	1796.38	0.0000	0.00
47	1825.35	1824.80	0.0000	0.00
48	2104.63	2103.99	0.0000	0.00
49	2205.22	2204.55	0.0000	0.00
50	2310.87	2310.17	0.0000	0.00
51	2615.19	2614.41	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1606038-10
CP-5019 05-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 10:37:11AM

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	23.03	20 -	26	23.27	6.86E+01	67.89	7.77E+02	3.46
2	46.73	44 -	49	46.97	1.12E+02	66.78	8.05E+02	1.14
3	63.96	60 -	68	64.18	1.37E+02	110.29	1.79E+03	1.66
M 4	75.10	71 -	80	75.32	4.03E+02	83.08	9.51E+02	1.83
m 5	77.47	71 -	80	77.68	6.52E+02	90.83	9.22E+02	1.68
M 6	84.60	82 -	97	84.81	7.40E+01	73.11	1.03E+03	1.85
m 7	88.11	82 -	97	88.32	2.28E+02	76.92	9.45E+02	1.85
m 8	93.47	82 -	97	93.68	2.94E+02	77.47	8.25E+02	1.86
9	129.97	126 -	134	130.15	8.05E+01	81.87	9.73E+02	1.73
10	186.63	183 -	190	186.79	1.73E+02	68.67	6.68E+02	1.92
11	209.72	206 -	213	209.87	5.50E+01	64.25	6.50E+02	1.42
M 12	239.04	233 -	246	239.17	6.68E+02	68.15	3.51E+02	1.89
m 13	242.05	233 -	246	242.17	1.29E+02	68.26	3.33E+02	1.89
14	270.08	267 -	274	270.19	7.28E+01	48.66	3.50E+02	2.69
M 15	295.78	293 -	303	295.88	1.73E+02	39.10	1.85E+02	1.74
m 16	300.53	293 -	303	300.63	4.98E+01	37.62	2.30E+02	2.15
17	327.99	325 -	331	328.08	6.11E+01	38.47	2.26E+02	2.08
18	338.81	335 -	343	338.89	1.78E+02	50.31	2.81E+02	1.50
19	352.37	348 -	357	352.44	2.91E+02	57.20	3.03E+02	2.00
20	410.73	407 -	414	410.77	3.17E+01	37.95	2.17E+02	1.59
21	463.08	459 -	467	463.09	5.10E+01	38.25	1.94E+02	3.13
22	511.37	507 -	515	511.36	1.09E+02	42.52	2.10E+02	2.02
23	583.59	580 -	588	583.54	2.01E+02	41.67	1.42E+02	2.13
24	609.70	607 -	614	609.64	1.77E+02	40.15	1.57E+02	1.88
M 25	727.91	724 -	741	727.80	5.64E+01	28.20	1.10E+02	2.28
m 26	738.07	724 -	741	737.95	2.86E+01	23.56	7.09E+01	2.28
27	785.97	783 -	788	785.83	2.78E+01	18.65	4.64E+01	1.68
28	796.19	792 -	801	796.05	2.58E+01	31.26	1.24E+02	2.09
M 29	859.17	857 -	866	859.00	1.74E+01	12.96	3.60E+01	2.14
m 30	863.18	857 -	866	863.00	2.47E+01	24.33	6.13E+01	3.14
31	897.89	894 -	901	897.70	1.68E+01	21.73	6.64E+01	2.99
32	911.58	906 -	915	911.38	1.08E+02	35.14	1.14E+02	1.82
M 33	965.31	955 -	972	965.09	2.99E+01	20.38	7.16E+01	2.42
m 34	969.44	955 -	972	969.22	8.49E+01	25.68	6.48E+01	2.24
35	1120.98	1115 -	1125	1120.69	3.48E+01	31.74	1.16E+02	1.83
36	1155.52	1149 -	1160	1155.22	2.80E+01	29.66	9.60E+01	1.24
37	1235.69	1227 -	1246	1235.36	6.25E+01	45.34	1.53E+02	11.76
M 38	1281.52	1277 -	1307	1281.17	1.41E+01	17.66	5.26E+01	2.58
m 39	1288.32	1277 -	1307	1287.96	2.25E+01	17.89	4.63E+01	2.58
40	1415.55	1412 -	1417	1415.15	1.01E+01	8.37	5.85E+00	1.50

Analysis Report for 1606038-10
CP-5019 05-10

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1461.23	1455 -	1469	1460.80	4.43E+02	42.96	1.40E+01	2.20
m	42	1466.18	1455 -	1469	1465.76	1.01E+01	22.27	4.33E-01	2.66
	43	1593.47	1589 -	1595	1593.00	1.51E+01	14.35	2.37E+01	1.95
	44	1729.65	1724 -	1733	1729.14	1.33E+01	11.05	9.33E+00	4.84
	45	1764.86	1760 -	1768	1764.33	3.35E+01	13.87	9.00E+00	2.98
	46	1796.92	1793 -	1799	1796.38	8.00E+00	5.66	0.00E+00	1.66
	47	1825.35	1822 -	1826	1824.80	5.00E+00	4.47	0.00E+00	1.16
	48	2104.63	2100 -	2110	2103.99	1.49E+01	12.02	1.23E+01	5.77
	49	2205.22	2200 -	2207	2204.55	8.30E+00	7.48	3.40E+00	3.85
	50	2310.87	2307 -	2313	2310.17	8.55E+00	7.23	2.90E+00	2.28
	51	2615.19	2610 -	2619	2614.41	7.00E+01	16.73	0.00E+00	2.71

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 : 6/14/2016 10:37:11AM

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	23.03	20 -	26	6.86E+01	67.89	7.77E+02	5.41E+01
	2	46.73	44 -	49	1.12E+02	66.78	8.05E+02	5.21E+01
	3	63.96	60 -	68	1.37E+02	110.29	1.79E+03	8.86E+01
M	4	75.10	71 -	80	4.03E+02	83.08	9.51E+02	5.07E+01
m	5	77.47	71 -	80	6.52E+02	90.83	9.22E+02	4.99E+01
M	6	84.60	82 -	97	7.40E+01	73.11	1.03E+03	5.28E+01
m	7	88.11	82 -	97	2.28E+02	76.92	9.45E+02	5.05E+01
m	8	93.47	82 -	97	2.94E+02	77.47	8.25E+02	4.72E+01
	9	129.97	126 -	134	8.05E+01	81.87	9.73E+02	6.57E+01
	10	186.63	183 -	190	1.73E+02	68.67	6.68E+02	5.22E+01
	11	209.72	206 -	213	5.50E+01	64.25	6.50E+02	5.14E+01
M	12	239.04	233 -	246	6.68E+02	68.15	3.51E+02	3.08E+01
m	13	242.05	233 -	246	1.29E+02	68.26	3.33E+02	3.00E+01
	14	270.08	267 -	274	7.28E+01	48.66	3.50E+02	3.75E+01
M	15	295.78	293 -	303	1.73E+02	39.10	1.85E+02	2.23E+01
m	16	300.53	293 -	303	4.98E+01	37.62	2.30E+02	2.49E+01
	17	327.99	325 -	331	6.11E+01	38.47	2.26E+02	2.89E+01

Analysis Report for 1606038-10
CP-5019 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
18	338.81	335 -	343	1.78E+02	50.31	2.81E+02	3.50E+01	
19	352.37	348 -	357	2.91E+02	57.20	3.03E+02	3.77E+01	
20	410.73	407 -	414	3.17E+01	37.95	2.17E+02	2.98E+01	
21	463.08	459 -	467	5.10E+01	38.25	1.94E+02	2.92E+01	
22	511.37	507 -	515	1.09E+02	42.52	2.10E+02	3.04E+01	
23	583.59	580 -	588	2.01E+02	41.67	1.42E+02	2.51E+01	
24	609.70	607 -	614	1.77E+02	40.15	1.57E+02	2.47E+01	
M	25	727.91	724 -	741	5.64E+01	28.20	1.10E+02	1.73E+01
m	26	738.07	724 -	741	2.86E+01	23.56	7.09E+01	1.38E+01
	27	785.97	783 -	788	2.78E+01	18.65	4.64E+01	1.26E+01
	28	796.19	792 -	801	2.58E+01	31.26	1.24E+02	2.43E+01
M	29	859.17	857 -	866	1.74E+01	12.96	3.60E+01	9.86E+00
m	30	863.18	857 -	866	2.47E+01	24.33	6.13E+01	1.29E+01
	31	897.89	894 -	901	1.68E+01	21.73	6.64E+01	1.65E+01
	32	911.58	906 -	915	1.08E+02	35.14	1.14E+02	2.33E+01
M	33	965.31	955 -	972	2.99E+01	20.38	7.16E+01	1.39E+01
m	34	969.44	955 -	972	8.49E+01	25.68	6.48E+01	1.32E+01
	35	1120.98	1115 -	1125	3.48E+01	31.74	1.16E+02	2.42E+01
	36	1155.52	1149 -	1160	2.80E+01	29.66	9.60E+01	2.28E+01
	37	1235.69	1227 -	1246	6.25E+01	45.34	1.53E+02	3.49E+01
M	38	1281.52	1277 -	1307	1.41E+01	17.66	5.26E+01	1.19E+01
m	39	1288.32	1277 -	1307	2.25E+01	17.89	4.63E+01	1.12E+01
	40	1415.55	1412 -	1417	1.01E+01	8.37	5.85E+00	4.48E+00
M	41	1461.23	1455 -	1469	4.43E+02	42.96	1.40E+01	6.16E+00
m	42	1466.18	1455 -	1469	1.01E+01	22.27	4.33E-01	1.08E+00
	43	1593.47	1589 -	1595	1.51E+01	14.35	2.37E+01	9.91E+00
	44	1729.65	1724 -	1733	1.33E+01	11.05	9.33E+00	6.81E+00
	45	1764.86	1760 -	1768	3.35E+01	13.87	9.00E+00	6.29E+00
	46	1796.92	1793 -	1799	8.00E+00	5.66	0.00E+00	0.00E+00
	47	1825.35	1822 -	1826	5.00E+00	4.47	0.00E+00	0.00E+00
	48	2104.63	2100 -	2110	1.49E+01	12.02	1.23E+01	7.58E+00
	49	2205.22	2200 -	2207	8.30E+00	7.48	3.40E+00	3.93E+00
	50	2310.87	2307 -	2313	8.55E+00	7.23	2.90E+00	3.49E+00
	51	2615.19	2610 -	2619	7.00E+01	16.73	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 2.00sigma

Analysis Report for 1606038-10
CP-5019 05-10

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/14/2016 10:37:11AM

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	20 -	26	23.27	6.86E+01	67.89	7.77E+02	.....
	2	44 -	49	46.97	1.12E+02	66.78	8.05E+02	PB-210
	3	60 -	68	64.18	1.37E+02	110.29	1.79E+03	TH-234
M	4	71 -	80	75.32	4.03E+02	83.08	9.51E+02	AM-243
m	5	71 -	80	77.68	6.52E+02	90.83	9.22E+02	TI-44
M	6	82 -	97	84.81	7.40E+01	73.11	1.03E+03	TH-231
m	7	82 -	97	88.32	2.28E+02	76.92	9.45E+02	CD-109 LU-176 SN-126
	8	82 -	97	93.68	2.94E+02	77.47	8.25E+02	GA-67
m	9	126 -	134	130.15	8.05E+01	81.87	9.73E+02	.....
	10	183 -	190	186.79	1.73E+02	68.67	6.68E+02	RA-226
	11	206 -	213	209.87	5.50E+01	64.25	6.50E+02	CM-243 GA-67
M	12	233 -	246	239.17	6.68E+02	68.15	3.51E+02	PB-212
m	13	233 -	246	242.17	1.29E+02	68.26	3.33E+02	.....
	14	267 -	274	270.19	7.28E+01	48.66	3.50E+02	.....
M	15	293 -	303	295.88	1.73E+02	39.10	1.85E+02	PB-214
m	16	293 -	303	300.63	4.98E+01	37.62	2.30E+02	GA-67 PB-212 BI-210M
	17	325 -	331	328.08	6.11E+01	38.47	2.26E+02	LA-140
	18	335 -	343	338.89	1.78E+02	50.31	2.81E+02	AC-228
	19	348 -	357	352.44	2.91E+02	57.20	3.03E+02	PB-214
	20	407 -	414	410.77	3.17E+01	37.95	2.17E+02	HO-166M
	21	459 -	467	463.09	5.10E+01	38.25	1.94E+02	SB-125
	22	507 -	515	511.36	1.09E+02	42.52	2.10E+02	.....
	23	580 -	588	583.54	2.01E+02	41.67	1.42E+02	TL-208
	24	607 -	614	609.64	1.77E+02	40.15	1.57E+02	BI-214
M	25	724 -	741	727.80	5.64E+01	28.20	1.10E+02	BI-212
m	26	724 -	741	737.95	2.86E+01	23.56	7.09E+01	.....
	27	783 -	788	785.83	2.78E+01	18.65	4.64E+01	.....
	28	792 -	801	796.05	2.58E+01	31.26	1.24E+02	CS-134
M	29	857 -	866	859.00	1.74E+01	12.96	3.60E+01	.....
m	30	857 -	866	863.00	2.47E+01	24.33	6.13E+01	.....
	31	894 -	901	897.70	1.68E+01	21.73	6.64E+01	Y-88
	32	906 -	915	911.38	1.08E+02	35.14	1.14E+02	AC-228 LU-172
M	33	955 -	972	965.09	2.99E+01	20.38	7.16E+01	.....
m	34	955 -	972	969.22	8.49E+01	25.68	6.48E+01	AC-228
	35	1115 -	1125	1120.69	3.48E+01	31.74	1.16E+02	TA-182

Analysis Report for 1606038-10

CP-5019 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								SC-46
								BI-214
	36	1149 -	1160	1155.22	2.80E+01	29.66	9.60E+01	.....
	37	1227 -	1246	1235.36	6.25E+01	45.34	1.53E+02	CS-136
M	38	1277 -	1307	1281.17	1.41E+01	17.66	5.26E+01	.....
m	39	1277 -	1307	1287.96	2.25E+01	17.89	4.63E+01	.....
	40	1412 -	1417	1415.15	1.01E+01	8.37	5.85E+00	.....
M	41	1455 -	1469	1460.80	4.43E+02	42.96	1.40E+01	K-40
m	42	1455 -	1469	1465.76	1.01E+01	22.27	4.33E-01	.....
	43	1589 -	1595	1593.00	1.51E+01	14.35	2.37E+01	.....
	44	1724 -	1733	1729.14	1.33E+01	11.05	9.33E+00	.....
	45	1760 -	1768	1764.33	3.35E+01	13.87	9.00E+00	BI-214
	46	1793 -	1799	1796.38	8.00E+00	5.66	0.00E+00	.....
	47	1822 -	1826	1824.80	5.00E+00	4.47	0.00E+00	.....
	48	2100 -	2110	2103.99	1.49E+01	12.02	1.23E+01	.....
	49	2200 -	2207	2204.55	8.30E+00	7.48	3.40E+00	BI-214
	50	2307 -	2313	2310.17	8.55E+00	7.23	2.90E+00	.....
	51	2610 -	2619	2614.41	7.00E+01	16.73	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 : 6/14/2016 10:37:11AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	6.86E+01	67.89	1.49E-03	1.58E-03
	2	1.12E+02	66.78	1.51E-02	1.58E-03
	3	1.37E+02	110.29	2.17E-02	1.73E-03
M	4	4.03E+02	83.08	2.37E-02	2.10E-03
m	5	6.52E+02	90.83	2.39E-02	2.18E-03
M	6	7.40E+01	73.11	2.43E-02	2.41E-03
m	7	2.28E+02	76.92	2.44E-02	2.52E-03
m	8	2.94E+02	77.47	2.44E-02	2.40E-03
	9	8.05E+01	81.87	2.25E-02	1.69E-03
	10	1.73E+02	68.67	1.82E-02	1.42E-03
	11	5.50E+01	64.25	1.68E-02	1.31E-03
M	12	6.68E+02	68.15	1.52E-02	1.18E-03

Analysis Report for 1606038-10
CP-5019 05-10

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	13	242.05	1.29E+02	68.26	1.51E-02	1.17E-03
	14	270.08	7.28E+01	48.66	1.38E-02	1.04E-03
M	15	295.78	1.73E+02	39.10	1.28E-02	9.73E-04
m	16	300.53	4.98E+01	37.62	1.26E-02	9.67E-04
	17	327.99	6.11E+01	38.47	1.17E-02	9.28E-04
	18	338.81	1.78E+02	50.31	1.14E-02	9.12E-04
	19	352.37	2.91E+02	57.20	1.10E-02	8.93E-04
	20	410.73	3.17E+01	37.95	9.69E-03	8.18E-04
	21	463.08	5.10E+01	38.25	8.73E-03	7.66E-04
	22	511.37	1.09E+02	42.52	8.01E-03	7.18E-04
	23	583.59	2.01E+02	41.67	7.13E-03	6.46E-04
	24	609.70	1.77E+02	40.15	6.87E-03	6.20E-04
M	25	727.91	5.64E+01	28.20	5.89E-03	5.14E-04
m	26	738.07	2.86E+01	23.56	5.82E-03	5.05E-04
	27	785.97	2.78E+01	18.65	5.51E-03	4.66E-04
	28	796.19	2.58E+01	31.26	5.45E-03	4.58E-04
M	29	859.17	1.74E+01	12.96	5.10E-03	4.06E-04
m	30	863.18	2.47E+01	24.33	5.08E-03	4.03E-04
	31	897.89	1.68E+01	21.73	4.91E-03	3.75E-04
	32	911.58	1.08E+02	35.14	4.85E-03	3.72E-04
M	33	965.31	2.99E+01	20.38	4.62E-03	3.62E-04
m	34	969.44	8.49E+01	25.68	4.60E-03	3.61E-04
	35	1120.98	3.48E+01	31.74	4.08E-03	3.33E-04
	36	1155.52	2.80E+01	29.66	3.97E-03	3.27E-04
	37	1235.69	6.25E+01	45.34	3.76E-03	3.10E-04
M	38	1281.52	1.41E+01	17.66	3.65E-03	3.00E-04
m	39	1288.32	2.25E+01	17.89	3.64E-03	2.98E-04
	40	1415.55	1.01E+01	8.37	3.37E-03	2.76E-04
M	41	1461.23	4.43E+02	42.96	3.29E-03	2.69E-04
m	42	1466.18	1.01E+01	22.27	3.28E-03	2.69E-04
	43	1593.47	1.51E+01	14.35	3.08E-03	2.49E-04
	44	1729.65	1.33E+01	11.05	2.90E-03	2.29E-04
	45	1764.86	3.35E+01	13.87	2.86E-03	2.24E-04
	46	1796.92	8.00E+00	5.66	2.82E-03	2.19E-04
	47	1825.35	5.00E+00	4.47	2.79E-03	2.15E-04
	48	2104.63	1.49E+01	12.02	2.54E-03	2.13E-04
	49	2205.22	8.30E+00	7.48	2.46E-03	2.13E-04
	50	2310.87	8.55E+00	7.23	2.39E-03	2.13E-04
	51	2615.19	7.00E+01	16.73	2.24E-03	2.13E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/14/2016 10:37:11AM

: 00527

Analysis Report for 1606038-10

CP-5019 05-10

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037621.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	23.03	6.86E+01	67.89			6.86E+01	6.79E+01
2	46.73	1.12E+02	66.78	4.44E+01	1.35E+00	6.72E+01	6.68E+01
3	63.96	1.37E+02	110.29	4.43E+01	1.36E+00	9.29E+01	1.10E+02
M	4	75.10	4.03E+02	83.08		4.03E+02	8.31E+01
m	5	77.47	6.52E+02	90.83	2.41E+00	1.27E+01	6.50E+02
M	6	84.60	7.40E+01	73.11		7.40E+01	9.17E+01
m	7	88.11	2.28E+02	76.92		2.28E+02	7.31E+01
m	8	93.47	2.94E+02	77.47	7.34E+01	7.09E+00	2.21E+02
9	129.97	8.05E+01	81.87			8.05E+01	7.78E+01
10	186.63	1.73E+02	68.67	3.79E+01	5.70E+00	1.35E+02	8.19E+01
11	209.72	5.50E+01	64.25			5.50E+01	6.89E+01
M	12	239.04	6.68E+02	68.15	1.16E+01	5.57E+00	6.42E+01
m	13	242.05	1.29E+02	68.26		6.56E+02	6.84E+01
14	270.08	7.28E+01	48.66			1.29E+02	6.83E+01
M	15	295.78	1.73E+02	39.10	1.82E+00	4.34E+00	7.28E+01
m	16	300.53	4.98E+01	37.62		1.71E+02	4.87E+01
17	327.99	6.11E+01	38.47			4.98E+01	3.93E+01
18	338.81	1.78E+02	50.31			6.11E+01	3.76E+01
19	352.37	2.91E+02	57.20	4.15E+00	3.98E+00	1.78E+02	3.85E+01
20	410.73	3.17E+01	37.95			2.87E+02	5.03E+01
21	463.08	5.10E+01	38.25			2.87E+02	5.73E+01
22	511.37	1.09E+02	42.52	6.27E+01	4.94E+00	3.17E+01	3.79E+01
23	583.59	2.01E+02	41.67	2.16E+00	3.21E+00	5.10E+01	3.82E+01
24	609.70	1.77E+02	40.15	5.95E+00	3.88E+00	5.10E+01	3.82E+01
M	25	727.91	5.64E+01	28.20		5.64E+01	4.03E+01
m	26	738.07	2.86E+01	23.56		2.86E+01	2.82E+01
27	785.97	2.78E+01	18.65			2.78E+01	2.36E+01
28	796.19	2.58E+01	31.26			2.78E+01	1.87E+01
M	29	859.17	1.74E+01	12.96		2.58E+01	1.87E+01
m	30	863.18	2.47E+01	24.33		1.74E+01	3.13E+01
31	897.89	1.68E+01	21.73			2.47E+01	1.30E+01
32	911.58	1.08E+02	35.14	1.86E+00	2.46E+00	2.47E+01	1.30E+01
M	33	965.31	2.99E+01	20.38		1.68E+01	2.17E+01
m	34	969.44	8.49E+01	25.68		1.06E+02	3.52E+01
35	1120.98	3.48E+01	31.74			2.99E+01	2.04E+01
36	1155.52	2.80E+01	29.66			8.49E+01	2.57E+01
37	1235.69	6.25E+01	45.34			2.80E+01	2.57E+01
M	38	1281.52	1.41E+01	17.66		3.48E+01	3.17E+01
m	39	1288.32	2.25E+01	17.89		2.80E+01	2.97E+01
40	1415.55	1.01E+01	8.37			6.25E+01	4.53E+01
M	41	1461.23	4.43E+02	42.96	2.56E+00	2.02E+00	1.41E+01
m	42	1466.18	1.01E+01	22.27		1.41E+01	1.77E+01
43	1593.47	1.51E+01	14.35			2.25E+01	1.79E+01
44	1729.65	1.33E+01	11.05			1.01E+01	8.37E+00
45	1764.86	3.35E+01	13.87			1.01E+01	2.23E+01
46	1796.92	8.00E+00	5.66			1.51E+01	1.44E+01
47	1825.35	5.00E+00	4.47			1.33E+01	1.10E+01
48	2104.63	1.49E+01	12.02			3.35E+01	1.39E+01
49	2205.22	8.30E+00	7.48			8.00E+00	5.66E+00
						5.00E+00	4.47E+00
						1.49E+01	1.20E+01
						8.30E+00	7.48E+00

Analysis Report for 1606038-10
CP-5019 05-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
50	2310.87	8.55E+00	7.23			8.55E+00	7.23E+00
51	2615.19	7.00E+01	16.73	3.45E+00	1.23E+00	6.66E+01	1.68E+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 : 6/14/2016 10:37:11AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037621.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	23.03	6.86E+01	67.89		6.86E+01	6.79E+01
	2	46.73	1.12E+02	66.78	4.44E+01	6.72E+01	6.68E+01
	3	63.96	1.37E+02	110.29	4.43E+01	9.29E+01	1.10E+02
M	4	75.10	4.03E+02	83.08		4.03E+02	8.31E+01
m	5	77.47	6.52E+02	90.83	2.41E+00	6.50E+02	9.17E+01
M	6	84.60	7.40E+01	73.11		7.40E+01	7.31E+01
m	7	88.11	2.28E+02	76.92		2.28E+02	7.69E+01
m	8	93.47	2.94E+02	77.47	7.34E+01	2.21E+02	7.78E+01
	9	129.97	8.05E+01	81.87		8.05E+01	8.19E+01
	10	186.63	1.73E+02	68.67	3.79E+01	1.35E+02	6.89E+01
	11	209.72	5.50E+01	64.25		5.50E+01	6.42E+01
M	12	239.04	6.68E+02	68.15	1.16E+01	6.56E+02	6.84E+01
m	13	242.05	1.29E+02	68.26		1.29E+02	6.83E+01
	14	270.08	7.28E+01	48.66		7.28E+01	4.87E+01
M	15	295.78	1.73E+02	39.10	1.82E+00	4.34E+00	1.71E+02
m	16	300.53	4.98E+01	37.62		4.98E+01	3.76E+01
	17	327.99	6.11E+01	38.47		6.11E+01	3.85E+01
	18	338.81	1.78E+02	50.31		1.78E+02	5.03E+01
	19	352.37	2.91E+02	57.20	4.15E+00	3.98E+00	2.87E+02
	20	410.73	3.17E+01	37.95		3.17E+01	3.79E+01
	21	463.08	5.10E+01	38.25		5.10E+01	3.82E+01
	22	511.37	1.09E+02	42.52	6.27E+01	4.94E+00	4.64E+01
	23	583.59	2.01E+02	41.67	2.16E+00	3.21E+00	1.99E+02
	24	609.70	1.77E+02	40.15	5.95E+00	3.88E+00	1.71E+02
M	25	727.91	5.64E+01	28.20		5.64E+01	2.82E+01
m	26	738.07	2.86E+01	23.56		2.86E+01	2.36E+01

Analysis Report for 1606038-10

CP-5019 05-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	27	785.97	2.78E+01	18.65		2.78E+01	1.87E+01
	28	796.19	2.58E+01	31.26		2.58E+01	3.13E+01
M	29	859.17	1.74E+01	12.96		1.74E+01	1.30E+01
m	30	863.18	2.47E+01	24.33		2.47E+01	2.43E+01
	31	897.89	1.68E+01	21.73		1.68E+01	2.17E+01
	32	911.58	1.08E+02	35.14	1.86E+00	2.46E+00	1.06E+02
M	33	965.31	2.99E+01	20.38		2.99E+01	2.04E+01
m	34	969.44	8.49E+01	25.68		8.49E+01	2.57E+01
	35	1120.98	3.48E+01	31.74		3.48E+01	3.17E+01
	36	1155.52	2.80E+01	29.66		2.80E+01	2.97E+01
	37	1235.69	6.25E+01	45.34		6.25E+01	4.53E+01
M	38	1281.52	1.41E+01	17.66		1.41E+01	1.77E+01
m	39	1288.32	2.25E+01	17.89		2.25E+01	1.79E+01
	40	1415.55	1.01E+01	8.37		1.01E+01	8.37E+00
M	41	1461.23	4.43E+02	42.96	2.56E+00	2.02E+00	4.40E+02
m	42	1466.18	1.01E+01	22.27		1.01E+01	2.23E+01
	43	1593.47	1.51E+01	14.35		1.51E+01	1.44E+01
	44	1729.65	1.33E+01	11.05		1.33E+01	1.10E+01
	45	1764.86	3.35E+01	13.87		3.35E+01	1.39E+01
	46	1796.92	8.00E+00	5.66		8.00E+00	5.66E+00
	47	1825.35	5.00E+00	4.47		5.00E+00	4.47E+00
	48	2104.63	1.49E+01	12.02		1.49E+01	1.20E+01
	49	2205.22	8.30E+00	7.48		8.30E+00	7.48E+00
	50	2310.87	8.55E+00	7.23		8.55E+00	7.23E+00
	51	2615.19	7.00E+01	16.73	3.45E+00	1.23E+00	6.66E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.973	1460.81	*	10.67	2.64E+01
GA-67	0.959	93.31	*	35.70	2.97E+00
		208.95	*	2.24	1.71E+01
		300.22	*	16.00	2.89E+00
CD-109	0.999	88.03	*	3.72	5.35E+00
SN-126	0.954	87.57	*	37.00	5.31E-01

Analysis Report for 1606038-10
 CP-5019 05-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.852	583.14 *	30.22	1.94E+00	4.44E-01
		860.37	4.48		
		2614.66 *	35.85	1.75E+00	4.70E-01
PB-210	0.991	46.50 *	4.25	2.20E+00	2.20E+00
BI-212	0.702	727.17 *	11.80	1.71E+00	8.68E-01
		1620.62	2.75		
PB-212	0.973	238.63 *	44.60	2.04E+00	2.65E-01
		300.09 *	3.41	2.43E+00	1.85E+00
BI-214	0.960	609.31 *	46.30	1.13E+00	2.86E-01
		1120.29 *	15.10	1.19E+00	1.09E+00
		1764.49 *	15.80	1.56E+00	6.59E-01
		2204.22 *	4.98	1.43E+00	1.29E+00
PB-214	0.962	295.21 *	19.19	1.47E+00	3.55E-01
		351.92 *	37.19	1.47E+00	3.17E-01
RA-226	0.972	186.21 *	3.28	4.75E+00	9.02E+00
AC-228	0.967	338.32 *	11.40	2.88E+00	8.45E-01
		911.07 *	27.70	1.67E+00	5.67E-01
		969.11 *	16.60	2.34E+00	7.31E-01
TH-231	0.311	25.64	14.70		
		84.21 *	6.40	1.00E+00	9.94E-01
TH-234	0.931	63.29 *	3.80	2.37E+00	2.82E+00
AM-243	0.971	74.67 *	66.00	5.44E-01	1.22E-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 : 6/14/2016 10:37:11AM
 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	23.03	1.90694E-02	49.44		
m 5	77.47	1.80491E-01	7.06		
9	129.97	2.23663E-02	50.84		
m 13	242.05	3.57599E-02	26.51		
14	270.08	2.02240E-02	33.42		
17	327.99	1.69604E-02	31.50	Sum	
20	410.73	8.80556E-03	59.85	Tol.	HO-166M

Analysis Report for 1606038-10
CP-5019 05-10

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
21	463.08	1.41676E-02	37.49		
22	511.37	1.28886E-02	46.13		
m 26	738.07	7.93386E-03	41.24		
27	785.97	7.72876E-03	33.52		
28	796.19	7.16698E-03	60.57	Sum	
M 29	859.17	4.84396E-03	37.16		
m 30	863.18	6.85521E-03	49.29		
31	897.89	4.66944E-03	64.62		
M 33	965.31	8.29712E-03	34.12		
36	1155.52	7.77778E-03	52.97	Sum	
37	1235.69	1.73681E-02	36.26	Tol.	CS-136
M 38	1281.52	3.92813E-03	62.45		
m 39	1288.32	6.26263E-03	39.67		
40	1415.55	2.79915E-03	41.51		
m 42	1466.18	2.80962E-03	110.09		
43	1593.47	4.20782E-03	47.37	D-Esc	
44	1729.65	3.70370E-03	41.42		
46	1796.92	2.22222E-03	35.36		
47	1825.35	1.38889E-03	44.72		
48	2104.63	4.12698E-03	40.45	S-Esc	
50	2310.87	2.37500E-03	42.27		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.97	1460.81 *	10.67	2.64E+01	3.41E+00
GA-67	0.95	93.31 *	35.70	2.97E+00	4.68E+00
		208.95 *	2.24	1.71E+01	2.70E+01
		300.22 *	16.00	2.89E+00	4.95E+00
CD-109	0.99	88.03 *	3.72	5.35E+00	1.91E+00
SN-126	0.95	87.57 *	37.00	5.31E-01	1.88E-01
TL-208	0.85	583.14 *	30.22	1.94E+00	4.44E-01

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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.85	860.37	4.48		
		2614.66 *	35.85	1.75E+00	4.70E-01
PB-210	0.99	46.50 *	4.25	2.20E+00	2.20E+00
BI-212	0.70	727.17 *	11.80	1.71E+00	8.68E-01
		1620.62	2.75		
PB-212	0.97	238.63 *	44.60	2.04E+00	2.65E-01
		300.09 *	3.41	2.43E+00	1.85E+00
BI-214	0.96	609.31 *	46.30	1.13E+00	2.86E-01
		1120.29 *	15.10	1.19E+00	1.09E+00
		1764.49 *	15.80	1.56E+00	6.59E-01
		2204.22 *	4.98	1.43E+00	1.29E+00
PB-214	0.96	295.21 *	19.19	1.47E+00	3.55E-01
		351.92 *	37.19	1.47E+00	3.17E-01
RA-226	0.97	186.21 *	3.28	4.75E+00	9.02E+00
AC-228	0.96	338.32 *	11.40	2.88E+00	8.45E-01
		911.07 *	27.70	1.67E+00	5.67E-01
		969.11 *	16.60	2.34E+00	7.31E-01
TH-231	0.31	25.64	14.70		
		84.21 *	6.40	1.00E+00	9.94E-01
TH-234	0.93	63.29 *	3.80	2.37E+00	2.82E+00
AM-243	0.97	74.67 *	66.00	5.44E-01	1.22E-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	0.973	2.64E+01	3.41E+00	
GA-67	0.959	2.52E+00	2.82E+00	
? CD-109	0.999	5.35E+00	1.91E+00	
? SN-126	0.954	5.31E-01	1.88E-01	
TL-208	0.852	1.85E+00	3.23E-01	
PB-210	0.991	2.20E+00	2.20E+00	

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Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-212	0.702	1.71E+00	8.68E-01	
PB-212	0.973	2.00E+00	2.63E-01	
BI-214	0.960	1.21E+00	2.50E-01	
PB-214	0.962	1.47E+00	2.36E-01	
RA-226	0.972	4.75E+00	9.02E+00	
AC-228	0.967	2.13E+00	3.96E-01	
TH-231	0.311	1.00E+00	9.94E-01	
TH-234	0.931	2.37E+00	2.82E+00	
AM-243	0.971	5.44E-01	1.22E-01	

- ? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 10:37:11AM
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	23.03	1.90694E-02		
m	5	77.47	1.80491E-01		
	9	129.97	2.23663E-02		
m	13	242.05	3.57599E-02		
	14	270.08	2.02240E-02		
	17	327.99	1.69604E-02	Sum	
	20	410.73	8.80556E-03	Tol.	HO-166M
	21	463.08	1.41676E-02		
	22	511.37	1.28886E-02		
m	26	738.07	7.93386E-03		
	27	785.97	7.72876E-03		
	28	796.19	7.16698E-03	Sum	
M	29	859.17	4.84396E-03		
m	30	863.18	6.85521E-03		
	31	897.89	4.66944E-03		
M	33	965.31	8.29712E-03		
	36	1155.52	7.77778E-03	Sum	
	37	1235.69	1.73681E-02	Tol.	CS-136
M	38	1281.52	3.92813E-03		
m	39	1288.32	6.26263E-03		
	40	1415.55	2.79915E-03		
m	42	1466.18	2.80962E-03		
	43	1593.47	4.20782E-03	D-Esc	
	44	1729.65	3.70370E-03		
	46	1796.92	2.22222E-03		
	47	1825.35	1.38889E-03		
	48	2104.63	4.12698E-03	S-Esc	
	50	2310.87	2.37500E-03		

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

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NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+ BE-7	477.59	10.42	-3.62E-01	1.05E+00	1.05E+00
+ NA-22	1274.54	99.94	-6.53E-03	1.60E-01	1.60E-01
+ NA-24	1368.53	99.99	-1.49E+02	1.06E+03	1.13E+03
	2754.09	99.86	2.58E+02		1.06E+03
+ AL-26	1808.65	99.76	9.19E-03	1.06E-01	1.06E-01
+ K-40	1460.81	* 10.67	2.64E+01	1.94E+00	1.94E+00
+ @ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+ TI-44	67.88	94.40	-2.92E-02	1.05E-01	1.05E-01
	78.34	96.00	3.21E-01		1.42E-01
+ SC-46	889.25	99.98	-3.26E-02	1.32E-01	1.32E-01
	1120.51	99.99	2.71E-01		2.40E-01
+ V-48	983.52	99.98	-9.59E-02	1.74E-01	1.74E-01
	1312.10	97.50	8.51E-02		2.30E-01
+ CR-51	320.08	9.83	4.94E-01	1.20E+00	1.20E+00
+ MN-54	834.83	99.97	-6.48E-02	1.45E-01	1.45E-01
+ CO-56	846.75	99.96	1.06E-02	1.48E-01	1.48E-01
	1037.75	14.03	3.23E-01		1.16E+00
	1238.25	67.00	1.80E-01		3.34E-01
	1771.40	15.51	-2.90E-01		7.68E-01
	2598.48	16.90	1.98E-02		5.53E-01
+ CO-57	122.06	85.51	-8.66E-03	8.79E-02	8.79E-02
	136.48	10.60	-7.84E-02		7.11E-01
+ CO-58	810.76	99.40	2.19E-02	1.42E-01	1.42E-01
+ FE-59	1099.22	56.50	-2.82E-02	2.79E-01	2.79E-01
	1291.56	43.20	1.55E-01		5.27E-01
+ CO-60	1173.22	100.00	2.69E-03	1.40E-01	1.88E-01
	1332.49	100.00	-3.67E-02		1.40E-01
+ ZN-65	1115.52	50.75	0.00E+00	3.14E-01	3.14E-01
+ GA-67	93.31	* 35.70	2.97E+00	3.30E+00	3.30E+00
	208.95	* 2.24	1.71E+01		3.29E+01
	300.22	* 16.00	2.89E+00		5.14E+00
+ SE-75	121.11	16.70	2.17E-02	1.30E-01	4.61E-01
	136.00	59.20	3.87E-03		1.30E-01
	264.65	59.80	-4.86E-03		1.68E-01
	279.53	25.20	-7.18E-02		4.23E-01
	400.65	11.40	-5.10E-01		1.01E+00
+ RB-82	776.52	13.00	1.28E-01	1.27E+00	1.27E+00
+ RB-83	520.41	46.00	-1.50E-01	2.51E-01	2.51E-01
	529.64	30.30	1.21E-01		3.92E-01
	552.65	16.40	3.15E-01		7.97E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99	0.43	1.48E+00	3.94E+01	3.94E+01
+	SR-85	513.99	99.27	7.06E-03	1.87E-01	1.87E-01
+	Y-88	898.02	93.40	6.34E-02	9.65E-02	1.66E-01
		1836.01	99.38	-1.07E-02		9.65E-02
+	NB-93M	16.57	9.43	1.03E+02	1.29E+02	1.29E+02
+	NB-94	702.63	100.00	4.95E-02	1.37E-01	1.39E-01
		871.10	100.00	8.46E-02		1.37E-01
+	NB-95	765.79	99.81	-7.75E-04	1.58E-01	1.58E-01
+	NB-95M	235.69	25.00	4.22E+00	3.20E+00	3.20E+00
+	ZR-95	724.18	43.70	4.80E-02	2.53E-01	4.21E-01
		756.72	55.30	-6.51E-02		2.53E-01
+	MO-99	181.06	6.20	1.32E+00	8.07E+00	9.92E+00
		739.58	12.80	1.43E+00		8.07E+00
		778.00	4.50	-1.27E+01		2.00E+01
+	RU-103	497.08	89.00	2.11E-02	1.44E-01	1.44E-01
+	RU-106	621.84	9.80	-4.68E-01	1.28E+00	1.28E+00
+	AG-108M	433.93	89.90	-7.31E-02	1.12E-01	1.12E-01
		614.37	90.40	1.87E-03		1.62E-01
		722.95	90.50	1.32E-02		1.57E-01
+	CD-109	88.03	* 3.72	5.35E+00	5.75E+00	5.75E+00
+	AG-110M	657.75	93.14	-8.59E-02	1.44E-01	1.44E-01
		677.61	10.53	-5.41E-02		1.30E+00
		706.67	16.46	-6.94E-02		8.46E-01
		763.93	21.98	1.13E-01		6.29E-01
		884.67	71.63	-5.13E-02		1.85E-01
		1384.27	23.94	4.80E-02		5.88E-01
+	CD-113M	263.70	0.02	-4.31E+01	4.08E+02	4.08E+02
+	SN-113	255.12	1.93	-2.84E+00	1.94E-01	4.97E+00
		391.69	64.90	8.61E-02		1.94E-01
+	TE123M	159.00	84.10	-1.13E-02	9.78E-02	9.78E-02
+	SB-124	602.71	97.87	-2.07E-02	1.47E-01	1.47E-01
		645.85	7.26	1.39E-01		1.83E+00
		722.78	11.10	1.18E-01		1.40E+00
		1691.02	49.00	-1.28E-01		2.26E-01
+	I-125	35.49	6.49	4.67E-01	3.43E+00	3.43E+00
+	SB-125	176.33	6.89	7.71E-02	3.89E-01	1.17E+00
		427.89	29.33	2.12E-01		3.89E-01
		463.38	10.35	1.23E+00		1.30E+00
		600.56	17.80	1.87E-02		7.40E-01
		635.90	11.32	5.07E-01		1.14E+00
+	SB-126	414.70	83.30	-2.11E-02	2.09E-01	2.09E-01
		666.33	99.60	2.75E-02		2.29E-01
		695.00	99.60	4.33E-02		2.27E-01
		720.50	53.80	-1.82E-01		3.58E-01
+	SN-126	87.57	* 37.00	5.31E-01	5.71E-01	5.71E-01
+	SB-127	473.00	25.00	-6.92E-01	1.64E+00	1.77E+00
		685.20	35.70	-5.60E-01		1.64E+00
		783.80	14.70	4.04E-01		4.37E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-129	29.78	57.00	-6.54E-02	6.03E-01	6.03E-01
		33.60	13.20	-4.57E-01		1.81E+00
		39.58	7.52	-5.74E-01		2.09E+00
+	I-131	284.30	6.05	-1.21E+00	2.58E-01	3.13E+00
		364.48	81.20	-7.43E-02		2.58E-01
		636.97	7.26	2.11E+00		3.57E+00
		722.89	1.80	1.33E+00		1.58E+01
+	TE-132	49.72	13.10	-2.13E-01	6.19E-01	4.89E+00
		228.16	88.00	-9.19E-02		6.19E-01
+	BA-133	81.00	33.00	-1.56E+00	2.43E-01	2.82E-01
		302.84	17.80	1.04E-01		6.08E-01
		356.01	60.00	-8.17E-03		2.43E-01
+	I-133	529.87	86.30	2.54E+01	8.24E+01	8.24E+01
+	XE-133	81.00	38.00	-3.93E+00	7.10E-01	7.10E-01
+	CS-134	563.23	8.38	-6.58E-01	1.36E-01	1.35E+00
		569.32	15.43	4.10E-01		8.11E-01
		604.70	97.60	-3.61E-02		1.36E-01
		795.84	85.40	1.03E-01		1.87E-01
		801.93	8.73	2.86E-02		1.49E+00
+	CS-135	268.24	16.00	-2.95E-02	6.74E-01	6.74E-01
+	I-135	1131.51	22.50	4.27E+07	3.34E+08	5.22E+08
		1260.41	28.60	-4.12E+07		3.34E+08
		1678.03	9.54	2.72E+08		7.93E+08
+	CS-136	153.22	7.46	1.60E-03	1.86E-01	1.63E+00
		163.89	4.61	-2.51E-01		2.56E+00
		176.55	13.56	5.82E-01		9.31E-01
		273.65	12.66	7.00E-02		1.30E+00
		340.57	48.50	9.05E-01		4.76E-01
		818.50	99.70	3.04E-02		1.86E-01
		1048.07	79.60	3.13E-03		2.65E-01
		1235.34	19.70	-1.33E+00		1.44E+00
+	CS-137	661.65	85.12	2.94E-02	1.72E-01	1.72E-01
+	LA-138	788.74	34.00	2.17E-02	2.09E-01	4.23E-01
		1435.80	66.00	5.12E-02		2.09E-01
+	CE-139	165.85	80.35	2.97E-02	1.03E-01	1.03E-01
+	BA-140	162.64	6.70	-1.01E+00	7.13E-01	1.72E+00
		304.84	4.50	6.51E-01		3.33E+00
		423.70	3.20	-1.89E+00		5.17E+00
		437.55	2.00	2.11E-02		8.63E+00
		537.32	25.00	1.26E-01		7.13E-01
+	LA-140	328.77	20.50	6.62E-01	2.72E-01	8.77E-01
		487.03	45.50	6.81E-02		3.98E-01
		815.85	23.50	-1.29E-01		7.87E-01
		1596.49	95.49	-3.00E-02		2.72E-01
+	CE-141	145.44	48.40	4.77E-02	1.93E-01	1.93E-01
+	CE-143	57.36	11.80	-1.57E+01	1.82E+01	5.31E+01
		293.26	42.00	-8.47E-01		1.82E+01
		664.55	5.20	4.30E+01		1.66E+02
+	CE-144	133.54	10.80	-2.68E-02	7.17E-01	7.17E-01

Analysis Report for 1606038-10
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-144	476.78	42.00	-3.62E-02	1.36E-01	2.42E-01
		618.01	98.60	2.09E-02		1.36E-01
		696.49	99.49	-2.78E-03		1.43E-01
+	PM-145	36.85	21.70	-1.26E-01	4.56E-01	8.48E-01
		37.36	39.70	-1.05E-01		4.56E-01
		42.30	15.10	-2.82E-01		9.25E-01
		72.40	2.31	-8.84E+00		5.10E+00
+	PM-146	453.90	39.94	1.31E-01	2.85E-01	2.85E-01
		735.90	14.01	3.66E-01		9.70E-01
		747.13	13.10	-7.27E-02		1.02E+00
+	ND-147	91.11	28.90	-5.78E-01	6.10E-01	6.10E-01
		531.02	13.10	-6.44E-02		1.37E+00
+	PM-149	285.90	3.10	2.50E+00	3.89E+01	3.89E+01
+	EU-152	121.78	20.50	-3.54E-02	3.59E-01	3.59E-01
		244.69	5.40	7.64E-02		2.17E+00
		344.27	19.13	1.58E-01		5.37E-01
		778.89	9.20	-1.50E-01		1.30E+00
		964.01	10.40	-3.41E+00		1.71E+00
		1085.78	7.22	-3.27E-01		2.03E+00
		1112.02	9.60	1.07E-01		1.66E+00
		1407.95	14.94	5.32E-01		1.00E+00
+	GD-153	97.43	31.30	4.75E-02	2.50E-01	2.50E-01
		103.18	22.20	-2.37E-01		3.42E-01
+	EU-154	123.07	40.50	-3.64E-02	1.84E-01	1.84E-01
		723.30	19.70	6.08E-02		7.22E-01
		873.19	11.50	-4.29E-01		1.10E+00
		996.32	10.30	-2.88E-01		1.39E+00
		1004.76	17.90	-1.74E-01		7.66E-01
		1274.45	35.50	-1.83E-02		4.50E-01
+	EU-155	86.50	30.90	4.32E-02	3.37E-01	3.37E-01
		105.30	20.70	3.26E-01		3.83E-01
+	EU-156	811.77	10.40	-2.73E-02	1.76E+00	1.76E+00
		1153.47	7.20	2.18E-01		3.68E+00
		1230.71	8.90	1.23E+00		3.20E+00
+	HO-166M	184.41	72.60	2.12E-01	1.44E-01	1.44E-01
		280.45	29.60	2.03E-02		3.39E-01
		410.94	11.10	3.23E-01		1.07E+00
		711.69	54.10	7.46E-02		2.59E-01
+	TM-171	66.72	0.14	-5.40E+01	7.53E+01	7.53E+01
+	HF-172	81.75	4.52	-8.52E+00	6.78E-01	2.04E+00
		125.81	11.30	-5.16E-02		6.78E-01
+	LU-172	181.53	20.60	-1.16E-01	5.72E-01	8.83E-01
		810.06	16.63	-2.26E-01		1.77E+00
		912.12	15.25	7.61E+00		3.99E+00
		1093.66	62.50	2.96E-02		5.72E-01
+	LU-173	100.72	5.24	-4.93E-01	5.39E-01	1.42E+00
		272.11	21.20	3.51E-01		5.39E-01
+	HF-175	343.40	84.00	3.06E-02	1.44E-01	1.44E-01
+	LU-176	88.34	13.30	2.97E-01	1.05E-01	8.12E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	201.83	86.00	-5.06E-02	1.05E-01	1.13E-01
		306.78	94.00	6.56E-02		1.05E-01
+	TA-182	67.75	41.20	-7.03E-02	2.54E-01	2.54E-01
		1121.30	34.90	5.74E-01		6.73E-01
		1189.05	16.23	2.46E-01		1.24E+00
		1221.41	26.98	3.53E-01		7.76E-01
		1231.02	11.44	1.49E+00		1.87E+00
+	IR-192	308.46	29.68	-4.99E-02	2.61E-01	3.40E-01
		468.07	48.10	4.15E-02		2.61E-01
+	HG-203	279.19	77.30	6.67E-02	1.51E-01	1.51E-01
+	BI-207	569.67	97.72	8.59E-02	1.30E-01	1.30E-01
		1063.62	74.90	-4.06E-02		1.72E-01
+	TL-208	583.14	* 30.22	1.94E+00	2.40E-01	5.22E-01
		860.37	4.48	1.68E+00		3.63E+00
		2614.66	* 35.85	1.75E+00		2.40E-01
+	BI-210M	262.00	45.00	9.09E-02	2.20E-01	2.20E-01
		300.00	23.00	-8.93E-01		4.98E-01
+	PB-210	46.50	* 4.25	2.20E+00	3.58E+00	3.58E+00
+	PB-211	404.84	2.90	2.44E+00	3.91E+00	3.91E+00
		831.96	2.90	-1.43E+00		4.84E+00
+	BI-212	727.17	* 11.80	1.71E+00	2.57E+00	2.57E+00
		1620.62	2.75	3.32E+00		5.92E+00
+	PB-212	238.63	* 44.60	2.04E+00	4.19E-01	4.19E-01
		300.09	* 3.41	2.43E+00		4.33E+00
+	BI-214	609.31	* 46.30	1.13E+00	3.53E-01	3.53E-01
		1120.29	* 15.10	1.19E+00		1.75E+00
		1764.49	* 15.80	1.56E+00		7.13E-01
		2204.22	* 4.98	1.43E+00		1.81E+00
+	PB-214	295.21	* 19.19	1.47E+00	4.04E-01	7.51E-01
		351.92	* 37.19	1.47E+00		4.04E-01
+	RN-219	401.80	6.50	-1.64E-02	1.75E+00	1.75E+00
+	RA-223	323.87	3.88	7.42E-02	2.61E+00	2.61E+00
+	RA-224	240.98	3.95	2.78E+01	5.31E+00	5.31E+00
+	RA-225	40.00	31.00	-1.98E-01	7.21E-01	7.21E-01
+	RA-226	186.21	* 3.28	4.75E+00	3.85E+00	3.85E+00
+	TH-227	50.10	8.40	-5.89E-02	1.35E+00	1.35E+00
		236.00	11.50	1.95E+00		1.48E+00
		256.20	6.30	-7.04E-01		1.46E+00
+	AC-228	338.32	* 11.40	2.88E+00	7.79E-01	1.18E+00
		911.07	* 27.70	1.67E+00		7.79E-01
		969.11	* 16.60	2.34E+00		2.07E+00
+	TH-230	48.44	16.90	3.06E-01	8.06E-01	8.06E-01
		62.85	4.60	2.17E+00		2.52E+00
		67.67	0.37	-7.45E+00		2.69E+01
+	PA-231	283.67	1.60	-2.28E+00	4.70E+00	5.89E+00
		302.67	2.30	8.00E-01		4.70E+00
+	TH-231	25.64	14.70	-6.95E-01	3.32E+00	4.43E+00
		84.21	* 6.40	1.00E+00		3.32E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-233	311.98	38.60	5.24E-02	2.92E-01	2.92E-01
+	PA-234	131.20	20.40	3.81E-01	4.11E-01	4.11E-01
		733.99	8.80	-1.05E+00		1.42E+00
		946.00	12.00	4.91E-03		1.17E+00
+	PA-234M	1001.03	0.92	1.94E+00	1.66E+01	1.66E+01
+	TH-234	63.29	*	3.80	4.62E+00	4.62E+00
+	U-235	143.76	10.50	1.50E-01	7.48E-01	7.48E-01
		163.35	4.70	-1.61E-01		1.64E+00
		205.31	4.70	-7.94E-01		2.03E+00
+	NP-237	86.50	12.60	1.06E-01	8.23E-01	8.23E-01
+	NP-239	106.10	22.70	2.31E+00	3.73E+00	3.73E+00
		228.18	10.70	-1.46E+00		9.84E+00
		277.60	14.10	5.67E+00		7.99E+00
+	AM-241	59.54	35.90	-5.17E-02	2.88E-01	2.88E-01
+	AM-243	74.67	*	66.00	2.39E-01	2.39E-01
+	CM-243	209.75	3.29	1.64E+00	7.48E-01	3.36E+00
		228.14	10.60	-1.37E-01		9.22E-01
		277.60	14.00	5.30E-01		7.48E-01

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

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	1.05E+00	1.05E+00	-3.62E-01	4.91E-01
NA-22	1274.54	99.94	1.60E-01	1.60E-01	-6.53E-03	7.24E-02
NA-24	1368.53	99.99	1.13E+03	1.06E+03	-1.49E+02	5.03E+02
	2754.09	99.86	1.06E+03		2.58E+02	4.27E+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)
AL-26	1808.65	99.76	1.06E-01	1.06E-01	9.19E-03	4.28E-02
+ K-40	1460.81	* 10.67	1.94E+00	1.94E+00	2.64E+01	8.87E-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	1.05E-01	1.05E-01	-2.92E-02	5.13E-02
	78.34	96.00	1.42E-01		3.21E-01	6.95E-02
SC-46	889.25	99.98	1.32E-01	1.32E-01	-3.26E-02	5.98E-02
	1120.51	99.99	2.40E-01		2.71E-01	1.13E-01
V-48	983.52	99.98	1.74E-01	1.74E-01	-9.59E-02	7.80E-02
	1312.10	97.50	2.30E-01		8.51E-02	1.03E-01
CR-51	320.08	9.83	1.20E+00	1.20E+00	4.94E-01	5.71E-01
MN-54	834.83	99.97	1.45E-01	1.45E-01	-6.48E-02	6.68E-02
CO-56	846.75	99.96	1.48E-01	1.48E-01	1.06E-02	6.83E-02
	1037.75	14.03	1.16E+00		3.23E-01	5.32E-01
	1238.25	67.00	3.34E-01		1.80E-01	1.55E-01
	1771.40	15.51	7.68E-01		-2.90E-01	3.15E-01
	2598.48	16.90	5.53E-01		1.98E-02	1.96E-01
CO-57	122.06	85.51	8.79E-02	8.79E-02	-8.66E-03	4.25E-02
	136.48	10.60	7.11E-01		-7.84E-02	3.43E-01
CO-58	810.76	99.40	1.42E-01	1.42E-01	2.19E-02	6.52E-02
FE-59	1099.22	56.50	2.79E-01	2.79E-01	-2.82E-02	1.26E-01
	1291.56	43.20	5.27E-01		1.55E-01	2.43E-01
CO-60	1173.22	100.00	1.88E-01	1.40E-01	2.69E-03	8.67E-02
	1332.49	100.00	1.40E-01		-3.67E-02	6.21E-02
ZN-65	1115.52	50.75	3.14E-01	3.14E-01	0.00E+00	1.43E-01
+ GA-67	93.31	* 35.70	3.30E+00	3.30E+00	2.97E+00	1.63E+00
	208.95	* 2.24	3.29E+01		1.71E+01	1.60E+01
	300.22	* 16.00	5.14E+00		2.89E+00	2.49E+00
SE-75	121.11	16.70	4.61E-01	1.30E-01	2.17E-02	2.23E-01
	136.00	59.20	1.30E-01		3.87E-03	6.29E-02
	264.65	59.80	1.68E-01		-4.86E-03	8.05E-02
	279.53	25.20	4.23E-01		-7.18E-02	2.03E-01
	400.65	11.40	1.01E+00		-5.10E-01	4.79E-01
RB-82	776.52	13.00	1.27E+00	1.27E+00	1.28E-01	5.84E-01
RB-83	520.41	46.00	2.51E-01	2.51E-01	-1.50E-01	1.17E-01
	529.64	30.30	3.92E-01		1.21E-01	1.83E-01
	552.65	16.40	7.97E-01		3.15E-01	3.74E-01
KR-85	513.99	0.43	3.94E+01	3.94E+01	1.48E+00	1.89E+01
SR-85	513.99	99.27	1.87E-01	1.87E-01	7.06E-03	8.98E-02
Y-88	898.02	93.40	1.66E-01	9.65E-02	6.34E-02	7.63E-02
	1836.01	99.38	9.65E-02		-1.07E-02	3.74E-02
NB-93M	16.57	9.43	1.29E+02	1.29E+02	1.03E+02	6.29E+01
NB-94	702.63	100.00	1.39E-01	1.37E-01	4.95E-02	6.46E-02
	871.10	100.00	1.37E-01		8.46E-02	6.30E-02
NB-95	765.79	99.81	1.58E-01	1.58E-01	-7.75E-04	7.30E-02
NB-95M	235.69	25.00	3.20E+00	3.20E+00	4.22E+00	1.56E+00
ZR-95	724.18	43.70	4.21E-01	2.53E-01	4.80E-02	1.98E-01
	756.72	55.30	2.53E-01		-6.51E-02	1.16E-01
MO-99	181.06	6.20	9.92E+00	8.07E+00	1.32E+00	4.77E+00
	739.58	12.80	8.07E+00		1.43E+00	3.74E+00
	778.00	4.50	2.00E+01		-1.27E+01	9.12E+00
RU-103	497.08	89.00	1.44E-01	1.44E-01	2.11E-02	6.74E-02
RU-106	621.84	9.80	1.28E+00	1.28E+00	-4.68E-01	5.97E-01
AG-108M	433.93	89.90	1.12E-01	1.12E-01	-7.31E-02	5.28E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-108M	614.37	90.40	1.62E-01	1.12E-01	1.87E-03	7.66E-02
	722.95	90.50	1.57E-01		1.32E-02	7.31E-02
+ CD-109	88.03 *	3.72	5.75E+00	5.75E+00	5.35E+00	2.84E+00
AG-110M	657.75	93.14	1.44E-01	1.44E-01	-8.59E-02	6.69E-02
	677.61	10.53	1.30E+00		-5.41E-02	6.08E-01
	706.67	16.46	8.46E-01		-6.94E-02	3.94E-01
	763.93	21.98	6.29E-01		1.13E-01	2.91E-01
	884.67	71.63	1.85E-01		-5.13E-02	8.43E-02
	1384.27	23.94	5.88E-01		4.80E-02	2.59E-01
CD-113M	263.70	0.02	4.08E+02	4.08E+02	-4.31E+01	1.95E+02
SN-113	255.12	1.93	4.97E+00	1.94E-01	-2.84E+00	2.38E+00
	391.69	64.90	1.94E-01		8.61E-02	9.26E-02
TE123M	159.00	84.10	9.78E-02	9.78E-02	-1.13E-02	4.71E-02
SB-124	602.71	97.87	1.47E-01	1.47E-01	-2.07E-02	6.90E-02
	645.85	7.26	1.83E+00		1.39E-01	8.48E-01
	722.78	11.10	1.40E+00		1.18E-01	6.54E-01
	1691.02	49.00	2.26E-01		-1.28E-01	9.12E-02
I-125	35.49	6.49	3.43E+00	3.43E+00	4.67E-01	1.66E+00
SB-125	176.33	6.89	1.17E+00	3.89E-01	7.71E-02	5.63E-01
	427.89	29.33	3.89E-01		2.12E-01	1.84E-01
	463.38	10.35	1.30E+00		1.23E+00	6.17E-01
	600.56	17.80	7.40E-01		1.87E-02	3.47E-01
	635.90	11.32	1.14E+00		5.07E-01	5.30E-01
SB-126	414.70	83.30	2.09E-01	2.09E-01	-2.11E-02	9.90E-02
	666.33	99.60	2.29E-01		2.75E-02	1.07E-01
	695.00	99.60	2.27E-01		4.33E-02	1.06E-01
	720.50	53.80	3.58E-01		-1.82E-01	1.65E-01
+ SN-126	87.57 *	37.00	5.71E-01	5.71E-01	5.31E-01	2.82E-01
SB-127	473.00	25.00	1.77E+00	1.64E+00	-6.92E-01	8.30E-01
	685.20	35.70	1.64E+00		-5.60E-01	7.63E-01
	783.80	14.70	4.37E+00		4.04E-01	2.03E+00
I-129	29.78	57.00	6.03E-01	6.03E-01	-6.54E-02	2.91E-01
	33.60	13.20	1.81E+00		-4.57E-01	8.72E-01
	39.58	7.52	2.09E+00		-5.74E-01	1.01E+00
I-131	284.30	6.05	3.13E+00	2.58E-01	-1.21E+00	1.49E+00
	364.48	81.20	2.58E-01		-7.43E-02	1.22E-01
	636.97	7.26	3.57E+00		2.11E+00	1.66E+00
	722.89	1.80	1.58E+01		1.33E+00	7.38E+00
TE-132	49.72	13.10	4.89E+00	6.19E-01	-2.13E-01	2.37E+00
	228.16	88.00	6.19E-01		-9.19E-02	2.98E-01
BA-133	81.00	33.00	2.82E-01	2.43E-01	-1.56E+00	1.37E-01
	302.84	17.80	6.08E-01		1.04E-01	2.91E-01
	356.01	60.00	2.43E-01		-8.17E-03	1.17E-01
I-133	529.87	86.30	8.24E+01	8.24E+01	2.54E+01	3.85E+01
XE-133	81.00	38.00	7.10E-01	7.10E-01	-3.93E+00	3.46E-01
CS-134	563.23	8.38	1.35E+00	1.36E-01	-6.58E-01	6.30E-01
	569.32	15.43	8.11E-01		4.10E-01	3.80E-01
	604.70	97.60	1.36E-01		-3.61E-02	6.37E-02
	795.84	85.40	1.87E-01		1.03E-01	8.74E-02
	801.93	8.73	1.49E+00		2.86E-02	6.85E-01
CS-135	268.24	16.00	6.74E-01	6.74E-01	-2.95E-02	3.24E-01
I-135	1131.51	22.50	5.22E+08	3.34E+08	4.27E+07	2.40E+08
	1260.41	28.60	3.34E+08		-4.12E+07	1.49E+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)
I-135	1678.03	9.54	7.93E+08	3.34E+08	2.72E+08	3.29E+08
CS-136	153.22	7.46	1.63E+00	1.86E-01	1.60E-03	7.87E-01
	163.89	4.61	2.56E+00		-2.51E-01	1.23E+00
	176.55	13.56	9.31E-01		5.82E-01	4.48E-01
	273.65	12.66	1.30E+00		7.00E-02	6.27E-01
	340.57	48.50	4.76E-01		9.05E-01	2.30E-01
	818.50	99.70	1.86E-01		3.04E-02	8.48E-02
	1048.07	79.60	2.65E-01		3.13E-03	1.20E-01
	1235.34	19.70	1.44E+00		-1.33E+00	6.63E-01
CS-137	661.65	85.12	1.72E-01	1.72E-01	2.94E-02	8.05E-02
LA-138	788.74	34.00	4.23E-01	2.09E-01	2.17E-02	1.96E-01
	1435.80	66.00	2.09E-01		5.12E-02	9.17E-02
CE-139	165.85	80.35	1.03E-01	1.03E-01	2.97E-02	4.96E-02
BA-140	162.64	6.70	1.72E+00	7.13E-01	-1.01E+00	8.29E-01
	304.84	4.50	3.33E+00		6.51E-01	1.59E+00
	423.70	3.20	5.17E+00		-1.89E+00	2.44E+00
	437.55	2.00	8.63E+00		2.11E-02	4.08E+00
	537.32	25.00	7.13E-01		1.26E-01	3.34E-01
LA-140	328.77	20.50	8.77E-01	2.72E-01	6.62E-01	4.20E-01
	487.03	45.50	3.98E-01		6.81E-02	1.87E-01
	815.85	23.50	7.87E-01		-1.29E-01	3.58E-01
	1596.49	95.49	2.72E-01		-3.00E-02	1.21E-01
CE-141	145.44	48.40	1.93E-01	1.93E-01	4.77E-02	9.32E-02
CE-143	57.36	11.80	5.31E+01	1.82E+01	-1.57E+01	2.58E+01
	293.26	42.00	1.82E+01		-8.47E-01	8.81E+00
	664.55	5.20	1.66E+02		4.30E+01	7.80E+01
CE-144	133.54	10.80	7.17E-01	7.17E-01	-2.68E-02	3.46E-01
PM-144	476.78	42.00	2.42E-01	1.36E-01	-3.62E-02	1.13E-01
	618.01	98.60	1.36E-01		2.09E-02	6.35E-02
	696.49	99.49	1.43E-01		-2.78E-03	6.69E-02
PM-145	36.85	21.70	8.48E-01	4.56E-01	-1.26E-01	4.10E-01
	37.36	39.70	4.56E-01		-1.05E-01	2.20E-01
	42.30	15.10	9.25E-01		-2.82E-01	4.48E-01
	72.40	2.31	5.10E+00		-8.84E+00	2.50E+00
PM-146	453.90	39.94	2.85E-01	2.85E-01	1.31E-01	1.34E-01
	735.90	14.01	9.70E-01		3.66E-01	4.50E-01
	747.13	13.10	1.02E+00		-7.27E-02	4.70E-01
ND-147	91.11	28.90	6.10E-01	6.10E-01	-5.78E-01	2.98E-01
	531.02	13.10	1.37E+00		-6.44E-02	6.38E-01
PM-149	285.90	3.10	3.89E+01	3.89E+01	2.50E+00	1.86E+01
EU-152	121.78	20.50	3.59E-01	3.59E-01	-3.54E-02	1.74E-01
	244.69	5.40	2.17E+00		7.64E-02	1.05E+00
	344.27	19.13	5.37E-01		1.58E-01	2.55E-01
	778.89	9.20	1.30E+00		-1.50E-01	5.92E-01
	964.01	10.40	1.71E+00		-3.41E+00	7.96E-01
	1085.78	7.22	2.03E+00		-3.27E-01	9.18E-01
	1112.02	9.60	1.66E+00		1.07E-01	7.57E-01
	1407.95	14.94	1.00E+00		5.32E-01	4.44E-01
GD-153	97.43	31.30	2.50E-01	2.50E-01	4.75E-02	1.21E-01
	103.18	22.20	3.42E-01		-2.37E-01	1.65E-01
EU-154	123.07	40.50	1.84E-01	1.84E-01	-3.64E-02	8.91E-02
	723.30	19.70	7.22E-01		6.08E-02	3.37E-01
	873.19	11.50	1.10E+00		-4.29E-01	5.02E-01

Analysis Report for 1606038-10
CP-5019 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	996.32	10.30	1.39E+00	1.84E-01	-2.88E-01	6.35E-01
	1004.76	17.90	7.66E-01		-1.74E-01	3.47E-01
	1274.45	35.50	4.50E-01		-1.83E-02	2.03E-01
EU-155	86.50	30.90	3.37E-01	3.37E-01	4.32E-02	1.65E-01
	105.30	20.70	3.83E-01		3.26E-01	1.86E-01
EU-156	811.77	10.40	1.76E+00	1.76E+00	-2.73E-02	8.04E-01
	1153.47	7.20	3.68E+00		2.18E-01	1.69E+00
	1230.71	8.90	3.20E+00		1.23E+00	1.48E+00
HO-166M	184.41	72.60	1.44E-01	1.44E-01	2.12E-01	7.00E-02
	280.45	29.60	3.39E-01		2.03E-02	1.62E-01
	410.94	11.10	1.07E+00		3.23E-01	5.10E-01
	711.69	54.10	2.59E-01		7.46E-02	1.21E-01
TM-171	66.72	0.14	7.53E+01	7.53E+01	-5.40E+01	3.67E+01
HF-172	81.75	4.52	2.04E+00	6.78E-01	-8.52E+00	9.91E-01
	125.81	11.30	6.78E-01		-5.16E-02	3.28E-01
LU-172	181.53	20.60	8.83E-01	5.72E-01	-1.16E-01	4.24E-01
	810.06	16.63	1.77E+00		-2.26E-01	8.10E-01
	912.12	15.25	3.99E+00		7.61E+00	1.91E+00
LU-173	1093.66	62.50	5.72E-01	5.39E-01	2.96E-02	2.61E-01
	100.72	5.24	1.42E+00		-4.93E-01	6.90E-01
	272.11	21.20	5.39E-01		3.51E-01	2.60E-01
HF-175	343.40	84.00	1.44E-01	1.44E-01	3.06E-02	6.85E-02
LU-176	88.34	13.30	8.12E-01	1.05E-01	2.97E-01	3.97E-01
	201.83	86.00	1.13E-01		-5.06E-02	5.46E-02
	306.78	94.00	1.05E-01		6.56E-02	5.02E-02
TA-182	67.75	41.20	2.54E-01	2.54E-01	-7.03E-02	1.24E-01
	1121.30	34.90	6.73E-01		5.74E-01	3.15E-01
	1189.05	16.23	1.24E+00		2.46E-01	5.72E-01
	1221.41	26.98	7.76E-01		3.53E-01	3.59E-01
	1231.02	11.44	1.87E+00		1.49E+00	8.68E-01
IR-192	308.46	29.68	3.40E-01	2.61E-01	-4.99E-02	1.62E-01
	468.07	48.10	2.61E-01		4.15E-02	1.23E-01
HG-203	279.19	77.30	1.51E-01	1.51E-01	6.67E-02	7.26E-02
BI-207	569.67	97.72	1.30E-01	1.30E-01	8.59E-02	6.08E-02
	1063.62	74.90	1.72E-01		-4.06E-02	7.68E-02
+ TL-208	583.14	* 30.22	5.22E-01	2.40E-01	1.94E+00	2.48E-01
	860.37	4.48	3.63E+00		1.68E+00	1.69E+00
	2614.66	* 35.85	2.40E-01		1.75E+00	8.44E-02
BI-210M	262.00	45.00	2.20E-01	2.20E-01	9.09E-02	1.06E-01
	300.00	23.00	4.98E-01		-8.93E-01	2.39E-01
+ PB-210	46.50	* 4.25	3.58E+00	3.58E+00	2.20E+00	1.74E+00
	404.84	2.90	3.91E+00		2.44E+00	1.85E+00
+ PB-211	831.96	2.90	4.84E+00	3.91E+00	-1.43E+00	2.23E+00
	727.17	* 11.80	2.57E+00		2.57E+00	1.71E+00
+ BI-212	1620.62	2.75	5.92E+00	2.57E+00	3.32E+00	2.62E+00
	238.63	* 44.60	4.19E-01		4.19E-01	2.04E+00
+ PB-212	300.09	* 3.41	4.33E+00	4.19E-01	2.43E+00	2.10E+00
	609.31	* 46.30	3.53E-01		3.53E-01	1.13E+00
+ BI-214	1120.29	* 15.10	1.75E+00	3.53E-01	1.19E+00	1.67E-01
	1764.49	* 15.80	7.13E-01		1.56E+00	8.29E-01
	2204.22	* 4.98	1.81E+00		1.43E+00	2.93E-01
+ PB-214	295.21	* 19.19	7.51E-01	4.04E-01	1.47E+00	3.64E-01
	351.92	* 37.19	4.04E-01		1.47E+00	1.95E-01

Analysis Report for 1606038-10
CP-5019 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RN-219	401.80	6.50	1.75E+00	1.75E+00	-1.64E-02	8.33E-01
RA-223	323.87	3.88	2.61E+00	2.61E+00	7.42E-02	1.25E+00
RA-224	240.98	3.95	5.31E+00	5.31E+00	2.78E+01	2.61E+00
RA-225	40.00	31.00	7.21E-01	7.21E-01	-1.98E-01	3.49E-01
+ RA-226	186.21	*	3.28	3.85E+00	3.85E+00	4.75E+00
TH-227	50.10	8.40	1.35E+00	1.35E+00	-5.89E-02	6.56E-01
	236.00	11.50	1.48E+00		1.95E+00	7.22E-01
	256.20	6.30	1.46E+00		-7.04E-01	7.00E-01
+ AC-228	338.32	*	11.40	1.18E+00	7.79E-01	2.88E+00
	911.07	*	27.70	7.79E-01		1.67E+00
	969.11	*	16.60	2.07E+00		2.34E+00
TH-230	48.44	16.90	8.06E-01	8.06E-01	3.06E-01	3.92E-01
	62.85	4.60	2.52E+00		2.17E+00	1.23E+00
	67.67	0.37	2.69E+01		-7.45E+00	1.31E+01
PA-231	283.67	1.60	5.89E+00	4.70E+00	-2.28E+00	2.81E+00
	302.67	2.30	4.70E+00		8.00E-01	2.25E+00
+ TH-231	25.64	14.70	4.43E+00	3.32E+00	-6.95E-01	2.14E+00
	84.21	*	6.40	3.32E+00		1.00E+00
PA-233	311.98	38.60	2.92E-01	2.92E-01	5.24E-02	1.39E-01
PA-234	131.20	20.40	4.11E-01	4.11E-01	3.81E-01	1.99E-01
	733.99	8.80	1.42E+00		-1.05E+00	6.53E-01
	946.00	12.00	1.17E+00		4.91E-03	5.35E-01
PA-234M	1001.03	0.92	1.66E+01	1.66E+01	1.94E+00	7.61E+00
+ TH-234	63.29	*	3.80	4.62E+00	4.62E+00	2.37E+00
U-235	143.76	10.50	7.48E-01	7.48E-01	1.50E-01	3.62E-01
	163.35	4.70	1.64E+00		-1.61E-01	7.87E-01
	205.31	4.70	2.03E+00		-7.94E-01	9.82E-01
NP-237	86.50	12.60	8.23E-01	8.23E-01	1.06E-01	4.02E-01
NP-239	106.10	22.70	3.73E+00	3.73E+00	2.31E+00	1.81E+00
	228.18	10.70	9.84E+00		-1.46E+00	4.74E+00
	277.60	14.10	7.99E+00		5.67E+00	3.83E+00
AM-241	59.54	35.90	2.88E-01	2.88E-01	-5.17E-02	1.40E-01
+ AM-243	74.67	*	66.00	2.39E-01	2.39E-01	5.44E-01
CM-243	209.75	3.29	3.36E+00	7.48E-01	1.64E+00	1.63E+00
	228.14	10.60	9.22E-01		-1.37E-01	4.44E-01
	277.60	14.00	7.48E-01		5.30E-01	3.59E-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 1606038-10
CP-5019 05-10

