WESTON SOLUTIONS, INC.

PO# 0094759

STANDARD LEVEL IV
REPORT OF ANALYSIS

WORK ORDER #17-07090-OR

September 22, 2017

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 # 17-07090

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

Date for Partial	Initials	Date	Initials	Checklist Items
		7-18-17	JED	Sample Log-In
		9-1-17	NJL	Data Compilation
		9/13/17	[illegible]	First Technical Data Review
		9-13-17	MLT	Second Technical Data Review
		9/10/17	[illegible]	Data Entry/Electronic Deliverable
		9/10/17	[illegible]	Case Narrative
		09/19/17	[illegible]	Electronic Deliverable Proof
		9/20/17	[illegible]	Samples Analyzed within Holding Time Yes? [X] No? [ ]
		9/20/17	[illegible]	QA/QC Review
				Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

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

Date package approved by: [signature] [signature] 9/22/17

Laboratory Manager Date

Copy No. _____

SECTION I

CHAIN OF CUSTODY

USEPA
DateShipped: 7/17/2017
CarrierName: FedEx
AirbillNo:

CHAIN OF CUSTODY RECORD
Case #: 445
Contact Name: Patrick Buster
Contact Phone: 903-348-3917

17-07090
REC'D JUL 18 2017

No: 2-071417-134807-0007
Cooler #:
Lab: Eberline Analytical
Lab Phone: 865-481-0683

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Lab QC	Sample_Remarks
	HTC-A03-S004-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/13/2017	15:33	1	16 oz Poly Jar	N	Weight N/A
	HTC-A03-S004-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/13/2017	15:30	1	16 oz Poly Jar	Y	Weight N/A
	HTC-A03-S004-4248-02	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/13/2017	15:30	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S001-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	10:11	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S001-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	10:08	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S001-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	10:05	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S001-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	10:02	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S001-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	09:59	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S001-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	09:56	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S001-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	09:53	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S001-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	09:50	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S002-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	08:04	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S002-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	08:02	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S002-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	08:00	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S002-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	07:58	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S002-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	07:56	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S002-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	07:54	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S002-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	07:52	1	16 oz Poly Jar	N	Weight N/A
	HTC-A04-S002-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	07:50	1	16 oz Poly Jar	N	Weight N/A
	HTC-A06-S001-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:28	1	16 oz Poly Jar	N	Weight N/A
	HTC-A06-S001-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:26	1	16 oz Poly Jar	N	Weight N/A
4	HTC-A06-S001-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:24	1	16 oz Poly Jar	N	Weight N/A

Special Instructions: Gamma Spec(EPA 901.0) analysis in jar "as is" for Ra-226 using 186keV peak for samples. From U decay chain "as is": Th-234, Pa-234 or Pa-234m, Pb-214, Bi-214. From the Th decay chain "as is": Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. For Gamma Spec (homogenized) after 21 day ingrowth: Ra-226 using Bi-214 and/or Pb-214. From U decay chain: Th-234, Pa-234 or Pa-234m. From Th decay chain: Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. Other radionuclides: Cs-137, K-40. Alpha Spec: Iso U (EPA 908.0 Modified): U-233/234, U-235/236, U-238. Iso Th (EPA 907.0 Modified): Th-230, 232, 228. No rocks should be removed, all samples to be pulverized.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all Samples all analysis	Chad Conway - Weston	7-17-17/1600	James E Bailey	7-18-17 0930	

0005

USEPA
DateShipped: 7/17/2017
CarrierName: FedEx
AirbillNo:

CHAIN OF CUSTODY RECORD
Case #: 445
Contact Name: Patrick Buster
Contact Phone: 903-348-3917

17-07090
REC'D JUL 18 2017

No: 2-071417-134807-0007
Cooler #:
Lab: Eberline Analytical
Lab Phone: 865-481-0683

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Lab QC	Sample_Remarks
5	HTC-A06-S001-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:22	1	16 oz Poly Jar	N	Weight N/A
6	HTC-A06-S001-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:20	1	16 oz Poly Jar	N	Weight N/A
7	HTC-A06-S001-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:18	1	16 oz Poly Jar	N	Weight N/A
8	HTC-A06-S001-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:16	1	16 oz Poly Jar	N	Weight N/A
9	HTC-A06-S001-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:14	1	16 oz Poly Jar	N	Weight N/A
10	HTC-A07-S001-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:14	1	16 oz Poly Jar	N	Weight N/A
11	HTC-A07-S001-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:12	1	16 oz Poly Jar	N	Weight N/A
12	HTC-A07-S001-0612-02	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:12	1	16 oz Poly Jar	N	Weight N/A
13	HTC-A07-S001-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:10	1	16 oz Poly Jar	N	Weight N/A
14	HTC-A07-S001-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:08	1	16 oz Poly Jar	N	Weight N/A
15	HTC-A07-S001-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:06	1	16 oz Poly Jar	N	Weight N/A
16	HTC-A07-S001-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:04	1	16 oz Poly Jar	N	Weight N/A
17	HTC-A07-S001-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:02	1	16 oz Poly Jar	N	Weight N/A
18	HTC-A07-S001-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:00	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD01-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:41	1	16 oz Poly Jar	Y	Weight N/A
19	HTC-A08-BKGD01-0006-02	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:41	1	16 oz Poly Jar	N	Weight N/A
20	HTC-A08-BKGD01-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:38	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD01-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:35	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD01-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:32	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD01-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:29	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD01-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:26	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD01-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:23	1	16 oz Poly Jar	N	Weight N/A

Special Instructions: Gamma Spec(EPA 901.0) analysis in jar "as is" for Ra-226 using 186keV peak for samples. From U decay chain "as is": Th-234, Pa-234 or Pa-234m, Pb-214, Bi-214. From the Th decay chain "as is": Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. For Gamma Spec (homogenized) after 21 day ingrowth: Ra-226 using Bi-214 and/or Pb-214. From U decay chain: Th-234, Pa-234 or Pa-234m. From Th decay chain: Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. Other radionuclides: Cs-137, K-40. Alpha Spec: Iso U (EPA 908.0 Modified): U-233/234, U-235/236, U-238. Iso Th (EPA 907.0 Modified): Th-230, 232, 228. No rocks should be removed, all samples to be pulverized.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all Samples all Analysis	Chad Conway - Weston	7-17-17/1600	[signature]	0930 7-18-17	

9000

EBERLINE SERVICES Oak Ridge Laboratory	Internal Chain of Custody	Work Order #	17-07090
		Lab Deadline	8/10/2017
		Analysis	UUISO - Level 4
		Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Report on dry weight basis.	04	47	L1.5
	05	57	L1.5
	06	37	L1.5
	07	39	L1.5
	08	45	L1.5
	09	41	L1.5
	10	67	L1.5
	11	76	L1.5
	12	70	L1.5
	13	51	L1.5
	14	44	L1.5
	15	55	L1.5
	16	33	L1.5
	17	39	L1.5
	18	43	L1.5
	19	45	L1.5
	20	55	L1.5

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1200	Kay Sai	8-1-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1130	Kay Sai	8-2-17
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/2/17 1130
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/4/17 300
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/16/14 1540
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/30/2017 0757
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	0757
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	8/30/17 1437
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		

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EBERLINE SERVICES Oak Ridge Laboratory	Internal Chain of Custody	Work Order #	17-07090
		Lab Deadline	8/10/2017
		Analysis	ThISO - Level 4
		Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Report on dry weight basis.	04	47	L1.5
	05	57	L1.5
	06	37	L1.5
	07	39	L1.5
	08	45	L1.5
	09	41	L1.5
	10	67	L1.5
	11	76	L1.5
	12	70	L1.5
	13	51	L1.5
	14	44	L1.5
	15	55	L1.5
	16	33	L1.5
	17	39	L1.5
	18	43	L1.5
	19	45	L1.5
	20	55	L1.5

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1200	Key Seg	8-1-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1130	Key Seg	8-2-17
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/2/17 1130
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/11/17 30
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/16/17 1540
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8-31-17 0851
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/31 0851
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	8/31/17 1527
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		

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EBERLINE Oak Ridge Laboratory	Internal Chain of Custody	Work Order #	17-07090
		Lab Deadline	See Comments
		Analysis	Gamma - Level 4
		Sample Matrix	SO

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Re-Analysis: 221 day ingrowth: Report Ac228, Bi212, Cs137, K40, Pa234m, Pb212, Ra224, Ra226 from Bi214/Pb214, Ra228 from Ac228, Tl208, Th234 & positives. Report on dry weight basis.	04	47	L1.5
	05	57	L1.5
	06	37	L1.5
	07	39	L1.5
	08	45	L1.5
	09	41	L1.5
	10	67	L1.5
	11	76	L1.5
	12	70	L1.5
~~Original Lab Deadline: 08/15/17~~ ejt 07/19/17 ~~Rerun Lab Deadline: 08/15/17 Quick Count: Report Ac228, Bi212/214, Cs137, K40, Pa234m, Pb212/214, Ra224, Ra226 from 186 keV peak, Ra228 from Ac228, Tl208, Th234 & positives. Report on WAO IC basis~~	13	51	L1.5
	14	44	L1.5
	15	55	L1.5
	16	33	L1.5
	17	39	L1.5
	18	43	L1.5
	19	45	L1.5
	20	55	L1.5

	Location (circle one)					Technician Initials	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1200	[illegible]	8-1-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1200	[illegible]	8-2-17
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	WB 8/2/17	1200
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	C 8/24	0716
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		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

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SECTION II

SAMPLE ACKNOWLEDGEMENT

Client Name	Contract/PO	Project Type	Date Received	Required Turnaround Days	Eberline Services Work Order
Weston Solutions, Inc.	0094759	Environmental	07/18/2017	28	17-07090
Project Name	**Client WO**	**Sample Disp**	**Lab Deadline**	**Internal Deadline**	**Client Deadline**
94759	Case #445	H	08/10/2017	08/14/2017	08/15/2017

Internal ID	Client ID	Sample Date	Matrix	Storage	Gamma	ThISO	UUISO																					Ttl
01	LCS	07/19/17	SO	L1.5	X	X	X																					3
02	BLANK	07/19/17	SO	L1.5	X	X	X																					3
03	DUP	07/19/17	SO	L1.5	X	X	X																					3
04	HTC-A06-S001-1218-01	05/16/17 14:24	SO	L1.5	X	X	X																					3
05	HTC-A06-S001-1824-01	05/16/17 14:22	SO	L1.5	X	X	X																					3
06	HTC-A06-S001-2430-01	05/16/17 14:20	SO	L1.5	X	X	X																					3
07	HTC-A06-S001-3036-01	05/16/17 14:18	SO	L1.5	X	X	X																					3
08	HTC-A06-S001-3642-01	05/16/17 14:16	SO	L1.5	X	X	X																					3
09	HTC-A06-S001-4248-01	05/16/17 14:14	SO	L1.5	X	X	X																					3
10	HTC-A07-S001-0006-01	05/16/17 15:14	SO	L1.5	X	X	X																					3
11	HTC-A07-S001-0612-01	05/16/17 15:12	SO	L1.5	X	X	X																					3
12	HTC-A07-S001-0612-02	05/16/17 15:12	SO	L1.5	X	X	X																					3
13	HTC-A07-S001-1218-01	05/16/17 15:10	SO	L1.5	X	X	X																					3
14	HTC-A07-S001-1824-01	05/16/17 15:08	SO	L1.5	X	X	X																					3
15	HTC-A07-S001-2430-01	05/16/17 15:06	SO	L1.5	X	X	X																					3
16	HTC-A07-S001-3036-01	05/16/17 15:04	SO	L1.5	X	X	X																					3
17	HTC-A07-S001-3642-01	05/16/17 15:02	SO	L1.5	X	X	X																					3
18	HTC-A07-S001-4248-01	05/16/17 15:00	SO	L1.5	X	X	X																					3
19	HTC-A08-BKGD01-0006-02	05/15/17 16:41	SO	L1.5	X	X	X																					3
20	HTC-A08-BKGD01-0612-01	05/15/17 16:38	SO	L1.5	X	X	X																					3
				Totals Per Analysis (non QA samples)	17	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

EBERLINE SERVICES

Sample Log In Report

Oak Ridge Laboratory
601 Scarboro Rd.
Oak Ridge, TN 37830

Voice: (865) 481-0683
Fax: (865) 483-4621

Invoice
Accounts Payable
Weston Solutions, Inc.
1090 King Georges Post Road Suite 201
Edison, NJ 08837
Voice 732-585-4425
Fax

Contact
Smita Sumbaly
Voice 732-585-4410
Fax 732-225-7037

Report Data
Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837
Voice 732-585-4410
Fax 732-225-7037

0011

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Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 17-07090

SAMPLE MATRIX/MATRICES: (CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

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

WERE SAMPLES:

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

WERE CHAIN OF CUSTODY SEALS:

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

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

REMARKS: _____

SIGNATURE: [signature] DATE: 7-18-17

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-42706

September 22, 2017

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, NJ 08837

CASE NARRATIVE
Work Order # 17-07090-OR

SAMPLE RECEIPT

This work order contains seventeen solid samples received 07/18/2017. These samples were analyzed for Isotopic Uranium, Isotopic Thorium and by Gamma Spectroscopy.

CLIENT ID	LAB ID	CLIENT ID	LAB ID
HTC-A06-S001-1218-01	17-07090-04	HTC-A07-S001-1218-01	17-07090-13
HTC-A06-S001-1824-01	17-07090-05	HTC-A07-S001-1824-01	17-07090-14
HTC-A06-S001-2430-01	17-07090-06	HTC-A07-S001-2430-01	17-07090-15
HTC-A06-S001-3036-01	17-07090-07	HTC-A07-S001-3036-01	17-07090-16
HTC-A06-S001-3642-01	17-07090-08	HTC-A07-S001-3642-01	17-07090-17
HTC-A06-S001-4248-01	17-07090-09	HTC-A07-S001-4248-01	17-07090-18
HTC-A07-S001-0006-01	17-07090-10	HTC-A08-BKGD01-0006-02	17-07090-19
HTC-A07-S001-0612-01	17-07090-11	HTC-A08-BKGD01-0612-01	17-07090-20
HTC-A07-S001-0612-02	17-07090-12		

ANALYTICAL METHODS

Isotopic Uranium was analyzed using EPA Method 908.0 Modified. Isotopic Thorium was analyzed using EPA Method 907.0 Modified. Gamma Spectroscopy was performed using EPA Method 901.1 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

Samples were dried and ground prior to analyses. 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 determinations. The Uranium-233/234, Uranium-235/236 and Uranium-238 method blank demonstrated acceptable results. Chemical recovery was acceptable for all samples. Results for the Uranium-233/234, Uranium-235/236 and Uranium-238 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Uranium-234 and Uranium-238 laboratory control sample demonstrated an acceptable percent recovery.

ISOTOPIC THORIUM

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

Samples demonstrated acceptable results for all Thorium determinations. The Thorium-228, Thorium-230 and Thorium-232 method blank demonstrated acceptable results. Chemical recovery was acceptable for all samples. Results for the Thorium-228 and Thorium-230 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Thorium-232 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Thorium-228, Thorium-230 and Thorium-232 laboratory control sample demonstrated an acceptable percent recovery.

GAMMA SPECTROSCOPY

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

Initially samples were counted on an "as received basis" and preliminary data only was emailed. After the initial count, samples were dried, pulverized and sealed for Radon-222 ingrowth. Samples demonstrated acceptable results for all gamma emitting radionuclides as reported. Results for the method blank demonstrated acceptable results for all gamma emitting radionuclides as reported. Results for the Bismuth-214, Potassium-40 and Radium-228 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: 9/22/2017

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

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
		21-day INGROWTH											
17-07090-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Cobalt-60	EPA 901.1 Modified	1.35E+02	5.27E+00			pCi/g
17-07090-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	8.44E+01	3.38E+00			pCi/g
17-07090-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Cobalt-60	EPA 901.1 Modified	1.25E+02	7.46E+00	9.84E+00	1.53E+00	pCi/g
17-07090-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	8.28E+01	7.56E+00	8.67E+00	1.88E+00	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	4.89E-02	6.31E-02	6.32E-02	1.32E-01	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	3.34E-02	1.87E-01	1.87E-01	3.11E-01	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	-1.21E-02	4.99E-02	4.99E-02	7.35E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	1.86E-02	2.47E-02	2.47E-02	4.55E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	1.94E-01	2.32E-01	2.32E-01	4.73E-01	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	1.42E+00	2.50E+00	2.50E+00	4.76E+00	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	6.05E-02	3.12E-02	3.14E-02	5.87E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	4.94E-02	3.81E-02	3.82E-02	7.26E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	4.20E-01	4.09E-01	4.10E-01	6.72E-01	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	-1.21E-02	4.99E-02	4.99E-02	7.35E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	4.89E-02	6.31E-02	6.32E-02	1.32E-01	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	4.23E-01	3.83E-01	3.84E-01	5.74E-01	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	2.58E-02	6.13E-02	6.13E-02	1.06E-01	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.38E+00	3.58E-01	3.65E-01	7.44E-01	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	9.12E-01	9.41E-01	9.42E-01	1.56E+00	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	1.71E+00	2.97E-01	3.09E-01	3.64E-01	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	3.73E-02	1.08E-01	1.08E-01	1.55E-01	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.12E+01	2.99E+00	3.19E+00	2.20E+00	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	2.69E+01	2.07E+01	2.08E+01	3.40E+01	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.21E+00	1.87E-01	1.97E-01	3.70E-01	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.92E+00	2.39E-01	2.59E-01	4.54E-01	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	1.65E+01	2.38E+00	2.53E+00	3.66E+00	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	1.71E+00	2.97E-01	3.09E-01	3.64E-01	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.38E+00	3.58E-01	3.65E-01	7.44E-01	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	1.58E+00	1.62E+00	1.62E+00	2.41E+00	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.19E+00	2.74E-01	2.80E-01	7.32E-02	pCi/g

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

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

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.11E+00	2.97E-01	3.02E-01	6.00E-01	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	1.67E+00	1.58E+00	1.59E+00	2.62E+00	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	1.82E+00	2.88E-01	3.03E-01	1.06E-01	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	2.25E-02	1.07E-01	1.07E-01	1.50E-01	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.44E+01	3.13E+00	3.37E+00	1.44E+00	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	-6.32E-01	1.21E+01	1.21E+01	1.56E+01	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.31E+00	2.04E-01	2.15E-01	3.94E-01	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.92E+00	2.44E-01	2.63E-01	3.85E-01	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	1.72E+01	2.37E+00	2.53E+00	3.63E+00	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	1.82E+00	2.88E-01	3.03E-01	1.06E-01	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.11E+00	2.97E-01	3.02E-01	6.00E-01	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	3.43E+00	1.62E+00	1.62E+00	2.46E+00	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.25E+00	2.76E-01	2.84E-01	4.46E-01	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.52E+00	2.25E-01	2.38E-01	4.25E-01	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	1.64E+00	6.10E-01	6.16E-01	9.02E-01	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	1.14E+00	1.78E-01	1.87E-01	2.67E-01	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	2.28E-02	5.48E-02	5.48E-02	8.46E-02	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.93E+01	3.07E+00	3.41E+00	1.32E+00	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	-6.52E-02	4.03E+00	4.03E+00	7.87E+00	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.53E+00	1.67E-01	1.84E-01	2.82E-01	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.25E+00	1.41E-01	1.55E-01	1.82E-01	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	4.56E+00	1.61E+00	1.63E+00	3.24E+00	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	1.14E+00	1.78E-01	1.87E-01	2.67E-01	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.14E+00	1.78E-01	1.87E-01	2.67E-01	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	1.58E+00	1.32E+00	1.32E+00	2.18E+00	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.27E+00	1.85E-01	1.96E-01	1.11E-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

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

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.15E+00	1.94E-01	2.02E-01	3.84E-01	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	1.29E+00	5.66E-01	5.70E-01	8.61E-01	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	9.10E-01	1.56E-01	1.63E-01	1.94E-01	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	-2.45E-03	2.67E-02	2.67E-02	7.63E-02	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.17E+01	2.51E+00	2.75E+00	1.12E+00	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	4.34E+00	4.64E+00	4.65E+00	7.67E+00	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.30E+00	1.39E-01	1.54E-01	2.84E-01	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.02E+00	1.35E-01	1.45E-01	2.21E-01	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	3.39E+00	1.33E+00	1.35E+00	3.26E+00	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	9.10E-01	1.56E-01	1.63E-01	1.94E-01	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.15E+00	1.94E-01	2.02E-01	3.84E-01	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	2.19E+00	1.40E+00	1.40E+00	2.30E+00	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.03E+00	1.52E-01	1.61E-01	1.06E-01	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.36E+00	1.94E-01	2.06E-01	3.51E-01	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	1.07E+00	3.75E-01	3.79E-01	1.04E+00	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	1.01E+00	1.49E-01	1.58E-01	2.03E-01	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	3.68E-04	1.88E-02	1.88E-02	7.28E-02	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.40E+01	2.51E+00	2.79E+00	1.25E+00	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	-1.01E+00	5.03E+00	5.03E+00	7.40E+00	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.33E+00	1.47E-01	1.62E-01	3.06E-01	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.12E+00	1.55E-01	1.65E-01	2.28E-01	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	3.92E+00	1.26E+00	1.28E+00	3.47E+00	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	1.01E+00	1.49E-01	1.58E-01	2.03E-01	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.36E+00	1.94E-01	2.06E-01	3.51E-01	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	1.03E+00	1.17E+00	1.17E+00	1.54E+00	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.16E+00	1.77E-01	1.87E-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