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP-5019 05-10

Elapsed Live time: 3600

Elapsed Real Time: 3613

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361																																																																																																																																																																																																																																																																																																																																																													
1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																										
9:	2	130	126	95	89	92	105	91	80	74	74	56	54	84	90	51	75	47	50	41	53	47	46	66	54	51	51	53	67	53	52	62	68	51	58	70	55	72	167	86	64	75	79	79	81	94	103	75	93	131	182	65	133	102	107	105	95	90	108	110	73	113	120	302	285	318	437	133	85	81	93	89	97	118	126	91	120	193	89	107	136	137	103	183	238	75	69	97	70	57	61	82	59	53	58	75	41	105	68	70	83	54	56	66	70	41	113	55	53	67	57	54	49	59	53	121	58	60	51	58	58	62	64	50	129	75	85	58	64	62	47	52	51	61	50	137	45	60	47	52	51	46	61	50	145	60	58	55	49	44	53	42	51	153	45	54	70	54	57	53	49	48	161	37	37	51	51	37	50	55	44	169	41	44	51	44	36	38	50	59	177	35	41	51	41	36	45	43	42	185	43	108	128	58	46	39	41	51	193	47	31	35	41	37	55	34	50	201	43	41	34	31	41	43	43	25	209	58	81	45	46	39	40	44	36	217	42	26	44	47	38	31	43	34	225	38	25	27	39	30	38	32	34	233	28	35	38	43	39	104	390	255	241	69	90	75	25	26	29	25	27	249	24	23	33	22	19	31	19	17	257	31	27	24	35	23	29	22	30	265	25	20	17	30	31	48	45	36	273	23	18	31	23	33	36	27	23	281	18	26	15	27	27	16	19	23	289	25	25	16	20	16	25	61	113	297	50	17	25	32	44	17	22	305	23	21	21	17	20	19	14	14	313	18	16	17	12	14	20	17	14	321	19	19	23	13	17	22	24	35	329	42	20	14	20	26	15	14	20	337	17	57	118	40	17	22	14	19	345	16	22	16	10	14	19	38	149	353	125	33	15	22	18	16	17	19	361	15	20	17	14	19	13	21	14

369: 23 18 17 11 19 17 10 16

Sample Title: CP-5019 05-10

Channel	23	18	17	11	19	17	10	16
377:	15	9	20	16	16	12	16	17
385:	6	11	9	9	23	21	12	20
393:	14	22	27	17	27	11	20	11
401:	12	19	22	16	19	16	15	9
409:	20	29	19	19	18	11	13	18
417:	15	12	17	16	20	9	10	11
425:	17	13	14	19	12	13	17	9
433:	14	10	11	6	13	21	14	21
441:	11	16	15	17	10	18	8	14
449:	11	9	10	16	11	21	12	12
457:	12	11	10	17	11	19	29	20
465:	23	9	10	12	17	11	12	10
473:	14	12	9	4	9	14	9	9
481:	10	8	11	11	7	15	18	13
489:	12	12	12	14	9	7	10	8
497:	16	8	11	16	7	10	7	12
505:	12	17	9	15	8	28	65	43
513:	27	11	8	13	10	9	12	11
521:	8	9	7	24	5	4	14	11
529:	4	6	8	13	12	9	12	7
537:	13	10	11	9	5	8	10	15
545:	13	5	8	4	10	16	8	12
553:	15	9	9	8	9	10	8	16
561:	5	11	11	9	3	7	10	16
569:	8	9	9	16	10	8	9	10
577:	10	17	10	7	10	25	92	85
585:	27	9	8	9	6	10	12	6
593:	7	12	4	10	12	10	11	12
601:	13	17	6	7	13	8	6	19
609:	69	100	26	12	12	11	12	9
617:	11	8	12	11	10	8	8	7
625:	7	14	10	8	16	5	8	6
633:	6	13	10	7	7	11	11	7
641:	6	6	7	9	2	9	10	10
649:	9	7	11	5	12	7	11	4
657:	10	9	11	10	9	13	17	10
665:	10	10	12	8	11	11	9	10
673:	5	16	10	7	10	8	7	14
681:	8	6	11	7	4	11	11	15
689:	15	8	10	10	15	9	8	11
697:	11	7	6	12	7	12	10	5
705:	11	7	8	7	11	12	7	8
713:	12	6	8	9	6	3	5	3
721:	12	9	9	10	10	11	31	33
729:	12	6	5	9	7	6	4	7
737:	9	18	5	7	3	6	9	7
745:	6	13	9	4	7	6	4	12
753:	7	9	8	7	3	7	7	6
761:	5	9	6	14	6	6	6	11
769:	2	7	8	4	16	8	5	7
777:	4	5	3	5	8	6	4	7
785:	10	18	9	3	3	10	6	7
793:	4	8	16	16	8	8	8	6

801: 7 5 5 4 8 3 6 9

Sample Title: CP-5019 05-10

Channel	1	2	3	4	5	6	7	8
809:	7	5	5	7	2	8	6	6
817:	3	7	3	3	8	4	4	3
825:	7	3	11	9	5	9	10	4
833:	3	6	11	7	7	11	10	8
841:	8	7	4	6	8	7	7	3
849:	8	6	7	6	5	6	7	5
857:	5	4	12	6	17	11	7	10
865:	3	2	3	5	9	5	6	7
873:	9	1	5	2	8	5	6	10
881:	5	5	3	3	10	6	4	5
889:	5	2	8	2	6	4	7	5
897:	10	7	8	5	4	3	6	7
905:	7	2	4	3	4	12	70	51
913:	11	3	5	9	5	2	4	5
921:	2	7	6	4	3	4	9	2
929:	3	4	4	11	8	10	5	4
937:	6	8	6	5	2	10	2	10
945:	5	6	5	9	1	5	5	2
953:	6	6	5	2	6	6	10	9
961:	4	3	6	13	18	11	6	17
969:	44	33	10	1	2	7	1	4
977:	4	3	5	3	7	4	2	3
985:	2	5	6	8	5	5	6	3
993:	3	7	1	7	6	4	8	7
1001:	8	4	5	5	5	4	3	6
1009:	5	3	4	4	4	9	2	7
1017:	3	9	7	5	6	6	4	5
1025:	4	6	4	7	7	4	2	5
1033:	8	3	7	3	1	10	3	5
1041:	9	5	1	5	7	3	6	5
1049:	0	4	5	5	5	4	6	1
1057:	8	5	6	3	3	1	5	5
1065:	5	3	4	3	5	3	5	1
1073:	5	8	8	6	3	4	9	3
1081:	5	2	3	8	3	5	5	3
1089:	5	4	9	2	10	4	3	4
1097:	1	10	2	5	4	2	6	4
1105:	10	7	6	4	4	5	7	4
1113:	8	4	5	5	5	4	8	19
1121:	24	5	12	4	2	10	5	6
1129:	5	6	6	6	6	9	7	2
1137:	7	6	5	2	6	6	1	12
1145:	8	2	4	5	3	5	6	7
1153:	6	8	8	7	13	4	8	1
1161:	7	8	5	4	3	5	2	8
1169:	10	6	7	5	7	8	10	5
1177:	4	6	5	6	6	4	8	10
1185:	2	3	6	6	6	11	10	7
1193:	8	4	3	3	3	4	4	6
1201:	4	11	6	5	4	6	4	7
1209:	6	12	8	5	5	4	5	5
1217:	6	6	6	10	7	7	5	10
1225:	7	2	3	6	10	9	12	5

1233: 4 7 4 4 8 11 12 9

Sample Title: CP-5019 05-10

Channel	1	2	3	4	5	6	7	8
1241:	7	2	7	7	8	4	6	6
1249:	5	6	6	4	4	7	3	5
1257:	1	4	4	3	5	4	2	4
1265:	3	6	4	5	3	3	3	5
1273:	2	1	5	4	3	3	3	4
1281:	9	6	4	2	5	2	4	12
1289:	5	4	2	6	3	6	5	3
1297:	6	3	3	6	5	4	4	1
1305:	3	2	0	4	6	0	1	5
1313:	3	3	4	1	2	3	4	1
1321:	6	4	2	1	3	3	4	3
1329:	1	3	4	2	2	1	2	2
1337:	2	3	2	3	4	4	2	1
1345:	1	0	4	1	2	1	2	3
1353:	3	3	3	1	1	2	2	3
1361:	4	4	2	2	3	6	2	1
1369:	2	2	1	2	1	4	4	2
1377:	5	2	5	4	2	2	0	2
1385:	1	1	3	3	0	1	2	1
1393:	1	1	4	1	1	3	2	3
1401:	6	4	0	4	3	2	3	6
1409:	1	0	2	0	1	2	7	3
1417:	0	0	1	2	1	2	2	5
1425:	0	6	1	2	2	0	2	0
1433:	4	2	2	4	0	3	0	2
1441:	1	0	2	1	2	2	2	0
1449:	1	3	3	0	1	4	1	5
1457:	3	1	40	113	195	89	6	2
1465:	1	4	1	1	0	0	0	1
1473:	4	1	1	1	0	2	3	1
1481:	1	0	2	1	2	2	2	1
1489:	3	4	4	1	0	4	1	2
1497:	3	2	2	0	2	1	1	1
1505:	0	2	1	3	2	2	2	1
1513:	1	2	5	1	1	3	0	0
1521:	1	0	0	0	1	2	3	0
1529:	0	3	1	3	0	2	1	2
1537:	0	1	0	0	1	1	2	1
1545:	0	3	0	2	1	0	2	2
1553:	1	2	0	1	1	4	1	2
1561:	1	2	0	2	2	1	0	0
1569:	0	0	1	1	2	1	0	2
1577:	0	0	1	1	1	5	1	1
1585:	1	3	2	5	3	3	4	4
1593:	8	5	0	0	3	0	2	0
1601:	0	2	1	0	0	3	1	0
1609:	2	0	0	1	1	2	1	3
1617:	1	0	3	1	3	5	0	4
1625:	0	0	3	0	2	6	0	3
1633:	2	1	2	1	0	1	0	1
1641:	0	2	2	0	0	0	0	1
1649:	1	1	0	0	1	1	0	2
1657:	0	2	3	1	2	4	1	1

1665: 1 0 1 1 1 3 0 0

Sample Title: CP-5019 05-10

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

2097: 1 0 0 0 1 3 3 3

Sample Title: CP-5019 05-10

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

2529: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5019 05-10

Channel	1	2	3	4	5	6	7	8	9
2537:	0	1	1	1	0	0	0	0	0
2545:	0	0	0	0	0	0	0	0	0
2553:	0	0	2	1	0	0	1	0	0
2561:	0	0	0	0	1	1	1	0	0
2569:	0	1	1	1	0	0	0	0	0
2577:	1	0	0	0	0	0	1	0	0
2585:	0	0	0	0	0	0	0	0	0
2593:	0	0	1	0	0	0	0	0	0
2601:	1	0	0	0	1	1	0	1	0
2609:	0	0	0	3	13	21	23	6	0
2617:	3	1	0	0	0	0	1	0	0
2625:	0	0	0	1	0	0	0	0	0
2633:	0	0	0	0	1	0	1	1	0
2641:	1	0	0	0	0	0	0	0	0
2649:	0	0	1	0	0	0	0	0	0
2657:	0	0	0	0	0	0	2	0	0
2665:	0	0	0	0	0	0	0	0	0
2673:	1	0	1	0	0	1	1	0	0
2681:	0	0	0	0	0	0	1	1	0
2689:	0	0	0	0	0	0	0	0	0
2697:	0	3	0	0	0	0	0	1	0
2705:	0	0	0	1	0	0	0	0	0
2713:	0	0	0	0	0	0	0	1	0
2721:	0	1	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0	0
2737:	0	0	0	0	0	0	0	0	0
2745:	0	0	2	0	1	1	0	0	0
2753:	2	0	0	2	0	0	0	0	0
2761:	0	0	0	1	0	0	0	0	0
2769:	0	0	0	0	0	0	0	0	0
2777:	0	0	0	1	0	0	0	0	0
2785:	1	0	0	0	0	0	0	0	0
2793:	0	0	0	0	1	0	0	0	0
2801:	0	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	0	0
2817:	1	0	0	0	1	1	2	0	0
2825:	0	0	1	0	0	0	0	0	0
2833:	0	0	1	0	0	0	0	0	0
2841:	0	0	0	0	0	0	1	0	0
2849:	0	0	1	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	1	0
2865:	0	0	0	0	0	0	0	2	0
2873:	0	0	0	0	0	0	0	2	0
2881:	0	1	0	0	0	0	0	0	0
2889:	1	0	0	0	0	0	1	0	0
2897:	0	1	1	0	0	0	0	0	0
2905:	1	0	1	0	0	0	0	1	0
2913:	0	0	0	0	0	0	0	0	0
2921:	0	1	0	0	0	1	0	0	0
2929:	0	1	0	0	1	0	0	0	0
2937:	0	0	0	0	0	0	0	1	0
2945:	0	0	0	0	0	0	0	0	0
2953:	0	1	1	0	0	0	0	0	0

2961: 0 0 0 0 0 0 0 1 0

Sample Title: CP-5019 05-10

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

3393: 0 0 0 0 0 1 0 0

Sample Title: CP-5019 05-10

Channel	1	2	3	4	5	6	7	8	9
3401:	0	1	0	0	0	0	0	0	1
3409:	0	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0	1
3425:	0	0	0	0	0	0	0	0	0
3433:	0	1	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0	0
3449:	0	0	1	0	0	0	0	0	1
3457:	0	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0	1
3505:	0	0	0	0	0	0	0	0	1
3513:	0	1	0	0	0	0	0	0	0
3521:	0	0	1	1	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0	0
3545:	0	0	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	1	0
3569:	1	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0	0
3585:	1	0	1	0	0	0	0	0	0
3593:	0	0	0	0	0	1	0	0	0
3601:	0	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0	0
3617:	1	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	1	0
3633:	0	0	0	0	0	0	0	0	1
3641:	1	0	0	0	0	0	0	0	1
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	1	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0	0
3689:	0	0	0	1	0	0	0	0	0
3697:	0	0	1	0	0	0	0	0	1
3705:	0	0	0	0	0	0	0	0	0
3713:	0	1	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0	1
3729:	1	0	0	0	0	0	0	0	0
3737:	0	1	0	0	0	0	0	0	0
3745:	1	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	1	1
3761:	0	0	0	0	0	0	0	0	0
3769:	0	0	0	1	0	0	0	0	0
3777:	0	0	1	0	0	0	1	0	0
3785:	0	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0	0
3801:	1	0	0	0	0	1	1	0	2
3809:	0	0	1	0	0	0	0	0	0
3817:	0	0	1	0	0	0	0	0	0

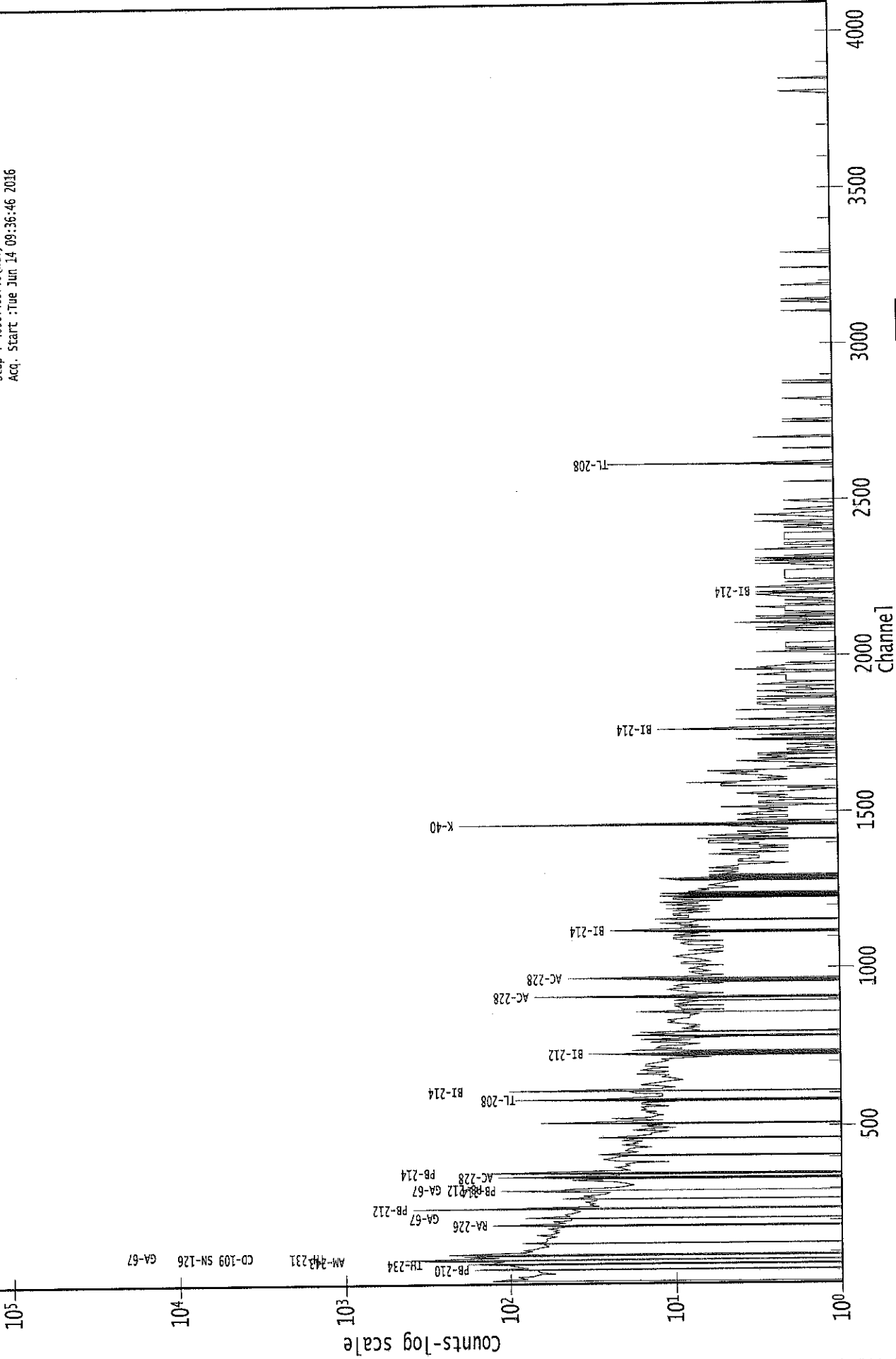
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5019 05-10

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	1	1	0	0	0
3849:	2	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	1	0	0	0
3865:	0	1	0	0	1	0	0	0	0
3873:	0	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0	1
3897:	0	0	0	0	1	0	0	0	0
3905:	0	0	0	0	0	0	1	0	0
3913:	0	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0	0
3929:	1	0	0	0	0	0	0	1	0
3937:	0	0	1	0	0	0	1	0	0
3945:	0	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	1	0	0
3961:	0	1	0	0	0	0	1	0	0
3969:	0	0	0	0	0	0	0	0	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	1	0	0	1	0	0
4001:	0	1	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0	1
4017:	0	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	1	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	1	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:	1	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0	0

0000038808.CNF

Live Time : 3600.000 sec
Real Time : 3613.090 sec
Start : 1: 0.7(keV)
Stop : 4096:4097.0(keV)
Acq. Start : Tue Jun 14 09:36:46 2016



Analysis Report for 1606038-11
CP-5019 10-15

✓
6/14

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-11
Sample Description : CP-5019 10-15
Sample Type : SOIL

Sample Size : 2.631E+02 grams
Facility : Countroom

Sample Taken On : 6/6/2016 8:17:29AM
Acquisition Started : 6/14/2016 10:38:22AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.3 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 6 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 4/6/2016
Efficiency Calibration Description :

Sample Number : 38815

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-11
CP-5019 10-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 11:38:30AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.33	76.42	0.0000	0.00
2	88.16	88.24	0.0000	0.00
3	93.14	93.22	0.0000	0.00
4	129.07	129.13	0.0000	0.00
5	185.59	185.62	0.0000	0.00
6	238.95	238.94	0.0000	0.00
7	269.67	269.65	0.0000	0.00
8	292.17	292.14	0.0000	0.00
9	295.00	294.97	0.0000	0.00
10	300.45	300.42	0.0000	0.00
11	328.05	328.00	0.0000	0.00
12	338.36	338.30	0.0000	0.00
13	348.36	348.30	0.0000	0.00
14	351.97	351.91	0.0000	0.00
15	406.65	406.56	0.0000	0.00
16	462.66	462.54	0.0000	0.00
17	511.03	510.89	0.0000	0.00
18	583.11	582.93	0.0000	0.00
19	609.31	609.12	0.0000	0.00
20	726.95	726.71	0.0000	0.00
21	861.76	861.46	0.0000	0.00
22	911.19	910.86	0.0000	0.00
23	934.12	933.79	0.0000	0.00
24	969.23	968.88	0.0000	0.00
25	1120.27	1119.86	0.0000	0.00
26	1156.12	1155.70	0.0000	0.00
27	1172.88	1172.46	0.0000	0.00
28	1277.76	1277.30	0.0000	0.00
29	1281.46	1281.00	0.0000	0.00
30	1377.05	1376.56	0.0000	0.00
31	1408.90	1408.39	0.0000	0.00
32	1414.26	1413.76	0.0000	0.00
33	1460.98	1460.45	0.0000	0.00
34	1539.79	1539.24	0.0000	0.00
35	1638.43	1637.86	0.0000	0.00
36	1729.43	1728.83	0.0000	0.00
37	1764.63	1764.03	0.0000	0.00
38	1833.62	1833.00	0.0000	0.00
39	2196.55	2195.86	0.0000	0.00
40	2204.55	2203.86	0.0000	0.00
41	2395.12	2394.40	0.0000	0.00
42	2614.36	2613.62	0.0000	0.00

Analysis Report for 1606038-11
CP-5019 10-15

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-11
CP-5019 10-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 11:38:30AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	76.33	73 -	80	76.42	7.74E+02	104.17	1.25E+03	2.78
2	88.16	86 -	91	88.24	1.04E+02	74.22	1.03E+03	3.68
3	93.14	91 -	96	93.22	1.80E+02	73.18	8.81E+02	1.39
4	129.07	126 -	132	129.13	5.14E+01	61.80	6.55E+02	1.20
5	185.59	182 -	189	185.62	1.73E+02	63.34	5.55E+02	1.33
6	238.95	234 -	243	238.94	7.24E+02	86.31	6.51E+02	1.75
7	269.67	266 -	274	269.65	6.03E+01	53.01	3.93E+02	1.59
M 8	292.17	291 -	298	292.14	2.30E+01	15.52	5.37E+01	1.49
m 9	295.00	291 -	298	294.97	1.98E+02	36.11	1.47E+02	1.50
10	300.45	299 -	303	300.42	4.02E+01	32.78	1.98E+02	1.21
11	328.05	325 -	331	328.00	4.70E+01	38.43	2.34E+02	1.22
12	338.36	334 -	341	338.30	1.38E+02	48.99	3.07E+02	1.27
M 13	348.36	347 -	356	348.30	1.49E+01	17.97	7.78E+01	1.73
m 14	351.97	347 -	356	351.91	3.09E+02	40.35	1.02E+02	1.39
15	406.65	399 -	414	406.56	6.55E+01	56.07	2.89E+02	8.93
16	462.66	460 -	466	462.54	3.47E+01	32.25	1.63E+02	1.20
17	511.03	506 -	516	510.89	1.20E+02	47.42	2.35E+02	2.05
18	583.11	579 -	586	582.93	1.58E+02	42.71	1.96E+02	1.30
19	609.31	605 -	613	609.12	1.87E+02	41.33	1.45E+02	1.42
20	726.95	721 -	733	726.71	5.29E+01	36.24	1.28E+02	2.25
21	861.76	857 -	866	861.46	4.20E+01	25.65	7.00E+01	2.60
22	911.19	907 -	913	910.86	1.45E+02	29.80	5.64E+01	1.69
23	934.12	930 -	938	933.79	2.30E+01	23.66	7.20E+01	1.69
24	969.23	965 -	973	968.88	9.14E+01	34.51	1.19E+02	1.61
25	1120.27	1114 -	1123	1119.86	5.37E+01	32.43	1.19E+02	2.10
26	1156.12	1154 -	1158	1155.70	1.15E+01	12.75	2.70E+01	2.15
27	1172.88	1169 -	1177	1172.46	2.35E+01	27.74	1.05E+02	2.36
M 28	1277.76	1276 -	1294	1277.30	6.86E+00	8.63	1.50E+01	2.87
m 29	1281.46	1276 -	1294	1281.00	2.45E+01	16.69	3.50E+01	2.20
30	1377.05	1373 -	1379	1376.56	1.05E+01	11.72	1.69E+01	1.33
M 31	1408.90	1405 -	1417	1408.39	1.65E+01	10.42	7.00E+00	3.67
m 32	1414.26	1405 -	1417	1413.76	1.06E+01	11.16	9.00E+00	3.04
33	1460.98	1456 -	1464	1460.45	5.27E+02	47.17	1.79E+01	2.20
34	1539.79	1535 -	1542	1539.24	1.13E+01	9.59	7.33E+00	2.17
35	1638.43	1634 -	1641	1637.86	1.40E+01	7.48	0.00E+00	2.07
36	1729.43	1726 -	1731	1728.83	5.00E+00	7.07	6.00E+00	2.38
37	1764.63	1760 -	1766	1764.03	3.11E+01	13.59	1.18E+01	1.55
38	1833.62	1830 -	1835	1833.00	1.00E+01	6.32	0.00E+00	2.36
39	2196.55	2191 -	2199	2195.86	7.00E+00	5.29	0.00E+00	6.44
40	2204.55	2200 -	2208	2203.86	1.40E+01	7.48	0.00E+00	3.32

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2395.12	2391 - 2396		2394.40	5.00E+00	4.47	0.00E+00	1.24
42	2614.36	2609 - 2617		2613.62	6.50E+01	16.12	0.00E+00	2.49

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.00sigma

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 11:38:30AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	76.33	73 -	80	7.74E+02	104.17	1.25E+03	9.62E+01
2	88.16	86 -	91	1.04E+02	74.22	1.03E+03	5.87E+01
3	93.14	91 -	96	1.80E+02	73.18	8.81E+02	5.60E+01
4	129.07	126 -	132	5.14E+01	61.80	6.55E+02	4.94E+01
5	185.59	182 -	189	1.73E+02	63.34	5.55E+02	4.74E+01
6	238.95	234 -	243	7.24E+02	86.31	6.51E+02	5.55E+01
7	269.67	266 -	274	6.03E+01	53.01	3.93E+02	4.17E+01
M 8	292.17	291 -	298	2.30E+01	15.52	5.37E+01	1.21E+01
m 9	295.00	291 -	298	1.98E+02	36.11	1.47E+02	1.99E+01
10	300.45	299 -	303	4.02E+01	32.78	1.98E+02	2.49E+01
11	328.05	325 -	331	4.70E+01	38.43	2.34E+02	2.95E+01
12	338.36	334 -	341	1.38E+02	48.99	3.07E+02	3.53E+01
M 13	348.36	347 -	356	1.49E+01	17.97	7.78E+01	1.45E+01
m 14	351.97	347 -	356	3.09E+02	40.35	1.02E+02	1.66E+01
15	406.65	399 -	414	6.55E+01	56.07	2.89E+02	4.41E+01
16	462.66	460 -	466	3.47E+01	32.25	1.63E+02	2.47E+01
17	511.03	506 -	516	1.20E+02	47.42	2.35E+02	3.46E+01
18	583.11	579 -	586	1.58E+02	42.71	1.96E+02	2.84E+01
19	609.31	605 -	613	1.87E+02	41.33	1.45E+02	2.54E+01
20	726.95	721 -	733	5.29E+01	36.24	1.28E+02	2.73E+01
21	861.76	857 -	866	4.20E+01	25.65	7.00E+01	1.82E+01
22	911.19	907 -	913	1.45E+02	29.80	5.64E+01	1.44E+01
23	934.12	930 -	938	2.30E+01	23.66	7.20E+01	1.78E+01
24	969.23	965 -	973	9.14E+01	34.51	1.19E+02	2.36E+01
25	1120.27	1114 -	1123	5.37E+01	32.43	1.19E+02	2.38E+01

Analysis Report for 1606038-11

CP-5019 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
26	1156.12	1154 -	1158	1.15E+01	12.75	2.70E+01	8.87E+00
27	1172.88	1169 -	1177	2.35E+01	27.74	1.05E+02	2.14E+01
M	28	1277.76	1276 - 1294	6.86E+00	8.63	1.50E+01	6.37E+00
m	29	1281.46	1276 - 1294	2.45E+01	16.69	3.50E+01	9.73E+00
	30	1377.05	1373 - 1379	1.05E+01	11.72	1.69E+01	8.02E+00
M	31	1408.90	1405 - 1417	1.65E+01	10.42	7.00E+00	4.35E+00
m	32	1414.26	1405 - 1417	1.06E+01	11.16	9.00E+00	4.93E+00
	33	1460.98	1456 - 1464	5.27E+02	47.17	1.79E+01	8.88E+00
	34	1539.79	1535 - 1542	1.13E+01	9.59	7.33E+00	5.62E+00
	35	1638.43	1634 - 1641	1.40E+01	7.48	0.00E+00	0.00E+00
	36	1729.43	1726 - 1731	5.00E+00	7.07	6.00E+00	4.50E+00
	37	1764.63	1760 - 1766	3.11E+01	13.59	1.18E+01	6.38E+00
	38	1833.62	1830 - 1835	1.00E+01	6.32	0.00E+00	0.00E+00
	39	2196.55	2191 - 2199	7.00E+00	5.29	0.00E+00	0.00E+00
	40	2204.55	2200 - 2208	1.40E+01	7.48	0.00E+00	0.00E+00
	41	2395.12	2391 - 2396	5.00E+00	4.47	0.00E+00	0.00E+00
	42	2614.36	2609 - 2617	6.50E+01	16.12	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 : 6/14/2016 11:38:30AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

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

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	76.33	73 -	80	76.42	7.74E+02	104.17	1.25E+03	.....
2	88.16	86 -	91	88.24	1.04E+02	74.22	1.03E+03	CD-109 LU-176 SN-126
3	93.14	91 -	96	93.22	1.80E+02	73.18	8.81E+02	GA-67
4	129.07	126 -	132	129.13	5.14E+01	61.80	6.55E+02	.....
5	185.59	182 -	189	185.62	1.73E+02	63.34	5.55E+02	RA-226
6	238.95	234 -	243	238.94	7.24E+02	86.31	6.51E+02	PB-212

Analysis Report for 1606038-11

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	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	7	269.67	266 -	274	269.65	6.03E+01	53.01	3.93E+02	.....
M	8	292.17	291 -	298	292.14	2.30E+01	15.52	5.37E+01	.....
m	9	295.00	291 -	298	294.97	1.98E+02	36.11	1.47E+02	PB-214
	10	300.45	299 -	303	300.42	4.02E+01	32.78	1.98E+02	GA-67 PB-212 BI-210M
	11	328.05	325 -	331	328.00	4.70E+01	38.43	2.34E+02	LA-140
	12	338.36	334 -	341	338.30	1.38E+02	48.99	3.07E+02	AC-228
M	13	348.36	347 -	356	348.30	1.49E+01	17.97	7.78E+01	.....
m	14	351.97	347 -	356	351.91	3.09E+02	40.35	1.02E+02	PB-214
	15	406.65	399 -	414	406.56	6.55E+01	56.07	2.89E+02	.....
	16	462.66	460 -	466	462.54	3.47E+01	32.25	1.63E+02	SB-125
	17	511.03	506 -	516	510.89	1.20E+02	47.42	2.35E+02	.....
	18	583.11	579 -	586	582.93	1.58E+02	42.71	1.96E+02	TL-208
	19	609.31	605 -	613	609.12	1.87E+02	41.33	1.45E+02	BI-214
	20	726.95	721 -	733	726.71	5.29E+01	36.24	1.28E+02	BI-212
	21	861.76	857 -	866	861.46	4.20E+01	25.65	7.00E+01	.....
	22	911.19	907 -	913	910.86	1.45E+02	29.80	5.64E+01	AC-228 LU-172
	23	934.12	930 -	938	933.79	2.30E+01	23.66	7.20E+01	.....
	24	969.23	965 -	973	968.88	9.14E+01	34.51	1.19E+02	AC-228
	25	1120.27	1114 -	1123	1119.86	5.37E+01	32.43	1.19E+02	BI-214 SC-46
	26	1156.12	1154 -	1158	1155.70	1.15E+01	12.75	2.70E+01	.....
	27	1172.88	1169 -	1177	1172.46	2.35E+01	27.74	1.05E+02	CO-60
M	28	1277.76	1276 -	1294	1277.30	6.86E+00	8.63	1.50E+01	.....
m	29	1281.46	1276 -	1294	1281.00	2.45E+01	16.69	3.50E+01	.....
	30	1377.05	1373 -	1379	1376.56	1.05E+01	11.72	1.69E+01	.....
M	31	1408.90	1405 -	1417	1408.39	1.65E+01	10.42	7.00E+00	EU-152
m	32	1414.26	1405 -	1417	1413.76	1.06E+01	11.16	9.00E+00	.....
	33	1460.98	1456 -	1464	1460.45	5.27E+02	47.17	1.79E+01	K-40
	34	1539.79	1535 -	1542	1539.24	1.13E+01	9.59	7.33E+00	.....
	35	1638.43	1634 -	1641	1637.86	1.40E+01	7.48	0.00E+00	.....
	36	1729.43	1726 -	1731	1728.83	5.00E+00	7.07	6.00E+00	.....
	37	1764.63	1760 -	1766	1764.03	3.11E+01	13.59	1.18E+01	BI-214
	38	1833.62	1830 -	1835	1833.00	1.00E+01	6.32	0.00E+00	.....
	39	2196.55	2191 -	2199	2195.86	7.00E+00	5.29	0.00E+00	.....
	40	2204.55	2200 -	2208	2203.86	1.40E+01	7.48	0.00E+00	BI-214
	41	2395.12	2391 -	2396	2394.40	5.00E+00	4.47	0.00E+00	.....
	42	2614.36	2609 -	2617	2613.62	6.50E+01	16.12	0.00E+00	TL-208

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606038-11
CP-5019 10-15

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/14/2016 11:38:30AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.33	7.74E+02	104.17	2.56E-02	2.02E-03
	2	88.16	1.04E+02	74.22	2.60E-02	2.27E-03
	3	93.14	1.80E+02	73.18	2.60E-02	2.27E-03
	4	129.07	5.14E+01	61.80	2.39E-02	2.29E-03
	5	185.59	1.73E+02	63.34	1.99E-02	2.40E-03
	6	238.95	7.24E+02	86.31	1.70E-02	2.31E-03
	7	269.67	6.03E+01	53.01	1.57E-02	2.26E-03
M	8	292.17	2.30E+01	15.52	1.48E-02	2.22E-03
m	9	295.00	1.98E+02	36.11	1.47E-02	2.21E-03
	10	300.45	4.02E+01	32.78	1.45E-02	2.21E-03
	11	328.05	4.70E+01	38.43	1.37E-02	2.16E-03
	12	338.36	1.38E+02	48.99	1.33E-02	2.14E-03
M	13	348.36	1.49E+01	17.97	1.31E-02	2.12E-03
m	14	351.97	3.09E+02	40.35	1.30E-02	2.12E-03
	15	406.65	6.55E+01	56.07	1.16E-02	1.97E-03
	16	462.66	3.47E+01	32.25	1.06E-02	1.68E-03
	17	511.03	1.20E+02	47.42	9.77E-03	1.43E-03
	18	583.11	1.58E+02	42.71	8.79E-03	1.06E-03
	19	609.31	1.87E+02	41.33	8.48E-03	9.23E-04
	20	726.95	5.29E+01	36.24	7.34E-03	7.36E-04
	21	861.76	4.20E+01	25.65	6.38E-03	9.09E-04
	22	911.19	1.45E+02	29.80	6.09E-03	9.29E-04
	23	934.12	2.30E+01	23.66	5.97E-03	8.82E-04
	24	969.23	9.14E+01	34.51	5.79E-03	8.11E-04
	25	1120.27	5.37E+01	32.43	5.15E-03	5.06E-04
	26	1156.12	1.15E+01	12.75	5.03E-03	4.33E-04
	27	1172.88	2.35E+01	27.74	4.97E-03	3.99E-04
M	28	1277.76	6.86E+00	8.63	4.66E-03	3.75E-04
m	29	1281.46	2.45E+01	16.69	4.65E-03	3.74E-04
	30	1377.05	1.05E+01	11.72	4.41E-03	3.66E-04
M	31	1408.90	1.65E+01	10.42	4.34E-03	3.68E-04
m	32	1414.26	1.06E+01	11.16	4.33E-03	3.69E-04
	33	1460.98	5.27E+02	47.17	4.23E-03	3.72E-04
	34	1539.79	1.13E+01	9.59	4.09E-03	3.78E-04
	35	1638.43	1.40E+01	7.48	3.93E-03	3.86E-04
	36	1729.43	5.00E+00	7.07	3.81E-03	3.93E-04
	37	1764.63	3.11E+01	13.59	3.77E-03	3.96E-04
	38	1833.62	1.00E+01	6.32	3.70E-03	4.01E-04
	39	2196.55	7.00E+00	5.29	3.46E-03	4.01E-04
	40	2204.55	1.40E+01	7.48	3.45E-03	4.01E-04
	41	2395.12	5.00E+00	4.47	3.40E-03	4.01E-04
	42	2614.36	6.50E+01	16.12	3.40E-03	4.01E-04

Analysis Report for 1606038-11
CP-5019 10-15

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 : 6/14/2016 11:38:30AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037620.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	76.33	7.74E+02	104.17			7.74E+02	1.04E+02
2	88.16	1.04E+02	74.22			1.04E+02	7.42E+01
3	93.14	1.80E+02	73.18	5.23E+01	6.82E+00	1.28E+02	7.35E+01
4	129.07	5.14E+01	61.80			5.14E+01	6.18E+01
5	185.59	1.73E+02	63.34	2.52E+01	6.98E+00	1.48E+02	6.37E+01
6	238.95	7.24E+02	86.31	8.15E+00	6.18E+00	7.16E+02	8.65E+01
7	269.67	6.03E+01	53.01			6.03E+01	5.30E+01
M	8	292.17	2.30E+01			2.30E+01	1.55E+01
m	9	295.00	1.98E+02	4.80E+00	5.42E+00	1.93E+02	3.65E+01
	10	300.45	4.02E+01			4.02E+01	3.28E+01
	11	328.05	4.70E+01			4.70E+01	3.84E+01
	12	338.36	1.38E+02			1.38E+02	4.90E+01
M	13	348.36	1.49E+01			1.49E+01	1.80E+01
m	14	351.97	3.09E+02	1.16E+01	4.76E+00	2.98E+02	4.06E+01
	15	406.65	6.55E+01			6.55E+01	5.61E+01
	16	462.66	3.47E+01			3.47E+01	3.22E+01
	17	511.03	1.20E+02	7.18E+01	4.99E+00	4.78E+01	4.77E+01
	18	583.11	1.58E+02			1.58E+02	4.27E+01
	19	609.31	1.87E+02	7.00E+00	3.58E+00	1.80E+02	4.15E+01
	20	726.95	5.29E+01			5.29E+01	3.62E+01
	21	861.76	4.20E+01			4.20E+01	2.57E+01
	22	911.19	1.45E+02	1.26E+00	2.67E+00	1.44E+02	2.99E+01
	23	934.12	2.30E+01			2.30E+01	2.37E+01
	24	969.23	9.14E+01			9.14E+01	3.45E+01
	25	1120.27	5.37E+01			5.37E+01	3.24E+01
	26	1156.12	1.15E+01			1.15E+01	1.27E+01
	27	1172.88	2.35E+01			2.35E+01	2.77E+01
M	28	1277.76	6.86E+00			6.86E+00	8.63E+00
m	29	1281.46	2.45E+01			2.45E+01	1.67E+01
	30	1377.05	1.05E+01			1.05E+01	1.17E+01
M	31	1408.90	1.65E+01			1.65E+01	1.04E+01
m	32	1414.26	1.06E+01			1.06E+01	1.12E+01
	33	1460.98	5.27E+02	3.84E+00	1.88E+00	5.23E+02	4.72E+01
	34	1539.79	1.13E+01			1.13E+01	9.59E+00
	35	1638.43	1.40E+01			1.40E+01	7.48E+00

Analysis Report for 1606038-11

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	1729.43	5.00E+00	7.07			5.00E+00	7.07E+00
37	1764.63	3.11E+01	13.59	1.55E+00	1.49E+00	2.96E+01	1.37E+01
38	1833.62	1.00E+01	6.32			1.00E+01	6.32E+00
39	2196.55	7.00E+00	5.29			7.00E+00	5.29E+00
40	2204.55	1.40E+01	7.48	5.23E-01	9.79E-01	1.35E+01	7.55E+00
41	2395.12	5.00E+00	4.47			5.00E+00	4.47E+00
42	2614.36	6.50E+01	16.12	3.94E+00	1.42E+00	6.11E+01	1.62E+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 : 6/14/2016 11:38:30AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037620.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	76.33	7.74E+02	104.17			7.74E+02	1.04E+02	
2	88.16	1.04E+02	74.22			1.04E+02	7.42E+01	
3	93.14	1.80E+02	73.18	5.23E+01	6.82E+00	1.28E+02	7.35E+01	
4	129.07	5.14E+01	61.80			5.14E+01	6.18E+01	
5	185.59	1.73E+02	63.34	2.52E+01	6.98E+00	1.48E+02	6.37E+01	
6	238.95	7.24E+02	86.31	8.15E+00	6.18E+00	7.16E+02	8.65E+01	
7	269.67	6.03E+01	53.01			6.03E+01	5.30E+01	
M	8	292.17	2.30E+01	15.52		2.30E+01	1.55E+01	
m	9	295.00	1.98E+02	36.11	4.80E+00	5.42E+00	1.93E+02	3.65E+01
	10	300.45	4.02E+01	32.78		4.02E+01	3.28E+01	
	11	328.05	4.70E+01	38.43		4.70E+01	3.84E+01	
	12	338.36	1.38E+02	48.99		1.38E+02	4.90E+01	
M	13	348.36	1.49E+01	17.97		1.49E+01	1.80E+01	
m	14	351.97	3.09E+02	40.35	1.16E+01	4.76E+00	2.98E+02	4.06E+01
	15	406.65	6.55E+01	56.07		6.55E+01	5.61E+01	
	16	462.66	3.47E+01	32.25		3.47E+01	3.22E+01	
	17	511.03	1.20E+02	47.42	7.18E+01	4.99E+00	4.78E+01	4.77E+01
	18	583.11	1.58E+02	42.71		1.58E+02	4.27E+01	
	19	609.31	1.87E+02	41.33	7.00E+00	3.58E+00	1.80E+02	4.15E+01
	20	726.95	5.29E+01	36.24		5.29E+01	3.62E+01	
	21	861.76	4.20E+01	25.65		4.20E+01	2.57E+01	

Analysis Report for 1606038-11
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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
22	911.19	1.45E+02	29.80	1.26E+00	2.67E+00	1.44E+02	2.99E+01
23	934.12	2.30E+01	23.66			2.30E+01	2.37E+01
24	969.23	9.14E+01	34.51			9.14E+01	3.45E+01
25	1120.27	5.37E+01	32.43			5.37E+01	3.24E+01
26	1156.12	1.15E+01	12.75			1.15E+01	1.27E+01
27	1172.88	2.35E+01	27.74			2.35E+01	2.77E+01
M	28	1277.76	6.86E+00	8.63		6.86E+00	8.63E+00
m	29	1281.46	2.45E+01	16.69		2.45E+01	1.67E+01
	30	1377.05	1.05E+01	11.72		1.05E+01	1.17E+01
M	31	1408.90	1.65E+01	10.42		1.65E+01	1.04E+01
m	32	1414.26	1.06E+01	11.16		1.06E+01	1.12E+01
	33	1460.98	5.27E+02	47.17	3.84E+00	5.23E+02	4.72E+01
	34	1539.79	1.13E+01	9.59		1.13E+01	9.59E+00
	35	1638.43	1.40E+01	7.48		1.40E+01	7.48E+00
	36	1729.43	5.00E+00	7.07		5.00E+00	7.07E+00
	37	1764.63	3.11E+01	13.59	1.55E+00	2.96E+01	1.37E+01
	38	1833.62	1.00E+01	6.32		1.00E+01	6.32E+00
	39	2196.55	7.00E+00	5.29		7.00E+00	5.29E+00
	40	2204.55	1.40E+01	7.48	5.23E-01	1.35E+01	7.55E+00
	41	2395.12	5.00E+00	4.47	9.79E-01	5.00E+00	4.47E+00
	42	2614.36	6.50E+01	16.12	3.94E+00	6.11E+01	1.62E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.996	1460.81	*	10.67	3.31E+01
GA-67	0.905	93.31	*	35.70	2.21E+00
		208.95		2.24	
		300.22	*	16.00	2.77E+00
CD-109	0.998	88.03	*	3.72	3.10E+00
SN-126	0.946	87.57	*	37.00	3.08E-01
TL-208	0.884	583.14	*	30.22	1.70E+00
		860.37		4.48	
		2614.66	*	35.85	1.43E+00
BI-212	0.760	727.17	*	11.80	1.74E+00
					4.15E-01
					1.21E+00

Analysis Report for 1606038-11
CP-5019 10-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.760	1620.62	2.75		
PB-212	0.984	238.63 *	44.60	2.69E+00	4.90E-01
		300.09 *	3.41	2.31E+00	1.92E+00
BI-214	0.998	609.31 *	46.30	1.31E+00	3.33E-01
		1120.29 *	15.10	1.97E+00	1.20E+00
		1764.49 *	15.80	1.42E+00	6.71E-01
		2204.22 *	4.98	2.24E+00	1.28E+00
PB-214	0.997	295.21 *	19.19	1.95E+00	4.72E-01
		351.92 *	37.19	1.76E+00	3.75E-01
RA-226	0.940	186.21 *	3.28	6.47E+00	1.22E+01
AC-228	0.998	338.32 *	11.40	2.60E+00	1.01E+00
		911.07 *	27.70	2.43E+00	6.27E-01
		969.11 *	16.60	2.71E+00	1.09E+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 : 6/14/2016 11:38:30AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.33	2.15066E-01	6.73		
4	129.07	1.42880E-02	60.07		
7	269.67	1.67510E-02	43.95		
M 8	292.17	6.39929E-03	33.69		
11	328.05	1.30615E-02	40.86	Sum	
M 13	348.36	4.13423E-03	60.35		
15	406.65	1.81958E-02	42.80		
16	462.66	9.64799E-03	46.42	Tol.	SB-125
17	511.03	1.32893E-02	49.83		
21	861.76	1.16667E-02	30.54		
23	934.12	6.38889E-03	51.44	Sum	
26	1156.12	3.19444E-03	55.42		
27	1172.88	6.52778E-03	59.03	Tol.	CO-60
M 28	1277.76	1.90577E-03	62.90		
m 29	1281.46	6.80796E-03	34.05		
30	1377.05	2.92398E-03	55.65		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
M	31	1408.90	4.57769E-03	31.60	Tol.	EU-152
m	32	1414.26	2.93571E-03	52.79		
	34	1539.79	3.14815E-03	42.32		
	35	1638.43	3.88889E-03	26.73	Sum	
	36	1729.43	1.38889E-03	70.71	Sum	
	38	1833.62	2.77778E-03	31.62		
	39	2196.55	1.94444E-03	37.80		
	41	2395.12	1.38889E-03	44.72		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	3.31E+01	4.22E+00
GA-67	0.90	93.31 *	35.70	2.21E+00	3.64E+00
		208.95 *	2.24		
		300.22 *	16.00	2.77E+00	4.85E+00
CD-109	0.99	88.03 *	3.72	3.10E+00	2.24E+00
SN-126	0.94	87.57 *	37.00	3.08E-01	2.21E-01
TL-208	0.88	583.14 *	30.22	1.70E+00	5.02E-01
		860.37 *	4.48		
		2614.66 *	35.85	1.43E+00	4.15E-01
BI-212	0.76	727.17 *	11.80	1.74E+00	1.21E+00
		1620.62 *	2.75		
PB-212	0.98	238.63 *	44.60	2.69E+00	4.90E-01
		300.09 *	3.41	2.31E+00	1.92E+00
BI-214	0.99	609.31 *	46.30	1.31E+00	3.33E-01
		1120.29 *	15.10	1.97E+00	1.20E+00
		1764.49 *	15.80	1.42E+00	6.71E-01
		2204.22 *	4.98	2.24E+00	1.28E+00
PB-214	0.99	295.21 *	19.19	1.95E+00	4.72E-01
		351.92 *	37.19	1.76E+00	3.75E-01
RA-226	0.94	186.21 *	3.28	6.47E+00	1.22E+01

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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.99	338.32 *	11.40	2.60E+00	1.01E+00
		911.07 *	27.70	2.43E+00	6.27E-01
		969.11 *	16.60	2.71E+00	1.09E+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	0.996	3.31E+01	4.22E+00	
GA-67	0.905	1.61E+00	2.04E+00	
? CD-109	0.998	3.10E+00	2.24E+00	
? SN-126	0.946	3.08E-01	2.21E-01	
TL-208	0.884	1.54E+00	3.20E-01	
BI-212	0.760	1.74E+00	1.21E+00	
PB-212	0.984	2.59E+00	4.78E-01	
BI-214	0.998	1.41E+00	2.83E-01	
PB-214	0.997	1.84E+00	2.93E-01	
RA-226	0.940	6.47E+00	1.22E+01	
AC-228	0.998	2.52E+00	4.79E-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 1606038-11
CP-5019 10-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 11:38:30AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.33	2.15066E-01	6.73		
4	129.07	1.42880E-02	60.07		
7	269.67	1.67510E-02	43.95		
M 8	292.17	6.39929E-03	33.69		
11	328.05	1.30615E-02	40.86	Sum	
M 13	348.36	4.13423E-03	60.35		
15	406.65	1.81958E-02	42.80		
16	462.66	9.64799E-03	46.42	Tol.	SB-125
17	511.03	1.32893E-02	49.83		
21	861.76	1.16667E-02	30.54		
23	934.12	6.38889E-03	51.44	Sum	
26	1156.12	3.19444E-03	55.42		
27	1172.88	6.52778E-03	59.03	Tol.	CO-60
M 28	1277.76	1.90577E-03	62.90		
m 29	1281.46	6.80796E-03	34.05		
30	1377.05	2.92398E-03	55.65		
M 31	1408.90	4.57769E-03	31.60	Tol.	EU-152
m 32	1414.26	2.93571E-03	52.79		
34	1539.79	3.14815E-03	42.32		
35	1638.43	3.88889E-03	26.73	Sum	
36	1729.43	1.38889E-03	70.71	Sum	
38	1833.62	2.77778E-03	31.62		
39	2196.55	1.94444E-03	37.80		
41	2395.12	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 1606038-11
CP-5019 10-15

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)	
+	BE-7	477.59	10.42	3.56E-01	1.15E+00	1.15E+00
+	NA-22	1274.54	99.94	-5.13E-04	1.84E-01	1.84E-01
+	NA-24	1368.53	99.99	1.92E+02	6.31E+02	1.09E+03
		2754.09	99.86	-6.80E+01		6.31E+02
+	AL-26	1808.65	99.76	-7.68E-03	1.15E-01	1.15E-01
+	K-40	1460.81	* 10.67	3.31E+01	1.38E+00	1.38E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	3.58E-02	9.48E-02	9.48E-02
		78.34	96.00	5.95E-01		1.47E-01
+	SC-46	889.25	99.98	-1.51E-02	1.58E-01	1.58E-01
		1120.51	99.99	3.04E-01		2.90E-01
+	V-48	983.52	99.98	9.84E-02	2.23E-01	2.23E-01
		1312.10	97.50	-1.04E-02		2.49E-01
+	CR-51	320.08	9.83	-5.36E-01	1.19E+00	1.19E+00
+	MN-54	834.83	99.97	-4.61E-02	1.50E-01	1.50E-01
+	CO-56	846.75	99.96	2.27E-02	1.47E-01	1.47E-01
		1037.75	14.03	5.84E-01		1.34E+00
		1238.25	67.00	5.77E-02		3.42E-01
		1771.40	15.51	-8.08E-01		6.88E-01
		2598.48	16.90	-2.20E-01		5.75E-01
+	CO-57	122.06	85.51	-1.42E-02	1.03E-01	1.03E-01
		136.48	10.60	-1.64E-01		8.39E-01
+	CO-58	810.76	99.40	-7.53E-02	1.44E-01	1.44E-01
+	FE-59	1099.22	56.50	-2.19E-01	3.09E-01	3.09E-01
		1291.56	43.20	-1.22E-01		3.98E-01
+	CO-60	1173.22	100.00	1.20E-01	1.70E-01	2.27E-01
		1332.49	100.00	8.73E-02		1.70E-01
+	ZN-65	1115.52	50.75	-2.71E-02	3.53E-01	3.53E-01
+	GA-67	93.31	* 35.70	2.21E+00	2.03E+00	2.03E+00
		208.95	2.24	5.22E+00		2.67E+01
		300.22	* 16.00	2.77E+00		3.61E+00
+	SE-75	121.11	16.70	5.34E-02	1.54E-01	5.42E-01
		136.00	59.20	4.12E-03		1.54E-01
		264.65	59.80	0.00E+00		1.63E-01
		279.53	25.20	-1.67E-01		3.89E-01
		400.65	11.40	4.84E-01		9.40E-01
+	RB-82	776.52	13.00	-5.17E-01	1.23E+00	1.23E+00
+	RB-83	520.41	46.00	2.48E-02	2.29E-01	2.29E-01
		529.64	30.30	-5.67E-02		3.40E-01
		552.65	16.40	-2.43E-01		6.20E-01
+	KR-85	513.99	0.43	-4.01E+01	2.88E+01	2.88E+01
+	SR-85	513.99	99.27	-1.91E-01	1.37E-01	1.37E-01

Analysis Report for 1606038-11
CP-5019 10-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	3.69E-02	1.60E-01	1.72E-01
		1836.01	99.38	-3.00E-02		1.60E-01
+	NB-93M	16.57	9.43	6.69E+01	1.76E+02	1.76E+02
+	NB-94	702.63	100.00	-6.03E-02	1.42E-01	1.42E-01
		871.10	100.00	6.93E-02		1.51E-01
+	NB-95	765.79	99.81	1.17E-01	1.89E-01	1.89E-01
+	NB-95M	235.69	25.00	-1.09E+01	3.10E+00	3.10E+00
+	ZR-95	724.18	43.70	1.84E-01	2.95E-01	4.24E-01
		756.72	55.30	2.22E-01		2.95E-01
+	MO-99	181.06	6.20	-3.45E+00	8.56E+00	1.16E+01
		739.58	12.80	1.73E+00		8.56E+00
		778.00	4.50	-1.62E+01		2.19E+01
+	RU-103	497.08	89.00	-2.26E-02	1.28E-01	1.28E-01
+	RU-106	621.84	9.80	3.30E-02	1.36E+00	1.36E+00
+	AG-108M	433.93	89.90	-7.24E-02	1.06E-01	1.06E-01
		614.37	90.40	4.12E-02		1.45E-01
		722.95	90.50	-1.72E-01		1.63E-01
+	CD-109	88.03	* 3.72	3.10E+00	3.58E+00	3.58E+00
+	AG-110M	657.75	93.14	7.57E-02	1.65E-01	1.65E-01
		677.61	10.53	4.09E-01		1.40E+00
		706.67	16.46	1.25E-02		9.42E-01
		763.93	21.98	-5.31E-01		6.26E-01
		884.67	71.63	6.25E-02		2.17E-01
		1384.27	23.94	6.52E-02		6.53E-01
+	CD-113M	263.70	0.02	-7.38E+01	3.84E+02	3.84E+02
+	SN-113	255.12	1.93	-1.05E+00	1.70E-01	5.10E+00
		391.69	64.90	-1.08E-02		1.70E-01
+	TE123M	159.00	84.10	2.73E-02	1.05E-01	1.05E-01
+	SB-124	602.71	97.87	1.43E-02	1.49E-01	1.49E-01
		645.85	7.26	-5.15E-01		1.85E+00
		722.78	11.10	-1.53E+00		1.46E+00
		1691.02	49.00	-8.28E-03		2.34E-01
+	I-125	35.49	6.49	-7.56E-01	2.92E+00	2.92E+00
+	SB-125	176.33	6.89	7.72E-01	3.49E-01	1.41E+00
		427.89	29.33	-6.11E-02		3.49E-01
		463.38	10.35	1.03E+00		1.28E+00
		600.56	17.80	-4.96E-01		6.50E-01
		635.90	11.32	-4.64E-02		1.23E+00
+	SB-126	414.70	83.30	1.62E-02	1.70E-01	1.70E-01
		666.33	99.60	-2.70E-02		2.02E-01
		695.00	99.60	1.14E-01		2.33E-01
		720.50	53.80	7.12E-02		4.17E-01
+	SN-126	87.57	* 37.00	3.08E-01	3.56E-01	3.56E-01
+	SB-127	473.00	25.00	1.33E-01	1.75E+00	1.78E+00
		685.20	35.70	8.16E-01		1.75E+00
		783.80	14.70	2.52E+00		4.70E+00
+	I-129	29.78	57.00	-2.75E-01	5.60E-01	5.60E-01
		33.60	13.20	-8.01E-01		1.49E+00

Analysis Report for 1606038-11
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	1.20E-01	5.60E-01	1.89E+00
+	I-131	284.30	6.05	-1.46E+00	2.61E-01	3.02E+00
		364.48	81.20	7.18E-02		2.61E-01
		636.97	7.26	-1.55E+00		3.72E+00
		722.89	1.80	-1.74E+01		1.65E+01
+	TE-132	49.72	13.10	-2.03E+00	6.07E-01	4.25E+00
		228.16	88.00	1.03E-01		6.07E-01
+	BA-133	81.00	33.00	1.15E-01	1.54E-01	2.39E-01
		302.84	17.80	-6.27E-02		5.52E-01
		356.01	60.00	-2.28E-03		1.54E-01
+	I-133	529.87	86.30	-1.68E+01	7.14E+01	7.14E+01
+	XE-133	81.00	38.00	2.93E-01	6.07E-01	6.07E-01
+	CS-134	563.23	8.38	3.07E-01	1.57E-01	1.47E+00
		569.32	15.43	4.96E-02		7.33E-01
		604.70	97.60	9.86E-04		1.57E-01
		795.84	85.40	8.59E-02		1.88E-01
		801.93	8.73	7.27E-01		1.81E+00
+	CS-135	268.24	16.00	1.44E-01	7.04E-01	7.04E-01
+	I-135	1131.51	22.50	-2.20E+08	4.26E+08	5.23E+08
		1260.41	28.60	-2.11E+07		4.26E+08
		1678.03	9.54	6.05E+08		1.19E+09
+	CS-136	153.22	7.46	5.20E-01	2.12E-01	1.92E+00
		163.89	4.61	-2.15E+00		2.93E+00
		176.55	13.56	1.30E-01		1.08E+00
		273.65	12.66	-2.14E-01		1.12E+00
		340.57	48.50	5.01E-02		3.80E-01
		818.50	99.70	-6.76E-02		2.12E-01
		1048.07	79.60	8.41E-02		2.94E-01
		1235.34	19.70	1.66E-01		1.67E+00
+	CS-137	661.65	85.12	-8.24E-02	1.56E-01	1.56E-01
+	LA-138	788.74	34.00	1.02E-01	2.03E-01	4.27E-01
		1435.80	66.00	-1.08E-02		2.03E-01
+	CE-139	165.85	80.35	-4.90E-02	1.18E-01	1.18E-01
+	BA-140	162.64	6.70	2.13E-01	5.93E-01	2.05E+00
		304.84	4.50	-1.28E-01		3.26E+00
		423.70	3.20	2.69E+00		5.27E+00
		437.55	2.00	1.17E+00		8.20E+00
		537.32	25.00	-9.74E-02		5.93E-01
+	LA-140	328.77	20.50	3.39E-01	2.41E-01	8.78E-01
		487.03	45.50	6.40E-02		3.42E-01
		815.85	23.50	3.17E-01		9.48E-01
		1596.49	95.49	5.11E-02		2.41E-01
+	CE-141	145.44	48.40	1.10E-01	2.34E-01	2.34E-01
+	CE-143	57.36	11.80	-9.62E-01	2.08E+01	4.45E+01
		293.26	42.00	3.24E+01		2.08E+01
		664.55	5.20	-1.02E+01		1.52E+02
+	CE-144	133.54	10.80	-7.41E-02	8.26E-01	8.26E-01
+	PM-144	476.78	42.00	8.06E-02	1.42E-01	2.59E-01
		618.01	98.60	7.18E-02		1.42E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49	99.49	-8.86E-03	1.42E-01	1.44E-01
+	PM-145	36.85	21.70	3.40E-01	4.10E-01	7.77E-01
		37.36	39.70	1.79E-01		4.10E-01
		42.30	15.10	2.42E-01		8.49E-01
		72.40	2.31	-3.27E-02		3.74E+00
+	PM-146	453.90	39.94	-1.09E-02	2.61E-01	2.61E-01
		735.90	14.01	-1.07E-01		8.82E-01
		747.13	13.10	8.12E-01		1.27E+00
+	ND-147	91.11	28.90	3.11E-01	7.40E-01	7.40E-01
		531.02	13.10	5.45E-01		1.30E+00
+	PM-149	285.90	3.10	1.35E+00	3.94E+01	3.94E+01
+	EU-152	121.78	20.50	-5.78E-02	4.19E-01	4.19E-01
		244.69	5.40	-6.88E-01		1.84E+00
		344.27	19.13	2.42E-01		5.17E-01
		778.89	9.20	-8.55E-02		1.50E+00
		964.01	10.40	-1.02E-01		1.70E+00
		1085.78	7.22	4.12E-01		1.87E+00
		1112.02	9.60	-6.31E-01		1.64E+00
		1407.95	14.94	1.54E-01		1.04E+00
+	GD-153	97.43	31.30	1.25E-01	3.03E-01	3.03E-01
		103.18	22.20	-5.39E-01		3.95E-01
+	EU-154	123.07	40.50	1.40E-02	2.15E-01	2.15E-01
		723.30	19.70	-7.90E-01		7.51E-01
		873.19	11.50	-2.17E-01		1.27E+00
		996.32	10.30	-6.61E-01		1.63E+00
		1004.76	17.90	-2.56E-01		9.02E-01
		1274.45	35.50	-1.44E-03		5.15E-01
+	EU-155	86.50	30.90	-6.98E-01	3.75E-01	3.75E-01
		105.30	20.70	4.37E-02		4.34E-01
+	EU-156	811.77	10.40	2.69E-01	1.93E+00	1.93E+00
		1153.47	7.20	-3.29E-01		3.40E+00
		1230.71	8.90	2.01E+00		3.61E+00
+	HO-166M	184.41	72.60	2.33E-01	1.69E-01	1.69E-01
		280.45	29.60	-1.36E-01		3.17E-01
		410.94	11.10	9.99E-01		1.02E+00
		711.69	54.10	2.09E-02		2.69E-01
+	TM-171	66.72	0.14	4.76E+00	6.47E+01	6.47E+01
+	HF-172	81.75	4.52	-2.63E+00	7.86E-01	1.75E+00
		125.81	11.30	-6.17E-02		7.86E-01
+	LU-172	181.53	20.60	-1.71E-01	6.16E-01	1.05E+00
		810.06	16.63	-9.62E-01		1.84E+00
		912.12	15.25	-4.51E-01		4.59E+00
		1093.66	62.50	1.23E-01		6.16E-01
+	LU-173	100.72	5.24	5.98E-01	5.22E-01	1.75E+00
		272.11	21.20	1.58E-01		5.22E-01
+	HF-175	343.40	84.00	9.82E-03	1.28E-01	1.28E-01
+	LU-176	88.34	13.30	1.53E+00	9.93E-02	9.22E-01
		201.83	86.00	8.67E-03		1.14E-01
		306.78	94.00	-2.93E-02		9.93E-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75	41.20	8.62E-02	2.28E-01	2.28E-01
		1121.30	34.90	7.88E-01		8.21E-01
		1189.05	16.23	-1.69E-01		1.11E+00
		1221.41	26.98	-2.68E-01		6.50E-01
		1231.02	11.44	5.30E-01		1.95E+00
+	IR-192	308.46	29.68	-2.25E-02	2.18E-01	3.42E-01
		468.07	48.10	-4.22E-02		2.18E-01
+	HG-203	279.19	77.30	6.15E-02	1.44E-01	1.44E-01
+	BI-207	569.67	97.72	7.79E-03	1.15E-01	1.15E-01
		1063.62	74.90	-7.32E-02		1.74E-01
+	TL-208	583.14	* 30.22	1.70E+00	2.26E-01	6.39E-01
		860.37	4.48	3.64E+00		3.92E+00
		2614.66	* 35.85	1.43E+00		2.26E-01
+	BI-210M	262.00	45.00	-8.61E-02	1.98E-01	1.98E-01
		300.00	23.00	1.45E-01		4.84E-01
+	PB-210	46.50	4.25	3.93E+00	3.14E+00	3.14E+00
+	PB-211	404.84	2.90	9.35E-01	3.24E+00	3.24E+00
		831.96	2.90	1.58E+00		5.23E+00
+	BI-212	727.17	* 11.80	1.74E+00	1.89E+00	1.89E+00
		1620.62	2.75	-3.65E-01		5.27E+00
+	PB-212	238.63	* 44.60	2.69E+00	4.31E-01	4.31E-01
		300.09	* 3.41	2.31E+00		3.02E+00
+	BI-214	609.31	* 46.30	1.31E+00	3.97E-01	3.97E-01
		1120.29	* 15.10	1.97E+00		1.84E+00
		1764.49	* 15.80	1.42E+00		7.82E-01
		2204.22	* 4.98	2.24E+00		9.26E-01
+	PB-214	295.21	* 19.19	1.95E+00	3.99E-01	6.73E-01
		351.92	* 37.19	1.76E+00		3.99E-01
+	RN-219	401.80	6.50	1.01E+00	1.61E+00	1.61E+00
+	RA-223	323.87	3.88	3.98E-01	2.51E+00	2.51E+00
+	RA-224	240.98	3.95	9.17E+00	5.10E+00	5.10E+00
+	RA-225	40.00	31.00	4.17E-02	6.56E-01	6.56E-01
+	RA-226	186.21	* 3.28	6.47E+00	4.35E+00	4.35E+00
+	TH-227	50.10	8.40	-5.58E-01	1.17E+00	1.17E+00
		236.00	11.50	-5.01E+00		1.42E+00
		256.20	6.30	7.87E-02		1.51E+00
+	AC-228	338.32	* 11.40	2.60E+00	5.44E-01	1.38E+00
		911.07	* 27.70	2.43E+00		5.44E-01
		969.11	* 16.60	2.71E+00		1.48E+00
+	TH-230	48.44	16.90	-8.58E-01	5.96E-01	5.96E-01
		62.85	4.60	2.41E+00		2.33E+00
		67.67	0.37	9.14E+00		2.42E+01
+	PA-231	283.67	1.60	-2.74E+00	4.26E+00	5.66E+00
		302.67	2.30	-4.85E-01		4.26E+00
+	TH-231	25.64	14.70	2.65E-01	1.35E+00	4.19E+00
		84.21	6.40	9.09E-01		1.35E+00
+	PA-233	311.98	38.60	-5.18E-02	3.03E-01	3.03E-01
+	PA-234	131.20	20.40	1.63E-01	4.67E-01	4.67E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	733.99	8.80	-3.49E-01	4.67E-01	1.33E+00
		946.00	12.00	2.01E-01		1.29E+00
+	PA-234M	1001.03	0.92	6.15E+00	1.90E+01	1.90E+01
+	TH-234	63.29	3.80	2.90E+00	2.81E+00	2.81E+00
+	U-235	143.76	10.50	3.31E-01	8.88E-01	8.88E-01
		163.35	4.70	1.96E-01		1.89E+00
		205.31	4.70	1.65E+00		2.24E+00
+	NP-237	86.50	12.60	-1.71E+00	9.17E-01	9.17E-01
+	NP-239	106.10	22.70	-5.09E-01	4.31E+00	4.31E+00
		228.18	10.70	1.65E+00		9.69E+00
		277.60	14.10	1.87E+00		7.68E+00
+	AM-241	59.54	35.90	-3.54E-02	2.49E-01	2.49E-01
+	AM-243	74.67	66.00	-8.95E-01	1.87E-01	1.87E-01
+	CM-243	209.75	3.29	8.58E-01	7.10E-01	3.16E+00
		228.14	10.60	1.52E-01		8.97E-01
		277.60	14.00	1.73E-01		7.10E-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	1.15E+00	1.15E+00	3.56E-01	5.33E-01
	NA-22	1274.54	99.94	1.84E-01	1.84E-01	-5.13E-04	8.35E-02
	NA-24	1368.53	99.99	1.09E+03	6.31E+02	1.92E+02	4.72E+02
		2754.09	99.86	6.31E+02		-6.80E+01	2.24E+02
	AL-26	1808.65	99.76	1.15E-01	1.15E-01	-7.68E-03	4.73E-02
+	K-40	1460.81	* 10.67	1.38E+00	1.38E+00	3.31E+01	6.05E-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)
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	9.48E-02	9.48E-02	3.58E-02	4.58E-02
	78.34	96.00	1.47E-01		5.95E-01	7.20E-02
SC-46	889.25	99.98	1.58E-01	1.58E-01	-1.51E-02	7.22E-02
	1120.51	99.99	2.90E-01		3.04E-01	1.37E-01
V-48	983.52	99.98	2.23E-01	2.23E-01	9.84E-02	1.02E-01
	1312.10	97.50	2.49E-01		-1.04E-02	1.12E-01
CR-51	320.08	9.83	1.19E+00	1.19E+00	-5.36E-01	5.59E-01
MN-54	834.83	99.97	1.50E-01	1.50E-01	-4.61E-02	6.92E-02
CO-56	846.75	99.96	1.47E-01	1.47E-01	2.27E-02	6.70E-02
	1037.75	14.03	1.34E+00		5.84E-01	6.15E-01
	1238.25	67.00	3.42E-01		5.77E-02	1.58E-01
	1771.40	15.51	6.88E-01		-8.08E-01	2.73E-01
	2598.48	16.90	5.75E-01		-2.20E-01	2.15E-01
CO-57	122.06	85.51	1.03E-01	1.03E-01	-1.42E-02	4.94E-02
	136.48	10.60	8.39E-01		-1.64E-01	4.04E-01
CO-58	810.76	99.40	1.44E-01	1.44E-01	-7.53E-02	6.55E-02
FE-59	1099.22	56.50	3.09E-01	3.09E-01	-2.19E-01	1.40E-01
	1291.56	43.20	3.98E-01		-1.22E-01	1.77E-01
CO-60	1173.22	100.00	2.27E-01	1.70E-01	1.20E-01	1.05E-01
	1332.49	100.00	1.70E-01		8.73E-02	7.66E-02
ZN-65	1115.52	50.75	3.53E-01	3.53E-01	-2.71E-02	1.62E-01
+ GA-67	93.31	*	2.03E+00	2.03E+00	2.21E+00	9.93E-01
	208.95	2.24	2.67E+01		5.22E+00	1.28E+01
	300.22	*	3.61E+00		2.77E+00	1.71E+00
SE-75	121.11	16.70	5.42E-01	1.54E-01	5.34E-02	2.61E-01
	136.00	59.20	1.54E-01		4.12E-03	7.39E-02
	264.65	59.80	1.63E-01		0.00E+00	7.72E-02
	279.53	25.20	3.89E-01		-1.67E-01	1.84E-01
	400.65	11.40	9.40E-01		4.84E-01	4.40E-01
RB-82	776.52	13.00	1.23E+00	1.23E+00	-5.17E-01	5.64E-01
RB-83	520.41	46.00	2.29E-01	2.29E-01	2.48E-02	1.05E-01
	529.64	30.30	3.40E-01		-5.67E-02	1.56E-01
	552.65	16.40	6.20E-01		-2.43E-01	2.83E-01
KR-85	513.99	0.43	2.88E+01	2.88E+01	-4.01E+01	1.35E+01
SR-85	513.99	99.27	1.37E-01	1.37E-01	-1.91E-01	6.41E-02
Y-88	898.02	93.40	1.72E-01	1.60E-01	3.69E-02	7.87E-02
	1836.01	99.38	1.60E-01		-3.00E-02	6.87E-02
NB-93M	16.57	9.43	1.76E+02	1.76E+02	6.69E+01	8.55E+01
NB-94	702.63	100.00	1.42E-01	1.42E-01	-6.03E-02	6.58E-02
	871.10	100.00	1.51E-01		6.93E-02	6.96E-02
NB-95	765.79	99.81	1.89E-01	1.89E-01	1.17E-01	8.81E-02
NB-95M	235.69	25.00	3.10E+00	3.10E+00	-1.09E+01	1.51E+00
ZR-95	724.18	43.70	4.24E-01	2.95E-01	1.84E-01	1.99E-01
	756.72	55.30	2.95E-01		2.22E-01	1.37E-01
MO-99	181.06	6.20	1.16E+01	8.56E+00	-3.45E+00	5.56E+00
	739.58	12.80	8.56E+00		1.73E+00	3.96E+00
	778.00	4.50	2.19E+01		-1.62E+01	1.00E+01
RU-103	497.08	89.00	1.28E-01	1.28E-01	-2.26E-02	5.91E-02
RU-106	621.84	9.80	1.36E+00	1.36E+00	3.30E-02	6.33E-01
AG-108M	433.93	89.90	1.06E-01	1.06E-01	-7.24E-02	4.90E-02
	614.37	90.40	1.45E-01		4.12E-02	6.75E-02
	722.95	90.50	1.63E-01		-1.72E-01	7.57E-02