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

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.31E+00	2.45E-01	2.54E-01	3.77E-01	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	1.20E+00	4.86E-01	4.90E-01	7.11E-01	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	9.52E-01	1.50E-01	1.57E-01	2.04E-01	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	-3.71E-02	5.59E-02	5.59E-02	7.80E-02	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.17E+01	2.50E+00	2.74E+00	6.26E-01	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	8.60E-02	3.18E+00	3.18E+00	7.45E+00	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.16E+00	1.33E-01	1.45E-01	2.19E-01	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.02E+00	1.45E-01	1.54E-01	2.71E-01	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	2.41E+00	8.39E-01	8.48E-01	2.47E+00	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	9.52E-01	1.50E-01	1.57E-01	2.04E-01	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.31E+00	2.45E-01	2.54E-01	3.77E-01	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	7.43E-01	8.00E-01	8.01E-01	1.24E+00	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.13E+00	1.72E-01	1.82E-01	1.09E-01	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.38E+00	2.91E-01	3.00E-01	1.00E+00	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	9.50E-01	6.69E-01	6.70E-01	1.06E+00	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	1.08E+00	2.40E-01	2.46E-01	3.54E-01	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	1.21E-01	8.88E-02	8.90E-02	1.44E-01	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	1.90E+01	2.72E+00	2.89E+00	1.91E+00	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	8.80E-01	1.13E+01	1.13E+01	1.56E+01	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.47E+00	1.97E-01	2.11E-01	3.99E-01	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.20E+00	1.97E-01	2.07E-01	3.30E-01	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	1.60E+01	2.22E+00	2.36E+00	3.42E+00	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	1.08E+00	2.40E-01	2.46E-01	3.54E-01	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.38E+00	2.91E-01	3.00E-01	1.00E+00	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	2.15E+00	1.41E+00	1.42E+00	2.15E+00	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.34E+00	2.76E-01	2.85E-01	7.23E-02	pCi/g

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

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Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	9.18E-01	5.27E-01	5.29E-01	8.21E-01	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	9.52E-01	1.03E+00	1.04E+00	1.56E+00	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	3.70E+01	1.89E+00	2.68E+00	6.50E-01	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	-2.02E-01	1.71E-01	1.71E-01	2.33E-01	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	4.55E+00	1.94E+00	1.95E+00	3.04E+00	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	4.34E+01	2.12E+01	2.13E+01	3.41E+01	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.23E+00	4.52E-01	4.56E-01	8.10E-01	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	3.82E+01	2.41E+00	3.10E+00	6.79E-01	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	7.03E+01	6.93E+00	7.81E+00	6.81E+00	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	3.70E+01	1.89E+00	2.68E+00	6.50E-01	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	9.18E-01	5.27E-01	5.29E-01	8.21E-01	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	2.46E+01	4.14E+00	4.33E+00	6.09E+00	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	4.49E-01	1.62E-01	1.64E-01	1.64E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	4.26E-01	4.32E-01	4.32E-01	6.49E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	1.41E+00	9.37E-01	9.40E-01	1.60E+00	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	4.37E+01	2.14E+00	3.10E+00	8.23E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	-1.74E-01	1.46E-01	1.46E-01	1.97E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	5.58E+00	1.62E+00	1.64E+00	2.42E+00	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	4.02E+01	1.21E+01	1.23E+01	2.75E+01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	-8.24E+00	7.78E-01	8.86E-01	3.82E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	4.42E+01	2.63E+00	3.48E+00	8.77E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	8.15E+01	7.19E+00	8.32E+00	8.05E+00	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	4.37E+01	2.14E+00	3.10E+00	8.23E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	4.26E-01	4.32E-01	4.32E-01	6.49E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	2.53E+01	4.30E+00	4.49E+00	6.14E+00	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	6.56E-01	3.70E-01	3.71E-01	3.79E-01	pCi/g

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

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
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Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	-2.51E-02	4.58E-01	4.58E-01	6.68E-01	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	2.96E-01	8.97E-01	8.97E-01	1.33E+00	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	4.12E+01	1.97E+00	2.89E+00	5.67E-01	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	-9.09E-01	1.98E-01	2.03E-01	1.83E-01	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	3.73E+00	1.58E+00	1.59E+00	2.47E+00	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	3.68E+01	1.66E+01	1.67E+01	2.65E+01	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	5.55E-01	1.88E-01	1.90E-01	6.94E-01	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	4.20E+01	2.30E+00	3.15E+00	5.69E-01	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	8.54E+01	7.30E+00	8.52E+00	6.51E+00	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	4.12E+01	1.97E+00	2.89E+00	5.67E-01	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	-2.51E-02	4.58E-01	4.58E-01	6.68E-01	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	2.87E+01	4.07E+00	4.33E+00	6.27E+00	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	3.84E-01	1.26E-01	1.28E-01	1.62E-01	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	8.25E-01	4.47E-01	4.49E-01	8.91E-01	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	8.87E-01	8.49E-01	8.50E-01	1.41E+00	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	2.84E+01	1.49E+00	2.08E+00	6.37E-01	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	-3.44E-01	1.60E-01	1.61E-01	2.00E-01	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	9.75E+00	2.14E+00	2.20E+00	2.89E+00	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	2.53E+01	1.74E+01	1.74E+01	2.84E+01	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	3.84E-01	1.19E-01	1.20E-01	5.36E-01	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	2.95E+01	1.89E+00	2.43E+00	7.19E-01	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	5.79E+01	5.94E+00	6.64E+00	6.36E+00	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	2.84E+01	1.49E+00	2.08E+00	6.37E-01	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	8.25E-01	4.47E-01	4.49E-01	8.91E-01	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	2.44E+01	3.61E+00	3.82E+00	5.03E+00	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	8.30E-01	4.05E-01	4.07E-01	4.44E-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

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

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.12E+00	2.76E-01	2.82E-01	4.82E-01	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	7.94E-01	7.52E-01	7.53E-01	1.16E+00	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	1.38E+00	2.57E-01	2.66E-01	4.16E-01	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	-6.66E-02	1.14E-01	1.14E-01	1.36E-01	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.32E+01	2.89E+00	3.13E+00	1.33E+00	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	9.92E-01	1.07E+01	1.07E+01	1.50E+01	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.25E+00	1.80E-01	1.91E-01	2.76E-01	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.36E+00	2.02E-01	2.13E-01	3.04E-01	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	3.76E+00	1.74E+00	1.75E+00	3.12E+00	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	1.38E+00	2.57E-01	2.66E-01	4.16E-01	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.12E+00	2.76E-01	2.82E-01	4.82E-01	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	1.11E+00	1.42E+00	1.43E+00	2.11E+00	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.22E+00	2.48E-01	2.55E-01	3.90E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.31E+00	1.84E-01	1.96E-01	6.79E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	1.00E+00	5.23E-01	5.26E-01	8.20E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	1.57E+00	1.74E-01	1.91E-01	2.53E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	-5.20E-02	5.29E-02	5.30E-02	7.18E-02	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.45E+01	2.54E+00	2.84E+00	1.37E+00	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	5.85E+00	4.65E+00	4.66E+00	7.47E+00	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.52E+00	1.61E-01	1.79E-01	3.02E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.53E+00	1.59E-01	1.77E-01	2.95E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	4.56E+00	1.31E+00	1.33E+00	3.42E+00	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	1.57E+00	1.74E-01	1.91E-01	2.53E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.31E+00	1.84E-01	1.96E-01	6.79E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	1.43E+00	1.11E+00	1.11E+00	1.84E+00	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.31E+00	2.35E-01	2.45E-01	3.89E-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

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

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.33E+00	3.09E-01	3.17E-01	7.28E-01	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	3.47E-01	7.42E-01	7.42E-01	1.08E+00	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	1.18E+00	2.25E-01	2.33E-01	4.22E-01	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	6.85E-03	9.36E-02	9.36E-02	1.31E-01	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.26E+01	2.88E+00	3.10E+00	1.48E+00	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	2.22E-01	9.36E+00	9.36E+00	1.33E+01	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.55E+00	2.31E-01	2.44E-01	2.85E-01	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.17E+00	2.02E-01	2.10E-01	3.69E-01	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	1.58E+01	2.15E+00	2.30E+00	3.25E+00	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	1.18E+00	2.25E-01	2.33E-01	4.22E-01	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.33E+00	3.09E-01	3.17E-01	7.28E-01	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	1.89E+00	1.49E+00	1.49E+00	2.47E+00	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.34E+00	2.50E-01	2.60E-01	6.35E-02	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.36E+00	1.82E-01	1.95E-01	4.27E-01	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	4.48E-01	3.80E-01	3.81E-01	6.31E-01	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	1.24E+00	1.69E-01	1.81E-01	1.99E-01	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	-3.08E-02	5.10E-02	5.10E-02	7.13E-02	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.39E+01	2.55E+00	2.83E+00	1.06E+00	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	1.82E+00	4.94E+00	4.94E+00	7.87E+00	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.41E+00	1.53E-01	1.69E-01	2.18E-01	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.29E+00	1.42E-01	1.57E-01	1.97E-01	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	4.87E+00	1.45E+00	1.47E+00	2.49E+00	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	1.24E+00	1.69E-01	1.81E-01	1.99E-01	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.36E+00	1.82E-01	1.95E-01	4.27E-01	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	9.52E-01	1.22E+00	1.22E+00	1.59E+00	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.06E+00	1.73E-01	1.81E-01	2.05E-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

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Eberline Analytical
Final Report of Analysis

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Smita Sumbaly	
Weston Solutions, Inc.	
1090 King Georges Post Rd Suite 201	
Edison, NJ 08837	

Work Order Details:	
SDG:	17-07090
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.19E+00	2.54E-01	2.61E-01	3.57E-01	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Bismuth-212	EPA 901.1 Modified	2.25E-01	8.00E-01	8.00E-01	1.14E+00	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Bismuth-214	EPA 901.1 Modified	1.19E+00	2.42E-01	2.50E-01	3.01E-01	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Cesium-137	EPA 901.1 Modified	4.72E-02	8.88E-02	8.88E-02	1.32E-01	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Potassium-40	EPA 901.1 Modified	2.07E+01	2.72E+00	2.92E+00	1.41E+00	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	6.61E+00	8.69E+00	8.70E+00	1.37E+01	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Lead-212	EPA 901.1 Modified	1.27E+00	1.76E-01	1.88E-01	2.53E-01	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Lead-214	EPA 901.1 Modified	1.04E+00	1.90E-01	1.97E-01	2.68E-01	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Radium-224	EPA 901.1 Modified	1.57E+01	2.14E+00	2.28E+00	3.26E+00	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Radium-226	EPA 901.1 Modified	1.19E+00	2.42E-01	2.50E-01	3.01E-01	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Radium-228	EPA 901.1 Modified	1.19E+00	2.54E-01	2.61E-01	3.57E-01	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Thorium-234	EPA 901.1 Modified	2.57E+00	1.30E+00	1.31E+00	2.00E+00	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/23/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.29E+00	2.65E-01	2.73E-01	6.65E-02	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Actinium-228	EPA 901.1 Modified	1.06E+00	1.77E-01	1.85E-01	3.42E-01	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Bismuth-212	EPA 901.1 Modified	5.42E-01	5.42E-01	5.43E-01	8.97E-01	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Bismuth-214	EPA 901.1 Modified	8.34E-01	1.45E-01	1.52E-01	2.44E-01	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Cesium-137	EPA 901.1 Modified	1.93E-01	7.14E-02	7.21E-02	1.03E-01	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Potassium-40	EPA 901.1 Modified	1.91E+01	2.18E+00	2.39E+00	1.06E+00	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	3.57E+00	4.15E+00	4.16E+00	7.27E+00	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Lead-212	EPA 901.1 Modified	1.16E+00	1.39E-01	1.51E-01	2.22E-01	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Lead-214	EPA 901.1 Modified	1.06E+00	1.45E-01	1.55E-01	2.24E-01	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Radium-224	EPA 901.1 Modified	2.94E+00	1.24E+00	1.25E+00	2.50E+00	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Radium-226	EPA 901.1 Modified	8.34E-01	1.45E-01	1.52E-01	2.44E-01	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Radium-228	EPA 901.1 Modified	1.06E+00	1.77E-01	1.85E-01	3.42E-01	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Thorium-234	EPA 901.1 Modified	2.47E+00	1.12E+00	1.13E+00	1.57E+00	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/24/2017	17-07090	Thallium-208	EPA 901.1 Modified	1.12E+00	1.71E-01	1.80E-01	2.77E-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

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

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Actinium-228	EPA 901.1 Modified	9.91E-01	2.10E-01	2.16E-01	2.98E-01	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Bismuth-212	EPA 901.1 Modified	7.10E-01	3.58E-01	3.60E-01	5.84E-01	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Bismuth-214	EPA 901.1 Modified	9.15E-01	1.45E-01	1.52E-01	1.91E-01	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Cesium-137	EPA 901.1 Modified	-1.89E-02	5.18E-02	5.18E-02	7.55E-02	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Potassium-40	EPA 901.1 Modified	1.67E+01	2.04E+00	2.22E+00	1.04E+00	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Protactinium-234m	EPA 901.1 Modified	8.28E-01	4.60E+00	4.60E+00	7.31E+00	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Lead-212	EPA 901.1 Modified	9.46E-01	1.17E-01	1.27E-01	1.99E-01	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Lead-214	EPA 901.1 Modified	8.97E-01	1.25E-01	1.33E-01	2.06E-01	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Radium-224	EPA 901.1 Modified	2.50E+00	7.95E-01	8.05E-01	2.24E+00	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Radium-226	EPA 901.1 Modified	9.15E-01	1.45E-01	1.52E-01	1.91E-01	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Radium-228	EPA 901.1 Modified	9.91E-01	2.10E-01	2.16E-01	2.98E-01	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Thorium-234	EPA 901.1 Modified	1.47E+00	7.29E-01	7.33E-01	1.20E+00	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/24/2017	17-07090	Thallium-208	EPA 901.1 Modified	8.63E-01	1.51E-01	1.57E-01	1.88E-01	pCi/g
17-07090-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	4.97E+00	1.79E-01			pCi/g
17-07090-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	6.12E+00	8.98E-01	1.07E+00	7.59E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	5.92E-02	6.71E-02	6.73E-02	9.37E-02	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	6.08E-01	1.99E-01	2.07E-01	1.00E-01	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	5.86E-01	2.00E-01	2.07E-01	7.07E-02	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	1.38E+00	3.35E-01	3.59E-01	8.08E-02	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	1.38E+00	3.33E-01	3.57E-01	7.63E-02	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	9.52E-01	2.97E-01	3.10E-01	9.84E-02	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	1.22E+00	2.93E-01	3.15E-01	5.73E-02	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	9.75E-01	3.12E-01	3.25E-01	1.08E-01	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	3.46E-01	1.80E-01	1.83E-01	1.58E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	4.90E-01	2.14E-01	2.19E-01	1.16E-01	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	4.64E-01	2.15E-01	2.20E-01	9.38E-02	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	7.33E-01	2.67E-01	2.76E-01	1.16E-01	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	1.27E+00	3.65E-01	3.84E-01	1.28E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	1.33E+00	3.54E-01	3.75E-01	8.60E-02	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	1.28E+00	3.29E-01	3.50E-01	7.01E-02	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	1.28E+00	3.39E-01	3.60E-01	6.81E-02	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	1.33E+00	3.57E-01	3.78E-01	1.10E-01	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	1.22E+00	3.32E-01	3.52E-01	1.02E-01	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/31/2017	17-07090	Thorium-228	EPA 907.0 Modified	1.19E+00	3.30E-01	3.49E-01	9.84E-02	pCi/g

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

0027

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

Report To:	
Smita Sumbaly	
Weston Solutions, Inc.	
1090 King Georges Post Rd Suite 201	
Edison, NJ 08837	

Work Order Details:	
SDG:	17-07090
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	5.43E+00	1.47E-01			pCi/g
17-07090-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	6.41E+00	9.32E-01	1.22E+00	7.95E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.12E-01	8.51E-02	8.62E-02	7.82E-02	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	7.66E-01	2.19E-01	2.39E-01	7.84E-02	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	8.87E-01	2.51E-01	2.74E-01	7.26E-02	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.12E+00	2.80E-01	3.12E-01	5.99E-02	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.00E+00	2.57E-01	2.85E-01	6.63E-02	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.31E+00	3.58E-01	3.93E-01	7.93E-02	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	9.06E-01	2.30E-01	2.56E-01	5.49E-02	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	8.88E-01	2.84E-01	3.04E-01	1.06E-01	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	3.56E+01	6.78E+00	8.08E+00	1.40E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	3.54E+01	7.71E+00	8.87E+00	8.95E-02	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	4.72E+01	1.07E+01	1.22E+01	9.96E-02	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	2.43E+01	4.85E+00	5.70E+00	1.08E-01	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.81E+00	4.57E-01	5.09E-01	1.09E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.44E+00	3.62E-01	4.04E-01	6.17E-02	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.28E+00	3.20E-01	3.57E-01	5.75E-02	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.06E+00	2.87E-01	3.15E-01	6.13E-02	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.05E+00	2.93E-01	3.21E-01	8.71E-02	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.23E+00	3.23E-01	3.57E-01	8.82E-02	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/31/2017	17-07090	Thorium-230	EPA 907.0 Modified	1.05E+00	2.95E-01	3.22E-01	8.85E-02	pCi/g

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

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

Report To:	
Smita Sumbaly	
Weston Solutions, Inc.	
1090 King Georges Post Rd Suite 201	
Edison, NJ 08837	

Work Order Details:	
SDG:	17-07090
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	4.97E+00	1.79E-01			pCi/g
17-07090-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	6.15E+00	9.01E-01	1.05E+00	6.32E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	3.70E-02	5.16E-02	5.17E-02	7.80E-02	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	6.38E-01	1.94E-01	2.02E-01	6.94E-02	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	4.82E-01	1.70E-01	1.75E-01	5.05E-02	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	1.34E+00	3.19E-01	3.40E-01	9.28E-02	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	8.80E-01	2.34E-01	2.47E-01	7.31E-02	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	1.02E+00	3.01E-01	3.14E-01	9.62E-02	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	1.14E+00	2.70E-01	2.88E-01	3.81E-02	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	1.07E+00	3.20E-01	3.33E-01	6.42E-02	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	5.63E-01	2.18E-01	2.24E-01	1.11E-01	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	6.75E-01	2.50E-01	2.57E-01	7.57E-02	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	7.31E-01	2.78E-01	2.85E-01	9.25E-02	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	6.64E-01	2.40E-01	2.47E-01	9.43E-02	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	1.22E+00	3.43E-01	3.60E-01	1.05E-01	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	9.90E-01	2.78E-01	2.91E-01	5.38E-02	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	1.12E+00	2.91E-01	3.07E-01	6.77E-02	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	1.04E+00	2.85E-01	2.99E-01	5.57E-02	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	1.06E+00	2.94E-01	3.08E-01	6.65E-02	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	1.14E+00	3.04E-01	3.20E-01	6.74E-02	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/31/2017	17-07090	Thorium-232	EPA 907.0 Modified	1.26E+00	3.32E-01	3.50E-01	6.76E-02	pCi/g

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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

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	8.08E+00	2.91E-01			pCi/g
17-07090-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	7.84E+00	1.02E+00	1.17E+00	7.15E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	3.03E-02	4.63E-02	4.64E-02	7.86E-02	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	1.10E+00	2.45E-01	2.57E-01	5.38E-02	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	1.11E+00	2.52E-01	2.65E-01	7.03E-02	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	9.33E-01	2.38E-01	2.47E-01	8.33E-02	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	8.00E-01	2.14E-01	2.21E-01	9.02E-02	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	8.90E-01	2.07E-01	2.16E-01	5.75E-02	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	7.41E-01	1.85E-01	1.92E-01	8.90E-02	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	8.72E-01	1.91E-01	2.01E-01	6.97E-02	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	3.16E+01	3.58E+00	4.23E+00	5.99E-02	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	4.00E+01	4.76E+00	5.55E+00	5.78E-02	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	3.50E+01	3.92E+00	4.65E+00	5.60E-02	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	2.14E+01	2.33E+00	2.79E+00	6.25E-02	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	1.38E+00	2.82E-01	2.99E-01	6.71E-02	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	1.33E+00	2.81E-01	2.97E-01	6.55E-02	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	1.15E+00	2.58E-01	2.71E-01	7.12E-02	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	9.47E-01	2.20E-01	2.30E-01	6.63E-02	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	8.68E-01	2.11E-01	2.20E-01	7.17E-02	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	7.82E-01	1.79E-01	1.88E-01	4.53E-02	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/30/2017	17-07090	Uranium-233/234	EPA 908.0 Modified	8.47E-01	2.25E-01	2.33E-01	9.55E-02	pCi/g

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

0030

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

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07090**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	6.07E-01	2.02E-01	2.06E-01	6.53E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	2.12E-03	2.97E-02	2.97E-02	8.47E-02	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	1.57E-01	9.60E-02	9.67E-02	7.83E-02	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	1.25E-01	8.63E-02	8.68E-02	6.92E-02	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	1.07E-01	8.19E-02	8.22E-02	6.51E-02	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	6.35E-02	6.56E-02	6.57E-02	8.29E-02	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	9.21E-02	7.08E-02	7.11E-02	7.10E-02	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	9.20E-02	7.68E-02	7.71E-02	9.89E-02	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	8.19E-02	6.29E-02	6.31E-02	6.91E-02	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	3.04E+00	5.11E-01	5.55E-01	8.26E-02	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	3.12E+00	5.54E-01	5.97E-01	7.83E-02	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	3.97E+00	6.31E-01	6.92E-01	6.91E-02	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	1.64E+00	3.36E-01	3.55E-01	6.54E-02	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	1.61E-01	9.54E-02	9.61E-02	6.60E-02	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	9.29E-02	7.53E-02	7.56E-02	7.51E-02	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	5.86E-02	6.45E-02	6.46E-02	8.78E-02	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	1.17E-01	8.14E-02	8.18E-02	7.79E-02	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	8.25E-02	7.08E-02	7.11E-02	8.03E-02	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	9.93E-02	6.72E-02	6.75E-02	6.01E-02	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/30/2017	17-07090	Uranium-235/236	EPA 908.0 Modified	7.75E-02	7.62E-02	7.64E-02	9.80E-02	pCi/g