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	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	CD-109	88.03	*	3.72	3.58E+00	3.58E+00	3.10E+00
	AG-110M	657.75		93.14	1.65E-01	1.65E-01	7.57E-02
		677.61		10.53	1.40E+00		4.09E-01
		706.67		16.46	9.42E-01		1.25E-02
		763.93		21.98	6.26E-01		-5.31E-01
		884.67		71.63	2.17E-01		6.25E-02
		1384.27		23.94	6.53E-01		6.52E-02
	CD-113M	263.70		0.02	3.84E+02	3.84E+02	-7.38E+01
	SN-113	255.12		1.93	5.10E+00	1.70E-01	-1.05E+00
		391.69		64.90	1.70E-01		-1.08E-02
	TE123M	159.00		84.10	1.05E-01	1.05E-01	2.73E-02
	SB-124	602.71		97.87	1.49E-01	1.49E-01	1.43E-02
		645.85		7.26	1.85E+00		-5.15E-01
		722.78		11.10	1.46E+00		-1.53E+00
		1691.02		49.00	2.34E-01		-8.28E-03
	I-125	35.49		6.49	2.92E+00	2.92E+00	-7.56E-01
	SB-125	176.33		6.89	1.41E+00	3.49E-01	7.72E-01
		427.89		29.33	3.49E-01		-6.11E-02
		463.38		10.35	1.28E+00		1.03E+00
		600.56		17.80	6.50E-01		-4.96E-01
		635.90		11.32	1.23E+00		-4.64E-02
	SB-126	414.70		83.30	1.70E-01	1.70E-01	1.62E-02
		666.33		99.60	2.02E-01		-2.70E-02
		695.00		99.60	2.33E-01		1.14E-01
		720.50		53.80	4.17E-01		7.12E-02
+	SN-126	87.57	*	37.00	3.56E-01	3.56E-01	3.08E-01
	SB-127	473.00		25.00	1.78E+00	1.75E+00	1.33E-01
		685.20		35.70	1.75E+00		8.16E-01
		783.80		14.70	4.70E+00		2.52E+00
	I-129	29.78		57.00	5.60E-01	5.60E-01	-2.75E-01
		33.60		13.20	1.49E+00		-8.01E-01
		39.58		7.52	1.89E+00		1.20E-01
	I-131	284.30		6.05	3.02E+00	2.61E-01	-1.46E+00
		364.48		81.20	2.61E-01		7.18E-02
		636.97		7.26	3.72E+00		-1.55E+00
		722.89		1.80	1.65E+01		-1.74E+01
	TE-132	49.72		13.10	4.25E+00	6.07E-01	-2.03E+00
		228.16		88.00	6.07E-01		1.03E-01
	BA-133	81.00		33.00	2.39E-01	1.54E-01	1.15E-01
		302.84		17.80	5.52E-01		-6.27E-02
		356.01		60.00	1.54E-01		-2.28E-03
	I-133	529.87		86.30	7.14E+01	7.14E+01	-1.68E+01
	XE-133	81.00		38.00	6.07E-01	6.07E-01	2.93E-01
	CS-134	563.23		8.38	1.47E+00	1.57E-01	3.07E-01
		569.32		15.43	7.33E-01		4.96E-02
		604.70		97.60	1.57E-01		9.86E-04
		795.84		85.40	1.88E-01		8.59E-02
		801.93		8.73	1.81E+00		7.27E-01
	CS-135	268.24		16.00	7.04E-01	7.04E-01	1.44E-01
	I-135	1131.51		22.50	5.23E+08	4.26E+08	-2.20E+08
		1260.41		28.60	4.26E+08		-2.11E+07
		1678.03		9.54	1.19E+09		6.05E+08
	CS-136	153.22		7.46	1.92E+00	2.12E-01	5.20E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	163.89	4.61	2.93E+00	2.12E-01	-2.15E+00	1.41E+00
	176.55	13.56	1.08E+00		1.30E-01	5.19E-01
	273.65	12.66	1.12E+00		-2.14E-01	5.31E-01
	340.57	48.50	3.80E-01		5.01E-02	1.81E-01
	818.50	99.70	2.12E-01		-6.76E-02	9.70E-02
	1048.07	79.60	2.94E-01		8.41E-02	1.33E-01
	1235.34	19.70	1.67E+00		1.66E-01	7.73E-01
	661.65	85.12	1.56E-01		1.56E-01	-8.24E-02	7.23E-02
LA-138	788.74	34.00	4.27E-01	2.03E-01	1.02E-01	1.97E-01
	1435.80	66.00	2.03E-01		-1.08E-02	8.79E-02
CE-139	165.85	80.35	1.18E-01	1.18E-01	-4.90E-02	5.68E-02
BA-140	162.64	6.70	2.05E+00	5.93E-01	2.13E-01	9.83E-01
	304.84	4.50	3.26E+00		-1.28E-01	1.54E+00
	423.70	3.20	5.27E+00		2.69E+00	2.47E+00
	437.55	2.00	8.20E+00		1.17E+00	3.83E+00
	537.32	25.00	5.93E-01		-9.74E-02	2.71E-01
	328.77	20.50	8.78E-01		2.41E-01	3.39E-01	4.17E-01
LA-140	487.03	45.50	3.42E-01		6.40E-02	1.58E-01
	815.85	23.50	9.48E-01		3.17E-01	4.36E-01
	1596.49	95.49	2.41E-01		5.11E-02	1.05E-01
CE-141	145.44	48.40	2.34E-01	2.34E-01	1.10E-01	1.13E-01
CE-143	57.36	11.80	4.45E+01	2.08E+01	-9.62E-01	2.14E+01
	293.26	42.00	2.08E+01		3.24E+01	1.00E+01
	664.55	5.20	1.52E+02		-1.02E+01	7.04E+01
CE-144	133.54	10.80	8.26E-01	8.26E-01	-7.41E-02	3.98E-01
PM-144	476.78	42.00	2.59E-01	1.42E-01	8.06E-02	1.21E-01
	618.01	98.60	1.42E-01		7.18E-02	6.62E-02
	696.49	99.49	1.44E-01		-8.86E-03	6.67E-02
PM-145	36.85	21.70	7.77E-01	4.10E-01	3.40E-01	3.71E-01
	37.36	39.70	4.10E-01		1.79E-01	1.96E-01
	42.30	15.10	8.49E-01		2.42E-01	4.07E-01
	72.40	2.31	3.74E+00		-3.27E-02	1.81E+00
PM-146	453.90	39.94	2.61E-01	2.61E-01	-1.09E-02	1.22E-01
	735.90	14.01	8.82E-01		-1.07E-01	4.03E-01
	747.13	13.10	1.27E+00		8.12E-01	5.92E-01
ND-147	91.11	28.90	7.40E-01	7.40E-01	3.11E-01	3.61E-01
	531.02	13.10	1.30E+00		5.45E-01	5.99E-01
PM-149	285.90	3.10	3.94E+01	3.94E+01	1.35E+00	1.87E+01
EU-152	121.78	20.50	4.19E-01	4.19E-01	-5.78E-02	2.02E-01
	244.69	5.40	1.84E+00		-6.88E-01	8.79E-01
	344.27	19.13	5.17E-01		2.42E-01	2.43E-01
	778.89	9.20	1.50E+00		-8.55E-02	6.91E-01
	964.01	10.40	1.70E+00		-1.02E-01	7.84E-01
	1085.78	7.22	1.87E+00		4.12E-01	8.36E-01
	1112.02	9.60	1.64E+00		-6.31E-01	7.44E-01
	1407.95	14.94	1.04E+00		1.54E-01	4.58E-01
	97.43	31.30	3.03E-01		3.03E-01	1.25E-01	1.47E-01
GD-153	103.18	22.20	3.95E-01		-5.39E-01	1.90E-01
EU-154	123.07	40.50	2.15E-01	2.15E-01	1.40E-02	1.04E-01
	723.30	19.70	7.51E-01		-7.90E-01	3.49E-01
	873.19	11.50	1.27E+00		-2.17E-01	5.80E-01
	996.32	10.30	1.63E+00		-6.61E-01	7.48E-01
	1004.76	17.90	9.02E-01		-2.56E-01	4.13E-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-154	1274.45	35.50	5.15E-01	2.15E-01	-1.44E-03	2.34E-01
EU-155	86.50	30.90	3.75E-01	3.75E-01	-6.98E-01	1.83E-01
	105.30	20.70	4.34E-01		4.37E-02	2.09E-01
EU-156	811.77	10.40	1.93E+00	1.93E+00	2.69E-01	8.83E-01
	1153.47	7.20	3.40E+00		-3.29E-01	1.55E+00
	1230.71	8.90	3.61E+00		2.01E+00	1.67E+00
HO-166M	184.41	72.60	1.69E-01	1.69E-01	2.33E-01	8.17E-02
	280.45	29.60	3.17E-01		-1.36E-01	1.50E-01
	410.94	11.10	1.02E+00		9.99E-01	4.80E-01
	711.69	54.10	2.69E-01		2.09E-02	1.25E-01
TM-171	66.72	0.14	6.47E+01	6.47E+01	4.76E+00	3.12E+01
HF-172	81.75	4.52	1.75E+00	7.86E-01	-2.63E+00	8.43E-01
	125.81	11.30	7.86E-01		-6.17E-02	3.79E-01
LU-172	181.53	20.60	1.05E+00	6.16E-01	-1.71E-01	5.02E-01
	810.06	16.63	1.84E+00		-9.62E-01	8.38E-01
	912.12	15.25	4.59E+00		-4.51E-01	2.20E+00
	1093.66	62.50	6.16E-01		1.23E-01	2.81E-01
LU-173	100.72	5.24	1.75E+00	5.22E-01	5.98E-01	8.45E-01
	272.11	21.20	5.22E-01		1.58E-01	2.49E-01
HF-175	343.40	84.00	1.28E-01	1.28E-01	9.82E-03	6.01E-02
LU-176	88.34	13.30	9.22E-01	9.93E-02	1.53E+00	4.50E-01
	201.83	86.00	1.14E-01		8.67E-03	5.47E-02
	306.78	94.00	9.93E-02		-2.93E-02	4.68E-02
TA-182	67.75	41.20	2.28E-01	2.28E-01	8.62E-02	1.10E-01
	1121.30	34.90	8.21E-01		7.88E-01	3.88E-01
	1189.05	16.23	1.11E+00		-1.69E-01	5.02E-01
	1221.41	26.98	6.50E-01		-2.68E-01	2.94E-01
	1231.02	11.44	1.95E+00		5.30E-01	9.00E-01
IR-192	308.46	29.68	3.42E-01	2.18E-01	-2.25E-02	1.61E-01
	468.07	48.10	2.18E-01		-4.22E-02	1.01E-01
HG-203	279.19	77.30	1.44E-01	1.44E-01	6.15E-02	6.85E-02
BI-207	569.67	97.72	1.15E-01	1.15E-01	7.79E-03	5.31E-02
	1063.62	74.90	1.74E-01		-7.32E-02	7.74E-02
+ TL-208	583.14	* 30.22	6.39E-01	2.26E-01	1.70E+00	3.05E-01
	860.37	4.48	3.92E+00		3.64E+00	1.83E+00
	2614.66	* 35.85	2.26E-01		1.43E+00	8.13E-02
BI-210M	262.00	45.00	1.98E-01	1.98E-01	-8.61E-02	9.37E-02
	300.00	23.00	4.84E-01		1.45E-01	2.30E-01
PB-210	46.50	4.25	3.14E+00	3.14E+00	3.93E+00	1.52E+00
PB-211	404.84	2.90	3.24E+00	3.24E+00	9.35E-01	1.50E+00
	831.96	2.90	5.23E+00		1.58E+00	2.41E+00
+ BI-212	727.17	* 11.80	1.89E+00	1.89E+00	1.74E+00	8.99E-01
	1620.62	2.75	5.27E+00		-3.65E-01	2.28E+00
+ PB-212	238.63	* 44.60	4.31E-01	4.31E-01	2.69E+00	2.10E-01
	300.09	* 3.41	3.02E+00		2.31E+00	1.43E+00
+ BI-214	609.31	* 46.30	3.97E-01	3.97E-01	1.31E+00	1.89E-01
	1120.29	* 15.10	1.84E+00		1.97E+00	8.73E-01
	1764.49	* 15.80	7.82E-01		1.42E+00	3.26E-01
	2204.22	* 4.98	9.26E-01		2.24E+00	2.38E-01
+ PB-214	295.21	* 19.19	6.73E-01	3.99E-01	1.95E+00	3.23E-01
	351.92	* 37.19	3.99E-01		1.76E+00	1.91E-01
RN-219	401.80	6.50	1.61E+00	1.61E+00	1.01E+00	7.53E-01
RA-223	323.87	3.88	2.51E+00	2.51E+00	3.98E-01	1.18E+00

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RA-224	240.98	3.95	5.10E+00	5.10E+00	9.17E+00	2.49E+00
RA-225	40.00	31.00	6.56E-01	6.56E-01	4.17E-02	3.14E-01
+ RA-226	186.21 *	3.28	4.35E+00	4.35E+00	6.47E+00	2.12E+00
TH-227	50.10	8.40	1.17E+00	1.17E+00	-5.58E-01	5.59E-01
	236.00	11.50	1.42E+00		-5.01E+00	6.91E-01
	256.20	6.30	1.51E+00		7.87E-02	7.17E-01
+ AC-228	338.32 *	11.40	1.38E+00	5.44E-01	2.60E+00	6.63E-01
	911.07 *	27.70	5.44E-01		2.43E+00	2.49E-01
	969.11 *	16.60	1.48E+00		2.71E+00	7.02E-01
TH-230	48.44	16.90	5.96E-01	5.96E-01	-8.58E-01	2.85E-01
	62.85	4.60	2.33E+00		2.41E+00	1.13E+00
	67.67	0.37	2.42E+01		9.14E+00	1.17E+01
PA-231	283.67	1.60	5.66E+00	4.26E+00	-2.74E+00	2.67E+00
	302.67	2.30	4.26E+00		-4.85E-01	2.02E+00
TH-231	25.64	14.70	4.19E+00	1.35E+00	2.65E-01	2.00E+00
	84.21	6.40	1.35E+00		9.09E-01	6.54E-01
PA-233	311.98	38.60	3.03E-01	3.03E-01	-5.18E-02	1.43E-01
PA-234	131.20	20.40	4.67E-01	4.67E-01	1.63E-01	2.25E-01
	733.99	8.80	1.33E+00		-3.49E-01	6.04E-01
	946.00	12.00	1.29E+00		2.01E-01	5.92E-01
PA-234M	1001.03	0.92	1.90E+01	1.90E+01	6.15E+00	8.77E+00
TH-234	63.29	3.80	2.81E+00	2.81E+00	2.90E+00	1.36E+00
U-235	143.76	10.50	8.88E-01	8.88E-01	3.31E-01	4.28E-01
	163.35	4.70	1.89E+00		1.96E-01	9.05E-01
	205.31	4.70	2.24E+00		1.65E+00	1.08E+00
NP-237	86.50	12.60	9.17E-01	9.17E-01	-1.71E+00	4.47E-01
NP-239	106.10	22.70	4.31E+00	4.31E+00	-5.09E-01	2.08E+00
	228.18	10.70	9.69E+00		1.65E+00	4.62E+00
	277.60	14.10	7.68E+00		1.87E+00	3.65E+00
AM-241	59.54	35.90	2.49E-01	2.49E-01	-3.54E-02	1.20E-01
AM-243	74.67	66.00	1.87E-01	1.87E-01	-8.95E-01	9.11E-02
CM-243	209.75	3.29	3.16E+00	7.10E-01	8.58E-01	1.52E+00
	228.14	10.60	8.97E-01		1.52E-01	4.28E-01
	277.60	14.00	7.10E-01		1.73E-01	3.37E-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 1606038-11
CP-5019 10-15

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: CP-5019 10-15

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	1	218	979
9:	1009	571	329	921	1408	97	108	123
17:	123	106	105	105	81	60	60	49
25:	53	58	50	54	56	54	45	65
33:	52	52	28	50	63	52	55	57
41:	54	55	69	51	47	78	141	55
49:	63	55	62	78	57	69	57	58
57:	55	81	70	73	72	72	131	137
65:	90	77	92	85	79	75	70	95
73:	86	115	312	106	484	174	62	62
81:	85	72	61	128	80	72	151	113
89:	72	143	68	117	201	108	71	56
97:	52	65	59	73	52	44	60	44
105:	54	71	47	60	55	50	53	48
113:	56	45	57	44	36	55	43	48
121:	43	45	57	39	52	45	45	58
129:	87	48	45	51	40	44	43	46
137:	41	43	45	48	37	38	46	60
145:	46	49	46	45	33	45	34	43
153:	40	61	47	38	38	35	27	32
161:	42	27	43	43	33	39	50	31
169:	46	38	40	40	32	41	45	36
177:	42	43	35	37	27	38	47	35
185:	64	135	55	40	37	36	34	38
193:	36	32	33	33	36	31	39	32
201:	34	30	43	41	32	40	48	31
209:	60	38	27	37	27	37	36	22
217:	31	25	30	33	26	27	34	33
225:	26	27	33	32	27	24	27	35
233:	26	33	25	36	31	296	393	31
241:	79	87	39	32	17	28	27	27
249:	24	20	19	23	25	22	20	33
257:	19	28	23	23	26	20	20	14
265:	26	20	31	21	35	56	34	22
273:	19	19	23	22	30	20	21	26
281:	20	17	22	19	22	15	26	24
289:	20	12	13	29	24	22	158	49
297:	26	18	30	44	19	24	22	13
305:	24	21	13	16	16	25	15	18
313:	17	16	22	21	23	16	18	21
321:	19	14	21	20	14	22	23	49
329:	22	22	12	21	22	21	15	15
337:	23	124	54	23	17	17	20	14
345:	18	16	10	23	19	14	75	225
353:	42	14	19	11	14	12	14	15
361:	20	19	14	21	16	19	12	21

369: 14 8 19 19 13 21 14 16

Sample Title: CP-5019 10-15

Channel	1	2	3	4	5	6	7	8
377:	17	15	22	10	12	17	11	16
385:	12	15	15	15	21	18	15	7
393:	19	20	13	15	13	8	9	9
401:	16	18	20	12	10	12	5	6
409:	25	21	15	13	12	7	12	12
417:	9	9	11	11	12	13	15	17
425:	15	15	12	8	16	13	15	11
433:	13	12	6	12	16	18	15	11
441:	13	10	9	9	8	9	12	6
449:	16	15	13	9	15	14	10	13
457:	11	12	16	9	19	18	36	13
465:	11	10	12	8	6	14	14	11
473:	12	10	9	10	12	19	10	6
481:	11	10	8	10	13	13	11	3
489:	10	11	6	9	14	12	6	13
497:	8	14	6	8	10	11	10	8
505:	11	12	12	5	19	52	64	24
513:	15	8	15	11	9	13	10	11
521:	5	4	6	8	10	7	9	5
529:	8	7	11	6	13	6	5	11
537:	5	9	8	10	6	11	13	9
545:	13	10	14	13	14	5	14	7
553:	5	5	6	9	8	10	10	14
561:	16	9	15	13	7	11	8	13
569:	16	6	6	11	8	10	3	11
577:	3	13	18	9	15	39	122	36
585:	8	9	10	14	11	9	7	5
593:	7	9	12	10	4	7	4	8
601:	8	8	8	12	8	12	7	30
609:	128	54	7	7	7	6	11	11
617:	11	5	9	13	6	6	7	10
625:	8	6	11	6	7	10	4	7
633:	15	10	6	6	10	8	8	11
641:	12	9	9	5	8	5	10	5
649:	5	6	7	7	7	13	11	10
657:	11	11	7	10	11	8	3	4
665:	11	10	6	6	9	4	8	6
673:	11	7	4	11	7	11	12	10
681:	4	8	13	11	4	7	10	8
689:	5	6	4	11	4	10	6	11
697:	10	10	5	9	9	8	10	8
705:	7	10	11	10	8	9	10	5
713:	4	12	5	7	12	5	10	6
721:	5	9	7	7	6	18	26	16
729:	2	6	4	7	4	5	4	4
737:	6	10	5	4	10	12	8	8
745:	12	12	4	9	11	14	3	3
753:	6	9	8	9	9	8	6	6
761:	3	5	6	7	10	6	6	18
769:	10	9	5	12	6	8	6	2
777:	5	5	6	4	9	13	7	5
785:	14	6	6	9	3	6	4	4
793:	7	9	16	5	8	4	9	7

801: 7 5 10 7 10 9 2 8

Sample Title: CP-5019 10-15

Channel	1	2	3	4	5	6	7	8
809:	4	6	6	5	6	6	6	4
817:	7	8	7	3	5	6	10	8
825:	6	6	2	5	3	9	8	7
833:	3	8	10	7	7	3	4	11
841:	7	7	5	3	6	2	12	2
849:	7	3	2	10	0	7	1	3
857:	4	2	4	17	15	11	9	4
865:	7	4	3	5	8	8	3	9
873:	9	2	6	3	7	6	6	3
881:	5	6	6	6	8	4	8	8
889:	2	5	6	7	4	7	2	5
897:	8	6	4	13	4	4	5	6
905:	3	6	3	6	4	44	85	28
913:	3	4	8	8	4	7	2	7
921:	6	3	0	7	4	4	2	5
929:	5	3	3	7	12	17	3	8
937:	3	3	5	3	4	6	5	6
945:	3	5	4	10	7	5	5	8
953:	4	1	1	7	6	7	3	7
961:	4	5	6	12	9	10	5	37
969:	62	14	3	6	5	3	4	0
977:	4	4	1	8	6	6	5	5
985:	3	5	5	3	6	1	7	5
993:	8	6	5	7	5	6	6	9
1001:	10	5	5	6	4	5	4	5
1009:	8	7	3	7	9	7	8	5
1017:	4	1	3	7	8	6	3	3
1025:	8	2	7	1	6	4	9	5
1033:	4	9	4	7	6	10	6	2
1041:	3	5	2	3	3	7	6	4
1049:	4	3	5	4	4	5	5	7
1057:	3	3	4	3	4	3	2	2
1065:	4	4	5	6	4	6	2	4
1073:	6	8	2	4	5	2	7	3
1081:	2	3	2	2	4	4	4	4
1089:	0	5	6	4	3	9	4	5
1097:	7	5	4	2	4	3	9	6
1105:	6	3	7	5	4	2	5	3
1113:	5	5	7	2	10	7	15	30
1121:	21	13	3	11	6	11	5	5
1129:	3	6	2	4	8	2	5	4
1137:	3	4	6	6	8	8	7	5
1145:	7	2	2	8	4	8	5	4
1153:	1	2	8	6	6	3	4	5
1161:	3	7	5	5	7	8	6	4
1169:	6	4	10	15	13	7	7	6
1177:	8	5	5	9	6	6	4	6
1185:	7	4	4	5	3	12	2	3
1193:	5	4	6	9	11	7	5	8
1201:	2	4	8	7	3	6	6	5
1209:	2	4	4	3	4	7	3	8
1217:	5	3	4	3	5	7	7	1
1225:	6	5	9	8	8	11	5	6

1233: 8 4 5 5 7 16 7 4

Sample Title: CP-5019 10-15

Channel	1	2	3	4	5	6	7	8
1241:	6	9	4	2	4	3	3	4
1249:	2	4	8	7	3	7	4	6
1257:	4	7	4	2	5	2	3	4
1265:	3	4	4	3	6	3	4	6
1273:	6	6	2	3	7	3	2	11
1281:	13	4	4	2	3	4	5	3
1289:	1	4	3	6	4	1	4	4
1297:	2	3	2	4	3	2	2	1
1305:	2	2	8	3	5	4	9	3
1313:	2	4	1	3	4	3	7	1
1321:	5	6	4	2	2	2	0	1
1329:	2	4	7	3	3	3	5	1
1337:	5	1	4	1	3	1	4	4
1345:	1	2	2	2	3	3	0	4
1353:	1	5	3	3	1	3	4	2
1361:	4	1	5	1	1	3	2	1
1369:	4	3	1	1	0	2	2	2
1377:	8	4	1	3	2	3	1	3
1385:	4	5	2	3	3	2	4	3
1393:	2	1	1	0	3	2	6	5
1401:	2	2	4	1	0	1	6	4
1409:	4	4	2	1	5	1	2	2
1417:	0	1	2	1	4	2	2	1
1425:	0	2	1	2	1	2	5	1
1433:	4	3	4	0	2	0	2	1
1441:	2	3	1	1	1	7	3	4
1449:	1	4	0	2	5	0	2	1
1457:	2	4	62	213	205	42	7	0
1465:	1	2	3	1	1	4	2	0
1473:	1	1	2	3	0	0	0	2
1481:	0	3	1	3	1	0	3	2
1489:	2	2	1	1	1	0	0	0
1497:	4	0	1	2	3	3	0	1
1505:	4	1	2	4	1	4	1	5
1513:	1	3	2	1	1	0	2	1
1521:	2	3	0	2	2	2	0	0
1529:	2	0	1	0	5	0	2	1
1537:	1	2	2	4	3	0	0	3
1545:	1	1	0	2	2	2	1	2
1553:	2	2	0	1	1	0	0	2
1561:	1	2	2	1	1	0	1	1
1569:	1	3	1	1	1	2	3	2
1577:	0	1	2	4	1	1	2	3
1585:	1	2	6	6	1	2	1	3
1593:	2	3	0	1	2	2	2	0
1601:	2	0	1	1	4	1	0	1
1609:	1	2	0	1	0	2	2	2
1617:	1	1	2	3	1	2	1	1
1625:	3	0	4	2	0	3	1	0
1633:	0	0	1	1	3	5	2	2
1641:	0	0	0	2	0	0	1	1
1649:	1	0	1	1	1	2	0	0
1657:	1	0	1	1	3	0	0	1

1665: 3 1 1 1 2 0 1 0

Sample Title: CP-5019 10-15

Channel	1	2	3	4	5	6	7	8
1673:	1	2	1	1	1	3	2	2
1681:	2	0	1	0	0	1	0	0
1689:	0	2	1	0	1	1	1	2
1697:	0	0	2	0	0	0	1	2
1705:	1	0	0	1	0	3	1	1
1713:	1	3	0	0	0	0	1	0
1721:	0	0	0	0	1	0	1	2
1729:	3	2	0	1	1	3	1	0
1737:	1	1	0	0	1	1	0	0
1745:	0	1	2	0	1	0	0	0
1753:	2	2	0	0	0	0	3	0
1761:	0	2	7	20	8	0	0	2
1769:	0	0	1	0	1	1	0	1
1777:	1	0	0	2	0	0	0	1
1785:	1	0	1	3	0	1	1	0
1793:	4	1	0	3	0	0	2	1
1801:	0	4	0	1	0	3	0	2
1809:	0	0	1	0	0	0	2	1
1817:	1	1	0	1	0	0	0	1
1825:	0	0	3	1	0	0	1	2
1833:	3	4	0	0	0	1	2	0
1841:	0	1	1	0	0	3	1	3
1849:	3	0	1	1	1	0	1	0
1857:	1	1	0	0	0	1	1	0
1865:	2	0	0	0	1	0	1	1
1873:	2	1	0	0	0	0	1	0
1881:	1	3	0	0	2	1	1	0
1889:	0	0	1	0	1	0	3	2
1897:	2	1	1	0	3	0	1	1
1905:	0	0	2	0	1	0	1	0
1913:	4	0	0	0	0	0	1	1
1921:	0	2	0	0	3	1	0	0
1929:	1	1	1	1	0	1	1	2
1937:	1	0	0	1	0	1	0	0
1945:	2	0	1	0	1	2	0	1
1953:	1	1	0	1	1	2	0	0
1961:	0	2	2	2	1	0	0	0
1969:	0	0	0	1	0	1	1	0
1977:	0	0	1	0	1	0	0	0
1985:	0	1	0	2	0	1	2	0
1993:	0	0	1	2	0	0	2	0
2001:	1	0	0	0	1	0	1	0
2009:	0	0	0	2	0	2	0	1
2017:	1	2	0	2	0	1	0	0
2025:	0	0	2	1	1	1	0	1
2033:	1	1	0	1	1	0	0	1
2041:	1	0	1	1	1	2	1	2
2049:	0	1	0	1	0	0	0	0
2057:	1	0	0	1	0	1	0	1
2065:	1	1	1	1	2	0	2	0
2073:	0	1	0	1	1	1	1	0
2081:	2	0	1	1	0	0	2	0
2089:	0	1	3	0	0	3	0	1

2097: 0 1 0 1 0 2 0 1

Sample Title: CP-5019 10-15

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

2529: 1 0 0 1 0 2 1 0

Sample Title: CP-5019 10-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	1	0	0	0	0
2545:	0	0	0	0	0	0	1	0
2553:	1	0	0	1	0	1	1	0
2561:	0	0	1	0	0	0	1	0
2569:	0	0	0	1	0	1	0	0
2577:	0	2	0	0	1	0	0	0
2585:	0	0	0	1	0	0	0	0
2593:	0	0	1	0	1	0	0	0
2601:	1	0	1	1	2	0	0	0
2609:	0	1	4	5	21	18	10	6
2617:	0	0	0	2	0	0	0	0
2625:	0	0	0	1	0	1	0	0
2633:	0	0	2	0	0	1	0	2
2641:	0	0	0	1	0	1	0	0
2649:	0	0	0	0	0	0	0	2
2657:	0	0	0	0	1	0	0	0
2665:	0	0	1	1	0	0	0	0
2673:	1	1	1	0	0	0	0	0
2681:	0	0	0	0	0	0	0	0
2689:	0	1	1	1	0	1	0	0
2697:	0	2	0	0	0	0	0	0
2705:	0	0	0	1	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	1	1	0
2729:	0	0	1	1	1	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	0	1	0	0	0	0	2	0
2753:	0	0	0	0	0	1	0	0
2761:	0	0	0	1	0	0	0	0
2769:	0	0	0	0	0	1	0	2
2777:	0	0	0	0	0	0	0	0
2785:	1	0	2	0	1	0	1	0
2793:	0	1	0	0	0	0	1	0
2801:	0	1	0	0	0	0	0	0
2809:	0	0	0	0	2	0	1	0
2817:	0	1	0	0	0	0	0	0
2825:	0	0	1	0	0	0	0	0
2833:	0	0	0	0	0	1	1	0
2841:	1	0	0	0	0	2	1	0
2849:	0	1	0	0	0	0	0	0
2857:	0	0	0	1	1	0	0	0
2865:	0	0	1	0	0	0	0	1
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	1	1
2897:	0	0	0	0	1	0	0	0
2905:	0	0	0	1	0	1	0	1
2913:	0	0	0	1	0	1	0	0
2921:	1	0	1	0	0	0	0	0
2929:	0	0	1	0	1	0	0	1
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	1	0
2953:	0	0	0	0	0	0	0	0

2961: 0 0 0 1 0 0 0 0

Sample Title: CP-5019 10-15

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

3393: 0 0 1 0 0 0 0 0 0

Sample Title: CP-5019 10-15

Channel	1	2	3	4	5	6	7	8
3401:	1	0	1	0	0	2	1	1
3409:	0	0	0	0	1	0	0	0
3417:	0	1	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	2	0	0	0
3441:	1	0	0	0	0	0	0	2
3449:	1	0	0	0	1	0	0	0
3457:	0	0	0	0	0	0	0	1
3465:	1	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	1	0	0	1	0	0
3497:	0	0	0	1	0	0	0	0
3505:	1	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	1	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:	0	0	0	0	0	0	0	1
3553:	0	0	1	0	0	0	0	0
3561:	0	1	0	0	0	0	0	0
3569:	0	1	0	0	0	0	1	0
3577:	0	0	0	0	0	0	0	0
3585:	0	1	0	0	1	0	1	0
3593:	1	0	0	0	0	0	0	1
3601:	0	0	1	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	1	0	0	0
3633:	0	0	0	0	2	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	1	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	1	1
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	1	0	0
3745:	0	0	0	0	0	1	0	0
3753:	0	0	0	0	1	0	0	0
3761:	0	1	0	0	0	1	0	1
3769:	0	0	1	1	0	0	0	0
3777:	0	0	0	0	0	0	1	0
3785:	0	0	0	0	1	1	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	1	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	2	1	0	0

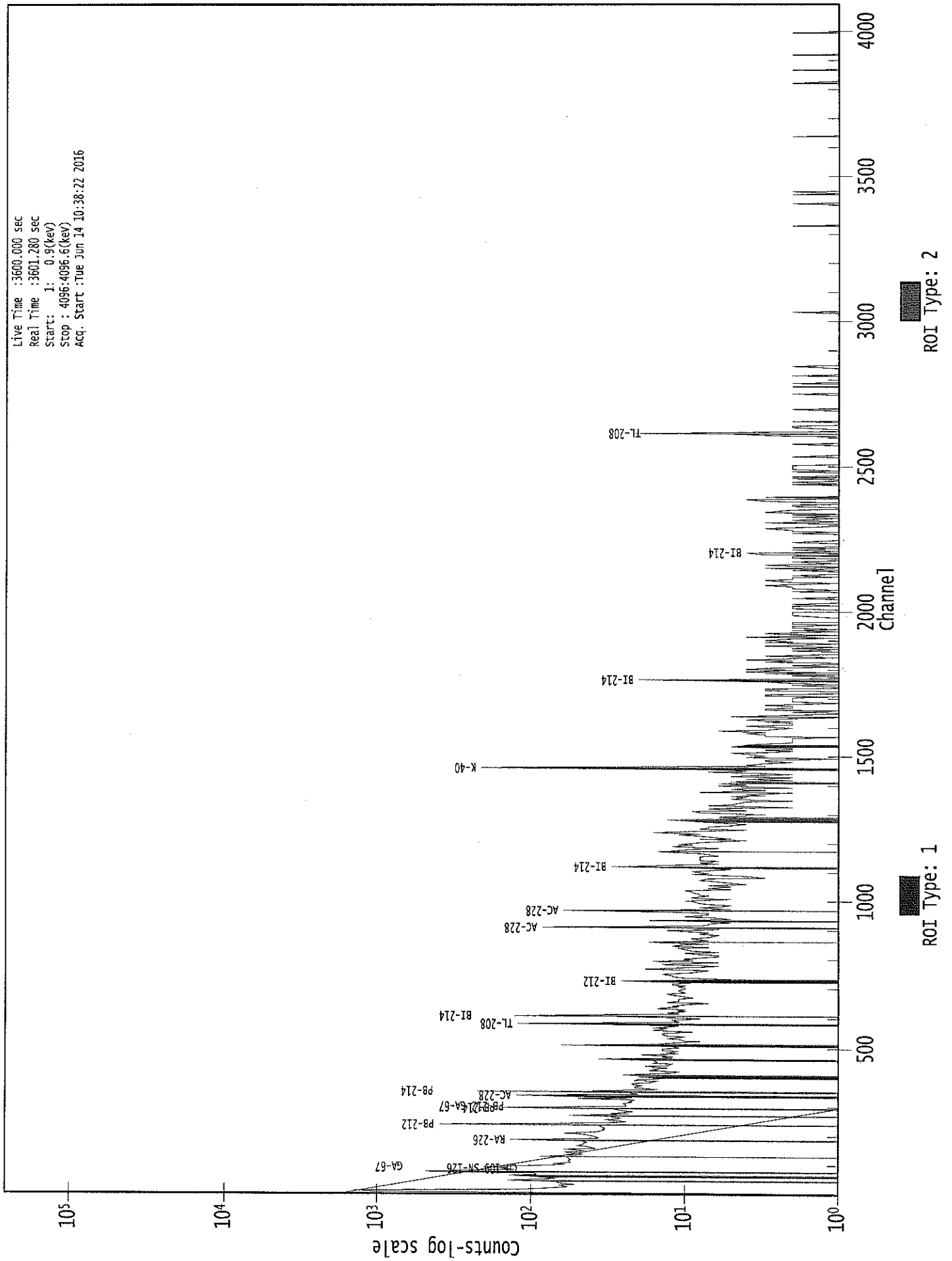
3825: 1 0 0 1 0 0 1 0

Sample Title: CP-5019 10-15

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

0000038815.CNF

Live Time : 3600.000 sec
Real Time : 3601.280 sec
Start: 1: 0.9(kev)
Stop : 4096.4096.6(kev)
Acq. Start : Tue Jun 14 10:38:22 2016



Analysis Report for 1606038-12
CP-5022 00-02



GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-12
Sample Description : CP-5022 00-02
Sample Type : SOIL

Sample Size : 4.875E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 8:17:54AM
Acquisition Started : 6/14/2016 10:38:36AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3612.8 seconds

Dead Time : 0.35 %

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 : 38816

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-12
CP-5022 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 11:38:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.90	47.13	0.0000	0.00
2	71.47	71.68	0.0000	0.00
3	75.10	75.32	0.0000	0.00
4	77.47	77.68	0.0000	0.00
5	85.39	85.60	0.0000	0.00
6	88.57	88.77	0.0000	0.00
7	93.13	93.33	0.0000	0.00
8	129.97	130.16	0.0000	0.00
9	186.59	186.74	0.0000	0.00
10	209.98	210.13	0.0000	0.00
11	239.01	239.14	0.0000	0.00
12	242.05	242.17	0.0000	0.00
13	270.97	271.09	0.0000	0.00
14	295.63	295.73	0.0000	0.00
15	338.72	338.80	0.0000	0.00
16	352.07	352.14	0.0000	0.00
17	368.88	368.94	0.0000	0.00
18	453.01	453.03	0.0000	0.00
19	462.47	462.49	0.0000	0.00
20	510.94	510.93	0.0000	0.00
21	583.66	583.62	0.0000	0.00
22	589.07	589.02	0.0000	0.00
23	604.73	604.67	0.0000	0.00
24	609.86	609.80	0.0000	0.00
25	727.57	727.46	0.0000	0.00
26	796.66	796.51	0.0000	0.00
27	838.28	838.11	0.0000	0.00
28	854.11	853.94	0.0000	0.00
29	911.59	911.40	0.0000	0.00
30	920.04	919.84	0.0000	0.00
31	934.45	934.24	0.0000	0.00
32	965.00	964.78	0.0000	0.00
33	969.44	969.22	0.0000	0.00
34	1126.93	1126.64	0.0000	0.00
35	1282.64	1282.29	0.0000	0.00
36	1378.41	1378.02	0.0000	0.00
37	1396.42	1396.02	0.0000	0.00
38	1461.21	1460.79	0.0000	0.00
39	1531.75	1531.31	0.0000	0.00
40	1553.69	1553.23	0.0000	0.00
41	1575.17	1574.71	0.0000	0.00
42	1580.13	1579.66	0.0000	0.00

Analysis Report for 1606038-12
CP-5022 00-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1592.72	1592.25	0.0000	0.00
44	1631.70	1631.22	0.0000	0.00
45	1764.64	1764.11	0.0000	0.00
46	1784.54	1784.00	0.0000	0.00
47	1848.41	1847.85	0.0000	0.00
48	2104.80	2104.16	0.0000	0.00
49	2119.41	2118.77	0.0000	0.00
50	2259.63	2258.94	0.0000	0.00
51	2614.93	2614.15	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-12
CP-5022 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 11:38:50AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.90	45 - 50	47.13	1.54E+02	66.51	7.75E+02	1.38
M	2	71.47	71 - 83	71.68	7.31E+01	24.24	2.20E+02	1.82
m	3	75.10	71 - 83	75.32	3.61E+02	83.30	1.06E+03	1.83
m	4	77.47	71 - 83	77.68	5.84E+02	90.66	1.02E+03	1.83
M	5	85.39	83 - 102	85.60	1.68E+02	63.02	8.23E+02	2.46
m	6	88.57	83 - 102	88.77	2.46E+02	85.22	1.10E+03	2.47
m	7	93.13	83 - 102	93.33	3.79E+02	87.76	9.90E+02	2.48
	8	129.97	127 - 133	130.16	6.33E+01	67.62	7.87E+02	1.18
	9	186.59	183 - 191	186.74	2.19E+02	77.77	7.93E+02	2.11
	10	209.98	207 - 213	210.13	5.10E+01	57.77	5.56E+02	1.13
M	11	239.01	234 - 248	239.14	6.76E+02	64.29	3.22E+02	1.76
m	12	242.05	234 - 248	242.17	1.58E+02	69.65	3.58E+02	1.89
	13	270.97	265 - 276	271.09	1.38E+02	68.06	5.10E+02	2.00
	14	295.63	292 - 299	295.73	1.82E+02	55.03	3.82E+02	1.65
	15	338.72	335 - 342	338.80	1.54E+02	48.87	2.94E+02	1.81
	16	352.07	347 - 356	352.14	3.38E+02	62.23	3.60E+02	1.92
	17	368.88	365 - 374	368.94	4.86E+01	42.98	2.39E+02	3.56
	18	453.01	449 - 456	453.03	3.30E+01	35.16	1.84E+02	1.18
	19	462.47	458 - 467	462.49	4.57E+01	41.57	2.23E+02	2.51
	20	510.94	505 - 516	510.93	1.30E+02	47.87	2.21E+02	2.01
M	21	583.66	578 - 592	583.62	1.87E+02	33.03	6.86E+01	2.04
m	22	589.07	578 - 592	589.02	2.04E+01	24.37	7.24E+01	2.41
M	23	604.73	603 - 618	604.67	1.41E+01	13.48	4.25E+01	2.92
m	24	609.86	603 - 618	609.80	2.21E+02	35.07	7.65E+01	1.83
	25	727.57	721 - 732	727.46	5.01E+01	40.50	1.80E+02	3.12
	26	796.66	793 - 801	796.51	2.08E+01	25.63	8.44E+01	1.47
	27	838.28	832 - 843	838.11	4.08E+01	32.74	1.12E+02	7.28
	28	854.11	850 - 857	853.94	1.40E+01	18.55	4.80E+01	1.47
	29	911.59	908 - 915	911.40	1.25E+02	29.66	6.27E+01	2.40
	30	920.04	917 - 924	919.84	1.70E+01	21.26	6.40E+01	2.94
	31	934.45	931 - 939	934.24	2.51E+01	23.66	6.78E+01	1.08
M	32	965.00	958 - 973	964.78	4.92E+01	19.86	3.82E+01	2.42
m	33	969.44	958 - 973	969.22	8.02E+01	23.89	3.19E+01	2.42
	34	1126.93	1115 - 1145	1126.64	8.25E+01	64.25	2.17E+02	2.20
	35	1282.64	1279 - 1286	1282.29	1.34E+01	17.44	3.72E+01	1.40
	36	1378.41	1375 - 1382	1378.02	1.01E+01	13.42	2.18E+01	1.55
	37	1396.42	1394 - 1398	1396.02	8.58E+00	8.17	6.83E+00	2.84
	38	1461.21	1455 - 1464	1460.79	4.45E+02	44.28	2.72E+01	2.24
	39	1531.75	1526 - 1535	1531.31	1.24E+01	10.86	9.29E+00	1.55
	40	1553.69	1549 - 1555	1553.23	6.63E+00	6.65	2.75E+00	1.26

Analysis Report for 1606038-12

CP-5022 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1575.17	1572 -	1576	1574.71	5.86E+00	5.85	2.29E+00	1.28
42	1580.13	1577 -	1582	1579.66	1.08E+01	7.55	2.50E+00	3.13
43	1592.72	1590 -	1595	1592.25	1.27E+01	11.40	1.26E+01	1.50
44	1631.70	1627 -	1635	1631.22	1.07E+01	8.50	4.62E+00	1.31
45	1764.64	1759 -	1769	1764.11	4.50E+01	13.42	0.00E+00	1.82
46	1784.54	1780 -	1786	1784.00	5.50E+00	7.78	7.00E+00	1.28
47	1848.41	1845 -	1850	1847.85	7.45E+00	8.43	7.09E+00	1.53
48	2104.80	2100 -	2108	2104.16	8.00E+00	7.76	4.00E+00	2.06
49	2119.41	2115 -	2121	2118.77	6.13E+00	6.65	3.75E+00	2.46
50	2259.63	2256 -	2261	2258.94	5.64E+00	6.08	2.71E+00	1.90
51	2614.93	2610 -	2617	2614.15	5.30E+01	14.56	0.00E+00	3.17

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 11:38:50AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.90	45 -	50	1.54E+02	66.51	5.07E+01
M	2	71.47	71 -	83	7.31E+01	24.24	2.44E+01
m	3	75.10	71 -	83	3.61E+02	83.30	5.34E+01
m	4	77.47	71 -	83	5.84E+02	90.66	5.25E+01
M	5	85.39	83 -	102	1.68E+02	63.02	4.72E+01
m	6	88.57	83 -	102	2.46E+02	85.22	5.44E+01
m	7	93.13	83 -	102	3.79E+02	87.76	5.17E+01
	8	129.97	127 -	133	6.33E+01	67.62	5.40E+01
	9	186.59	183 -	191	2.19E+02	77.77	5.91E+01
	10	209.98	207 -	213	5.10E+01	57.77	4.60E+01
M	11	239.01	234 -	248	6.76E+02	64.29	2.95E+01
m	12	242.05	234 -	248	1.58E+02	69.65	3.11E+01
	13	270.97	265 -	276	1.38E+02	68.06	5.25E+01
	14	295.63	292 -	299	1.82E+02	55.03	3.94E+01
	15	338.72	335 -	342	1.54E+02	48.87	3.46E+01
	16	352.07	347 -	356	3.38E+02	62.23	4.13E+01
	17	368.88	365 -	374	4.86E+01	42.98	3.34E+01

: 00701

Analysis Report for 1606038-12

CP-5022 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	18	453.01	449 -	456	3.30E+01	35.16	1.84E+02	2.73E+01
	19	462.47	458 -	467	4.57E+01	41.57	2.23E+02	3.23E+01
	20	510.94	505 -	516	1.30E+02	47.87	2.21E+02	3.46E+01
M	21	583.66	578 -	592	1.87E+02	33.03	6.86E+01	1.36E+01
m	22	589.07	578 -	592	2.04E+01	24.37	7.24E+01	1.40E+01
M	23	604.73	603 -	618	1.41E+01	13.48	4.25E+01	1.07E+01
m	24	609.86	603 -	618	2.21E+02	35.07	7.65E+01	1.44E+01
	25	727.57	721 -	732	5.01E+01	40.50	1.80E+02	3.12E+01
	26	796.66	793 -	801	2.08E+01	25.63	8.44E+01	1.97E+01
	27	838.28	832 -	843	4.08E+01	32.74	1.12E+02	2.48E+01
	28	854.11	850 -	857	1.40E+01	18.55	4.80E+01	1.39E+01
	29	911.59	908 -	915	1.25E+02	29.66	6.27E+01	1.61E+01
	30	920.04	917 -	924	1.70E+01	21.26	6.40E+01	1.61E+01
	31	934.45	931 -	939	2.51E+01	23.66	6.78E+01	1.76E+01
M	32	965.00	958 -	973	4.92E+01	19.86	3.82E+01	1.02E+01
m	33	969.44	958 -	973	8.02E+01	23.89	3.19E+01	9.28E+00
	34	1126.93	1115 -	1145	8.25E+01	64.25	2.17E+02	1.30E+01
	35	1282.64	1279 -	1286	1.34E+01	17.44	3.72E+01	1.30E+01
	36	1378.41	1375 -	1382	1.01E+01	13.42	2.18E+01	9.71E+00
	37	1396.42	1394 -	1398	8.58E+00	8.17	6.83E+00	4.68E+00
	38	1461.21	1455 -	1464	4.45E+02	44.28	2.72E+01	1.10E+01
	39	1531.75	1526 -	1535	1.24E+01	10.86	9.29E+00	6.81E+00
	40	1553.69	1549 -	1555	6.63E+00	6.65	2.75E+00	3.46E+00
	41	1575.17	1572 -	1576	5.86E+00	5.85	2.29E+00	2.70E+00
	42	1580.13	1577 -	1582	1.08E+01	7.55	2.50E+00	3.08E+00
	43	1592.72	1590 -	1595	1.27E+01	11.40	1.26E+01	7.32E+00
	44	1631.70	1627 -	1635	1.07E+01	8.50	4.62E+00	4.46E+00
	45	1764.64	1759 -	1769	4.50E+01	13.42	0.00E+00	0.00E+00
	46	1784.54	1780 -	1786	5.50E+00	7.78	7.00E+00	5.10E+00
	47	1848.41	1845 -	1850	7.45E+00	8.43	7.09E+00	5.28E+00
	48	2104.80	2100 -	2108	8.00E+00	7.76	4.00E+00	4.37E+00
	49	2119.41	2115 -	2121	6.13E+00	6.65	3.75E+00	3.65E+00
	50	2259.63	2256 -	2261	5.64E+00	6.08	2.71E+00	3.12E+00
	51	2614.93	2610 -	2617	5.30E+01	14.56	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 1606038-12
CP-5022 00-02

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/14/2016 11:38:50AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

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

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	1	45 -	50	47.13	1.54E+02	66.51	7.75E+02	PB-210
m	2	71 -	83	71.68	7.31E+01	24.24	2.20E+02	PM-145
m	3	71 -	83	75.32	3.61E+02	83.30	1.06E+03	AM-243
M	4	71 -	83	77.68	5.84E+02	90.66	1.02E+03	TI-44
m	5	83 -	102	85.60	1.68E+02	63.02	8.23E+02	.....
	6	83 -	102	88.77	2.46E+02	85.22	1.10E+03	LU-176 CD-109 SN-126
m	7	83 -	102	93.33	3.79E+02	87.76	9.90E+02	GA-67
	8	127 -	133	130.16	6.33E+01	67.62	7.87E+02	.....
	9	183 -	191	186.74	2.19E+02	77.77	7.93E+02	RA-226
	10	207 -	213	210.13	5.10E+01	57.77	5.56E+02	CM-243
M	11	234 -	248	239.14	6.76E+02	64.29	3.22E+02	PB-212
m	12	234 -	248	242.17	1.58E+02	69.65	3.58E+02	.....
	13	265 -	276	271.09	1.38E+02	68.06	5.10E+02	.....
	14	292 -	299	295.73	1.82E+02	55.03	3.82E+02	PB-214
	15	335 -	342	338.80	1.54E+02	48.87	2.94E+02	AC-228
	16	347 -	356	352.14	3.38E+02	62.23	3.60E+02	PB-214
	17	365 -	374	368.94	4.86E+01	42.98	2.39E+02	.....
	18	449 -	456	453.03	3.30E+01	35.16	1.84E+02	PM-146
	19	458 -	467	462.49	4.57E+01	41.57	2.23E+02	SB-125
	20	505 -	516	510.93	1.30E+02	47.87	2.21E+02	.....
M	21	578 -	592	583.62	1.87E+02	33.03	6.86E+01	TL-208
m	22	578 -	592	589.02	2.04E+01	24.37	7.24E+01	.....
M	23	603 -	618	604.67	1.41E+01	13.48	4.25E+01	CS-134
m	24	603 -	618	609.80	2.21E+02	35.07	7.65E+01	BI-214
	25	721 -	732	727.46	5.01E+01	40.50	1.80E+02	BI-212
	26	793 -	801	796.51	2.08E+01	25.63	8.44E+01	CS-134
	27	832 -	843	838.11	4.08E+01	32.74	1.12E+02	.....
	28	850 -	857	853.94	1.40E+01	18.55	4.80E+01	.....
	29	908 -	915	911.40	1.25E+02	29.66	6.27E+01	AC-228 LU-172
	30	917 -	924	919.84	1.70E+01	21.26	6.40E+01	.....
	31	931 -	939	934.24	2.51E+01	23.66	6.78E+01	.....
M	32	958 -	973	964.78	4.92E+01	19.86	3.82E+01	EU-152
m	33	958 -	973	969.22	8.02E+01	23.89	3.19E+01	AC-228
	34	1115 -	1145	1126.64	8.25E+01	64.25	2.17E+02	.....
	35	1279 -	1286	1282.29	1.34E+01	17.44	3.72E+01	.....
	36	1375 -	1382	1378.02	1.01E+01	13.42	2.18E+01	.....
	37	1394 -	1398	1396.02	8.58E+00	8.17	6.83E+00	.....
	38	1455 -	1464	1460.79	4.45E+02	44.28	2.72E+01	K-40

Analysis Report for 1606038-12

CP-5022 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
39	1531.75	1526 -	1535	1531.31	1.24E+01	10.86	9.29E+00	.....
40	1553.69	1549 -	1555	1553.23	6.63E+00	6.65	2.75E+00	.....
41	1575.17	1572 -	1576	1574.71	5.86E+00	5.85	2.29E+00	.....
42	1580.13	1577 -	1582	1579.66	1.08E+01	7.55	2.50E+00	.....
43	1592.72	1590 -	1595	1592.25	1.27E+01	11.40	1.26E+01	.....
44	1631.70	1627 -	1635	1631.22	1.07E+01	8.50	4.62E+00	.....
45	1764.64	1759 -	1769	1764.11	4.50E+01	13.42	0.00E+00	BI-214
46	1784.54	1780 -	1786	1784.00	5.50E+00	7.78	7.00E+00	.....
47	1848.41	1845 -	1850	1847.85	7.45E+00	8.43	7.09E+00	.....
48	2104.80	2100 -	2108	2104.16	8.00E+00	7.76	4.00E+00	.....
49	2119.41	2115 -	2121	2118.77	6.13E+00	6.65	3.75E+00	.....
50	2259.63	2256 -	2261	2258.94	5.64E+00	6.08	2.71E+00	.....
51	2614.93	2610 -	2617	2614.15	5.30E+01	14.56	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 : 6/14/2016 11:38:50AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.90	1.54E+02	66.51	1.52E-02	1.58E-03
M	2	71.47	7.31E+01	24.24	2.32E-02	1.98E-03
m	3	75.10	3.61E+02	83.30	2.37E-02	2.10E-03
m	4	77.47	5.84E+02	90.66	2.39E-02	2.18E-03
M	5	85.39	1.68E+02	63.02	2.43E-02	2.44E-03
m	6	88.57	2.46E+02	85.22	2.44E-02	2.51E-03
m	7	93.13	3.79E+02	87.76	2.44E-02	2.41E-03
	8	129.97	6.33E+01	67.62	2.25E-02	1.69E-03
	9	186.59	2.19E+02	77.77	1.82E-02	1.42E-03
	10	209.98	5.10E+01	57.77	1.68E-02	1.31E-03
M	11	239.01	6.76E+02	64.29	1.52E-02	1.18E-03
m	12	242.05	1.58E+02	69.65	1.51E-02	1.17E-03
	13	270.97	1.38E+02	68.06	1.38E-02	1.03E-03
	14	295.63	1.82E+02	55.03	1.28E-02	9.73E-04
	15	338.72	1.54E+02	48.87	1.14E-02	9.12E-04
	16	352.07	3.38E+02	62.23	1.11E-02	8.93E-04
	17	368.88	4.86E+01	42.98	1.06E-02	8.70E-04

: 00704

Analysis Report for 1606038-12
CP-5022 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	18	453.01	3.30E+01	35.16	8.90E-03	7.76E-04
	19	462.47	4.57E+01	41.57	8.74E-03	7.67E-04
	20	510.94	1.30E+02	47.87	8.01E-03	7.18E-04
M	21	583.66	1.87E+02	33.03	7.13E-03	6.46E-04
m	22	589.07	2.04E+01	24.37	7.08E-03	6.40E-04
M	23	604.73	1.41E+01	13.48	6.92E-03	6.25E-04
m	24	609.86	2.21E+02	35.07	6.87E-03	6.20E-04
	25	727.57	5.01E+01	40.50	5.89E-03	5.14E-04
	26	796.66	2.08E+01	25.63	5.44E-03	4.57E-04
	27	838.28	4.08E+01	32.74	5.21E-03	4.23E-04
	28	854.11	1.40E+01	18.55	5.13E-03	4.11E-04
	29	911.59	1.25E+02	29.66	4.85E-03	3.72E-04
	30	920.04	1.70E+01	21.26	4.81E-03	3.71E-04
	31	934.45	2.51E+01	23.66	4.75E-03	3.68E-04
M	32	965.00	4.92E+01	19.86	4.62E-03	3.62E-04
m	33	969.44	8.02E+01	23.89	4.60E-03	3.61E-04
	34	1126.93	8.25E+01	64.25	4.06E-03	3.32E-04
	35	1282.64	1.34E+01	17.44	3.65E-03	2.99E-04
	36	1378.41	1.01E+01	13.42	3.45E-03	2.82E-04
	37	1396.42	8.58E+00	8.17	3.41E-03	2.79E-04
	38	1461.21	4.45E+02	44.28	3.29E-03	2.69E-04
	39	1531.75	1.24E+01	10.86	3.17E-03	2.59E-04
	40	1553.69	6.63E+00	6.65	3.14E-03	2.55E-04
	41	1575.17	5.86E+00	5.85	3.11E-03	2.52E-04
	42	1580.13	1.08E+01	7.55	3.10E-03	2.51E-04
	43	1592.72	1.27E+01	11.40	3.08E-03	2.50E-04
	44	1631.70	1.07E+01	8.50	3.03E-03	2.44E-04
	45	1764.64	4.50E+01	13.42	2.86E-03	2.24E-04
	46	1784.54	5.50E+00	7.78	2.83E-03	2.21E-04
	47	1848.41	7.45E+00	8.43	2.77E-03	2.13E-04
	48	2104.80	8.00E+00	7.76	2.53E-03	2.13E-04
	49	2119.41	6.13E+00	6.65	2.52E-03	2.13E-04
	50	2259.63	5.64E+00	6.08	2.43E-03	2.13E-04
	51	2614.93	5.30E+01	14.56	2.24E-03	2.13E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/14/2016 11:38:50AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037621.CNF

: 00705

Analysis Report for 1606038-12

CP-5022 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.90	1.54E+02	66.51	4.44E+01	1.35E+00	1.09E+02	6.65E+01
M	2	71.47	7.31E+01	24.24			7.31E+01	2.42E+01
m	3	75.10	3.61E+02	83.30			3.61E+02	8.33E+01
m	4	77.47	5.84E+02	90.66	2.41E+00	1.27E+01	5.82E+02	9.15E+01
M	5	85.39	1.68E+02	63.02			1.68E+02	6.30E+01
m	6	88.57	2.46E+02	85.22			2.46E+02	8.52E+01
m	7	93.13	3.79E+02	87.76	7.34E+01	7.09E+00	3.06E+02	8.80E+01
	8	129.97	6.33E+01	67.62			6.33E+01	6.76E+01
	9	186.59	2.19E+02	77.77	3.79E+01	5.70E+00	1.81E+02	7.80E+01
	10	209.98	5.10E+01	57.77			5.10E+01	5.78E+01
M	11	239.01	6.76E+02	64.29	1.16E+01	5.57E+00	6.64E+02	6.45E+01
m	12	242.05	1.58E+02	69.65			1.58E+02	6.96E+01
	13	270.97	1.38E+02	68.06			1.38E+02	6.81E+01
	14	295.63	1.82E+02	55.03	1.82E+00	4.34E+00	1.80E+02	5.52E+01
	15	338.72	1.54E+02	48.87			1.54E+02	4.89E+01
	16	352.07	3.38E+02	62.23	4.15E+00	3.98E+00	3.34E+02	6.24E+01
	17	368.88	4.86E+01	42.98			4.86E+01	4.30E+01
	18	453.01	3.30E+01	35.16			3.30E+01	3.52E+01
	19	462.47	4.57E+01	41.57			4.57E+01	4.16E+01
	20	510.94	1.30E+02	47.87	6.27E+01	4.94E+00	6.69E+01	4.81E+01
M	21	583.66	1.87E+02	33.03	2.16E+00	3.21E+00	1.84E+02	3.32E+01
m	22	589.07	2.04E+01	24.37			2.04E+01	2.44E+01
M	23	604.73	1.41E+01	13.48			1.41E+01	1.35E+01
m	24	609.86	2.21E+02	35.07	5.95E+00	3.88E+00	2.15E+02	3.53E+01
	25	727.57	5.01E+01	40.50			5.01E+01	4.05E+01
	26	796.66	2.08E+01	25.63			2.08E+01	2.56E+01
	27	838.28	4.08E+01	32.74			4.08E+01	3.27E+01
	28	854.11	1.40E+01	18.55			1.40E+01	1.85E+01
	29	911.59	1.25E+02	29.66	1.86E+00	2.46E+00	1.23E+02	2.98E+01
	30	920.04	1.70E+01	21.26			1.70E+01	2.13E+01
	31	934.45	2.51E+01	23.66			2.51E+01	2.37E+01
M	32	965.00	4.92E+01	19.86			4.92E+01	1.99E+01
m	33	969.44	8.02E+01	23.89			8.02E+01	2.39E+01
	34	1126.93	8.25E+01	64.25			8.25E+01	6.42E+01
	35	1282.64	1.34E+01	17.44			1.34E+01	1.74E+01
	36	1378.41	1.01E+01	13.42			1.01E+01	1.34E+01
	37	1396.42	8.58E+00	8.17			8.58E+00	8.17E+00
	38	1461.21	4.45E+02	44.28	2.56E+00	2.02E+00	4.43E+02	4.43E+01
	39	1531.75	1.24E+01	10.86			1.24E+01	1.09E+01
	40	1553.69	6.63E+00	6.65			6.63E+00	6.65E+00
	41	1575.17	5.86E+00	5.85			5.86E+00	5.85E+00
	42	1580.13	1.08E+01	7.55			1.08E+01	7.55E+00
	43	1592.72	1.27E+01	11.40			1.27E+01	1.14E+01
	44	1631.70	1.07E+01	8.50			1.07E+01	8.50E+00
	45	1764.64	4.50E+01	13.42			4.50E+01	1.34E+01
	46	1784.54	5.50E+00	7.78			5.50E+00	7.78E+00
	47	1848.41	7.45E+00	8.43			7.45E+00	8.43E+00
	48	2104.80	8.00E+00	7.76			8.00E+00	7.76E+00
	49	2119.41	6.13E+00	6.65			6.13E+00	6.65E+00
	50	2259.63	5.64E+00	6.08			5.64E+00	6.08E+00
	51	2614.93	5.30E+01	14.56	3.45E+00	1.23E+00	4.96E+01	1.46E+01

Analysis Report for 1606038-12
CP-5022 00-02

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 : 6/14/2016 11:38:50AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037621.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	46.90	1.54E+02	66.51		1.35E+00	1.09E+02	6.65E+01
M	2	71.47	7.31E+01	24.24	4.44E+01		7.31E+01	2.42E+01
m	3	75.10	3.61E+02	83.30			3.61E+02	8.33E+01
m	4	77.47	5.84E+02	90.66	2.41E+00	1.27E+01	5.82E+02	9.15E+01
M	5	85.39	1.68E+02	63.02			1.68E+02	6.30E+01
m	6	88.57	2.46E+02	85.22			2.46E+02	8.52E+01
m	7	93.13	3.79E+02	87.76	7.34E+01	7.09E+00	3.06E+02	8.80E+01
	8	129.97	6.33E+01	67.62			6.33E+01	6.76E+01
	9	186.59	2.19E+02	77.77	3.79E+01	5.70E+00	1.81E+02	7.80E+01
	10	209.98	5.10E+01	57.77			5.10E+01	5.78E+01
M	11	239.01	6.76E+02	64.29	1.16E+01	5.57E+00	6.64E+02	6.45E+01
m	12	242.05	1.58E+02	69.65			1.58E+02	6.96E+01
	13	270.97	1.38E+02	68.06			1.38E+02	6.81E+01
	14	295.63	1.82E+02	55.03	1.82E+00	4.34E+00	1.80E+02	5.52E+01
	15	338.72	1.54E+02	48.87			1.54E+02	4.89E+01
	16	352.07	3.38E+02	62.23	4.15E+00	3.98E+00	3.34E+02	6.24E+01
	17	368.88	4.86E+01	42.98			4.86E+01	4.30E+01
	18	453.01	3.30E+01	35.16			3.30E+01	3.52E+01
	19	462.47	4.57E+01	41.57			4.57E+01	4.16E+01
	20	510.94	1.30E+02	47.87	6.27E+01	4.94E+00	6.69E+01	4.81E+01
M	21	583.66	1.87E+02	33.03	2.16E+00	3.21E+00	1.84E+02	3.32E+01
m	22	589.07	2.04E+01	24.37			2.04E+01	2.44E+01
M	23	604.73	1.41E+01	13.48			1.41E+01	1.35E+01
m	24	609.86	2.21E+02	35.07	5.95E+00	3.88E+00	2.15E+02	3.53E+01
	25	727.57	5.01E+01	40.50			5.01E+01	4.05E+01
	26	796.66	2.08E+01	25.63			2.08E+01	2.56E+01
	27	838.28	4.08E+01	32.74			4.08E+01	3.27E+01
	28	854.11	1.40E+01	18.55			1.40E+01	1.85E+01
	29	911.59	1.25E+02	29.66	1.86E+00	2.46E+00	1.23E+02	2.98E+01
	30	920.04	1.70E+01	21.26			1.70E+01	2.13E+01
	31	934.45	2.51E+01	23.66			2.51E+01	2.37E+01
M	32	965.00	4.92E+01	19.86			4.92E+01	1.99E+01

Analysis Report for 1606038-12

CP-5022 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m 33	969.44	8.02E+01	23.89			8.02E+01	2.39E+01
34	1126.93	8.25E+01	64.25			8.25E+01	6.42E+01
35	1282.64	1.34E+01	17.44			1.34E+01	1.74E+01
36	1378.41	1.01E+01	13.42			1.01E+01	1.34E+01
37	1396.42	8.58E+00	8.17			8.58E+00	8.17E+00
38	1461.21	4.45E+02	44.28	2.56E+00	2.02E+00	4.43E+02	4.43E+01
39	1531.75	1.24E+01	10.86			1.24E+01	1.09E+01
40	1553.69	6.63E+00	6.65			6.63E+00	6.65E+00
41	1575.17	5.86E+00	5.85			5.86E+00	5.85E+00
42	1580.13	1.08E+01	7.55			1.08E+01	7.55E+00
43	1592.72	1.27E+01	11.40			1.27E+01	1.14E+01
44	1631.70	1.07E+01	8.50			1.07E+01	8.50E+00
45	1764.64	4.50E+01	13.42			4.50E+01	1.34E+01
46	1784.54	5.50E+00	7.78			5.50E+00	7.78E+00
47	1848.41	7.45E+00	8.43			7.45E+00	8.43E+00
48	2104.80	8.00E+00	7.76			8.00E+00	7.76E+00
49	2119.41	6.13E+00	6.65			6.13E+00	6.65E+00
50	2259.63	5.64E+00	6.08			5.64E+00	6.08E+00
51	2614.93	5.30E+01	14.56	3.45E+00	1.23E+00	4.96E+01	1.46E+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	0.975	1460.81 *	10.67	1.94E+01	2.54E+00
GA-67	0.523	93.31 *	35.70	7.10E+00	1.39E+01
		208.95	2.24		
		300.22	16.00		
CD-109	0.955	88.03 *	3.72	4.24E+00	1.55E+00
SN-126	0.853	87.57 *	37.00	4.19E-01	1.52E-01
CS-134	0.709	563.23	8.38		
		569.32	15.43		
		604.70 *	97.60	3.24E-02	3.12E-02
		795.84 *	85.40	6.96E-02	8.60E-02
		801.93	8.73		
PM-146	0.361	453.90 *	39.94	1.44E-01	1.53E-01

: 00708

Analysis Report for 1606038-12
CP-5022 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PM-146	0.361	735.90	14.01		
		747.13	13.10		
TL-208	0.864	583.14 *	30.22	1.32E+00	2.65E-01
		860.37	4.48		
		2614.66 *	35.85	9.50E-01	2.95E-01
PB-210	0.975	46.50 *	4.25	2.60E+00	1.61E+00
BI-212	0.750	727.17 *	11.80	1.11E+00	9.03E-01
		1620.62	2.75		
PB-212	0.875	238.63 *	44.60	1.51E+00	1.88E-01
		300.09	3.41		
BI-214	0.644	609.31 *	46.30	1.04E+00	1.95E-01
		1120.29	15.10		
		1764.49 *	15.80	1.53E+00	4.73E-01
		2204.22	4.98		
PB-214	0.988	295.21 *	19.19	1.13E+00	3.56E-01
		351.92 *	37.19	1.25E+00	2.54E-01
RA-226	0.977	186.21 *	3.28	4.67E+00	8.78E+00
AC-228	0.968	338.32 *	11.40	1.82E+00	5.96E-01
		911.07 *	27.70	1.41E+00	3.58E-01
		969.11 *	16.60	1.62E+00	4.98E-01
AM-243	0.971	74.67 *	66.00	3.56E-01	8.80E-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 : 6/14/2016 11:38:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	2	71.47	2.03175E-02	16.57	Tol. PM-145
m	4	77.47	1.61661E-01	7.86	
M	5	85.39	4.66708E-02	18.75	
	8	129.97	1.75851E-02	53.40	
	10	209.98	1.41688E-02	56.63	Tol. CM-243
m	12	242.05	4.38569E-02	22.06	
	13	270.97	3.83757E-02	24.63	
	17	368.88	1.34921E-02	44.24	

Analysis Report for 1606038-12
CP-5022 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
	19	462.47	1.26840E-02	45.52	Tol.	SB-125
	20	510.94	1.85851E-02	35.97		
m	22	589.07	5.66692E-03	59.72		
	27	838.28	1.13302E-02	40.14		
	28	854.11	3.88889E-03	66.24		
	30	920.04	4.72222E-03	62.53		
	31	934.45	6.97740E-03	47.11		EU-152
M	32	965.00	1.36707E-02	20.18	Tol.	
	34	1126.93	2.29167E-02	38.94		
	35	1282.64	3.71962E-03	65.10		
	36	1378.41	2.80423E-03	66.45		
	37	1396.42	2.38426E-03	47.59		
	39	1531.75	3.43137E-03	43.97		
	40	1553.69	1.84028E-03	50.20	Sum	
	41	1575.17	1.62698E-03	49.96		
	42	1580.13	2.98611E-03	35.12	Sum	
	43	1592.72	3.52339E-03	44.94	D-Esc	
	44	1631.70	2.97009E-03	39.75		
	46	1784.54	1.52778E-03	70.71		
	47	1848.41	2.07071E-03	56.52		
	48	2104.80	2.22222E-03	48.51	S-Esc	
	49	2119.41	1.70139E-03	54.30		
	50	2259.63	1.56746E-03	53.90		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.97	1460.81 *	10.67	1.94E+01	2.54E+00
GA-67	0.52	93.31 *	35.70	7.10E+00	1.39E+01
		208.95	2.24		
		300.22	16.00		
CD-109	0.95	88.03 *	3.72	4.24E+00	1.55E+00

Analysis Report for 1606038-12
CP-5022 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SN-126	0.85	87.57 *	37.00	4.19E-01	1.52E-01
CS-134	0.70	563.23	8.38		
		569.32	15.43		
		604.70 *	97.60	3.24E-02	3.12E-02
		795.84 *	85.40	6.96E-02	8.60E-02
PM-146	0.36	801.93	8.73		
		453.90 *	39.94	1.44E-01	1.53E-01
		735.90	14.01		
TL-208	0.86	747.13	13.10		
		583.14 *	30.22	1.32E+00	2.65E-01
		860.37	4.48		
PB-210	0.97	2614.66 *	35.85	9.50E-01	2.95E-01
		46.50 *	4.25	2.60E+00	1.61E+00
BI-212	0.75	727.17 *	11.80	1.11E+00	9.03E-01
		1620.62	2.75		
PB-212	0.87	238.63 *	44.60	1.51E+00	1.88E-01
		300.09	3.41		
BI-214	0.64	609.31 *	46.30	1.04E+00	1.95E-01
		1120.29	15.10		
		1764.49 *	15.80	1.53E+00	4.73E-01
		2204.22	4.98		
PB-214	0.98	295.21 *	19.19	1.13E+00	3.56E-01
		351.92 *	37.19	1.25E+00	2.54E-01
RA-226	0.97	186.21 *	3.28	4.67E+00	8.78E+00
AC-228	0.96	338.32 *	11.40	1.82E+00	5.96E-01
		911.07 *	27.70	1.41E+00	3.58E-01
		969.11 *	16.60	1.62E+00	4.98E-01
AM-243	0.97	74.67 *	66.00	3.56E-01	8.80E-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1606038-12
CP-5022 00-02

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.975	1.94E+01	2.54E+00	
GA-67	0.523	7.10E+00	1.39E+01	
? CD-109	0.955	4.24E+00	1.55E+00	
? SN-126	0.853	4.19E-01	1.52E-01	
CS-134	0.709	3.67E-02	2.94E-02	
PM-146	0.361	1.44E-01	1.53E-01	
TL-208	0.864	1.15E+00	1.97E-01	
PB-210	0.975	2.60E+00	1.61E+00	
BI-212	0.750	1.11E+00	9.03E-01	
PB-212	0.875	1.51E+00	1.88E-01	
BI-214	0.644	1.11E+00	1.80E-01	
PB-214	0.988	1.21E+00	2.07E-01	
RA-226	0.977	4.67E+00	8.78E+00	
AC-228	0.968	1.54E+00	2.61E-01	
AM-243	0.971	3.56E-01	8.80E-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 1606038-12
CP-5022 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 11:38:50AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
M	2	71.47	2.03175E-02	16.57	Tol.	PM-145
m	4	77.47	1.61661E-01	7.86		
M	5	85.39	4.66708E-02	18.75		
	8	129.97	1.75851E-02	53.40		
	10	209.98	1.41688E-02	56.63	Tol.	CM-243
m	12	242.05	4.38569E-02	22.06		
	13	270.97	3.83757E-02	24.63		
	17	368.88	1.34921E-02	44.24		
	19	462.47	1.26840E-02	45.52	Tol.	SB-125
	20	510.94	1.85851E-02	35.97		
m	22	589.07	5.66692E-03	59.72		
	27	838.28	1.13302E-02	40.14		
	28	854.11	3.88889E-03	66.24		
	30	920.04	4.72222E-03	62.53		
	31	934.45	6.97740E-03	47.11		
M	32	965.00	1.36707E-02	20.18	Tol.	EU-152
	34	1126.93	2.29167E-02	38.94		
	35	1282.64	3.71962E-03	65.10		
	36	1378.41	2.80423E-03	66.45		
	37	1396.42	2.38426E-03	47.59		
	39	1531.75	3.43137E-03	43.97		
	40	1553.69	1.84028E-03	50.20	Sum	
	41	1575.17	1.62698E-03	49.96		
	42	1580.13	2.98611E-03	35.12	Sum	
	43	1592.72	3.52339E-03	44.94	D-Esc	
	44	1631.70	2.97009E-03	39.75		
	46	1784.54	1.52778E-03	70.71		
	47	1848.41	2.07071E-03	56.52		
	48	2104.80	2.22222E-03	48.51	S-Esc	
	49	2119.41	1.70139E-03	54.30		
	50	2259.63	1.56746E-03	53.90		