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

0031

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

Report To:		Work Order Details:	
Smita Sumbaly		SDG:	17-07090
Weston Solutions, Inc.		Purchase Order:	0094759
1090 King Georges Post Rd Suite 201		Analysis Category:	ENVIRONMENTAL
Edison, NJ 08837		Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07090-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	7.83E+00	2.82E-01			pCi/g
17-07090-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	7.31E+00	9.67E-01	1.10E+00	7.56E-02	pCi/g
17-07090-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	3.40E-02	4.58E-02	4.59E-02	7.19E-02	pCi/g
17-07090-03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	1.01E+00	2.33E-01	2.44E-01	6.71E-02	pCi/g
17-07090-04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	9.52E-01	2.29E-01	2.39E-01	6.13E-02	pCi/g
17-07090-05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	1.04E+00	2.52E-01	2.63E-01	6.61E-02	pCi/g
17-07090-06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	1.04E+00	2.48E-01	2.59E-01	8.14E-02	pCi/g
17-07090-07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	6.58E-01	1.74E-01	1.80E-01	6.69E-02	pCi/g
17-07090-08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	7.50E-01	1.84E-01	1.92E-01	7.59E-02	pCi/g
17-07090-09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	9.90E-01	2.05E-01	2.17E-01	5.33E-02	pCi/g
17-07090-10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	3.30E+01	3.74E+00	4.42E+00	7.25E-02	pCi/g
17-07090-11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	3.94E+01	4.69E+00	5.47E+00	7.21E-02	pCi/g
17-07090-12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	3.54E+01	3.96E+00	4.70E+00	4.87E-02	pCi/g
17-07090-13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	2.12E+01	2.31E+00	2.76E+00	5.79E-02	pCi/g
17-07090-14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	1.51E+00	2.98E-01	3.17E-01	5.33E-02	pCi/g
17-07090-15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	1.37E+00	2.86E-01	3.02E-01	6.92E-02	pCi/g
17-07090-16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	9.56E-01	2.30E-01	2.40E-01	4.93E-02	pCi/g
17-07090-17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	9.90E-01	2.25E-01	2.36E-01	5.50E-02	pCi/g
17-07090-18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	9.84E-01	2.26E-01	2.37E-01	4.52E-02	pCi/g
17-07090-19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	7.50E-01	1.75E-01	1.83E-01	5.15E-02	pCi/g
17-07090-20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	7/18/2017	8/30/2017	17-07090	Uranium-238	EPA 908.0 Modified	8.37E-01	2.21E-01	2.29E-01	6.01E-02	pCi/g

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

EBERLINE SERVICES

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

SECTION V

ANALYTICAL STANDARD

QA/QC REVIEWED
Date 1/16/95 Initials LA

U-8

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide:	U-238NAT	Customer:	TMA EBERLINE
Half Life:	(4.468 ± 0.005) x 10^9 years	P.O.No.:	OR2778
Catalog No.:	7338	Reference Date:	January 1 1995 12:00 PST.
Source No.:	479-50	Contained Radioactivity:	(Total U) 8.016 μCi
		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 μCi/g.

Method of Calibration

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration: ±3.0%

b. Random uncertainty in assay: ±0.0%

c. Random uncertainty in weighing(s): ±2.0%

d. Total uncertainty at the 99% confidence level: ±3.6%

NIST Traceability

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

Leak Test(s)

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

Notes

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

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

EBERLINE SERVICES

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: 7/12/2017 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 HNO_3

Dilution Instructions:

Dilution Solvent Used: 1M HNO_3

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: June 28, 2018

Verified & Approved By _____ Date: 7/12/2017 0:00

QC Approval _____ Date: 7/25/17

EBERLINE SERVICES

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

MP-009
Solution Reference # IPL 479-50

Date 7/12/2017 0:00
Solution # U-8a

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

Radionuclide of Interest $^{234, 235, 238}U$
Parent Solution Conc. 1.7796E+04 dpm/ml

Reference Date 1/1/1995 0:00

Chemical Composition of Standard Solution
Uranly Nitrate in 1M HNO_3

Dilution Instructions:

Dilution Solvent Used 1M HNO_3

SECONDARY VOLUMETRIC DILUTION

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

Final Activity Concentration: 7.1182E+01 dpm/ml

NOTES:

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

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: June 28, 2018

Verified & Approved By _____ Date: 7/12/2017 0:00

QC Approval _____ Date: 7/25/17

RECORD COPY

Tracer Solution for Environmental Analysis & Disequilibrium Studies

Product Description & Measurement Certificate

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

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

Accuracy

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

Radionuclidic Purity

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

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

Isotopic Purity

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

Not measured

Chemical Composition

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

Physical Data

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

Remarks

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

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

Approved Signatory

Roger Wiltshire

Project Ref. AE2315

Roger Wiltshire

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

EBERLINE SERVICES

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: 11/7/2016 0:00

SOLUTION REFERENCE #: AEA/Amersham 92/232/67

SOLUTION #: U-10

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

Radionuclide: ^{232}U

Reference Date: 3/1/2000 0:00

Certified Activity: 9.760E-01 µCi

Certified Concentration: µCi per gram

Ampoule /Solution Gross: Weight, Grams

Empty Ampoule: Weight, Grams

Solution Net: Weight, Grams

Total Activity in Ampoule: 0.9760 µCi

Chemical Composition of Standard Solution

$^{232}U(NO_3)_6$ in 2M HNO_3

Dilution Instructions:

Dilution Solvent Used: 2M HNO_3

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 7, 2017

Verified & Approved By _____ Date: 11/7/2016 0:00

QC Approval _____ Date: 11/10/16

EBERLINE SERVICES

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

MP-009
Solution Reference # AEA/Amersham 92/232/67

Date 11/7/2016 0:00
Solution # U-10a

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

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

Reference Date 3/1/2000 0:00

Chemical Composition of Standard Solution
$^{232}U(NO_3)_6$ in 2M HNO_3

Dilution Instructions:

Dilution Solvent Used 2M HNO_3

SECONDARY VOLUMETRIC DILUTION

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

Final Activity Concentration: 2.1670E+01 dpm/ml

NOTES:

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

Expiration Date: October 7, 2017

Verified & Approved By _____ Date: 11/7/2016 0:00

QC Approval _____ Date: 11/10/16

Th-18

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

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: (Th-229 only)**	1.013 µCi 37.48 kBq

Physical Description:

A. Mass of solution: 5.0147 g in 5 mL flame-sealed ampoule
B. Chemical form: $Th(NO_3)_4$ in 0.1M HNO_3
C. Carrier content: 10µg Th/mL
D. Density: 1.0016 g/mL @ 20°C.

Radioimpurities:

None detected (daughters in equilibrium)

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

Method of Calibration:

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

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

Uncertainty of Measurement:

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

Notes:

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

Ann U Khan
Quality Control

9-Jan-02
Date Signed

IPL Ref. No.: 867-54

EBERLINE SERVICES

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

CURRENT DATE: 8/16/2017 0:00

SOLUTION REFERENCE #: IPL 867-54

SOLUTION #: Th-18

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

Radionuclide: ^{229}Th

Reference Date: 1/15/2002 0:00

Certified Activity: 1.013E+00 µCi

Certified Concentration: µCi per gram

Ampoule /Solution Gross: 8.7752 Weight, Grams

Empty Ampoule: 3.7591 Weight, Grams

Solution Net: 5.0161 Weight, Grams

Total Activity in Ampoule: 1.0130 µCi

Chemical Composition of Standard Solution

$^{229}Th(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used: 0.1 M HNO_3

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 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

EBERLINE SERVICES

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

MP-009
Solution Reference # IPL 867-54

Date 8/16/2017 0:00
Solution # Th-18a

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

Radionuclide of Interest ^{229}Th
Parent Solution Conc. 2.25E+03 dpm/ml

Reference Date 1/15/2002 0:00

Chemical Composition of Standard Solution
$TH(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used 0.1M HNO_3

SECONDARY VOLUMETRIC DILUTION

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

Final Activity Concentration: 2.2490E+01 dpm/ml

NOTES:

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

Expiration Date: August 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

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

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Received
OCT 14 1991
TMA/Eberline
Oak Ridge Lab

Radionuclide	Th-230	Customer:	TMA EBERLINE
Half Life:	(7.54 ± 0.03) x 10^4 years	P.O.No.:	TT4944
Catalog No.:	7230	Reference Date:	November 1 1991 12:00 PST.
Source No.:	388-116	Contained Radioactivity:	1.036 µCi.

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 µCi/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: ±2.0%
b. Random uncertainty in assay: ±0.5%
c. Random uncertainty in weighing(s): ±0.2%
d. Total uncertainty at the 99% confidence level: ±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)

QUALITY CONTROL

ISOTOPE PRODUCTS LABORATORIES
1800 No. Keystone Street.,
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EBERLINE SERVICES

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

CURRENT DATE: 2/28/2017 0:00

SOLUTION REFERENCE #: IPL 388-116 SOLUTION #: Th-1

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

Radionuclide: ^{230}Thorium
Reference Date: 11/1/1991 0:00
Certified Activity: 1.036E+00 µCi
Certified Concentration: µCi per gram

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

Chemical Composition of Standard Solution
$^{230}Th(NO_3)_4$ in 0.1N HNO_3

Dilution Instructions:
Dilution Solvent Used: 0.1N HNO_3

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 1, 2018

Recertified By _____ Date: 2/28/2017 0:00

QC Approval _____ Date: 3/1/17

EBERLINE SERVICES

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

MP-009

Solution Reference # IPL 388-116

Date 2/28/2017 0:00

Solution # Th-1b

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

Radionuclide of Interest ^{230}Thorium

Reference Date 11/1/1991 0:00

Parent Solution Conc. 2.30E+03 dpm/ml

Chemical Composition of Standard Solution

$^{230}Th(NO_3)_4$ in 0.1N HNO_3

Dilution Instructions:

Dilution Solvent Used 0.1N HNO_3

SECONDARY VOLUMETRIC DILUTION

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

Final Activity Concentration: 2.2999E+01 dpm/ml

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.

NOTES:

Expiration Date: February 1, 2018

Recertified By _____ Date: 2/28/2017 0:00

QC Approval _____ Date: 3/1/17

Th-18

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

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: (Th-229 only)**	1.013 µCi 37.48 kBq

Physical Description:

A. Mass of solution: 5.0147 g in 5 mL flame-sealed ampoule
B. Chemical form: $Th(NO_3)_4$ in 0.1M HNO_3
C. Carrier content: 10µg Th/mL
D. Density: 1.0016 g/mL @ 20°C.

Radioimpurities:

None detected (daughters in equilibrium)

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

Method of Calibration:

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

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

Uncertainty of Measurement:

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

Notes:

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

Ann U Khan
Quality Control

9-Jan-02
Date Signed

IPL Ref. No.: 867-54

EBERLINE SERVICES

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

CURRENT DATE: 8/16/2017 0:00

SOLUTION REFERENCE #: IPL 867-54 SOLUTION #: Th-18

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

Radionuclide: ^{229}Th

Reference Date: 1/15/2002 0:00

Certified Activity: 1.013E+00 µCi

Certified Concentration: µCi per gram

Ampoule /Solution Gross: 8.7752 Weight, Grams

Empty Ampoule: 3.7591 Weight, Grams

Solution Net: 5.0161 Weight, Grams

Total Activity in Ampoule: 1.0130 µCi

Chemical Composition of Standard Solution

$^{229}Th(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used: 0.1 M HNO_3

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 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

EBERLINE SERVICES

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

MP-009
Solution Reference # IPL 867-54

Date 8/16/2017 0:00
Solution # Th-18a

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

Radionuclide of interest ^{229}Th
Parent Solution Conc. 2.25E+03 dpm/ml

Reference Date 1/15/2002 0:00

Chemical Composition of Standard Solution
$TH(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used 0.1M HNO_3

SECONDARY VOLUMETRIC DILUTION

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

Final Activity Concentration: 2.2490E+01 dpm/ml

NOTES:

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

Expiration Date: August 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

Eckert & Ziegler
Analytics

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

CERTIFICATE OF CALIBRATION

Standard Reference Source

GAS - 1602

SRS Number: 104852
Source Description: Sand in 16 Ounce PP Omega Jar Filled to Capacity
Product Code: 8401-EG-SAN
Customer: Eberline Analytical Corporation
P.O. Number: OR-1610009, Item 4

This standard radionuclide source was prepared from an aliquot measured gravimetrically from a master radionuclide solution calibrated with a germanium gamma-ray spectrometer system. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using germanium gamma-ray spectrometry. 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 (NIST) 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."

Reference Date: 01-October-2016 12:00 PM EST

MGS Mixture

Isotope	Gamma-Ray Energy, keV	Half-Life, d	Activity, Bq	Flux, s^{-1}	Uncertainty u_A, %	u_B, %	U, %*	Calibration Method**
Am-241	59.5	1.580E+05	5.500E+03	1.976E+03	0.1	1.8	3.8	4π LS
Cd-109	88.0	4.614E+02	7.668E+04	2.837E+03	0.5	2.0	4.1	HPGe
Co-57	122.1	2.717E+02	2.240E+03	1.917E+03	0.4	1.7	3.4	HPGe
Ce-139	165.9	1.376E+02	2.655E+03	2.124E+03	0.4	1.7	3.6	HPGe
Hg-203	279.2	4.669E+01	6.065E+03	4.947E+03	0.3	1.7	3.5	HPGe
Sn-113	391.7	1.151E+02	4.528E+03	2.942E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.099E+04	2.240E+03	1.914E+03	0.7	1.9	4.1	HPGe
Y-88	898.0	1.066E+02	7.415E+03	6.948E+03	0.7	1.7	3.7	HPGe
Y-88	1836.1			7.356E+03	0.7	1.7	3.7	
Co-60	1173.2	1.925E+03	3.562E+03	3.557E+03	0.7	1.8	3.9	HPGe
Co-60	1332.5			3.561E+03	0.7	1.8	3.9	

Mixed Gamma (MGS) master solution is EZA's eight isotope mixture which is calibrated quarterly and consists of Cd-109, Co-57, Ce-139, Hg-203, Sn-113, Cs-137, Y-88, and Co-60. ***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results." ****Calibration Methods:** 4π LS - 4π Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber.

(Certificate continued on reverse side)

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia 30318

SECTION VI

QUALITY CONTROL SAMPLE RESULTS SUMMARY

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07090	UUISO	1	pCi	g	Weston Solutions, 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		96.97%	14.89%	100.00%	3.60%	8.08E+00	2.91E-01	7.84E+00	1.17E+00	U-8a	3.20E+01	3.60E+00	5.61E-01
U-238		93.36%	15.03%	100.00%	3.60%	7.83E+00	2.82E-01	7.31E+00	1.10E+00	U-8a	3.10E+01	3.60E+00	5.61E-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)

Duplicate Results

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU
U-234	0.08	1.40	1.11E+00	2.65E-01	1.10E+00	2.57E-01
U-238	0.33	5.93	9.52E-01	2.39E-01	1.01E+00	2.44E-01
U-235	0.48	22.52	1.25E-01	8.68E-02	1.57E-01	9.67E-02

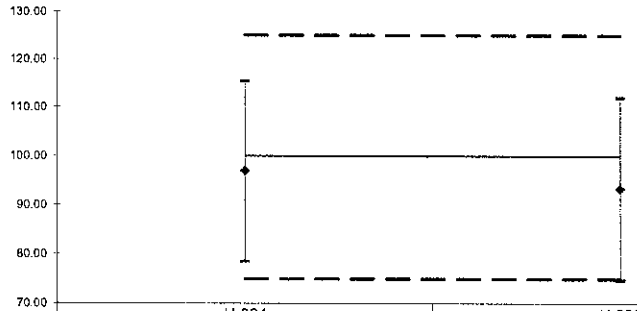
QC Summary

LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
0.97	OK				OK	OK
0.93	OK				OK	OK
	OK				NA	OK

0051

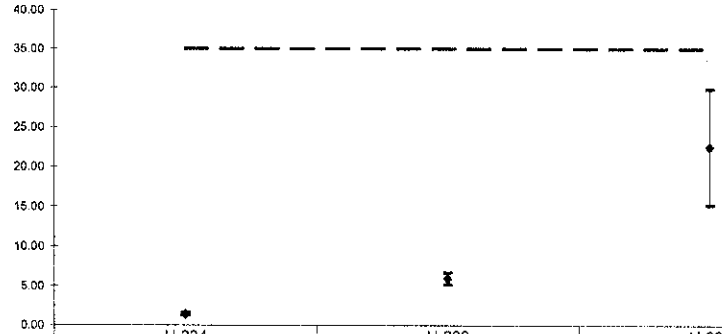
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07090	UUISO	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



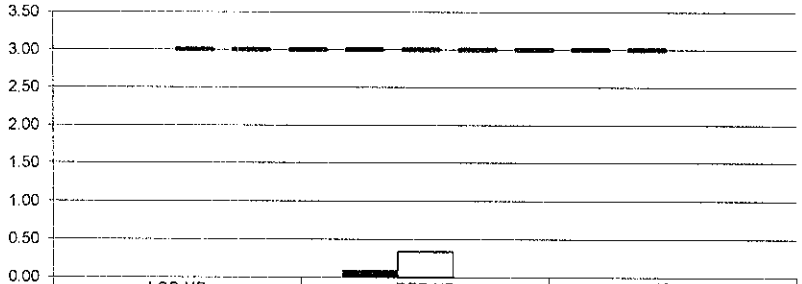
	U-234	U-238
Lower Error	78.49	74.73
Upper Error	115.46	111.99
%R	96.97	93.36
LCL	75	75
Mean	100	100
UCL	125	125

Replicate Sample RPD



	U-234	U-238	U-235
Lower Error	1.57	6.66	29.84
Upper Error	1.24	5.20	15.21
RPD	1.40	5.93	22.52
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
U-234	0.00	0.08	0.00
U-238	0.00	0.33	0.00
	0.00	0.00	0.00
UCL	3	3	3

No Matrix Spike

0052

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07090	ThISO	1	pCi	g	Weston Solutions, 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		123.15%	17.42%	100.00%	3.60%	4.97E+00	1.79E-01	6.12E+00	1.07E+00	Th-8b	1.04E+02	3.60E+00	1.07E-01
TH-230		118.03%	19.09%	100.00%	2.70%	5.43E+00	1.47E-01	6.41E+00	1.22E+00	Th-1b	2.35E+01	2.70E+00	5.12E-01
TH-232		123.67%	17.09%	100.00%	3.60%	4.97E+00	1.79E-01	6.15E+00	1.05E+00	Th-8b	1.04E+02	3.60E+00	1.07E-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)

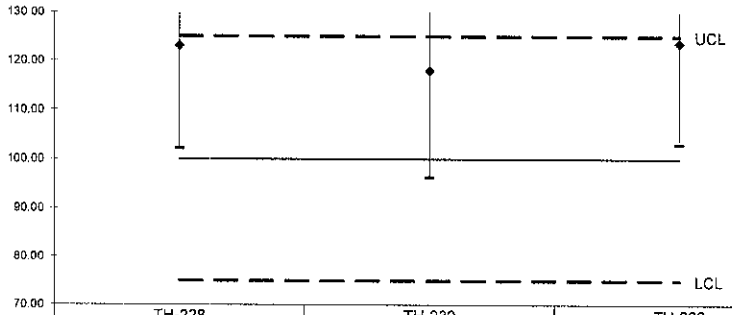
Duplicate Results / QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
TH-228	0.15	3.69	5.86E-01	2.07E-01	6.08E-01	2.07E-01	1.23	OK				OK	OK
TH-230	0.65	14.63	8.87E-01	2.74E-01	7.66E-01	2.39E-01	1.18	OK				OK	OK
TH-232	1.15	27.87	4.82E-01	1.75E-01	6.38E-01	2.02E-01	1.24	OK				INV	OK

0053

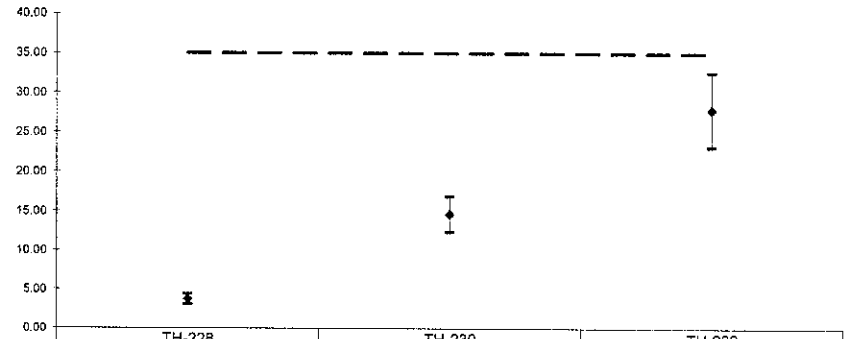
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07090	ThISO	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



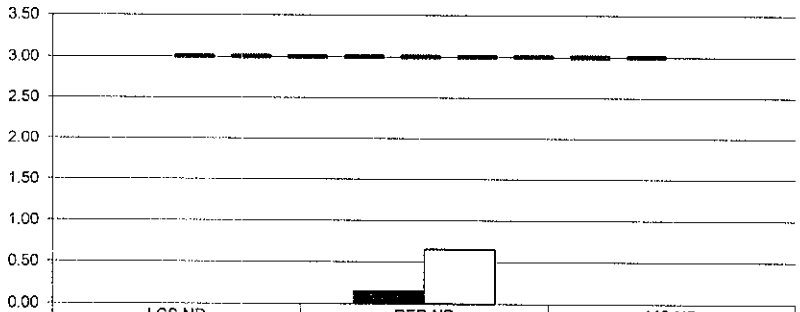
	TH-228	TH-230	TH-232
Lower Error	102.12	96.23	102.98
Upper Error	144.17	139.82	144.36
%R	123.15	118.03	123.67
LCL	75	75	75
Mean	100	100	100
UCL	125	125	125