Analysis Report for 1606038-12

CP-5022 00-02

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

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-1.89E-01	8.86E-01
+	NA-22	1274.54	99.94	-1.51E-02	1.31E-01
+	NA-24	1368.53	99.99	-4.13E+04	5.22E+04
		2754.09	99.86	-9.16E+03	5.22E+04
+	AL-26	1808.65	99.76	-3.63E-02	7.21E-02
+	K-40	1460.81	* 10.67	1.94E+01	1.12E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.78E-02	7.88E-02
		78.34	96.00	2.31E-01	1.02E-01
+	SC-46	889.25	99.98	5.05E-03	1.20E-01
		1120.51	99.99	1.44E-01	1.69E-01
+	V-48	983.52	99.98	1.50E-02	1.73E-01
		1312.10	97.50	1.09E-02	2.04E-01
+	CR-51	320.08	9.83	3.01E-01	1.06E+00
+	MN-54	834.83	99.97	4.46E-02	1.17E-01
+	CO-56	846.75	99.96	2.88E-02	1.08E-01
		1037.75	14.03	-2.67E-01	8.60E-01
		1238.25	67.00	1.07E-01	2.70E-01
		1771.40	15.51	1.32E-01	5.82E-01
		2598.48	16.90	-7.52E-02	4.19E-01
+	CO-57	122.06	85.51	4.04E-02	7.01E-02
		136.48	10.60	-2.42E-01	5.55E-01
+	CO-58	810.76	99.40	-1.95E-02	9.96E-02
+	FE-59	1099.22	56.50	-1.06E-01	2.52E-01
		1291.56	43.20	2.35E-01	3.90E-01
+	CO-60	1173.22	100.00	-1.11E-02	1.07E-01
		1332.49	100.00	-4.37E-02	1.07E-01
+	ZN-65	1115.52	50.75	1.49E-02	2.47E-01
+	GA-67	93.31	* 35.70	7.10E+00	6.84E+00
		208.95	2.24	5.09E+01	4.80E+01
		300.22	16.00	2.60E+00	6.84E+00
+	SE-75	121.11	16.70	8.76E-02	1.01E-01

Analysis Report for 1606038-12
CP-5022 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-7.41E-02	1.01E-01	1.01E-01
		264.65	59.80	-1.65E-02		1.23E-01
		279.53	25.20	9.32E-03		3.19E-01
		400.65	11.40	-1.85E-01		7.54E-01
+	RB-82	776.52	13.00	-3.05E-01	1.05E+00	1.05E+00
+	RB-83	520.41	46.00	3.97E-02	1.87E-01	1.87E-01
		529.64	30.30	-1.26E-02		2.84E-01
		552.65	16.40	5.48E-02		5.80E-01
+	KR-85	513.99	0.43	3.32E+01	2.74E+01	2.74E+01
+	SR-85	513.99	99.27	1.65E-01	1.36E-01	1.36E-01
+	Y-88	898.02	93.40	-8.06E-03	9.57E-02	1.08E-01
		1836.01	99.38	-1.96E-02		9.57E-02
+	NB-93M	16.57	9.43	2.40E+00	9.48E+01	9.48E+01
+	NB-94	702.63	100.00	5.46E-02	1.06E-01	1.06E-01
		871.10	100.00	2.85E-02		1.15E-01
+	NB-95	765.79	99.81	9.19E-02	1.58E-01	1.58E-01
+	NB-95M	235.69	25.00	9.20E+00	5.17E+00	5.17E+00
+	ZR-95	724.18	43.70	-5.94E-02	1.87E-01	2.96E-01
		756.72	55.30	-1.04E-01		1.87E-01
+	MO-99	181.06	6.20	1.08E+01	1.67E+01	2.16E+01
		739.58	12.80	2.49E+00		1.67E+01
		778.00	4.50	1.62E+00		4.65E+01
+	RU-103	497.08	89.00	1.66E-02	1.17E-01	1.17E-01
+	RU-106	621.84	9.80	6.84E-02	9.98E-01	9.98E-01
+	AG-108M	433.93	89.90	-5.77E-04	8.69E-02	8.69E-02
		614.37	90.40	-3.35E-01		1.26E-01
		722.95	90.50	-8.94E-02		1.17E-01
+	CD-109	88.03	3.72	4.24E+00	5.10E+00	5.10E+00
+	AG-110M	657.75	93.14	-3.45E-02	9.98E-02	9.98E-02
		677.61	10.53	0.00E+00		1.01E+00
		706.67	16.46	5.06E-02		6.40E-01
		763.93	21.98	-1.36E-01		5.34E-01
		884.67	71.63	-2.27E-02		1.56E-01
		1384.27	23.94	1.48E-01		4.56E-01
+	CD-113M	263.70	0.02	-4.11E+01	2.94E+02	2.94E+02
+	SN-113	255.12	1.93	-2.18E+00	1.35E-01	3.99E+00
		391.69	64.90	-1.98E-02		1.35E-01
+	TE123M	159.00	84.10	-2.82E-02	7.48E-02	7.48E-02
+	SB-124	602.71	97.87	-1.41E-02	1.05E-01	1.05E-01
		645.85	7.26	-3.58E-01		1.37E+00
		722.78	11.10	-8.37E-01		1.10E+00
		1691.02	49.00	6.13E-02		2.22E-01
+	I-125	35.49	6.49	-3.05E-01	2.63E+00	2.63E+00
+	SB-125	176.33	6.89	-3.68E-01	2.81E-01	8.84E-01
		427.89	29.33	1.06E-01		2.81E-01
		463.38	10.35	7.23E-01		9.45E-01
		600.56	17.80	-1.11E-01		5.25E-01
		635.90	11.32	-2.19E-01		8.03E-01

Analysis Report for 1606038-12

CP-5022 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-4.97E-03	1.97E-01	1.97E-01
		666.33	99.60	-3.32E-02		1.97E-01
		695.00	99.60	7.27E-02		2.11E-01
		720.50	53.80	6.90E-03		3.59E-01
+	SN-126	87.57 *	37.00	4.19E-01	5.04E-01	5.04E-01
+	SB-127	473.00	25.00	8.89E-02	2.42E+00	3.00E+00
		685.20	35.70	-1.12E+00		2.42E+00
		783.80	14.70	1.48E+00		6.15E+00
+	I-129	29.78	57.00	-1.83E-01	4.71E-01	4.71E-01
		33.60	13.20	1.67E-01		1.35E+00
		39.58	7.52	1.12E+00		1.58E+00
+	I-131	284.30	6.05	-1.21E-01	2.44E-01	3.33E+00
		364.48	81.20	1.32E-02		2.44E-01
		636.97	7.26	6.82E-01		3.59E+00
		722.89	1.80	-1.28E+01		1.68E+01
+	TE-132	49.72	13.10	-3.11E+00	1.16E+00	8.74E+00
		228.16	88.00	1.44E-01		1.16E+00
+	BA-133	81.00	33.00	-4.61E-01	1.87E-01	2.13E-01
		302.84	17.80	2.13E-01		4.53E-01
		356.01	60.00	2.61E-02		1.87E-01
+	I-133	529.87	86.30	-6.48E+01	1.46E+03	1.46E+03
+	XE-133	81.00	38.00	-1.98E+00	9.18E-01	9.18E-01
+	CS-134	563.23	8.38	7.67E-01	1.41E-01	1.24E+00
		569.32	15.43	9.71E-02		6.31E-01
		604.70 *	97.60	3.24E-02		1.79E-01
		795.84 *	85.40	6.96E-02		1.41E-01
		801.93	8.73	8.70E-02		1.08E+00
+	CS-135	268.24	16.00	4.47E-01	5.25E-01	5.25E-01
+	I-135	1131.51	22.50	1.90E+12	7.32E+12	9.68E+12
		1260.41	28.60	6.61E+11		7.32E+12
		1678.03	9.54	9.54E+12		1.80E+13
+	CS-136	153.22	7.46	6.02E-01	1.85E-01	1.58E+00
		163.89	4.61	1.22E-01		2.39E+00
		176.55	13.56	8.52E-02		8.66E-01
		273.65	12.66	-4.08E-01		1.25E+00
		340.57	48.50	-1.98E-02		4.22E-01
		818.50	99.70	6.87E-02		1.85E-01
		1048.07	79.60	6.85E-02		2.94E-01
		1235.34	19.70	-9.64E-01		1.48E+00
+	CS-137	661.65	85.12	-3.75E-03	1.16E-01	1.16E-01
+	LA-138	788.74	34.00	6.23E-03	1.75E-01	2.91E-01
		1435.80	66.00	1.17E-01		1.75E-01
+	CE-139	165.85	80.35	-1.19E-02	7.52E-02	7.52E-02
+	BA-140	162.64	6.70	-2.35E-01	6.58E-01	1.66E+00
		304.84	4.50	-2.75E+00		3.22E+00
		423.70	3.20	-7.80E-01		4.98E+00
		437.55	2.00	1.61E+00		7.67E+00
		537.32	25.00	-1.49E-03		6.58E-01
+	LA-140	328.77	20.50	5.24E-02	2.32E-01	7.56E-01

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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	2.12E-02	2.32E-01	3.81E-01
		815.85	23.50	-1.57E-01		7.53E-01
		1596.49	95.49	-9.10E-03		2.32E-01
+	CE-141	145.44	48.40	5.11E-02	1.65E-01	1.65E-01
+	CE-143	57.36	11.80	-8.85E+01	1.13E+02	2.99E+02
		293.26	42.00	-2.78E-01		1.13E+02
		664.55	5.20	3.73E+02		8.99E+02
+	CE-144	133.54	10.80	-2.74E-01	5.28E-01	5.28E-01
+	PM-144	476.78	42.00	-1.32E-02	9.61E-02	1.97E-01
		618.01	98.60	-1.29E-02		9.61E-02
		696.49	99.49	-2.66E-02		1.07E-01
+	PM-145	36.85	21.70	-2.31E-01	3.36E-01	6.16E-01
		37.36	39.70	-1.36E-02		3.36E-01
		42.30	15.10	3.11E-01		6.56E-01
		72.40	2.31	-5.41E+00		3.85E+00
+	PM-146	453.90	* 39.94	1.44E-01	2.50E-01	2.50E-01
		735.90	14.01	-7.36E-02		7.16E-01
		747.13	13.10	3.10E-02		7.44E-01
+	ND-147	91.11	28.90	-1.79E-02	6.09E-01	6.09E-01
		531.02	13.10	4.54E-02		1.35E+00
+	PM-149	285.90	3.10	-2.43E+01	1.01E+02	1.01E+02
+	EU-152	121.78	20.50	1.64E-01	2.84E-01	2.84E-01
		244.69	5.40	-1.65E+00		1.72E+00
		344.27	19.13	-2.79E-02		4.12E-01
		778.89	9.20	1.81E-01		1.08E+00
		964.01	10.40	-1.39E+00		1.32E+00
		1085.78	7.22	-4.87E-02		1.48E+00
		1112.02	9.60	4.53E-02		1.15E+00
		1407.95	14.94	-3.38E-01		7.17E-01
+	GD-153	97.43	31.30	-3.16E-01	1.91E-01	1.91E-01
		103.18	22.20	-9.10E-02		2.64E-01
+	EU-154	123.07	40.50	6.06E-02	1.42E-01	1.42E-01
		723.30	19.70	-4.12E-01		5.40E-01
		873.19	11.50	2.49E-01		9.93E-01
		996.32	10.30	-5.74E-01		1.12E+00
		1004.76	17.90	-6.15E-02		6.06E-01
		1274.45	35.50	-4.21E-02		3.68E-01
+	EU-155	86.50	30.90	1.02E-01	2.48E-01	2.48E-01
		105.30	20.70	1.30E-01		2.86E-01
+	EU-156	811.77	10.40	7.46E-02	1.51E+00	1.51E+00
		1153.47	7.20	7.94E-01		3.23E+00
		1230.71	8.90	3.63E-01		2.97E+00
+	HO-166M	184.41	72.60	1.50E-01	1.12E-01	1.12E-01
		280.45	29.60	1.65E-01		2.57E-01
		410.94	11.10	4.74E-01		8.08E-01
		711.69	54.10	2.83E-02		1.95E-01
+	TM-171	66.72	0.14	-9.97E+01	5.43E+01	5.43E+01
+	HF-172	81.75	4.52	-6.07E+00	4.86E-01	1.51E+00
		125.81	11.30	-1.10E-02		4.86E-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	3.47E-01	6.43E-01	1.06E+00
		810.06	16.63	-1.15E-01		1.90E+00
		912.12	15.25	9.03E+00		4.40E+00
		1093.66	62.50	4.15E-02		6.43E-01
+	LU-173	100.72	5.24	-1.68E-01	4.29E-01	1.08E+00
		272.11	21.20	5.75E-01		4.29E-01
+	HF-175	343.40	84.00	-7.14E-03	1.13E-01	1.13E-01
+	LU-176	88.34	13.30	-2.92E-01	8.14E-02	5.90E-01
		201.83	86.00	-2.90E-02		8.65E-02
		306.78	94.00	-8.41E-03		8.14E-02
+	TA-182	67.75	41.20	-6.87E-02	1.94E-01	1.94E-01
		1121.30	34.90	2.72E-01		4.59E-01
		1189.05	16.23	-1.15E-01		8.16E-01
		1221.41	26.98	-5.60E-02		5.37E-01
		1231.02	11.44	3.29E-01		1.49E+00
+	IR-192	308.46	29.68	8.57E-02	1.97E-01	2.92E-01
		468.07	48.10	1.56E-02		1.97E-01
+	HG-203	279.19	77.30	1.34E-02	1.16E-01	1.16E-01
+	BI-207	569.67	97.72	-6.86E-04	9.70E-02	9.70E-02
		1063.62	74.90	3.90E-02		1.59E-01
+	TL-208	583.14	* 30.22	1.32E+00	1.75E-01	4.67E-01
		860.37	4.48	1.28E+00		2.51E+00
		2614.66	* 35.85	9.50E-01		1.75E-01
+	BI-210M	262.00	45.00	1.38E-02	1.57E-01	1.57E-01
		300.00	23.00	1.37E-01		3.62E-01
+	PB-210	46.50	* 4.25	2.60E+00	2.54E+00	2.54E+00
+	PB-211	404.84	2.90	-1.42E+00	2.70E+00	2.70E+00
		831.96	2.90	-3.09E-01		3.54E+00
+	BI-212	727.17	* 11.80	1.11E+00	1.44E+00	1.44E+00
		1620.62	2.75	1.75E+00		3.47E+00
+	PB-212	238.63	* 44.60	1.51E+00	3.37E-01	3.37E-01
		300.09	3.41	9.27E-01		2.44E+00
+	BI-214	609.31	* 46.30	1.04E+00	9.23E-02	3.85E-01
		1120.29	15.10	8.63E-01		1.01E+00
		1764.49	* 15.80	1.53E+00		9.23E-02
		2204.22	4.98	4.76E-01		2.28E+00
+	PB-214	295.21	* 19.19	1.13E+00	3.21E-01	5.14E-01
		351.92	* 37.19	1.25E+00		3.21E-01
+	RN-219	401.80	6.50	2.14E-02	1.24E+00	1.24E+00
+	RA-223	323.87	3.88	-9.14E-01	1.92E+00	1.92E+00
+	RA-224	240.98	3.95	2.03E+01	3.92E+00	3.92E+00
+	RA-225	40.00	31.00	4.67E-01	6.59E-01	6.59E-01
+	RA-226	186.21	* 3.28	4.67E+00	3.17E+00	3.17E+00
+	TH-227	50.10	8.40	-3.64E-01	1.02E+00	1.02E+00
		236.00	11.50	1.95E+00		1.10E+00
		256.20	6.30	-4.13E-01		1.14E+00
+	AC-228	338.32	* 11.40	1.82E+00	4.06E-01	8.51E-01
		911.07	* 27.70	1.41E+00		4.06E-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	1.62E+00	4.06E-01	9.34E-01
+	TH-230	48.44		16.90	9.14E-01	6.03E-01	6.03E-01
		62.85		4.60	2.06E+00		1.89E+00
		67.67		0.37	-7.11E+00		2.01E+01
+	PA-231	283.67		1.60	-1.61E-01	3.50E+00	4.42E+00
		302.67		2.30	1.65E+00		3.50E+00
+	TH-231	25.64		14.70	-5.17E-01	1.07E+00	3.48E+00
		84.21		6.40	-9.77E-01		1.07E+00
+	PA-233	311.98		38.60	3.14E-02	2.70E-01	2.70E-01
+	PA-234	131.20		20.40	2.84E-01	3.03E-01	3.03E-01
		733.99		8.80	3.37E-01		1.20E+00
		946.00		12.00	-5.05E-02		8.04E-01
+	PA-234M	1001.03		0.92	-1.01E+00	1.24E+01	1.24E+01
+	TH-234	63.29		3.80	3.16E+00	2.27E+00	2.27E+00
+	U-235	143.76		10.50	-3.14E-02	5.88E-01	5.88E-01
		163.35		4.70	6.32E-02		1.23E+00
		205.31		4.70	2.41E-01		1.62E+00
+	NP-237	86.50		12.60	2.48E-01	6.05E-01	6.05E-01
+	NP-239	106.10		22.70	4.65E+00	9.18E+00	9.18E+00
		228.18		10.70	3.19E+00		2.56E+01
		277.60		14.10	4.48E+00		1.93E+01
+	AM-241	59.54		35.90	-1.81E-01	2.22E-01	2.22E-01
+	AM-243	74.67	*	66.00	3.56E-01	2.30E-01	2.30E-01
+	CM-243	209.75		3.29	1.20E+00	5.50E-01	2.43E+00
		228.14		10.60	9.11E-02		7.32E-01
		277.60		14.00	1.27E-01		5.50E-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

: 00719

Analysis Report for 1606038-12
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	8.86E-01	8.86E-01	-1.89E-01	4.15E-01
NA-22	1274.54	99.94	1.31E-01	1.31E-01	-1.51E-02	6.00E-02
NA-24	1368.53	99.99	6.33E+04	5.22E+04	-4.13E+04	2.75E+04
	2754.09	99.86	5.22E+04		-9.16E+03	1.95E+04
AL-26	1808.65	99.76	7.21E-02	7.21E-02	-3.63E-02	2.86E-02
+ K-40	1460.81	* 10.67	1.12E+00	1.12E+00	1.94E+01	5.02E-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	7.88E-02	7.88E-02	-2.78E-02	3.84E-02
	78.34	96.00	1.02E-01		2.31E-01	5.03E-02
SC-46	889.25	99.98	1.20E-01	1.20E-01	5.05E-03	5.54E-02
	1120.51	99.99	1.69E-01		1.44E-01	7.89E-02
V-48	983.52	99.98	1.73E-01	1.73E-01	1.50E-02	7.89E-02
	1312.10	97.50	2.04E-01		1.09E-02	9.18E-02
CR-51	320.08	9.83	1.06E+00	1.06E+00	3.01E-01	5.04E-01
MN-54	834.83	99.97	1.17E-01	1.17E-01	4.46E-02	5.45E-02
CO-56	846.75	99.96	1.08E-01	1.08E-01	2.88E-02	4.94E-02
	1037.75	14.03	8.60E-01		-2.67E-01	3.92E-01
	1238.25	67.00	2.70E-01		1.07E-01	1.26E-01
	1771.40	15.51	5.82E-01		1.32E-01	2.39E-01
	2598.48	16.90	4.19E-01		-7.52E-02	1.48E-01
CO-57	122.06	85.51	7.01E-02	7.01E-02	4.04E-02	3.40E-02
	136.48	10.60	5.55E-01		-2.42E-01	2.68E-01
CO-58	810.76	99.40	9.96E-02	9.96E-02	-1.95E-02	4.54E-02
FE-59	1099.22	56.50	2.52E-01	2.52E-01	-1.06E-01	1.15E-01
	1291.56	43.20	3.90E-01		2.35E-01	1.79E-01
CO-60	1173.22	100.00	1.28E-01	1.07E-01	-1.11E-02	5.87E-02
	1332.49	100.00	1.07E-01		-4.37E-02	4.77E-02
ZN-65	1115.52	50.75	2.47E-01	2.47E-01	1.49E-02	1.13E-01
+ GA-67	93.31	* 35.70	6.87E+00	6.84E+00	7.10E+00	3.41E+00
	208.95	2.24	4.80E+01		5.09E+01	2.33E+01
	300.22	16.00	6.84E+00		2.60E+00	3.28E+00
SE-75	121.11	16.70	3.67E-01	1.01E-01	8.76E-02	1.78E-01
	136.00	59.20	1.01E-01		-7.41E-02	4.87E-02
	264.65	59.80	1.23E-01		-1.65E-02	5.89E-02
	279.53	25.20	3.19E-01		9.32E-03	1.53E-01
	400.65	11.40	7.54E-01		-1.85E-01	3.57E-01
RB-82	776.52	13.00	1.05E+00	1.05E+00	-3.05E-01	4.86E-01
RB-83	520.41	46.00	1.87E-01	1.87E-01	3.97E-02	8.71E-02
	529.64	30.30	2.84E-01		-1.26E-02	1.32E-01
	552.65	16.40	5.80E-01		5.48E-02	2.71E-01
KR-85	513.99	0.43	2.74E+01	2.74E+01	3.32E+01	1.31E+01
SR-85	513.99	99.27	1.36E-01	1.36E-01	1.65E-01	6.50E-02
Y-88	898.02	93.40	1.08E-01	9.57E-02	-8.06E-03	4.93E-02
	1836.01	99.38	9.57E-02		-1.96E-02	3.97E-02
NB-93M	16.57	9.43	9.48E+01	9.48E+01	2.40E+00	4.61E+01
NB-94	702.63	100.00	1.06E-01	1.06E-01	5.46E-02	4.94E-02
	871.10	100.00	1.15E-01		2.85E-02	5.32E-02
NB-95	765.79	99.81	1.58E-01	1.58E-01	9.19E-02	7.42E-02
NB-95M	235.69	25.00	5.17E+00	5.17E+00	9.20E+00	2.53E+00
ZR-95	724.18	43.70	2.96E-01	1.87E-01	-5.94E-02	1.39E-01
	756.72	55.30	1.87E-01		-1.04E-01	8.61E-02

Analysis Report for 1606038-12
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	2.16E+01	1.67E+01	1.08E+01	1.04E+01
	739.58	12.80	1.67E+01		2.49E+00	7.78E+00
	778.00	4.50	4.65E+01		1.62E+00	2.15E+01
RU-103	497.08	89.00	1.17E-01	1.17E-01	1.66E-02	5.50E-02
RU-106	621.84	9.80	9.98E-01	9.98E-01	6.84E-02	4.67E-01
AG-108M	433.93	89.90	8.69E-02	8.69E-02	-5.77E-04	4.09E-02
	614.37	90.40	1.26E-01		-3.35E-01	5.98E-02
	722.95	90.50	1.17E-01		-8.94E-02	5.47E-02
+ CD-109	88.03	* 3.72	5.10E+00	5.10E+00	4.24E+00	2.53E+00
AG-110M	657.75	93.14	9.98E-02	9.98E-02	-3.45E-02	4.63E-02
	677.61	10.53	1.01E+00		0.00E+00	4.70E-01
	706.67	16.46	6.40E-01		5.06E-02	2.98E-01
	763.93	21.98	5.34E-01		-1.36E-01	2.50E-01
	884.67	71.63	1.56E-01		-2.27E-02	7.20E-02
	1384.27	23.94	4.56E-01		1.48E-01	2.02E-01
CD-113M	263.70	0.02	2.94E+02	2.94E+02	-4.11E+01	1.40E+02
SN-113	255.12	1.93	3.99E+00	1.35E-01	-2.18E+00	1.92E+00
	391.69	64.90	1.35E-01		-1.98E-02	6.39E-02
	TE123M	159.00	84.10		7.48E-02	7.48E-02	-2.82E-02	3.61E-02
SB-124	602.71	97.87	1.05E-01	1.05E-01	-1.41E-02	4.89E-02
	645.85	7.26	1.37E+00		-3.58E-01	6.32E-01
	722.78	11.10	1.10E+00		-8.37E-01	5.13E-01
	1691.02	49.00	2.22E-01		6.13E-02	9.46E-02
I-125	35.49	6.49	2.63E+00	2.63E+00	-3.05E-01	1.27E+00
SB-125	176.33	6.89	8.84E-01	2.81E-01	-3.68E-01	4.26E-01
	427.89	29.33	2.81E-01		1.06E-01	1.33E-01
	463.38	10.35	9.45E-01		7.23E-01	4.49E-01
	600.56	17.80	5.25E-01		-1.11E-01	2.46E-01
	635.90	11.32	8.03E-01		-2.19E-01	3.73E-01
	SB-126	414.70	83.30		1.97E-01	1.97E-01	-4.97E-03	9.33E-02
SB-126	666.33	99.60	1.97E-01	1.97E-01	-3.32E-02	9.19E-02
	695.00	99.60	2.11E-01		7.27E-02	9.87E-02
	720.50	53.80	3.59E-01		6.90E-03	1.67E-01
	+ SN-126	87.57	* 37.00		5.04E-01	5.04E-01	4.19E-01	2.50E-01
SB-127	473.00	25.00	3.00E+00	2.42E+00	8.89E-02	1.41E+00
	685.20	35.70	2.42E+00		-1.12E+00	1.13E+00
	783.80	14.70	6.15E+00		1.48E+00	2.85E+00
I-129	29.78	57.00	4.71E-01	4.71E-01	-1.83E-01	2.28E-01
	33.60	13.20	1.35E+00		1.67E-01	6.54E-01
	39.58	7.52	1.58E+00		1.12E+00	7.63E-01
I-131	284.30	6.05	3.33E+00	2.44E-01	-1.21E-01	1.59E+00
	364.48	81.20	2.44E-01		1.32E-02	1.15E-01
	636.97	7.26	3.59E+00		6.82E-01	1.67E+00
	722.89	1.80	1.68E+01		-1.28E+01	7.82E+00
TE-132	49.72	13.10	8.74E+00	1.16E+00	-3.11E+00	4.24E+00
	228.16	88.00	1.16E+00		1.44E-01	5.60E-01
BA-133	81.00	33.00	2.13E-01	1.87E-01	-4.61E-01	1.04E-01
	302.84	17.80	4.53E-01		2.13E-01	2.17E-01
	356.01	60.00	1.87E-01		2.61E-02	9.04E-02
I-133	529.87	86.30	1.46E+03	1.46E+03	-6.48E+01	6.82E+02
XE-133	81.00	38.00	9.18E-01	9.18E-01	-1.98E+00	4.48E-01
+ CS-134	563.23	8.38	1.24E+00	1.41E-01	7.67E-01	5.87E-01
	569.32	15.43	6.31E-01		9.71E-02	2.97E-01

Analysis Report for 1606038-12
CP-5022 00-02

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	604.70	*	97.60	1.79E-01	1.41E-01	3.24E-02	8.63E-02
	795.84	*	85.40	1.41E-01		6.96E-02	6.60E-02
	801.93		8.73	1.08E+00		8.70E-02	4.97E-01
CS-135	268.24		16.00	5.25E-01	5.25E-01	4.47E-01	2.53E-01
I-135	1131.51		22.50	9.68E+12	7.32E+12	1.90E+12	4.44E+12
	1260.41		28.60	7.32E+12		6.61E+11	3.32E+12
	1678.03		9.54	1.80E+13		9.54E+12	7.72E+12
CS-136	153.22		7.46	1.58E+00	1.85E-01	6.02E-01	7.62E-01
	163.89		4.61	2.39E+00		1.22E-01	1.15E+00
	176.55		13.56	8.66E-01		8.52E-02	4.18E-01
	273.65		12.66	1.25E+00		-4.08E-01	6.04E-01
	340.57		48.50	4.22E-01		-1.98E-02	2.04E-01
	818.50		99.70	1.85E-01		6.87E-02	8.48E-02
	1048.07		79.60	2.94E-01		6.85E-02	1.36E-01
	1235.34		19.70	1.48E+00		-9.64E-01	6.85E-01
	CS-137	661.65		85.12		1.16E-01	1.16E-01	-3.75E-03	5.43E-02
LA-138	788.74		34.00	2.91E-01	1.75E-01	6.23E-03	1.34E-01
	1435.80		66.00	1.75E-01		1.17E-01	7.80E-02
CE-139	165.85		80.35	7.52E-02	7.52E-02	-1.19E-02	3.62E-02
BA-140	162.64		6.70	1.66E+00	6.58E-01	-2.35E-01	7.97E-01
	304.84		4.50	3.22E+00		-2.75E+00	1.54E+00
	423.70		3.20	4.98E+00		-7.80E-01	2.36E+00
	437.55		2.00	7.67E+00		1.61E+00	3.61E+00
	537.32		25.00	6.58E-01		-1.49E-03	3.08E-01
LA-140	328.77		20.50	7.56E-01	2.32E-01	5.24E-02	3.62E-01
	487.03		45.50	3.81E-01		2.12E-02	1.80E-01
	815.85		23.50	7.53E-01		-1.57E-01	3.44E-01
	1596.49		95.49	2.32E-01		-9.10E-03	1.03E-01
CE-141	145.44		48.40	1.65E-01	1.65E-01	5.11E-02	8.01E-02
CE-143	57.36		11.80	2.99E+02	1.13E+02	-8.85E+01	1.45E+02
	293.26		42.00	1.13E+02		-2.73E+01	5.46E+01
	664.55		5.20	8.99E+02		3.78E+02	4.21E+02
CE-144	133.54		10.80	5.28E-01	5.28E-01	-2.74E-01	2.55E-01
PM-144	476.78		42.00	1.97E-01	9.61E-02	-1.32E-02	9.23E-02
	618.01		98.60	9.61E-02		-1.29E-02	4.48E-02
	696.49		99.49	1.07E-01		-2.66E-02	5.00E-02
PM-145	36.85		21.70	6.16E-01	3.36E-01	-2.31E-01	2.98E-01
	37.36		39.70	3.36E-01		-1.36E-02	1.62E-01
	42.30		15.10	6.56E-01		3.11E-01	3.17E-01
	72.40		2.31	3.85E+00		-5.41E+00	1.89E+00
+ PM-146	453.90	*	39.94	2.50E-01	2.50E-01	1.44E-01	1.19E-01
	735.90		14.01	7.16E-01		-7.36E-02	3.32E-01
	747.13		13.10	7.44E-01		3.10E-02	3.44E-01
ND-147	91.11		28.90	6.09E-01	6.09E-01	-1.79E-02	2.98E-01
	531.02		13.10	1.35E+00		4.54E-02	6.30E-01
PM-149	285.90		3.10	1.01E+02	1.01E+02	-2.43E+01	4.81E+01
EU-152	121.78		20.50	2.84E-01	2.84E-01	1.64E-01	1.37E-01
	244.69		5.40	1.72E+00		-1.65E+00	8.33E-01
	344.27		19.13	4.12E-01		-2.79E-02	1.96E-01
	778.89		9.20	1.08E+00		1.81E-01	4.97E-01
	964.01		10.40	1.32E+00		-1.39E+00	6.15E-01
	1085.78		7.22	1.48E+00		-4.87E-02	6.72E-01
	1112.02		9.60	1.15E+00		4.53E-02	5.23E-01

Analysis Report for 1606038-12
CP-5022 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	1407.95	14.94	7.17E-01	2.84E-01	-3.38E-01	3.17E-01
GD-153	97.43	31.30	1.91E-01	1.91E-01	-3.16E-01	9.26E-02
	103.18	22.20	2.64E-01		-9.10E-02	1.28E-01
EU-154	123.07	40.50	1.42E-01	1.42E-01	6.06E-02	6.89E-02
	723.30	19.70	5.40E-01		-4.12E-01	2.52E-01
	873.19	11.50	9.93E-01		2.49E-01	4.60E-01
	996.32	10.30	1.12E+00		-5.74E-01	5.14E-01
	1004.76	17.90	6.06E-01		-6.15E-02	2.77E-01
	1274.45	35.50	3.68E-01		-4.21E-02	1.68E-01
EU-155	86.50	30.90	2.48E-01	2.48E-01	1.02E-01	1.21E-01
	105.30	20.70	2.86E-01		1.30E-01	1.39E-01
EU-156	811.77	10.40	1.51E+00	1.51E+00	7.46E-02	6.89E-01
	1153.47	7.20	3.23E+00		7.94E-01	1.49E+00
	1230.71	8.90	2.97E+00		3.63E-01	1.38E+00
HO-166M	184.41	72.60	1.12E-01	1.12E-01	1.50E-01	5.43E-02
	280.45	29.60	2.57E-01		1.65E-01	1.23E-01
	410.94	11.10	8.08E-01		4.74E-01	3.84E-01
	711.69	54.10	1.95E-01		2.83E-02	9.10E-02
TM-171	66.72	0.14	5.43E+01	5.43E+01	-9.97E+01	2.65E+01
HF-172	81.75	4.52	1.51E+00	4.86E-01	-6.07E+00	7.33E-01
	125.81	11.30	4.86E-01		-1.10E-02	2.35E-01
LU-172	181.53	20.60	1.06E+00	6.43E-01	3.47E-01	5.13E-01
	810.06	16.63	1.90E+00		-1.15E-01	8.67E-01
	912.12	15.25	4.40E+00		9.03E+00	2.10E+00
	1093.66	62.50	6.43E-01		4.15E-02	2.94E-01
LU-173	100.72	5.24	1.08E+00	4.29E-01	-1.68E-01	5.26E-01
	272.11	21.20	4.29E-01		5.75E-01	2.07E-01
HF-175	343.40	84.00	1.13E-01	1.13E-01	-7.14E-03	5.39E-02
LU-176	88.34	13.30	5.90E-01	8.14E-02	-2.92E-01	2.89E-01
	201.83	86.00	8.65E-02		-2.90E-02	4.19E-02
	306.78	94.00	8.14E-02		-8.41E-03	3.89E-02
TA-182	67.75	41.20	1.94E-01	1.94E-01	-6.87E-02	9.48E-02
	1121.30	34.90	4.59E-01		2.72E-01	2.13E-01
	1189.05	16.23	8.16E-01		-1.15E-01	3.72E-01
	1221.41	26.98	5.37E-01		-5.60E-02	2.47E-01
	1231.02	11.44	1.49E+00		3.29E-01	6.92E-01
IR-192	308.46	29.68	2.92E-01	1.97E-01	8.57E-02	1.40E-01
	468.07	48.10	1.97E-01		1.56E-02	9.30E-02
HG-203	279.19	77.30	1.16E-01	1.16E-01	1.34E-02	5.55E-02
BI-207	569.67	97.72	9.70E-02	9.70E-02	-6.86E-04	4.56E-02
	1063.62	74.90	1.59E-01		3.90E-02	7.29E-02
+ TL-208	583.14	*	30.22	1.75E-01	1.32E+00	2.24E-01
	860.37		4.48	2.51E+00	1.28E+00	1.16E+00
	2614.66	*	35.85	1.75E-01	9.50E-01	6.17E-02
BI-210M	262.00		45.00	1.57E-01	1.38E-02	7.51E-02
	300.00		23.00	3.62E-01	1.37E-01	1.74E-01
+ PB-210	46.50	*	4.25	2.54E+00	2.54E+00	1.24E+00
PB-211	404.84		2.90	2.70E+00	2.70E+00	-1.42E+00
	831.96		2.90	3.54E+00	-3.09E-01	1.63E+00
+ BI-212	727.17	*	11.80	1.44E+00	1.44E+00	1.11E+00
	1620.62		2.75	3.47E+00	1.75E+00	1.48E+00
+ PB-212	238.63	*	44.60	3.37E-01	3.37E-01	1.51E+00
	300.09		3.41	2.44E+00	9.27E-01	1.17E+00

Analysis Report for 1606038-12
CP-5022 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	BI-214	609.31 *		46.30	3.85E-01	9.23E-02	1.04E+00	1.86E-01
		1120.29		15.10	1.01E+00		8.63E-01	4.73E-01
		1764.49 *		15.80	9.23E-02		1.53E+00	0.00E+00
		2204.22		4.98	2.28E+00		4.76E-01	9.69E-01
+	PB-214	295.21 *		19.19	5.14E-01	3.21E-01	1.13E+00	2.49E-01
		351.92 *		37.19	3.21E-01		1.25E+00	1.56E-01
	RN-219	401.80		6.50	1.24E+00	1.24E+00	2.14E-02	5.88E-01
	RA-223	323.87		3.88	1.92E+00	1.92E+00	-9.14E-01	9.14E-01
	RA-224	240.98		3.95	3.92E+00	3.92E+00	2.03E+01	1.93E+00
	RA-225	40.00		31.00	6.59E-01	6.59E-01	4.67E-01	3.19E-01
+	RA-226	186.21 *		3.28	3.17E+00	3.17E+00	4.67E+00	1.55E+00
	TH-227	50.10		8.40	1.02E+00	1.02E+00	-3.64E-01	4.97E-01
		236.00		11.50	1.10E+00		1.95E+00	5.38E-01
		256.20		6.30	1.14E+00		-4.13E-01	5.48E-01
+	AC-228	338.32 *		11.40	8.51E-01	4.06E-01	1.82E+00	4.09E-01
		911.07 *		27.70	4.06E-01		1.41E+00	1.87E-01
		969.11 *		16.60	9.34E-01		1.62E+00	4.40E-01
	TH-230	48.44		16.90	6.03E-01	6.03E-01	9.14E-01	2.94E-01
		62.85		4.60	1.89E+00		2.06E+00	9.26E-01
		67.67		0.37	2.01E+01		-7.11E+00	9.82E+00
	PA-231	283.67		1.60	4.42E+00	3.50E+00	-1.61E-01	2.11E+00
		302.67		2.30	3.50E+00		1.65E+00	1.68E+00
	TH-231	25.64		14.70	3.48E+00	1.07E+00	-5.17E-01	1.69E+00
		84.21		6.40	1.07E+00		-9.77E-01	5.24E-01
	PA-233	311.98		38.60	2.70E-01	2.70E-01	3.14E-02	1.29E-01
	PA-234	131.20		20.40	3.03E-01	3.03E-01	2.84E-01	1.47E-01
		733.99		8.80	1.20E+00		3.37E-01	5.57E-01
		946.00		12.00	8.04E-01		-5.05E-02	3.65E-01
	PA-234M	1001.03		0.92	1.24E+01	1.24E+01	-1.01E+00	5.70E+00
	TH-234	63.29		3.80	2.27E+00	2.27E+00	3.16E+00	1.11E+00
	U-235	143.76		10.50	5.88E-01	5.88E-01	-3.14E-02	2.85E-01
		163.35		4.70	1.23E+00		6.32E-02	5.95E-01
		205.31		4.70	1.62E+00		2.41E-01	7.84E-01
	NP-237	86.50		12.60	6.05E-01	6.05E-01	2.48E-01	2.96E-01
	NP-239	106.10		22.70	9.18E+00	9.18E+00	4.65E+00	4.46E+00
		228.18		10.70	2.56E+01		3.19E+00	1.24E+01
		277.60		14.10	1.93E+01		4.48E+00	9.27E+00
	AM-241	59.54		35.90	2.22E-01	2.22E-01	-1.81E-01	1.08E-01
+	AM-243	74.67 *		66.00	2.30E-01	2.30E-01	3.56E-01	1.14E-01
	CM-243	209.75		3.29	2.43E+00	5.50E-01	1.20E+00	1.18E+00
		228.14		10.60	7.32E-01		9.11E-02	3.53E-01
		277.60		14.00	5.50E-01		1.27E-01	2.64E-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

Analysis Report for 1606038-12
CP-5022 00-02

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP-5022 00-02

Elapsed Live time: 3600
Elapsed Real Time: 3613

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	4	176	161	81	97	108	82	90	
17:	100	82	72	70	67	76	71	63	
25:	57	55	68	64	59	44	63	60	
33:	62	55	45	67	51	56	53	64	
41:	68	65	48	59	43	87	166	94	
49:	85	66	83	57	92	82	90	72	
57:	84	71	102	116	99	108	141	204	
65:	100	95	94	114	119	101	121	151	
73:	117	132	282	283	274	406	163	99	
81:	101	97	74	118	133	95	112	168	
89:	134	150	120	107	238	191	127	89	
97:	74	64	72	63	77	62	62	65	
105:	76	84	81	61	63	68	59	70	
113:	59	84	60	67	55	65	58	62	
121:	67	64	68	67	52	51	57	50	
129:	69	100	54	60	67	49	57	41	
137:	58	67	63	73	65	67	60	72	
145:	65	55	69	55	52	57	60	57	
153:	44	71	68	60	46	51	55	63	
161:	40	50	54	57	37	43	44	46	
169:	53	37	44	62	41	41	52	51	
177:	46	47	54	56	51	53	38	47	
185:	59	133	132	64	56	49	38	48	
193:	51	46	48	41	45	42	48	40	
201:	43	42	47	47	34	53	46	39	
209:	46	87	44	33	34	32	46	36	
217:	45	36	42	45	46	41	39	39	
225:	32	33	51	44	34	41	36	34	
233:	38	33	41	37	36	101	416	206	
241:	76	110	84	35	37	30	28	26	
249:	30	34	33	26	23	30	26	25	
257:	32	30	26	38	26	25	20	21	
265:	22	21	25	31	27	51	69	38	
273:	27	26	35	21	21	42	31	16	
281:	27	22	22	25	23	17	20	18	
289:	26	22	24	26	21	28	83	133	
297:	41	19	22	24	48	17	28	21	
305:	27	18	25	20	27	23	28	22	
313:	20	16	20	18	23	28	24	21	
321:	20	21	13	24	14	26	20	30	
329:	19	26	13	24	32	16	23	19	
337:	22	62	96	41	22	16	19	19	
345:	30	13	20	25	24	25	34	169	
353:	172	17	14	18	21	13	19	15	
361:	11	16	13	7	12	9	18	22	

369: 22 26 14 18 14 13 15 11

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	17	19	18	15	26	16	25	18
385:	18	23	17	16	23	15	10	23
393:	15	18	14	20	18	18	17	14
401:	15	21	10	15	19	14	14	10
409:	26	16	22	21	17	21	14	15
417:	11	13	13	16	20	18	10	12
425:	14	19	13	18	17	11	10	16
433:	9	15	10	15	15	11	13	16
441:	12	10	13	17	15	16	13	9
449:	14	13	12	14	28	14	16	14
457:	9	8	12	15	16	18	24	25
465:	12	16	11	16	9	15	14	14
473:	10	17	12	9	17	9	10	7
481:	13	11	12	13	19	16	17	8
489:	12	13	18	12	13	10	10	17
497:	13	10	5	17	9	10	17	9
505:	11	14	12	15	8	31	64	41
513:	16	8	13	7	10	11	9	7
521:	8	13	6	7	6	10	6	8
529:	9	10	13	10	6	13	7	15
537:	12	11	8	7	12	12	5	13
545:	11	15	16	14	9	6	15	7
553:	11	11	8	13	9	7	10	10
561:	19	16	14	14	16	11	13	9
569:	12	17	6	17	8	8	13	13
577:	6	7	9	14	12	19	74	88
585:	22	6	10	7	15	10	8	6
593:	4	12	10	13	15	10	13	10
601:	10	7	7	14	7	10	7	15
609:	75	116	46	7	9	11	13	10
617:	10	6	11	9	8	13	12	10
625:	8	8	14	9	8	12	12	7
633:	8	10	10	7	7	12	6	10
641:	11	5	12	8	8	7	3	9
649:	6	7	12	8	9	8	9	6
657:	6	7	9	9	10	12	10	7
665:	11	15	10	8	7	13	8	10
673:	7	13	5	3	12	12	7	15
681:	16	10	10	8	6	11	7	10
689:	6	11	8	9	14	6	15	12
697:	7	10	5	10	16	3	9	13
705:	7	12	5	8	12	7	10	11
713:	13	7	8	12	9	9	7	8
721:	8	6	10	10	6	19	18	22
729:	13	10	10	8	6	14	5	13
737:	8	3	8	6	11	9	6	6
745:	5	11	8	10	8	4	7	7
753:	9	7	12	6	2	6	9	2
761:	9	10	9	11	8	9	14	19
769:	14	6	8	12	8	7	5	7
777:	7	6	10	6	9	5	8	5
785:	11	8	7	6	4	8	6	10
793:	3	9	15	8	7	4	7	8

801: 2 5 7 5 8 4 8 3

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Channel	1	2	3	4	5	6	7	8
809:	6	6	4	8	3	6	5	7
817:	3	7	8	6	8	5	4	7
825:	3	4	9	7	5	8	6	5
833:	9	6	9	14	10	7	3	9
841:	10	13	2	6	8	6	9	6
849:	4	2	5	4	4	7	11	3
857:	2	4	11	8	17	8	5	2
865:	14	3	8	10	6	9	8	8
873:	7	8	9	6	1	10	5	6
881:	10	7	4	7	8	4	8	13
889:	5	3	6	9	5	7	5	5
897:	3	6	3	6	6	5	4	8
905:	8	5	6	3	5	28	48	53
913:	10	8	1	6	2	9	8	9
921:	5	6	6	4	4	10	7	8
929:	7	4	6	8	5	17	5	6
937:	4	4	4	2	6	6	4	4
945:	3	8	2	1	11	4	4	3
953:	6	5	10	4	2	4	6	4
961:	5	7	5	10	24	5	12	17
969:	37	30	7	4	1	3	2	2
977:	2	2	5	3	5	5	5	10
985:	5	2	4	7	5	5	9	6
993:	8	8	7	6	4	6	5	10
1001:	9	4	5	4	9	6	6	4
1009:	3	3	6	1	2	7	5	10
1017:	3	7	5	8	7	3	7	6
1025:	7	5	7	1	5	5	5	2
1033:	5	8	9	8	2	1	6	7
1041:	3	9	4	6	7	5	6	5
1049:	13	6	5	5	7	2	3	11
1057:	9	3	5	6	5	5	9	4
1065:	8	5	6	5	4	4	3	8
1073:	10	4	2	3	6	2	9	10
1081:	4	6	6	2	9	2	3	5
1089:	5	3	6	7	3	10	6	2
1097:	4	6	8	8	6	5	4	10
1105:	7	6	3	9	6	4	6	4
1113:	6	6	1	8	7	8	9	16
1121:	18	5	3	3	6	3	9	6
1129:	5	3	6	6	7	8	4	4
1137:	3	5	4	7	9	5	4	7
1145:	2	5	4	5	6	3	7	7
1153:	6	2	12	10	8	3	2	8
1161:	5	6	6	6	10	6	5	5
1169:	7	1	5	5	10	12	4	4
1177:	7	6	7	7	5	9	3	8
1185:	5	9	3	3	6	6	5	5
1193:	6	5	6	5	4	2	6	5
1201:	8	5	9	10	5	6	6	4
1209:	2	6	5	9	6	8	4	9
1217:	7	4	9	2	5	13	3	7
1225:	4	7	6	7	8	11	12	4

1233: 7 11 6 10 6 12 15 8

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Channel	1	2	3	4	5	6	7	8
1241:	6	4	6	5	3	7	3	2
1249:	5	7	2	6	5	7	5	5
1257:	7	5	3	6	2	4	4	4
1265:	3	2	4	5	8	1	4	4
1273:	6	3	5	4	4	6	3	2
1281:	10	6	3	4	3	1	1	3
1289:	4	4	5	8	7	3	7	3
1297:	3	2	6	7	2	3	4	3
1305:	3	2	5	1	6	3	2	3
1313:	4	3	3	3	1	4	5	3
1321:	6	3	1	0	2	6	2	0
1329:	1	1	2	5	5	3	2	3
1337:	4	2	2	1	2	1	0	3
1345:	3	3	4	3	1	3	2	2
1353:	0	7	3	3	0	4	3	0
1361:	3	5	2	4	1	3	0	2
1369:	3	0	0	2	3	3	1	2
1377:	5	8	2	1	2	0	2	3
1385:	3	4	1	4	1	3	7	0
1393:	1	1	4	3	4	0	1	1
1401:	5	7	1	1	2	1	4	4
1409:	3	1	3	1	5	1	1	2
1417:	1	2	4	0	0	0	2	2
1425:	2	3	1	3	1	1	4	4
1433:	0	1	2	8	1	1	2	0
1441:	1	0	1	2	0	2	4	0
1449:	0	4	1	4	2	3	1	4
1457:	3	5	28	128	191	89	10	0
1465:	1	3	1	1	3	2	1	3
1473:	2	2	1	2	0	1	2	1
1481:	3	1	2	0	0	1	2	1
1489:	2	2	2	0	0	1	4	0
1497:	0	1	2	1	2	3	0	1
1505:	2	2	0	4	4	3	2	1
1513:	0	3	2	0	0	1	1	1
1521:	2	0	3	3	0	2	1	2
1529:	0	1	2	5	2	2	0	0
1537:	2	2	2	0	1	1	0	1
1545:	1	0	1	0	0	1	0	0
1553:	2	5	0	1	2	2	2	0
1561:	2	1	0	0	0	0	1	1
1569:	1	0	0	0	0	2	5	0
1577:	1	2	3	2	4	0	0	2
1585:	0	1	3	7	6	0	5	9
1593:	3	2	0	0	0	2	0	3
1601:	1	2	1	2	0	2	1	3
1609:	3	0	0	4	0	0	0	2
1617:	1	0	1	1	3	3	1	0
1625:	1	0	0	0	1	2	6	1
1633:	1	2	0	1	0	1	1	1
1641:	1	1	0	1	2	1	2	0
1649:	1	2	2	0	2	1	1	1
1657:	1	2	0	1	2	0	2	0

1665: 0 2 0 2 0 1 0 0

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Channel	1	2	3	4	5	6	7	8	9
1673:	0	2	0	0	2	1	1	1	
1681:	2	3	0	1	1	0	4	0	
1689:	1	0	1	0	1	2	2	1	
1697:	1	0	0	2	0	1	0	0	
1705:	1	0	2	1	1	0	1	1	
1713:	0	1	0	0	0	1	2	3	
1721:	1	2	0	0	2	1	0	1	
1729:	2	5	2	3	0	1	1	2	
1737:	0	0	1	1	0	0	0	0	
1745:	0	3	0	1	1	1	1	0	
1753:	2	1	0	0	0	0	0	3	
1761:	0	1	7	18	9	5	1	1	
1769:	0	0	1	2	1	1	0	0	
1777:	0	0	1	0	0	2	1	2	
1785:	4	0	1	0	1	0	1	0	
1793:	1	1	1	0	1	0	1	0	
1801:	2	2	2	2	0	1	0	0	
1809:	1	1	0	0	3	0	0	2	
1817:	1	1	0	2	0	2	1	1	
1825:	0	0	0	1	0	0	0	2	
1833:	1	0	0	0	2	1	2	4	
1841:	1	2	0	2	1	1	3	5	
1849:	1	0	0	0	0	0	0	0	
1857:	1	0	1	0	1	0	1	0	
1865:	1	0	2	0	1	0	0	2	
1873:	0	2	1	0	0	0	1	1	
1881:	4	1	1	2	0	0	2	0	
1889:	3	1	0	0	0	5	0	1	
1897:	0	1	2	1	0	0	0	0	
1905:	0	0	0	1	2	0	1	1	
1913:	0	1	2	0	4	1	1	1	
1921:	2	0	2	1	0	0	1	1	
1929:	1	3	1	0	0	0	0	0	
1937:	1	1	2	0	1	0	0	0	
1945:	0	1	1	1	0	2	2	1	
1953:	2	0	1	1	2	0	3	1	
1961:	1	1	0	1	0	1	0	0	
1969:	1	0	0	1	0	0	0	0	
1977:	1	1	0	0	0	1	1	1	
1985:	0	0	1	1	1	0	1	0	
1993:	0	1	0	0	0	0	1	0	
2001:	0	0	0	3	1	1	0	2	
2009:	0	0	1	0	0	0	1	1	
2017:	1	0	1	0	0	2	0	1	
2025:	1	0	1	1	0	1	0	0	
2033:	0	1	1	1	0	1	1	3	
2041:	1	1	0	0	1	1	0	0	
2049:	2	1	0	0	0	0	1	0	
2057:	1	1	0	3	1	2	1	1	
2065:	1	0	1	0	0	0	1	0	
2073:	2	0	2	1	2	1	1	0	
2081:	1	0	0	2	0	0	0	1	
2089:	2	1	0	0	0	0	0	0	

2097: 0 0 1 0 1 0 3 3

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

2529: 2 0 0 0 2 0 0 0

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Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	1	0	0	0	0	0	0
2545:	0	0	1	0	0	2	0	0	0
2553:	0	0	0	0	0	0	0	1	1
2561:	1	0	0	1	0	0	1	0	0
2569:	0	0	0	1	0	1	0	0	0
2577:	0	0	0	0	0	0	0	1	1
2585:	1	0	0	1	0	0	0	1	1
2593:	1	0	0	0	0	0	1	1	1
2601:	0	0	0	0	0	1	2	1	1
2609:	0	0	1	2	13	15	16	6	6
2617:	0	0	1	0	0	0	1	0	0
2625:	0	0	0	0	1	0	1	0	0
2633:	0	0	0	0	0	0	0	1	1
2641:	1	0	0	0	0	0	1	0	0
2649:	0	0	0	0	1	0	0	0	0
2657:	0	1	0	0	0	0	0	1	1
2665:	0	1	1	0	0	1	0	0	0
2673:	0	1	0	0	1	1	0	0	0
2681:	0	1	0	0	0	1	0	1	1
2689:	0	1	0	0	0	0	0	0	0
2697:	0	1	0	1	0	0	0	0	0
2705:	0	1	0	0	0	0	1	0	0
2713:	1	0	1	0	1	0	0	0	0
2721:	0	0	1	0	1	0	0	0	0
2729:	0	0	0	0	0	1	0	0	0
2737:	1	1	0	0	1	0	0	0	0
2745:	0	0	0	0	1	1	0	0	0
2753:	1	0	0	0	0	0	2	0	0
2761:	0	0	1	0	0	0	0	0	0
2769:	0	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0	0
2785:	0	1	1	0	0	0	0	0	0
2793:	0	0	1	0	0	0	0	0	0
2801:	0	0	1	1	0	0	0	0	0
2809:	0	1	0	0	0	0	0	0	0
2817:	0	0	0	1	0	0	0	0	0
2825:	0	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	1	1	0	0
2841:	0	0	0	0	0	2	0	0	0
2849:	0	0	0	1	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	1	1	0	0
2873:	0	1	0	0	0	0	0	1	1
2881:	0	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	1	0	0	0
2897:	0	2	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	1	1
2913:	1	0	0	0	1	0	0	0	0
2921:	0	1	1	0	0	0	0	0	0
2929:	0	0	0	0	1	0	1	0	0
2937:	0	0	0	0	0	0	0	0	0
2945:	0	1	0	0	2	1	0	0	0
2953:	0	0	0	0	0	0	1	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	0	0	1
2977:	0	0	1	0	0	0	0	1
2985:	0	0	0	0	0	0	3	0
2993:	0	1	0	0	0	0	0	1
3001:	0	0	1	0	0	0	0	0
3009:	0	0	0	0	1	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	1	0	1	0	0	0	1	0
3033:	0	0	0	1	0	0	0	0
3041:	0	0	0	0	0	1	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	1	0	0
3065:	0	0	0	1	0	0	0	0
3073:	1	0	0	0	0	0	1	0
3081:	1	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	0	0	1	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	1	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	1	0	0	0	1	0	0
3153:	0	0	0	1	0	0	0	0
3161:	1	1	0	0	2	0	0	0
3169:	0	0	1	0	0	1	0	0
3177:	1	0	1	0	1	0	0	0
3185:	0	0	0	0	1	0	0	0
3193:	0	0	1	0	0	0	1	0
3201:	0	0	0	0	0	1	0	0
3209:	0	0	0	1	0	0	1	0
3217:	0	0	0	0	0	1	0	1
3225:	0	2	1	0	0	0	0	0
3233:	0	0	0	0	0	0	1	0
3241:	0	0	0	1	0	0	0	0
3249:	1	1	0	1	0	0	0	0
3257:	0	1	0	0	1	0	2	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	1	0	0	0	1	1
3289:	0	0	1	1	1	0	0	0
3297:	1	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	1	1
3313:	0	1	0	0	0	0	0	1
3321:	0	1	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	1	0	0	1	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	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	1	0	0
3385:	0	0	0	0	0	0	0	1

3393: 1 0 0 0 0 0 0 0

Sample Title: CP-5022 00-02

Channel	-----	-----	-----	-----	-----	-----	-----
3401:	1	0	0	0	1	0	1
3409:	0	0	1	0	0	0	0
3417:	0	0	0	0	0	1	0
3425:	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0
3449:	0	0	1	1	0	0	0
3457:	0	0	0	0	0	0	0
3465:	1	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0
3489:	2	0	0	0	0	0	1
3497:	0	0	1	0	0	0	0
3505:	0	0	1	0	0	0	0
3513:	0	0	0	1	0	0	0
3521:	0	0	0	0	0	0	0
3529:	0	1	0	0	0	0	0
3537:	1	0	0	0	0	0	0
3545:	0	0	0	0	1	0	0
3553:	0	0	0	0	0	0	0
3561:	0	0	0	0	0	1	1
3569:	0	0	0	0	1	0	0
3577:	0	0	0	0	1	0	0
3585:	0	0	0	0	0	1	0
3593:	0	0	0	0	0	0	0
3601:	0	0	0	0	0	1	0
3609:	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	1
3633:	0	0	1	0	0	0	0
3641:	0	0	0	0	1	1	0
3649:	0	0	0	0	0	0	0
3657:	0	1	0	0	0	0	0
3665:	0	1	0	0	0	1	0
3673:	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0
3689:	0	0	1	0	0	0	0
3697:	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0
3713:	0	1	0	0	0	0	0
3721:	1	1	1	0	0	0	0
3729:	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0
3745:	0	0	0	0	1	0	0
3753:	0	0	0	1	0	0	0
3761:	0	0	0	0	0	0	1
3769:	0	0	0	0	0	0	0
3777:	0	0	0	1	0	0	0
3785:	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0
3801:	0	0	0	0	0	1	0
3809:	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0

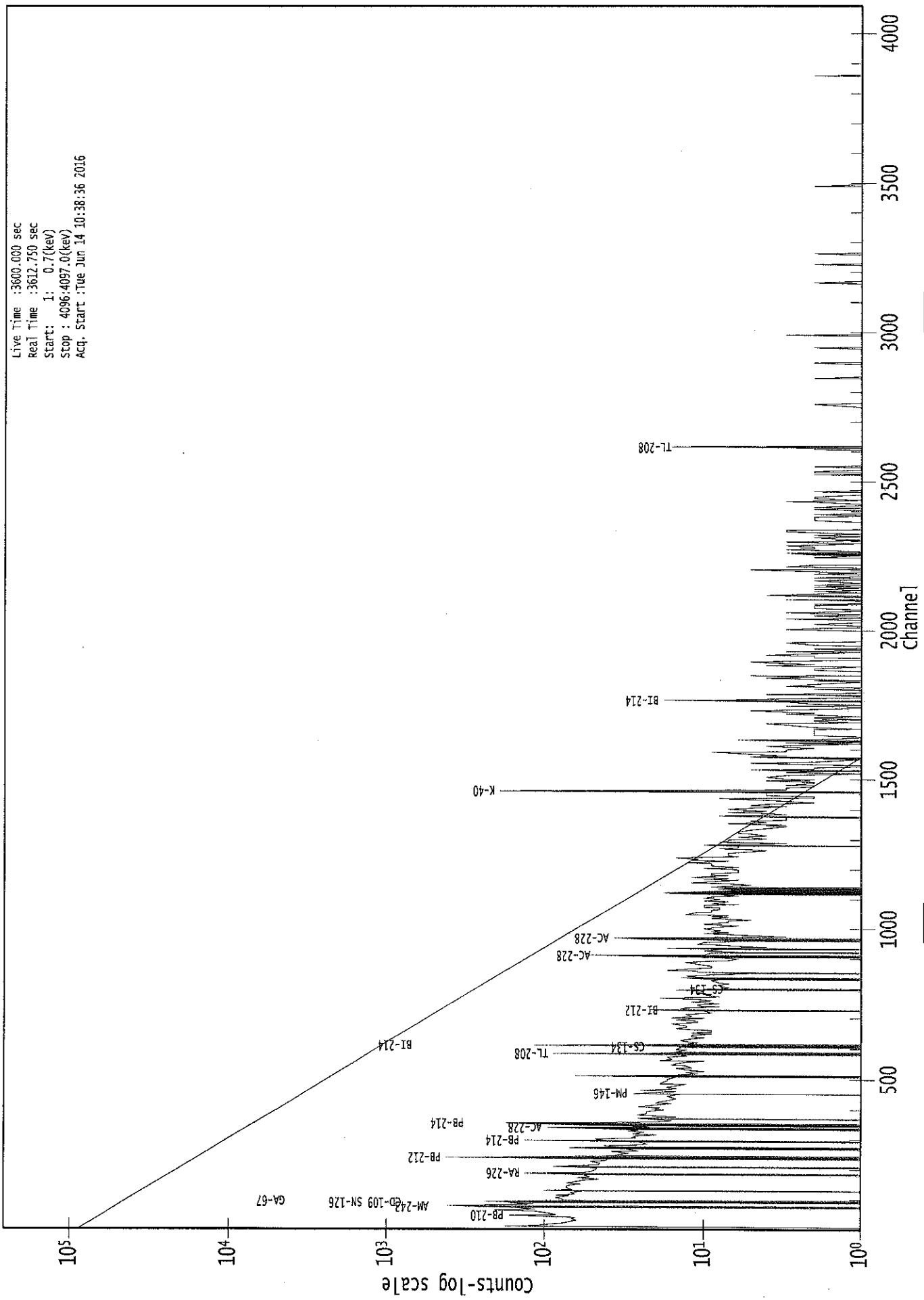
3825: 0 1 0 0 0 0 0 0 0

Sample Title: CP-5022 00-02

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	2	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	1	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	1	0	0	1	0
3913:	0	0	0	0	0	0	0	0
3921:	1	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	1	0	0	0	1	0
3945:	0	0	1	0	1	0	0	1
3953:	0	0	1	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	1	0	0	0	0	0	0	0
3977:	0	1	0	0	1	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	0	0
4009:	0	1	0	0	0	0	0	0
4017:	1	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	1	1	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	1	0
4065:	0	0	1	0	0	1	0	1
4073:	1	0	0	0	1	0	0	1
4081:	0	0	0	0	0	0	0	1
4089:	0	0	0	0	0	1	0	0

0000038816.CNF

Live Time :3600.000 sec
Real Time :3612.750 sec
Start: 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start :Tue Jun 14 10:38:36 2016



AG
6/14/16Analysis Report for 1606038-13
CP 5022 02-05

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-13
Sample Description : CP 5022 02-05
Sample Type : SOIL

Sample Size : 4.840E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 8:18:21AM
Acquisition Started : 6/14/2016 11:38:49AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
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) : 7 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 4/6/2016
Efficiency Calibration Description :

Sample Number : 38822

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

: 00737

Analysis Report for 1606038-13
CP 5022 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 12:38:53PM
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	12.75	12.87	0.0000	0.00
2	63.56	63.66	0.0000	0.00
3	73.01	73.10	0.0000	0.00
4	76.81	76.90	0.0000	0.00
5	87.25	87.33	0.0000	0.00
6	93.00	93.08	0.0000	0.00
7	128.92	128.97	0.0000	0.00
8	185.64	185.66	0.0000	0.00
9	209.43	209.44	0.0000	0.00
10	236.00	236.00	0.0000	0.00
11	241.00	241.00	0.0000	0.00
12	278.29	278.26	0.0000	0.00
13	295.20	295.17	0.0000	0.00
14	299.95	299.92	0.0000	0.00
15	327.39	327.34	0.0000	0.00
16	338.25	338.20	0.0000	0.00
17	351.85	351.79	0.0000	0.00
18	462.87	462.75	0.0000	0.00
19	510.46	510.31	0.0000	0.00
20	580.30	580.12	0.0000	0.00
21	583.28	583.10	0.0000	0.00
22	609.34	609.14	0.0000	0.00
23	691.08	690.85	0.0000	0.00
24	699.91	699.68	0.0000	0.00
25	727.16	726.91	0.0000	0.00
26	829.26	828.97	0.0000	0.00
27	838.59	838.30	0.0000	0.00
28	860.44	860.14	0.0000	0.00
29	866.31	866.00	0.0000	0.00
30	911.37	911.04	0.0000	0.00
31	963.85	963.50	0.0000	0.00
32	969.51	969.16	0.0000	0.00
33	1048.50	1048.12	0.0000	0.00
34	1111.53	1111.12	0.0000	0.00
35	1120.21	1119.80	0.0000	0.00
36	1153.74	1153.32	0.0000	0.00
37	1229.86	1229.41	0.0000	0.00
38	1237.95	1237.50	0.0000	0.00
39	1294.76	1294.29	0.0000	0.00
40	1347.29	1346.80	0.0000	0.00
41	1373.73	1373.24	0.0000	0.00
42	1460.87	1460.35	0.0000	0.00

Analysis Report for 1606038-13
CP 5022 02-05

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1484.31	1483.78	0.0000	0.00
44	1510.20	1509.66	0.0000	0.00
45	1590.88	1590.32	0.0000	0.00
46	1729.56	1728.97	0.0000	0.00
47	1735.72	1735.13	0.0000	0.00
48	1764.21	1763.61	0.0000	0.00
49	1840.77	1840.14	0.0000	0.00
50	1933.79	1933.15	0.0000	0.00
51	1997.66	1997.00	0.0000	0.00
52	2103.25	2102.58	0.0000	0.00
53	2118.20	2117.52	0.0000	0.00
54	2153.40	2152.71	0.0000	0.00
55	2204.39	2203.70	0.0000	0.00
56	2262.93	2262.22	0.0000	0.00
57	2446.61	2445.89	0.0000	0.00
58	2614.61	2613.87	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1606038-13

CP 5022 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 12:38:53PM

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	12.75	12 -	16	12.87	1.76E+03	136.85	2.01E+03	1.08
2	63.56	61 -	66	63.66	1.59E+02	80.50	1.17E+03	1.96
M 3	73.01	71 -	80	73.10	5.23E+01	48.52	6.40E+02	1.10
m 4	76.81	71 -	80	76.90	5.86E+02	74.26	5.78E+02	1.10
5	87.25	83 -	91	87.33	1.65E+02	62.51	8.03E+02	1.34
6	93.00	91 -	96	93.08	2.01E+02	79.27	1.03E+03	1.14
7	128.92	126 -	131	128.97	6.13E+01	62.42	7.27E+02	1.03
8	185.64	182 -	189	185.66	2.21E+02	73.38	7.46E+02	1.16
9	209.43	206 -	212	209.44	4.91E+01	59.05	5.92E+02	1.56
M 10	236.00	233 -	246	236.00	4.41E+01	34.58	2.52E+02	1.28
m 11	241.00	233 -	246	241.00	1.25E+02	59.13	2.27E+02	1.29
12	278.29	275 -	281	278.26	3.81E+01	46.42	3.52E+02	1.42
13	295.20	291 -	298	295.17	2.01E+02	55.46	3.75E+02	1.28
14	299.95	299 -	303	299.92	2.91E+01	36.02	2.72E+02	1.25
15	327.39	323 -	330	327.34	7.93E+01	45.48	2.91E+02	1.11
16	338.25	334 -	342	338.20	1.57E+02	54.03	3.56E+02	1.54
17	351.85	348 -	355	351.79	3.82E+02	59.50	3.34E+02	1.33
18	462.87	460 -	465	462.75	4.98E+01	28.74	1.24E+02	1.26
19	510.46	505 -	516	510.31	1.37E+02	53.48	2.91E+02	2.04
M 20	580.30	579 -	587	580.12	1.33E+01	13.76	4.22E+01	2.97
m 21	583.28	579 -	587	583.10	2.94E+02	37.70	7.30E+01	1.66
22	609.34	605 -	612	609.14	2.92E+02	44.00	1.28E+02	1.37
23	691.08	686 -	694	690.85	3.78E+01	30.97	1.20E+02	5.01
24	699.91	696 -	704	699.68	4.69E+01	30.24	1.10E+02	5.85
25	727.16	722 -	729	726.91	5.83E+01	30.13	1.13E+02	1.67
26	829.26	825 -	833	828.97	2.22E+01	25.63	8.16E+01	1.99
27	838.59	833 -	844	838.30	5.05E+01	27.86	7.09E+01	8.74
M 28	860.44	857 -	869	860.14	3.43E+01	19.65	6.22E+01	2.10
m 29	866.31	857 -	869	866.00	1.72E+01	18.71	4.41E+01	1.92
30	911.37	908 -	915	911.04	1.73E+02	32.19	5.94E+01	1.52
31	963.85	959 -	966	963.50	4.23E+01	24.90	7.35E+01	1.67
32	969.51	966 -	973	969.16	6.81E+01	36.50	1.70E+02	1.43
33	1048.50	1046 -	1051	1048.12	1.70E+01	15.91	3.40E+01	3.32
34	1111.53	1107 -	1117	1111.12	3.03E+01	27.24	8.34E+01	4.25
35	1120.21	1117 -	1123	1119.80	5.01E+01	24.68	7.58E+01	1.68
36	1153.74	1149 -	1157	1153.32	3.90E+01	24.41	6.81E+01	3.73
37	1229.86	1227 -	1233	1229.41	2.22E+01	21.08	6.76E+01	3.79
38	1237.95	1234 -	1240	1237.50	3.19E+01	25.43	9.41E+01	1.42
39	1294.76	1291 -	1298	1294.29	1.97E+01	18.55	4.47E+01	3.98
40	1347.29	1335 -	1359	1346.80	2.97E+01	37.12	8.27E+01	19.87

: 00740

Analysis Report for 1606038-13

CP 5022 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1373.73	1366 -	1380	1373.24	4.10E+01	21.19	3.00E+01	8.25
42	1460.87	1454 -	1466	1460.35	6.31E+02	51.87	1.93E+01	2.21
43	1484.31	1480 -	1486	1483.78	1.07E+01	10.04	1.06E+01	2.48
44	1510.20	1502 -	1516	1509.66	2.81E+01	15.89	1.38E+01	3.33
45	1590.88	1584 -	1597	1590.32	3.20E+01	17.75	2.01E+01	8.94
46	1729.56	1726 -	1731	1728.97	1.26E+01	8.06	2.79E+00	2.49
47	1735.72	1733 -	1738	1735.13	5.14E+00	6.08	3.71E+00	2.97
48	1764.21	1760 -	1767	1763.61	3.28E+01	12.49	4.34E+00	2.37
49	1840.77	1837 -	1842	1840.14	6.00E+00	7.35	6.00E+00	1.28
50	1933.79	1929 -	1936	1933.15	6.00E+00	6.93	4.00E+00	3.33
51	1997.66	1993 -	2000	1997.00	8.00E+00	5.66	0.00E+00	1.16
52	2103.25	2098 -	2107	2102.58	1.59E+01	11.58	1.03E+01	4.24
53	2118.20	2113 -	2120	2117.52	5.88E+00	6.93	4.25E+00	3.02
54	2153.40	2149 -	2155	2152.71	7.00E+00	5.29	0.00E+00	2.74
55	2204.39	2199 -	2210	2203.70	9.62E+00	9.38	6.77E+00	2.69
56	2262.93	2257 -	2266	2262.22	8.54E+00	10.10	8.92E+00	3.27
57	2446.61	2440 -	2449	2445.89	6.33E+00	7.81	5.33E+00	1.91
58	2614.61	2608 -	2619	2613.87	8.23E+01	20.59	1.14E+01	1.93

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 : 6/14/2016 12:38:53PM

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	12 -	16	1.76E+03	136.85	2.01E+03	8.89E+01
	2	61 -	66	1.59E+02	80.50	1.17E+03	6.28E+01
M	3	71 -	80	5.23E+01	48.52	6.40E+02	4.16E+01
m	4	71 -	80	5.86E+02	74.26	5.78E+02	3.95E+01
m	5	83 -	91	1.65E+02	62.51	8.03E+02	4.66E+01
	6	91 -	96	2.01E+02	79.27	1.03E+03	6.09E+01
	7	126 -	131	6.13E+01	62.42	7.27E+02	4.97E+01
	8	182 -	189	2.21E+02	73.38	7.46E+02	5.51E+01
	9	206 -	212	4.91E+01	59.05	5.92E+02	4.72E+01
M	10	233 -	246	4.41E+01	34.58	2.52E+02	2.61E+01

: 00741

Analysis Report for 1606038-13

CP 5022 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	11	241.00	233 -	246	1.25E+02	59.13	2.27E+02	2.48E+01
	12	278.29	275 -	281	3.81E+01	46.42	3.52E+02	3.68E+01
	13	295.20	291 -	298	2.01E+02	55.46	3.75E+02	3.92E+01
	14	299.95	299 -	303	2.91E+01	36.02	2.72E+02	2.83E+01
	15	327.39	323 -	330	7.93E+01	45.48	2.91E+02	3.44E+01
	16	338.25	334 -	342	1.57E+02	54.03	3.56E+02	3.93E+01
	17	351.85	348 -	355	3.82E+02	59.50	3.34E+02	3.69E+01
	18	462.87	460 -	465	4.98E+01	28.74	1.24E+02	2.06E+01
	19	510.46	505 -	516	1.37E+02	53.48	2.91E+02	1.32E+01
M	20	580.30	579 -	587	1.33E+01	13.76	4.22E+01	1.07E+01
m	21	583.28	579 -	587	2.94E+02	37.70	7.30E+01	1.40E+01
	22	609.34	605 -	612	2.92E+02	44.00	1.28E+02	2.28E+01
	23	691.08	686 -	694	3.78E+01	30.97	1.20E+02	2.34E+01
	24	699.91	696 -	704	4.69E+01	30.24	1.10E+02	2.22E+01
	25	727.16	722 -	729	5.83E+01	30.13	1.13E+02	2.14E+01
	26	829.26	825 -	833	2.22E+01	25.63	8.16E+01	1.96E+01
	27	838.59	833 -	844	5.05E+01	27.86	7.09E+01	1.97E+01
M	28	860.44	857 -	869	3.43E+01	19.65	6.22E+01	1.30E+01
m	29	866.31	857 -	869	1.72E+01	18.71	4.41E+01	1.09E+01
	30	911.37	908 -	915	1.73E+02	32.19	5.94E+01	1.52E+01
	31	963.85	959 -	966	4.23E+01	24.90	7.35E+01	1.75E+01
	32	969.51	966 -	973	6.81E+01	36.50	1.70E+02	2.68E+01
	33	1048.50	1046 -	1051	1.70E+01	15.91	3.40E+01	1.12E+01
	34	1111.53	1107 -	1117	3.03E+01	27.24	8.34E+01	2.05E+01
	35	1120.21	1117 -	1123	5.01E+01	24.68	7.58E+01	1.66E+01
	36	1153.74	1149 -	1157	3.90E+01	24.41	6.81E+01	1.72E+01
	37	1229.86	1227 -	1233	2.22E+01	21.08	6.76E+01	1.55E+01
	38	1237.95	1234 -	1240	3.19E+01	25.43	9.41E+01	1.87E+01
	39	1294.76	1291 -	1298	1.97E+01	18.55	4.47E+01	1.34E+01
	40	1347.29	1335 -	1359	2.97E+01	37.12	8.27E+01	9.70E+00
	41	1373.73	1366 -	1380	4.10E+01	21.19	3.00E+01	1.39E+01
	42	1460.87	1454 -	1466	6.31E+02	51.87	1.93E+01	1.06E+01
	43	1484.31	1480 -	1486	1.07E+01	10.04	1.06E+01	6.26E+00
	44	1510.20	1502 -	1516	2.81E+01	15.89	1.38E+01	9.73E+00
	45	1590.88	1584 -	1597	3.20E+01	17.75	2.01E+01	1.12E+01
	46	1729.56	1726 -	1731	1.26E+01	8.06	2.79E+00	3.14E+00
	47	1735.72	1733 -	1738	5.14E+00	6.08	3.71E+00	3.33E+00
	48	1764.21	1760 -	1767	3.28E+01	12.49	4.34E+00	4.08E+00
	49	1840.77	1837 -	1842	6.00E+00	7.35	6.00E+00	4.50E+00
	50	1933.79	1929 -	1936	6.00E+00	6.93	4.00E+00	4.03E+00
	51	1997.66	1993 -	2000	8.00E+00	5.66	0.00E+00	0.00E+00
	52	2103.25	2098 -	2107	1.59E+01	11.58	1.03E+01	6.91E+00
	53	2118.20	2113 -	2120	5.88E+00	6.93	4.25E+00	4.07E+00
	54	2153.40	2149 -	2155	7.00E+00	5.29	0.00E+00	0.00E+00
	55	2204.39	2199 -	2210	9.62E+00	9.38	6.77E+00	5.79E+00
	56	2262.93	2257 -	2266	8.54E+00	10.10	8.92E+00	6.77E+00
	57	2446.61	2440 -	2449	6.33E+00	7.81	5.33E+00	4.91E+00
	58	2614.61	2608 -	2619	8.23E+01	20.59	1.14E+01	8.00E+00

Analysis Report for 1606038-13
CP 5022 02-05

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 : 6/14/2016 12:38:53PM

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	12.75	12 -	16	12.87	1.76E+03	136.85	2.01E+03	.....
2	63.56	61 -	66	63.66	1.59E+02	80.50	1.17E+03	TH-234
M 3	73.01	71 -	80	73.10	5.23E+01	48.52	6.40E+02	TH-230
m 4	76.81	71 -	80	76.90	5.86E+02	74.26	5.78E+02	PM-145
m 5	87.25	83 -	91	87.33	1.65E+02	62.51	8.03E+02	.....
6	93.00	91 -	96	93.08	2.01E+02	79.27	1.03E+03	SN-126
7	128.92	126 -	131	128.97	6.13E+01	62.42	7.27E+02	NP-237
8	185.64	182 -	189	185.66	2.21E+02	73.38	7.46E+02	EU-155
9	209.43	206 -	212	209.44	4.91E+01	59.05	5.92E+02	CD-109
M 10	236.00	233 -	246	236.00	4.41E+01	34.58	2.52E+02	GA-67
m 11	241.00	233 -	246	241.00	1.25E+02	59.13	2.27E+02	TH-227
12	278.29	275 -	281	278.26	3.81E+01	46.42	3.52E+02	NB-95M
13	295.20	291 -	298	295.17	2.01E+02	55.46	3.75E+02	RA-224
14	299.95	299 -	303	299.92	2.91E+01	36.02	2.72E+02	CM-243
15	327.39	323 -	330	327.34	7.93E+01	45.48	2.91E+02	NP-239
16	338.25	334 -	342	338.20	1.57E+02	54.03	3.56E+02	HG-203
17	351.85	348 -	355	351.79	3.82E+02	59.50	3.34E+02	PB-214
18	462.87	460 -	465	462.75	4.98E+01	28.74	1.24E+02	SB-125
19	510.46	505 -	516	510.31	1.37E+02	53.48	2.91E+02	.....
M 20	580.30	579 -	587	580.12	1.33E+01	13.76	4.22E+01	BI-210M
								PB-212
								GA-67
							
								AC-228
								PB-214
								SB-125
							
							

Analysis Report for 1606038-13

CP 5022 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	21	583.28	579 -	587	583.10	2.94E+02	37.70	7.30E+01	TL-208
	22	609.34	605 -	612	609.14	2.92E+02	44.00	1.28E+02	BI-214
	23	691.08	686 -	694	690.85	3.78E+01	30.97	1.20E+02	.....
	24	699.91	696 -	704	699.68	4.69E+01	30.24	1.10E+02	.....
	25	727.16	722 -	729	726.91	5.83E+01	30.13	1.13E+02	BI-212
	26	829.26	825 -	833	828.97	2.22E+01	25.63	8.16E+01	.....
	27	838.59	833 -	844	838.30	5.05E+01	27.86	7.09E+01	.....
M	28	860.44	857 -	869	860.14	3.43E+01	19.65	6.22E+01	TL-208
m	29	866.31	857 -	869	866.00	1.72E+01	18.71	4.41E+01	.....
	30	911.37	908 -	915	911.04	1.73E+02	32.19	5.94E+01	AC-228 LU-172
	31	963.85	959 -	966	963.50	4.23E+01	24.90	7.35E+01	EU-152
	32	969.51	966 -	973	969.16	6.81E+01	36.50	1.70E+02	AC-228
	33	1048.50	1046 -	1051	1048.12	1.70E+01	15.91	3.40E+01	CS-136
	34	1111.53	1107 -	1117	1111.12	3.03E+01	27.24	8.34E+01	EU-152
	35	1120.21	1117 -	1123	1119.80	5.01E+01	24.68	7.58E+01	BI-214 SC-46
	36	1153.74	1149 -	1157	1153.32	3.90E+01	24.41	6.81E+01	EU-156
	37	1229.86	1227 -	1233	1229.41	2.22E+01	21.08	6.76E+01	EU-156
	38	1237.95	1234 -	1240	1237.50	3.19E+01	25.43	9.41E+01	CO-56
	39	1294.76	1291 -	1298	1294.29	1.97E+01	18.55	4.47E+01	.....
	40	1347.29	1335 -	1359	1346.80	2.97E+01	37.12	8.27E+01	.....
	41	1373.73	1366 -	1380	1373.24	4.10E+01	21.19	3.00E+01	.....
	42	1460.87	1454 -	1466	1460.35	6.31E+02	51.87	1.93E+01	K-40
	43	1484.31	1480 -	1486	1483.78	1.07E+01	10.04	1.06E+01	.....
	44	1510.20	1502 -	1516	1509.66	2.81E+01	15.89	1.38E+01	.....
	45	1590.88	1584 -	1597	1590.32	3.20E+01	17.75	2.01E+01	.....
	46	1729.56	1726 -	1731	1728.97	1.26E+01	8.06	2.79E+00	.....
	47	1735.72	1733 -	1738	1735.13	5.14E+00	6.08	3.71E+00	.....
	48	1764.21	1760 -	1767	1763.61	3.28E+01	12.49	4.34E+00	BI-214
	49	1840.77	1837 -	1842	1840.14	6.00E+00	7.35	6.00E+00	.....
	50	1933.79	1929 -	1936	1933.15	6.00E+00	6.93	4.00E+00	.....
	51	1997.66	1993 -	2000	1997.00	8.00E+00	5.66	0.00E+00	.....
	52	2103.25	2098 -	2107	2102.58	1.59E+01	11.58	1.03E+01	.....
	53	2118.20	2113 -	2120	2117.52	5.88E+00	6.93	4.25E+00	.....
	54	2153.40	2149 -	2155	2152.71	7.00E+00	5.29	0.00E+00	.....
	55	2204.39	2199 -	2210	2203.70	9.62E+00	9.38	6.77E+00	BI-214
	56	2262.93	2257 -	2266	2262.22	8.54E+00	10.10	8.92E+00	.....
	57	2446.61	2440 -	2449	2445.89	6.33E+00	7.81	5.33E+00	.....
	58	2614.61	2608 -	2619	2613.87	8.23E+01	20.59	1.14E+01	TL-208

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606038-13
CP 5022 02-05

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/14/2016 12:38:53PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	12.75	1.76E+03	136.85	9.92E-06	1.66E-03
	2	63.56	1.59E+02	80.50	2.37E-02	1.75E-03
M	3	73.01	5.23E+01	48.52	2.53E-02	1.95E-03
m	4	76.81	5.86E+02	74.26	2.57E-02	2.03E-03
m	5	87.25	1.65E+02	62.51	2.60E-02	2.26E-03
	6	93.00	2.01E+02	79.27	2.60E-02	2.27E-03
	7	128.92	6.13E+01	62.42	2.39E-02	2.29E-03
	8	185.64	2.21E+02	73.38	1.99E-02	2.40E-03
	9	209.43	4.91E+01	59.05	1.85E-02	2.36E-03
M	10	236.00	4.41E+01	34.58	1.71E-02	2.32E-03
m	11	241.00	1.25E+02	59.13	1.69E-02	2.31E-03
	12	278.29	3.81E+01	46.42	1.53E-02	2.24E-03
	13	295.20	2.01E+02	55.46	1.47E-02	2.21E-03
	14	299.95	2.91E+01	36.02	1.46E-02	2.21E-03
	15	327.39	7.93E+01	45.48	1.37E-02	2.16E-03
	16	338.25	1.57E+02	54.03	1.34E-02	2.14E-03
	17	351.85	3.82E+02	59.50	1.30E-02	2.12E-03
	18	462.87	4.98E+01	28.74	1.06E-02	1.68E-03
	19	510.46	1.37E+02	53.48	9.77E-03	1.43E-03
M	20	580.30	1.33E+01	13.76	8.83E-03	1.07E-03
m	21	583.28	2.94E+02	37.70	8.79E-03	1.06E-03
	22	609.34	2.92E+02	44.00	8.48E-03	9.23E-04
	23	691.08	3.78E+01	30.97	7.66E-03	6.90E-04
	24	699.91	4.69E+01	30.24	7.58E-03	7.01E-04
	25	727.16	5.83E+01	30.13	7.34E-03	7.36E-04
	26	829.26	2.22E+01	25.63	6.59E-03	8.67E-04
	27	838.59	5.05E+01	27.86	6.53E-03	8.79E-04
M	28	860.44	3.43E+01	19.65	6.39E-03	9.07E-04
m	29	866.31	1.72E+01	18.71	6.35E-03	9.15E-04
	30	911.37	1.73E+02	32.19	6.09E-03	9.28E-04
	31	963.85	4.23E+01	24.90	5.82E-03	8.22E-04
	32	969.51	6.81E+01	36.50	5.79E-03	8.11E-04
	33	1048.50	1.70E+01	15.91	5.43E-03	6.51E-04
	34	1111.53	3.03E+01	27.24	5.19E-03	5.24E-04
	35	1120.21	5.01E+01	24.68	5.15E-03	5.06E-04
	36	1153.74	3.90E+01	24.41	5.04E-03	4.38E-04
	37	1229.86	2.22E+01	21.08	4.79E-03	3.86E-04
	38	1237.95	3.19E+01	25.43	4.77E-03	3.84E-04
	39	1294.76	1.97E+01	18.55	4.61E-03	3.71E-04
	40	1347.29	2.97E+01	37.12	4.48E-03	3.64E-04
	41	1373.73	4.10E+01	21.19	4.42E-03	3.66E-04
	42	1460.87	6.31E+02	51.87	4.23E-03	3.72E-04
	43	1484.31	1.07E+01	10.04	4.19E-03	3.74E-04
	44	1510.20	2.81E+01	15.89	4.14E-03	3.76E-04
	45	1590.88	3.20E+01	17.75	4.00E-03	3.82E-04

Analysis Report for 1606038-13
CP 5022 02-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
46	1729.56	1.26E+01	8.06	3.81E-03	3.93E-04
47	1735.72	5.14E+00	6.08	3.81E-03	3.93E-04
48	1764.21	3.28E+01	12.49	3.77E-03	3.95E-04
49	1840.77	6.00E+00	7.35	3.69E-03	4.01E-04
50	1933.79	6.00E+00	6.93	3.61E-03	4.01E-04
51	1997.66	8.00E+00	5.66	3.56E-03	4.01E-04
52	2103.25	1.59E+01	11.58	3.50E-03	4.01E-04
53	2118.20	5.88E+00	6.93	3.49E-03	4.01E-04
54	2153.40	7.00E+00	5.29	3.48E-03	4.01E-04
55	2204.39	9.62E+00	9.38	3.45E-03	4.01E-04
56	2262.93	8.54E+00	10.10	3.43E-03	4.01E-04
57	2446.61	6.33E+00	7.81	3.40E-03	4.01E-04
58	2614.61	8.23E+01	20.59	3.40E-03	4.01E-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 : 6/14/2016 12:38:53PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037620.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	12.75	1.76E+03	136.85	8.66E+02	3.93E+01	8.94E+02	1.42E+02
2	63.56	1.59E+02	80.50	3.21E+01	5.65E+00	1.27E+02	8.07E+01
M	3	73.01	5.23E+01	48.52		5.23E+01	4.85E+01
m	4	76.81	5.86E+02	74.26		5.86E+02	7.43E+01
m	5	87.25	1.65E+02	62.51		1.65E+02	6.25E+01
6	93.00	2.01E+02	79.27	5.23E+01	6.82E+00	1.49E+02	7.96E+01
7	128.92	6.13E+01	62.42			6.13E+01	6.24E+01
8	185.64	2.21E+02	73.38	2.52E+01	6.98E+00	1.96E+02	7.37E+01
9	209.43	4.91E+01	59.05			4.91E+01	5.91E+01
M	10	236.00	4.41E+01	34.58		4.41E+01	3.46E+01
m	11	241.00	1.25E+02	59.13		1.25E+02	5.91E+01
12	278.29	3.81E+01	46.42			3.81E+01	4.64E+01
13	295.20	2.01E+02	55.46	4.80E+00	5.42E+00	1.97E+02	5.57E+01
14	299.95	2.91E+01	36.02			2.91E+01	3.60E+01
15	327.39	7.93E+01	45.48			7.93E+01	4.55E+01
16	338.25	1.57E+02	54.03			1.57E+02	5.40E+01
17	351.85	3.82E+02	59.50	1.16E+01	4.76E+00	3.70E+02	5.97E+01

: 00746

Analysis Report for 1606038-13

CP 5022 02-05

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	18	462.87	4.98E+01	28.74			4.98E+01	2.87E+01
	19	510.46	1.37E+02	53.48	7.18E+01	4.99E+00	6.56E+01	5.37E+01
M	20	580.30	1.33E+01	13.76			1.33E+01	1.38E+01
m	21	583.28	2.94E+02	37.70			2.94E+02	3.77E+01
	22	609.34	2.92E+02	44.00	7.00E+00	3.58E+00	2.85E+02	4.41E+01
	23	691.08	3.78E+01	30.97			3.78E+01	3.10E+01
	24	699.91	4.69E+01	30.24			4.69E+01	3.02E+01
	25	727.16	5.83E+01	30.13			5.83E+01	3.01E+01
	26	829.26	2.22E+01	25.63			2.22E+01	2.56E+01
	27	838.59	5.05E+01	27.86			5.05E+01	2.79E+01
M	28	860.44	3.43E+01	19.65			3.43E+01	1.96E+01
m	29	866.31	1.72E+01	18.71			1.72E+01	1.87E+01
	30	911.37	1.73E+02	32.19	1.26E+00	2.67E+00	1.72E+02	3.23E+01
	31	963.85	4.23E+01	24.90			4.23E+01	2.49E+01
	32	969.51	6.81E+01	36.50			6.81E+01	3.65E+01
	33	1048.50	1.70E+01	15.91			1.70E+01	1.59E+01
	34	1111.53	3.03E+01	27.24			3.03E+01	2.72E+01
	35	1120.21	5.01E+01	24.68			5.01E+01	2.47E+01
	36	1153.74	3.90E+01	24.41			3.90E+01	2.44E+01
	37	1229.86	2.22E+01	21.08			2.22E+01	2.11E+01
	38	1237.95	3.19E+01	25.43			3.19E+01	2.54E+01
	39	1294.76	1.97E+01	18.55			1.97E+01	1.85E+01
	40	1347.29	2.97E+01	37.12			2.97E+01	3.71E+01
	41	1373.73	4.10E+01	21.19			4.10E+01	2.12E+01
	42	1460.87	6.31E+02	51.87	3.84E+00	1.88E+00	6.27E+02	5.19E+01
	43	1484.31	1.07E+01	10.04			1.07E+01	1.00E+01
	44	1510.20	2.81E+01	15.89			2.81E+01	1.59E+01
	45	1590.88	3.20E+01	17.75			3.20E+01	1.77E+01
	46	1729.56	1.26E+01	8.06			1.26E+01	8.06E+00
	47	1735.72	5.14E+00	6.08			5.14E+00	6.08E+00
	48	1764.21	3.28E+01	12.49	1.55E+00	1.49E+00	3.13E+01	1.26E+01
	49	1840.77	6.00E+00	7.35			6.00E+00	7.35E+00
	50	1933.79	6.00E+00	6.93			6.00E+00	6.93E+00
	51	1997.66	8.00E+00	5.66			8.00E+00	5.66E+00
	52	2103.25	1.59E+01	11.58			1.59E+01	1.16E+01
	53	2118.20	5.88E+00	6.93			5.88E+00	6.93E+00
	54	2153.40	7.00E+00	5.29			7.00E+00	5.29E+00
	55	2204.39	9.62E+00	9.38	5.23E-01	9.79E-01	9.09E+00	9.43E+00
	56	2262.93	8.54E+00	10.10			8.54E+00	1.01E+01
	57	2446.61	6.33E+00	7.81			6.33E+00	7.81E+00
	58	2614.61	8.23E+01	20.59	3.94E+00	1.42E+00	7.84E+01	2.06E+01

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

Analysis Report for 1606038-13

CP 5022 02-05

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/14/2016 12:38:53PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037620.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+03	136.85	8.66E+02	3.93E+01	8.94E+02	1.42E+02
	2	1.59E+02	80.50	3.21E+01	5.65E+00	1.27E+02	8.07E+01
M	3	5.23E+01	48.52			5.23E+01	4.85E+01
m	4	5.86E+02	74.26			5.86E+02	7.43E+01
m	5	1.65E+02	62.51			1.65E+02	6.25E+01
	6	2.01E+02	79.27	5.23E+01	6.82E+00	1.49E+02	7.96E+01
	7	6.13E+01	62.42			6.13E+01	6.24E+01
	8	2.21E+02	73.38	2.52E+01	6.98E+00	1.96E+02	7.37E+01
	9	4.91E+01	59.05			4.91E+01	5.91E+01
M	10	4.41E+01	34.58			4.41E+01	3.46E+01
m	11	1.25E+02	59.13			1.25E+02	5.91E+01
	12	3.81E+01	46.42			3.81E+01	4.64E+01
	13	2.01E+02	55.46	4.80E+00	5.42E+00	1.97E+02	5.57E+01
	14	2.91E+01	36.02			2.91E+01	3.60E+01
	15	7.93E+01	45.48			7.93E+01	4.55E+01
	16	1.57E+02	54.03			1.57E+02	5.40E+01
	17	3.82E+02	59.50	1.16E+01	4.76E+00	3.70E+02	5.97E+01
	18	4.98E+01	28.74			4.98E+01	2.87E+01
	19	1.37E+02	53.48	7.18E+01	4.99E+00	6.56E+01	5.37E+01
M	20	1.33E+01	13.76			1.33E+01	1.38E+01
m	21	2.94E+02	37.70			2.94E+02	3.77E+01
	22	2.92E+02	44.00	7.00E+00	3.58E+00	2.85E+02	4.41E+01
	23	3.78E+01	30.97			3.78E+01	3.10E+01
	24	4.69E+01	30.24			4.69E+01	3.02E+01
	25	5.83E+01	30.13			5.83E+01	3.01E+01
	26	829.26	25.63			2.22E+01	2.56E+01
	27	838.59	27.86			5.05E+01	2.79E+01
M	28	3.43E+01	19.65			3.43E+01	1.96E+01
m	29	1.72E+01	18.71			1.72E+01	1.87E+01
	30	1.73E+02	32.19	1.26E+00	2.67E+00	1.72E+02	3.23E+01
	31	4.23E+01	24.90			4.23E+01	2.49E+01
	32	6.81E+01	36.50			6.81E+01	3.65E+01
	33	1048.50	15.91			1.70E+01	1.59E+01
	34	1111.53	27.24			3.03E+01	2.72E+01
	35	1120.21	24.68			5.01E+01	2.47E+01
	36	1153.74	24.41			3.90E+01	2.44E+01
	37	1229.86	21.08			2.22E+01	2.11E+01
	38	1237.95	25.43			3.19E+01	2.54E+01
	39	1294.76	18.55			1.97E+01	1.85E+01
	40	1347.29	37.12			2.97E+01	3.71E+01
	41	1373.73	21.19			4.10E+01	2.12E+01

: 00748

Analysis Report for 1606038-13

CP 5022 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1460.87	6.31E+02	51.87	3.84E+00	1.88E+00	6.27E+02	5.19E+01
43	1484.31	1.07E+01	10.04			1.07E+01	1.00E+01
44	1510.20	2.81E+01	15.89			2.81E+01	1.59E+01
45	1590.88	3.20E+01	17.75			3.20E+01	1.77E+01
46	1729.56	1.26E+01	8.06			1.26E+01	8.06E+00
47	1735.72	5.14E+00	6.08			5.14E+00	6.08E+00
48	1764.21	3.28E+01	12.49	1.55E+00	1.49E+00	3.13E+01	1.26E+01
49	1840.77	6.00E+00	7.35			6.00E+00	7.35E+00
50	1933.79	6.00E+00	6.93			6.00E+00	6.93E+00
51	1997.66	8.00E+00	5.66			8.00E+00	5.66E+00
52	2103.25	1.59E+01	11.58			1.59E+01	1.16E+01
53	2118.20	5.88E+00	6.93			5.88E+00	6.93E+00
54	2153.40	7.00E+00	5.29			7.00E+00	5.29E+00
55	2204.39	9.62E+00	9.38	5.23E-01	9.79E-01	9.09E+00	9.43E+00
56	2262.93	8.54E+00	10.10			8.54E+00	1.01E+01
57	2446.61	6.33E+00	7.81			6.33E+00	7.81E+00
58	2614.61	8.23E+01	20.59	3.94E+00	1.42E+00	7.84E+01	2.06E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.999	1460.81 *	10.67	2.16E+01	2.64E+00
GA-67	0.919	93.31 *	35.70	3.29E+00	6.63E+00
		208.95 *	2.24	2.43E+01	4.85E+01
		300.22 *	16.00	2.57E+00	5.93E+00
NB-95M	0.930	235.69 *	25.00	1.65E+00	1.31E+00
CD-109	0.907	88.03 *	3.72	2.69E+00	1.06E+00
SN-126	0.984	87.57 *	37.00	2.65E-01	1.03E-01
EU-155	0.309	86.50 *	30.90	3.19E-01	1.24E-01
		105.30	20.70		
TL-208	0.998	583.14 *	30.22	1.72E+00	3.02E-01
		860.37 *	4.48	1.86E+00	1.10E+00
		2614.66 *	35.85	9.98E-01	2.88E-01
BI-212	0.766	727.17 *	11.80	1.04E+00	5.50E-01
		1620.62	2.75		

: 00749

Analysis Report for 1606038-13
CP 5022 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.997	609.31 *	46.30	1.13E+00	2.13E-01
		1120.29 *	15.10	9.99E-01	5.02E-01
		1764.49 *	15.80	8.14E-01	3.38E-01
		2204.22 *	4.98	8.20E-01	8.56E-01
PB-214	1.000	295.21 *	19.19	1.08E+00	3.46E-01
		351.92 *	37.19	1.19E+00	2.73E-01
RA-224	1.000	240.98 *	3.95	2.90E+00	1.43E+00
RA-226	0.949	186.21 *	3.28	4.65E+00	8.70E+00
AC-228	0.985	338.32 *	11.40	1.60E+00	6.07E-01
		911.07 *	27.70	1.58E+00	3.82E-01
		969.11 *	16.60	1.10E+00	6.09E-01
TH-234	0.988	63.29 *	3.80	2.19E+00	1.40E+00
NP-237	0.914	86.50 *	12.60	7.79E-01	3.03E-01
CM-243	0.335	209.75 *	3.29	1.25E+00	1.51E+00
		228.14	10.60		
		277.60 *	14.00	2.76E-01	3.38E-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 : 6/14/2016 12:38:53PM
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	12.75	2.48367E-01	7.96	
M	3	73.01	1.45309E-02	46.38	Tol. PM-145
m	4	76.81	1.62807E-01	6.34	
	7	128.92	1.70359E-02	50.89	
	15	327.39	2.20148E-02	28.69	Sum
	18	462.87	1.38393E-02	28.84	Tol. SB-125
	19	510.46	1.82350E-02	40.91	
M	20	580.30	3.68426E-03	51.86	
	23	691.08	1.04875E-02	41.01	Sum
	24	699.91	1.30310E-02	32.23	
	26	829.26	6.17284E-03	57.67	
	27	838.59	1.40407E-02	27.56	
m	29	866.31	4.77022E-03	54.47	

Analysis Report for 1606038-13
CP 5022 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
31	963.85	1.17370E-02	29.47	Sum	
33	1048.50	4.72222E-03	46.78	Tol.	CS-136
34	1111.53	8.41049E-03	44.98	Tol.	EU-152
36	1153.74	1.08219E-02	31.33	Tol.	EU-156
37	1229.86	6.16071E-03	47.53	Tol.	EU-156
38	1237.95	8.87131E-03	39.82		
39	1294.76	5.46296E-03	47.15		
40	1347.29	8.24139E-03	62.55		
41	1373.73	1.13889E-02	25.84		
43	1484.31	2.96875E-03	46.96		
44	1510.20	7.80952E-03	28.26		
45	1590.88	8.87897E-03	27.76		
46	1729.56	3.50198E-03	31.97	Sum	
47	1735.72	1.42857E-03	59.14		
49	1840.77	1.66667E-03	61.24		
50	1933.79	1.66667E-03	57.74		
51	1997.66	2.22222E-03	35.36		
52	2103.25	4.40476E-03	36.50	S-Esc	
53	2118.20	1.63194E-03	58.96		
54	2153.40	1.94444E-03	37.80		
56	2262.93	2.37180E-03	59.14		
57	2446.61	1.75926E-03	61.66		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	2.16E+01	2.64E+00
GA-67	0.91	93.31 *	35.70	3.29E+00	6.63E+00
		208.95 *	2.24	2.43E+01	4.85E+01
		300.22 *	16.00	2.57E+00	5.93E+00
NB-95M	0.93	235.69 *	25.00	1.65E+00	1.31E+00
CD-109	0.90	88.03 *	3.72	2.69E+00	1.06E+00

: 00751

Analysis Report for 1606038-13
CP 5022 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SN-126	0.98	87.57 *	37.00	2.65E-01	1.03E-01
EU-155	0.30	86.50 *	30.90	3.19E-01	1.24E-01
		105.30	20.70		
TL-208	0.99	583.14 *	30.22	1.72E+00	3.02E-01
		860.37 *	4.48	1.86E+00	1.10E+00
		2614.66 *	35.85	9.98E-01	2.88E-01
BI-212	0.76	727.17 *	11.80	1.04E+00	5.50E-01
		1620.62	2.75		
BI-214	0.99	609.31 *	46.30	1.13E+00	2.13E-01
		1120.29 *	15.10	9.99E-01	5.02E-01
		1764.49 *	15.80	8.14E-01	3.38E-01
		2204.22 *	4.98	8.20E-01	8.56E-01
PB-214	1.00	295.21 *	19.19	1.08E+00	3.46E-01
		351.92 *	37.19	1.19E+00	2.73E-01
RA-224	1.00	240.98 *	3.95	2.90E+00	1.43E+00
RA-226	0.94	186.21 *	3.28	4.65E+00	8.70E+00
AC-228	0.98	338.32 *	11.40	1.60E+00	6.07E-01
		911.07 *	27.70	1.58E+00	3.82E-01
		969.11 *	16.60	1.10E+00	6.09E-01
TH-234	0.98	63.29 *	3.80	2.19E+00	1.40E+00
NP-237	0.91	86.50 *	12.60	7.79E-01	3.03E-01
CM-243	0.33	209.75 *	3.29	1.25E+00	1.51E+00
		228.14	10.60		
		277.60 *	14.00	2.76E-01	3.38E-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	0.999	2.16E+01	2.64E+00	
GA-67	0.919	3.16E+00	5.24E+00	
NB-95M	0.930	1.65E+00	1.31E+00	

Analysis Report for 1606038-13
CP 5022 02-05

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
?	CD-109	0.907	2.69E+00	1.06E+00	
?	SN-126	0.984	2.65E-01	1.03E-01	
?	EU-155	0.309	3.19E-01	1.24E-01	
X	HG-203	0.878			
	TL-208	0.998	1.36E+00	2.05E-01	
	BI-212	0.766	1.04E+00	5.50E-01	
	BI-214	0.997	1.02E+00	1.66E-01	
	PB-214	1.000	1.15E+00	2.14E-01	
	RA-224	1.000	2.90E+00	1.43E+00	
	RA-226	0.949	4.65E+00	8.70E+00	
	AC-228	0.985	1.48E+00	2.86E-01	
	TH-234	0.988	2.19E+00	1.40E+00	
?	NP-237	0.914	7.79E-01	3.03E-01	
	CM-243	0.335	3.14E-01	3.30E-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 1606038-13
CP 5022 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 12:38:53PM
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	12.75	2.48367E-01	7.96	
M	3	73.01	1.45309E-02	46.38	Tol. PM-145
m	4	76.81	1.62807E-01	6.34	
	7	128.92	1.70359E-02	50.89	
	15	327.39	2.20148E-02	28.69	Sum
	18	462.87	1.38393E-02	28.84	Tol. SB-125
	19	510.46	1.82350E-02	40.91	
M	20	580.30	3.68426E-03	51.86	
	23	691.08	1.04875E-02	41.01	Sum
	24	699.91	1.30310E-02	32.23	
	26	829.26	6.17284E-03	57.67	
	27	838.59	1.40407E-02	27.56	
m	29	866.31	4.77022E-03	54.47	
	31	963.85	1.17370E-02	29.47	Sum
	33	1048.50	4.72222E-03	46.78	Tol. CS-136
	34	1111.53	8.41049E-03	44.98	Tol. EU-152
	36	1153.74	1.08219E-02	31.33	Tol. EU-156
	37	1229.86	6.16071E-03	47.53	Tol. EU-156
	38	1237.95	8.87131E-03	39.82	
	39	1294.76	5.46296E-03	47.15	
	40	1347.29	8.24139E-03	62.55	
	41	1373.73	1.13889E-02	25.84	
	43	1484.31	2.96875E-03	46.96	
	44	1510.20	7.80952E-03	28.26	
	45	1590.88	8.87897E-03	27.76	
	46	1729.56	3.50198E-03	31.97	Sum
	47	1735.72	1.42857E-03	59.14	
	49	1840.77	1.66667E-03	61.24	
	50	1933.79	1.66667E-03	57.74	
	51	1997.66	2.22222E-03	35.36	
	52	2103.25	4.40476E-03	36.50	S-Esc
	53	2118.20	1.63194E-03	58.96	
	54	2153.40	1.94444E-03	37.80	
	56	2262.93	2.37180E-03	59.14	
	57	2446.61	1.75926E-03	61.66	

Analysis Report for 1606038-13
CP 5022 02-05

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	1.47E-01	7.09E-01	7.09E-01
+	NA-22	1274.54	99.94	4.09E-02	1.08E-01	1.08E-01
+	NA-24	1368.53	99.99	1.37E+04	2.40E+04	6.42E+04
		2754.09	99.86	3.27E+03		2.40E+04
+	AL-26	1808.65	99.76	8.35E-03	6.62E-02	6.62E-02
+	K-40	1460.81	* 10.67	2.16E+01	8.60E-01	8.60E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.32E-02	5.70E-02	5.70E-02
		78.34	96.00	3.66E-01		8.72E-02
+	SC-46	889.25	99.98	2.66E-02	9.45E-02	9.45E-02
		1120.51	99.99	1.35E-01		1.54E-01
+	V-48	983.52	99.98	7.47E-02	1.45E-01	1.67E-01
		1312.10	97.50	-5.77E-02		1.45E-01
+	CR-51	320.08	9.83	1.21E-01	7.51E-01	7.51E-01
+	MN-54	834.83	99.97	6.63E-03	8.74E-02	8.74E-02
+	CO-56	846.75	99.96	-1.59E-02	8.96E-02	8.96E-02
		1037.75	14.03	-2.62E-01		6.61E-01
		1238.25	67.00	1.57E-01		2.37E-01
		1771.40	15.51	3.35E-01		5.76E-01
		2598.48	16.90	0.00E+00		3.24E-01
+	CO-57	122.06	85.51	-1.10E-02	6.44E-02	6.44E-02
		136.48	10.60	-2.44E-02		5.33E-01
+	CO-58	810.76	99.40	1.70E-02	9.50E-02	9.50E-02
+	FE-59	1099.22	56.50	-4.29E-02	1.97E-01	1.97E-01
		1291.56	43.20	-3.22E-02		2.44E-01
+	CO-60	1173.22	100.00	1.84E-02	7.93E-02	1.12E-01
		1332.49	100.00	1.04E-02		7.93E-02
+	ZN-65	1115.52	50.75	-6.60E-01	1.97E-01	1.97E-01
+	GA-67	93.31	* 35.70	3.29E+00	2.82E+00	2.82E+00
		208.95	* 2.24	2.43E+01		4.81E+01
		300.22	* 16.00	2.57E+00		5.23E+00
+	SE-75	121.11	16.70	1.26E-01	9.74E-02	3.48E-01

Analysis Report for 1606038-13
CP 5022 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-4.00E-02	9.74E-02	9.74E-02
		264.65	59.80	7.10E-02		1.06E-01
		279.53	25.20	-4.51E-03		2.48E-01
		400.65	11.40	-1.44E-02		5.84E-01
+	RB-82	776.52	13.00	3.74E-01	9.46E-01	9.46E-01
+	RB-83	520.41	46.00	-5.21E-02	1.43E-01	1.43E-01
		529.64	30.30	2.81E-02		2.19E-01
		552.65	16.40	2.61E-01		4.76E-01
+	KR-85	513.99	0.43	-2.19E+01	1.62E+01	1.62E+01
+	SR-85	513.99	99.27	-1.09E-01	8.07E-02	8.07E-02
+	Y-88	898.02	93.40	4.68E-02	5.99E-02	9.99E-02
		1836.01	99.38	-1.83E-02		5.99E-02
+	NB-93M	16.57	9.43	-4.50E+00	9.55E+01	9.55E+01
+	NB-94	702.63	100.00	-3.70E-02	7.61E-02	8.72E-02
		871.10	100.00	-1.10E-02		7.61E-02
+	NB-95	765.79	99.81	9.31E-02	1.22E-01	1.22E-01
+	NB-95M	235.69	* 25.00	1.65E+00	5.00E+00	5.00E+00
+	ZR-95	724.18	43.70	2.12E-01	1.92E-01	2.77E-01
		756.72	55.30	9.21E-02		1.92E-01
+	MO-99	181.06	6.20	-7.97E+00	1.31E+01	2.08E+01
		739.58	12.80	-5.90E+00		1.31E+01
		778.00	4.50	6.96E+00		3.96E+01
+	RU-103	497.08	89.00	-1.92E-02	8.82E-02	8.82E-02
+	RU-106	621.84	9.80	-3.19E-01	7.52E-01	7.52E-01
+	AG-108M	433.93	89.90	-2.28E-02	6.52E-02	6.52E-02
		614.37	90.40	-2.04E-02		8.31E-02
		722.95	90.50	2.20E-02		9.93E-02
+	CD-109	88.03	* 3.72	2.69E+00	2.69E+00	2.69E+00
+	AG-110M	657.75	93.14	-2.79E-02	8.56E-02	8.56E-02
		677.61	10.53	-2.12E-01		7.82E-01
		706.67	16.46	1.80E-01		5.47E-01
		763.93	21.98	-4.71E-01		3.69E-01
		884.67	71.63	-2.65E-03		1.23E-01
		1384.27	23.94	1.56E-01		4.03E-01
+	CD-113M	263.70	0.02	9.83E+01	2.56E+02	2.56E+02
+	SN-113	255.12	1.93	-1.44E+00	1.07E-01	3.13E+00
		391.69	64.90	-1.36E-02		1.07E-01
+	TE123M	159.00	84.10	3.73E-02	7.33E-02	7.33E-02
+	SB-124	602.71	97.87	2.47E-02	9.50E-02	9.50E-02
		645.85	7.26	1.69E-01		1.26E+00
		722.78	11.10	2.06E-01		9.31E-01
		1691.02	49.00	-4.36E-02		1.50E-01
+	I-125	35.49	6.49	-9.09E-01	1.80E+00	1.80E+00
+	SB-125	176.33	6.89	5.20E-01	1.91E-01	8.96E-01
		427.89	29.33	-4.92E-02		1.91E-01
		463.38	10.35	5.45E-01		6.96E-01
		600.56	17.80	2.86E-01		4.77E-01
		635.90	11.32	8.96E-03		7.43E-01

Analysis Report for 1606038-13
CP 5022 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)		
+	SB-126	414.70	83.30	-1.36E-02	1.47E-01	1.47E-01		
		666.33	99.60	-5.07E-02		1.57E-01		
		695.00	99.60	-3.88E-02		1.71E-01		
		720.50	53.80	1.71E-02		2.91E-01		
+	SN-126	87.57	* 37.00	2.65E-01	2.66E-01	2.66E-01		
+	SB-127	473.00	25.00	4.21E-01	2.09E+00	2.22E+00		
		685.20	35.70	-3.65E-02		2.09E+00		
		783.80	14.70	2.79E-01		5.04E+00		
+	I-129	29.78	57.00	-5.54E-02	3.40E-01	3.40E-01		
		33.60	13.20	2.71E-01		9.14E-01		
		39.58	7.52	-6.45E-01		1.03E+00		
+	I-131	284.30	6.05	8.72E-01	2.17E-01	2.69E+00		
		364.48	81.20	1.21E-01		2.17E-01		
		636.97	7.26	4.51E-01		3.20E+00		
		722.89	1.80	3.16E+00		1.42E+01		
+	TE-132	49.72	13.10	1.45E+00	8.23E-01	5.82E+00		
		228.16	88.00	-1.09E-01		8.23E-01		
+	BA-133	81.00	33.00	5.37E-02	9.49E-02	1.46E-01		
		302.84	17.80	-2.32E-02		3.44E-01		
		356.01	60.00	-3.13E-02		9.49E-02		
+	I-133	529.87	86.30	-1.17E+02	1.14E+03	1.14E+03		
+	XE-133	81.00	38.00	2.32E-01	6.30E-01	6.30E-01		
+	CS-134	563.23	8.38	-7.89E-02	9.44E-02	8.27E-01		
		569.32	15.43	-2.50E-01		4.22E-01		
		604.70	97.60	1.85E-02		9.44E-02		
		795.84	85.40	9.58E-02		1.22E-01		
		801.93	8.73	2.63E-01		1.09E+00		
+	CS-135	268.24	16.00	-8.26E-02	4.00E-01	4.00E-01		
+	I-135	1131.51	22.50	2.22E+12	6.44E+12	8.46E+12		
		1260.41	28.60	1.45E+11		6.44E+12		
		1678.03	9.54	-5.32E+11		1.43E+13		
+	CS-136	153.22	7.46	1.41E+00	1.44E-01	1.51E+00		
		163.89	4.61	1.75E+00		2.36E+00		
		176.55	13.56	1.08E-01		8.47E-01		
		273.65	12.66	0.00E+00		9.25E-01		
		340.57	48.50	-3.79E-01		2.79E-01		
		818.50	99.70	-7.37E-02		1.44E-01		
		1048.07	79.60	-2.17E-02		2.13E-01		
		1235.34	19.70	2.53E-01		1.34E+00		
+		CS-137	661.65	85.12		2.44E-03	9.76E-02	9.76E-02
+		LA-138	788.74	34.00		6.66E-02	1.03E-01	2.65E-01
	1435.80		66.00	-1.46E-02	1.03E-01			
+	CE-139	165.85	80.35	3.05E-02	7.39E-02	7.39E-02		
+	BA-140	162.64	6.70	-4.08E-02	5.32E-01	1.64E+00		
		304.84	4.50	2.56E-01		2.65E+00		
		423.70	3.20	-3.27E-01		3.50E+00		
		437.55	2.00	1.36E+00		6.17E+00		
		537.32	25.00	2.05E-01		5.32E-01		
+	LA-140	328.77	20.50	4.90E-01	1.72E-01	6.40E-01		

Analysis Report for 1606038-13
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<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
LA-140	487.03	45.50	4.75E-02	1.72E-01	2.67E-01
	815.85	23.50	2.70E-01		6.74E-01
	1596.49	95.49	-1.57E-02		1.72E-01
+ CE-141	145.44	48.40	4.79E-02	1.55E-01	1.55E-01
+ CE-143	57.36	11.80	-9.34E+01	9.31E+01	2.04E+02
	293.26	42.00	9.08E+01		9.31E+01
	664.55	5.20	2.73E+02		7.50E+02
+ CE-144	133.54	10.80	4.35E-02	5.17E-01	5.17E-01
+ PM-144	476.78	42.00	3.19E-02	7.88E-02	1.54E-01
	618.01	98.60	2.39E-02		7.88E-02
	696.49	99.49	-6.47E-02		8.79E-02
+ PM-145	36.85	21.70	2.21E-01	2.34E-01	4.44E-01
	37.36	39.70	1.17E-01		2.34E-01
	42.30	15.10	1.48E-01		4.75E-01
	72.40	2.31	1.96E-01		2.45E+00
+ PM-146	453.90	39.94	4.55E-02	1.65E-01	1.65E-01
	735.90	14.01	3.33E-02		5.79E-01
	747.13	13.10	-2.72E-01		6.52E-01
+ ND-147	91.11	28.90	4.67E-01	5.79E-01	5.79E-01
	531.02	13.10	-1.21E-01		9.76E-01
+ PM-149	285.90	3.10	6.38E+01	8.74E+01	8.74E+01
+ EU-152	121.78	20.50	-4.45E-02	2.60E-01	2.60E-01
	244.69	5.40	-1.77E+00		1.07E+00
	344.27	19.13	9.24E-02		3.17E-01
	778.89	9.20	-2.68E-01		8.26E-01
	964.01	10.40	-2.81E+00		1.11E+00
	1085.78	7.22	2.87E-01		1.28E+00
	1112.02	9.60	4.19E-01		1.11E+00
	1407.95	14.94	-4.79E-02		5.51E-01
+ GD-153	97.43	31.30	1.32E-01	1.83E-01	1.83E-01
	103.18	22.20	-7.87E-02		2.53E-01
+ EU-154	123.07	40.50	-6.46E-02	1.31E-01	1.31E-01
	723.30	19.70	1.01E-01		4.57E-01
	873.19	11.50	-1.27E-01		6.39E-01
	996.32	10.30	-3.58E-01		8.06E-01
	1004.76	17.90	-1.38E-01		4.08E-01
	1274.45	35.50	1.14E-01		3.02E-01
+ EU-155	86.50	* 30.90	3.19E-01	2.60E-01	3.20E-01
	105.30	20.70	3.53E-02		2.60E-01
+ EU-156	811.77	10.40	-7.05E-02	1.30E+00	1.30E+00
	1153.47	7.20	2.94E+00		3.02E+00
	1230.71	8.90	1.34E-01		2.38E+00
+ HO-166M	184.41	72.60	1.79E-01	1.07E-01	1.07E-01
	280.45	29.60	-3.58E-03		1.97E-01
	410.94	11.10	4.48E-01		6.31E-01
	711.69	54.10	-4.87E-02		1.58E-01
+ TM-171	66.72	0.14	1.76E+01	3.96E+01	3.96E+01
+ HF-172	81.75	4.52	3.96E-01	4.77E-01	1.08E+00
	125.81	11.30	-5.08E-02		4.77E-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	-2.30E-01	5.69E-01	1.02E+00
		810.06	16.63	3.18E-01		1.77E+00
		912.12	15.25	1.01E+01		4.05E+00
		1093.66	62.50	4.06E-01		5.69E-01
+	LU-173	100.72	5.24	-2.41E-02	3.41E-01	1.06E+00
		272.11	21.20	3.33E-01		3.41E-01
+	HF-175	343.40	84.00	-8.24E-04	7.87E-02	7.87E-02
+	LU-176	88.34	13.30	1.14E+00	6.04E-02	5.77E-01
		201.83	86.00	-1.27E-02		6.96E-02
		306.78	94.00	-2.03E-02		6.04E-02
+	TA-182	67.75	41.20	-3.25E-02	1.41E-01	1.41E-01
		1121.30	34.90	4.44E-01		4.44E-01
		1189.05	16.23	-2.46E-01		6.95E-01
		1221.41	26.98	-4.56E-02		4.13E-01
		1231.02	11.44	7.07E-01		1.21E+00
+	IR-192	308.46	29.68	-2.99E-02	1.36E-01	2.15E-01
		468.07	48.10	-1.78E-02		1.36E-01
+	HG-203	279.19	* 77.30	5.98E-02	1.20E-01	1.20E-01
+	BI-207	569.67	97.72	-3.90E-02	6.60E-02	6.60E-02
		1063.62	74.90	-4.26E-02		1.28E-01
+	TL-208	583.14	* 30.22	1.72E+00	2.57E-01	2.76E-01
		860.37	* 4.48	1.86E+00		2.80E+00
		2614.66	* 35.85	9.98E-01		2.57E-01
+	BI-210M	262.00	45.00	-4.11E-02	1.28E-01	1.28E-01
		300.00	23.00	-4.11E-02		2.71E-01
+	PB-210	46.50	4.25	2.08E+00	1.74E+00	1.74E+00
+	PB-211	404.84	2.90	4.41E-01	2.12E+00	2.12E+00
		831.96	2.90	-1.41E+00		2.98E+00
+	BI-212	727.17	* 11.80	1.04E+00	8.13E-01	8.13E-01
		1620.62	2.75	7.50E-01		3.42E+00
+	PB-212	238.63	44.60	1.20E+00	3.08E-01	3.08E-01
		300.09	3.41	-2.77E-01		1.83E+00
+	BI-214	609.31	* 46.30	1.13E+00	1.95E-01	1.95E-01
		1120.29	* 15.10	9.99E-01		7.17E-01
		1764.49	* 15.80	8.14E-01		3.17E-01
		2204.22	* 4.98	8.20E-01		1.32E+00
+	PB-214	295.21	* 19.19	1.08E+00	2.50E-01	4.50E-01
		351.92	* 37.19	1.19E+00		2.50E-01
+	RN-219	401.80	6.50	2.06E-01	9.71E-01	9.71E-01
+	RA-223	323.87	3.88	-1.42E-01	1.51E+00	1.51E+00
+	RA-224	240.98	* 3.95	2.90E+00	3.09E+00	3.09E+00
+	RA-225	40.00	31.00	-2.70E-01	4.32E-01	4.32E-01
+	RA-226	186.21	* 3.28	4.65E+00	2.73E+00	2.73E+00
+	TH-227	50.10	8.40	1.69E-01	6.77E-01	6.77E-01
		236.00	11.50	-4.04E+00		8.30E-01
		256.20	6.30	-3.02E-01		9.00E-01
+	AC-228	338.32	* 11.40	1.60E+00	3.10E-01	8.30E-01
		911.07	* 27.70	1.58E+00		3.10E-01

Analysis Report for 1606038-13
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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	1.10E+00	3.10E-01	9.08E-01
+	TH-230	48.44		16.90	-4.75E-01	3.43E-01	3.43E-01
		62.85		4.60	1.52E+00		1.43E+00
		67.67		0.37	-3.36E+00		1.46E+01
+	PA-231	283.67		1.60	1.15E+00	2.66E+00	3.56E+00
		302.67		2.30	-1.79E-01		2.66E+00
+	TH-231	25.64		14.70	-1.81E+00	8.18E-01	2.32E+00
		84.21		6.40	3.43E-01		8.18E-01
+	PA-233	311.98		38.60	1.16E-01	2.11E-01	2.11E-01
+	PA-234	131.20		20.40	2.16E-02	2.93E-01	2.93E-01
		733.99		8.80	8.36E-02		9.15E-01
		946.00		12.00	-2.52E-01		6.53E-01
+	PA-234M	1001.03		0.92	5.39E+00	9.15E+00	9.15E+00
+	TH-234	63.29	*	3.80	2.19E+00	2.24E+00	2.24E+00
+	U-235	143.76		10.50	8.43E-03	5.53E-01	5.53E-01
		163.35		4.70	-3.01E-02		1.21E+00
		205.31		4.70	3.31E-01		1.30E+00
+	NP-237	86.50	*	12.60	7.79E-01	7.81E-01	7.81E-01
+	NP-239	106.10		22.70	-2.01E+00	8.46E+00	8.46E+00
		228.18		10.70	-2.41E+00		1.82E+01
		277.60		14.10	1.22E+01		1.60E+01
+	AM-241	59.54		35.90	4.70E-02	1.54E-01	1.54E-01
+	AM-243	74.67		66.00	-4.61E-01	1.18E-01	1.18E-01
+	CM-243	209.75	*	3.29	1.25E+00	5.14E-01	2.47E+00
		228.14		10.60	-6.79E-02		5.14E-01
		277.60	*	14.00	2.76E-01		5.52E-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

: 00760

Analysis Report for 1606038-13
CP 5022 02-05

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	7.09E-01	7.09E-01	1.47E-01	3.32E-01
NA-22	1274.54	99.94	1.08E-01	1.08E-01	4.09E-02	4.94E-02
NA-24	1368.53	99.99	6.42E+04	2.40E+04	1.37E+04	2.87E+04
	2754.09	99.86	2.40E+04		3.27E+03	7.60E+03
AL-26	1808.65	99.76	6.62E-02	6.62E-02	8.35E-03	2.75E-02
+ K-40	1460.81	* 10.67	8.60E-01	8.60E-01	2.16E+01	3.84E-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	5.70E-02	5.70E-02	-1.32E-02	2.76E-02
	78.34	96.00	8.72E-02		3.66E-01	4.28E-02
SC-46	889.25	99.98	9.45E-02	9.45E-02	2.66E-02	4.35E-02
	1120.51	99.99	1.54E-01		1.35E-01	7.26E-02
V-48	983.52	99.98	1.67E-01	1.45E-01	7.47E-02	7.71E-02
	1312.10	97.50	1.45E-01		-5.77E-02	6.44E-02
CR-51	320.08	9.83	7.51E-01	7.51E-01	1.21E-01	3.55E-01
MN-54	834.83	99.97	8.74E-02	8.74E-02	6.63E-03	4.04E-02
CO-56	846.75	99.96	8.96E-02	8.96E-02	-1.59E-02	4.12E-02
	1037.75	14.03	6.61E-01		-2.62E-01	3.00E-01
	1238.25	67.00	2.37E-01		1.57E-01	1.11E-01
	1771.40	15.51	5.76E-01		3.35E-01	2.48E-01
	2598.48	16.90	3.24E-01		0.00E+00	1.21E-01
CO-57	122.06	85.51	6.44E-02	6.44E-02	-1.10E-02	3.12E-02
	136.48	10.60	5.33E-01		-2.44E-02	2.58E-01
CO-58	810.76	99.40	9.50E-02	9.50E-02	1.70E-02	4.39E-02
FE-59	1099.22	56.50	1.97E-01	1.97E-01	-4.29E-02	8.97E-02
	1291.56	43.20	2.44E-01		-3.22E-02	1.09E-01
CO-60	1173.22	100.00	1.12E-01	7.93E-02	1.84E-02	5.16E-02
	1332.49	100.00	7.93E-02		1.04E-02	3.50E-02
ZN-65	1115.52	50.75	1.97E-01	1.97E-01	-6.60E-01	9.00E-02
+ GA-67	93.31	* 35.70	2.82E+00	2.82E+00	3.29E+00	1.38E+00
	208.95	* 2.24	4.81E+01		2.43E+01	2.34E+01
	300.22	* 16.00	5.23E+00		2.57E+00	2.50E+00
SE-75	121.11	16.70	3.48E-01	9.74E-02	1.26E-01	1.69E-01
	136.00	59.20	9.74E-02		-4.00E-02	4.71E-02
	264.65	59.80	1.06E-01		7.10E-02	5.06E-02
	279.53	25.20	2.48E-01		-4.51E-03	1.18E-01
	400.65	11.40	5.84E-01		-1.44E-02	2.75E-01
RB-82	776.52	13.00	9.46E-01	9.46E-01	3.74E-01	4.41E-01
RB-83	520.41	46.00	1.43E-01	1.43E-01	-5.21E-02	6.60E-02
	529.64	30.30	2.19E-01		2.81E-02	1.02E-01
	552.65	16.40	4.76E-01		2.61E-01	2.23E-01
KR-85	513.99	0.43	1.62E+01	1.62E+01	-2.19E+01	7.62E+00
SR-85	513.99	99.27	8.07E-02	8.07E-02	-1.09E-01	3.79E-02
Y-88	898.02	93.40	9.99E-02	5.99E-02	4.68E-02	4.60E-02
	1836.01	99.38	5.99E-02		-1.83E-02	2.38E-02
NB-93M	16.57	9.43	9.55E+01	9.55E+01	-4.50E+00	4.63E+01
NB-94	702.63	100.00	8.72E-02	7.61E-02	-3.70E-02	4.08E-02
	871.10	100.00	7.61E-02		-1.10E-02	3.47E-02
NB-95	765.79	99.81	1.22E-01	1.22E-01	9.31E-02	5.70E-02
+ NB-95M	235.69	* 25.00	5.00E+00	5.00E+00	1.65E+00	2.45E+00
ZR-95	724.18	43.70	2.77E-01	1.92E-01	2.12E-01	1.31E-01
	756.72	55.30	1.92E-01		9.21E-02	9.01E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	2.08E+01	1.31E+01	-7.97E+00	1.00E+01
	739.58	12.80	1.31E+01		-5.90E+00	6.07E+00
	778.00	4.50	3.96E+01		6.96E+00	1.83E+01
RU-103	497.08	89.00	8.82E-02	8.82E-02	-1.92E-02	4.12E-02
RU-106	621.84	9.80	7.52E-01	7.52E-01	-3.19E-01	3.50E-01
AG-108M	433.93	89.90	6.52E-02	6.52E-02	-2.28E-02	3.05E-02
	614.37	90.40	8.31E-02		-2.04E-02	3.88E-02
	722.95	90.50	9.93E-02		2.20E-02	4.65E-02
+ CD-109	88.03	*	2.69E+00	2.69E+00	2.69E+00	1.33E+00
AG-110M	657.75	93.14	8.56E-02	8.56E-02	-2.79E-02	3.99E-02
	677.61	10.53	7.82E-01		-2.12E-01	3.64E-01
	706.67	16.46	5.47E-01		1.80E-01	2.56E-01
	763.93	21.98	3.69E-01		-4.71E-01	1.70E-01
	884.67	71.63	1.23E-01		-2.65E-03	5.66E-02
	1384.27	23.94	4.03E-01		1.56E-01	1.81E-01
CD-113M	263.70	0.02	2.56E+02	2.56E+02	9.83E+01	1.22E+02
SN-113	255.12	1.93	3.13E+00	1.07E-01	-1.44E+00	1.49E+00
	391.69	64.90	1.07E-01		-1.36E-02	5.04E-02
TE123M	159.00	84.10	7.33E-02	7.33E-02	3.73E-02	3.54E-02
SB-124	602.71	97.87	9.50E-02	9.50E-02	2.47E-02	4.46E-02
	645.85	7.26	1.26E+00		1.69E-01	5.87E-01
	722.78	11.10	9.31E-01		2.06E-01	4.36E-01
	1691.02	49.00	1.50E-01		-4.36E-02	6.21E-02
I-125	35.49	6.49	1.80E+00	1.80E+00	-9.09E-01	8.60E-01
SB-125	176.33	6.89	8.96E-01	1.91E-01	5.20E-01	4.33E-01
	427.89	29.33	1.91E-01		-4.92E-02	8.92E-02
	463.38	10.35	6.96E-01		5.45E-01	3.28E-01
	600.56	17.80	4.77E-01		2.86E-01	2.25E-01
	635.90	11.32	7.43E-01		8.96E-03	3.49E-01
SB-126	414.70	83.30	1.47E-01	1.47E-01	-1.36E-02	6.91E-02
	666.33	99.60	1.57E-01		-5.07E-02	7.31E-02
	695.00	99.60	1.71E-01		-3.88E-02	8.02E-02
	720.50	53.80	2.91E-01		1.71E-02	1.35E-01
+ SN-126	87.57	*	2.66E-01	2.66E-01	2.65E-01	1.31E-01
SB-127	473.00	25.00	2.22E+00	2.09E+00	4.21E-01	1.04E+00
	685.20	35.70	2.09E+00		-3.65E-02	9.79E-01
	783.80	14.70	5.04E+00		2.79E-01	2.33E+00
I-129	29.78	57.00	3.40E-01	3.40E-01	-5.54E-02	1.63E-01
	33.60	13.20	9.14E-01		2.71E-01	4.37E-01
	39.58	7.52	1.03E+00		-6.45E-01	4.93E-01
I-131	284.30	6.05	2.69E+00	2.17E-01	8.72E-01	1.28E+00
	364.48	81.20	2.17E-01		1.21E-01	1.03E-01
	636.97	7.26	3.20E+00		4.51E-01	1.50E+00
	722.89	1.80	1.42E+01		3.16E+00	6.67E+00
TE-132	49.72	13.10	5.82E+00	8.23E-01	1.45E+00	2.80E+00
BA-133	228.16	88.00	8.23E-01	9.49E-02	-1.09E-01	3.93E-01
	81.00	33.00	1.46E-01		5.37E-02	7.04E-02
	302.84	17.80	3.44E-01		-2.32E-02	1.64E-01
	356.01	60.00	9.49E-02		-3.13E-02	4.47E-02
I-133	529.87	86.30	1.14E+03	1.14E+03	-1.17E+02	5.27E+02
XE-133	81.00	38.00	6.30E-01	6.30E-01	2.32E-01	3.04E-01
CS-134	563.23	8.38	8.27E-01	9.44E-02	-7.89E-02	3.85E-01
	569.32	15.43	4.22E-01		-2.50E-01	1.96E-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	9.44E-02	9.44E-02	1.85E-02	4.47E-02
	795.84	85.40	1.22E-01		9.58E-02	5.75E-02
	801.93	8.73	1.09E+00		2.63E-01	5.09E-01
CS-135	268.24	16.00	4.00E-01	4.00E-01	-8.26E-02	1.92E-01
I-135	1131.51	22.50	8.46E+12	6.44E+12	2.22E+12	3.87E+12
	1260.41	28.60	6.44E+12		1.45E+11	2.92E+12
	1678.03	9.54	1.43E+13		-5.32E+11	6.02E+12
CS-136	153.22	7.46	1.51E+00	1.44E-01	1.41E+00	7.30E-01
	163.89	4.61	2.36E+00		1.75E+00	1.14E+00
	176.55	13.56	8.47E-01		1.08E-01	4.09E-01
	273.65	12.66	9.25E-01		0.00E+00	4.42E-01
	340.57	48.50	2.79E-01		-3.79E-01	1.34E-01
	818.50	99.70	1.44E-01		-7.37E-02	6.60E-02
	1048.07	79.60	2.13E-01		-2.17E-02	9.75E-02
	1235.34	19.70	1.34E+00		2.53E-01	6.26E-01
CS-137	661.65	85.12	9.76E-02	9.76E-02	2.44E-03	4.57E-02
LA-138	788.74	34.00	2.65E-01	1.03E-01	6.66E-02	1.24E-01
	1435.80	66.00	1.03E-01		-1.46E-02	4.42E-02
CE-139	165.85	80.35	7.39E-02	7.39E-02	3.05E-02	3.56E-02
BA-140	162.64	6.70	1.64E+00	5.32E-01	-4.08E-02	7.91E-01
	304.84	4.50	2.65E+00		2.56E-01	1.26E+00
	423.70	3.20	3.50E+00		-3.27E-01	1.64E+00
	437.55	2.00	6.17E+00		1.36E+00	2.90E+00
	537.32	25.00	5.32E-01		2.05E-01	2.49E-01
	LA-140	328.77	20.50		6.40E-01	1.72E-01
	487.03	45.50	2.67E-01		4.75E-02	1.25E-01
	815.85	23.50	6.74E-01		2.70E-01	3.11E-01
	1596.49	95.49	1.72E-01		-1.57E-02	7.54E-02
CE-141	145.44	48.40	1.55E-01	1.55E-01	4.79E-02	7.50E-02
CE-143	57.36	11.80	2.04E+02	9.31E+01	-9.34E+01	9.84E+01
	293.26	42.00	9.31E+01		9.08E+01	4.50E+01
	664.55	5.20	7.50E+02		2.73E+02	3.52E+02
CE-144	133.54	10.80	5.17E-01	5.17E-01	4.35E-02	2.50E-01
PM-144	476.78	42.00	1.54E-01	7.88E-02	3.19E-02	7.19E-02
	618.01	98.60	7.88E-02		2.39E-02	3.68E-02
	696.49	99.49	8.79E-02		-6.47E-02	4.11E-02
PM-145	36.85	21.70	4.44E-01	2.34E-01	2.21E-01	2.13E-01
	37.36	39.70	2.34E-01		1.17E-01	1.12E-01
	42.30	15.10	4.75E-01		1.48E-01	2.28E-01
	72.40	2.31	2.45E+00		1.96E-01	1.19E+00
PM-146	453.90	39.94	1.65E-01	1.65E-01	4.55E-02	7.76E-02
	735.90	14.01	5.79E-01		3.33E-02	2.69E-01
	747.13	13.10	6.52E-01		-2.72E-01	3.03E-01
ND-147	91.11	28.90	5.79E-01	5.79E-01	4.67E-01	2.84E-01
	531.02	13.10	9.76E-01		-1.21E-01	4.52E-01
PM-149	285.90	3.10	8.74E+01	8.74E+01	6.38E+01	4.17E+01
EU-152	121.78	20.50	2.60E-01	2.60E-01	-4.45E-02	1.26E-01
	244.69	5.40	1.07E+00		-1.77E+00	5.12E-01
	344.27	19.13	3.17E-01		9.24E-02	1.50E-01
	778.89	9.20	8.26E-01		-2.68E-01	3.80E-01
	964.01	10.40	1.11E+00		-2.81E+00	5.21E-01
	1085.78	7.22	1.28E+00		2.87E-01	5.84E-01
	1112.02	9.60	1.11E+00		4.19E-01	5.14E-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	1407.95	14.94	5.51E-01	2.60E-01	-4.79E-02	2.43E-01
GD-153	97.43	31.30	1.83E-01	1.83E-01	1.32E-01	8.86E-02
	103.18	22.20	2.53E-01		-7.87E-02	1.23E-01
EU-154	123.07	40.50	1.31E-01	1.31E-01	-6.46E-02	6.32E-02
	723.30	19.70	4.57E-01		1.01E-01	2.14E-01
	873.19	11.50	6.39E-01		-1.27E-01	2.91E-01
	996.32	10.30	8.06E-01		-3.58E-01	3.67E-01
	1004.76	17.90	4.08E-01		-1.38E-01	1.83E-01
	1274.45	35.50	3.02E-01		1.14E-01	1.38E-01
+ EU-155	86.50	* 30.90	3.20E-01	2.60E-01	3.19E-01	1.57E-01
	105.30	20.70	2.60E-01		3.53E-02	1.26E-01
EU-156	811.77	10.40	1.30E+00	1.30E+00	-7.05E-02	5.98E-01
	1153.47	7.20	3.02E+00		2.94E+00	1.41E+00
	1230.71	8.90	2.38E+00		1.34E-01	1.10E+00
HO-166M	184.41	72.60	1.07E-01	1.07E-01	1.79E-01	5.21E-02
	280.45	29.60	1.97E-01		-3.58E-03	9.39E-02
	410.94	11.10	6.31E-01		4.48E-01	2.99E-01
	711.69	54.10	1.58E-01		-4.87E-02	7.36E-02
TM-171	66.72	0.14	3.96E+01	3.96E+01	1.76E+01	1.92E+01
HF-172	81.75	4.52	1.08E+00	4.77E-01	3.96E-01	5.21E-01
	125.81	11.30	4.77E-01		-5.08E-02	2.31E-01
LU-172	181.53	20.60	1.02E+00	5.69E-01	-2.30E-01	4.94E-01
	810.06	16.63	1.77E+00		3.18E-01	8.20E-01
	912.12	15.25	4.05E+00		1.01E+01	1.94E+00
	1093.66	62.50	5.69E-01		4.06E-01	2.62E-01
LU-173	100.72	5.24	1.06E+00	3.41E-01	-2.41E-02	5.15E-01
	272.11	21.20	3.41E-01		3.33E-01	1.64E-01
HF-175	343.40	84.00	7.87E-02	7.87E-02	-8.24E-04	3.72E-02
LU-176	88.34	13.30	5.77E-01	6.04E-02	1.14E+00	2.83E-01
	201.83	86.00	6.96E-02		-1.27E-02	3.35E-02
	306.78	94.00	6.04E-02		-2.03E-02	2.86E-02
TA-182	67.75	41.20	1.41E-01	1.41E-01	-3.25E-02	6.81E-02
	1121.30	34.90	4.44E-01		4.44E-01	2.10E-01
	1189.05	16.23	6.95E-01		-2.46E-01	3.19E-01
	1221.41	26.98	4.13E-01		-4.56E-02	1.89E-01
	1231.02	11.44	1.21E+00		7.07E-01	5.63E-01
IR-192	308.46	29.68	2.15E-01	1.36E-01	-2.99E-02	1.02E-01
	468.07	48.10	1.36E-01		-1.78E-02	6.33E-02
HG-203	279.19	* 77.30	1.20E-01	1.20E-01	5.98E-02	5.77E-02
BI-207	569.67	97.72	6.60E-02	6.60E-02	-3.90E-02	3.06E-02
	1063.62	74.90	1.28E-01		-4.26E-02	5.89E-02
+ TL-208	583.14	* 30.22	2.76E-01	2.57E-01	1.72E+00	1.30E-01
	860.37	* 4.48	2.80E+00		1.86E+00	1.33E+00
	2614.66	* 35.85	2.57E-01		9.98E-01	1.11E-01
BI-210M	262.00	45.00	1.28E-01	1.28E-01	-4.11E-02	6.10E-02
	300.00	23.00	2.71E-01		-4.11E-02	1.29E-01
PB-210	46.50	4.25	1.74E+00	1.74E+00	2.08E+00	8.42E-01
PB-211	404.84	2.90	2.12E+00	2.12E+00	4.41E-01	9.99E-01
	831.96	2.90	2.98E+00		-1.41E+00	1.38E+00
+ BI-212	727.17	* 11.80	8.13E-01	8.13E-01	1.04E+00	3.83E-01
	1620.62	2.75	3.42E+00		7.50E-01	1.52E+00
PB-212	238.63	44.60	3.08E-01	3.08E-01	1.20E+00	1.51E-01
	300.09	3.41	1.83E+00		-2.77E-01	8.73E-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)
+	BI-214	609.31 *		46.30	1.95E-01	1.95E-01	1.13E+00	9.24E-02
		1120.29 *		15.10	7.17E-01		9.99E-01	3.31E-01
		1764.49 *		15.80	3.17E-01		8.14E-01	1.23E-01
		2204.22 *		4.98	1.32E+00		8.20E-01	5.38E-01
+	PB-214	295.21 *		19.19	4.50E-01	2.50E-01	1.08E+00	2.18E-01
		351.92 *		37.19	2.50E-01		1.19E+00	1.21E-01
	RN-219	401.80		6.50	9.71E-01	9.71E-01	2.06E-01	4.58E-01
	RA-223	323.87		3.88	1.51E+00	1.51E+00	-1.42E-01	7.18E-01
+	RA-224	240.98 *		3.95	3.09E+00	3.09E+00	2.90E+00	1.51E+00
	RA-225	40.00		31.00	4.32E-01	4.32E-01	-2.70E-01	2.07E-01
+	RA-226	186.21 *		3.28	2.73E+00	2.73E+00	4.65E+00	1.33E+00
	TH-227	50.10		8.40	6.77E-01	6.77E-01	1.69E-01	3.25E-01
		236.00		11.50	8.30E-01		-4.04E+00	4.04E-01
		256.20		6.30	9.00E-01		-3.02E-01	4.29E-01
+	AC-228	338.32 *		11.40	8.30E-01	3.10E-01	1.60E+00	4.01E-01
		911.07 *		27.70	3.10E-01		1.58E+00	1.42E-01
		969.11 *		16.60	9.08E-01		1.10E+00	4.32E-01
	TH-230	48.44		16.90	3.43E-01	3.43E-01	-4.75E-01	1.65E-01
		62.85		4.60	1.43E+00		1.52E+00	6.95E-01
		67.67		0.37	1.46E+01		-3.36E+00	7.05E+00
	PA-231	283.67		1.60	3.56E+00	2.66E+00	1.15E+00	1.69E+00
		302.67		2.30	2.66E+00		-1.79E-01	1.27E+00
	TH-231	25.64		14.70	2.32E+00	8.18E-01	-1.81E+00	1.11E+00
		84.21		6.40	8.18E-01		3.43E-01	3.96E-01
	PA-233	311.98		38.60	2.11E-01	2.11E-01	1.16E-01	1.00E-01
	PA-234	131.20		20.40	2.93E-01	2.93E-01	2.16E-02	1.42E-01
		733.99		8.80	9.15E-01		8.36E-02	4.25E-01
		946.00		12.00	6.53E-01		-2.52E-01	2.97E-01
	PA-234M	1001.03		0.92	9.15E+00	9.15E+00	5.39E+00	4.17E+00
+	TH-234	63.29 *		3.80	2.24E+00	2.24E+00	2.19E+00	1.10E+00
	U-235	143.76		10.50	5.53E-01	5.53E-01	8.43E-03	2.68E-01
		163.35		4.70	1.21E+00		-3.01E-02	5.85E-01
		205.31		4.70	1.30E+00		3.31E-01	6.25E-01
+	NP-237	86.50 *		12.60	7.81E-01	7.81E-01	7.79E-01	3.84E-01
	NP-239	106.10		22.70	8.46E+00	8.46E+00	-2.01E+00	4.10E+00
		228.18		10.70	1.82E+01		-2.41E+00	8.72E+00
		277.60		14.10	1.60E+01		1.22E+01	7.67E+00
	AM-241	59.54		35.90	1.54E-01	1.54E-01	4.70E-02	7.45E-02
	AM-243	74.67		66.00	1.18E-01	1.18E-01	-4.61E-01	5.79E-02
+	CM-243	209.75 *		3.29	2.47E+00	5.14E-01	1.25E+00	1.20E+00
		228.14		10.60	5.14E-01		-6.79E-02	2.46E-01
		277.60 *		14.00	5.52E-01		2.76E-01	2.66E-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 1606038-13
CP 5022 02-05

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: CP 5022 02-05

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	120	955
9:	1047	624	344	632	1753	135	121	124
17:	127	98	112	92	84	75	75	72
25:	54	60	53	72	70	54	71	67
33:	61	55	55	43	68	72	47	62
41:	58	67	64	53	71	84	142	59
49:	59	77	70	65	95	81	85	80
57:	77	80	93	102	87	96	180	160
65:	124	98	102	122	91	118	100	121
73:	146	121	459	149	549	219	91	81
81:	95	101	84	145	105	98	207	164
89:	102	165	90	128	268	98	75	57
97:	68	86	84	74	64	80	57	64
105:	83	76	58	55	80	66	63	56
113:	74	50	80	60	53	58	69	70
121:	54	69	56	57	61	66	57	57
129:	126	67	52	65	55	58	49	67
137:	61	49	69	61	65	68	60	69
145:	76	44	62	50	44	45	65	47
153:	54	83	61	47	55	50	70	53
161:	51	48	57	58	52	54	36	51
169:	36	45	46	41	46	55	52	65
177:	55	56	48	52	42	58	64	46
185:	68	204	69	41	44	44	44	48
193:	34	41	32	44	35	58	46	54
201:	48	33	52	42	50	46	43	35
209:	79	64	41	37	39	35	40	39
217:	37	36	38	37	28	40	38	35
225:	40	38	37	30	27	28	30	32
233:	32	39	31	64	46	308	483	54
241:	120	98	41	35	33	23	32	28
249:	34	31	39	34	33	25	31	30
257:	27	35	34	33	23	27	30	35
265:	33	28	28	20	31	72	44	38
273:	26	38	29	30	36	45	25	29
281:	20	19	24	28	21	37	24	32
289:	17	26	30	18	22	43	171	65
297:	30	10	29	55	32	18	31	32
305:	23	29	22	22	18	23	25	26
313:	27	22	19	17	22	21	11	20
321:	23	23	15	26	24	25	24	69
329:	22	20	15	19	16	15	16	17
337:	33	124	72	22	17	19	28	18
345:	21	24	19	26	23	21	115	278
353:	45	22	19	20	17	13	23	20
361:	16	19	24	18	27	17	15	17