Replicate Sample RPD



	TH-228	TH-230	TH-232
Lower Error	4.34	16.89	32.56
Upper Error	3.05	12.36	23.19
RPD	3.69	14.63	27.87
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
TH-228	0.00	0.15	0.00
TH-230	0.00	0.65	0.00
UCL	3	3	3

No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07090	Gamma	2	pCi	g	Weston Solutions, 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		92.28%	7.88%	100.00%	3.89%	1.35E+02	5.27E+00	1.25E+02	9.84E+00	GAS-1402	1.35E+02	5.27E+00	7.36E+02
CS-137		98.16%	10.47%	100.00%	4.01%	8.44E+01	3.38E+00	8.28E+01	8.67E+00	GAS-1402	8.44E+01	3.38E+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)

Duplicate Results

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU
BI-214	0.50	6.19	1.82E+00	3.03E-01	1.71E+00	3.09E-01
K-40	1.35	14.04	2.44E+01	3.37E+00	2.12E+01	3.19E+00
RA-228	1.10	21.46	1.11E+00	3.02E-01	1.38E+00	3.65E-01

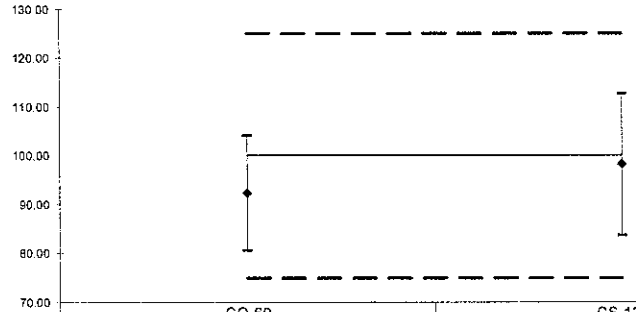
QC Summary

LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
0.92	OK		<CS-137	BI-214>	NA	
0.98	OK		<CO-60	K-40>	NA	OK
				RA-228>	NA	OK

0055

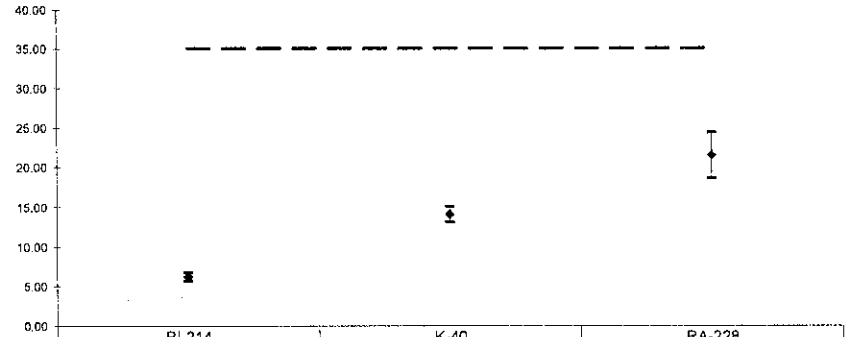
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07090	Gamma	2	pCi	g	Weston Solutions, Inc.

LCS % Recovery



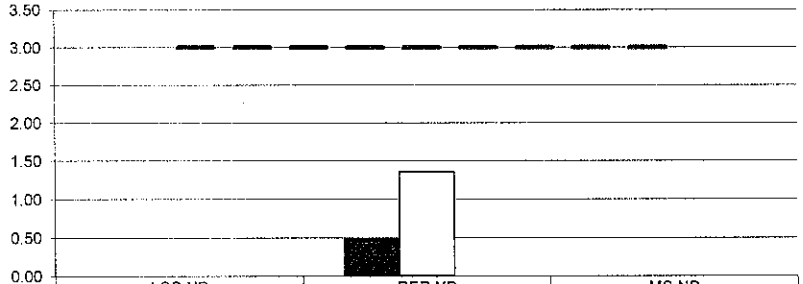
	CO-60	CS-137
Lower Error	80.51	83.68
Upper Error	104.05	112.64
%R	92.28	98.16
LCL	75	75
Mean	100	100
UCL	125	125

Replicate Sample RPD



	BI-214	K-40	RA-228
Lower Error	6.73	15.05	24.34
Upper Error	5.66	13.03	18.58
RPD	6.19	14.04	21.46
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
CO-60	0.00	0.50	0.00
CS-137	0.00	1.35	0.00
	0.00	0.00	0.00
UCL	3	3	3

No Matrix Spike

0056

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	17-07090
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:26	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS

JHarvey
8/16/17

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	17-07090
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:26	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	08/29/17 16:36	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.

8/29/17

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	17-07090
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:26	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	08/29/17 16:36	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	08/30/17 05:17	CHEM	TSMITH	Followed steps 12.1.7 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Uranium)

6-30-17
JM

EBERLINE SERVICES

Reagents Used in an Analysis

Internal Work Order	
17-07090	
Analysis Code	Run
UUISO	1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
019093P	Hydrofluoric Acid	Reagent Grade	JHARVEY	8/16/2017
018971P	Nitric Acid	Reagent Grade	JHARVEY	8/16/2017
019133P	Perchloric Acid	Reagent Grade	JHARVEY	8/16/2017
018550P	Sulfuric Acid	Reagent Grade	JHARVEY	8/16/2017
017344P	Anion Exchange Resin	Reagent Grade	JDEMELAS	8/29/2017
017553P	Anion Exchange Resin	Reagent Grade	JDEMELAS	8/29/2017
019220S	HCl - HF	6.5N - 0.04N	JDEMELAS	8/29/2017
019183D01	Hydrochloric Acid	0.5N	JDEMELAS	8/29/2017
019202S	Hydrochloric Acid	6.5N	JDEMELAS	8/29/2017
019229S	HCl - HF	6.5N - 0.04N	JDEMELAS	8/29/2017
019235S	Hydrochloric Acid	8N	JDEMELAS	8/29/2017
019237S	HCl - NH4I	8N - 0.1M	JDEMELAS	8/29/2017
019183P	Hydrochloric Acid	Reagent Grade	JDEMELAS	8/29/2017
019196S	Carbon substrate	Solution	TSMITH	8/30/2017
019063P	Ethyl Alcohol	1	TSMITH	8/30/2017
019227P	Hydrofluoric Acid	Reagent Grade	TSMITH	8/30/2017
018890S	Neodymium Carrier	1 mg/ml	TSMITH	8/30/2017
019038P	Titanous Chloride	Reagent Grade	TSMITH	8/30/2017

Alpha #1

Date	Sample #	Client	Load Time	CT Time	Analyzed	Tech
8/24/17	1707145A(12-17)	Auxier	1124	2hr50m	UU	KB
8/25	Daily Pulse	LAB	0457	1hr	NA	C
8/25	SECCAL (~~[illegible]~~ 0-3.5)	LAB	~~0512~~ 0747	2hr	NA	C
8/25/17	RegentestR106A(1)	Lab	1021	1hr	UUNT	KB
8/25/17	1708017A(3-4)	Republic Services	1021	2hr50m	UU	KB
8/25/17	1707088A(1-3)	Weston	1022	2hr50m	Th	KB
8/25/17	1707088A(6-11)	Weston	1315	2hr50m	Th	KB
8/25/17	System Bkgd	Lab	1703	16.40 hr	[illegible]	KB
8/26	Daily Pulse	LAB	0945	1hr	NA	—
8/28	Daily Pulse	LAB	0518	1hr	NA	—
8/28	1708026A(1-3.5)	UCOR	0828	2hr5m	Am241	—
8/28	1708026A(1,2)	UCOR	0828	2hr5m	Am243	—
8/28/17	1708026A(1-3,5)	UCOR	1127	2hr50m	Np	KB
8/28/17	1708026A(1-2)	UCOR	1128	2hr50m	Th	KB
8/28/17	1707088A(14-19)	Weston	1432	2hr50m	UU	KB
8/29	Daily Pulse	LAB	0518	1hr	NA	—
8/29	1708038A(~~1-4~~ 1-4 8/29)	UCOR	0826	2hr5m	Am241	C
8/29	1708038A(1-2)	UCOR	0827	2hr5m	Am243	C
8/29/17	RegentestAR107(1)	Lab	1124	1hr	UUNT	KB
8/29/17	1708038A(4)	UCOR	1125	2hr50m	UU	KB
8/29/17	1708038A(1-4)	UCOR	1125	2hr50m	Np	KB
8/29/17	1708038A(1-4)	UCOR	1431	2hr50m	Rale	KB
8/29/17	1708019A(1-2)	AMO	1432	2hr50m	Rale	KB
~~8/29/17~~	~~1708117-02~~	~~Energy Transfer~~	~~1706~~	~~1hr~~	KAB Y	KB
8/30	Daily Pulse	LAB	0522	1hr	NA	—
8/30	1708116A(1-6)	Sunday Mount	0833	2hr5m	Pu250	—
8/30/17	1707090A(7-11)	Weston	1129	2hr50m	UU	KB
8/30/17	RegentestR108A(1)	Lab	1128	1hr	UUNT	KB

Alphan #3

Date	Sample #	Client	Load Time	CT Time	Analyzed	Tech
8/29/17	1708014A(1-11)	Accubest	1729	2h-50	Rob	KB
8/29/17	1707089A(19-20)	Weston	1730	2h-50	UU	KB
8/3	Daily Pulse	LAB	0520	1	[illegible]	
8/3	1708116A(1-5)	Smoky Mount	0833	2h-5	Pulse	C
8/3	1708116A(1-5)	Smoky Mount	0834	2h-5	UUIso	C
8/3	1707090A(1-6)	Weston	0835	2h-5	UUIso	C
8/3	1708099A(1-8)	Zion	0836	5h-35	PuIso	C
8/30/17	1707090A(12-20)	Weston	1130	2h-50	UU	KB
8/30/17	1707089A(1-7)	Weston	1131	2h-50	Th	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	17-07090
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:26	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS

JHarvey
8/16/17

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	17-07090
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:26	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	08/30/17 17:00	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 deiononized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.

8/30/17

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	17-07090
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/16/17 05:26	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	08/30/17 17:00	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 deiononized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.
3	08/31/17 05:32	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Thorium)

8-31-17
JM

EBERLINE SERVICES

Reagents Used in an Analysis

Internal Work Order	
17-07090	
Analysis Code	Run
ThISO	1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
019093P	Hydrofluoric Acid	Reagent Grade	JHARVEY	8/16/2017
018971P	Nitric Acid	Reagent Grade	JHARVEY	8/16/2017
019133P	Perchloric Acid	Reagent Grade	JHARVEY	8/16/2017
018550P	Sulfuric Acid	Reagent Grade	JHARVEY	8/16/2017
017553P	Anion Exchange Resin	Reagent Grade	JDEMELAS	8/30/2017
019134P	Hydrochloric Acid	Reagent Grade	JDEMELAS	8/30/2017
019236S	Nitric Acid	8N	JDEMELAS	8/30/2017
019074P	Nitric Acid	Reagent Grade	JDEMELAS	8/30/2017
019242S	Hydrochloric Acid	8N	JDEMELAS	8/30/2017
019106S	Cerrium Carrier	0.1mg/ml	TSMITH	8/31/2017
019063P	Ethyl Alcohol	1	TSMITH	8/31/2017
019227P	Hydrofluoric Acid	Reagent Grade	TSMITH	8/31/2017
019225S	Carbon substrate	Solution	TSMITH	8/31/2017

Alpha #1

Date	Sample #	Client	Load Time	CT Time	Analyzed	Tech
8/24/17	1707145A(12-17)	Auxier	1124	2hr50m	UU	KB
8/25	Daily Pulse	LAB	0457	1hr	NA	C
8/25	SECCAL ~~(7-18)~~ (7-15)	LAB	~~0512~~ 0747	2hr5m	NA	C
8/25/17	Regentest R106A(1)	Lab	1021	1hr	UUNT	KB
8/25/17	1708017A(3-4)	Republic Services	1021	2hr50m	UU	KB
8/25/17	1707088A(1-3)	Weston	1022	2hr50m	Th	KB
8/25/17	1707088A(6-11)	Weston	1315	2hr50m	Th	KB
8/25/17	System Bkgd	Lab	1703	16.40 hr	2	KB
8/26	Daily Pulse	LAB	0945	1hr	NA	—
8/28	Daily Pulse	LAB	0518	1hr	NA	—
8/28	1708026A(1-3,5)	UCOR	0828	2hr5m	Am241	—
8/28	1708026A(1,2)	UCOR	0828	2hr5m	Am243	—
8/28/17	1708026A(1-3,5)	UCOR	1127	2hr50m	Np	KB
8/28/17	1708026A(1-2)	UCOR	1128	2hr50m	Th	KB
8/28/17	1707088A(14-19)	Weston	1432	2hr50m	UU	KB
8/29	Daily Pulse	LAB	0518	1hr	NA	—
8/29	1708038A(1-4) 8/29	UCOR	0826	2hr5m	Am241	C
8/29	1708038A(1-2)	UCOR	0827	2hr5m	Am243	C
8/29/17	Regentest AR107(1)	Lab	1124	1hr	UUNT	KB
8/29/17	1708038A(4)	UCOR	1125	2hr50m	UU	KB
8/29/17	1708038A(1-4)	UCOR	1125	2hr50m	Np	KB
8/29/17	1708038A(1-4)	UCOR	1431	2hr50m	Rale	KB
8/29/17	1708019A(1-2)	AMO	1432	2hr50m	Rale	KB
~~8/29/17~~	~~1708117-02~~	~~Energy Transfer~~	~~1706~~	~~1hr~~	~~KAS~~	~~Y~~	KB
8/30	Daily Pulse	LAB	0522	1hr	NA	—
8/30	1708116A(1-6)	Smoky Mount	0833	2hr5m	Pu250	—
8/30/17	1707090A(7-11)	Weston	1129	2hr50m	UU	KB
8/30/17	Regentest R108A(1)	Lab	1128	1hr	UUNT	KB
8/31	Daily Pulse	LAB	0518	1hr	NA	—
8/31	1708019A(1-6)	Amo	0912	2hr5m	UU250	—
8/31/17	1707090A(19-20)	Weston	1211	2hr50m	Th	KB
8/31/17	1708116A(1-4)	Smoky Mt. Solutions	1212	2hr50m	Am241	KB

Alpha #3

Date	Sample #	Client	Load Time	CT Time	Analyzed	Tech
8/29/17	1708014A(1-11)	Accutest	1729	2h50	Rob	KB
8/29/17	1707089A(19-20)	Weston	1730	2h50	UU	KB
8/30	Daily Pulse	LAB	0520	1	[illegible]	—
8/30	1708116A(1-5)	Smoky Mount	0833	2h50	Pulse	C
8/30	1708116A(1-5)	Smoky Mount	0834	2h50	UUIso	C
8/30	1707090A(1-6)	Weston	0835	2h50	UUIso	C
8/30	1708099A(1-8)	Zion	0836	5h35	PuIso	—
8/30/17	1707090A(12-20)	Weston	1130	2h50	UU	KB
8/30/17	1707089A(1-7)	Weston	1131	2h50	Th	KB
8/30/17	1708122A(1-4)	USA	1424	2h50	Rob	KB
8/30/17	1707089A(8-20)	Weston	1426	2h50	Th	KB
8/31	Daily Pulse	LAB	0518	1	[illegible]	—
8/31	1708019A(1-6)	Amo	0913	2h50	ThIso	C
8/31	1707090A(1-18)	Weston	0913	2h50	ThIso	C

GAMMA NOTES

GE 1

DATE	SAmple #	Client	LoadTime	CT.Time	Analysis	Tech
8/21/17	1707086-07	Weston	1524	1 hr	✓	KB
8/21/17	1707086-10	Weston	1625	1 hr	✓	KB
8/21/17	1707086-14	Weston	1726	1 hr	✓	KB
8/21/17	1708086-03	Indust.+Env.	1827	4 hrs	✓	KB
8/22	GAF16	LAB	0510	15	✓	C
8/22	Daily R	LAB	0533	15	✓	C
8/22	1707086-16	Weston	0550	1 hr	✓	—
8/22	1707086-20	Weston	0654	1 hr	✓	—
8/22	1707161-07	LGA	0759	1 hr	✓	—
8/22	1707087-03	Weston	0901	1 hr	✓	C
8/22	1707087-04	Weston	1004	1 hr	✓	C
8/22	1707087-12	Weston	1106	1 hr	✓	—
8/22/17	1707087-16	Weston	1208	1 hr	✓	KB
8/22/17	1707087-20	Weston	1311	1 hr	✓	—
8/22/17	1707088-06	Weston	1413	1 hr	✓	KB
8/22/17	1708002-02	MPA	1519	15 mins	Ba	KB
8/22/17	1708002-06	MPA	1535	15 mins	Ba	KB
8/22/17	1708006-03	UCOR	1552	15 min	Ba	KB
8/22/17	1708011-03	MPA	1609	15 min	Ba	KB
8/22/17	1707088-08	Weston	1626	1 hr	✓	KB
8/22/17	1707088-11	Weston	1727	1 hr	✓	KB
8/22/17	1708086-04	Indust.+Env.	1827	4 hrs	✓	KB
8/23	GAF16	LAB	0517	15	✓	C
8/23	Daily R	LAB	0541	15	✓	C
8/23	1707088-16	Weston	0601	1 hr	✓	—
8/23	1707088-20	Weston	0705	1 hr	✓	—
8/23	1707089-07	Weston	0811	1 hr	✓	—
8/23	1707089-10	Weston	0917	1 hr	✓	—
8/23	1707089-14	Weston	1017	1 hr	✓	—
8/23	1707089-18	Weston	1118	1 hr	✓	—
8/23/17	1708086-01	Indust.+Env.	1220	15 min	Ba	KB
8/23/17	1707090-05	Weston	1237	1 hr	✓	KB
8/23/17	1707090-07	Weston	1338	1 hr	✓	KB
8/23/17	1707090-11	Weston	1440	1 hr	✓	KB

GE 1

DATE	Sample #	Client	Load Time	CT Time	Analysis	Tech
8/23/17	1707090-15	Weston	1541	1hr	✓	RB
8/23/17	1707090-17	Weston	1642	1hr	✓	RB
8/23/17	1707135-08	ERA	1745	8hr	✓	RB
8/24	G4F16	LAB	0516	15	✓	[illegible]
8/24	DW14R	LAB	0538	15	✓	
8/24	1707090-19	Weston	0555	1hr	✓	—

GE 2

DATE	SAmple #	Client	Load Time	CT Time	Analysis	Tech
8/22/17	1708095-03	Eden Foods	1608	2hr	✓	KB
8/22/17	1708095-04	Eden Foods	1810	2hr	✓	KB
8/23	~~GA~~ 81601	KB	0517	15	✓	C
8/23	[illegible]	KB	0544	15	✓	—
8/23	1707088-17	Weston	[illegible]	[illegible]	✓	—
8/23	1707089-03	Weston	0705	[illegible]	✓	C
8/23	1707089-04	Weston	0811	[illegible]	✓	C
8/23	1707089-11	Weston	0917	[illegible]	✓	—
8/23	1707089-15	Weston	1017	[illegible]	✓	—
8/23	1707089-02	Weston	1119	[illegible]	✓	—
8/23/17	1708086-02	Indust+Env.	1220	15 min	Da	KB
8/23/17	1707090-06	Weston	1237	1hr	✓	KB
8/23/17	1707090-08	Weston	1339	1hr	✓	KB
8/23/17	1707090-12	Weston	1440	1hr	✓	KB
8/23/17	1708095-06	Eden Foods	1542	2hr	✓	KB
8/23/17	1708095-01	Eden Foods	1744	30 min	✓	KB
8/23/17	1708095-08	Eden Foods	1815	2hr	✓	KB
8/24	~~GA~~ 81601	KB	0517	15	✓	—
8/24	[illegible]	KB	0528	15	✓	—
8/24	1707090-20	Weston	0555	[illegible]	✓	—

GE 3

DATE	Sample #	Client	LoadTime	CTTime	Analysis	Tech
8/22/17	1707088-12	Weston	1727	1hr	✓	KB
8/22/17	1708095-05	Eden Foods	1828	2hr	✓	KB
8/23	~~CAS~~ 11602	LAB	0517	15	✓	[illegible]
8/23	[illegible]	LAB	0541	15	✓	[illegible]
8/23	1707088-13	Weston	0601	1h	✓	—
8/23	1707089-05	Weston	0705	1h	✓	—
8/23	1707085-08	Weston	0841	1h	✓	—
8/23	1707089-12	Weston	0917	1h	✓	—
8/23	1707089-16	Weston	1017	1h	✓	—
8/23	1707085.01	Weston	1119	3h	✓	—
8/23	1707090-01	Weston	1152	3h	✓	—
8/23/17	1708086-04	Industr+Env.	1223	15min	Bu	KB
8/23/17	1707090-02	Weston	1232	1hr	✓	KB
8/23/17	1707090-10	Weston	1339	1hr	✓	KB
8/23/17	1707090-13	Weston	1440	1hr	✓	KB
8/23/17	1708095-07	Eden Foods	1542	2hr	✓	KB