369: 16 21 18 17 20 22 22 18

Sample Title: CP 5022 02-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	17	17	28	14	9	13	17	20
385:	15	14	22	24	24	19	18	20
393:	25	20	20	14	17	19	15	20
401:	15	17	24	18	18	18	10	15
409:	38	21	18	15	21	18	15	12
417:	20	19	19	18	15	19	15	14
425:	15	9	14	15	12	15	13	18
433:	12	13	17	11	18	20	18	14
441:	19	17	14	15	19	14	12	18
449:	18	13	15	17	19	12	21	15
457:	16	13	8	15	8	19	45	16
465:	9	10	14	18	12	8	13	15
473:	16	13	13	14	14	14	16	13
481:	9	15	16	12	13	16	17	9
489:	13	12	10	16	11	15	5	15
497:	18	14	15	16	18	13	12	11
505:	10	18	8	17	28	49	74	33
513:	14	11	9	12	15	14	6	9
521:	11	14	14	13	11	12	11	8
529:	8	10	17	8	9	12	13	12
537:	16	14	15	11	11	13	8	14
545:	10	11	13	8	10	11	14	21
553:	15	10	9	11	10	17	12	10
561:	17	15	9	10	13	19	11	10
569:	13	9	12	15	15	11	12	6
577:	12	9	5	15	11	46	197	46
585:	10	8	7	8	10	9	17	11
593:	8	5	8	10	9	13	14	12
601:	13	14	14	11	6	11	13	35
609:	193	76	11	11	4	13	7	7
617:	14	13	9	11	7	7	8	7
625:	11	12	6	18	9	9	11	6
633:	17	9	10	9	14	12	8	13
641:	13	4	9	13	6	8	13	10
649:	10	8	11	6	9	10	5	9
657:	11	9	9	10	10	17	7	11
665:	13	8	10	10	6	9	10	9
673:	8	5	7	13	11	12	7	9
681:	12	13	6	11	10	9	11	10
689:	16	7	12	15	14	4	5	9
697:	12	14	13	14	17	6	12	5
705:	6	14	12	11	12	8	8	10
713:	10	9	13	8	6	9	6	11
721:	12	5	8	7	7	24	42	17
729:	5	6	7	11	11	8	8	7
737:	5	7	11	9	5	9	10	13
745:	5	8	9	8	7	12	13	12
753:	11	9	15	17	6	6	10	2
761:	7	7	7	6	5	8	10	21
769:	19	8	2	14	16	4	12	8
777:	9	4	10	2	10	2	8	8
785:	14	7	5	10	7	11	10	8
793:	7	14	24	12	6	9	12	3

801: 8 7 18 9 11 6 12 5

Sample Title: CP 5022 02-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	6	4	8	7	10	4	6	3
817:	10	10	6	3	3	11	7	4
825:	10	4	8	8	10	12	4	7
833:	0	6	14	15	8	1	8	4
841:	9	8	10	3	2	12	7	3
849:	7	8	8	5	4	2	6	8
857:	4	4	9	22	11	6	8	7
865:	4	12	6	10	3	3	5	3
873:	7	6	4	6	6	4	8	10
881:	7	8	5	5	9	6	6	5
889:	5	3	13	8	2	5	9	4
897:	4	6	2	9	12	4	6	2
905:	6	8	4	1	6	32	107	45
913:	5	5	2	7	3	6	8	6
921:	4	4	4	7	4	7	3	3
929:	3	6	6	5	7	8	11	8
937:	5	14	3	5	8	5	0	9
945:	3	5	6	8	3	7	6	5
953:	7	4	3	4	6	2	3	10
961:	7	5	5	19	26	4	10	32
969:	58	17	10	12	10	5	4	7
977:	5	4	9	3	8	13	7	6
985:	8	7	6	2	6	5	8	4
993:	8	5	5	4	3	4	6	8
1001:	7	4	6	1	3	1	4	4
1009:	4	2	6	3	6	7	7	6
1017:	4	6	4	1	2	3	1	6
1025:	3	3	8	6	2	8	3	10
1033:	9	4	3	4	3	8	7	4
1041:	3	4	7	6	4	5	9	7
1049:	8	4	1	3	8	6	7	5
1057:	11	8	3	5	3	9	9	7
1065:	2	8	14	5	6	7	5	6
1073:	8	3	4	7	8	3	6	6
1081:	6	5	5	7	12	4	3	2
1089:	3	4	11	4	8	9	5	5
1097:	2	5	4	7	6	8	3	8
1105:	4	4	3	11	3	12	9	8
1113:	8	3	7	6	2	6	20	35
1121:	13	7	5	8	6	10	2	8
1129:	5	8	3	3	7	6	2	5
1137:	6	7	5	6	5	5	7	2
1145:	4	2	7	2	3	6	8	6
1153:	15	9	11	11	4	6	8	6
1161:	4	9	4	6	11	15	7	5
1169:	10	11	4	8	7	6	8	6
1177:	4	7	10	9	5	15	6	8
1185:	6	6	6	6	3	10	3	9
1193:	12	5	8	4	7	8	5	4
1201:	7	6	4	4	8	10	7	5
1209:	4	12	4	7	8	4	11	7
1217:	6	7	3	9	5	2	4	10
1225:	10	2	2	10	12	8	13	6

1233: 5 9 9 7 13 25 11 5

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Channel	1	2	3	4	5	6	7	8
1241:	8	8	6	9	4	8	6	12
1249:	4	3	4	7	5	9	5	2
1257:	5	4	4	4	3	6	5	7
1265:	3	2	4	7	1	2	5	8
1273:	3	5	4	9	6	7	5	6
1281:	2	8	6	6	2	6	4	3
1289:	3	1	1	5	6	6	8	5
1297:	5	6	3	5	8	2	1	4
1305:	3	1	3	5	2	1	5	3
1313:	6	3	2	5	5	2	1	2
1321:	6	6	1	3	1	3	2	3
1329:	1	5	2	4	2	4	1	4
1337:	4	2	7	4	5	2	3	1
1345:	3	3	1	6	2	2	2	5
1353:	1	1	2	1	3	6	0	2
1361:	4	2	2	2	2	0	4	2
1369:	4	7	5	4	3	4	2	3
1377:	10	4	3	1	1	4	2	6
1385:	5	3	5	3	2	4	2	1
1393:	1	0	3	3	1	3	1	4
1401:	3	4	2	0	4	3	2	6
1409:	2	2	3	3	3	3	5	1
1417:	1	1	2	1	5	1	2	1
1425:	0	3	2	0	0	5	2	3
1433:	2	3	2	0	1	1	1	2
1441:	2	2	2	3	2	4	1	2
1449:	3	3	2	6	2	0	4	5
1457:	3	11	82	256	215	52	7	3
1465:	2	1	0	0	1	3	2	2
1473:	0	3	3	0	3	1	2	0
1481:	1	0	7	4	4	0	1	3
1489:	2	4	2	2	3	1	4	3
1497:	3	2	1	2	1	1	2	2
1505:	1	2	1	5	5	6	3	2
1513:	2	2	1	0	0	3	1	2
1521:	0	2	1	2	0	3	3	1
1529:	0	1	1	0	2	2	2	3
1537:	2	2	6	2	4	1	2	4
1545:	2	1	1	3	1	1	2	2
1553:	1	1	1	1	1	0	0	2
1561:	1	1	3	0	2	4	2	2
1569:	1	1	0	0	3	2	2	3
1577:	0	0	3	1	3	3	0	2
1585:	2	2	6	6	3	2	3	3
1593:	3	4	4	2	0	1	0	0
1601:	2	0	4	3	0	1	3	4
1609:	2	0	1	1	1	2	1	1
1617:	2	1	4	1	4	2	5	1
1625:	1	3	1	3	1	3	2	0
1633:	1	1	0	0	3	2	1	1
1641:	1	2	0	0	0	1	0	2
1649:	1	1	3	1	1	1	0	0
1657:	1	1	0	2	0	0	1	1

1665: 2 2 1 1 0 2 3 1

Sample Title: CP 5022 02-05

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

2097: 0 0 1 1 4 3 3 5

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

2529: 0 0 0 0 0 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	1	0	1	1	0	0
2545:	0	0	0	0	0	1	0	0
2553:	0	2	0	0	0	0	0	0
2561:	0	0	0	2	0	0	1	0
2569:	0	1	0	0	0	0	0	0
2577:	0	0	0	0	0	1	1	0
2585:	1	1	0	0	0	0	1	0
2593:	0	1	0	0	0	1	1	0
2601:	0	0	0	0	1	1	1	1
2609:	0	1	3	7	22	36	11	4
2617:	2	1	0	0	0	0	1	0
2625:	0	1	0	0	2	0	0	0
2633:	0	0	0	0	0	0	0	0
2641:	0	0	0	0	0	1	1	2
2649:	0	0	0	0	0	0	0	1
2657:	1	2	0	0	0	1	2	0
2665:	0	0	0	1	1	0	0	0
2673:	0	0	0	1	0	0	0	1
2681:	1	1	1	0	0	1	0	0
2689:	0	0	1	0	1	1	0	0
2697:	0	1	1	0	0	0	0	0
2705:	0	0	1	0	0	0	1	1
2713:	0	1	1	1	0	0	0	0
2721:	1	1	0	0	0	0	0	0
2729:	0	0	0	0	1	0	0	0
2737:	1	1	0	0	0	0	0	0
2745:	0	0	0	0	0	0	0	0
2753:	0	0	0	1	0	0	0	0
2761:	0	0	0	1	1	0	0	0
2769:	2	0	1	0	0	0	0	1
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	1	0	0	0	0	0	0	0
2801:	0	0	0	0	0	0	0	1
2809:	0	0	0	0	0	0	0	1
2817:	0	0	0	0	1	0	1	0
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	1	1	0	0	0
2841:	0	0	0	2	0	1	2	0
2849:	1	0	0	0	0	0	1	0
2857:	2	1	0	0	1	0	0	0
2865:	0	0	0	0	0	0	0	1
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	1	0	0
2889:	1	0	0	0	1	0	0	0
2897:	0	0	1	0	1	0	1	0
2905:	0	0	0	0	0	0	2	0
2913:	0	0	0	1	1	1	0	0
2921:	0	0	0	0	1	0	0	0
2929:	0	0	1	1	1	0	0	0
2937:	1	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	1
2953:	0	1	0	0	0	0	1	1

2961: 0 0 0 1 3 0 1 1

Sample Title: CP 5022 02-05

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

3393: 1 0 0 0 0 0 0 0

Sample Title: CP 5022 02-05

3401:	1	0	0	0	0	0	0	1
3409:	0	0	0	0	1	0	0	1
3417:	1	0	1	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	1	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	1	0	0	1	0	0
3489:	1	0	0	1	0	2	0	1
3497:	0	0	1	0	0	0	0	0
3505:	0	0	0	0	1	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	1	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	1	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	1	0	0	0	0	0	0
3577:	0	1	0	0	0	0	0	0
3585:	0	0	0	0	1	1	1	1
3593:	1	0	0	0	1	0	1	0
3601:	0	1	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	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	1	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	1	0	0	0	0	1	0	0
3681:	0	0	0	0	0	1	0	0
3689:	0	1	0	0	0	0	0	0
3697:	1	0	0	0	0	0	0	1
3705:	0	0	0	0	0	1	0	0
3713:	0	0	0	0	0	1	0	0
3721:	0	0	0	0	0	0	1	0
3729:	0	1	1	0	0	0	0	0
3737:	1	0	0	0	0	0	1	1
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	1	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	1	1	0
3793:	0	0	0	0	0	1	0	0
3801:	0	0	0	0	0	1	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	1

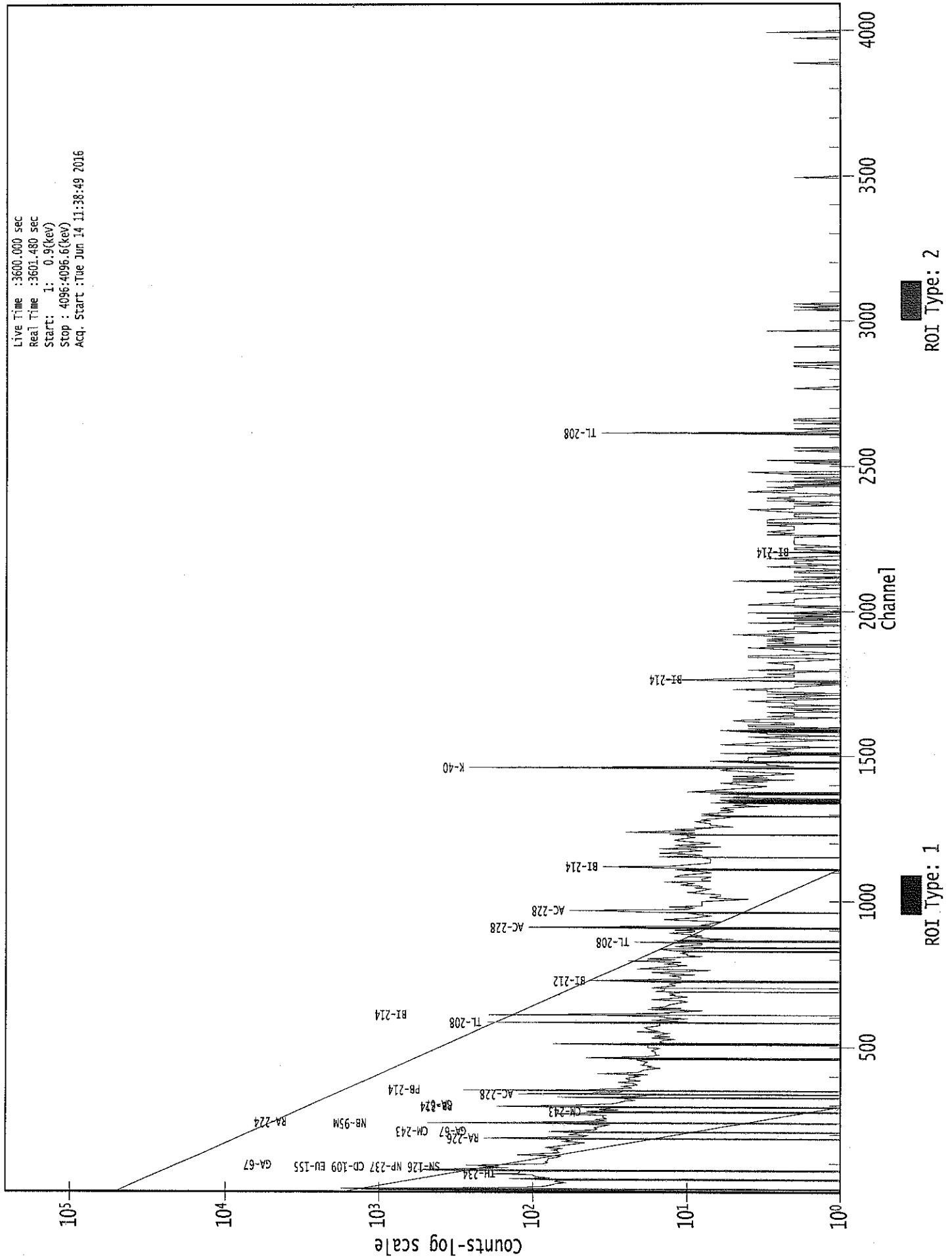
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP 5022 02-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	1	0	0
3841:	0	0	0	0	0	0	0	1
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	1	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	1	0	1	0	0	0
3881:	0	1	0	0	0	0	2	0
3889:	0	0	0	0	0	1	0	0
3897:	0	0	0	0	0	1	0	0
3905:	0	0	0	0	0	0	0	0
3913:	1	1	1	0	1	0	0	0
3921:	0	0	0	1	1	0	0	0
3929:	1	0	0	0	0	0	1	1
3937:	0	0	0	0	0	0	0	0
3945:	1	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	1	0	0	2	0	0	1
3977:	0	0	0	0	0	0	1	0
3985:	0	1	0	1	0	0	0	0
3993:	3	0	0	0	0	1	0	0
4001:	0	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	0	0	0	0	1	0	0
4033:	0	0	0	0	0	0	0	0
4041:	1	1	0	0	1	0	1	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	0	1	1
4089:	0	0	0	0	0	0	0	0

0000038822.CNF

Live Time :3600.000 sec
Real Time :3601.480 sec
Start: 1: 0.9(kev)
Stop : 4096:4096.6(kev)
Acq. Start :Tue Jun 14 11:38:49 2016



VBS
6/14/16Analysis Report for 1606038-14
CP 5022 05-10

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-14
Sample Description : CP 5022 05-10
Sample Type : SOIL

Sample Size : 2.998E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 8:18:48AM
Acquisition Started : 6/14/2016 11:39:18AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3612.2 seconds

Dead Time : 0.34 %

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 : 38823

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-14
CP 5022 05-10

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 12:39:32PM
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	46.75	46.98	0.0000	0.00
2	74.94	75.15	0.0000	0.00
3	77.63	77.85	0.0000	0.00
4	87.50	87.71	0.0000	0.00
5	93.06	93.27	0.0000	0.00
6	106.59	106.79	0.0000	0.00
7	186.49	186.65	0.0000	0.00
8	238.99	239.12	0.0000	0.00
9	242.05	242.17	0.0000	0.00
10	270.69	270.81	0.0000	0.00
11	295.60	295.70	0.0000	0.00
12	300.85	300.95	0.0000	0.00
13	338.63	338.71	0.0000	0.00
14	352.37	352.44	0.0000	0.00
15	464.01	464.03	0.0000	0.00
16	511.57	511.56	0.0000	0.00
17	529.25	529.23	0.0000	0.00
18	583.46	583.41	0.0000	0.00
19	589.12	589.07	0.0000	0.00
20	609.75	609.69	0.0000	0.00
21	632.76	632.69	0.0000	0.00
22	727.19	727.08	0.0000	0.00
23	796.40	796.26	0.0000	0.00
24	911.59	911.40	0.0000	0.00
25	969.53	969.31	0.0000	0.00
26	989.92	989.69	0.0000	0.00
27	1120.54	1120.25	0.0000	0.00
28	1203.32	1203.00	0.0000	0.00
29	1207.32	1207.00	0.0000	0.00
30	1234.33	1234.00	0.0000	0.00
31	1238.91	1238.58	0.0000	0.00
32	1261.09	1260.75	0.0000	0.00
33	1379.14	1378.76	0.0000	0.00
34	1461.13	1460.71	0.0000	0.00
35	1524.84	1524.40	0.0000	0.00
36	1579.73	1579.26	0.0000	0.00
37	1584.27	1583.80	0.0000	0.00
38	1592.52	1592.05	0.0000	0.00
39	1728.54	1728.02	0.0000	0.00
40	1765.19	1764.65	0.0000	0.00
41	1847.60	1847.04	0.0000	0.00
42	2103.50	2102.86	0.0000	0.00

Analysis Report for 1606038-14
CP 5022 05-10

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	2187.16	2186.50	0.0000	0.00
44	2204.34	2203.68	0.0000	0.00
45	2240.55	2239.87	0.0000	0.00
46	2448.94	2448.20	0.0000	0.00
47	2615.00	2614.22	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-14
CP 5022 05-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 12:39:32PM

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	46.75	43 -	51	46.98	1.47E+02	87.87	1.11E+03	1.46
M	2	74.94	71 -	81	75.15	2.94E+02	78.50	9.21E+02	1.66
m	3	77.63	71 -	81	77.85	5.28E+02	86.03	8.64E+02	1.67
M	4	87.50	83 -	97	87.71	4.22E+02	103.03	1.29E+03	3.97
m	5	93.06	83 -	97	93.27	3.97E+02	80.97	7.66E+02	2.26
	6	106.59	104 -	110	106.79	9.34E+01	64.44	6.89E+02	4.57
	7	186.49	181 -	192	186.65	2.05E+02	87.66	8.58E+02	1.89
M	8	238.99	234 -	245	239.12	7.19E+02	62.37	2.67E+02	1.80
m	9	242.05	234 -	245	242.17	1.45E+02	67.39	3.14E+02	1.89
	10	270.69	268 -	273	270.81	6.27E+01	40.19	2.73E+02	2.07
M	11	295.60	292 -	303	295.70	2.12E+02	42.07	1.91E+02	2.14
m	12	300.85	292 -	303	300.95	4.09E+01	34.03	2.11E+02	1.91
	13	338.63	334 -	343	338.71	1.56E+02	56.11	3.62E+02	1.43
	14	352.37	349 -	356	352.44	2.41E+02	49.96	2.55E+02	1.98
	15	464.01	461 -	467	464.03	2.33E+01	29.91	1.43E+02	1.53
	16	511.57	507 -	517	511.56	1.51E+02	39.92	1.32E+02	2.92
	17	529.25	526 -	532	529.23	2.90E+01	21.93	6.60E+01	3.23
M	18	583.46	578 -	592	583.41	1.93E+02	36.65	1.03E+02	2.40
m	19	589.12	578 -	592	589.07	1.79E+01	26.90	1.15E+02	2.41
	20	609.75	606 -	613	609.69	1.83E+02	40.60	1.46E+02	2.11
	21	632.76	630 -	636	632.69	2.45E+01	23.54	8.11E+01	1.61
	22	727.19	720 -	732	727.08	4.35E+01	40.13	1.69E+02	2.65
	23	796.40	792 -	800	796.26	4.25E+01	24.07	6.30E+01	2.75
	24	911.59	908 -	916	911.40	1.46E+02	29.57	4.50E+01	2.17
	25	969.53	966 -	974	969.31	5.69E+01	33.70	1.30E+02	2.27
	26	989.92	985 -	994	989.69	3.58E+01	20.59	4.05E+01	4.10
	27	1120.54	1116 -	1123	1120.25	5.91E+01	24.90	6.38E+01	2.31
M	28	1203.32	1200 -	1213	1203.00	1.98E+01	18.43	5.49E+01	2.31
m	29	1207.32	1200 -	1213	1207.00	1.92E+01	18.53	4.54E+01	2.31
M	30	1234.33	1227 -	1244	1234.00	1.28E+01	17.41	3.88E+01	2.32
m	31	1238.91	1227 -	1244	1238.58	2.30E+01	23.75	6.42E+01	3.40
	32	1261.09	1250 -	1271	1260.75	4.03E+01	36.00	8.33E+01	17.97
	33	1379.14	1372 -	1381	1378.76	1.33E+01	17.29	3.55E+01	2.85
	34	1461.13	1455 -	1467	1460.71	3.86E+02	44.61	5.35E+01	2.53
	35	1524.84	1521 -	1528	1524.40	1.00E+01	6.32	0.00E+00	2.92
	36	1579.73	1575 -	1581	1579.26	8.50E+00	8.51	7.00E+00	1.22
	37	1584.27	1582 -	1587	1583.80	8.43E+00	9.11	1.11E+01	2.25
	38	1592.52	1588 -	1596	1592.05	1.59E+01	13.30	1.62E+01	1.59
	39	1728.54	1723 -	1732	1728.02	1.06E+01	8.77	4.77E+00	6.36
	40	1765.19	1761 -	1767	1764.65	2.65E+01	12.02	7.00E+00	2.42

Analysis Report for 1606038-14

CP 5022 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1847.60	1843 -	1850	1847.04	1.11E+01	8.25	3.85E+00	2.97
42	2103.50	2099 -	2107	2102.86	9.18E+00	8.02	3.64E+00	2.82
43	2187.16	2182 -	2190	2186.50	6.00E+00	4.90	0.00E+00	1.16
44	2204.34	2199 -	2207	2203.68	1.49E+01	9.39	4.24E+00	2.96
45	2240.55	2237 -	2242	2239.87	4.58E+00	5.74	2.83E+00	2.72
46	2448.94	2444 -	2452	2448.20	1.00E+01	6.32	0.00E+00	3.22
47	2615.00	2609 -	2618	2614.22	6.30E+01	15.87	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 : 6/14/2016 12:39:32PM

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	46.75	43 -	51	1.47E+02	87.87	1.11E+03	6.94E+01
M	2	74.94	71 -	81	2.94E+02	78.50	9.21E+02	4.99E+01
m	3	77.63	71 -	81	5.28E+02	86.03	8.64E+02	4.83E+01
M	4	87.50	83 -	97	4.22E+02	103.03	1.29E+03	5.90E+01
m	5	93.06	83 -	97	3.97E+02	80.97	7.66E+02	4.55E+01
	6	106.59	104 -	110	9.34E+01	64.44	6.89E+02	5.05E+01
	7	186.49	181 -	192	2.05E+02	87.66	8.58E+02	6.81E+01
M	8	238.99	234 -	245	7.19E+02	62.37	2.67E+02	2.68E+01
m	9	242.05	234 -	245	1.45E+02	67.39	3.14E+02	2.91E+01
	10	270.69	268 -	273	6.27E+01	40.19	2.73E+02	3.04E+01
M	11	295.60	292 -	303	2.12E+02	42.07	1.91E+02	2.27E+01
m	12	300.85	292 -	303	4.09E+01	34.03	2.11E+02	2.39E+01
	13	338.63	334 -	343	1.56E+02	56.11	3.62E+02	4.13E+01
	14	352.37	349 -	356	2.41E+02	49.96	2.55E+02	3.22E+01
	15	464.01	461 -	467	2.33E+01	29.91	1.43E+02	2.33E+01
	16	511.57	507 -	517	1.51E+02	39.92	1.32E+02	2.59E+01
	17	529.25	526 -	532	2.90E+01	21.93	6.60E+01	1.57E+01
M	18	583.46	578 -	592	1.93E+02	36.65	1.03E+02	1.67E+01
m	19	589.12	578 -	592	1.79E+01	26.90	1.15E+02	1.77E+01
	20	609.75	606 -	613	1.83E+02	40.60	1.46E+02	2.49E+01

: 00782

Analysis Report for 1606038-14

CP 5022 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
21	632.76	630 -	636	2.45E+01	23.54	8.11E+01	1.76E+01
22	727.19	720 -	732	4.35E+01	40.13	1.69E+02	3.12E+01
23	796.40	792 -	800	4.25E+01	24.07	6.30E+01	1.66E+01
24	911.59	908 -	916	1.46E+02	29.57	4.50E+01	1.41E+01
25	969.53	966 -	974	5.69E+01	33.70	1.30E+02	2.48E+01
26	989.92	985 -	994	3.58E+01	20.59	4.05E+01	1.38E+01
27	1120.54	1116 -	1123	5.91E+01	24.90	6.38E+01	1.61E+01
M 28	1203.32	1200 -	1213	1.98E+01	18.43	5.49E+01	1.22E+01
m 29	1207.32	1200 -	1213	1.92E+01	18.53	4.54E+01	1.11E+01
M 30	1234.33	1227 -	1244	1.28E+01	17.41	3.88E+01	1.02E+01
m 31	1238.91	1227 -	1244	2.30E+01	23.75	6.42E+01	1.32E+01
32	1261.09	1250 -	1271	4.03E+01	36.00	8.33E+01	2.77E+01
33	1379.14	1372 -	1381	1.33E+01	17.29	3.55E+01	1.29E+01
34	1461.13	1455 -	1467	3.86E+02	44.61	5.35E+01	1.73E+01
35	1524.84	1521 -	1528	1.00E+01	6.32	0.00E+00	0.00E+00
36	1579.73	1575 -	1581	8.50E+00	8.51	7.00E+00	5.10E+00
37	1584.27	1582 -	1587	8.43E+00	9.11	1.11E+01	5.77E+00
38	1592.52	1588 -	1596	1.59E+01	13.30	1.62E+01	8.75E+00
39	1728.54	1723 -	1732	1.06E+01	8.77	4.77E+00	4.83E+00
40	1765.19	1761 -	1767	2.65E+01	12.02	7.00E+00	5.10E+00
41	1847.60	1843 -	1850	1.11E+01	8.25	3.85E+00	4.00E+00
42	2103.50	2099 -	2107	9.18E+00	8.02	3.64E+00	4.31E+00
43	2187.16	2182 -	2190	6.00E+00	4.90	0.00E+00	0.00E+00
44	2204.34	2199 -	2207	1.49E+01	9.39	4.24E+00	4.41E+00
45	2240.55	2237 -	2242	4.58E+00	5.74	2.83E+00	3.15E+00
46	2448.94	2444 -	2452	1.00E+01	6.32	0.00E+00	0.00E+00
47	2615.00	2609 -	2618	6.30E+01	15.87	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 2.00sigma

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/14/2016 12:39:32PM

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

: 00783

Analysis Report for 1606038-14

CP 5022 05-10

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.75	43 -	51	46.98	1.47E+02	87.87	1.11E+03	PB-210
M	2	74.94	71 -	81	75.15	2.94E+02	78.50	9.21E+02	AM-243
m	3	77.63	71 -	81	77.85	5.28E+02	86.03	8.64E+02	TI-44
M	4	87.50	83 -	97	87.71	4.22E+02	103.03	1.29E+03	SN-126 CD-109 LU-176 NP-237 EU-155
m	5	93.06	83 -	97	93.27	3.97E+02	80.97	7.66E+02	GA-67
	6	106.59	104 -	110	106.79	9.34E+01	64.44	6.89E+02	NP-239
	7	186.49	181 -	192	186.65	2.05E+02	87.66	8.58E+02	RA-226
M	8	238.99	234 -	245	239.12	7.19E+02	62.37	2.67E+02	PB-212
m	9	242.05	234 -	245	242.17	1.45E+02	67.39	3.14E+02	.....
	10	270.69	268 -	273	270.81	6.27E+01	40.19	2.73E+02	.....
M	11	295.60	292 -	303	295.70	2.12E+02	42.07	1.91E+02	PB-214
m	12	300.85	292 -	303	300.95	4.09E+01	34.03	2.11E+02	GA-67 PB-212 BI-210M
	13	338.63	334 -	343	338.71	1.56E+02	56.11	3.62E+02	AC-228
	14	352.37	349 -	356	352.44	2.41E+02	49.96	2.55E+02	PB-214
	15	464.01	461 -	467	464.03	2.33E+01	29.91	1.43E+02	SB-125
	16	511.57	507 -	517	511.56	1.51E+02	39.92	1.32E+02	.....
	17	529.25	526 -	532	529.23	2.90E+01	21.93	6.60E+01	RB-83 I-133
M	18	583.46	578 -	592	583.41	1.93E+02	36.65	1.03E+02	TL-208
m	19	589.12	578 -	592	589.07	1.79E+01	26.90	1.15E+02	.....
	20	609.75	606 -	613	609.69	1.83E+02	40.60	1.46E+02	BI-214
	21	632.76	630 -	636	632.69	2.45E+01	23.54	8.11E+01	.....
	22	727.19	720 -	732	727.08	4.35E+01	40.13	1.69E+02	BI-212
	23	796.40	792 -	800	796.26	4.25E+01	24.07	6.30E+01	CS-134
	24	911.59	908 -	916	911.40	1.46E+02	29.57	4.50E+01	AC-228 LU-172
	25	969.53	966 -	974	969.31	5.69E+01	33.70	1.30E+02	AC-228
	26	989.92	985 -	994	989.69	3.58E+01	20.59	4.05E+01	.....
	27	1120.54	1116 -	1123	1120.25	5.91E+01	24.90	6.38E+01	SC-46 BI-214 TA-182
M	28	1203.32	1200 -	1213	1203.00	1.98E+01	18.43	5.49E+01	.....
m	29	1207.32	1200 -	1213	1207.00	1.92E+01	18.53	4.54E+01	.....
M	30	1234.33	1227 -	1244	1234.00	1.28E+01	17.41	3.88E+01	.....
m	31	1238.91	1227 -	1244	1238.58	2.30E+01	23.75	6.42E+01	CO-56
	32	1261.09	1250 -	1271	1260.75	4.03E+01	36.00	8.33E+01	I-135
	33	1379.14	1372 -	1381	1378.76	1.33E+01	17.29	3.55E+01	.....
	34	1461.13	1455 -	1467	1460.71	3.86E+02	44.61	5.35E+01	K-40
	35	1524.84	1521 -	1528	1524.40	1.00E+01	6.32	0.00E+00	.....
	36	1579.73	1575 -	1581	1579.26	8.50E+00	8.51	7.00E+00	.....
	37	1584.27	1582 -	1587	1583.80	8.43E+00	9.11	1.11E+01	.....
	38	1592.52	1588 -	1596	1592.05	1.59E+01	13.30	1.62E+01	.....
	39	1728.54	1723 -	1732	1728.02	1.06E+01	8.77	4.77E+00	.....
	40	1765.19	1761 -	1767	1764.65	2.65E+01	12.02	7.00E+00	BI-214
	41	1847.60	1843 -	1850	1847.04	1.11E+01	8.25	3.85E+00	.....
	42	2103.50	2099 -	2107	2102.86	9.18E+00	8.02	3.64E+00	.....
	43	2187.16	2182 -	2190	2186.50	6.00E+00	4.90	0.00E+00	.....
	44	2204.34	2199 -	2207	2203.68	1.49E+01	9.39	4.24E+00	BI-214

Analysis Report for 1606038-14

CP 5022 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
45	2240.55	2237 -	2242	2239.87	4.58E+00	5.74	2.83E+00	.....
46	2448.94	2444 -	2452	2448.20	1.00E+01	6.32	0.00E+00	.....
47	2615.00	2609 -	2618	2614.22	6.30E+01	15.87	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 : 6/14/2016 12:39:32PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.75	1.47E+02	87.87	1.51E-02	1.58E-03
M	2	74.94	2.94E+02	78.50	2.36E-02	2.09E-03
m	3	77.63	5.28E+02	86.03	2.39E-02	2.18E-03
M	4	87.50	4.22E+02	103.03	2.44E-02	2.51E-03
m	5	93.06	3.97E+02	80.97	2.44E-02	2.41E-03
	6	106.59	9.34E+01	64.44	2.40E-02	2.09E-03
	7	186.49	2.05E+02	87.66	1.83E-02	1.42E-03
M	8	238.99	7.19E+02	62.37	1.52E-02	1.18E-03
m	9	242.05	1.45E+02	67.39	1.51E-02	1.17E-03
	10	270.69	6.27E+01	40.19	1.38E-02	1.04E-03
M	11	295.60	2.12E+02	42.07	1.28E-02	9.74E-04
m	12	300.85	4.09E+01	34.03	1.26E-02	9.66E-04
	13	338.63	1.56E+02	56.11	1.14E-02	9.12E-04
	14	352.37	2.41E+02	49.96	1.10E-02	8.93E-04
	15	464.01	2.33E+01	29.91	8.71E-03	7.65E-04
	16	511.57	1.51E+02	39.92	8.00E-03	7.18E-04
	17	529.25	2.90E+01	21.93	7.77E-03	7.00E-04
M	18	583.46	1.93E+02	36.65	7.14E-03	6.46E-04
m	19	589.12	1.79E+01	26.90	7.08E-03	6.40E-04
	20	609.75	1.83E+02	40.60	6.87E-03	6.20E-04
	21	632.76	2.45E+01	23.54	6.65E-03	5.97E-04
	22	727.19	4.35E+01	40.13	5.89E-03	5.14E-04
	23	796.40	4.25E+01	24.07	5.45E-03	4.58E-04
	24	911.59	1.46E+02	29.57	4.85E-03	3.72E-04
	25	969.53	5.69E+01	33.70	4.60E-03	3.61E-04
	26	989.92	3.58E+01	20.59	4.52E-03	3.58E-04
	27	1120.54	5.91E+01	24.90	4.08E-03	3.33E-04

Analysis Report for 1606038-14
CP 5022 05-10

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	28	1203.32	1.98E+01	18.43	3.84E-03	3.17E-04
m	29	1207.32	1.92E+01	18.53	3.83E-03	3.16E-04
M	30	1234.33	1.28E+01	17.41	3.76E-03	3.10E-04
m	31	1238.91	2.30E+01	23.75	3.75E-03	3.09E-04
	32	1261.09	4.03E+01	36.00	3.70E-03	3.04E-04
	33	1379.14	1.33E+01	17.29	3.44E-03	2.82E-04
	34	1461.13	3.86E+02	44.61	3.29E-03	2.69E-04
	35	1524.84	1.00E+01	6.32	3.18E-03	2.60E-04
	36	1579.73	8.50E+00	8.51	3.10E-03	2.52E-04
	37	1584.27	8.43E+00	9.11	3.09E-03	2.51E-04
	38	1592.52	1.59E+01	13.30	3.08E-03	2.50E-04
	39	1728.54	1.06E+01	8.77	2.90E-03	2.29E-04
	40	1765.19	2.65E+01	12.02	2.86E-03	2.24E-04
	41	1847.60	1.11E+01	8.25	2.77E-03	2.13E-04
	42	2103.50	9.18E+00	8.02	2.54E-03	2.13E-04
	43	2187.16	6.00E+00	4.90	2.47E-03	2.13E-04
	44	2204.34	1.49E+01	9.39	2.46E-03	2.13E-04
	45	2240.55	4.58E+00	5.74	2.44E-03	2.13E-04
	46	2448.94	1.00E+01	6.32	2.32E-03	2.13E-04
	47	2615.00	6.30E+01	15.87	2.24E-03	2.13E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/14/2016 12:39:32PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037621.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.75	1.47E+02	87.87	4.44E+01	1.35E+00	1.03E+02	8.79E+01
M	2	74.94	2.94E+02	78.50			2.94E+02	7.85E+01
m	3	77.63	5.28E+02	86.03	2.41E+00	1.27E+01	5.25E+02	8.70E+01
M	4	87.50	4.22E+02	103.03			4.22E+02	1.03E+02
m	5	93.06	3.97E+02	80.97	7.34E+01	7.09E+00	3.24E+02	8.13E+01
	6	106.59	9.34E+01	64.44			9.34E+01	6.44E+01
	7	186.49	2.05E+02	87.66	3.79E+01	5.70E+00	1.67E+02	8.78E+01
M	8	238.99	7.19E+02	62.37	1.16E+01	5.57E+00	7.08E+02	6.26E+01
m	9	242.05	1.45E+02	67.39			1.45E+02	6.74E+01
	10	270.69	6.27E+01	40.19			6.27E+01	4.02E+01

Analysis Report for 1606038-14

CP 5022 05-10

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	11	295.60	2.12E+02	42.07	1.82E+00	4.34E+00	2.10E+02	4.23E+01
m	12	300.85	4.09E+01	34.03			4.09E+01	3.40E+01
	13	338.63	1.56E+02	56.11			1.56E+02	5.61E+01
	14	352.37	2.41E+02	49.96	4.15E+00	3.98E+00	2.36E+02	5.01E+01
	15	464.01	2.33E+01	29.91			2.33E+01	2.99E+01
	16	511.57	1.51E+02	39.92	6.27E+01	4.94E+00	8.83E+01	4.02E+01
	17	529.25	2.90E+01	21.93			2.90E+01	2.19E+01
M	18	583.46	1.93E+02	36.65	2.16E+00	3.21E+00	1.91E+02	3.68E+01
m	19	589.12	1.79E+01	26.90			1.79E+01	2.69E+01
	20	609.75	1.83E+02	40.60	5.95E+00	3.88E+00	1.77E+02	4.08E+01
	21	632.76	2.45E+01	23.54			2.45E+01	2.35E+01
	22	727.19	4.35E+01	40.13			4.35E+01	4.01E+01
	23	796.40	4.25E+01	24.07			4.25E+01	2.41E+01
	24	911.59	1.46E+02	29.57	1.86E+00	2.46E+00	1.44E+02	2.97E+01
	25	969.53	5.69E+01	33.70			5.69E+01	3.37E+01
	26	989.92	3.58E+01	20.59			3.58E+01	2.06E+01
	27	1120.54	5.91E+01	24.90			5.91E+01	2.49E+01
M	28	1203.32	1.98E+01	18.43			1.98E+01	1.84E+01
m	29	1207.32	1.92E+01	18.53			1.92E+01	1.85E+01
M	30	1234.33	1.28E+01	17.41			1.28E+01	1.74E+01
m	31	1238.91	2.30E+01	23.75			2.30E+01	2.37E+01
	32	1261.09	4.03E+01	36.00			4.03E+01	3.60E+01
	33	1379.14	1.33E+01	17.29			1.33E+01	1.73E+01
	34	1461.13	3.86E+02	44.61	2.56E+00	2.02E+00	3.84E+02	4.47E+01
	35	1524.84	1.00E+01	6.32			1.00E+01	6.32E+00
	36	1579.73	8.50E+00	8.51			8.50E+00	8.51E+00
	37	1584.27	8.43E+00	9.11			8.43E+00	9.11E+00
	38	1592.52	1.59E+01	13.30			1.59E+01	1.33E+01
	39	1728.54	1.06E+01	8.77			1.06E+01	8.77E+00
	40	1765.19	2.65E+01	12.02			2.65E+01	1.20E+01
	41	1847.60	1.11E+01	8.25			1.11E+01	8.25E+00
	42	2103.50	9.18E+00	8.02			9.18E+00	8.02E+00
	43	2187.16	6.00E+00	4.90			6.00E+00	4.90E+00
	44	2204.34	1.49E+01	9.39			1.49E+01	9.39E+00
	45	2240.55	4.58E+00	5.74			4.58E+00	5.74E+00
	46	2448.94	1.00E+01	6.32			1.00E+01	6.32E+00
	47	2615.00	6.30E+01	15.87	3.45E+00	1.23E+00	5.96E+01	1.59E+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 1606038-14

CP 5022 05-10

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/14/2016 12:39:32PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037621.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	46.75	1.47E+02	87.87	4.44E+01	1.35E+00	1.03E+02	8.79E+01
M	2	74.94	2.94E+02	78.50			2.94E+02	7.85E+01
m	3	77.63	5.28E+02	86.03	2.41E+00	1.27E+01	5.25E+02	8.70E+01
M	4	87.50	4.22E+02	103.03			4.22E+02	1.03E+02
m	5	93.06	3.97E+02	80.97	7.34E+01	7.09E+00	3.24E+02	8.13E+01
	6	106.59	9.34E+01	64.44			9.34E+01	6.44E+01
	7	186.49	2.05E+02	87.66	3.79E+01	5.70E+00	1.67E+02	8.78E+01
M	8	238.99	7.19E+02	62.37	1.16E+01	5.57E+00	7.08E+02	6.26E+01
m	9	242.05	1.45E+02	67.39			1.45E+02	6.74E+01
	10	270.69	6.27E+01	40.19			6.27E+01	4.02E+01
M	11	295.60	2.12E+02	42.07	1.82E+00	4.34E+00	2.10E+02	4.23E+01
m	12	300.85	4.09E+01	34.03			4.09E+01	3.40E+01
	13	338.63	1.56E+02	56.11			1.56E+02	5.61E+01
	14	352.37	2.41E+02	49.96	4.15E+00	3.98E+00	2.36E+02	5.01E+01
	15	464.01	2.33E+01	29.91			2.33E+01	2.99E+01
	16	511.57	1.51E+02	39.92	6.27E+01	4.94E+00	8.83E+01	4.02E+01
	17	529.25	2.90E+01	21.93			2.90E+01	2.19E+01
M	18	583.46	1.93E+02	36.65	2.16E+00	3.21E+00	1.91E+02	3.68E+01
m	19	589.12	1.79E+01	26.90			1.79E+01	2.69E+01
	20	609.75	1.83E+02	40.60	5.95E+00	3.88E+00	1.77E+02	4.08E+01
	21	632.76	2.45E+01	23.54			2.45E+01	2.35E+01
	22	727.19	4.35E+01	40.13			4.35E+01	4.01E+01
	23	796.40	4.25E+01	24.07			4.25E+01	2.41E+01
	24	911.59	1.46E+02	29.57	1.86E+00	2.46E+00	1.44E+02	2.97E+01
	25	969.53	5.69E+01	33.70			5.69E+01	3.37E+01
	26	989.92	3.58E+01	20.59			3.58E+01	2.06E+01
	27	1120.54	5.91E+01	24.90			5.91E+01	2.49E+01
M	28	1203.32	1.98E+01	18.43			1.98E+01	1.84E+01
m	29	1207.32	1.92E+01	18.53			1.92E+01	1.85E+01
M	30	1234.33	1.28E+01	17.41			1.28E+01	1.74E+01
m	31	1238.91	2.30E+01	23.75			2.30E+01	2.37E+01
	32	1261.09	4.03E+01	36.00			4.03E+01	3.60E+01
	33	1379.14	1.33E+01	17.29			1.33E+01	1.73E+01
	34	1461.13	3.86E+02	44.61	2.56E+00	2.02E+00	3.84E+02	4.47E+01
	35	1524.84	1.00E+01	6.32			1.00E+01	6.32E+00
	36	1579.73	8.50E+00	8.51			8.50E+00	8.51E+00
	37	1584.27	8.43E+00	9.11			8.43E+00	9.11E+00
	38	1592.52	1.59E+01	13.30			1.59E+01	1.33E+01
	39	1728.54	1.06E+01	8.77			1.06E+01	8.77E+00
	40	1765.19	2.65E+01	12.02			2.65E+01	1.20E+01
	41	1847.60	1.11E+01	8.25			1.11E+01	8.25E+00

Analysis Report for 1606038-14

CP 5022 05-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	2103.50	9.18E+00	8.02			9.18E+00	8.02E+00
43	2187.16	6.00E+00	4.90			6.00E+00	4.90E+00
44	2204.34	1.49E+01	9.39			1.49E+01	9.39E+00
45	2240.55	4.58E+00	5.74			4.58E+00	5.74E+00
46	2448.94	1.00E+01	6.32			1.00E+01	6.32E+00
47	2615.00	6.30E+01	15.87	3.45E+00	1.23E+00	5.96E+01	1.59E+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	0.983	1460.81 *	10.67	2.74E+01	3.93E+00
GA-67	0.853	93.31 *	35.70	1.23E+01	2.42E+01
		208.95	2.24		
		300.22 *	16.00	6.73E+00	1.42E+01
CD-109	0.956	88.03 *	3.72	1.18E+01	3.22E+00
SN-126	0.999	87.57 *	37.00	1.17E+00	3.10E-01
I-133	0.352	529.87 *	86.30	1.81E+03	1.38E+03
TL-208	0.872	583.14 *	30.22	2.22E+00	4.72E-01
		860.37	4.48		
		2614.66 *	35.85	1.86E+00	5.27E-01
PB-210	0.990	46.50 *	4.25	4.01E+00	3.45E+00
BI-212	0.770	727.17 *	11.80	1.57E+00	1.45E+00
		1620.62	2.75		
PB-212	0.974	238.63 *	44.60	2.61E+00	3.08E-01
		300.09 *	3.41	2.38E+00	1.99E+00
BI-214	0.967	609.31 *	46.30	1.40E+00	3.45E-01
		1120.29 *	15.10	2.40E+00	1.03E+00
		1764.49 *	15.80	1.47E+00	6.77E-01
		2204.22 *	4.98	3.04E+00	1.94E+00
PB-214	0.971	295.21 *	19.19	2.14E+00	4.61E-01
		351.92 *	37.19	1.44E+00	3.27E-01
RA-226	0.988	186.21 *	3.28	7.00E+00	1.33E+01
AC-228	0.967	338.32 *	11.40	3.00E+00	1.10E+00
		911.07 *	27.70	2.68E+00	5.90E-01
		969.11 *	16.60	1.87E+00	1.11E+00

Analysis Report for 1606038-14
CP 5022 05-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
NP-237	0.853	86.50 *	12.60	3.43E+00	9.10E-01
AM-243	0.989	74.67 *	66.00	4.72E-01	1.33E-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 : 6/14/2016 12:39:32PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 3	77.63	1.45934E-01	8.28		
6	106.59	2.59475E-02	34.49	Tol.	NP-239
m 9	242.05	4.02968E-02	23.23		
10	270.69	1.74051E-02	32.07		
15	464.01	6.47661E-03	64.14	Tol.	SB-125
16	511.57	2.45364E-02	22.77		
m 19	589.12	4.97297E-03	75.12		
21	632.76	6.79487E-03	48.11		
23	796.40	1.18056E-02	28.32	Sum	
26	989.92	9.93056E-03	28.80		
M 28	1203.32	5.49263E-03	46.59		
m 29	1207.32	5.33996E-03	48.21	Sum	
M 30	1234.33	3.54313E-03	68.23		
m 31	1238.91	6.38277E-03	51.68		
32	1261.09	1.12060E-02	44.62	Tol.	I-135
33	1379.14	3.68280E-03	65.21		
35	1524.84	2.77778E-03	31.62		
36	1579.73	2.36111E-03	50.09	Sum	
37	1584.27	2.34127E-03	54.04		
38	1592.52	4.42130E-03	41.79	D-Esc	
39	1728.54	2.94872E-03	41.33		
41	1847.60	3.07692E-03	37.22	Sum	
42	2103.50	2.55051E-03	43.65	S-Esc	
43	2187.16	1.66667E-03	40.82		
45	2240.55	1.27315E-03	62.67	Sum	
46	2448.94	2.77778E-03	31.62		

Analysis Report for 1606038-14
CP 5022 05-10

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	2.74E+01	3.93E+00
GA-67	0.85	93.31 *	35.70	1.23E+01	2.42E+01
		208.95	2.24		
		300.22 *	16.00	6.73E+00	1.42E+01
CD-109	0.95	88.03 *	3.72	1.18E+01	3.22E+00
SN-126	0.99	87.57 *	37.00	1.17E+00	3.10E-01
I-133	0.35	529.87 *	86.30	1.81E+03	1.38E+03
TL-208	0.87	583.14 *	30.22	2.22E+00	4.72E-01
		860.37	4.48		
		2614.66 *	35.85	1.86E+00	5.27E-01
PB-210	0.99	46.50 *	4.25	4.01E+00	3.45E+00
BI-212	0.77	727.17 *	11.80	1.57E+00	1.45E+00
		1620.62	2.75		
PB-212	0.97	238.63 *	44.60	2.61E+00	3.08E-01
		300.09 *	3.41	2.38E+00	1.99E+00
BI-214	0.96	609.31 *	46.30	1.40E+00	3.45E-01
		1120.29 *	15.10	2.40E+00	1.03E+00
		1764.49 *	15.80	1.47E+00	6.77E-01
		2204.22 *	4.98	3.04E+00	1.94E+00
PB-214	0.97	295.21 *	19.19	2.14E+00	4.61E-01
		351.92 *	37.19	1.44E+00	3.27E-01
RA-226	0.98	186.21 *	3.28	7.00E+00	1.33E+01
AC-228	0.96	338.32 *	11.40	3.00E+00	1.10E+00
		911.07 *	27.70	2.68E+00	5.90E-01
		969.11 *	16.60	1.87E+00	1.11E+00
NP-237	0.85	86.50 *	12.60	3.43E+00	9.10E-01
AM-243	0.98	74.67 *	66.00	4.72E-01	1.33E-01

Analysis Report for 1606038-14
CP 5022 05-10

* = 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	0.983	2.74E+01	3.93E+00	
GA-67	0.853	9.03E+00	1.46E+01	
? CD-109	0.956	1.18E+01	3.22E+00	
? SN-126	0.999	1.17E+00	3.10E-01	
I-133	0.352	1.81E+03	1.38E+03	
TL-208	0.872	2.06E+00	3.52E-01	
PB-210	0.990	4.01E+00	3.45E+00	
BI-212	0.770	1.57E+00	1.45E+00	
PB-212	0.974	2.53E+00	3.05E-01	
BI-214	0.967	1.53E+00	2.91E-01	
PB-214	0.971	1.68E+00	2.67E-01	
RA-226	0.988	7.00E+00	1.33E+01	
AC-228	0.967	2.59E+00	4.72E-01	
? NP-237	0.853	3.43E+00	9.10E-01	
AM-243	0.989	4.72E-01	1.33E-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 1606038-14
CP 5022 05-10

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 12:39:32PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 3	77.63	1.45934E-01	8.28		
6	106.59	2.59475E-02	34.49	Tol.	NP-239
m 9	242.05	4.02968E-02	23.23		
10	270.69	1.74051E-02	32.07		
15	464.01	6.47661E-03	64.14	Tol.	SB-125
16	511.57	2.45364E-02	22.77		
m 19	589.12	4.97297E-03	75.12		
21	632.76	6.79487E-03	48.11		
23	796.40	1.18056E-02	28.32	Sum	
26	989.92	9.93056E-03	28.80		
M 28	1203.32	5.49263E-03	46.59		
m 29	1207.32	5.33996E-03	48.21	Sum	
M 30	1234.33	3.54313E-03	68.23		
m 31	1238.91	6.38277E-03	51.68		
32	1261.09	1.12060E-02	44.62	Tol.	I-135
33	1379.14	3.68280E-03	65.21		
35	1524.84	2.77778E-03	31.62		
36	1579.73	2.36111E-03	50.09	Sum	
37	1584.27	2.34127E-03	54.04		
38	1592.52	4.42130E-03	41.79	D-Esc	
39	1728.54	2.94872E-03	41.33		
41	1847.60	3.07692E-03	37.22	Sum	
42	2103.50	2.55051E-03	43.65	S-Esc	
43	2187.16	1.66667E-03	40.82		
45	2240.55	1.27315E-03	62.67	Sum	
46	2448.94	2.77778E-03	31.62		

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

Analysis Report for 1606038-14
CP 5022 05-10

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	-9.94E-01	1.41E+00	1.41E+00
+	NA-22	1274.54	99.94	-7.41E-02	1.82E-01	1.82E-01
+	NA-24	1368.53	99.99	3.45E+04	2.23E+04	1.30E+05
		2754.09	99.86	0.00E+00		2.23E+04
+	AL-26	1808.65	99.76	-3.10E-02	1.56E-01	1.56E-01
+	K-40	1460.81	* 10.67	2.74E+01	2.71E+00	2.71E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.01E-02	1.27E-01	1.27E-01
		78.34	96.00	4.04E-01		1.60E-01
+	SC-46	889.25	99.98	8.09E-02	1.80E-01	1.80E-01
		1120.51	99.99	3.18E-01		3.08E-01
+	V-48	983.52	99.98	-1.13E-02	2.38E-01	2.38E-01
		1312.10	97.50	8.18E-03		3.21E-01
+	CR-51	320.08	9.83	-1.06E+00	1.56E+00	1.56E+00
+	MN-54	834.83	99.97	3.44E-02	1.80E-01	1.80E-01
+	CO-56	846.75	99.96	-1.61E-02	1.75E-01	1.75E-01
		1037.75	14.03	-4.30E-01		1.29E+00
		1238.25	67.00	7.70E-02		3.91E-01
		1771.40	15.51	-1.57E+00		8.89E-01
		2598.48	16.90	1.47E-01		8.82E-01
+	CO-57	122.06	85.51	-4.75E-02	9.38E-02	9.38E-02
		136.48	10.60	-9.73E-02		8.46E-01
+	CO-58	810.76	99.40	-4.92E-02	1.78E-01	1.78E-01
+	FE-59	1099.22	56.50	-9.44E-02	3.53E-01	3.53E-01
		1291.56	43.20	2.62E-02		5.83E-01
+	CO-60	1173.22	100.00	-7.37E-02	1.91E-01	1.91E-01
		1332.49	100.00	1.23E-02		2.09E-01
+	ZN-65	1115.52	50.75	1.10E-03	3.72E-01	3.72E-01
+	GA-67	93.31	* 35.70	1.23E+01	7.91E+00	7.91E+00
		208.95	2.24	2.91E+00		7.30E+01
		300.22	* 16.00	6.73E+00		1.48E+01
+	SE-75	121.11	16.70	-2.01E-01	1.57E-01	4.98E-01
		136.00	59.20	1.06E-02		1.57E-01
		264.65	59.80	9.50E-02		2.02E-01
		279.53	25.20	6.77E-02		4.88E-01
		400.65	11.40	2.75E-01		1.21E+00
+	RB-82	776.52	13.00	-7.70E-01	1.65E+00	1.65E+00
+	RB-83	520.41	46.00	1.14E-01	2.81E-01	2.81E-01
		529.64	30.30	-7.04E-03		4.55E-01
		552.65	16.40	1.11E-01		8.92E-01
+	KR-85	513.99	0.43	6.11E+01	4.41E+01	4.41E+01
+	SR-85	513.99	99.27	3.03E-01	2.19E-01	2.19E-01

Analysis Report for 1606038-14
CP 5022 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	-4.56E-02	1.47E-01	1.69E-01
		1836.01	99.38	8.41E-03		1.47E-01
+	NB-93M	16.57	9.43	3.46E+01	1.50E+02	1.50E+02
+	NB-94	702.63	100.00	-1.29E-03	1.36E-01	1.55E-01
		871.10	100.00	2.68E-02		1.36E-01
+	NB-95	765.79	99.81	-8.11E-02	2.09E-01	2.09E-01
+	NB-95M	235.69	25.00	1.90E+01	8.38E+00	8.38E+00
+	ZR-95	724.18	43.70	-1.53E-01	3.46E-01	4.48E-01
		756.72	55.30	5.62E-02		3.46E-01
+	MO-99	181.06	6.20	-2.57E+00	2.92E+01	3.07E+01
		739.58	12.80	2.51E+01		2.92E+01
		778.00	4.50	6.12E+00		7.49E+01
+	RU-103	497.08	89.00	5.14E-03	1.84E-01	1.84E-01
+	RU-106	621.84	9.80	-3.12E-02	1.43E+00	1.43E+00
+	AG-108M	433.93	89.90	-7.33E-02	1.31E-01	1.31E-01
		614.37	90.40	-9.31E-03		1.68E-01
		722.95	90.50	-2.14E-01		1.74E-01
+	CD-109	88.03	* 3.72	1.18E+01	5.97E+00	5.97E+00
+	AG-110M	657.75	93.14	1.51E-02	1.62E-01	1.62E-01
		677.61	10.53	1.28E-02		1.42E+00
		706.67	16.46	2.25E-01		9.45E-01
		763.93	21.98	-6.81E-01		7.01E-01
		884.67	71.63	-7.63E-02		2.20E-01
		1384.27	23.94	-2.63E-01		7.57E-01
+	CD-113M	263.70	0.02	1.32E+02	4.93E+02	4.93E+02
+	SN-113	255.12	1.93	1.79E+00	2.14E-01	6.20E+00
		391.69	64.90	8.23E-02		2.14E-01
+	TE123M	159.00	84.10	-1.38E-02	1.16E-01	1.16E-01
+	SB-124	602.71	97.87	4.20E-02	1.77E-01	1.77E-01
		645.85	7.26	3.87E-01		2.28E+00
		722.78	11.10	-2.00E+00		1.63E+00
		1691.02	49.00	9.09E-02		3.32E-01
+	I-125	35.49	6.49	-1.61E+00	4.19E+00	4.19E+00
+	SB-125	176.33	6.89	2.22E-01	4.31E-01	1.31E+00
		427.89	29.33	5.39E-02		4.31E-01
		463.38	10.35	4.86E-01		1.37E+00
		600.56	17.80	-5.39E-01		7.52E-01
		635.90	11.32	-7.30E-02		1.29E+00
+	SB-126	414.70	83.30	-2.14E-01	2.74E-01	2.74E-01
		666.33	99.60	6.53E-02		2.98E-01
		695.00	99.60	-1.26E-01		2.91E-01
		720.50	53.80	-7.64E-02		5.03E-01
+	SN-126	87.57	* 37.00	1.17E+00	5.89E-01	5.89E-01
+	SB-127	473.00	25.00	8.87E-01	3.79E+00	4.68E+00
		685.20	35.70	1.80E-03		3.79E+00
		783.80	14.70	-2.06E+00		9.81E+00
+	I-129	29.78	57.00	-7.30E-01	7.36E-01	7.36E-01
		33.60	13.20	1.35E+00		2.21E+00

Analysis Report for 1606038-14
CP 5022 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	1.01E+00	7.36E-01	2.47E+00
+	I-131	284.30	6.05	-9.62E-03	3.78E-01	4.98E+00
		364.48	81.20	-6.06E-02		3.78E-01
		636.97	7.26	4.87E-01		5.35E+00
		722.89	1.80	-3.06E+01		2.49E+01
+	TE-132	49.72	13.10	-1.45E+01	1.60E+00	1.43E+01
		228.16	88.00	-6.79E-01		1.60E+00
+	BA-133	81.00	33.00	-1.45E+00	2.73E-01	3.18E-01
		302.84	17.80	-1.23E-01		6.96E-01
		356.01	60.00	2.76E-02		2.73E-01
+	I-133	529.87	* 86.30	1.81E+03	2.13E+03	2.13E+03
+	XE-133	81.00	38.00	-6.25E+00	1.38E+00	1.38E+00
+	CS-134	563.23	8.38	1.41E-01	1.66E-01	1.81E+00
		569.32	15.43	2.10E-01		9.18E-01
		604.70	97.60	3.27E-02		1.66E-01
		795.84	85.40	2.26E-01		2.20E-01
		801.93	8.73	-4.55E-01		1.78E+00
+	CS-135	268.24	16.00	3.11E-02	8.00E-01	8.00E-01
+	I-135	1131.51	22.50	-2.06E+12	1.24E+13	1.65E+13
		1260.41	28.60	-2.65E+11		1.24E+13
		1678.03	9.54	8.65E+12		2.60E+13
+	CS-136	153.22	7.46	1.64E+00	2.81E-01	2.37E+00
		163.89	4.61	2.34E-01		3.62E+00
		176.55	13.56	-1.70E-02		1.22E+00
		273.65	12.66	-4.40E-01		1.95E+00
		340.57	48.50	1.17E+00		6.90E-01
		818.50	99.70	6.79E-02		2.81E-01
		1048.07	79.60	1.18E-01		4.24E-01
		1235.34	19.70	-8.29E-01		2.17E+00
+	CS-137	661.65	85.12	3.77E-02	1.82E-01	1.82E-01
+	LA-138	788.74	34.00	2.21E-01	2.06E-01	4.73E-01
		1435.80	66.00	-7.96E-02		2.06E-01
+	CE-139	165.85	80.35	-1.72E-02	1.14E-01	1.14E-01
+	BA-140	162.64	6.70	9.74E-02	8.74E-01	2.56E+00
		304.84	4.50	1.46E+00		5.04E+00
		423.70	3.20	-1.44E+00		7.28E+00
		437.55	2.00	1.17E+00		1.23E+01
		537.32	25.00	-7.92E-02		8.74E-01
+	LA-140	328.77	20.50	3.99E-01	3.79E-01	1.20E+00
		487.03	45.50	-1.72E-01		5.61E-01
		815.85	23.50	3.34E-01		1.28E+00
		1596.49	95.49	1.65E-02		3.79E-01
+	CE-141	145.44	48.40	2.71E-01	2.55E-01	2.55E-01
+	CE-143	57.36	11.80	-1.64E+02	1.76E+02	4.84E+02
		293.26	42.00	2.07E+01		1.76E+02
		664.55	5.20	2.71E+02		1.37E+03
+	CE-144	133.54	10.80	-7.48E-01	7.80E-01	7.80E-01
+	PM-144	476.78	42.00	-1.16E-01	1.41E-01	3.18E-01
		618.01	98.60	4.10E-02		1.41E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49	99.49	1.61E-02	1.41E-01	1.61E-01
+	PM-145	36.85	21.70	-3.15E-01	5.22E-01	9.77E-01
		37.36	39.70	-2.01E-01		5.22E-01
		42.30	15.10	1.70E-01		1.10E+00
		72.40	2.31	-7.56E+00		5.87E+00
+	PM-146	453.90	39.94	-2.07E-02	3.34E-01	3.34E-01
		735.90	14.01	2.15E-01		1.17E+00
		747.13	13.10	2.11E-01		1.19E+00
+	ND-147	91.11	28.90	-5.90E-01	9.40E-01	9.40E-01
		531.02	13.10	2.13E-01		2.18E+00
+	PM-149	285.90	3.10	-4.99E+01	1.53E+02	1.53E+02
+	EU-152	121.78	20.50	-1.92E-01	3.80E-01	3.80E-01
		244.69	5.40	5.83E-01		2.57E+00
		344.27	19.13	7.20E-02		6.88E-01
		778.89	9.20	1.20E-01		1.73E+00
		964.01	10.40	6.81E-01		2.04E+00
		1085.78	7.22	6.92E-02		2.54E+00
		1112.02	9.60	-3.72E-01		1.68E+00
		1407.95	14.94	-9.01E-02		1.22E+00
+	GD-153	97.43	31.30	3.93E-02	2.70E-01	2.70E-01
		103.18	22.20	-4.94E-02		3.92E-01
+	EU-154	123.07	40.50	-2.79E-02	1.99E-01	1.99E-01
		723.30	19.70	-9.84E-01		8.01E-01
		873.19	11.50	1.08E-01		1.22E+00
		996.32	10.30	-5.23E-01		1.46E+00
		1004.76	17.90	-1.82E-01		9.50E-01
		1274.45	35.50	-2.07E-01		5.10E-01
+	EU-155	86.50	30.90	2.96E-01	3.96E-01	3.96E-01
		105.30	20.70	6.79E-02		4.29E-01
+	EU-156	811.77	10.40	-1.08E+00	2.60E+00	2.60E+00
		1153.47	7.20	6.96E-01		4.60E+00
		1230.71	8.90	1.10E+00		4.03E+00
+	HO-166M	184.41	72.60	2.86E-01	1.69E-01	1.69E-01
		280.45	29.60	8.83E-02		3.84E-01
		410.94	11.10	7.13E-01		1.22E+00
		711.69	54.10	1.96E-02		2.59E-01
+	TM-171	66.72	0.14	-7.71E+01	8.92E+01	8.92E+01
+	HF-172	81.75	4.52	-9.47E+00	7.54E-01	2.27E+00
		125.81	11.30	-5.49E-01		7.54E-01
+	LU-172	181.53	20.60	-2.30E+00	1.08E+00	1.54E+00
		810.06	16.63	6.45E-01		3.48E+00
		912.12	15.25	1.75E+01		7.42E+00
		1093.66	62.50	-1.37E-01		1.08E+00
+	LU-173	100.72	5.24	3.27E-01	6.47E-01	1.64E+00
		272.11	21.20	-2.02E-02		6.47E-01
+	HF-175	343.40	84.00	-1.62E-02	1.84E-01	1.84E-01
+	LU-176	88.34	13.30	6.80E-02	1.29E-01	9.54E-01
		201.83	86.00	3.42E-02		1.38E-01
		306.78	94.00	2.73E-02		1.29E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75	41.20	-4.95E-02	3.14E-01	3.14E-01
		1121.30	34.90	8.60E-01		8.74E-01
		1189.05	16.23	-1.95E-01		1.31E+00
		1221.41	26.98	5.02E-01		8.26E-01
		1231.02	11.44	1.45E+00		2.07E+00
+	IR-192	308.46	29.68	2.01E-01	2.85E-01	4.65E-01
		468.07	48.10	-2.68E-02		2.85E-01
+	HG-203	279.19	77.30	5.47E-02	1.82E-01	1.82E-01
+	BI-207	569.67	97.72	1.94E-02	1.42E-01	1.42E-01
		1063.62	74.90	-1.03E-02		2.28E-01
+	TL-208	583.14	* 30.22	2.22E+00	2.85E-01	8.67E-01
		860.37	4.48	7.77E-01		3.80E+00
		2614.66	* 35.85	1.86E+00		2.85E-01
+	BI-210M	262.00	45.00	-1.54E-01	2.43E-01	2.43E-01
		300.00	23.00	-1.44E+00		5.60E-01
+	PB-210	46.50	* 4.25	4.01E+00	5.58E+00	5.58E+00
+	PB-211	404.84	2.90	-5.66E+00	4.27E+00	4.27E+00
		831.96	2.90	-1.01E+00		5.81E+00
+	BI-212	727.17	* 11.80	1.57E+00	2.34E+00	2.34E+00
		1620.62	2.75	-1.35E+00		4.99E+00
+	PB-212	238.63	* 44.60	2.61E+00	4.14E-01	4.14E-01
		300.09	* 3.41	2.38E+00		5.22E+00
+	BI-214	609.31	* 46.30	1.40E+00	4.22E-01	4.22E-01
		1120.29	* 15.10	2.40E+00		1.42E+00
		1764.49	* 15.80	1.47E+00		7.16E-01
		2204.22	* 4.98	3.04E+00		2.35E+00
+	PB-214	295.21	* 19.19	2.14E+00	4.13E-01	9.12E-01
		351.92	* 37.19	1.44E+00		4.13E-01
+	RN-219	401.80	6.50	5.73E-01	2.00E+00	2.00E+00
+	RA-223	323.87	3.88	-2.74E+00	3.00E+00	3.00E+00
+	RA-224	240.98	3.95	3.35E+01	6.27E+00	6.27E+00
+	RA-225	40.00	31.00	4.21E-01	1.03E+00	1.03E+00
+	RA-226	186.21	* 3.28	7.00E+00	5.89E+00	5.89E+00
+	TH-227	50.10	8.40	-1.69E+00	1.66E+00	1.66E+00
		236.00	11.50	4.00E+00		1.77E+00
		256.20	6.30	8.61E-01		1.79E+00
+	AC-228	338.32	* 11.40	3.00E+00	5.87E-01	1.64E+00
		911.07	* 27.70	2.68E+00		5.87E-01
		969.11	* 16.60	1.87E+00		1.71E+00
+	TH-230	48.44	16.90	8.37E-01	9.37E-01	9.37E-01
		62.85	4.60	1.55E+00		2.93E+00
		67.67	0.37	-5.13E+00		3.25E+01
+	PA-231	283.67	1.60	-1.27E-02	5.37E+00	6.59E+00
		302.67	2.30	-9.49E-01		5.37E+00
+	TH-231	25.64	14.70	-6.72E-01	1.62E+00	5.45E+00
		84.21	6.40	-3.14E+00		1.62E+00
+	PA-233	311.98	38.60	-2.60E-01	4.18E-01	4.18E-01
+	PA-234	131.20	20.40	2.94E-01	4.44E-01	4.44E-01

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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	-6.36E-01	4.44E-01	1.70E+00
		946.00	12.00	-1.62E-01		1.23E+00
+	PA-234M	1001.03	0.92	2.99E+00	1.93E+01	1.93E+01
+	TH-234	63.29	3.80	2.61E+00	3.56E+00	3.56E+00
+	U-235	143.76	10.50	-1.74E-01	8.76E-01	8.76E-01
		163.35	4.70	1.21E-01		1.87E+00
		205.31	4.70	-3.64E+00		2.46E+00
+	NP-237	86.50	* 12.60	3.43E+00	1.73E+00	1.73E+00
+	NP-239	106.10	22.70	2.87E+00	1.40E+01	1.40E+01
		228.18	10.70	-1.51E+01		3.56E+01
		277.60	14.10	1.62E+01		3.03E+01
+	AM-241	59.54	35.90	-1.50E-01	3.51E-01	3.51E-01
+	AM-243	74.67	* 66.00	4.72E-01	3.02E-01	3.02E-01
+	CM-243	209.75	3.29	2.10E+00	8.53E-01	3.85E+00
		228.14	10.60	-4.24E-01		1.00E+00
		277.60	14.00	4.57E-01		8.53E-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	1.41E+00	1.41E+00	-9.94E-01	6.63E-01	
NA-22	1274.54	99.94	1.82E-01	1.82E-01	-7.41E-02	8.17E-02	
NA-24	1368.53	99.99	1.30E+05	2.23E+04	3.45E+04	5.80E+04	
	2754.09	99.86	2.23E+04		0.00E+00	0.00E+00	
AL-26	1808.65	99.76	1.56E-01	1.56E-01	-3.10E-02	6.58E-02	
+	K-40	1460.81	* 10.67	2.71E+00	2.71E+00	2.74E+01	1.26E+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)
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	1.27E-01	1.27E-01	-2.01E-02	6.21E-02
	78.34	96.00	1.60E-01		4.04E-01	7.86E-02
SC-46	889.25	99.98	1.80E-01	1.80E-01	8.09E-02	8.23E-02
	1120.51	99.99	3.08E-01		3.18E-01	1.45E-01
V-48	983.52	99.98	2.38E-01	2.38E-01	-1.13E-02	1.06E-01
	1312.10	97.50	3.21E-01		8.18E-03	1.44E-01
CR-51	320.08	9.83	1.56E+00	1.56E+00	-1.06E+00	7.43E-01
MN-54	834.83	99.97	1.80E-01	1.80E-01	3.44E-02	8.33E-02
CO-56	846.75	99.96	1.75E-01	1.75E-01	-1.61E-02	8.04E-02
	1037.75	14.03	1.29E+00		-4.30E-01	5.82E-01
	1238.25	67.00	3.91E-01		7.70E-02	1.80E-01
	1771.40	15.51	8.89E-01		-1.57E+00	3.59E-01
	2598.48	16.90	8.82E-01		1.47E-01	3.42E-01
CO-57	122.06	85.51	9.38E-02	9.38E-02	-4.75E-02	4.51E-02
	136.48	10.60	8.46E-01		-9.73E-02	4.08E-01
CO-58	810.76	99.40	1.78E-01	1.78E-01	-4.92E-02	8.17E-02
FE-59	1099.22	56.50	3.53E-01	3.53E-01	-9.44E-02	1.59E-01
	1291.56	43.20	5.83E-01		2.62E-02	2.66E-01
CO-60	1173.22	100.00	1.91E-01	1.91E-01	-7.37E-02	8.69E-02
	1332.49	100.00	2.09E-01		1.23E-02	9.50E-02
ZN-65	1115.52	50.75	3.72E-01	3.72E-01	1.10E-03	1.69E-01
+ GA-67	93.31	* 35.70	7.91E+00	7.91E+00	1.23E+01	3.91E+00
	208.95	2.24	7.30E+01		2.91E+00	3.53E+01
	300.22	* 16.00	1.48E+01		6.73E+00	7.15E+00
SE-75	121.11	16.70	4.98E-01	1.57E-01	-2.01E-01	2.40E-01
	136.00	59.20	1.57E-01		1.06E-02	7.57E-02
	264.65	59.80	2.02E-01		9.50E-02	9.66E-02
	279.53	25.20	4.88E-01		6.77E-02	2.33E-01
	400.65	11.40	1.21E+00		2.75E-01	5.73E-01
RB-82	776.52	13.00	1.65E+00	1.65E+00	-7.70E-01	7.59E-01
RB-83	520.41	46.00	2.81E-01	2.81E-01	1.14E-01	1.30E-01
	529.64	30.30	4.55E-01		-7.04E-03	2.12E-01
	552.65	16.40	8.92E-01		1.11E-01	4.16E-01
KR-85	513.99	0.43	4.41E+01	4.41E+01	6.11E+01	2.11E+01
SR-85	513.99	99.27	2.19E-01	2.19E-01	3.03E-01	1.05E-01
Y-88	898.02	93.40	1.69E-01	1.47E-01	-4.56E-02	7.65E-02
	1836.01	99.38	1.47E-01		8.41E-03	6.04E-02
NB-93M	16.57	9.43	1.50E+02	1.50E+02	3.46E+01	7.30E+01
NB-94	702.63	100.00	1.55E-01	1.36E-01	-1.29E-03	7.18E-02
	871.10	100.00	1.36E-01		2.68E-02	6.11E-02
NB-95	765.79	99.81	2.09E-01	2.09E-01	-8.11E-02	9.68E-02
NB-95M	235.69	25.00	8.38E+00	8.38E+00	1.90E+01	4.10E+00
ZR-95	724.18	43.70	4.48E-01	3.46E-01	-1.53E-01	2.09E-01
	756.72	55.30	3.46E-01		5.62E-02	1.61E-01
MO-99	181.06	6.20	3.07E+01	2.92E+01	-2.57E+00	1.47E+01
	739.58	12.80	2.92E+01		2.51E+01	1.36E+01
	778.00	4.50	7.49E+01		6.12E+00	3.46E+01
RU-103	497.08	89.00	1.84E-01	1.84E-01	5.14E-03	8.61E-02
RU-106	621.84	9.80	1.43E+00	1.43E+00	-3.12E-02	6.62E-01
AG-108M	433.93	89.90	1.31E-01	1.31E-01	-7.33E-02	6.12E-02
	614.37	90.40	1.68E-01		-9.31E-03	7.85E-02
	722.95	90.50	1.74E-01		-2.14E-01	8.06E-02