GE 4

DATE	Sample #	Client	Load Time	Ct. Time	Analysis	Tech
8/22/17	1708002-01	MPA	1454	15 mins	Ba	KB
8/22/17	1708002-05	MPA	1519	15 mins	Ba	KB
8/22/17	1708006-02	LICOR	1536	15 mins	Ba	KB
8/22/17	1708011-02	MPA	1553	15 min	Ba	KB
8/22/17	1708011-05	MPA	1610	15 min	Ba	KB
8/22/17	1707088-10	Weston	1626	1 hr	r	KB
8/22/17	1707088-13	Weston	1727	1 hr	r	KB
8/22/17	1708095-02	Eden Foods	1828	2 hr	r	KB
8/23	GAW16	LAB	0517	15	r	[illegible]
8/23	[illegible]	LAB	0534	15	r	
8/23	1707088-19	Weston	0601	1 hr	r	—
8/23	1707088-06	Weston	0705	1 hr	r	—
8/23	1707088-08	Weston	0811	1 hr	r	—
8/23	1707088-13	Weston	0817	1 hr	r	—
8/23	1707088-17	Weston	1017	1 hr	r	—
8/23	1707090-03	Weston	1119	1 hr	r	[illegible]
8/23	1707090-04	Weston	1237	1 hr	r	
8/23/17	170808603	Indust + Env	1220	15 mins	Ba	KB
8/23/17	1707090-09	Weston	1339	1 hr	r	KB
8/23/17	1707090-14	Weston	1441	1 hr	r	KB
8/23/17	1707090-16	Weston	1541	1 hr	r	KB
8/23/17	1707090-18	Weston	1642	1 hr	r	KB

SECTION VIII

ANALYTICAL DATA (ISOTOPIC URANIUM)

17-07090
UUISO
Run 1

Work Order	17-07090
Analysis Code	UUISO
Run	1
Date Received	7/18/2017
Lab Deadline	8/10/2017
Client	Weston Solutions, Inc.
Project	94759
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EPA 908.0 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	U-232
Radiometric Sol#	U-10a
Tracer Act (dpm/g)	18.32
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		07/19/17 00:00	1.0000E+00
02	MBL	BLANK		07/19/17 00:00	1.0000E+00
03	DUP	HTC-A06-S001-1218-01	47	05/16/17 14:24	1.0200E+00
04	DO	HTC-A06-S001-1218-01	47	05/16/17 14:24	1.0197E+00
05	TRG	HTC-A06-S001-1824-01	57	05/16/17 14:22	1.1300E+00
06	TRG	HTC-A06-S001-2430-01	37	05/16/17 14:20	1.2500E+00
07	TRG	HTC-A06-S001-3036-01	39	05/16/17 14:18	1.0300E+00
08	TRG	HTC-A06-S001-3642-01	45	05/16/17 14:16	1.0200E+00
09	TRG	HTC-A06-S001-4248-01	41	05/16/17 14:14	1.2700E+00
10	TRG	HTC-A07-S001-0006-01	67	05/16/17 15:14	1.2700E+00
11	TRG	HTC-A07-S001-0612-01	76	05/16/17 15:12	1.2800E+00
12	TRG	HTC-A07-S001-0612-02	70	05/16/17 15:12	1.1200E+00
13	TRG	HTC-A07-S001-1218-01	51	05/16/17 15:10	1.0100E+00
14	TRG	HTC-A07-S001-1824-01	44	05/16/17 15:08	1.0700E+00
15	TRG	HTC-A07-S001-2430-01	55	05/16/17 15:06	1.1000E+00
16	TRG	HTC-A07-S001-3036-01	33	05/16/17 15:04	1.0000E+00
17	TRG	HTC-A07-S001-3642-01	39	05/16/17 15:02	1.1800E+00
18	TRG	HTC-A07-S001-4248-01	43	05/16/17 15:00	1.0800E+00
19	TRG	HTC-A08-BKGD01-0006-02	45	05/15/17 16:41	1.3100E+00
20	TRG	HTC-A08-BKGD01-0612-01	55	05/15/17 16:38	1.0600E+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.

17-07090
UUISO
Run 1

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	0.6759	12.4		0.00								
02	MBL	0.6763	12.4		0.00								
03	DUP	0.6740	12.3		0.00								
04	DO	0.6660	12.2		0.00								
05	TRG	0.6746	12.4		0.00								
06	TRG	0.6737	12.3		0.00								
07	TRG	0.6664	12.2		0.00								
08	TRG	0.6680	12.2		0.00								
09	TRG	0.6664	12.2		0.00								
10	TRG	0.6651	12.2		0.00								
11	TRG	0.6650	12.2		0.00								
12	TRG	0.6650	12.2		0.00								
13	TRG	0.6730	12.3		0.00								
14	TRG	0.6656	12.2		0.00								
15	TRG	0.6667	12.2		0.00								
16	TRG	0.6820	12.5		0.00								
17	TRG	0.6655	12.2		0.00								
18	TRG	0.6660	12.2		0.00								
19	TRG	0.6673	12.2		0.00								
20	TRG	0.6591	12.1		0.00								

0080

* 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.

17-07090
UUISO
Run 1

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			08/15/17 09:39	JPACHELLA				
02	MBL			08/15/17 09:39	JPACHELLA				
03	DUP			08/15/17 09:39	JPACHELLA				
04	DO	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
05	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
06	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
07	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
08	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
09	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
10	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
11	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
12	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
13	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
14	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
15	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
16	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
17	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
18	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
19	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	JPACHELLA				
20	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:39	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: 17-07090-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07090
Client: Weston Solutions, Inc.

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-234	LCS	LCS	pCi/g	7.84E+00	1.02E+00	7.15E-02	8.08E+00	96.97	OK		OK	
02	U-234	MBL	BLANK	pCi/g	3.03E-02	4.63E-02	7.86E-02					OK	OK
03	U-234	DUP	HTC-A06-S001-1218-01	pCi/g	1.10E+00	2.45E-01	5.38E-02				OK	OK	
04	U-234	DO	HTC-A06-S001-1218-01	pCi/g	1.11E+00	2.52E-01	7.03E-02					OK	
05	U-234	TRG	HTC-A06-S001-1824-01	pCi/g	9.33E-01	2.38E-01	8.33E-02					OK	
06	U-234	TRG	HTC-A06-S001-2430-01	pCi/g	8.00E-01	2.14E-01	9.02E-02					OK	
07	U-234	TRG	HTC-A06-S001-3036-01	pCi/g	8.90E-01	2.07E-01	5.75E-02					OK	
08	U-234	TRG	HTC-A06-S001-3642-01	pCi/g	7.41E-01	1.85E-01	8.90E-02					OK	
09	U-234	TRG	HTC-A06-S001-4248-01	pCi/g	8.72E-01	1.91E-01	6.97E-02					OK	
10	U-234	TRG	HTC-A07-S001-0006-01	pCi/g	3.16E+01	3.58E+00	5.99E-02					OK	
11	U-234	TRG	HTC-A07-S001-0612-01	pCi/g	4.00E+01	4.76E+00	5.78E-02					OK	
12	U-234	TRG	HTC-A07-S001-0612-02	pCi/g	3.50E+01	3.92E+00	5.60E-02					OK	
13	U-234	TRG	HTC-A07-S001-1218-01	pCi/g	2.14E+01	2.33E+00	6.25E-02					OK	
14	U-234	TRG	HTC-A07-S001-1824-01	pCi/g	1.38E+00	2.82E-01	6.71E-02					OK	
15	U-234	TRG	HTC-A07-S001-2430-01	pCi/g	1.33E+00	2.81E-01	6.55E-02					OK	
16	U-234	TRG	HTC-A07-S001-3036-01	pCi/g	1.15E+00	2.58E-01	7.12E-02					OK	
17	U-234	TRG	HTC-A07-S001-3642-01	pCi/g	9.47E-01	2.20E-01	6.63E-02					OK	
18	U-234	TRG	HTC-A07-S001-4248-01	pCi/g	8.68E-01	2.11E-01	7.17E-02					OK	
19	U-234	TRG	HTC-A08-BKGD01-0006-02	pCi/g	7.82E-01	1.79E-01	4.53E-02					OK	
20	U-234	TRG	HTC-A08-BKGD01-0612-01	pCi/g	8.47E-01	2.25E-01	9.55E-02					OK	

Work Order: 17-07090-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07090
Client: Weston Solutions, Inc.

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	U-234	LCS	07/19/17 00:00	1.00E+00	124.07	0.00	0.00			
02	U-234	MBL	07/19/17 00:00	1.00E+00	135.14	0.00	0.00			
03	U-234	DUP	05/16/17 14:24	1.02E+00	142.54	0.00	0.00			
04	U-234	DO	05/16/17 14:24	1.02E+00	135.87	0.00	0.00			
05	U-234	TRG	05/16/17 14:22	1.13E+00	124.85	0.00	0.00			
06	U-234	TRG	05/16/17 14:20	1.25E+00	124.42	0.00	0.00			
07	U-234	TRG	05/16/17 14:18	1.03E+00	134.22	0.00	0.00			
08	U-234	TRG	05/16/17 14:16	1.02E+00	142.13	0.00	0.00			
09	U-234	TRG	05/16/17 14:14	1.27E+00	123.48	0.00	0.00			
10	U-234	TRG	05/16/17 15:14	1.27E+00	104.59	0.00	0.00			
11	U-234	TRG	05/16/17 15:12	1.28E+00	92.88	0.00	0.00			
12	U-234	TRG	05/16/17 15:12	1.12E+00	120.33	0.00	0.00			
13	U-234	TRG	05/16/17 15:10	1.01E+00	137.22	0.00	0.00			
14	U-234	TRG	05/16/17 15:08	1.07E+00	140.36	0.00	0.00			
15	U-234	TRG	05/16/17 15:06	1.10E+00	114.03	0.00	0.00			
16	U-234	TRG	05/16/17 15:04	1.00E+00	140.86	0.00	0.00			
17	U-234	TRG	05/16/17 15:02	1.18E+00	138.49	0.00	0.00			
18	U-234	TRG	05/16/17 15:00	1.08E+00	122.02	0.00	0.00			
19	U-234	TRG	05/15/17 16:41	1.31E+00	129.37	0.00	0.00			
20	U-234	TRG	05/15/17 16:38	1.06E+00	105.92	0.00	0.00			

Preliminary Data Report & Analytical Calculations

Work Order: 17-07090-UUISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07090
Analysis Code: UUISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-234	LCS	08/30/17 08:35		A_Spec	Alpha_045	170	6.18 E+02	4.00 E-03	16.9
02	U-234	MBL	08/30/17 08:35		A_Spec	Alpha_046	170	2.64 E+00	8.00 E-03	17.1
03	U-234	DUP	08/30/17 08:35		A_Spec	Alpha_047	170	9.77 E+01	2.00 E-03	16.2
04	U-234	DO	08/30/17 08:35		A_Spec	Alpha_048	170	9.50 E+01	0.00 E+00	16.3
05	U-234	TRG	08/30/17 08:35		A_Spec	Alpha_049	170	7.38 E+01	7.00 E-03	14.9
06	U-234	TRG	08/30/17 08:35		A_Spec	Alpha_050	170	6.71 E+01	1.10 E-02	14.3
07	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_004	170.02	8.73 E+01	4.00 E-03	18.8
08	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_010	170	7.58 E+01	1.90 E-02	18.7
09	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_011	170	1.03 E+02	1.40 E-02	19.9
10	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_012	170.02	2.97 E+03	4.00 E-03	18.8
11	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_014	170	3.31 E+03	2.00 E-03	18.5
12	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_033	170	2.98 E+03	2.00 E-03	16.8
13	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_034	170	1.93 E+03	4.00 E-03	17.3
14	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_035	170	1.23 E+02	0.00 E+00	15.8
15	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_036	170	1.14 E+02	4.00 E-03	18.2
16	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_037	170	9.70 E+01	0.00 E+00	15.9
17	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_038	170	9.00 E+01	6.00 E-03	15.4
18	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_039	170	7.98 E+01	7.00 E-03	18.5
19	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_040	170	9.05 E+01	3.00 E-03	18.1
20	U-234	TRG	08/30/17 11:29		A_Spec	Alpha_043	170	6.71 E+01	1.10 E-02	18.7

Preliminary Data Report & Analytical Calculations

Work Order: 17-07090-UUISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07090
Analysis Code: UUISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-238	LCS	LCS	pCi/g	7.31E+00	9.67E-01	7.56E-02	7.83E+00	93.36	OK		OK	
02	U-238	MBL	BLANK	pCi/g	3.40E-02	4.58E-02	7.19E-02					OK	OK
03	U-238	DUP	HTC-A06-S001-1218-01	pCi/g	1.01E+00	2.33E-01	6.71E-02				OK	OK	
04	U-238	DO	HTC-A06-S001-1218-01	pCi/g	9.52E-01	2.29E-01	6.13E-02					OK	
05	U-238	TRG	HTC-A06-S001-1824-01	pCi/g	1.04E+00	2.52E-01	6.61E-02					OK	
06	U-238	TRG	HTC-A06-S001-2430-01	pCi/g	1.04E+00	2.48E-01	8.14E-02					OK	
07	U-238	TRG	HTC-A06-S001-3036-01	pCi/g	6.58E-01	1.74E-01	6.69E-02					OK	
08	U-238	TRG	HTC-A06-S001-3642-01	pCi/g	7.50E-01	1.84E-01	7.59E-02					OK	
09	U-238	TRG	HTC-A06-S001-4248-01	pCi/g	9.90E-01	2.05E-01	5.33E-02					OK	
10	U-238	TRG	HTC-A07-S001-0006-01	pCi/g	3.30E+01	3.74E+00	7.25E-02					OK	
11	U-238	TRG	HTC-A07-S001-0612-01	pCi/g	3.94E+01	4.69E+00	7.21E-02					OK	
12	U-238	TRG	HTC-A07-S001-0612-02	pCi/g	3.54E+01	3.96E+00	4.87E-02					OK	
13	U-238	TRG	HTC-A07-S001-1218-01	pCi/g	2.12E+01	2.31E+00	5.79E-02					OK	
14	U-238	TRG	HTC-A07-S001-1824-01	pCi/g	1.51E+00	2.98E-01	5.33E-02					OK	
15	U-238	TRG	HTC-A07-S001-2430-01	pCi/g	1.37E+00	2.86E-01	6.92E-02					OK	
16	U-238	TRG	HTC-A07-S001-3036-01	pCi/g	9.56E-01	2.30E-01	4.93E-02					OK	
17	U-238	TRG	HTC-A07-S001-3642-01	pCi/g	9.90E-01	2.25E-01	5.50E-02					OK	
18	U-238	TRG	HTC-A07-S001-4248-01	pCi/g	9.84E-01	2.26E-01	4.52E-02					OK	
19	U-238	TRG	HTC-A08-BKGD01-0006-02	pCi/g	7.50E-01	1.75E-01	5.15E-02					OK	
20	U-238	TRG	HTC-A08-BKGD01-0612-01	pCi/g	8.37E-01	2.21E-01	6.01E-02					OK	

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Work Order: 17-07090-UUISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07090
Analysis Code: UUISO
Run: 1

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	U-238	LCS	07/19/17 00:00	1.00E+00	124.07	0.00	0.00			
02	U-238	MBL	07/19/17 00:00	1.00E+00	135.14	0.00	0.00			
03	U-238	DUP	05/16/17 14:24	1.02E+00	142.54	0.00	0.00			
04	U-238	DO	05/16/17 14:24	1.02E+00	135.87	0.00	0.00			
05	U-238	TRG	05/16/17 14:22	1.13E+00	124.85	0.00	0.00			
06	U-238	TRG	05/16/17 14:20	1.25E+00	124.42	0.00	0.00			
07	U-238	TRG	05/16/17 14:18	1.03E+00	134.22	0.00	0.00			
08	U-238	TRG	05/16/17 14:16	1.02E+00	142.13	0.00	0.00			
09	U-238	TRG	05/16/17 14:14	1.27E+00	123.48	0.00	0.00			
10	U-238	TRG	05/16/17 15:14	1.27E+00	104.59	0.00	0.00			
11	U-238	TRG	05/16/17 15:12	1.28E+00	92.88	0.00	0.00			
12	U-238	TRG	05/16/17 15:12	1.12E+00	120.33	0.00	0.00			
13	U-238	TRG	05/16/17 15:10	1.01E+00	137.22	0.00	0.00			
14	U-238	TRG	05/16/17 15:08	1.07E+00	140.36	0.00	0.00			
15	U-238	TRG	05/16/17 15:06	1.10E+00	114.03	0.00	0.00			
16	U-238	TRG	05/16/17 15:04	1.00E+00	140.86	0.00	0.00			
17	U-238	TRG	05/16/17 15:02	1.18E+00	138.49	0.00	0.00			
18	U-238	TRG	05/16/17 15:00	1.08E+00	122.02	0.00	0.00			
19	U-238	TRG	05/15/17 16:41	1.31E+00	129.37	0.00	0.00			
20	U-238	TRG	05/15/17 16:38	1.06E+00	105.92	0.00	0.00			

9800

Preliminary Data Report & Analytical Calculations

Work Order: 17-07090-UUISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07090
Analysis Code: UUISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-238	LCS	08/30/17 08:35		A_Spec	Alpha_045	170	5.79 E+02	5.00 E-03	16.9
02	U-238	MBL	08/30/17 08:35		A_Spec	Alpha_046	170	2.98 E+00	6.00 E-03	17.1
03	U-238	DUP	08/30/17 08:35		A_Spec	Alpha_047	170	9.02 E+01	5.00 E-03	16.2
04	U-238	DO	08/30/17 08:35		A_Spec	Alpha_048	170	8.15 E+01	3.00 E-03	16.3
05	U-238	TRG	08/30/17 08:35		A_Spec	Alpha_049	170	8.25 E+01	3.00 E-03	14.9
06	U-238	TRG	08/30/17 08:35		A_Spec	Alpha_050	170	8.76 E+01	8.00 E-03	14.3
07	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_004	170.02	6.48 E+01	7.00 E-03	18.8
08	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_010	170	7.70 E+01	1.20 E-02	18.7
09	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_011	170	1.17 E+02	6.00 E-03	19.9
10	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_012	170.02	3.12 E+03	8.00 E-03	18.8
11	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_014	170	3.28 E+03	5.00 E-03	18.5
12	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_033	170	3.03 E+03	1.00 E-03	16.8
13	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_034	170	1.92 E+03	3.00 E-03	17.3
14	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_035	170	1.36 E+02	2.00 E-03	15.8
15	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_036	170	1.18 E+02	5.00 E-03	18.2
16	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_037	170	8.08 E+01	1.00 E-03	15.9
17	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_038	170	9.45 E+01	3.00 E-03	15.4
18	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_039	170	9.08 E+01	1.00 E-03	18.5
19	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_040	170	8.72 E+01	5.00 E-03	18.1
20	U-238	TRG	08/30/17 11:29		A_Spec	Alpha_043	170	6.67 E+01	2.00 E-03	18.7

Eberline Analytical
Oak Ridge Laboratory

Preliminary Data Report & Analytical Calculations

Work Order: 17-07090-UUISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07090
Analysis Code: UUISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-235	LCS	LCS	pCi/g	6.07E-01	2.02E-01	6.53E-02					OK	
02	U-235	MBL	BLANK	pCi/g	2.12E-03	2.97E-02	8.47E-02					OK	OK
03	U-235	DUP	HTC-A06-S001-1218-01	pCi/g	1.57E-01	9.60E-02	7.83E-02				NA	OK	
04	U-235	DO	HTC-A06-S001-1218-01	pCi/g	1.25E-01	8.63E-02	6.92E-02					OK	
05	U-235	TRG	HTC-A06-S001-1824-01	pCi/g	1.07E-01	8.19E-02	6.51E-02					OK	
06	U-235	TRG	HTC-A06-S001-2430-01	pCi/g	6.35E-02	6.56E-02	8.29E-02					OK	
07	U-235	TRG	HTC-A06-S001-3036-01	pCi/g	9.21E-02	7.08E-02	7.10E-02					OK	
08	U-235	TRG	HTC-A06-S001-3642-01	pCi/g	9.20E-02	7.68E-02	9.89E-02					OK	
09	U-235	TRG	HTC-A06-S001-4248-01	pCi/g	8.19E-02	6.29E-02	6.91E-02					OK	
10	U-235	TRG	HTC-A07-S001-0006-01	pCi/g	3.04E+00	5.11E-01	8.26E-02					OK	
11	U-235	TRG	HTC-A07-S001-0612-01	pCi/g	3.12E+00	5.54E-01	7.83E-02					OK	
12	U-235	TRG	HTC-A07-S001-0612-02	pCi/g	3.97E+00	6.31E-01	6.91E-02					OK	
13	U-235	TRG	HTC-A07-S001-1218-01	pCi/g	1.64E+00	3.36E-01	6.54E-02					OK	
14	U-235	TRG	HTC-A07-S001-1824-01	pCi/g	1.61E-01	9.54E-02	6.60E-02					OK	
15	U-235	TRG	HTC-A07-S001-2430-01	pCi/g	9.29E-02	7.53E-02	7.51E-02					OK	
16	U-235	TRG	HTC-A07-S001-3036-01	pCi/g	5.86E-02	6.45E-02	8.78E-02					OK	
17	U-235	TRG	HTC-A07-S001-3642-01	pCi/g	1.17E-01	8.14E-02	7.79E-02					OK	
18	U-235	TRG	HTC-A07-S001-4248-01	pCi/g	8.25E-02	7.08E-02	8.03E-02					OK	
19	U-235	TRG	HTC-A08-BKGD01-0006-02	pCi/g	9.93E-02	6.72E-02	6.01E-02					OK	
20	U-235	TRG	HTC-A08-BKGD01-0612-01	pCi/g	7.75E-02	7.62E-02	9.80E-02					OK	

0008

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07090
Analysis Code: UUISO
Run: 1