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	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
+	CD-109	88.03	*	3.72	5.97E+00	5.97E+00	1.18E+01	2.94E+00
	AG-110M	657.75		93.14	1.62E-01	1.62E-01	1.51E-02	7.53E-02
		677.61		10.53	1.42E+00		1.28E-02	6.59E-01
		706.67		16.46	9.45E-01		2.25E-01	4.37E-01
		763.93		21.98	7.01E-01		-6.81E-01	3.22E-01
		884.67		71.63	2.20E-01		-7.63E-02	1.00E-01
		1384.27		23.94	7.57E-01		-2.63E-01	3.36E-01
	CD-113M	263.70		0.02	4.93E+02	4.93E+02	1.32E+02	2.36E+02
	SN-113	255.12		1.93	6.20E+00	2.14E-01	1.79E+00	2.97E+00
		391.69		64.90	2.14E-01		8.23E-02	1.01E-01
	TE123M	159.00		84.10	1.16E-01	1.16E-01	-1.38E-02	5.56E-02
	SB-124	602.71		97.87	1.77E-01	1.77E-01	4.20E-02	8.26E-02
		645.85		7.26	2.28E+00		3.87E-01	1.06E+00
		722.78		11.10	1.63E+00		-2.00E+00	7.56E-01
		1691.02		49.00	3.32E-01		9.09E-02	1.39E-01
	I-125	35.49		6.49	4.19E+00	4.19E+00	-1.61E+00	2.02E+00
	SB-125	176.33		6.89	1.31E+00	4.31E-01	2.22E-01	6.28E-01
		427.89		29.33	4.31E-01		5.39E-02	2.03E-01
		463.38		10.35	1.37E+00		4.86E-01	6.47E-01
		600.56		17.80	7.52E-01		-5.39E-01	3.49E-01
		635.90		11.32	1.29E+00		-7.30E-02	5.97E-01
	SB-126	414.70		83.30	2.74E-01	2.74E-01	-2.14E-01	1.29E-01
		666.33		99.60	2.98E-01		6.53E-02	1.38E-01
		695.00		99.60	2.91E-01		-1.26E-01	1.35E-01
		720.50		53.80	5.03E-01		-7.64E-02	2.30E-01
+	SN-126	87.57	*	37.00	5.89E-01	5.89E-01	1.17E+00	2.91E-01
	SB-127	473.00		25.00	4.68E+00	3.79E+00	8.87E-01	2.20E+00
		685.20		35.70	3.79E+00		1.80E-03	1.76E+00
		783.80		14.70	9.81E+00		-2.06E+00	4.53E+00
	I-129	29.78		57.00	7.36E-01	7.36E-01	-7.30E-01	3.55E-01
		33.60		13.20	2.21E+00		1.35E+00	1.07E+00
		39.58		7.52	2.47E+00		1.01E+00	1.19E+00
	I-131	284.30		6.05	4.98E+00	3.78E-01	-9.62E-03	2.37E+00
		364.48		81.20	3.78E-01		-6.06E-02	1.78E-01
		636.97		7.26	5.35E+00		4.87E-01	2.47E+00
		722.89		1.80	2.49E+01		-3.06E+01	1.16E+01
	TE-132	49.72		13.10	1.43E+01	1.60E+00	-1.45E+01	6.92E+00
		228.16		88.00	1.60E+00		-6.79E-01	7.69E-01
	BA-133	81.00		33.00	3.18E-01	2.73E-01	-1.45E+00	1.55E-01
		302.84		17.80	6.96E-01		-1.23E-01	3.33E-01
		356.01		60.00	2.73E-01		2.76E-02	1.31E-01
+	I-133	529.87	*	86.30	2.13E+03	2.13E+03	1.81E+03	9.82E+02
	XE-133	81.00		38.00	1.38E+00	1.38E+00	-6.25E+00	6.70E-01
	CS-134	563.23		8.38	1.81E+00	1.66E-01	1.41E-01	8.49E-01
		569.32		15.43	9.18E-01		2.10E-01	4.29E-01
		604.70		97.60	1.66E-01		3.27E-02	7.81E-02
		795.84		85.40	2.20E-01		2.26E-01	1.03E-01
		801.93		8.73	1.78E+00		-4.55E-01	8.17E-01
	CS-135	268.24		16.00	8.00E-01	8.00E-01	3.11E-02	3.85E-01
	I-135	1131.51		22.50	1.65E+13	1.24E+13	-2.06E+12	7.51E+12
		1260.41		28.60	1.24E+13		-2.65E+11	5.59E+12
		1678.03		9.54	2.60E+13		8.65E+12	1.06E+13
	CS-136	153.22		7.46	2.37E+00	2.81E-01	1.64E+00	1.14E+00

Analysis Report for 1606038-14
CP 5022 05-10

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	3.62E+00	2.81E-01	2.34E-01	1.74E+00
	176.55	13.56	1.22E+00		-1.70E-02	5.85E-01
	273.65	12.66	1.95E+00		-4.40E-01	9.36E-01
	340.57	48.50	6.90E-01		1.17E+00	3.34E-01
	818.50	99.70	2.81E-01		6.79E-02	1.28E-01
	1048.07	79.60	4.24E-01		1.18E-01	1.93E-01
	1235.34	19.70	2.17E+00		-8.29E-01	1.00E+00
CS-137	661.65	85.12	1.82E-01	1.82E-01	3.77E-02	8.50E-02
LA-138	788.74	34.00	4.73E-01	2.06E-01	2.21E-01	2.18E-01
	1435.80	66.00	2.06E-01		-7.96E-02	8.77E-02
CE-139	165.85	80.35	1.14E-01	1.14E-01	-1.72E-02	5.48E-02
BA-140	162.64	6.70	2.56E+00	8.74E-01	9.74E-02	1.23E+00
	304.84	4.50	5.04E+00		1.46E+00	2.41E+00
	423.70	3.20	7.28E+00		-1.44E+00	3.42E+00
	437.55	2.00	1.23E+01		1.17E+00	5.79E+00
	537.32	25.00	8.74E-01		-7.92E-02	4.03E-01
LA-140	328.77	20.50	1.20E+00	3.79E-01	3.99E-01	5.74E-01
	487.03	45.50	5.61E-01		-1.72E-01	2.63E-01
	815.85	23.50	1.28E+00		3.34E-01	5.89E-01
	1596.49	95.49	3.79E-01		1.65E-02	1.67E-01
CE-141	145.44	48.40	2.55E-01	2.55E-01	2.71E-01	1.23E-01
CE-143	57.36	11.80	4.84E+02	1.76E+02	-1.64E+02	2.35E+02
	293.26	42.00	1.76E+02		2.07E+01	8.53E+01
	664.55	5.20	1.37E+03		2.71E+02	6.36E+02
CE-144	133.54	10.80	7.80E-01	7.80E-01	-7.48E-01	3.76E-01
PM-144	476.78	42.00	3.18E-01	1.41E-01	-1.16E-01	1.49E-01
	618.01	98.60	1.41E-01		4.10E-02	6.55E-02
	696.49	99.49	1.61E-01		1.61E-02	7.46E-02
PM-145	36.85	21.70	9.77E-01	5.22E-01	-3.15E-01	4.71E-01
	37.36	39.70	5.22E-01		-2.01E-01	2.52E-01
	42.30	15.10	1.10E+00		1.70E-01	5.30E-01
	72.40	2.31	5.87E+00		-7.56E+00	2.87E+00
PM-146	453.90	39.94	3.34E-01	3.34E-01	-2.07E-02	1.57E-01
	735.90	14.01	1.17E+00		2.15E-01	5.45E-01
	747.13	13.10	1.19E+00		2.11E-01	5.49E-01
ND-147	91.11	28.90	9.40E-01	9.40E-01	-5.90E-01	4.60E-01
	531.02	13.10	2.18E+00		2.13E-01	1.02E+00
PM-149	285.90	3.10	1.53E+02	1.53E+02	-4.99E+01	7.30E+01
EU-152	121.78	20.50	3.80E-01	3.80E-01	-1.92E-01	1.83E-01
	244.69	5.40	2.57E+00		5.83E-01	1.24E+00
	344.27	19.13	6.88E-01		7.20E-02	3.28E-01
	778.89	9.20	1.73E+00		1.20E-01	8.00E-01
	964.01	10.40	2.04E+00		6.81E-01	9.48E-01
	1085.78	7.22	2.54E+00		6.92E-02	1.16E+00
	1112.02	9.60	1.68E+00		-3.72E-01	7.56E-01
	1407.95	14.94	1.22E+00		-9.01E-02	5.41E-01
	97.43	31.30	2.70E-01		2.70E-01	3.93E-02
103.18	22.20	3.92E-01		-4.94E-02	1.89E-01	
EU-154	123.07	40.50	1.99E-01	1.99E-01	-2.79E-02	9.56E-02
	723.30	19.70	8.01E-01		-9.84E-01	3.71E-01
	873.19	11.50	1.22E+00		1.08E-01	5.53E-01
	996.32	10.30	1.46E+00		-5.23E-01	6.55E-01
	1004.76	17.90	9.50E-01		-1.82E-01	4.32E-01

Analysis Report for 1606038-14
CP 5022 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	1274.45	35.50	5.10E-01	1.99E-01	-2.07E-01	2.29E-01
EU-155	86.50	30.90	3.96E-01	3.96E-01	2.96E-01	1.94E-01
	105.30	20.70	4.29E-01		6.79E-02	2.08E-01
EU-156	811.77	10.40	2.60E+00	2.60E+00	-1.08E+00	1.19E+00
	1153.47	7.20	4.60E+00		6.96E-01	2.09E+00
	1230.71	8.90	4.03E+00		1.10E+00	1.84E+00
HO-166M	184.41	72.60	1.69E-01	1.69E-01	2.86E-01	8.22E-02
	280.45	29.60	3.84E-01		8.83E-02	1.83E-01
	410.94	11.10	1.22E+00		7.13E-01	5.76E-01
	711.69	54.10	2.59E-01		1.96E-02	1.19E-01
TM-171	66.72	0.14	8.92E+01	8.92E+01	-7.71E+01	4.35E+01
HF-172	81.75	4.52	2.27E+00	7.54E-01	-9.47E+00	1.10E+00
	125.81	11.30	7.54E-01		-5.49E-01	3.64E-01
LU-172	181.53	20.60	1.54E+00	1.08E+00	-2.30E+00	7.38E-01
	810.06	16.63	3.48E+00		6.45E-01	1.61E+00
	912.12	15.25	7.42E+00		1.75E+01	3.55E+00
	1093.66	62.50	1.08E+00		-1.37E-01	4.92E-01
LU-173	100.72	5.24	1.64E+00	6.47E-01	3.27E-01	7.94E-01
	272.11	21.20	6.47E-01		-2.02E-02	3.12E-01
HF-175	343.40	84.00	1.84E-01	1.84E-01	-1.62E-02	8.79E-02
LU-176	88.34	13.30	9.54E-01	1.29E-01	6.80E-02	4.67E-01
	201.83	86.00	1.38E-01		3.42E-02	6.66E-02
	306.78	94.00	1.29E-01		2.73E-02	6.15E-02
TA-182	67.75	41.20	3.14E-01	3.14E-01	-4.95E-02	1.53E-01
	1121.30	34.90	8.74E-01		8.60E-01	4.11E-01
	1189.05	16.23	1.31E+00		-1.95E-01	5.97E-01
	1221.41	26.98	8.26E-01		5.02E-01	3.77E-01
	1231.02	11.44	2.07E+00		1.45E+00	9.53E-01
IR-192	308.46	29.68	4.65E-01	2.85E-01	2.01E-01	2.22E-01
	468.07	48.10	2.85E-01		-2.68E-02	1.33E-01
HG-203	279.19	77.30	1.82E-01	1.82E-01	5.47E-02	8.72E-02
BI-207	569.67	97.72	1.42E-01	1.42E-01	1.94E-02	6.60E-02
	1063.62	74.90	2.28E-01		-1.03E-02	1.03E-01
+ TL-208	583.14	* 30.22	8.67E-01	2.85E-01	2.22E+00	4.18E-01
	860.37	* 4.48	3.80E+00		7.77E-01	1.75E+00
	2614.66	* 35.85	2.85E-01		1.86E+00	1.00E-01
BI-210M	262.00	45.00	2.43E-01	2.43E-01	-1.54E-01	1.16E-01
	300.00	23.00	5.60E-01		-1.44E+00	2.69E-01
+ PB-210	46.50	* 4.25	5.58E+00	5.58E+00	4.01E+00	2.74E+00
PB-211	404.84	2.90	4.27E+00	4.27E+00	-5.66E+00	2.02E+00
	831.96	2.90	5.81E+00		-1.01E+00	2.68E+00
+ BI-212	727.17	* 11.80	2.34E+00	2.34E+00	1.57E+00	1.12E+00
	1620.62	2.75	4.99E+00		-1.35E+00	2.09E+00
+ PB-212	238.63	* 44.60	4.14E-01	4.14E-01	2.61E+00	2.02E-01
	300.09	* 3.41	5.22E+00		2.38E+00	2.53E+00
+ BI-214	609.31	* 46.30	4.22E-01	4.22E-01	1.40E+00	2.00E-01
	1120.29	* 15.10	1.42E+00		2.40E+00	6.55E-01
	1764.49	* 15.80	7.16E-01		1.47E+00	2.83E-01
	2204.22	* 4.98	2.35E+00		3.04E+00	9.00E-01
+ PB-214	295.21	* 19.19	9.12E-01	4.13E-01	2.14E+00	4.42E-01
	351.92	* 37.19	4.13E-01		1.44E+00	1.98E-01
RN-219	401.80	6.50	2.00E+00	2.00E+00	5.73E-01	9.48E-01
RA-223	323.87	3.88	3.00E+00	3.00E+00	-2.74E+00	1.43E+00

Analysis Report for 1606038-14
CP 5022 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RA-224	240.98	3.95	6.27E+00	6.27E+00	3.35E+01	3.08E+00
RA-225	40.00	31.00	1.03E+00	1.03E+00	4.21E-01	5.00E-01
+ RA-226	186.21 *	3.28	5.89E+00	5.89E+00	7.00E+00	2.89E+00
TH-227	50.10	8.40	1.66E+00	1.66E+00	-1.69E+00	8.04E-01
	236.00	11.50	1.77E+00		4.00E+00	8.64E-01
	256.20	6.30	1.79E+00		8.61E-01	8.60E-01
+ AC-228	338.32 *	11.40	1.64E+00	5.87E-01	3.00E+00	7.94E-01
	911.07 *	27.70	5.87E-01		2.68E+00	2.68E-01
	969.11 *	16.60	1.71E+00		1.87E+00	8.12E-01
TH-230	48.44	16.90	9.37E-01	9.37E-01	8.37E-01	4.56E-01
	62.85	4.60	2.93E+00		1.55E+00	1.43E+00
	67.67	0.37	3.25E+01		-5.13E+00	1.59E+01
PA-231	283.67	1.60	6.59E+00	5.37E+00	-1.27E-02	3.13E+00
	302.67	2.30	5.37E+00		-9.49E-01	2.57E+00
TH-231	25.64	14.70	5.45E+00	1.62E+00	-6.72E-01	2.64E+00
	84.21	6.40	1.62E+00		-3.14E+00	7.89E-01
PA-233	311.98	38.60	4.18E-01	4.18E-01	-2.60E-01	1.99E-01
PA-234	131.20	20.40	4.44E-01	4.44E-01	2.94E-01	2.15E-01
	733.99	8.80	1.70E+00		-6.36E-01	7.85E-01
	946.00	12.00	1.23E+00		-1.62E-01	5.56E-01
PA-234M	1001.03	0.92	1.93E+01	1.93E+01	2.99E+00	8.83E+00
TH-234	63.29	3.80	3.56E+00	3.56E+00	2.61E+00	1.74E+00
U-235	143.76	10.50	8.76E-01	8.76E-01	-1.74E-01	4.23E-01
	163.35	4.70	1.87E+00		1.21E-01	8.99E-01
	205.31	4.70	2.46E+00		-3.64E+00	1.19E+00
+ NP-237	86.50 *	12.60	1.73E+00	1.73E+00	3.43E+00	8.54E-01
NP-239	106.10	22.70	1.40E+01	1.40E+01	2.87E+00	6.77E+00
	228.18	10.70	3.56E+01		-1.51E+01	1.71E+01
	277.60	14.10	3.03E+01		1.62E+01	1.45E+01
AM-241	59.54	35.90	3.51E-01	3.51E-01	-1.50E-01	1.71E-01
+ AM-243	74.67 *	66.00	3.02E-01	3.02E-01	4.72E-01	1.49E-01
CM-243	209.75	3.29	3.85E+00	8.53E-01	2.10E+00	1.86E+00
	228.14	10.60	1.00E+00		-4.24E-01	4.81E-01
	277.60	14.00	8.53E-01		4.57E-01	4.08E-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 1606038-14
CP 5022 05-10

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP 5022 05-10

Elapsed Live time: 3600
 Elapsed Real Time: 3612

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	4	151	129	97	100	88	78	91	
17:	88	72	75	69	66	67	72	53	
25:	58	60	62	51	50	58	45	63	
33:	74	53	52	49	50	59	48	59	
41:	64	53	50	65	67	69	141	99	
49:	65	77	67	73	68	78	80	64	
57:	74	80	107	97	100	83	121	167	
65:	117	112	105	98	101	100	100	114	
73:	96	129	265	235	256	404	131	100	
81:	72	86	58	103	114	83	130	187	
89:	107	119	133	101	209	196	87	50	
97:	43	56	54	69	59	63	45	50	
105:	66	78	74	45	73	52	49	63	
113:	59	65	46	61	50	45	44	45	
121:	37	48	45	44	58	53	50	47	
129:	71	72	47	50	43	44	45	43	
137:	61	56	45	56	59	49	46	62	
145:	61	48	55	56	34	34	45	45	
153:	42	59	63	43	47	49	43	43	
161:	47	44	44	45	33	42	41	35	
169:	39	40	44	44	36	42	31	46	
177:	37	39	32	37	35	39	42	37	
185:	46	101	129	51	38	40	41	35	
193:	36	36	37	33	39	41	41	48	
201:	42	41	40	35	41	38	36	35	
209:	44	79	40	25	52	38	35	38	
217:	37	27	34	27	34	32	32	38	
225:	32	25	27	27	29	27	23	28	
233:	29	25	34	32	35	98	432	210	
241:	63	102	68	22	18	34	25	25	
249:	28	17	21	19	24	21	24	33	
257:	23	30	24	26	18	25	30	26	
265:	12	29	31	15	24	47	57	35	
273:	21	24	26	27	24	41	19	17	
281:	21	19	18	20	17	17	18	20	
289:	18	25	18	12	20	28	80	115	
297:	39	24	14	30	40	24	9	27	
305:	14	18	24	28	18	23	21	24	
313:	19	15	20	28	21	14	17	23	
321:	17	16	15	26	18	16	19	28	
329:	31	12	25	19	18	14	23	20	
337:	24	51	104	35	21	26	19	21	
345:	22	17	21	22	11	15	34	138	
353:	121	28	9	12	19	13	16	13	
361:	17	12	18	11	15	10	11	10	

369: 13 12 16 13 14 19 18 13

Sample Title: CP 5022 05-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	17	13	20	15	20	17	20	19
385:	18	19	15	17	15	13	18	21
393:	14	18	13	12	10	14	16	17
401:	17	19	11	13	16	15	14	9
409:	22	32	14	13	7	16	14	6
417:	11	13	12	11	14	9	11	18
425:	14	11	7	15	14	17	12	10
433:	10	12	15	8	9	13	14	15
441:	15	9	17	16	10	15	10	13
449:	12	9	18	17	14	14	11	9
457:	8	13	17	13	11	11	16	24
465:	14	10	9	9	12	7	11	13
473:	10	16	18	7	11	10	12	6
481:	10	20	12	13	10	9	10	12
489:	11	14	8	14	14	12	10	8
497:	7	17	9	13	4	12	16	12
505:	7	4	8	11	13	29	46	47
513:	24	12	15	9	3	9	5	10
521:	9	9	9	9	3	7	5	10
529:	14	12	10	4	5	13	9	5
537:	5	4	6	5	11	6	6	11
545:	11	10	13	10	6	17	5	7
553:	6	10	6	12	9	8	13	12
561:	8	14	15	13	8	9	7	15
569:	7	8	12	9	7	6	11	6
577:	7	6	5	10	12	23	79	81
585:	29	10	7	7	17	9	10	8
593:	9	6	9	8	8	7	6	9
601:	6	7	9	10	17	12	7	18
609:	89	90	29	8	3	7	9	9
617:	4	10	8	9	5	7	7	7
625:	11	10	7	9	9	5	12	11
633:	17	9	7	4	6	7	8	10
641:	8	8	11	8	8	7	7	9
649:	6	6	7	8	4	11	8	7
657:	6	5	9	11	10	6	9	9
665:	9	12	7	3	9	9	4	10
673:	8	8	8	9	9	7	9	5
681:	5	9	5	10	13	6	9	4
689:	11	9	10	6	8	7	7	4
697:	12	7	13	6	9	6	10	8
705:	12	5	6	7	7	7	8	2
713:	6	7	7	7	4	7	6	6
721:	9	4	5	6	5	20	17	29
729:	7	7	10	3	11	3	7	7
737:	7	11	12	10	6	13	4	4
745:	7	13	5	8	6	7	6	3
753:	10	10	11	8	4	10	7	8
761:	7	9	7	8	2	6	5	18
769:	8	10	13	7	5	9	7	8
777:	2	7	8	10	6	8	4	7
785:	6	9	10	6	9	8	4	3
793:	5	7	16	12	10	8	8	5

801: 2 8 11 6 3 6 11 9

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Channel	1	2	3	4	5	6	7	8	9
809:	6	3	8	6	6	6	8	6	
817:	7	7	3	5	2	4	3	7	
825:	8	5	8	6	8	5	7	10	
833:	8	4	7	6	11	7	3	11	
841:	5	4	8	6	4	5	9	5	
849:	8	4	4	9	7	4	6	7	
857:	2	5	9	9	11	6	5	5	
865:	5	6	1	4	0	5	6	7	
873:	2	4	3	3	5	5	9	4	
881:	6	5	3	3	3	8	7	6	
889:	7	4	5	3	6	2	5	6	
897:	4	5	3	5	3	7	6	4	
905:	7	6	3	2	7	23	62	48	
913:	13	5	6	2	3	5	1	6	
921:	8	5	4	3	3	10	6	1	
929:	7	6	6	4	5	10	6	4	
937:	6	7	5	5	7	4	4	3	
945:	5	3	4	8	2	7	1	6	
953:	7	5	3	4	4	4	7	1	
961:	2	8	11	9	14	8	9	20	
969:	34	26	11	5	4	5	5	6	
977:	2	4	4	6	4	2	4	1	
985:	2	5	6	5	7	7	6	11	
993:	5	2	3	2	6	4	5	10	
1001:	6	4	4	6	3	8	5	5	
1009:	4	4	7	1	3	5	5	4	
1017:	3	6	4	3	6	5	5	5	
1025:	7	4	4	5	5	5	6	5	
1033:	5	1	8	5	3	2	6	5	
1041:	1	5	9	4	4	6	6	5	
1049:	6	3	6	2	2	10	4	3	
1057:	2	4	6	4	1	4	5	3	
1065:	10	5	6	3	4	6	4	3	
1073:	5	6	7	2	4	7	3	3	
1081:	3	6	5	5	3	4	5	7	
1089:	7	5	6	3	8	8	4	5	
1097:	7	4	1	5	3	3	3	6	
1105:	4	6	3	5	4	0	5	4	
1113:	7	4	2	7	3	7	10	26	
1121:	26	11	1	6	6	7	6	4	
1129:	4	7	6	3	4	8	4	6	
1137:	8	3	6	4	1	5	6	7	
1145:	9	5	2	7	5	7	1	4	
1153:	6	8	3	6	4	2	4	5	
1161:	7	6	6	3	4	4	4	5	
1169:	8	4	5	8	2	8	2	5	
1177:	5	8	4	12	2	9	7	3	
1185:	8	9	4	4	2	5	6	6	
1193:	5	7	6	5	4	2	5	4	
1201:	5	2	12	10	3	6	11	2	
1209:	4	7	4	8	0	5	7	3	
1217:	3	7	8	3	6	1	6	7	
1225:	3	2	2	5	4	8	7	8	

1233: 3 8 3 4 6 13 6 12

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Channel	1	2	3	4	5	6	7	8	9
1241:	5	6	7	4	4	9	3	2	
1249:	4	2	2	4	8	5	6	3	
1257:	3	3	4	5	6	3	3	4	
1265:	3	2	4	4	2	5	1	1	
1273:	4	2	6	2	2	3	7	4	
1281:	7	4	4	6	3	4	4	4	
1289:	0	3	5	1	6	5	7	5	
1297:	3	5	2	3	5	1	5	4	
1305:	1	2	2	3	1	4	3	2	
1313:	5	4	0	4	3	4	4	2	
1321:	2	3	5	2	4	5	3	2	
1329:	2	5	6	2	5	3	4	4	
1337:	4	2	7	3	5	2	2	2	
1345:	2	3	5	2	2	2	4	2	
1353:	2	3	1	4	4	1	4	1	
1361:	2	1	2	4	1	4	3	3	
1369:	1	1	4	2	2	2	2	3	
1377:	2	8	4	6	0	1	5	3	
1385:	3	1	1	1	6	1	0	0	
1393:	1	2	0	1	2	3	2	3	
1401:	3	3	5	2	5	2	4	5	
1409:	2	1	1	0	3	1	0	2	
1417:	0	1	1	1	3	3	4	1	
1425:	5	3	1	2	2	2	2	1	
1433:	3	1	1	1	1	1	0	3	
1441:	1	4	1	1	2	6	1	3	
1449:	1	3	2	3	1	3	0	2	
1457:	1	8	31	128	148	77	12	2	
1465:	1	1	2	3	2	1	0	3	
1473:	2	2	2	0	1	0	0	1	
1481:	1	2	2	1	2	1	0	3	
1489:	0	0	1	3	0	1	2	3	
1497:	2	2	2	2	2	1	1	2	
1505:	0	1	1	3	3	1	1	3	
1513:	1	0	1	1	2	2	0	0	
1521:	0	0	3	3	2	1	1	0	
1529:	0	4	1	2	2	3	2	0	
1537:	3	2	1	3	1	2	1	1	
1545:	2	2	0	0	1	1	1	3	
1553:	0	2	1	1	1	2	1	1	
1561:	1	3	2	0	3	1	1	0	
1569:	1	0	2	1	1	1	1	1	
1577:	1	2	2	5	0	0	4	5	
1585:	3	1	1	2	3	2	1	6	
1593:	9	0	1	0	1	0	2	0	
1601:	1	0	0	0	0	0	1	2	
1609:	2	1	2	1	1	1	2	1	
1617:	1	1	0	1	3	1	1	0	
1625:	2	1	1	3	1	3	1	1	
1633:	2	1	1	2	2	0	0	1	
1641:	0	2	1	2	0	2	1	2	
1649:	0	1	3	2	0	2	0	1	
1657:	0	2	1	1	2	2	1	0	

1665: 0 2 1 0 2 1 0 0

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Channel	1	2	3	4	5	6	7	8	9
1673:	1	0	1	2	0	0	2	1	
1681:	1	0	0	0	1	0	1	0	
1689:	1	2	1	0	0	2	2	0	
1697:	2	0	0	0	0	0	0	1	
1705:	2	1	0	0	1	2	0	0	
1713:	0	1	2	1	2	0	1	0	
1721:	0	1	0	1	2	3	0	0	
1729:	3	2	2	0	0	0	0	0	
1737:	1	3	1	2	2	1	1	1	
1745:	1	1	1	0	0	0	0	0	
1753:	1	0	1	0	2	2	0	1	
1761:	0	1	5	6	11	7	0	1	
1769:	0	0	1	1	1	0	2	3	
1777:	0	1	0	0	0	1	0	0	
1785:	1	0	0	1	2	1	0	0	
1793:	0	0	1	0	0	0	0	0	
1801:	1	0	1	2	0	4	0	1	
1809:	0	0	2	1	1	1	4	1	
1817:	0	0	0	2	1	2	1	2	
1825:	1	1	1	0	1	3	0	1	
1833:	2	1	2	0	1	0	0	0	
1841:	0	1	0	1	1	3	3	4	
1849:	1	0	0	1	3	0	0	0	
1857:	1	2	0	3	0	0	1	0	
1865:	1	0	1	0	0	1	0	0	
1873:	2	0	1	0	2	0	0	3	
1881:	0	1	1	1	1	2	2	0	
1889:	2	0	0	0	1	1	1	2	
1897:	2	1	1	1	1	0	0	0	
1905:	1	0	0	0	0	2	0	1	
1913:	0	1	0	0	1	1	1	0	
1921:	1	1	0	1	2	0	0	0	
1929:	1	1	0	2	0	0	0	1	
1937:	2	0	1	2	0	1	0	0	
1945:	1	1	1	2	0	0	1	0	
1953:	2	0	2	0	1	1	1	1	
1961:	0	0	0	2	0	1	0	0	
1969:	1	2	0	1	1	2	0	0	
1977:	1	0	0	1	1	0	0	0	
1985:	1	0	0	3	2	1	0	3	
1993:	0	1	2	0	0	0	1	0	
2001:	0	0	1	1	0	0	0	0	
2009:	0	0	1	0	0	0	1	0	
2017:	1	0	0	2	0	0	0	2	
2025:	1	0	0	2	0	0	1	0	
2033:	1	3	0	0	1	1	1	1	
2041:	1	0	0	1	0	0	1	1	
2049:	1	0	0	1	0	0	0	0	
2057:	0	2	1	1	0	1	0	1	
2065:	0	3	1	1	1	0	0	2	
2073:	1	0	0	1	0	0	0	2	
2081:	3	0	0	0	2	0	0	0	
2089:	0	1	1	0	1	0	0	1	

2097: 2 0 1 0 2 2 3 1

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

2529: 1 0 0 0 0 1 0 1

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Channel	1	0	0	0	0	1	0	1
2537:	1	0	0	0	0	0	0	0
2545:	0	0	0	0	0	0	0	0
2553:	0	0	0	1	1	0	0	1
2561:	0	0	0	0	0	0	3	0
2569:	0	0	0	1	0	0	0	0
2577:	0	0	1	1	0	0	0	0
2585:	0	1	0	1	1	0	0	0
2593:	0	1	1	0	0	1	0	0
2601:	1	0	0	0	1	2	0	0
2609:	0	1	0	4	10	23	17	5
2617:	3	0	0	0	0	0	0	0
2625:	0	0	0	0	0	0	1	0
2633:	0	0	1	0	0	0	0	0
2641:	0	0	2	0	0	0	0	1
2649:	0	0	0	1	0	1	0	0
2657:	0	0	1	1	0	0	0	0
2665:	1	0	0	1	0	0	1	0
2673:	1	1	1	0	0	0	0	1
2681:	0	0	0	0	0	1	0	0
2689:	1	0	0	0	1	0	0	1
2697:	1	0	1	0	2	0	0	0
2705:	0	0	0	0	1	0	0	0
2713:	1	0	0	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0
2729:	0	1	0	1	0	1	1	0
2737:	0	0	0	0	1	0	0	0
2745:	0	0	0	1	0	0	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	1	0	0	0	1	0
2769:	1	0	0	1	1	1	0	0
2777:	0	0	0	0	0	0	0	0
2785:	1	0	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	0
2801:	0	0	1	0	0	0	0	0
2809:	0	0	0	0	0	0	0	1
2817:	0	0	0	0	0	0	0	0
2825:	0	1	0	0	0	0	0	0
2833:	1	0	0	0	0	1	0	0
2841:	1	1	0	0	0	1	0	1
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	0	0	1	0	0
2865:	0	0	0	1	0	0	0	0
2873:	0	0	0	0	0	0	0	2
2881:	0	0	0	0	0	0	0	0
2889:	1	0	0	0	0	0	1	0
2897:	0	0	0	0	1	1	0	0
2905:	0	0	0	0	0	1	0	1
2913:	0	0	0	0	1	0	1	1
2921:	0	0	2	0	0	0	0	0
2929:	0	0	0	1	0	0	0	1
2937:	0	1	0	0	0	0	0	0
2945:	0	0	1	0	0	0	2	0
2953:	0	0	0	0	0	0	0	1

2961: 0 1 0 0 0 0 0 0 0

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

3393: 0 0 0 0 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8
3401:	0	1	0	0	0	0	0	1
3409:	0	0	0	0	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	2	0	0	1	0	0
3449:	0	0	0	0	0	0	0	2
3457:	0	0	0	1	0	1	0	0
3465:	0	1	0	0	1	0	0	0
3473:	1	0	0	0	0	1	0	0
3481:	0	1	1	0	1	0	0	0
3489:	1	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	1	0	0	0	1	0
3537:	0	0	0	0	1	0	0	1
3545:	0	0	1	0	0	0	0	0
3553:	0	0	0	0	0	0	1	0
3561:	0	0	0	0	0	0	0	0
3569:	2	0	0	0	0	0	0	0
3577:	0	0	0	1	0	1	0	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	0
3609:	0	1	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	1	0	0	0	0	1
3641:	0	0	0	1	1	0	0	1
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	1	0	0	1	0
3705:	0	0	0	0	0	0	0	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	1	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	0	1
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	1	0	0
3785:	0	0	0	1	0	0	0	0
3793:	0	1	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	1
3809:	0	0	0	0	2	0	0	0
3817:	0	0	0	0	0	0	0	0

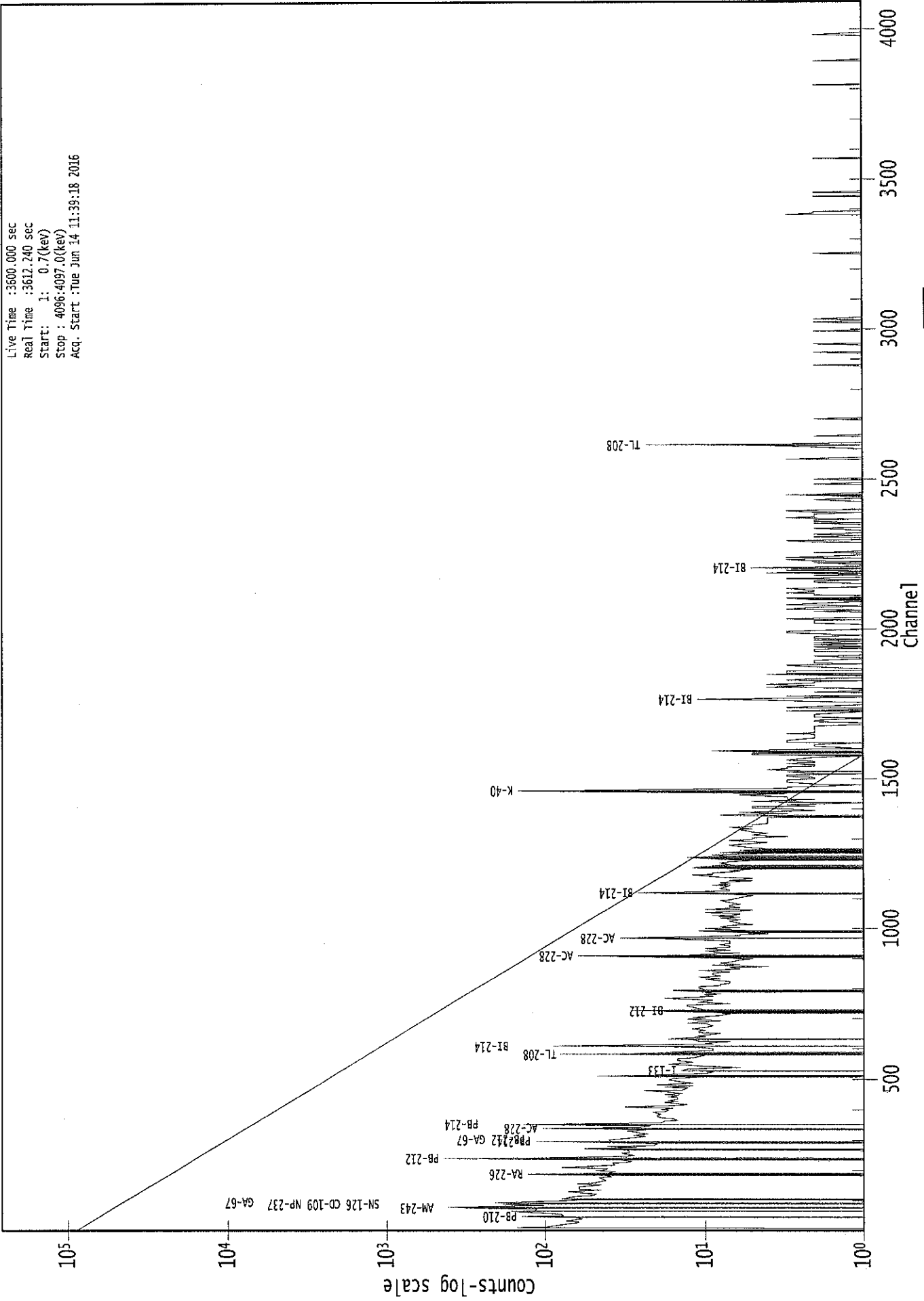
3825: 0 1 1 0 0 1 0 0

Sample Title: CP 5022 05-10

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

0000038823.CNF

Live Time : 3600.000 sec
 Real Time : 3612.240 sec
 Start : 1: 0.7(kev)
 Stop : 4096.4097.0(kev)
 Acq. Start : Tue Jun 14 11:39:18 2016



ROI Type: 2

ROI Type: 1

10/15
6/14/14Analysis Report for 1606038-15
CP 5022 10-15

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606038-15
Sample Description : CP 5022 10-15
Sample Type : SOIL

Sample Size : 3.076E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 8:19:15AM
Acquisition Started : 6/14/2016 12:40:53PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.4 seconds

Dead Time : 0.04 %

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

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 4/6/2016
Efficiency Calibration Description :

Sample Number : 38826

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/14/16

Analysis Report for 1606038-15
CP 5022 10-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/14/2016 1:40:57PM
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	12.87	13.00	0.0000	0.00
2	19.89	20.01	0.0000	0.00
3	46.87	46.97	0.0000	0.00
4	64.11	64.20	0.0000	0.00
5	76.37	76.46	0.0000	0.00
6	88.16	88.24	0.0000	0.00
7	93.20	93.28	0.0000	0.00
8	153.16	153.20	0.0000	0.00
9	185.87	185.90	0.0000	0.00
10	210.44	210.45	0.0000	0.00
11	222.28	222.29	0.0000	0.00
12	238.95	238.94	0.0000	0.00
13	242.05	242.04	0.0000	0.00
14	274.24	274.22	0.0000	0.00
15	295.20	295.16	0.0000	0.00
16	300.12	300.08	0.0000	0.00
17	338.59	338.54	0.0000	0.00
18	351.84	351.78	0.0000	0.00
19	409.63	409.54	0.0000	0.00
20	438.47	438.36	0.0000	0.00
21	446.05	445.94	0.0000	0.00
22	452.67	452.56	0.0000	0.00
23	461.78	461.66	0.0000	0.00
24	510.86	510.72	0.0000	0.00
25	583.20	583.02	0.0000	0.00
26	588.35	588.17	0.0000	0.00
27	609.37	609.18	0.0000	0.00
28	665.04	664.83	0.0000	0.00
29	701.73	701.50	0.0000	0.00
30	727.29	727.05	0.0000	0.00
31	740.65	740.40	0.0000	0.00
32	794.93	794.66	0.0000	0.00
33	860.71	860.40	0.0000	0.00
34	865.90	865.60	0.0000	0.00
35	870.46	870.16	0.0000	0.00
36	911.31	910.98	0.0000	0.00
37	935.59	935.26	0.0000	0.00
38	964.23	963.88	0.0000	0.00
39	969.29	968.94	0.0000	0.00
40	1120.15	1119.74	0.0000	0.00
41	1238.28	1237.83	0.0000	0.00
42	1292.72	1292.26	0.0000	0.00

Analysis Report for 1606038-15
CP 5022 10-15

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1378.25	1377.75	0.0000	0.00
44	1390.45	1389.95	0.0000	0.00
45	1409.30	1408.80	0.0000	0.00
46	1428.60	1428.09	0.0000	0.00
47	1461.00	1460.47	0.0000	0.00
48	1729.81	1729.21	0.0000	0.00
49	1737.91	1737.31	0.0000	0.00
50	1753.48	1752.88	0.0000	0.00
51	1764.85	1764.25	0.0000	0.00
52	1960.22	1959.57	0.0000	0.00
53	2117.57	2116.90	0.0000	0.00
54	2156.52	2155.83	0.0000	0.00
55	2204.16	2203.47	0.0000	0.00
56	2330.69	2329.97	0.0000	0.00
57	2354.55	2353.83	0.0000	0.00
58	2393.68	2392.96	0.0000	0.00
59	2614.60	2613.86	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606038-15
CP 5022 10-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 1:40:57PM

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	12.87	12 -	15	13.00	1.90E+03	121.19	1.53E+03	1.00
2	19.89	18 -	22	20.01	9.60E+01	61.98	7.32E+02	2.59
3	46.87	44 -	50	46.97	9.05E+01	67.52	7.63E+02	1.06
4	64.11	60 -	69	64.20	1.81E+02	111.77	1.68E+03	1.88
5	76.37	72 -	82	76.46	9.69E+02	127.86	1.61E+03	3.07
6	88.16	86 -	91	88.24	1.36E+02	76.93	1.08E+03	3.64
7	93.20	91 -	96	93.28	1.38E+02	73.11	8.98E+02	1.33
8	153.16	149 -	158	153.20	1.17E+02	77.74	8.00E+02	4.26
9	185.87	182 -	189	185.90	1.99E+02	65.79	5.90E+02	1.33
10	210.44	207 -	214	210.45	7.58E+01	58.28	4.98E+02	2.01
11	222.28	218 -	225	222.29	5.23E+01	53.78	4.45E+02	3.94
M 12	238.95	235 -	245	238.94	5.93E+02	58.55	2.11E+02	1.41
m 13	242.05	235 -	245	242.04	1.58E+02	39.65	2.03E+02	1.42
14	274.24	267 -	283	274.22	1.48E+02	85.22	6.26E+02	8.57
15	295.20	291 -	298	295.16	2.53E+02	53.03	2.99E+02	1.38
16	300.12	299 -	303	300.08	2.65E+01	31.94	2.07E+02	1.03
17	338.59	335 -	342	338.54	1.08E+02	47.29	2.94E+02	1.77
18	351.84	348 -	355	351.78	3.91E+02	55.68	2.57E+02	1.25
19	409.63	406 -	413	409.54	4.03E+01	36.61	1.97E+02	1.98
20	438.47	433 -	442	438.36	3.49E+01	37.31	1.76E+02	2.86
M 21	446.05	443 -	456	445.94	2.05E+01	20.16	6.79E+01	2.48
m 22	452.67	443 -	456	452.56	2.93E+01	26.05	8.79E+01	2.49
23	461.78	457 -	467	461.66	7.04E+01	39.08	1.69E+02	2.24
24	510.86	506 -	517	510.72	1.36E+02	48.79	2.34E+02	2.43
M 25	583.20	577 -	591	583.02	2.53E+02	35.82	7.42E+01	1.75
m 26	588.35	577 -	591	588.17	1.90E+01	22.09	6.39E+01	1.85
27	609.37	605 -	613	609.18	2.66E+02	47.27	1.81E+02	1.74
28	665.04	661 -	668	664.83	2.40E+01	24.98	8.80E+01	1.62
29	701.73	700 -	704	701.50	1.51E+01	19.63	7.18E+01	1.32
30	727.29	723 -	730	727.05	3.81E+01	27.42	9.97E+01	1.25
31	740.65	737 -	745	740.40	2.34E+01	23.75	7.32E+01	3.93
32	794.93	791 -	797	794.66	2.82E+01	23.53	7.95E+01	1.44
M 33	860.71	857 -	874	860.40	2.75E+01	20.69	5.77E+01	2.31
m 34	865.90	857 -	874	865.60	1.33E+01	19.09	5.97E+01	2.32
m 35	870.46	857 -	874	870.16	1.71E+01	20.01	6.15E+01	2.32
36	911.31	907 -	915	910.98	1.43E+02	29.91	5.01E+01	1.58
37	935.59	929 -	941	935.26	4.67E+01	29.95	8.06E+01	4.19
M 38	964.23	960 -	974	963.88	3.87E+01	21.08	5.83E+01	2.41
m 39	969.29	960 -	974	968.94	8.08E+01	22.64	4.57E+01	1.70
40	1120.15	1115 -	1122	1119.74	5.87E+01	27.64	8.86E+01	1.50

Analysis Report for 1606038-15
CP 5022 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1238.28	1235 - 1243	1237.83	2.30E+01	23.66	7.20E+01	2.46
	42	1292.72	1288 - 1296	1292.26	1.62E+01	20.27	5.15E+01	2.84
m	43	1378.25	1374 - 1393	1377.75	2.15E+01	14.61	2.46E+01	3.01
	44	1390.45	1374 - 1393	1389.95	1.85E+01	14.61	2.05E+01	3.02
	45	1409.30	1404 - 1414	1408.80	1.47E+01	16.22	2.66E+01	6.78
	46	1428.60	1424 - 1430	1428.09	8.68E+00	9.63	1.06E+01	1.10
	47	1461.00	1454 - 1464	1460.47	5.29E+02	48.24	3.02E+01	2.16
	48	1729.81	1725 - 1734	1729.21	1.50E+01	11.40	1.00E+01	4.19
	49	1737.91	1735 - 1740	1737.31	6.00E+00	7.35	6.00E+00	1.17
	50	1753.48	1749 - 1755	1752.88	8.00E+00	5.66	0.00E+00	2.09
	51	1764.85	1760 - 1768	1764.25	4.98E+01	19.33	2.64E+01	1.51
	52	1960.22	1956 - 1962	1959.57	7.00E+00	5.29	0.00E+00	2.88
	53	2117.57	2112 - 2121	2116.90	8.23E+00	10.10	9.54E+00	1.06
	54	2156.52	2153 - 2158	2155.83	6.00E+00	4.90	0.00E+00	2.74
	55	2204.16	2200 - 2207	2203.47	1.28E+01	8.72	4.40E+00	1.69
	56	2330.69	2326 - 2332	2329.97	6.50E+00	6.65	3.00E+00	1.39
	57	2354.55	2348 - 2355	2353.83	4.92E+00	6.32	2.17E+00	1.07
	58	2393.68	2390 - 2395	2392.96	6.63E+00	6.40	2.75E+00	1.61
	59	2614.60	2608 - 2618	2613.86	6.71E+01	17.61	5.81E+00	2.79

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/14/2016 1:40:57PM

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	12.87	12 -	15	1.90E+03	121.19	1.53E+03	6.92E+01
2	19.89	18 -	22	9.60E+01	61.98	7.32E+02	4.83E+01
3	46.87	44 -	50	9.05E+01	67.52	7.63E+02	5.33E+01
4	64.11	60 -	69	1.81E+02	111.77	1.68E+03	4.25E+01
5	76.37	72 -	82	9.69E+02	127.86	1.61E+03	9.18E+01
6	88.16	86 -	91	1.36E+02	76.93	1.08E+03	6.02E+01
7	93.20	91 -	96	1.38E+02	73.11	8.98E+02	5.69E+01
8	153.16	149 -	158	1.17E+02	77.74	8.00E+02	6.14E+01
9	185.87	182 -	189	1.99E+02	65.79	5.90E+02	4.89E+01

: 00821

Analysis Report for 1606038-15

CP 5022 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	10	210.44	207 -	214	7.58E+01	58.28	4.98E+02	4.57E+01
	11	222.28	218 -	225	5.23E+01	53.78	4.45E+02	4.26E+01
M	12	238.95	235 -	245	5.93E+02	58.55	2.11E+02	2.39E+01
m	13	242.05	235 -	245	1.58E+02	39.65	2.03E+02	2.34E+01
	14	274.24	267 -	283	1.48E+02	85.22	6.26E+02	6.71E+01
	15	295.20	291 -	298	2.53E+02	53.03	2.99E+02	3.49E+01
	16	300.12	299 -	303	2.65E+01	31.94	2.07E+02	2.49E+01
	17	338.59	335 -	342	1.08E+02	47.29	2.94E+02	3.49E+01
	18	351.84	348 -	355	3.91E+02	55.68	2.57E+02	3.22E+01
	19	409.63	406 -	413	4.03E+01	36.61	1.97E+02	2.82E+01
	20	438.47	433 -	442	3.49E+01	37.31	1.76E+02	2.91E+01
M	21	446.05	443 -	456	2.05E+01	20.16	6.79E+01	1.35E+01
m	22	452.67	443 -	456	2.93E+01	26.05	8.79E+01	1.54E+01
	23	461.78	457 -	467	7.04E+01	39.08	1.69E+02	2.90E+01
	24	510.86	506 -	517	1.36E+02	48.79	2.34E+02	3.52E+01
M	25	583.20	577 -	591	2.53E+02	35.82	7.42E+01	1.42E+01
m	26	588.35	577 -	591	1.90E+01	22.09	6.39E+01	1.31E+01
	27	609.37	605 -	613	2.66E+02	47.27	1.81E+02	2.81E+01
	28	665.04	661 -	668	2.40E+01	24.98	8.80E+01	1.89E+01
	29	701.73	700 -	704	1.51E+01	19.63	7.18E+01	1.48E+01
	30	727.29	723 -	730	3.81E+01	27.42	9.97E+01	2.01E+01
	31	740.65	737 -	745	2.34E+01	23.75	7.32E+01	1.78E+01
	32	794.93	791 -	797	2.82E+01	23.53	7.95E+01	1.73E+01
M	33	860.71	857 -	874	2.75E+01	20.69	5.77E+01	1.25E+01
m	34	865.90	857 -	874	1.33E+01	19.09	5.97E+01	1.27E+01
m	35	870.46	857 -	874	1.71E+01	20.01	6.15E+01	1.29E+01
	36	911.31	907 -	915	1.43E+02	29.91	5.01E+01	1.48E+01
	37	935.59	929 -	941	4.67E+01	29.95	8.06E+01	2.19E+01
M	38	964.23	960 -	974	3.87E+01	21.08	5.83E+01	1.26E+01
m	39	969.29	960 -	974	8.08E+01	22.64	4.57E+01	1.11E+01
	40	1120.15	1115 -	1122	5.87E+01	27.64	8.86E+01	1.89E+01
	41	1238.28	1235 -	1243	2.30E+01	23.66	7.20E+01	1.78E+01
	42	1292.72	1288 -	1296	1.62E+01	20.27	5.15E+01	1.53E+01
M	43	1378.25	1374 -	1393	2.15E+01	14.61	2.46E+01	8.16E+00
m	44	1390.45	1374 -	1393	1.85E+01	14.61	2.05E+01	7.44E+00
	45	1409.30	1404 -	1414	1.47E+01	16.22	2.66E+01	1.18E+01
	46	1428.60	1424 -	1430	8.68E+00	9.63	1.06E+01	6.26E+00
	47	1461.00	1454 -	1464	5.29E+02	48.24	3.02E+01	1.20E+01
	48	1729.81	1725 -	1734	1.50E+01	11.40	1.00E+01	6.88E+00
	49	1737.91	1735 -	1740	6.00E+00	7.35	6.00E+00	4.50E+00
	50	1753.48	1749 -	1755	8.00E+00	5.66	0.00E+00	0.00E+00
	51	1764.85	1760 -	1768	4.98E+01	19.33	2.64E+01	1.09E+01
	52	1960.22	1956 -	1962	7.00E+00	5.29	0.00E+00	0.00E+00
	53	2117.57	2112 -	2121	8.23E+00	10.10	9.54E+00	6.83E+00
	54	2156.52	2153 -	2158	6.00E+00	4.90	0.00E+00	0.00E+00
	55	2204.16	2200 -	2207	1.28E+01	8.72	4.40E+00	4.09E+00
	56	2330.69	2326 -	2332	6.50E+00	6.65	3.00E+00	3.51E+00
	57	2354.55	2348 -	2355	4.92E+00	6.32	2.17E+00	3.71E+00
	58	2393.68	2390 -	2395	6.63E+00	6.40	2.75E+00	3.13E+00
	59	2614.60	2608 -	2618	6.71E+01	17.61	5.81E+00	5.32E+00

Analysis Report for 1606038-15
CP 5022 10-15

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 : 6/14/2016 1:40:57PM

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	12.87	12 -	15	13.00	1.90E+03	121.19	1.53E+03	.....
2	19.89	18 -	22	20.01	9.60E+01	61.98	7.32E+02	.....
3	46.87	44 -	50	46.97	9.05E+01	67.52	7.63E+02	PB-210	
4	64.11	60 -	69	64.20	1.81E+02	111.77	1.68E+03	TH-234	
5	76.37	72 -	82	76.46	9.69E+02	127.86	1.61E+03	.....
6	88.16	86 -	91	88.24	1.36E+02	76.93	1.08E+03	CD-109 LU-176 SN-126	
7	93.20	91 -	96	93.28	1.38E+02	73.11	8.98E+02	GA-67	
8	153.16	149 -	158	153.20	1.17E+02	77.74	8.00E+02	CS-136	
9	185.87	182 -	189	185.90	1.99E+02	65.79	5.90E+02	RA-226	
10	210.44	207 -	214	210.45	7.58E+01	58.28	4.98E+02	CM-243	
11	222.28	218 -	225	222.29	5.23E+01	53.78	4.45E+02	.....
M	12	238.95	235 -	245	238.94	5.93E+02	58.55	2.11E+02	PB-212
m	13	242.05	235 -	245	242.04	1.58E+02	39.65	2.03E+02
14	274.24	267 -	283	274.22	1.48E+02	85.22	6.26E+02	CS-136	
15	295.20	291 -	298	295.16	2.53E+02	53.03	2.99E+02	PB-214	
16	300.12	299 -	303	300.08	2.65E+01	31.94	2.07E+02	PB-212 GA-67 BI-210M	
17	338.59	335 -	342	338.54	1.08E+02	47.29	2.94E+02	AC-228	
18	351.84	348 -	355	351.78	3.91E+02	55.68	2.57E+02	PB-214	
19	409.63	406 -	413	409.54	4.03E+01	36.61	1.97E+02	.....
20	438.47	433 -	442	438.36	3.49E+01	37.31	1.76E+02	BA-140	
M	21	446.05	443 -	456	445.94	2.05E+01	20.16	6.79E+01
m	22	452.67	443 -	456	452.56	2.93E+01	26.05	8.79E+01
23	461.78	457 -	467	461.66	7.04E+01	39.08	1.69E+02	.....
24	510.86	506 -	517	510.72	1.36E+02	48.79	2.34E+02	.....
M	25	583.20	577 -	591	583.02	2.53E+02	35.82	7.42E+01	TL-208
m	26	588.35	577 -	591	588.17	1.90E+01	22.09	6.39E+01

Analysis Report for 1606038-15

CP 5022 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	27	609.37	605 -	613	609.18	2.66E+02	47.27	1.81E+02	BI-214
	28	665.04	661 -	668	664.83	2.40E+01	24.98	8.80E+01	CE-143
	29	701.73	700 -	704	701.50	1.51E+01	19.63	7.18E+01	NB-94
	30	727.29	723 -	730	727.05	3.81E+01	27.42	9.97E+01	BI-212
	31	740.65	737 -	745	740.40	2.34E+01	23.75	7.32E+01	.....
	32	794.93	791 -	797	794.66	2.82E+01	23.53	7.95E+01	CS-134
M	33	860.71	857 -	874	860.40	2.75E+01	20.69	5.77E+01	TL-208
m	34	865.90	857 -	874	865.60	1.33E+01	19.09	5.97E+01	.....
m	35	870.46	857 -	874	870.16	1.71E+01	20.01	6.15E+01	NB-94
	36	911.31	907 -	915	910.98	1.43E+02	29.91	5.01E+01	AC-228 LU-172
	37	935.59	929 -	941	935.26	4.67E+01	29.95	8.06E+01	.....
M	38	964.23	960 -	974	963.88	3.87E+01	21.08	5.83E+01	EU-152
m	39	969.29	960 -	974	968.94	8.08E+01	22.64	4.57E+01	AC-228
	40	1120.15	1115 -	1122	1119.74	5.87E+01	27.64	8.86E+01	BI-214 SC-46
	41	1238.28	1235 -	1243	1237.83	2.30E+01	23.66	7.20E+01	CO-56
	42	1292.72	1288 -	1296	1292.26	1.62E+01	20.27	5.15E+01	AR-41
M	43	1378.25	1374 -	1393	1377.75	2.15E+01	14.61	2.46E+01	.....
m	44	1390.45	1374 -	1393	1389.95	1.85E+01	14.61	2.05E+01	.....
	45	1409.30	1404 -	1414	1408.80	1.47E+01	16.22	2.66E+01	.....
	46	1428.60	1424 -	1430	1428.09	8.68E+00	9.63	1.06E+01	.....
	47	1461.00	1454 -	1464	1460.47	5.29E+02	48.24	3.02E+01	K-40
	48	1729.81	1725 -	1734	1729.21	1.50E+01	11.40	1.00E+01	.....
	49	1737.91	1735 -	1740	1737.31	6.00E+00	7.35	6.00E+00	.....
	50	1753.48	1749 -	1755	1752.88	8.00E+00	5.66	0.00E+00	.....
	51	1764.85	1760 -	1768	1764.25	4.98E+01	19.33	2.64E+01	BI-214
	52	1960.22	1956 -	1962	1959.57	7.00E+00	5.29	0.00E+00	.....
	53	2117.57	2112 -	2121	2116.90	8.23E+00	10.10	9.54E+00	.....
	54	2156.52	2153 -	2158	2155.83	6.00E+00	4.90	0.00E+00	.....
	55	2204.16	2200 -	2207	2203.47	1.28E+01	8.72	4.40E+00	BI-214
	56	2330.69	2326 -	2332	2329.97	6.50E+00	6.65	3.00E+00	.....
	57	2354.55	2348 -	2355	2353.83	4.92E+00	6.32	2.17E+00	.....
	58	2393.68	2390 -	2395	2392.96	6.63E+00	6.40	2.75E+00	.....
	59	2614.60	2608 -	2618	2613.86	6.71E+01	17.61	5.81E+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 : 6/14/2016 1:40:57PM

: 00824

Analysis Report for 1606038-15
CP 5022 10-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	12.87	1.90E+03	121.19	1.12E-05	1.66E-03
	2	19.89	9.60E+01	61.98	6.52E-04	1.66E-03
	3	46.87	9.05E+01	67.52	1.72E-02	1.66E-03
	4	64.11	1.81E+02	111.77	2.39E-02	1.76E-03
	5	76.37	9.69E+02	127.86	2.56E-02	2.02E-03
	6	88.16	1.36E+02	76.93	2.60E-02	2.27E-03
	7	93.20	1.38E+02	73.11	2.60E-02	2.27E-03
	8	153.16	1.17E+02	77.74	2.21E-02	2.39E-03
	9	185.87	1.99E+02	65.79	1.99E-02	2.40E-03
	10	210.44	7.58E+01	58.28	1.85E-02	2.36E-03
	11	222.28	5.23E+01	53.78	1.78E-02	2.34E-03
M	12	238.95	5.93E+02	58.55	1.70E-02	2.31E-03
m	13	242.05	1.58E+02	39.65	1.69E-02	2.30E-03
	14	274.24	1.48E+02	85.22	1.55E-02	2.25E-03
	15	295.20	2.53E+02	53.03	1.47E-02	2.21E-03
	16	300.12	2.65E+01	31.94	1.45E-02	2.21E-03
	17	338.59	1.08E+02	47.29	1.33E-02	2.14E-03
	18	351.84	3.91E+02	55.68	1.30E-02	2.12E-03
	19	409.63	4.03E+01	36.61	1.16E-02	1.96E-03
	20	438.47	3.49E+01	37.31	1.10E-02	1.81E-03
M	21	446.05	2.05E+01	20.16	1.09E-02	1.77E-03
m	22	452.67	2.93E+01	26.05	1.07E-02	1.73E-03
	23	461.78	7.04E+01	39.08	1.06E-02	1.69E-03
	24	510.86	1.36E+02	48.79	9.77E-03	1.43E-03
M	25	583.20	2.53E+02	35.82	8.79E-03	1.06E-03
m	26	588.35	1.90E+01	22.09	8.73E-03	1.03E-03
	27	609.37	2.66E+02	47.27	8.48E-03	9.22E-04
	28	665.04	2.40E+01	24.98	7.90E-03	6.56E-04
	29	701.73	1.51E+01	19.63	7.56E-03	7.03E-04
	30	727.29	3.81E+01	27.42	7.34E-03	7.36E-04
	31	740.65	2.34E+01	23.75	7.23E-03	7.53E-04
	32	794.93	2.82E+01	23.53	6.82E-03	8.23E-04
M	33	860.71	2.75E+01	20.69	6.39E-03	9.08E-04
m	34	865.90	1.33E+01	19.09	6.36E-03	9.14E-04
m	35	870.46	1.71E+01	20.01	6.33E-03	9.20E-04
	36	911.31	1.43E+02	29.91	6.09E-03	9.29E-04
	37	935.59	4.67E+01	29.95	5.96E-03	8.79E-04
M	38	964.23	3.87E+01	21.08	5.82E-03	8.22E-04
m	39	969.29	8.08E+01	22.64	5.79E-03	8.11E-04
	40	1120.15	5.87E+01	27.64	5.15E-03	5.06E-04
	41	1238.28	2.30E+01	23.66	4.77E-03	3.84E-04
	42	1292.72	1.62E+01	20.27	4.62E-03	3.72E-04
M	43	1378.25	2.15E+01	14.61	4.41E-03	3.66E-04
m	44	1390.45	1.85E+01	14.61	4.38E-03	3.67E-04
	45	1409.30	1.47E+01	16.22	4.34E-03	3.68E-04
	46	1428.60	8.68E+00	9.63	4.30E-03	3.70E-04
	47	1461.00	5.29E+02	48.24	4.23E-03	3.72E-04
	48	1729.81	1.50E+01	11.40	3.81E-03	3.93E-04
	49	1737.91	6.00E+00	7.35	3.80E-03	3.93E-04
	50	1753.48	8.00E+00	5.66	3.78E-03	3.95E-04
	51	1764.85	4.98E+01	19.33	3.77E-03	3.96E-04
	52	1960.22	7.00E+00	5.29	3.59E-03	4.01E-04
	53	2117.57	8.23E+00	10.10	3.49E-03	4.01E-04

Analysis Report for 1606038-15
CP 5022 10-15

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2156.52	6.00E+00	4.90	3.47E-03	4.01E-04
55	2204.16	1.28E+01	8.72	3.45E-03	4.01E-04
56	2330.69	6.50E+00	6.65	3.42E-03	4.01E-04
57	2354.55	4.92E+00	6.32	3.41E-03	4.01E-04
58	2393.68	6.63E+00	6.40	3.40E-03	4.01E-04
59	2614.60	6.71E+01	17.61	3.40E-03	4.01E-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 : 6/14/2016 1:40:57PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037620.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	12.87	1.90E+03	121.19	8.66E+02	3.93E+01	1.04E+03	1.27E+02
2	19.89	9.60E+01	61.98			9.60E+01	6.20E+01
3	46.87	9.05E+01	67.52	2.46E+01	5.53E+00	6.59E+01	6.77E+01
4	64.11	1.81E+02	111.77			1.81E+02	1.12E+02
5	76.37	9.69E+02	127.86			9.69E+02	1.28E+02
6	88.16	1.36E+02	76.93			1.36E+02	7.69E+01
7	93.20	1.38E+02	73.11	5.23E+01	6.82E+00	8.56E+01	7.34E+01
8	153.16	1.17E+02	77.74			1.17E+02	7.77E+01
9	185.87	1.99E+02	65.79	2.52E+01	6.98E+00	1.74E+02	6.62E+01
10	210.44	7.58E+01	58.28			7.58E+01	5.83E+01
11	222.28	5.23E+01	53.78			5.23E+01	5.38E+01
M	12	238.95	5.93E+02	8.15E+00	6.18E+00	5.85E+02	5.89E+01
m	13	242.05	1.58E+02			1.58E+02	3.96E+01
	14	274.24	1.48E+02			1.48E+02	8.52E+01
	15	295.20	2.53E+02	4.80E+00	5.42E+00	2.49E+02	5.33E+01
	16	300.12	2.65E+01			2.65E+01	3.19E+01
	17	338.59	1.08E+02			1.08E+02	4.73E+01
	18	351.84	3.91E+02	1.16E+01	4.76E+00	3.79E+02	5.59E+01
	19	409.63	4.03E+01			4.03E+01	3.66E+01
	20	438.47	3.49E+01			3.49E+01	3.73E+01
M	21	446.05	2.05E+01			2.05E+01	2.02E+01
m	22	452.67	2.93E+01			2.93E+01	2.60E+01
	23	461.78	7.04E+01			7.04E+01	3.91E+01
	24	510.86	1.36E+02	7.18E+01	4.99E+00	6.44E+01	4.90E+01

Analysis Report for 1606038-15

CP 5022 10-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	25	583.20	2.53E+02	35.82			2.53E+02	3.58E+01
m	26	588.35	1.90E+01	22.09			1.90E+01	2.21E+01
	27	609.37	2.66E+02	47.27	7.00E+00	3.58E+00	2.59E+02	4.74E+01
	28	665.04	2.40E+01	24.98			2.40E+01	2.50E+01
	29	701.73	1.51E+01	19.63			1.51E+01	1.96E+01
	30	727.29	3.81E+01	27.42			3.81E+01	2.74E+01
	31	740.65	2.34E+01	23.75	2.08E-01	2.75E+00	2.32E+01	2.39E+01
	32	794.93	2.82E+01	23.53			2.82E+01	2.35E+01
M	33	860.71	2.75E+01	20.69			2.75E+01	2.07E+01
m	34	865.90	1.33E+01	19.09			1.33E+01	1.91E+01
m	35	870.46	1.71E+01	20.01			1.71E+01	2.00E+01
	36	911.31	1.43E+02	29.91	1.26E+00	2.67E+00	1.42E+02	3.00E+01
	37	935.59	4.67E+01	29.95			4.67E+01	3.00E+01
M	38	964.23	3.87E+01	21.08			3.87E+01	2.11E+01
m	39	969.29	8.08E+01	22.64			8.08E+01	2.26E+01
	40	1120.15	5.87E+01	27.64			5.87E+01	2.76E+01
	41	1238.28	2.30E+01	23.66			2.30E+01	2.37E+01
	42	1292.72	1.62E+01	20.27			1.62E+01	2.03E+01
M	43	1378.25	2.15E+01	14.61			2.15E+01	1.46E+01
m	44	1390.45	1.85E+01	14.61			1.85E+01	1.46E+01
	45	1409.30	1.47E+01	16.22			1.47E+01	1.62E+01
	46	1428.60	8.68E+00	9.63			8.68E+00	9.63E+00
	47	1461.00	5.29E+02	48.24	3.84E+00	1.88E+00	5.25E+02	4.83E+01
	48	1729.81	1.50E+01	11.40			1.50E+01	1.14E+01
	49	1737.91	6.00E+00	7.35			6.00E+00	7.35E+00
	50	1753.48	8.00E+00	5.66			8.00E+00	5.66E+00
	51	1764.85	4.98E+01	19.33	1.55E+00	1.49E+00	4.82E+01	1.94E+01
	52	1960.22	7.00E+00	5.29			7.00E+00	5.29E+00
	53	2117.57	8.23E+00	10.10			8.23E+00	1.01E+01
	54	2156.52	6.00E+00	4.90			6.00E+00	4.90E+00
	55	2204.16	1.28E+01	8.72	5.23E-01	9.79E-01	1.23E+01	8.77E+00
	56	2330.69	6.50E+00	6.65			6.50E+00	6.65E+00
	57	2354.55	4.92E+00	6.32			4.92E+00	6.32E+00
	58	2393.68	6.63E+00	6.40			6.63E+00	6.40E+00
	59	2614.60	6.71E+01	17.61	3.94E+00	1.42E+00	6.32E+01	1.77E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.00sigma

Analysis Report for 1606038-15

CP 5022 10-15

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/14/2016 1:40:57PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000037620.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	12.87	1.90E+03	121.19	8.66E+02	3.93E+01	1.04E+03	1.27E+02
2	19.89	9.60E+01	61.98			9.60E+01	6.20E+01
3	46.87	9.05E+01	67.52	2.46E+01	5.53E+00	6.59E+01	6.77E+01
4	64.11	1.81E+02	111.77			1.81E+02	1.12E+02
5	76.37	9.69E+02	127.86			9.69E+02	1.28E+02
6	88.16	1.36E+02	76.93			1.36E+02	7.69E+01
7	93.20	1.38E+02	73.11	5.23E+01	6.82E+00	8.56E+01	7.34E+01
8	153.16	1.17E+02	77.74			1.17E+02	7.77E+01
9	185.87	1.99E+02	65.79	2.52E+01	6.98E+00	1.74E+02	6.62E+01
10	210.44	7.58E+01	58.28			7.58E+01	5.83E+01
11	222.28	5.23E+01	53.78			5.23E+01	5.38E+01
M 12	238.95	5.93E+02	58.55	8.15E+00	6.18E+00	5.85E+02	5.89E+01
m 13	242.05	1.58E+02	39.65			1.58E+02	3.96E+01
14	274.24	1.48E+02	85.22			1.48E+02	8.52E+01
15	295.20	2.53E+02	53.03	4.80E+00	5.42E+00	2.49E+02	5.33E+01
16	300.12	2.65E+01	31.94			2.65E+01	3.19E+01
17	338.59	1.08E+02	47.29			1.08E+02	4.73E+01
18	351.84	3.91E+02	55.68	1.16E+01	4.76E+00	3.79E+02	5.59E+01
19	409.63	4.03E+01	36.61			4.03E+01	3.66E+01
20	438.47	3.49E+01	37.31			3.49E+01	3.73E+01
M 21	446.05	2.05E+01	20.16			2.05E+01	2.02E+01
m 22	452.67	2.93E+01	26.05			2.93E+01	2.60E+01
23	461.78	7.04E+01	39.08			7.04E+01	3.91E+01
24	510.86	1.36E+02	48.79	7.18E+01	4.99E+00	6.44E+01	4.90E+01
M 25	583.20	2.53E+02	35.82			2.53E+02	3.58E+01
m 26	588.35	1.90E+01	22.09			1.90E+01	2.21E+01
27	609.37	2.66E+02	47.27	7.00E+00	3.58E+00	2.59E+02	4.74E+01
28	665.04	2.40E+01	24.98			2.40E+01	2.50E+01
29	701.73	1.51E+01	19.63			1.51E+01	1.96E+01
30	727.29	3.81E+01	27.42			3.81E+01	2.74E+01
31	740.65	2.34E+01	23.75	2.08E-01	2.75E+00	2.32E+01	2.39E+01
32	794.93	2.82E+01	23.53			2.82E+01	2.35E+01
M 33	860.71	2.75E+01	20.69			2.75E+01	2.07E+01
m 34	865.90	1.33E+01	19.09			1.33E+01	1.91E+01
m 35	870.46	1.71E+01	20.01			1.71E+01	2.00E+01
36	911.31	1.43E+02	29.91	1.26E+00	2.67E+00	1.42E+02	3.00E+01
37	935.59	4.67E+01	29.95			4.67E+01	3.00E+01
M 38	964.23	3.87E+01	21.08			3.87E+01	2.11E+01
m 39	969.29	8.08E+01	22.64			8.08E+01	2.26E+01
40	1120.15	5.87E+01	27.64			5.87E+01	2.76E+01
41	1238.28	2.30E+01	23.66			2.30E+01	2.37E+01

Analysis Report for 1606038-15

CP 5022 10-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M 42	1292.72	1.62E+01	20.27			1.62E+01	2.03E+01
m 43	1378.25	2.15E+01	14.61			2.15E+01	1.46E+01
m 44	1390.45	1.85E+01	14.61			1.85E+01	1.46E+01
45	1409.30	1.47E+01	16.22			1.47E+01	1.62E+01
46	1428.60	8.68E+00	9.63			8.68E+00	9.63E+00
47	1461.00	5.29E+02	48.24	3.84E+00	1.88E+00	5.25E+02	4.83E+01
48	1729.81	1.50E+01	11.40			1.50E+01	1.14E+01
49	1737.91	6.00E+00	7.35			6.00E+00	7.35E+00
50	1753.48	8.00E+00	5.66			8.00E+00	5.66E+00
51	1764.85	4.98E+01	19.33	1.55E+00	1.49E+00	4.82E+01	1.94E+01
52	1960.22	7.00E+00	5.29			7.00E+00	5.29E+00
53	2117.57	8.23E+00	10.10			8.23E+00	1.01E+01
54	2156.52	6.00E+00	4.90			6.00E+00	4.90E+00
55	2204.16	1.28E+01	8.72	5.23E-01	9.79E-01	1.23E+01	8.77E+00
56	2330.69	6.50E+00	6.65			6.50E+00	6.65E+00
57	2354.55	4.92E+00	6.32			4.92E+00	6.32E+00
58	2393.68	6.63E+00	6.40			6.63E+00	6.40E+00
59	2614.60	6.71E+01	17.61	3.94E+00	1.42E+00	6.32E+01	1.77E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.994	1460.81 *	10.67	2.84E+01	3.66E+00
GA-67	0.874	93.31 *	35.70	3.01E+00	6.40E+00
		208.95	2.24		
		300.22 *	16.00	3.72E+00	8.53E+00
NB-94	0.908	702.63 *	100.00	4.87E-02	6.35E-02
		871.10 *	100.00	6.61E-02	7.78E-02
CD-109	0.997	88.03 *	3.72	3.50E+00	2.01E+00
SN-126	0.946	87.57 *	37.00	3.46E-01	1.97E-01
TL-208	0.998	583.14 *	30.22	2.32E+00	4.32E-01
		860.37 *	4.48	2.35E+00	1.80E+00
		2614.66 *	35.85	1.27E+00	3.84E-01
PB-210	0.979	46.50 *	4.25	2.20E+00	2.27E+00
BI-212	0.764	727.17 *	11.80	1.07E+00	7.80E-01