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	U-235	LCS	07/19/17 00:00	1.00E+00	124.07	0.00	0.00			
02	U-235	MBL	07/19/17 00:00	1.00E+00	135.14	0.00	0.00			
03	U-235	DUP	05/16/17 14:24	1.02E+00	142.54	0.00	0.00			
04	U-235	DO	05/16/17 14:24	1.02E+00	135.87	0.00	0.00			
05	U-235	TRG	05/16/17 14:22	1.13E+00	124.85	0.00	0.00			
06	U-235	TRG	05/16/17 14:20	1.25E+00	124.42	0.00	0.00			
07	U-235	TRG	05/16/17 14:18	1.03E+00	134.22	0.00	0.00			
08	U-235	TRG	05/16/17 14:16	1.02E+00	142.13	0.00	0.00			
09	U-235	TRG	05/16/17 14:14	1.27E+00	123.48	0.00	0.00			
10	U-235	TRG	05/16/17 15:14	1.27E+00	104.59	0.00	0.00			
11	U-235	TRG	05/16/17 15:12	1.28E+00	92.88	0.00	0.00			
12	U-235	TRG	05/16/17 15:12	1.12E+00	120.33	0.00	0.00			
13	U-235	TRG	05/16/17 15:10	1.01E+00	137.22	0.00	0.00			
14	U-235	TRG	05/16/17 15:08	1.07E+00	140.36	0.00	0.00			
15	U-235	TRG	05/16/17 15:06	1.10E+00	114.03	0.00	0.00			
16	U-235	TRG	05/16/17 15:04	1.00E+00	140.86	0.00	0.00			
17	U-235	TRG	05/16/17 15:02	1.18E+00	138.49	0.00	0.00			
18	U-235	TRG	05/16/17 15:00	1.08E+00	122.02	0.00	0.00			
19	U-235	TRG	05/15/17 16:41	1.31E+00	129.37	0.00	0.00			
20	U-235	TRG	05/15/17 16:38	1.06E+00	105.92	0.00	0.00			

6800

Work Order: 17-07090-UUISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07090
Analysis Code: UUISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-235	LCS	08/30/17 08:35		A_Spec	Alpha_045	170	3.88 E+01	1.00 E-03	16.9
02	U-235	MBL	08/30/17 08:35		A_Spec	Alpha_046	170	1.50 E-01	5.00 E-03	17.1
03	U-235	DUP	08/30/17 08:35		A_Spec	Alpha_047	170	1.13 E+01	4.00 E-03	16.2
04	U-235	DO	08/30/17 08:35		A_Spec	Alpha_048	170	8.66 E+00	2.00 E-03	16.3
05	U-235	TRG	08/30/17 08:35		A_Spec	Alpha_049	170	6.83 E+00	1.00 E-03	14.9
06	U-235	TRG	08/30/17 08:35		A_Spec	Alpha_050	170	4.32 E+00	4.00 E-03	14.3
07	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_004	170.02	7.32 E+00	4.00 E-03	18.8
08	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_010	170	7.62 E+00	1.40 E-02	18.7
09	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_011	170	7.81 E+00	7.00 E-03	19.9
10	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_012	170.02	2.32 E+02	6.00 E-03	18.8
11	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_014	170	2.09 E+02	3.00 E-03	18.5
12	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_033	170	2.75 E+02	2.00 E-03	16.8
13	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_034	170	1.20 E+02	2.00 E-03	17.3
14	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_035	170	1.17 E+01	2.00 E-03	15.8
15	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_036	170	6.49 E+00	3.00 E-03	18.2
16	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_037	170	4.00 E+00	0.00 E+00	15.9
17	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_038	170	9.00 E+00	0.00 E+00	15.4
18	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_039	170	6.15 E+00	5.00 E-03	18.5
19	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_040	170	9.32 E+00	4.00 E-03	18.1
20	U-235	TRG	08/30/17 11:29		A_Spec	Alpha_043	170	4.98 E+00	6.00 E-03	18.7

Count Room Report
Client: Weston Solutions, Inc.

17-07090-UUISO-1 (pCi/g) in SO
Tracer ID: U-10a

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	07/19/17 00:00	1.0000	0.6759	12.3825		0.00		
02	MBL	BLANK	07/19/17 00:00	1.0000	0.6763	12.3898		0.00		
03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	1.0200	0.6740	12.3477		0.00		
04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	1.0197	0.6660	12.2011		0.00		
05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	1.1300	0.6746	12.3587		0.00		
06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	1.2500	0.6737	12.3422		0.00		
07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	1.0300	0.6664	12.2084		0.00		
08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	1.0200	0.6680	12.2378		0.00		
09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	1.2700	0.6664	12.2084		0.00		
10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	1.2700	0.6651	12.1846		0.00		
11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	1.2800	0.6650	12.1828		0.00		
12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	1.1200	0.6650	12.1828		0.00		
13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	1.0100	0.6730	12.3294		0.00		
14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	1.0700	0.6656	12.1938		0.00		
15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	1.1000	0.6667	12.2139		0.00		
16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	1.0000	0.6820	12.4942		0.00		
17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	1.1800	0.6655	12.1920		0.00		
18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	1.0800	0.6660	12.2011		0.00		
19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	1.3100	0.6673	12.2249		0.00		
20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	1.0600	0.6591	12.0747		0.00		

YS
0 8 0 75
#4-14 SO
#33-42
0091

Eberline Services
Oak Ridge Laboratory

Spike and Tracer Worksheet

Printed: 8/15/2017 9:39 AM

Internal Work Order	Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
17-07090	1	UUISO	8/15/2017 9:29	JPACHELLA	JMP	

LCS & Matrix Spikes					LCS	MS	LCSD	MSD	LCS		MS		LCSD		MSD	
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	Volume Used (g)	Volume Used (g)	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	8/15/2017	0.550	0.5608				8.08	0.291	0.00	0.000	0.00	0.000	0.00	0.000
U-238	U-8a	31.000	8/15/2017	0.550	0.5608				7.83	0.282	0.00	0.000	0.00	0.000	0.00	0.000
Tc-99 MS	Tc-2a	22043.636	7/5/2014	0.1												

Tracers

fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition
01	U-232	U-10a	18.320	8/15/2017	0.6759	0.6600
02	U-232	U-10a	18.320	8/15/2017	0.6763	0.6600
03	U-232	U-10a	18.320	8/15/2017	0.6740	0.6600
04	U-232	U-10a	18.320	8/15/2017	0.6660	0.6600
05	U-232	U-10a	18.320	8/15/2017	0.6746	0.6600
06	U-232	U-10a	18.320	8/15/2017	0.6737	0.6600
07	U-232	U-10a	18.320	8/15/2017	0.6664	0.6600
08	U-232	U-10a	18.320	8/15/2017	0.6680	0.6600
09	U-232	U-10a	18.320	8/15/2017	0.6664	0.6600
10	U-232	U-10a	18.320	8/15/2017	0.6651	0.6600
11	U-232	U-10a	18.320	8/15/2017	0.6650	0.6600
12	U-232	U-10a	18.320	8/15/2017	0.6650	0.6600
13	U-232	U-10a	18.320	8/15/2017	0.6730	0.6600
14	U-232	U-10a	18.320	8/15/2017	0.6656	0.6600
15	U-232	U-10a	18.320	8/15/2017	0.6667	0.6600
16	U-232	U-10a	18.320	8/15/2017	0.6820	0.6600
17	U-232	U-10a	18.320	8/15/2017	0.6655	0.6600
18	U-232	U-10a	18.320	8/15/2017	0.6660	0.6600
19	U-232	U-10a	18.320	8/15/2017	0.6673	0.6600
20	U-232	U-10a	18.320	8/15/2017	0.6591	0.6600

Balance Printer Tapes

Tracer	LCS

Matrix Spike

0092

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
17-07090	1	UUISO	grams	8/10/2017	JPACHELLA

Lab Fraction	Weston Solutions, Inc. Client ID	Sample Type	Muffle Data	Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq
01	LCS	LCS				1.00E+00	1.0000E+00	1.0000E+00				
02	BLANK	MBL				1.00E+00	1.0000E+00	1.0000E+00				
03	HTC-A06-S001-1218-01	DUP				1.00E+00	1.0200E+00	1.0200E+00				
04	HTC-A06-S001-1218-01	DO				1.00E+00	1.0197E+00	1.0197E+00				
05	HTC-A06-S001-1824-01	TRG				1.00E+00	1.1300E+00	1.1300E+00				
06	HTC-A06-S001-2430-01	TRG				1.00E+00	1.2500E+00	1.2500E+00				
07	HTC-A06-S001-3036-01	TRG				1.00E+00	1.0300E+00	1.0300E+00				
08	HTC-A06-S001-3642-01	TRG				1.00E+00	1.0200E+00	1.0200E+00				
09	HTC-A06-S001-4248-01	TRG				1.00E+00	1.2700E+00	1.2700E+00				
10	HTC-A07-S001-0006-01	TRG				1.00E+00	1.2700E+00	1.2700E+00				
11	HTC-A07-S001-0612-01	TRG				1.00E+00	1.2800E+00	1.2800E+00				
12	HTC-A07-S001-0612-02	TRG				1.00E+00	1.1200E+00	1.1200E+00				
13	HTC-A07-S001-1218-01	TRG				1.00E+00	1.0100E+00	1.0100E+00				
14	HTC-A07-S001-1824-01	TRG				1.00E+00	1.0700E+00	1.0700E+00				
15	HTC-A07-S001-2430-01	TRG				1.00E+00	1.1000E+00	1.1000E+00				
16	HTC-A07-S001-3036-01	TRG				1.00E+00	1.0000E+00	1.0000E+00				
17	HTC-A07-S001-3642-01	TRG				1.00E+00	1.1800E+00	1.1800E+00				
18	HTC-A07-S001-4248-01	TRG				1.00E+00	1.0800E+00	1.0800E+00				
19	HTC-A08-BKGD01-0006-02	TRG				1.00E+00	1.3100E+00	1.3100E+00				
20	HTC-A08-BKGD01-0612-01	TRG				1.00E+00	1.0600E+00	1.0600E+00				

Comments	

0093

Technician: JPachella Date: 8/15/17

Eberline Services - Oak Ridge
Prep Logbook
Version 2.0 8/1999

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
17-07090	8/10/2017	8/1/2017	8/2/2017	8/3/2017	KSALLINGS

Bico Pulverizer: 000302 [✓] Jaw Crusher 68275 [ ]

Eberline	Weston Solutions, Inc.	Tare (g)	Gross (g)		Net (g)		Percent		Gamma		Special
Fraction	Client ID	Pan Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	Info
04	HTC-A06-S001-1218-01	14.4900	918.6800	691.4900	904.1900	677.0000	25.13%	74.87%	0.0000	0.0000	
05	HTC-A06-S001-1824-01	14.5100	851.0800	690.4600	836.5700	675.9500	19.20%	80.80%	0.0000	0.0000	
06	HTC-A06-S001-2430-01	14.5000	927.6800	764.7400	913.1800	750.2400	17.84%	82.16%	0.0000	0.0000	
07	HTC-A06-S001-3036-01	14.5300	922.2000	744.1300	907.6700	729.6000	19.62%	80.38%	0.0000	0.0000	
08	HTC-A06-S001-3642-01	14.5100	877.5400	709.1700	863.0300	694.6600	19.51%	80.49%	0.0000	0.0000	
09	HTC-A06-S001-4248-01	14.5400	850.2200	681.6600	835.6800	667.1200	20.17%	79.83%	0.0000	0.0000	
10	HTC-A07-S001-0006-01	14.6000	953.4000	867.7400	938.8000	853.1400	9.12%	90.88%	0.0000	0.0000	
11	HTC-A07-S001-0612-01	14.5700	902.1400	844.2800	887.5700	829.7100	6.52%	93.48%	0.0000	0.0000	
12	HTC-A07-S001-0612-02	14.5000	856.9800	805.7600	842.4800	791.2600	6.08%	93.92%	0.0000	0.0000	
13	HTC-A07-S001-1218-01	14.4700	912.9800	822.1400	898.5100	807.6700	10.11%	89.89%	0.0000	0.0000	
14	HTC-A07-S001-1824-01	14.4500	913.2600	751.5800	898.8100	737.1300	17.99%	82.01%	0.0000	0.0000	
15	HTC-A07-S001-2430-01	14.4200	954.4400	785.8100	940.0200	771.3900	17.94%	82.06%	0.0000	0.0000	
16	HTC-A07-S001-3036-01	14.4100	975.7400	794.6000	961.3300	780.1900	18.84%	81.16%	0.0000	0.0000	
17	HTC-A07-S001-3642-01	14.3500	1041.3800	838.3400	1027.0300	823.9900	19.77%	80.23%	0.0000	0.0000	
18	HTC-A07-S001-4248-01	14.4100	1057.6200	847.3000	1043.2100	832.8900	20.16%	79.84%	0.0000	0.0000	
19	HTC-A08-BKGD01-0006-02	14.4300	848.5800	678.8300	834.1500	664.4000	20.35%	79.65%	0.0000	0.0000	
20	HTC-A08-BKGD01-0612-01	14.5100	900.9800	717.0700	886.4700	702.5600	20.75%	79.25%	0.0000	0.0000	

OVENS Fisher Isotemp SN 00579 [✓] VWR SN 000588 [ ]

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

0094

Technician: Kerry Sais

Date: **Analysis: Rough Prep Logbook**

KG
8/30/17

Apex-Alpha™

Sample Description: SPIKE
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001930
Batch Identification: 1707090A-UU
Sample Identification: 01
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_045
Chamber Serial Number: 04026482A
Detector Serial Number: 91131
Env. Background: System Bkgd 194884
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 8/30/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 8:35:20 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.676 mL
Effective Efficiency: 0.2094 +/- 0.0111
Counting Efficiency: 0.1688 +/- 0.0029 on 11/18/2016 10:08:40 AM
Chem. Recovery Factor: 1.2407 +/- 0.0692

Control Certificate Name: NatU_U-8A
Chem. Recov. of Control: U-238 0.821299 +/- 0.060634
Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

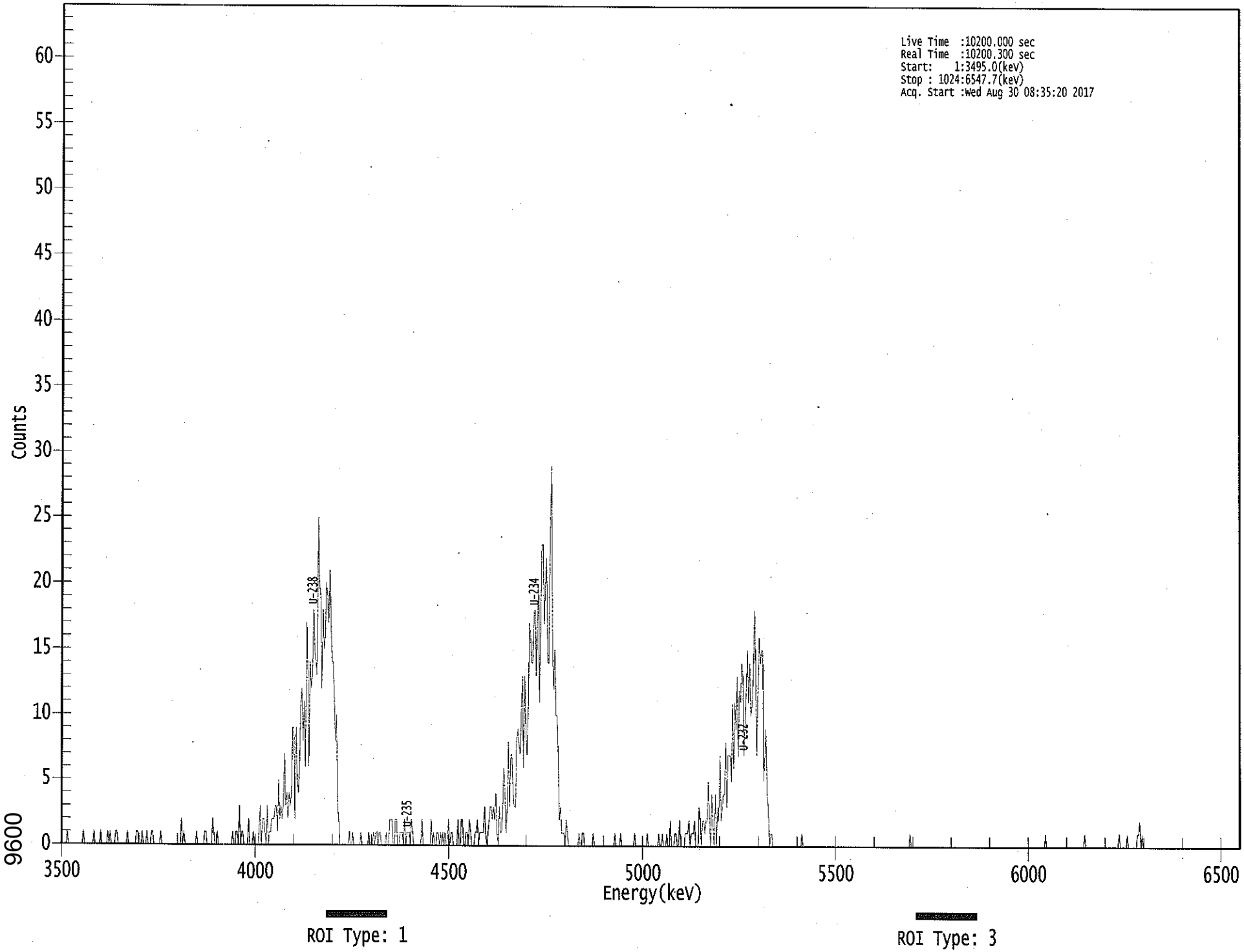
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.259	437.32	9.38	0.68	0.00E+000	29.8
U-234		4.719	618.32	7.89	0.68	0.00E+000	9.3
U-235		4.390	38.83	31.53	0.17	0.00E+000	9.0
U-238		4.145	579.15	8.15	0.85	0.00E+000	25.2

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.987	5302.50*	5.54E+000 +/- 5.77E-001	7.15E-002 +/- 7.44E-003
U-234	0.988	4761.50*	7.84E+000 +/- 1.02E+000	7.15E-002 +/- 7.44E-003
U-235	1.000	4385.50*	6.07E-001 +/- 2.02E-001	6.53E-002 +/- 6.79E-003
U-238	0.989	4184.40*	7.31E+000 +/- 9.67E-001	7.56E-002 +/- 7.87E-003

0000193087.CNF



9600

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

369:	0	1	2	3	3	2	3	2

Sample Title: 01

Channel								
377:	4	1	0	3	1	1	3	6
385:	4	1	3	8	3	7	7	4
393:	3	3	8	9	8	7	10	13
401:	6	13	9	7	10	17	16	14
409:	14	18	18	13	17	20	11	18
417:	23	23	17	20	22	14	14	23
425:	29	15	12	15	10	10	7	2
433:	3	1	1	1	0	2	1	0
441:	0	0	0	0	0	0	0	0
449:	1	0	0	1	1	0	0	0
457:	0	0	0	0	1	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	1
481:	0	0	0	0	1	0	0	0
489:	0	0	0	0	0	0	0	0
497:	1	0	0	0	0	0	0	0
505:	0	0	0	1	0	0	0	0
513:	0	0	0	0	0	1	0	0
521:	1	0	0	0	1	0	0	2
529:	0	0	0	1	1	0	0	2
537:	0	0	0	0	1	1	1	2
545:	0	1	1	1	2	0	0	0
553:	3	2	0	2	2	1	2	2
561:	5	2	0	4	2	0	4	0
569:	3	2	7	2	3	4	4	8
577:	3	7	7	7	5	11	6	11
585:	9	13	7	12	11	14	13	7
593:	10	12	15	11	14	10	11	13
601:	18	13	7	12	16	14	15	15
609:	5	7	9	4	3	0	1	1
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	1	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	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	1
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	1	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	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	1	0	0
921:	0	0	0	0	1	0	0	0
929:	0	0	0	0	0	1	1	2
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

KD 8/30/17

Apex-Alpha™

Sample Description: BLANK
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001930
Batch Identification: 1707090A-UU
Sample Identification: 02
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_046
Chamber Serial Number: 04026482B
Detector Serial Number: 58762
Env. Background: System Bkgd 194885
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 8/30/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 8:35:22 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.676 mL
Effective Efficiency: 0.2315 +/- 0.0118
Counting Efficiency: 0.1713 +/- 0.0029 on 11/18/2016 10:08:38 AM
Chem. Recovery Factor: 1.3514 +/- 0.0727

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

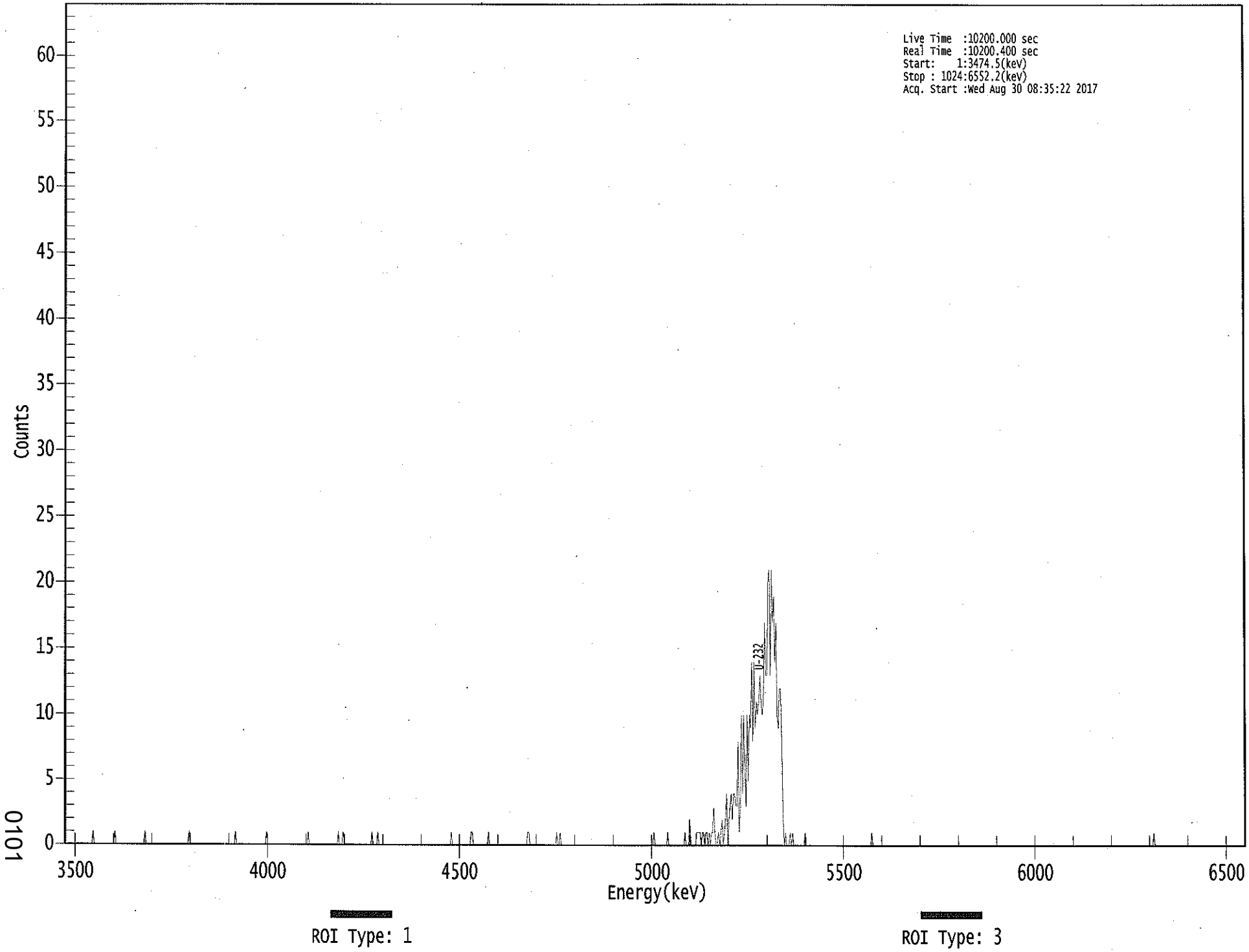
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.284	483.81	8.92	1.19	0.00E+000	37.4
U-234		4.719	2.64	152.72	1.36	0.00E+000	6.0
U-235		4.479	0.15	1397.8	0.85	0.00E+000	3.0
U-238		4.121	2.98	134.36	1.02	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	5.55E+000 +/- 5.55E-001	7.55E-002 +/- 7.55E-003
U-234	0.987	4761.50*	3.03E-002 +/- 4.63E-002	7.86E-002 +/- 7.86E-003
U-235	0.939	4385.50*	2.12E-003 +/- 2.97E-002	8.47E-002 +/- 8.47E-003
U-238	0.972	4184.40*	3.40E-002 +/- 4.58E-002	7.19E-002 +/- 7.19E-003

0000193084.CNF



0101

****
***** 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:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	1	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	1	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	1	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	1	0	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	1	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	1	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	1	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	1	0	0	0
241:	1	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	1	0	0	0	0	1	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	1
353:	1	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	1	0

369:	0	0	0	0	0	0	0	0

Sample Title: 02

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	1	1	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	1	0	0	1	0	0	0
433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	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	1	0	0
513:	0	0	0	0	0	0	0	0
521:	0	1	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	1	0	0	0	2	0	0	0
545:	0	0	1	1	1	1	0	1
553:	1	0	1	1	0	1	0	1
561:	1	3	1	0	0	1	0	1
569:	2	0	1	2	4	0	2	3
577:	4	2	4	4	3	3	8	1
585:	3	10	4	10	6	3	10	5
593:	10	9	14	8	14	9	11	10
601:	11	13	11	10	11	17	13	13
609:	20	21	13	21	17	19	14	17
617:	10	9	12	12	8	2	0	1
625:	0	0	0	1	0	1	0	0
633:	0	0	0	0	0	0	0	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	1	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: 02

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

Apex-Alpha™

KB
8/30/17

Sample Description: HTC-A06-S001-1218-01-DUP
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001930
Batch Identification: 1707090A-UU
Sample Identification: 03
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_047
Chamber Serial Number: 02030596A
Detector Serial Number: 91086
Env. Background: System Bkgd 194886
Reagent Blank: <not performed>

Sample Size: 1.020E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 8:35:17 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.674 mL
Effective Efficiency: 0.2313 +/- 0.0118
Counting Efficiency: 0.1623 +/- 0.0028 on 11/18/2016 10:08:37 AM
Chem. Recovery Factor: 1.4254 +/- 0.0768

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

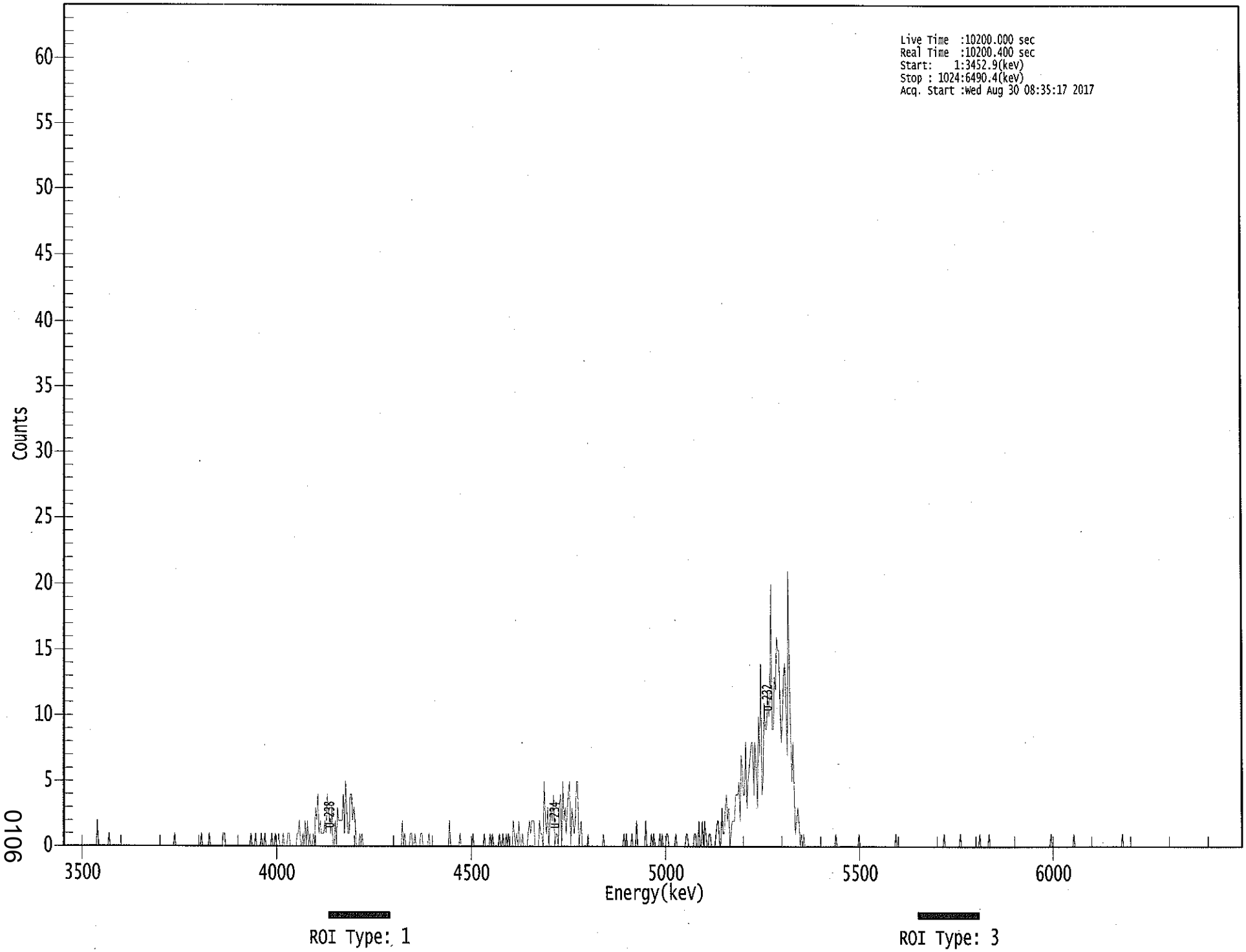
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.266	481.66	8.93	0.34	0.00E+000	7.1
U-234		4.719	97.66	19.87	0.34	0.00E+000	4.0
U-235		4.376	11.32	60.27	0.68	0.00E+000	3.0
U-238		4.139	90.15	20.76	0.85	0.00E+000	5.6

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	5.44E+000 +/- 5.44E-001	5.40E-002 +/- 5.40E-003
U-234	0.987	4761.50*	1.10E+000 +/- 2.45E-001	5.38E-002 +/- 5.39E-003
U-235	0.999	4385.50*	1.57E-001 +/- 9.60E-002	7.83E-002 +/- 7.84E-003
U-238	0.986	4184.40*	1.01E+000 +/- 2.33E-001	6.71E-002 +/- 6.71E-003

0000193085.CNF



0106

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

369:	0	1	0	1	0	0	0	0

Sample Title: 03

Channel								
377:	0	1	0	0	1	0	0	1
385:	0	1	0	0	0	2	1	0
393:	1	0	2	0	0	1	0	0
401:	0	0	1	2	1	2	2	2
409:	0	0	0	0	2	1	1	0
417:	5	2	1	3	0	2	3	2
425:	4	0	1	1	0	3	4	0
433:	5	2	3	1	3	4	5	0
441:	3	2	1	2	5	5	0	1
449:	2	0	0	0	0	0	1	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	1	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	1	0	1
489:	0	0	0	0	1	0	0	0
497:	2	0	0	0	0	0	0	0
505:	2	0	0	0	0	1	0	1
513:	0	0	0	0	1	0	1	0
521:	0	0	1	1	0	0	0	0
529:	0	0	1	0	0	0	0	0
537:	0	0	0	1	1	0	0	0
545:	0	0	1	1	0	0	2	0
553:	0	2	0	2	1	0	0	1
561:	1	0	0	0	0	1	2	2
569:	0	0	3	1	1	3	4	2
577:	3	0	1	2	2	2	4	4
585:	4	5	2	7	6	4	4	8
593:	3	5	6	7	8	8	4	8
601:	6	3	10	7	14	4	5	11
609:	9	9	12	10	11	20	9	9
617:	13	12	16	15	15	11	8	10
625:	13	14	11	7	21	13	9	5
633:	8	4	1	2	3	2	0	1
641:	0	1	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	1	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	1	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	1	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	1	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	1	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	1	0	0	0	0	0

801:	0	0	1	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:	1	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	1	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	1	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
9/30/17

Apex-Alpha™

Sample Description: HTC-A06-S001-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001930
Batch Identification: 1707090A-UU
Sample Identification: 04
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_048
Chamber Serial Number: 02030596B
Detector Serial Number: 83111
Env. Background: System Bkgd 194887
Reagent Blank: <not performed>

Sample Size: 1.020E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 8:35:19 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.666 mL
Effective Efficiency: 0.2219 +/- 0.0116
Counting Efficiency: 0.1633 +/- 0.0028 on 11/18/2016 10:08:35 AM
Chem. Recovery Factor: 1.3587 +/- 0.0746

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

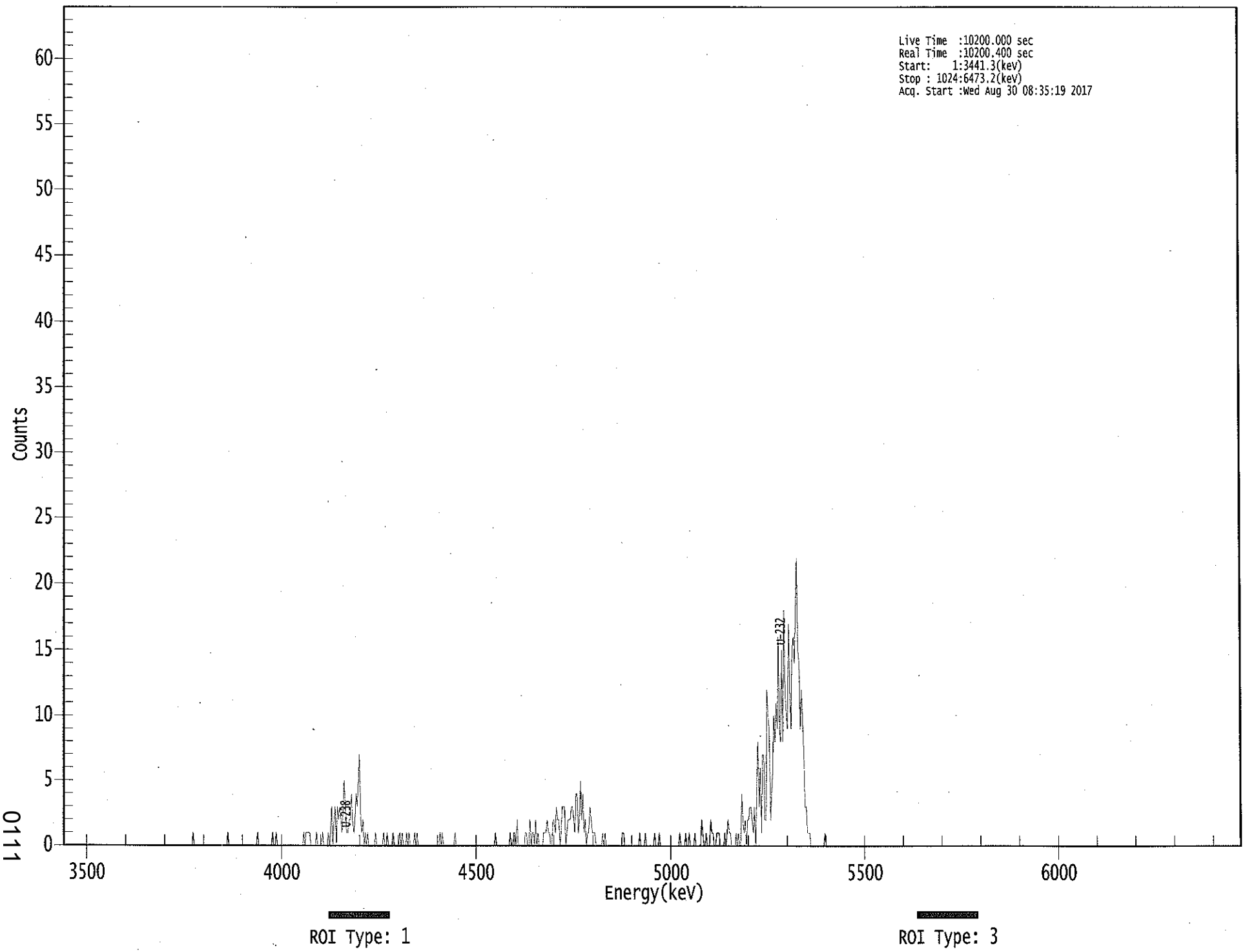
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.289	456.66	9.18	0.34	0.00E+000	21.5
U-234		4.730	95.00	20.21	0.00	0.00E+000	4.9
U-235		4.358	8.66	68.12	0.34	0.00E+000	3.0
U-238		4.166	81.49	21.79	0.51	0.00E+000	7.3

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	5.37E+000 +/- 5.49E-001	5.63E-002 +/- 5.75E-003
U-234	0.993	4761.50*	1.11E+000 +/- 2.52E-001	7.03E-002 +/- 7.19E-003
U-235	0.995	4385.50*	1.25E-001 +/- 8.63E-002	6.92E-002 +/- 7.08E-003
U-238	0.998	4184.40*	9.52E-001 +/- 2.29E-001	6.13E-002 +/- 6.27E-003

0000193086.CNF



0111

****
***** 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	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	1	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	1	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	0	0
177:	0	0	0	0	0	1	0	0
185:	1	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:	1	0	1	1	1	1	0	0
217:	0	0	0	1	0	0	0	0
225:	1	0	0	0	0	1	0	1
233:	3	0	2	3	0	3	2	3
241:	2	1	3	5	3	1	1	2
249:	2	4	2	1	2	4	3	5
257:	7	2	1	2	0	1	0	1
265:	0	0	0	0	0	0	1	0
273:	0	0	0	0	0	1	0	0
281:	1	0	0	0	0	1	0	0
289:	0	0	0	1	0	1	0	0
297:	0	1	0	1	0	0	0	0
305:	1	0	1	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	1	0
329:	1	0	0	0	0	0	0	0
337:	0	0	0	1	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	0	0	0	0	0	0	1	0

Sample Title: 04

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	1	0	0	1	1
393:	0	2	0	0	0	0	0	0
401:	1	1	0	0	2	0	1	1
409:	0	2	0	1	0	0	0	0
417:	1	1	1	2	1	1	0	0
425:	2	2	1	3	2	2	0	1
433:	3	3	3	0	1	2	2	2
441:	3	3	2	1	4	4	1	2
449:	5	2	4	1	2	0	1	1
457:	3	2	1	1	1	0	0	0
465:	0	0	0	1	0	1	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	1	1	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	1	0	0	0	0
505:	1	0	0	0	0	0	0	0
513:	1	0	0	0	1	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	1	0
537:	0	0	0	1	0	0	1	0
545:	0	0	0	1	0	0	0	0
553:	0	2	1	0	0	1	0	0
561:	0	2	1	1	0	0	1	1
569:	1	0	0	0	0	1	0	1
577:	2	1	1	0	0	0	0	1
585:	0	1	0	0	4	2	1	2
593:	0	2	2	3	3	2	1	3
601:	0	5	8	3	6	1	7	7
609:	2	2	12	10	9	2	4	6
617:	10	8	11	9	16	9	8	15
625:	8	18	12	10	9	17	12	9
633:	15	16	14	18	22	15	14	9
641:	12	10	7	3	3	1	1	1
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	1	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	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: 04

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

KB 8/30/17

Apex-Alpha™

Sample Description: HTC-A06-S001-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001930
Batch Identification: 1707090A-UU
Sample Identification: 05
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_049
Chamber Serial Number: 10006121A
Detector Serial Number: 49
Env. Background: System Bkgd 194888
Reagent Blank: <not performed>

Sample Size: 1.130E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 8:35:24 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.675 mL
Effective Efficiency: 0.1858 +/- 0.0104
Counting Efficiency: 0.1488 +/- 0.0026 on 11/18/2016 3:34:20 PM
Chem. Recovery Factor: 1.2485 +/- 0.0730

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

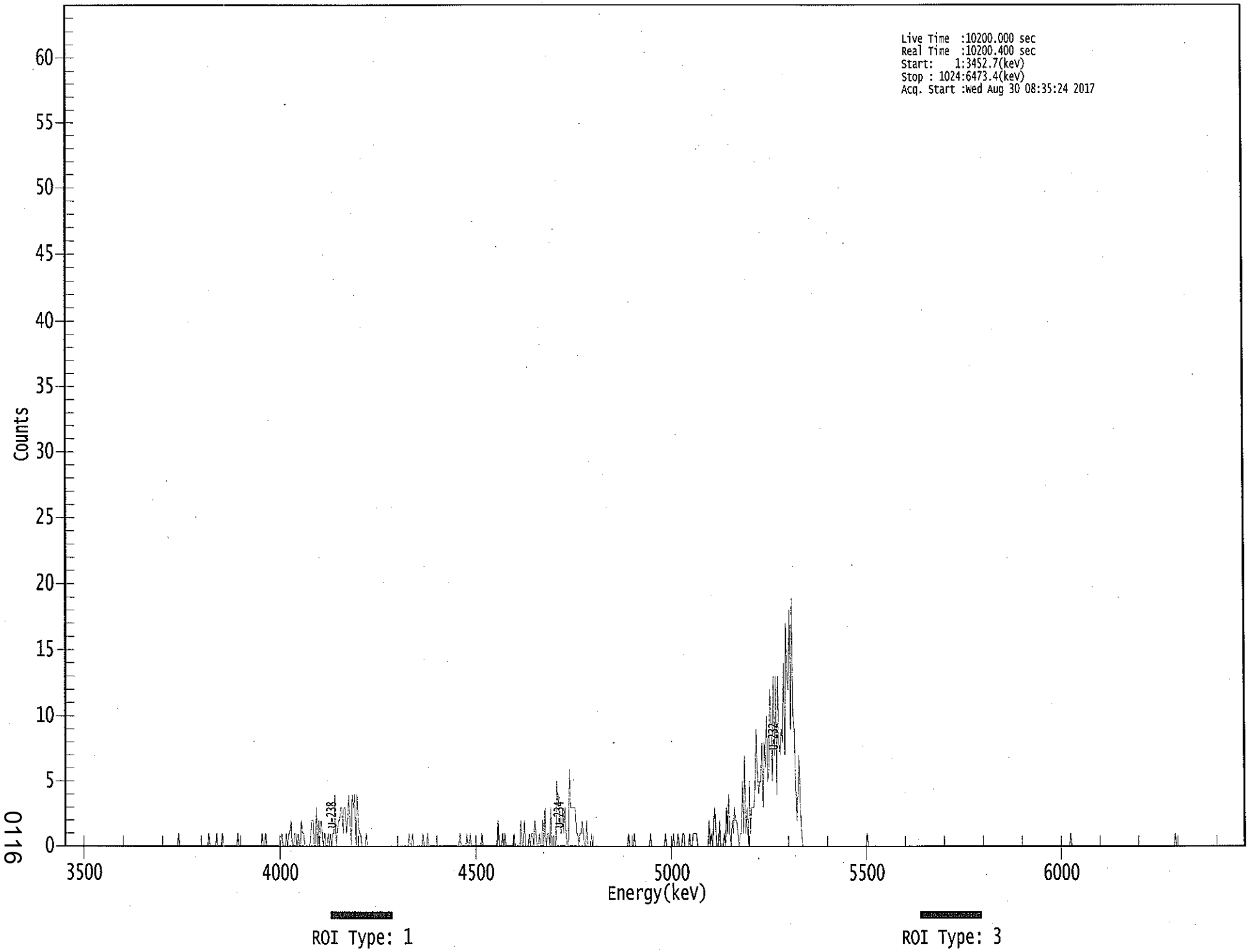
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.265	387.32	9.97	0.68	0.00E+000	7.2
U-234		4.715	73.81	23.03	1.19	0.00E+000	4.4
U-235		4.405	6.83	76.08	0.17	0.00E+000	3.0
U-238		4.136	82.49	21.66	0.51	0.00E+000	3.4