: 00829

Analysis Report for 1606038-15
CP 5022 10-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.764	1620.62	2.75		
PB-212	0.985	238.63 *	44.60	1.88E+00	3.18E-01
		300.09 *	3.41	1.30E+00	1.58E+00
BI-214	0.995	609.31 *	46.30	1.61E+00	3.42E-01
		1120.29 *	15.10	1.84E+00	8.85E-01
		1764.49 *	15.80	1.98E+00	8.20E-01
		2204.22 *	4.98	1.74E+00	1.26E+00
PB-214	0.999	295.21 *	19.19	2.15E+00	5.63E-01
		351.92 *	37.19	1.92E+00	4.22E-01
RA-226	0.982	186.21 *	3.28	6.50E+00	1.22E+01
AC-228	0.992	338.32 *	11.40	1.73E+00	8.08E-01
		911.07 *	27.70	2.05E+00	5.35E-01
		969.11 *	16.60	2.05E+00	6.42E-01
TH-234	0.899	63.29 *	3.80	4.87E+00	3.03E+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 : 6/14/2016 1:40:57PM
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	12.87	2.87965E-01	6.14		
2	19.89	2.66799E-02	32.27		
5	76.37	2.69244E-01	6.60		
8	153.16	3.25344E-02	33.19	Sum	
10	210.44	2.10538E-02	38.44	Tol.	CM-243
11	222.28	1.45152E-02	51.46		
m 13	242.05	4.38583E-02	12.56		
14	274.24	4.10963E-02	28.80	Sum	
19	409.63	1.11910E-02	45.43		
20	438.47	9.69964E-03	53.42	D-Esc	
M 21	446.05	5.70024E-03	49.13		
m 22	452.67	8.12569E-03	44.52		
23	461.78	1.95609E-02	27.75		
24	510.86	1.79023E-02	38.05		
m 26	588.35	5.27520E-03	58.16		

Analysis Report for 1606038-15
CP 5022 10-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
	28	665.04	6.66667E-03	52.04	Tol.	CE-143
	31	740.65	6.44676E-03	51.51		
	32	794.93	7.84109E-03	41.68	Sum	
m	34	865.90	3.70036E-03	71.63		
	37	935.59	1.29693E-02	32.08	Sum	
M	38	964.23	1.07506E-02	27.24	Sum	
	41	1238.28	6.38889E-03	51.44		
	42	1292.72	4.51058E-03	62.42		
M	43	1378.25	5.96745E-03	34.01		
m	44	1390.45	5.14917E-03	39.41		
	45	1409.30	4.08730E-03	55.13		
	46	1428.60	2.41071E-03	55.49	Sum	
	48	1729.81	4.16667E-03	38.01	Sum	
	49	1737.91	1.66667E-03	61.24		
	50	1753.48	2.22222E-03	35.36		
	52	1960.22	1.94444E-03	37.80		
	53	2117.57	2.28632E-03	61.35	Sum	
	54	2156.52	1.66667E-03	40.82		
	56	2330.69	1.80556E-03	51.17	Sum	
	57	2354.55	1.36574E-03	64.32		
	58	2393.68	1.84028E-03	48.33		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	2.84E+01	3.66E+00
GA-67	0.87	93.31 *	35.70	3.01E+00	6.40E+00
		208.95	2.24		
		300.22 *	16.00	3.72E+00	8.53E+00
NB-94	0.90	702.63 *	100.00	4.87E-02	6.35E-02
		871.10 *	100.00	6.61E-02	7.78E-02
CD-109	0.99	88.03 *	3.72	3.50E+00	2.01E+00

Analysis Report for 1606038-15
CP 5022 10-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SN-126	0.94	87.57 *	37.00	3.46E-01	1.97E-01
TL-208	0.99	583.14 *	30.22	2.32E+00	4.32E-01
		860.37 *	4.48	2.35E+00	1.80E+00
		2614.66 *	35.85	1.27E+00	3.84E-01
PB-210	0.97	46.50 *	4.25	2.20E+00	2.27E+00
BI-212	0.76	727.17 *	11.80	1.07E+00	7.80E-01
		1620.62	2.75		
PB-212	0.98	238.63 *	44.60	1.88E+00	3.18E-01
		300.09 *	3.41	1.30E+00	1.58E+00
BI-214	0.99	609.31 *	46.30	1.61E+00	3.42E-01
		1120.29 *	15.10	1.84E+00	8.85E-01
		1764.49 *	15.80	1.98E+00	8.20E-01
		2204.22 *	4.98	1.74E+00	1.26E+00
PB-214	0.99	295.21 *	19.19	2.15E+00	5.63E-01
		351.92 *	37.19	1.92E+00	4.22E-01
RA-226	0.98	186.21 *	3.28	6.50E+00	1.22E+01
AC-228	0.99	338.32 *	11.40	1.73E+00	8.08E-01
		911.07 *	27.70	2.05E+00	5.35E-01
		969.11 *	16.60	2.05E+00	6.42E-01
TH-234	0.89	63.29 *	3.80	4.87E+00	3.03E+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	2.84E+01	3.66E+00	
GA-67	0.874	1.89E+00	3.75E+00	
NB-94	0.908	5.57E-02	4.92E-02	
? CD-109	0.997	3.50E+00	2.01E+00	
? SN-126	0.946	3.46E-01	1.97E-01	
TL-208	0.998	1.75E+00	2.83E-01	
PB-210	0.979	2.20E+00	2.27E+00	

Analysis Report for 1606038-15
 CP 5022 10-15

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-212	0.764	1.07E+00	7.80E-01	
PB-212	0.985	1.84E+00	3.14E-01	
BI-214	0.995	1.69E+00	2.90E-01	
PB-214	0.999	2.00E+00	3.37E-01	
RA-226	0.982	6.50E+00	1.22E+01	
AC-228	0.992	1.98E+00	3.66E-01	
TH-234	0.899	4.87E+00	3.03E+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 1606038-15
CP 5022 10-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/14/2016 1:40:57PM
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	12.87	2.87965E-01	6.14		
2	19.89	2.66799E-02	32.27		
5	76.37	2.69244E-01	6.60		
8	153.16	3.25344E-02	33.19	Sum	
10	210.44	2.10538E-02	38.44	Tol.	CM-243
11	222.28	1.45152E-02	51.46		
m 13	242.05	4.38583E-02	12.56		
14	274.24	4.10963E-02	28.80	Sum	
19	409.63	1.11910E-02	45.43		
20	438.47	9.69964E-03	53.42	D-Esc	
M 21	446.05	5.70024E-03	49.13		
m 22	452.67	8.12569E-03	44.52		
23	461.78	1.95609E-02	27.75		
24	510.86	1.79023E-02	38.05		
m 26	588.35	5.27520E-03	58.16		
28	665.04	6.66667E-03	52.04	Tol.	CE-143
31	740.65	6.44676E-03	51.51		
32	794.93	7.84109E-03	41.68	Sum	
m 34	865.90	3.70036E-03	71.63		
37	935.59	1.29693E-02	32.08	Sum	
M 38	964.23	1.07506E-02	27.24	Sum	
41	1238.28	6.38889E-03	51.44		
42	1292.72	4.51058E-03	62.42		
M 43	1378.25	5.96745E-03	34.01		
m 44	1390.45	5.14917E-03	39.41		
45	1409.30	4.08730E-03	55.13		
46	1428.60	2.41071E-03	55.49	Sum	
48	1729.81	4.16667E-03	38.01	Sum	
49	1737.91	1.66667E-03	61.24		
50	1753.48	2.22222E-03	35.36		
52	1960.22	1.94444E-03	37.80		
53	2117.57	2.28632E-03	61.35	Sum	
54	2156.52	1.66667E-03	40.82		
56	2330.69	1.80556E-03	51.17	Sum	
57	2354.55	1.36574E-03	64.32		

Analysis Report for 1606038-15
 CP 5022 10-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
58	2393.68	1.84028E-03	48.33		

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	2.46E-01	1.05E+00	1.05E+00
+	NA-22	1274.54	99.94	2.64E-03	1.53E-01	1.53E-01
+	NA-24	1368.53	99.99	-1.06E+04	5.00E+04	7.24E+04
		2754.09	99.86	1.08E+04		5.00E+04
+	AL-26	1808.65	99.76	4.03E-02	1.14E-01	1.14E-01
+	K-40	1460.81	* 10.67	2.84E+01	1.50E+00	1.50E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.35E-02	8.59E-02	8.59E-02
		78.34	96.00	5.42E-01		1.31E-01
+	SC-46	889.25	99.98	3.35E-02	1.47E-01	1.47E-01
		1120.51	99.99	2.33E-01		2.54E-01
+	V-48	983.52	99.98	4.26E-02	1.93E-01	2.16E-01
		1312.10	97.50	-6.61E-02		1.93E-01
+	CR-51	320.08	9.83	-6.19E-01	1.17E+00	1.17E+00
+	MN-54	834.83	99.97	-2.24E-02	1.38E-01	1.38E-01
+	CO-56	846.75	99.96	2.58E-02	1.47E-01	1.47E-01
		1037.75	14.03	5.30E-02		1.04E+00
		1238.25	67.00	1.10E-01		3.03E-01
		1771.40	15.51	-5.82E-01		6.99E-01
		2598.48	16.90	2.64E-01		7.11E-01
+	CO-57	122.06	85.51	-3.16E-02	9.22E-02	9.22E-02
		136.48	10.60	2.90E-01		7.54E-01
+	CO-58	810.76	99.40	-2.33E-02	1.47E-01	1.47E-01
+	FE-59	1099.22	56.50	-9.81E-02	2.64E-01	2.64E-01
		1291.56	43.20	4.43E-02		4.29E-01
+	CO-60	1173.22	100.00	-5.58E-02	1.30E-01	1.53E-01
		1332.49	100.00	-1.90E-02		1.30E-01
+	ZN-65	1115.52	50.75	-3.05E-02	3.20E-01	3.20E-01

Analysis Report for 1606038-15
CP 5022 10-15

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	GA-67	93.31	*	35.70	3.01E+00	4.21E+00	4.21E+00
		208.95		2.24	3.31E+01		5.76E+01
		300.22	*	16.00	3.72E+00		7.36E+00
+	SE-75	121.11		16.70	7.25E-02	1.41E-01	4.91E-01
		136.00		59.20	4.55E-02		1.41E-01
		264.65		59.80	8.33E-02		1.53E-01
		279.53		25.20	1.59E-01		3.75E-01
		400.65		11.40	2.12E-01		9.09E-01
+	RB-82	776.52		13.00	3.76E-01	1.45E+00	1.45E+00
+	RB-83	520.41		46.00	-4.61E-02	2.24E-01	2.24E-01
		529.64		30.30	-3.69E-02		3.42E-01
		552.65		16.40	-1.61E-01		6.01E-01
+	KR-85	513.99		0.43	-2.46E+01	2.61E+01	2.61E+01
+	SR-85	513.99		99.27	-1.22E-01	1.30E-01	1.30E-01
+	Y-88	898.02		93.40	-1.79E-02	1.01E-01	1.44E-01
		1836.01		99.38	-2.16E-02		1.01E-01
+	NB-93M	16.57		9.43	9.93E+01	1.49E+02	1.49E+02
+	NB-94	702.63	*	100.00	4.87E-02	1.04E-01	1.04E-01
		871.10	*	100.00	6.61E-02		2.56E-01
+	NB-95	765.79		99.81	1.90E-01	2.13E-01	2.13E-01
+	NB-95M	235.69		25.00	-3.16E+01	5.40E+00	5.40E+00
+	ZR-95	724.18		43.70	-2.16E-02	2.59E-01	3.67E-01
		756.72		55.30	2.56E-02		2.59E-01
+	MO-99	181.06		6.20	-1.69E+00	2.05E+01	2.79E+01
		739.58		12.80	9.12E+00		2.05E+01
		778.00		4.50	1.61E+01		6.13E+01
+	RU-103	497.08		89.00	4.32E-02	1.44E-01	1.44E-01
+	RU-106	621.84		9.80	6.70E-01	1.30E+00	1.30E+00
+	AG-108M	433.93		89.90	-4.55E-02	9.04E-02	9.04E-02
		614.37		90.40	1.69E-03		1.30E-01
		722.95		90.50	1.65E-02		1.27E-01
+	CD-109	88.03	*	3.72	3.50E+00	3.16E+00	3.16E+00
+	AG-110M	657.75		93.14	-2.72E-02	1.13E-01	1.13E-01
		677.61		10.53	-1.68E-01		1.05E+00
		706.67		16.46	1.46E-01		7.97E-01
		763.93		21.98	-9.09E-01		6.26E-01
		884.67		71.63	2.32E-02		1.99E-01
		1384.27		23.94	-7.20E-02		5.39E-01
+	CD-113M	263.70		0.02	2.68E+02	3.83E+02	3.83E+02
+	SN-113	255.12		1.93	1.50E+00	1.45E-01	4.88E+00
		391.69		64.90	7.80E-02		1.45E-01
+	TE123M	159.00		84.10	5.64E-03	1.04E-01	1.04E-01
+	SB-124	602.71		97.87	-5.20E-02	1.40E-01	1.40E-01
		645.85		7.26	3.12E-01		1.91E+00
		722.78		11.10	1.54E-01		1.19E+00
		1691.02		49.00	-1.26E-01		2.36E-01
+	I-125	35.49		6.49	1.20E+00	2.89E+00	2.89E+00
+	SB-125	176.33		6.89	-1.55E-02	3.12E-01	1.13E+00

Analysis Report for 1606038-15
CP 5022 10-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	427.89	29.33	5.62E-02	3.12E-01	3.12E-01
		463.38	10.35	1.26E+00		1.10E+00
		600.56	17.80	1.45E-01		7.14E-01
		635.90	11.32	-1.61E-02		1.00E+00
+	SB-126	414.70	83.30	5.95E-03	2.06E-01	2.06E-01
		666.33	99.60	3.58E-03		2.40E-01
		695.00	99.60	1.41E-01		2.68E-01
		720.50	53.80	-8.79E-02		4.24E-01
+	SN-126	87.57	* 37.00	3.46E-01	3.12E-01	3.12E-01
+	SB-127	473.00	25.00	-5.88E-01	3.02E+00	3.18E+00
		685.20	35.70	1.88E+00		3.02E+00
		783.80	14.70	2.14E-01		7.92E+00
+	I-129	29.78	57.00	-5.89E-01	4.27E-01	4.27E-01
		33.60	13.20	-6.48E-01		1.40E+00
		39.58	7.52	3.06E-01		1.65E+00
+	I-131	284.30	6.05	1.16E+00	3.12E-01	3.75E+00
		364.48	81.20	-1.42E-01		3.12E-01
		636.97	7.26	-1.35E+00		4.41E+00
		722.89	1.80	2.37E+00		1.82E+01
+	TE-132	49.72	13.10	-2.25E+00	1.25E+00	8.19E+00
		228.16	88.00	-4.09E-01		1.25E+00
+	BA-133	81.00	33.00	-7.07E-02	1.36E-01	1.91E-01
		302.84	17.80	1.51E-01		5.00E-01
		356.01	60.00	1.83E-02		1.36E-01
+	I-133	529.87	86.30	-1.41E+02	1.85E+03	1.85E+03
+	XE-133	81.00	38.00	-3.07E-01	8.32E-01	8.32E-01
+	CS-134	563.23	8.38	2.31E-01	1.44E-01	1.27E+00
		569.32	15.43	-1.29E-01		6.18E-01
		604.70	97.60	-9.91E-03		1.44E-01
		795.84	85.40	1.54E-02		1.72E-01
		801.93	8.73	5.14E-01		1.53E+00
+	CS-135	268.24	16.00	6.95E-02	5.75E-01	5.75E-01
+	I-135	1131.51	22.50	6.04E+12	1.09E+13	1.55E+13
		1260.41	28.60	-3.28E+12		1.09E+13
		1678.03	9.54	-1.28E+13		2.39E+13
+	CS-136	153.22	7.46	1.85E+00	2.25E-01	2.32E+00
		163.89	4.61	1.46E+00		3.34E+00
		176.55	13.56	-3.34E-02		1.10E+00
		273.65	12.66	-1.38E+00		1.29E+00
		340.57	48.50	-1.03E-01		3.99E-01
		818.50	99.70	-1.08E-01		2.25E-01
		1048.07	79.60	1.23E-01		3.56E-01
		1235.34	19.70	2.10E-01		1.88E+00
+	CS-137	661.65	85.12	-1.99E-03	1.29E-01	1.29E-01
+	LA-138	788.74	34.00	2.90E-01	1.79E-01	4.27E-01
		1435.80	66.00	9.93E-02		1.79E-01
+	CE-139	165.85	80.35	-6.42E-02	1.00E-01	1.00E-01
+	BA-140	162.64	6.70	1.00E+00	7.18E-01	2.38E+00
		304.84	4.50	6.80E-01		3.79E+00

Analysis Report for 1606038-15
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	423.70	3.20	-1.07E+00	7.18E-01	5.30E+00
		437.55	2.00	-8.25E-03		8.63E+00
		537.32	25.00	1.52E-01		7.18E-01
+	LA-140	328.77	20.50	7.20E-01	2.64E-01	9.40E-01
		487.03	45.50	-7.53E-02		3.91E-01
		815.85	23.50	6.13E-02		1.02E+00
		1596.49	95.49	1.26E-01		2.64E-01
+	CE-141	145.44	48.40	7.43E-02	2.13E-01	2.13E-01
+	CE-143	57.36	11.80	-6.08E+01	1.49E+02	3.13E+02
		293.26	42.00	1.21E+02		1.49E+02
		664.55	5.20	5.40E+02		1.10E+03
+	CE-144	133.54	10.80	-1.11E-01	7.48E-01	7.48E-01
+	PM-144	476.78	42.00	5.32E-02	1.21E-01	2.27E-01
		618.01	98.60	-3.44E-02		1.21E-01
		696.49	99.49	-4.98E-02		1.34E-01
+	PM-145	36.85	21.70	-1.90E-01	3.48E-01	6.59E-01
		37.36	39.70	-1.00E-01		3.48E-01
		42.30	15.10	-3.53E-02		6.98E-01
		72.40	2.31	-7.36E-01		3.47E+00
+	PM-146	453.90	39.94	9.78E-02	2.30E-01	2.30E-01
		735.90	14.01	0.00E+00		7.55E-01
		747.13	13.10	6.78E-03		7.67E-01
+	ND-147	91.11	28.90	1.73E-01	8.23E-01	8.23E-01
		531.02	13.10	-5.33E-01		1.47E+00
+	PM-149	285.90	3.10	5.14E+01	1.20E+02	1.20E+02
+	EU-152	121.78	20.50	-1.28E-01	3.73E-01	3.73E-01
		244.69	5.40	-4.32E-02		1.52E+00
		344.27	19.13	-1.88E-01		4.12E-01
		778.89	9.20	5.46E-01		1.36E+00
		964.01	10.40	-5.18E+00		1.52E+00
		1085.78	7.22	1.29E+00		2.26E+00
		1112.02	9.60	5.14E-01		1.72E+00
		1407.95	14.94	3.08E-02		8.67E-01
+	GD-153	97.43	31.30	2.22E-01	2.59E-01	2.59E-01
		103.18	22.20	-4.72E-01		3.56E-01
+	EU-154	123.07	40.50	8.67E-02	1.95E-01	1.95E-01
		723.30	19.70	7.58E-02		5.83E-01
		873.19	11.50	-4.21E-02		1.22E+00
		996.32	10.30	-7.34E-02		1.28E+00
		1004.76	17.90	1.30E-01		7.44E-01
		1274.45	35.50	7.39E-03		4.29E-01
+	EU-155	86.50	30.90	-5.67E-01	3.43E-01	3.43E-01
		105.30	20.70	2.86E-01		3.82E-01
+	EU-156	811.77	10.40	3.56E-01	2.20E+00	2.20E+00
		1153.47	7.20	1.84E+00		3.90E+00
		1230.71	8.90	1.76E+00		3.62E+00
+	HO-166M	184.41	72.60	1.92E-01	1.50E-01	1.50E-01
		280.45	29.60	1.27E-01		2.98E-01
		410.94	11.10	6.46E-01		9.23E-01

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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	1.98E-02	1.50E-01	2.51E-01
+	TM-171	66.72	0.14	3.61E+01	6.02E+01	6.02E+01
+	HF-172	81.75	4.52	-3.79E+00	6.95E-01	1.38E+00
		125.81	11.30	-1.05E+00		6.95E-01
+	LU-172	181.53	20.60	-5.31E-02	7.63E-01	1.39E+00
		810.06	16.63	-4.36E-01		2.75E+00
		912.12	15.25	1.10E+01		5.68E+00
		1093.66	62.50	2.28E-01		7.63E-01
+	LU-173	100.72	5.24	7.25E-02	4.68E-01	1.53E+00
		272.11	21.20	2.34E-01		4.68E-01
+	HF-175	343.40	84.00	1.47E-02	1.12E-01	1.12E-01
+	LU-176	88.34	13.30	9.93E-01	8.93E-02	8.21E-01
		201.83	86.00	-4.24E-03		9.89E-02
		306.78	94.00	3.48E-02		8.93E-02
+	TA-182	67.75	41.20	3.34E-02	2.12E-01	2.12E-01
		1121.30	34.90	-8.41E-02		6.99E-01
		1189.05	16.23	-3.32E-01		1.05E+00
		1221.41	26.98	-1.02E-01		7.00E-01
		1231.02	11.44	3.36E-01		1.69E+00
+	IR-192	308.46	29.68	-1.04E-01	1.90E-01	3.00E-01
		468.07	48.10	4.79E-02		1.90E-01
+	HG-203	279.19	77.30	3.50E-02	1.41E-01	1.41E-01
+	BI-207	569.67	97.72	-2.02E-02	9.66E-02	9.66E-02
		1063.62	74.90	6.23E-02		1.79E-01
+	TL-208	583.14	* 30.22	2.32E+00	3.09E-01	6.52E-01
		860.37	* 4.48	2.35E+00		5.65E+00
		2614.66	* 35.85	1.27E+00		3.09E-01
+	BI-210M	262.00	45.00	1.17E-01	2.04E-01	2.04E-01
		300.00	23.00	6.56E-02		3.98E-01
+	PB-210	46.50	* 4.25	2.20E+00	3.70E+00	3.70E+00
+	PB-211	404.84	2.90	2.22E-02	2.92E+00	2.92E+00
		831.96	2.90	3.10E+00		4.96E+00
+	BI-212	727.17	* 11.80	1.07E+00	1.21E+00	1.21E+00
		1620.62	2.75	2.45E+00		4.91E+00
+	PB-212	238.63	* 44.60	1.88E+00	3.29E-01	3.29E-01
		300.09	* 3.41	1.30E+00		2.58E+00
+	BI-214	609.31	* 46.30	1.61E+00	3.73E-01	3.73E-01
		1120.29	* 15.10	1.84E+00		1.27E+00
		1764.49	* 15.80	1.98E+00		1.02E+00
		2204.22	* 4.98	1.74E+00		1.62E+00
+	PB-214	295.21	* 19.19	2.15E+00	3.47E-01	6.34E-01
		351.92	* 37.19	1.92E+00		3.47E-01
+	RN-219	401.80	6.50	1.31E-01	1.42E+00	1.42E+00
+	RA-223	323.87	3.88	-8.83E-01	2.30E+00	2.30E+00
+	RA-224	240.98	3.95	1.40E+01	4.67E+00	4.67E+00
+	RA-225	40.00	31.00	1.29E-01	6.92E-01	6.92E-01
+	RA-226	186.21	* 3.28	6.50E+00	3.83E+00	3.83E+00
+	TH-227	50.10	8.40	-2.60E-01	9.43E-01	9.43E-01

Analysis Report for 1606038-15
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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>
	TH-227	236.00		11.50	-6.60E+00	9.43E-01	1.13E+00
		256.20		6.30	-3.82E-01		1.38E+00
+	AC-228	338.32	*	11.40	1.73E+00	4.75E-01	1.16E+00
		911.07	*	27.70	2.05E+00		4.75E-01
		969.11	*	16.60	2.05E+00		1.46E+00
+	TH-230	48.44		16.90	-6.96E-01	4.92E-01	4.92E-01
		62.85		4.60	2.46E+00		2.10E+00
		67.67		0.37	3.46E+00		2.19E+01
+	PA-231	283.67		1.60	1.53E+00	3.86E+00	4.94E+00
		302.67		2.30	1.17E+00		3.86E+00
+	TH-231	25.64		14.70	-9.58E-01	1.26E+00	3.45E+00
		84.21		6.40	2.07E+00		1.26E+00
+	PA-233	311.98		38.60	-1.73E-02	2.80E-01	2.80E-01
+	PA-234	131.20		20.40	4.53E-01	4.26E-01	4.26E-01
		733.99		8.80	4.09E-01		1.18E+00
		946.00		12.00	5.57E-01		1.05E+00
+	PA-234M	1001.03		0.92	-9.53E-01	1.46E+01	1.46E+01
+	TH-234	63.29	*	3.80	4.87E+00	4.88E+00	4.88E+00
+	U-235	143.76		10.50	1.86E-01	7.67E-01	7.67E-01
		163.35		4.70	7.41E-01		1.76E+00
		205.31		4.70	5.73E-01		1.93E+00
+	NP-237	86.50		12.60	-1.38E+00	8.38E-01	8.38E-01
+	NP-239	106.10		22.70	-1.40E+00	1.22E+01	1.22E+01
		228.18		10.70	-9.11E+00		2.77E+01
		277.60		14.10	4.39E+00		2.32E+01
+	AM-241	59.54		35.90	4.84E-02	2.31E-01	2.31E-01
+	AM-243	74.67		66.00	-7.27E-01	1.70E-01	1.70E-01
+	CM-243	209.75		3.29	2.41E+00	6.45E-01	2.91E+00
		228.14		10.60	-2.53E-01		7.72E-01
		277.60		14.00	1.22E-01		6.45E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = 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	1.05E+00	1.05E+00	2.46E-01	4.88E-01
NA-22	1274.54	99.94	1.53E-01	1.53E-01	2.64E-03	6.95E-02
NA-24	1368.53	99.99	7.24E+04	5.00E+04	-1.06E+04	3.06E+04
	2754.09	99.86	5.00E+04		1.08E+04	1.77E+04
AL-26	1808.65	99.76	1.14E-01	1.14E-01	4.03E-02	4.83E-02
+ K-40	1460.81	*	10.67	1.50E+00	2.84E+01	6.75E-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	8.59E-02	8.59E-02	1.35E-02	4.15E-02
	78.34	96.00	1.31E-01		5.42E-01	6.43E-02
SC-46	889.25	99.98	1.47E-01	1.47E-01	3.35E-02	6.78E-02
	1120.51	99.99	2.54E-01		2.33E-01	1.20E-01
V-48	983.52	99.98	2.16E-01	1.93E-01	4.26E-02	9.83E-02
	1312.10	97.50	1.93E-01		-6.61E-02	8.39E-02
CR-51	320.08	9.83	1.17E+00	1.17E+00	-6.19E-01	5.50E-01
MN-54	834.83	99.97	1.38E-01	1.38E-01	-2.24E-02	6.36E-02
CO-56	846.75	99.96	1.47E-01	1.47E-01	2.58E-02	6.77E-02
	1037.75	14.03	1.04E+00		5.30E-02	4.72E-01
	1238.25	67.00	3.03E-01		1.10E-01	1.40E-01
	1771.40	15.51	6.99E-01		-5.82E-01	2.86E-01
	2598.48	16.90	7.11E-01		2.64E-01	2.91E-01
CO-57	122.06	85.51	9.22E-02	9.22E-02	-3.16E-02	4.45E-02
	136.48	10.60	7.54E-01		2.90E-01	3.63E-01
CO-58	810.76	99.40	1.47E-01	1.47E-01	-2.33E-02	6.78E-02
FE-59	1099.22	56.50	2.64E-01	2.64E-01	-9.81E-02	1.18E-01
	1291.56	43.20	4.29E-01		4.43E-02	1.95E-01
CO-60	1173.22	100.00	1.53E-01	1.30E-01	-5.58E-02	6.98E-02
	1332.49	100.00	1.30E-01		-1.90E-02	5.79E-02
ZN-65	1115.52	50.75	3.20E-01	3.20E-01	-3.05E-02	1.47E-01
+ GA-67	93.31	*	35.70	4.21E+00	3.01E+00	2.06E+00
	208.95		2.24	5.76E+01	3.31E+01	2.77E+01
	300.22	*	16.00	7.36E+00	3.72E+00	3.49E+00
SE-75	121.11	16.70	4.91E-01	1.41E-01	7.25E-02	2.37E-01
	136.00	59.20	1.41E-01		4.55E-02	6.81E-02
	264.65	59.80	1.53E-01		8.33E-02	7.26E-02
	279.53	25.20	3.75E-01		1.59E-01	1.78E-01
	400.65	11.40	9.09E-01		2.12E-01	4.28E-01
RB-82	776.52	13.00	1.45E+00	1.45E+00	3.76E-01	6.72E-01
RB-83	520.41	46.00	2.24E-01	2.24E-01	-4.61E-02	1.04E-01
	529.64	30.30	3.42E-01		-3.69E-02	1.59E-01
	552.65	16.40	6.01E-01		-1.61E-01	2.76E-01
KR-85	513.99	0.43	2.61E+01	2.61E+01	-2.46E+01	1.23E+01
SR-85	513.99	99.27	1.30E-01	1.30E-01	-1.22E-01	6.11E-02
Y-88	898.02	93.40	1.44E-01	1.01E-01	-1.79E-02	6.58E-02
	1836.01	99.38	1.01E-01		-2.16E-02	4.10E-02
NB-93M	16.57	9.43	1.49E+02	1.49E+02	9.93E+01	7.23E+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)
+	NB-94	702.63	*	100.00	1.04E-01	1.04E-01	4.87E-02	4.79E-02
		871.10	*	100.00	2.56E-01		6.61E-02	1.23E-01
	NB-95	765.79		99.81	2.13E-01	2.13E-01	1.90E-01	1.00E-01
	NB-95M	235.69		25.00	5.40E+00	5.40E+00	-3.16E+01	2.62E+00
	ZR-95	724.18		43.70	3.67E-01	2.59E-01	-2.16E-02	1.72E-01
		756.72		55.30	2.59E-01		2.56E-02	1.20E-01
	MO-99	181.06		6.20	2.79E+01	2.05E+01	-1.69E+00	1.34E+01
		739.58		12.80	2.05E+01		9.12E+00	9.47E+00
		778.00		4.50	6.13E+01		1.61E+01	2.84E+01
	RU-103	497.08		89.00	1.44E-01	1.44E-01	4.32E-02	6.73E-02
	RU-106	621.84		9.80	1.30E+00	1.30E+00	6.70E-01	6.07E-01
	AG-108M	433.93		89.90	9.04E-02	9.04E-02	-4.55E-02	4.19E-02
		614.37		90.40	1.30E-01		1.69E-03	6.06E-02
		722.95		90.50	1.27E-01		1.65E-02	5.83E-02
+	CD-109	88.03	*	3.72	3.16E+00	3.16E+00	3.50E+00	1.55E+00
		AG-110M	657.75		93.14	1.13E-01	1.13E-01	-2.72E-02	5.19E-02
		677.61		10.53	1.05E+00		-1.68E-01	4.81E-01
		706.67		16.46	7.97E-01		1.46E-01	3.71E-01
		763.93		21.98	6.26E-01		-9.09E-01	2.91E-01
		884.67		71.63	1.99E-01		2.32E-02	9.19E-02
		1384.27		23.94	5.39E-01		-7.20E-02	2.37E-01
	CD-113M	263.70		0.02	3.83E+02	3.83E+02	2.68E+02	1.83E+02
	SN-113	255.12		1.93	4.88E+00	1.45E-01	1.50E+00	2.33E+00
		391.69		64.90	1.45E-01		7.80E-02	6.81E-02
	TE123M	159.00		84.10	1.04E-01	1.04E-01	5.64E-03	5.03E-02
	SB-124	602.71		97.87	1.40E-01	1.40E-01	-5.20E-02	6.53E-02
		645.85		7.26	1.91E+00		3.12E-01	8.90E-01
		722.78		11.10	1.19E+00		1.54E-01	5.47E-01
		1691.02		49.00	2.36E-01		-1.26E-01	9.77E-02
	I-125	35.49		6.49	2.89E+00	2.89E+00	1.20E+00	1.38E+00
	SB-125	176.33		6.89	1.13E+00	3.12E-01	-1.55E-02	5.43E-01
		427.89		29.33	3.12E-01		5.62E-02	1.46E-01
		463.38		10.35	1.10E+00		1.26E+00	5.20E-01
		600.56		17.80	7.14E-01		1.45E-01	3.35E-01
		635.90		11.32	1.00E+00		-1.61E-02	4.66E-01
	SB-126	414.70		83.30	2.06E-01	2.06E-01	5.95E-03	9.62E-02
		666.33		99.60	2.40E-01		3.58E-03	1.12E-01
		695.00		99.60	2.68E-01		1.41E-01	1.26E-01
		720.50		53.80	4.24E-01		-8.79E-02	1.96E-01
+	SN-126	87.57	*	37.00	3.12E-01	3.12E-01	3.46E-01	1.53E-01
		SB-127	473.00		25.00	3.18E+00	3.02E+00	-5.88E-01	1.47E+00
		685.20		35.70	3.02E+00		1.88E+00	1.40E+00
		783.80		14.70	7.92E+00		2.14E-01	3.67E+00
	I-129	29.78		57.00	4.27E-01	4.27E-01	-5.89E-01	2.03E-01
		33.60		13.20	1.40E+00		-6.48E-01	6.68E-01
		39.58		7.52	1.65E+00		3.06E-01	7.90E-01
	I-131	284.30		6.05	3.75E+00	3.12E-01	1.16E+00	1.77E+00
		364.48		81.20	3.12E-01		-1.42E-01	1.47E-01
		636.97		7.26	4.41E+00		-1.35E+00	2.05E+00
		722.89		1.80	1.82E+01		2.37E+00	8.39E+00
	TE-132	49.72		13.10	8.19E+00	1.25E+00	-2.25E+00	3.92E+00
		228.16		88.00	1.25E+00		-4.09E-01	5.94E-01
	BA-133	81.00		33.00	1.91E-01	1.36E-01	-7.07E-02	9.18E-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	5.00E-01	1.36E-01	1.51E-01	2.37E-01
	356.01	60.00	1.36E-01		1.83E-02	6.39E-02
I-133	529.87	86.30	1.85E+03	1.85E+03	-1.41E+02	8.57E+02
XE-133	81.00	38.00	8.32E-01	8.32E-01	-3.07E-01	3.99E-01
CS-134	563.23	8.38	1.27E+00	1.44E-01	2.31E-01	5.92E-01
	569.32	15.43	6.18E-01		-1.29E-01	2.85E-01
	604.70	97.60	1.44E-01		-9.91E-03	6.79E-02
	795.84	85.40	1.72E-01		1.54E-02	8.02E-02
	801.93	8.73	1.53E+00		5.14E-01	7.07E-01
CS-135	268.24	16.00	5.75E-01	5.75E-01	6.95E-02	2.74E-01
I-135	1131.51	22.50	1.55E+13	1.09E+13	6.04E+12	7.12E+12
	1260.41	28.60	1.09E+13		-3.28E+12	4.94E+12
	1678.03	9.54	2.39E+13		-1.28E+13	1.00E+13
CS-136	153.22	7.46	2.32E+00	2.25E-01	1.85E+00	1.12E+00
	163.89	4.61	3.34E+00		1.46E+00	1.61E+00
	176.55	13.56	1.10E+00		-3.34E-02	5.28E-01
	273.65	12.66	1.29E+00		-1.38E+00	6.12E-01
	340.57	48.50	3.99E-01		-1.03E-01	1.90E-01
	818.50	99.70	2.25E-01		-1.08E-01	1.03E-01
	1048.07	79.60	3.56E-01		1.23E-01	1.64E-01
	1235.34	19.70	1.88E+00		2.10E-01	8.74E-01
CS-137	661.65	85.12	1.29E-01	1.29E-01	-1.99E-03	5.95E-02
LA-138	788.74	34.00	4.27E-01	1.79E-01	2.90E-01	1.99E-01
	1435.80	66.00	1.79E-01		9.93E-02	7.78E-02
CE-139	165.85	80.35	1.00E-01	1.00E-01	-6.42E-02	4.81E-02
BA-140	162.64	6.70	2.38E+00	7.18E-01	1.00E+00	1.15E+00
	304.84	4.50	3.79E+00		6.80E-01	1.80E+00
	423.70	3.20	5.30E+00		-1.07E+00	2.47E+00
	437.55	2.00	8.63E+00		-8.25E-03	4.03E+00
	537.32	25.00	7.18E-01		1.52E-01	3.32E-01
LA-140	328.77	20.50	9.40E-01	2.64E-01	7.20E-01	4.47E-01
	487.03	45.50	3.91E-01		-7.53E-02	1.82E-01
	815.85	23.50	1.02E+00		6.13E-02	4.70E-01
	1596.49	95.49	2.64E-01		1.26E-01	1.15E-01
CE-141	145.44	48.40	2.13E-01	2.13E-01	7.43E-02	1.03E-01
CE-143	57.36	11.80	3.13E+02	1.49E+02	-6.08E+01	1.50E+02
	293.26	42.00	1.49E+02		1.21E+02	7.22E+01
	664.55	5.20	1.10E+03		5.40E+02	5.15E+02
CE-144	133.54	10.80	7.48E-01	7.48E-01	-1.11E-01	3.61E-01
PM-144	476.78	42.00	2.27E-01	1.21E-01	5.32E-02	1.06E-01
	618.01	98.60	1.21E-01		-3.44E-02	5.62E-02
	696.49	99.49	1.34E-01		-4.98E-02	6.24E-02
PM-145	36.85	21.70	6.59E-01	3.48E-01	-1.90E-01	3.15E-01
	37.36	39.70	3.48E-01		-1.00E-01	1.66E-01
	42.30	15.10	6.98E-01		-3.53E-02	3.34E-01
	72.40	2.31	3.47E+00		-7.36E-01	1.68E+00
PM-146	453.90	39.94	2.30E-01	2.30E-01	9.78E-02	1.07E-01
	735.90	14.01	7.55E-01		0.00E+00	3.45E-01
	747.13	13.10	7.67E-01		6.78E-03	3.48E-01
ND-147	91.11	28.90	8.23E-01	8.23E-01	1.73E-01	4.02E-01
	531.02	13.10	1.47E+00		-5.33E-01	6.78E-01
PM-149	285.90	3.10	1.20E+02	1.20E+02	5.14E+01	5.68E+01
EU-152	121.78	20.50	3.73E-01	3.73E-01	-1.28E-01	1.80E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
EU-152	244.69	5.40	1.52E+00	3.73E-01	-4.32E-02	7.23E-01	
	344.27	19.13	4.12E-01		-1.88E-01	1.93E-01	
	778.89	9.20	1.36E+00		5.46E-01	6.30E-01	
	964.01	10.40	1.52E+00		-5.18E+00	7.03E-01	
	1085.78	7.22	2.26E+00		1.29E+00	1.04E+00	
	1112.02	9.60	1.72E+00		5.14E-01	7.92E-01	
	1407.95	14.94	8.67E-01		3.08E-02	3.82E-01	
GD-153	97.43	31.30	2.59E-01	2.59E-01	2.22E-01	1.25E-01	
	103.18	22.20	3.56E-01		-4.72E-01	1.72E-01	
EU-154	123.07	40.50	1.95E-01	1.95E-01	8.67E-02	9.42E-02	
	723.30	19.70	5.83E-01		7.58E-02	2.69E-01	
	873.19	11.50	1.22E+00		-4.21E-02	5.66E-01	
	996.32	10.30	1.28E+00		-7.34E-02	5.86E-01	
	1004.76	17.90	7.44E-01		1.30E-01	3.39E-01	
	1274.45	35.50	4.29E-01		7.39E-03	1.94E-01	
EU-155	86.50	30.90	3.43E-01	3.43E-01	-5.67E-01	1.67E-01	
	105.30	20.70	3.82E-01		2.86E-01	1.85E-01	
EU-156	811.77	10.40	2.20E+00	2.20E+00	3.56E-01	1.01E+00	
	1153.47	7.20	3.90E+00		1.84E+00	1.79E+00	
	1230.71	8.90	3.62E+00		1.76E+00	1.68E+00	
HO-166M	184.41	72.60	1.50E-01	1.50E-01	1.92E-01	7.29E-02	
	280.45	29.60	2.98E-01		1.27E-01	1.42E-01	
	410.94	11.10	9.23E-01		6.46E-01	4.36E-01	
	711.69	54.10	2.51E-01		1.98E-02	1.18E-01	
TM-171	66.72	0.14	6.02E+01	6.02E+01	3.61E+01	2.91E+01	
HF-172	81.75	4.52	1.38E+00	6.95E-01	-3.79E+00	6.62E-01	
	125.81	11.30	6.95E-01		-1.05E+00	3.35E-01	
LU-172	181.53	20.60	1.39E+00	7.63E-01	-5.31E-02	6.65E-01	
	810.06	16.63	2.75E+00		-4.36E-01	1.27E+00	
	912.12	15.25	5.68E+00		1.10E+01	2.72E+00	
	1093.66	62.50	7.63E-01		2.28E-01	3.46E-01	
LU-173	100.72	5.24	1.53E+00	4.68E-01	7.25E-02	7.38E-01	
	272.11	21.20	4.68E-01		2.34E-01	2.24E-01	
HF-175	343.40	84.00	1.12E-01	1.12E-01	1.47E-02	5.26E-02	
LU-176	88.34	13.30	8.21E-01	8.93E-02	9.93E-01	4.01E-01	
	201.83	86.00	9.89E-02		-4.24E-03	4.74E-02	
	306.78	94.00	8.93E-02		3.48E-02	4.22E-02	
TA-182	67.75	41.20	2.12E-01	2.12E-01	3.34E-02	1.02E-01	
	1121.30	34.90	6.99E-01		-8.41E-02	3.30E-01	
	1189.05	16.23	1.05E+00		-3.32E-01	4.78E-01	
	1221.41	26.98	7.00E-01		-1.02E-01	3.22E-01	
	1231.02	11.44	1.69E+00		3.36E-01	7.81E-01	
	308.46	29.68	3.00E-01		1.90E-01	-1.04E-01	1.41E-01
IR-192	468.07	48.10	1.90E-01	1.90E-01	4.79E-02	8.77E-02	
	279.19	77.30	1.41E-01		1.41E-01	3.50E-02	6.71E-02
BI-207	569.67	97.72	9.66E-02	9.66E-02	-2.02E-02	4.45E-02	
	1063.62	74.90	1.79E-01		6.23E-02	8.11E-02	
+ TL-208	583.14	*	30.22	3.09E-01	2.32E+00	3.14E-01	
	860.37	*	4.48		2.35E+00	2.71E+00	
	2614.66	*	35.85		1.27E+00	1.27E-01	
BI-210M	262.00		2.04E-01	2.04E-01	1.17E-01	9.73E-02	
	300.00		3.98E-01		6.56E-02	1.89E-01	
+ PB-210	46.50	*	4.25	3.70E+00	3.70E+00	2.20E+00	1.80E+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	2.92E+00	2.92E+00	2.22E-02	1.36E+00
	831.96	2.90	4.96E+00		3.10E+00	2.31E+00
+ BI-212	727.17 *	11.80	1.21E+00	1.21E+00	1.07E+00	5.67E-01
	1620.62	2.75	4.91E+00		2.45E+00	2.15E+00
+ PB-212	238.63 *	44.60	3.29E-01	3.29E-01	1.88E+00	1.60E-01
	300.09 *	3.41	2.58E+00		1.30E+00	1.22E+00
+ BI-214	609.31 *	46.30	3.73E-01	3.73E-01	1.61E+00	1.78E-01
	1120.29 *	15.10	1.27E+00		1.84E+00	5.93E-01
	1764.49 *	15.80	1.02E+00		1.98E+00	4.55E-01
	2204.22 *	4.98	1.62E+00		1.74E+00	6.16E-01
+ PB-214	295.21 *	19.19	6.34E-01	3.47E-01	2.15E+00	3.05E-01
	351.92 *	37.19	3.47E-01		1.92E+00	1.67E-01
RN-219	401.80	6.50	1.42E+00	1.42E+00	1.31E-01	6.65E-01
RA-223	323.87	3.88	2.30E+00	2.30E+00	-8.83E-01	1.09E+00
RA-224	240.98	3.95	4.67E+00	4.67E+00	1.40E+01	2.29E+00
RA-225	40.00	31.00	6.92E-01	6.92E-01	1.29E-01	3.32E-01
+ RA-226	186.21 *	3.28	3.83E+00	3.83E+00	6.50E+00	1.87E+00
TH-227	50.10	8.40	9.43E-01	9.43E-01	-2.60E-01	4.51E-01
	236.00	11.50	1.13E+00		-6.60E+00	5.47E-01
	256.20	6.30	1.38E+00		-3.82E-01	6.59E-01
+ AC-228	338.32 *	11.40	1.16E+00	4.75E-01	1.73E+00	5.61E-01
	911.07 *	27.70	4.75E-01		2.05E+00	2.18E-01
	969.11 *	16.60	1.46E+00		2.05E+00	6.94E-01
TH-230	48.44	16.90	4.92E-01	4.92E-01	-6.96E-01	2.35E-01
	62.85	4.60	2.10E+00		2.46E+00	1.02E+00
	67.67	0.37	2.19E+01		3.46E+00	1.06E+01
PA-231	283.67	1.60	4.94E+00	3.86E+00	1.53E+00	2.33E+00
	302.67	2.30	3.86E+00		1.17E+00	1.83E+00
TH-231	25.64	14.70	3.45E+00	1.26E+00	-9.58E-01	1.65E+00
	84.21	6.40	1.26E+00		2.07E+00	6.12E-01
PA-233	311.98	38.60	2.80E-01	2.80E-01	-1.73E-02	1.32E-01
PA-234	131.20	20.40	4.26E-01	4.26E-01	4.53E-01	2.06E-01
	733.99	8.80	1.18E+00		4.09E-01	5.39E-01
	946.00	12.00	1.05E+00		5.57E-01	4.80E-01
PA-234M	1001.03	0.92	1.46E+01	1.46E+01	-9.53E-01	6.65E+00
+ TH-234	63.29 *	3.80	4.88E+00	4.88E+00	4.87E+00	2.40E+00
U-235	143.76	10.50	7.67E-01	7.67E-01	1.86E-01	3.70E-01
	163.35	4.70	1.76E+00		7.41E-01	8.46E-01
	205.31	4.70	1.93E+00		5.73E-01	9.25E-01
NP-237	86.50	12.60	8.38E-01	8.38E-01	-1.38E+00	4.09E-01
NP-239	106.10	22.70	1.22E+01	1.22E+01	-1.40E+00	5.91E+00
	228.18	10.70	2.77E+01		-9.11E+00	1.32E+01
	277.60	14.10	2.32E+01		4.39E+00	1.11E+01
AM-241	59.54	35.90	2.31E-01	2.31E-01	4.84E-02	1.12E-01
AM-243	74.67	66.00	1.70E-01	1.70E-01	-7.27E-01	8.28E-02
CM-243	209.75	3.29	2.91E+00	6.45E-01	2.41E+00	1.40E+00
	228.14	10.60	7.72E-01		-2.53E-01	3.68E-01
	277.60	14.00	6.45E-01		1.22E-01	3.07E-01

Analysis Report for 1606038-15

CP 5022 10-15

-
- + = Nuclide identified during the nuclide identification
 - * = Energy line found in the spectrum
 - > = MDA value not calculated
 - @ = Half-life too short to be able to perform the decay correction
-

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: CP 5022 10-15

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	91	786
9:	1079	638	400	346	2061	138	122	137
17:	117	90	112	112	92	56	56	67
25:	57	48	44	50	41	43	38	73
33:	55	44	62	58	53	51	59	61
41:	53	55	56	53	51	65	142	53
49:	51	57	52	62	75	77	67	59
57:	77	78	81	83	92	81	151	148
65:	89	91	114	94	80	92	100	89
73:	107	111	389	102	495	205	85	74
81:	65	51	66	144	112	66	170	127
89:	83	152	76	104	193	108	64	42
97:	63	58	56	79	49	53	60	59
105:	56	75	43	42	55	50	52	55
113:	55	49	48	66	34	53	46	47
121:	54	52	54	45	62	46	57	44
129:	87	64	60	51	48	44	53	51
137:	46	46	40	40	50	52	45	54
145:	44	49	42	35	40	44	58	59
153:	61	66	51	47	53	38	46	45
161:	45	47	51	39	43	35	32	36
169:	42	40	39	35	35	32	35	42
177:	33	38	37	41	32	38	38	41
185:	70	160	65	39	43	34	42	46
193:	37	37	39	33	37	50	27	37
201:	34	35	38	41	45	44	38	39
209:	56	60	37	33	30	32	17	33
217:	31	28	30	32	41	42	36	42
225:	24	29	25	32	28	31	39	38
233:	33	30	25	33	31	242	436	43
241:	79	133	33	24	23	27	25	28
249:	25	28	31	30	23	22	30	36
257:	32	21	37	29	24	27	34	38
265:	13	26	17	25	34	46	42	28
273:	23	25	23	25	33	29	25	23
281:	26	24	13	19	21	22	17	25
289:	19	23	18	24	20	41	180	80
297:	23	17	17	45	23	22	23	23
305:	24	13	29	18	16	12	19	23
313:	16	16	19	8	23	17	14	17
321:	23	24	25	15	21	20	26	46
329:	23	20	14	16	26	27	19	17
337:	25	82	63	12	23	14	16	10
345:	20	13	23	8	26	27	87	291
353:	52	15	13	20	17	10	14	13
361:	16	14	19	17	24	12	25	14

369: 19 14 19 13 12 17 20 19

Sample Title: CP 5022 10-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	15	12	13	12	15	11	9	13
385:	13	14	22	13	11	16	17	15
393:	12	15	10	14	15	20	22	12
401:	25	15	15	13	11	12	15	15
409:	25	29	15	17	11	15	8	15
417:	18	10	17	15	13	12	10	15
425:	10	19	15	16	9	11	13	12
433:	10	15	8	9	9	23	16	19
441:	8	6	8	12	13	18	10	10
449:	8	10	12	21	15	12	12	5
457:	7	11	14	15	14	26	33	17
465:	8	6	4	14	11	13	14	10
473:	5	13	14	10	16	13	9	9
481:	14	12	13	16	12	9	11	11
489:	15	14	10	13	17	11	15	16
497:	12	16	13	8	13	7	12	10
505:	9	6	8	15	19	54	57	31
513:	12	17	10	13	11	12	9	18
521:	5	10	16	9	11	9	15	15
529:	9	8	6	13	11	9	10	12
537:	7	11	10	8	7	7	7	8
545:	7	10	14	6	14	8	10	9
553:	7	10	11	11	9	12	11	13
561:	10	10	21	13	7	8	12	7
569:	9	9	10	14	12	12	9	8
577:	10	7	7	9	18	39	155	56
585:	11	4	12	16	7	9	5	5
593:	4	11	8	14	11	8	20	7
601:	11	10	13	6	13	10	8	37
609:	161	99	12	9	7	14	6	12
617:	6	8	12	11	9	12	10	10
625:	9	6	9	6	8	11	9	8
633:	6	11	7	4	9	10	10	5
641:	11	12	13	10	8	8	4	12
649:	9	7	5	10	4	15	4	7
657:	8	6	7	7	4	9	8	9
665:	10	15	8	5	6	11	9	5
673:	10	4	6	12	4	8	8	3
681:	6	8	8	5	8	8	11	9
689:	4	6	7	15	13	5	12	7
697:	11	9	9	6	18	12	9	6
705:	8	9	4	13	12	9	7	8
713:	16	5	10	13	8	5	6	11
721:	5	5	8	3	6	9	37	15
729:	7	3	9	6	5	5	5	5
737:	2	5	11	9	10	9	6	4
745:	4	5	4	7	8	1	5	6
753:	9	5	13	10	7	3	6	7
761:	9	4	11	9	8	7	11	34
769:	15	7	10	11	11	5	9	9
777:	9	10	6	5	4	7	3	5
785:	14	12	8	13	6	10	4	10
793:	4	13	23	8	6	3	9	5

801: 0 13 8 8 10 7 7 6

Sample Title: CP 5022 10-15

Channel	1	2	3	4	5	6	7	8
809:	5	11	7	4	10	8	7	5
817:	5	3	7	2	11	6	8	5
825:	7	10	3	5	10	5	10	10
833:	4	10	11	6	6	4	8	9
841:	6	10	4	9	8	8	7	7
849:	5	6	3	11	6	4	10	4
857:	4	6	4	18	13	8	2	7
865:	5	11	3	3	5	13	7	6
873:	11	3	6	6	5	8	5	5
881:	4	9	10	3	10	7	6	3
889:	12	7	6	4	7	2	6	6
897:	4	8	4	6	4	7	7	6
905:	7	1	4	6	6	26	79	35
913:	9	3	0	6	6	5	2	7
921:	6	4	2	8	2	8	2	4
929:	5	4	7	3	9	14	12	8
937:	9	4	5	5	2	2	3	7
945:	5	5	6	4	6	0	7	7
953:	10	6	6	9	5	3	6	2
961:	5	8	7	23	9	2	2	28
969:	52	16	3	5	9	3	7	7
977:	4	4	3	2	3	6	5	8
985:	7	3	5	4	7	6	1	7
993:	3	1	4	5	11	5	7	3
1001:	11	3	4	4	4	4	6	6
1009:	2	1	6	2	3	5	11	6
1017:	1	4	4	6	8	4	7	4
1025:	3	5	8	7	6	3	6	3
1033:	6	5	5	7	3	8	2	3
1041:	3	6	5	4	7	8	5	6
1049:	2	8	7	4	5	7	5	6
1057:	4	1	5	1	5	5	5	4
1065:	8	5	2	5	3	6	1	5
1073:	3	5	4	10	3	6	4	3
1081:	7	8	9	7	4	7	6	8
1089:	5	2	9	3	9	5	4	0
1097:	0	3	7	7	2	7	9	3
1105:	11	5	5	4	7	10	8	7
1113:	3	8	5	7	9	4	20	41
1121:	14	3	6	6	11	7	4	5
1129:	4	8	6	8	7	6	2	5
1137:	6	4	7	4	3	3	9	6
1145:	6	9	3	5	5	5	4	6
1153:	7	10	7	4	4	2	6	5
1161:	4	4	2	7	5	3	8	6
1169:	9	4	7	9	5	2	4	6
1177:	5	8	7	5	3	3	6	5
1185:	7	3	2	7	7	9	4	7
1193:	9	7	3	4	7	4	4	4
1201:	7	12	4	3	2	5	7	10
1209:	8	5	5	3	6	1	10	9
1217:	10	8	9	5	5	5	9	6
1225:	7	5	7	10	2	7	7	10

1233: 9 4 4 8 10 13 7 3

Sample Title: CP 5022 10-15

Channel	1	2	3	4	5	6	7	8
1241:	5	5	4	4	5	4	1	7
1249:	5	4	3	5	5	3	4	8
1257:	8	4	1	7	5	4	0	6
1265:	4	3	4	4	3	6	5	4
1273:	3	3	4	7	6	7	2	4
1281:	6	6	3	5	6	6	1	1
1289:	1	2	8	7	7	6	6	4
1297:	6	3	5	3	0	4	4	4
1305:	4	4	4	3	2	5	2	2
1313:	2	2	0	3	3	5	2	1
1321:	2	3	4	4	6	3	4	3
1329:	1	4	4	2	4	2	4	4
1337:	3	2	5	3	2	3	3	1
1345:	1	3	4	0	3	4	3	5
1353:	3	1	1	5	2	2	2	6
1361:	2	3	0	3	2	1	1	2
1369:	1	2	1	1	3	1	2	2
1377:	11	8	7	4	1	3	2	4
1385:	5	1	2	1	1	9	2	1
1393:	1	1	2	2	1	0	2	2
1401:	2	7	0	3	1	2	7	4
1409:	1	1	2	2	5	0	2	1
1417:	1	1	4	2	2	1	1	1
1425:	0	2	3	2	6	0	1	2
1433:	5	0	2	1	3	2	0	1
1441:	3	2	1	3	3	2	2	3
1449:	2	2	0	2	3	1	2	4
1457:	4	5	49	216	209	49	5	0
1465:	1	1	0	2	3	0	3	1
1473:	0	1	0	1	2	1	5	2
1481:	1	0	3	2	1	3	3	2
1489:	4	3	1	0	4	2	1	4
1497:	3	2	0	2	2	0	3	1
1505:	1	0	4	5	3	3	3	3
1513:	2	0	0	0	2	3	2	0
1521:	4	0	3	2	1	1	1	0
1529:	2	2	2	0	2	2	2	1
1537:	0	2	2	2	2	0	1	0
1545:	3	3	0	0	2	1	1	1
1553:	1	2	2	5	1	4	1	1
1561:	0	2	1	0	1	1	1	0
1569:	0	0	2	0	2	2	2	2
1577:	1	0	1	5	2	1	2	1
1585:	2	5	2	7	2	0	2	3
1593:	4	2	2	0	3	1	0	1
1601:	0	1	2	0	0	0	2	2
1609:	0	0	1	3	1	1	1	4
1617:	0	4	1	4	0	2	1	1
1625:	0	1	0	2	3	0	3	1
1633:	0	0	0	0	2	2	1	0
1641:	1	0	0	2	2	2	2	0
1649:	0	5	4	2	0	3	0	1
1657:	0	1	0	3	3	3	4	1

1665: 2 5 1 0 2 1 2 1

Sample Title: CP 5022 10-15

Channel	1	2	3	4	5	6	7	8	9
1673:	1	0	0	1	2	3	0	1	
1681:	1	1	4	0	2	1	0	2	
1689:	1	0	2	0	1	1	3	2	
1697:	0	0	1	0	3	0	2	1	
1705:	2	1	0	0	0	3	1	0	
1713:	0	3	0	1	2	1	1	0	
1721:	0	0	0	1	0	2	3	0	
1729:	5	5	3	1	1	0	1	2	
1737:	1	4	1	0	1	2	1	1	
1745:	0	0	1	0	0	1	0	1	
1753:	3	3	0	0	1	1	2	2	
1761:	0	0	11	31	12	2	3	2	
1769:	0	0	0	1	0	1	0	1	
1777:	2	0	1	1	1	1	0	0	
1785:	0	2	0	1	1	2	2	1	
1793:	1	0	0	1	2	0	2	2	
1801:	0	1	1	1	3	2	1	1	
1809:	0	2	0	0	0	0	1	0	
1817:	0	0	1	0	1	0	1	0	
1825:	1	1	1	0	1	1	1	0	
1833:	0	0	2	0	2	1	0	2	
1841:	0	2	1	1	1	2	2	2	
1849:	1	1	0	1	0	1	1	1	
1857:	1	0	0	0	1	0	0	2	
1865:	1	0	0	1	1	1	0	1	
1873:	2	0	1	1	3	0	1	1	
1881:	0	0	0	1	0	2	1	0	
1889:	1	2	1	0	1	0	2	1	
1897:	0	0	0	1	1	0	1	0	
1905:	0	2	1	2	1	0	1	2	
1913:	3	2	2	2	0	0	4	0	
1921:	3	2	0	1	2	0	0	0	
1929:	0	0	1	2	0	0	3	0	
1937:	0	1	0	2	0	2	0	0	
1945:	0	0	0	1	0	0	1	2	
1953:	1	2	0	0	1	0	2	2	
1961:	2	0	0	1	3	1	0	0	
1969:	2	0	1	0	0	1	0	2	
1977:	0	1	1	0	1	1	1	2	
1985:	1	0	1	1	1	0	0	0	
1993:	1	2	0	2	0	2	1	0	
2001:	0	1	1	0	1	1	0	1	
2009:	0	0	1	0	1	0	0	0	
2017:	2	1	0	1	0	0	1	0	
2025:	0	2	2	0	0	0	2	1	
2033:	0	0	1	0	0	2	1	0	
2041:	2	2	2	1	0	0	1	0	
2049:	0	1	0	2	1	0	1	0	
2057:	2	0	0	0	0	0	1	1	
2065:	0	1	1	0	2	3	1	2	
2073:	0	0	0	0	1	1	0	3	
2081:	2	0	1	0	0	0	2	0	
2089:	0	1	1	3	0	0	1	0	

2097: 0 0 1 1 2 2 2 3

Sample Title: CP 5022 10-15

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

2529: 0 1 0 0 1 0 0 0

Sample Title: CP 5022 10-15

Channel	1	2	3	4	5	6	7	8
2537:	0	1	0	0	0	0	0	1
2545:	0	0	0	1	0	0	0	1
2553:	0	0	0	0	1	0	0	0
2561:	0	0	0	0	1	1	0	0
2569:	1	1	0	0	0	0	0	0
2577:	0	0	1	1	0	0	0	1
2585:	0	1	0	0	0	1	1	2
2593:	0	3	2	0	0	2	0	0
2601:	0	0	0	0	0	0	1	0
2609:	1	0	0	6	20	24	15	3
2617:	1	0	0	0	0	0	0	2
2625:	0	0	0	1	1	2	0	0
2633:	0	0	1	0	0	0	0	0
2641:	0	0	0	0	0	0	1	0
2649:	0	0	0	0	1	0	0	1
2657:	1	0	0	2	0	0	0	0
2665:	0	1	1	1	0	1	0	0
2673:	1	0	0	2	1	0	0	0
2681:	1	0	0	0	0	1	0	0
2689:	1	1	1	0	0	0	1	0
2697:	1	0	0	1	1	1	0	1
2705:	0	0	0	0	0	1	0	0
2713:	0	1	1	0	0	2	0	0
2721:	0	0	0	0	0	0	0	0
2729:	1	0	0	0	0	0	0	0
2737:	1	0	0	0	1	1	0	0
2745:	0	0	0	0	2	0	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	1	0	1	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	1	0	0	1
2793:	0	0	1	0	1	0	1	1
2801:	1	0	0	0	1	1	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	1	1	1	0	1	0	0
2841:	0	1	0	0	0	1	0	0
2849:	0	0	0	0	0	0	1	0
2857:	1	0	1	0	0	0	0	0
2865:	0	0	0	1	0	0	0	1
2873:	0	0	1	0	0	1	0	0
2881:	2	1	0	1	1	0	1	0
2889:	0	0	0	0	2	0	0	0
2897:	0	0	0	1	0	0	1	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	1	0	0	0	0
2921:	0	0	2	0	0	1	0	2
2929:	0	0	0	0	0	1	0	1
2937:	0	0	1	0	0	0	1	0
2945:	0	0	0	0	0	0	1	0
2953:	0	0	0	0	0	0	1	0

2961: 0 0 0 0 0 1 0 0

Sample Title: CP 5022 10-15

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

3393: 0 0 0 0 0 0 0 0

Sample Title: CP 5022 10-15

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	0	0
3417:	0	0	0	0	1	0	0	0
3425:	0	0	0	0	0	1	1	0
3433:	0	0	0	0	0	0	0	0
3441:	0	1	1	0	0	0	0	0
3449:	1	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	1	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	1	0	0	1
3489:	0	1	0	0	0	0	0	0
3497:	0	0	0	0	1	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	1	0	0	0	0
3521:	0	0	0	1	0	0	0	0
3529:	0	0	0	0	0	1	0	0
3537:	1	0	0	0	0	1	0	0
3545:	1	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	1	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	1	0	0	0	1	0	1
3585:	0	1	0	1	0	1	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	1
3609:	0	0	0	0	0	0	0	1
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	1	0
3633:	0	0	0	0	0	0	0	1
3641:	0	0	0	0	0	1	0	0
3649:	0	0	0	0	2	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	1	0	0	2	0	1
3681:	0	0	0	0	0	0	1	0
3689:	1	1	0	0	0	2	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	1	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	1	0	1	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	1	0	1	1	0	0
3753:	0	0	0	0	0	0	1	1
3761:	0	0	0	0	0	0	0	0
3769:	0	0	2	0	0	1	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	1	0	0	0	0	0	0
3793:	0	0	1	1	1	0	0	0
3801:	1	0	0	0	0	0	0	1
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	2	0	1	0	0

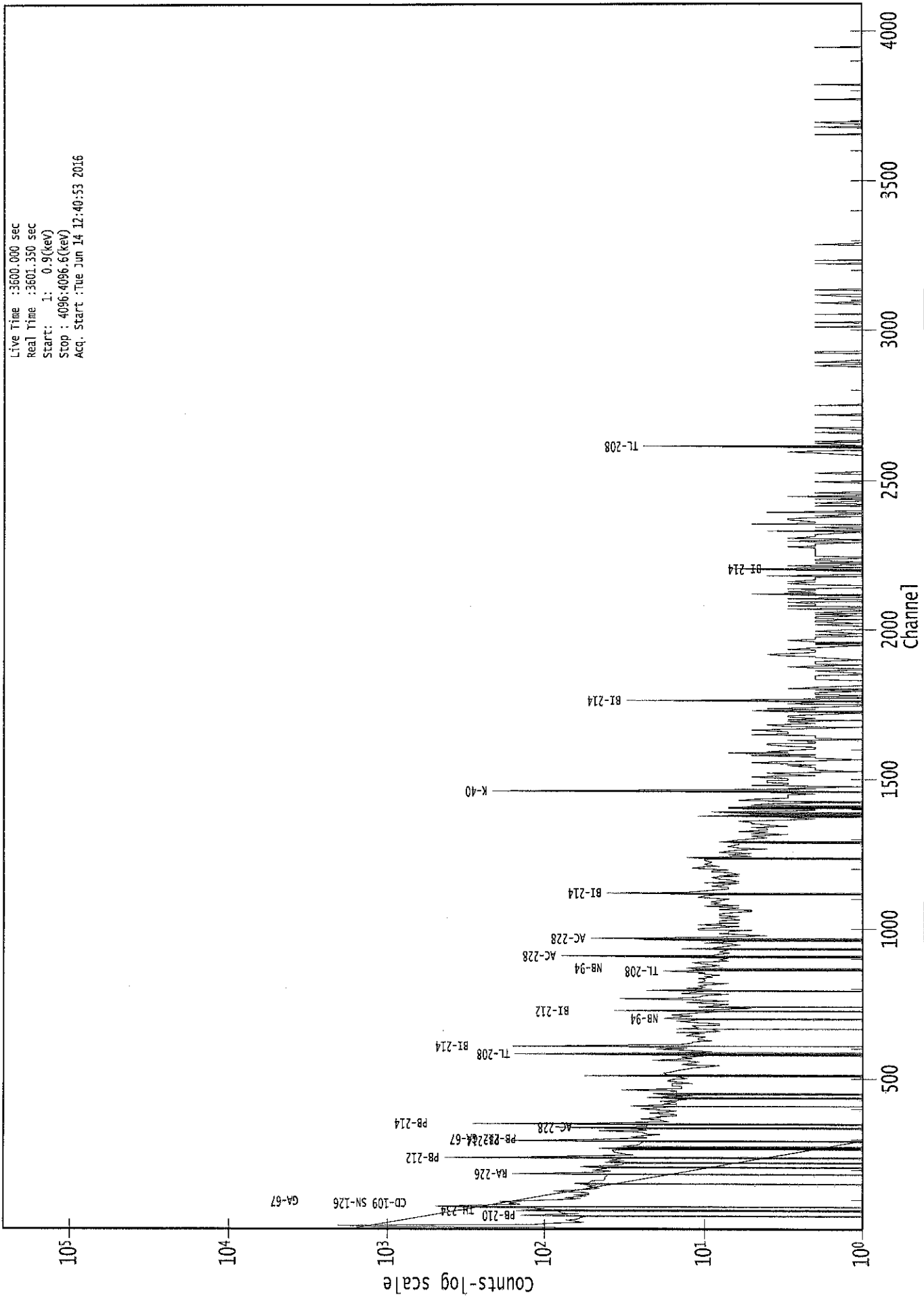
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP 5022 10-15

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

0000038826.CNF

Live Time : 3600.000 sec
Real Time : 3601.350 sec
Start: 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Tue Jun 14 12:40:53 2016



ROI Type: 2

ROI Type: 1

 ***** G E N I E Q U A L I T Y A S S U R A N C E *****

Last Results Report
 6/14/16 8:06:13 AM

6119

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002GAS-1401C.QC

Detector: GE2
 Geometry: <None>
 Certificate: GAS-1401
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 6/14/16 7:50:31 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 929.0 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54keV Boundary Limits: [5.800E+001, 6.100E+001]	5.9696E+001	< : : : >
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.640E+002]	6.6129E+002	< : : : >
Peak centroid 1332.49 ke Boundary Limits: [1.331E+003, 1.334E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.3319E+003	< : : : >
Peak centroid 1836.1 keV Boundary Limits: [1.834E+003, 1.838E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.8354E+003	< : : : >
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	1.8531E+000	< : : : >
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	1.7852E+000	< : : : >
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000]	1.9021E+000	< : : : >
Peak FWHM Y-88 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	2.2026E+000	< : : : >
Decay corrected activity Boundary Limits: [1.224E-001, 1.836E-001]	1.5548E+005	< : : : >
Decay corrected activity Boundary Limits: [4.971E-002, 7.457E-002]	6.2746E+004	< : : : >

Decay corrected activity 1.0119E+005
Boundary Limits: [7.978E-002, 1.197E-001] < : : : >

Parameter Description Value Deviation/Flags
[Mean +/- Std. Dev.] < LU : SD : UD : BS >

Decay corrected activity 2.2543E+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
 6/14/16 5:35:10 AM

6/14/16

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000003GAS-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: 6/14/16 5:19:30 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 929.7 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 keV	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	6.6172E+002	
Boundary Limits: [6.600E+002, 6.640E+002]		< : : >
Peak centroid 1332.49 keV	1.3325E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : >
Peak centroid 1836.1 keV	1.8359E+003	
Boundary Limits: [1.833E+003, 1.838E+003]		< : : >
Peak FWHM Am-241	1.3964E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	1.8021E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Peak FWHM Co-60	2.3452E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Peak FWHM Y-88	2.6400E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Decay corrected activity	1.8303E+005	
Boundary Limits: [1.223E-001, 1.834E-001]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity	6.7916E+004	
Boundary Limits: [4.969E-002, 7.453E-002]		< : : >

Decay corrected activity 1.0320E+005
Boundary Limits: [7.972E-002, 1.120E-001] < : : : >

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >

Decay corrected activity 2.2887E+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
 6/14/16 6:20:26 AM

6/14/16

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: 6/14/16 6:04:54 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 918.5 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 keV	6.0489E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 keV	6.6243E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3332E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Trend Test: The last 9 samples exhibit a monotonic trend.		
Peak centroid 1836.01 ke	1.8366E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : >
Peak FWHM Am-241	8.9220E-001	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.0650E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Peak FWHM Co-60	2.1008E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Peak FWHM Y-90	2.4809E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : >
Decay corrected activity	1.7047E+004	
Boundary Limits: [1.170E-002, 1.754E-002]		< : : >
Trend Test: The last 9 samples exhibit a bias trend.		

Decay corrected activity 6.2693E+003
Boundary Limits: [4.716E-003, 7.075E-003] < : : : >
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 1.0695E+004
Boundary Limits: [7.572E-003, 1.136E-002] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 2.2480E+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)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/14/16 6:00:59 AM

C
0100

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002B.QCK

Detector: GE2
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 6/14/16 5:45:44 AM
 Measurement Date: 6/14/16 5:45:46 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.2 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE2 [SD:-2.4446E+035+/-*****]	3.5344E+000	3.7905E-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)


```

*****
*****  G E N I E  Q U A L I T Y  A S S U R A N C E  *****
*****

```

Last Results Report
6/14/16 6:01:08 AM

6114

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:  6/14/16 5:45:52 AM
Measurement Date: 6/14/16 5:45:53 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 902.8 seconds

```

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE3 [SD: 2.2351E+003+/-1366.5]	1.6620E+003	-4.1937E-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
 6/14/16 6:00:51 AM

6114

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001B.QCK

Detector: GE1
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 6/14/16 5:45:37 AM
 Measurement Date: 6/14/16 5:45:38 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.1 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE1 [SD: 2.2814E+000+/- 1.495]	2.3544E+000	4.8898E-002
Trend Test: The last	9 samples exhibit a bias trend.	< : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

***** GENIE QUALITY ASSURANCE *****

Last Results Report
6/14/16 10:14:49 AM

Telly

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004GAW-14C.QCK

Detector: GE4
Geometry: <None>
Certificate: GAW-14
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/14 12:00:00 AM
Measurement Date: 6/14/16 9:59:00 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 936.1 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 keV	5.8806E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 keV	6.6096E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Peak centroid 1332.49 keV	1.3319E+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]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	2.1752E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.4799E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	2.8128E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	3.2576E+000	
Boundary Limits: [5.000E-001, 3.500E+000]		< : : : >
Decay corrected activity	1.2579E+005	
Boundary Limits: [1.200E-001, 1.816E-001]		< : : : >
Decay corrected activity	7.0880E+004	
Boundary Limits: [4.918E-002, 7.377E-002]		< : : : >

Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity	1.1124E+005	<	:	:	:	>				
Boundary Limits: [	7.892E-002,	1.184E-001]							
Parameter Description	Value									
[Mean +/- Std. Dev.]		<	LU	:	SD	:	UD	:	BS	>
Decay corrected activity	2.4442E+005	<	:	:	:	>				
Boundary Limits: [	1.695E-001,	2.543E-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
 6/14/16 6:01:16 AM

C
6114

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004B.QCK

Detector: GE4
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 6/14/16 5:45:58 AM
 Measurement Date: 6/14/16 5:46:00 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.2 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE4 [SD: 9.5683E+000+/-157.40]	1.7467E+000	-4.9691E-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)