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	4.91E+000 +/- 5.37E-001	7.15E-002 +/- 7.83E-003
U-234	0.985	4761.50*	9.33E-001 +/- 2.38E-001	8.33E-002 +/- 9.11E-003
U-235	0.997	4385.50*	1.07E-001 +/- 8.19E-002	6.51E-002 +/- 7.12E-003
U-238	0.984	4184.40*	1.04E+000 +/- 2.52E-001	6.61E-002 +/- 7.23E-003

0000193082.CNF



0116

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

369:	0	0	0	0	0	0	2	0

Sample Title: 05

Channel								
377:	0	0	1	0	1	0	0	0
385:	0	0	0	0	1	0	0	0
393:	0	0	2	0	0	2	0	0
401:	0	1	0	1	1	0	2	1
409:	0	0	1	0	0	2	0	3
417:	0	1	1	0	3	0	0	0
425:	0	5	3	4	1	1	3	1
433:	3	1	0	0	6	3	3	3
441:	3	3	1	1	0	1	1	2
449:	1	0	0	2	0	0	0	1
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	1
489:	0	0	0	0	1	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	1	0	0	0	0	0
513:	0	0	0	0	0	0	0	1
521:	0	0	0	0	0	0	1	0
529:	0	0	1	0	0	0	1	1
537:	0	0	0	0	1	0	0	1
545:	1	1	1	0	0	0	0	0
553:	0	0	0	0	0	2	0	1
561:	0	2	3	1	0	0	2	0
569:	0	0	1	0	3	1	4	1
577:	0	2	1	3	2	2	1	0
585:	1	1	5	1	7	1	3	0
593:	5	1	3	3	3	4	9	6
601:	4	5	5	8	3	8	6	10
609:	5	6	12	10	5	13	7	13
617:	4	13	8	7	9	8	14	7
625:	17	13	12	18	9	19	10	9
633:	5	2	4	7	3	1	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	1	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	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: 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	1
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	1	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

WB 9/30/17

Sample Description: HTC-A06-S001-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001930
Batch Identification: 1707090A-UU
Sample Identification: 06
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_050
Chamber Serial Number: 10006121B
Detector Serial Number: 50
Env. Background: System Bkgd 194889
Reagent Blank: <not performed>

Sample Size: 1.250E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 8:35:26 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.674 mL
Effective Efficiency: 0.1782 +/- 0.0101
Counting Efficiency: 0.1433 +/- 0.0025 on 11/18/2016 3:34:18 PM
Chem. Recovery Factor: 1.2442 +/- 0.0740

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

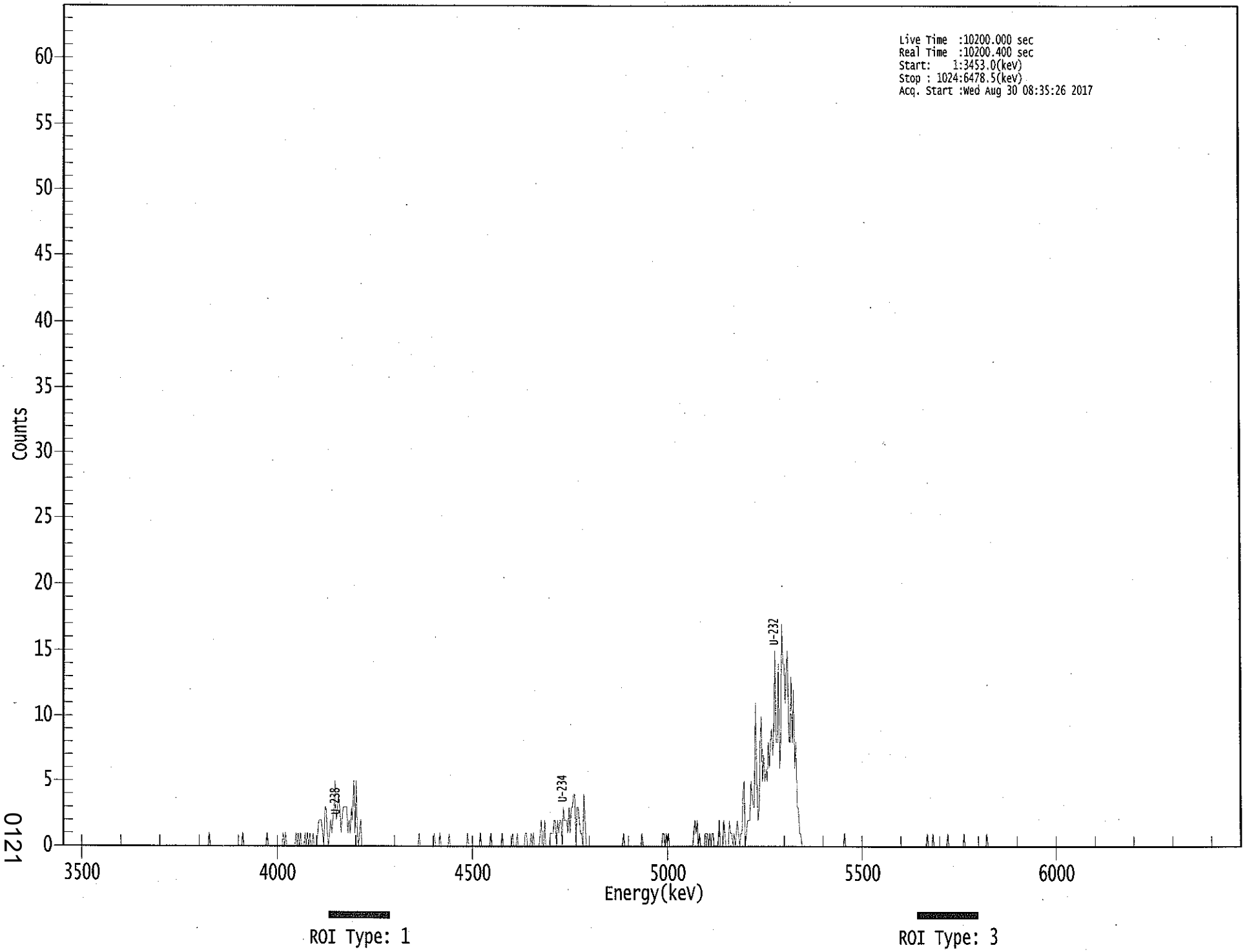
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.276	370.98	10.19	1.02	0.00E+000	20.3
U-234		4.735	67.13	24.31	1.87	0.00E+000	11.8
U-235		4.423	4.32	102.62	0.68	0.00E+000	3.0
U-238		4.151	87.64	21.13	1.36	0.00E+000	6.9

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	4.43E+000 +/- 4.94E-001	7.53E-002 +/- 8.39E-003
U-234	0.995	4761.50*	8.00E-001 +/- 2.14E-001	9.02E-002 +/- 1.01E-002
U-235	0.990	4385.50*	6.35E-002 +/- 6.56E-002	8.29E-002 +/- 9.24E-003
U-238	0.992	4184.40*	1.04E+000 +/- 2.48E-001	8.14E-002 +/- 9.07E-003

0000193083.CNF



0121

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

369:	0	0	1	0	0	0	0	0

Sample Title: 06

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

801:	0	1	0	0	0	0	0	0

Sample Title: 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

Apex-Alpha™

YJS 9/30/17

Sample Description: HTC-A06-S001-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 07
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_004
Chamber Serial Number:
Detector Serial Number: 4
Env. Background: System Bkgd 194869
Reagent Blank: <not performed>

Sample Size: 1.030E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:05 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.666 mL
Effective Efficiency: 0.2528 +/- 0.0125
Counting Efficiency: 0.1883 +/- 0.0032 on 11/19/2016 1:08:17 PM
Chem. Recovery Factor: 1.3422 +/- 0.0703

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

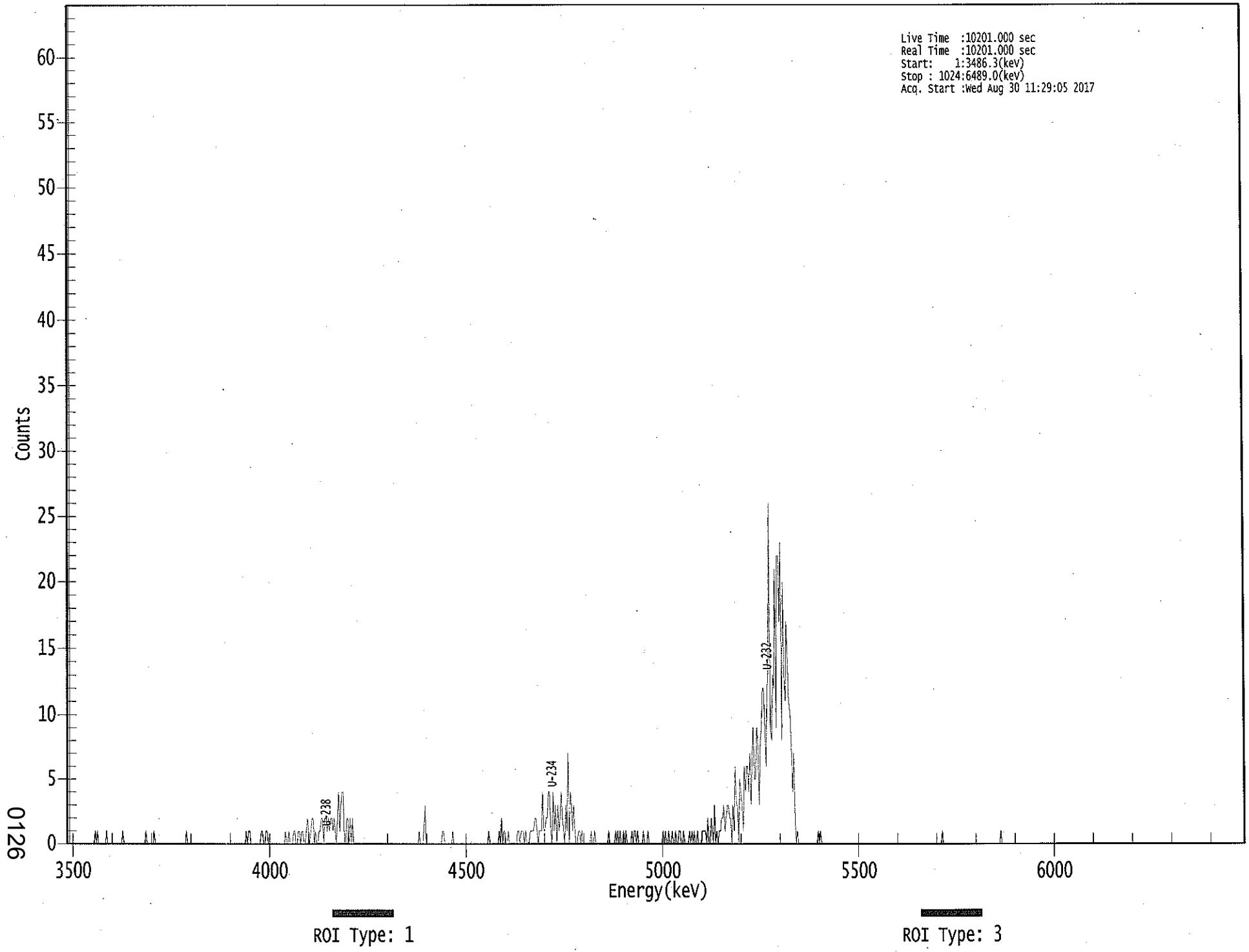
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.272	520.49	8.60	0.51	0.00E+000	5.2
U-234		4.723	87.32	21.07	0.68	0.00E+000	3.2
U-235		4.414	7.32	76.28	0.68	0.00E+000	3.7
U-238		4.147	64.81	24.61	1.19	0.00E+000	4.9

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	5.32E+000 +/- 5.17E-001	5.37E-002 +/- 5.21E-003
U-234	0.990	4761.50*	8.90E-001 +/- 2.07E-001	5.75E-002 +/- 5.58E-003
U-235	0.994	4385.50*	9.21E-002 +/- 7.08E-002	7.10E-002 +/- 6.89E-003
U-238	0.990	4184.40*	6.58E-001 +/- 1.74E-001	6.69E-002 +/- 6.49E-003

0000193101.CNF



0126

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

Sample Title: 07

Elapsed Live time: 10201
Elapsed Real Time: 10201

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

369:	0	0	0	0	0	0	1	0

Sample Title: 07

Channel								
377:	2	0	1	1	0	0	1	0
385:	0	0	0	0	0	0	1	1
393:	0	1	1	1	0	1	0	0
401:	0	1	1	1	1	2	2	1
409:	0	1	1	1	4	1	1	2
417:	2	4	4	1	0	4	1	3
425:	0	3	1	2	4	2	1	0
433:	3	1	7	0	4	3	1	3
441:	1	0	0	1	1	0	1	0
449:	0	0	0	0	0	0	1	0
457:	0	1	0	0	0	0	0	0
465:	0	0	0	0	0	1	0	0
473:	0	0	0	1	0	1	0	1
481:	0	0	1	0	1	0	0	0
489:	0	1	0	1	1	0	1	0
497:	0	0	0	1	0	0	0	1
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	1	0	1	0
521:	0	1	0	0	1	0	0	1
529:	0	0	1	1	0	0	1	0
537:	0	0	0	1	0	1	0	1
545:	0	0	1	0	0	0	1	1
553:	1	1	0	2	0	0	2	1
561:	0	3	0	1	0	1	1	2
569:	2	3	1	2	3	3	2	2
577:	0	3	1	6	3	3	0	5
585:	4	3	1	6	4	6	6	4
593:	7	3	7	9	5	5	9	8
601:	3	8	9	12	12	9	6	12
609:	13	26	9	8	13	12	21	9
617:	22	22	17	23	8	20	13	11
625:	17	14	11	10	8	4	7	2
633:	0	1	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	1	0	1	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	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	1
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 07

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

Apex-Alpha™

VB 9/30/14

Sample Description: HTC-A06-S001-3642-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001930
Batch Identification: 1707090A-UU
Sample Identification: 08
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_010
Chamber Serial Number:
Detector Serial Number: 10
Env. Background: System Bkgd 194870
Reagent Blank: <not performed>

Sample Size: 1.020E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:00 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.668 mL
Effective Efficiency: 0.2661 +/- 0.0129
Counting Efficiency: 0.1872 +/- 0.0032 on 11/19/2016 1:08:16 PM
Chem. Recovery Factor: 1.4213 +/- 0.0732

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

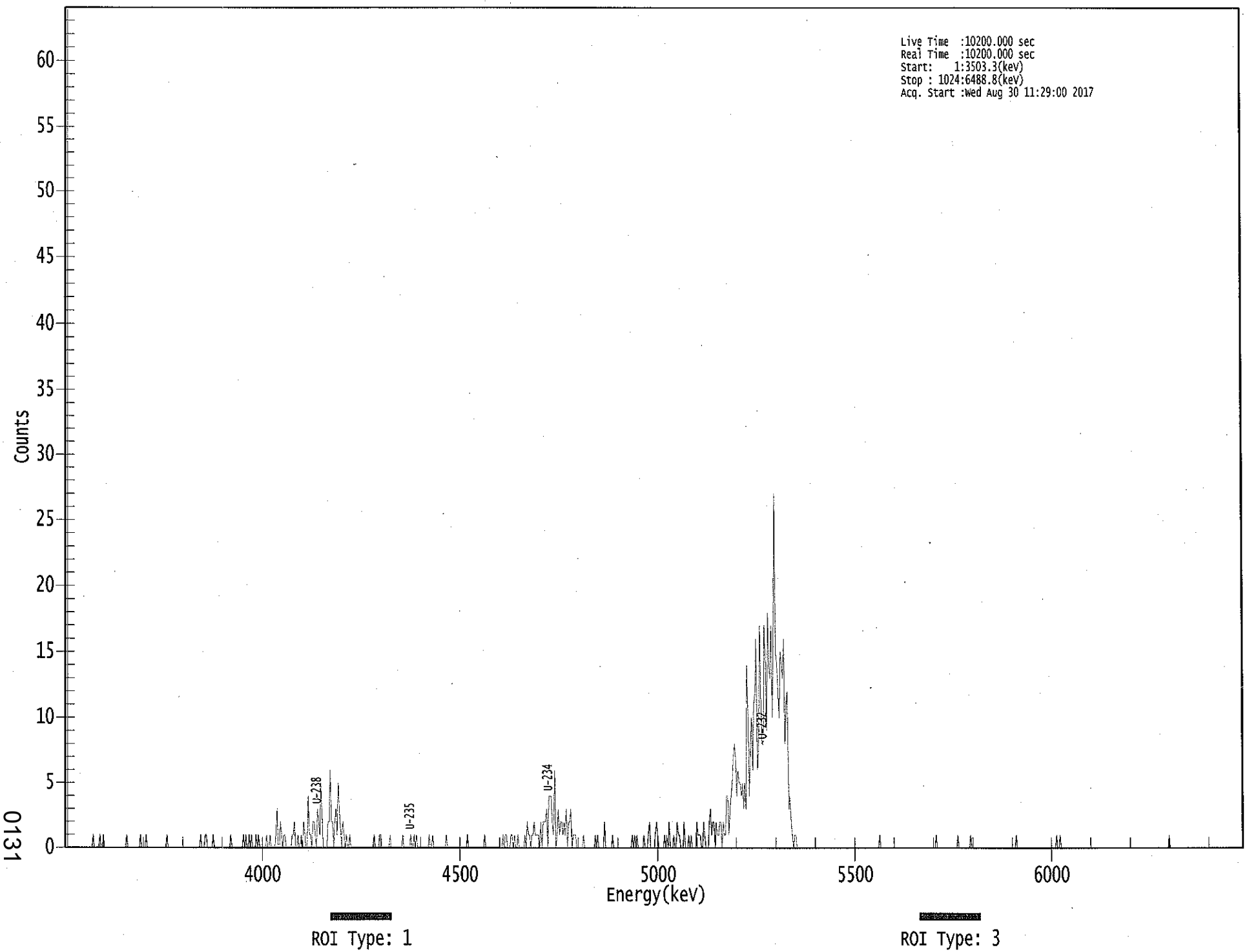
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.269	549.13	8.38	1.87	0.00E+000	10.7
U-234		4.725	75.77	23.07	3.23	0.00E+000	3.2
U-235		4.375	7.62	82.97	2.38	0.00E+000	0.0
U-238		4.139	76.96	22.69	2.04	0.00E+000	4.4

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.992	5302.50*	5.39E+000 +/- 5.13E-001	7.43E-002 +/- 7.07E-003
U-234	0.991	4761.50*	7.41E-001 +/- 1.85E-001	8.90E-002 +/- 8.48E-003
U-235	0.999	4385.50*	9.20E-002 +/- 7.68E-002	9.89E-002 +/- 9.41E-003
U-238	0.986	4184.40*	7.50E-001 +/- 1.84E-001	7.59E-002 +/- 7.22E-003

0000193097.CNF



0131

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

369:	0	0	0	0	0	0	0	0

Sample Title: 08

Channel								
377:	0	0	0	1	0	1	1	0
385:	0	0	1	1	0	1	0	0
393:	1	0	0	0	0	0	1	0
401:	2	1	1	0	1	1	2	1
409:	1	1	1	0	2	0	2	2
417:	2	3	0	4	4	4	2	1
425:	6	0	1	3	1	2	2	1
433:	2	1	3	0	2	2	3	0
441:	1	1	1	0	0	0	0	0
449:	0	1	0	0	0	0	0	0
457:	0	0	0	1	0	1	0	0
465:	0	0	0	2	0	0	0	0
473:	0	0	1	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	1	0	1	0	1
497:	0	0	0	0	0	1	0	0
505:	0	1	2	0	0	0	0	1
513:	2	1	0	0	0	0	0	1
521:	0	1	0	2	0	0	0	1
529:	0	0	2	1	1	0	0	0
537:	2	0	0	0	1	0	1	0
545:	0	0	0	2	1	1	1	0
553:	0	2	1	0	0	0	2	3
561:	1	2	2	0	2	1	1	2
569:	2	0	2	1	1	4	4	1
577:	3	4	5	7	8	7	4	6
585:	5	5	4	5	3	5	3	14
593:	10	4	8	10	6	11	12	16
601:	6	8	17	11	8	8	17	14
609:	9	18	14	13	17	10	16	27
617:	15	14	12	10	15	14	13	16
625:	8	11	12	3	4	2	1	0
633:	1	1	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	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	1	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	1	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	1	0
777:	0	0	0	0	0	0	0	0
785:	0	1	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

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

Apex-Alpha™

KB 8/30/17

Sample Description: HTC-A06-S001-4248-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001930
Batch Identification: 1707090A-UU
Sample Identification: 09
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_011
Chamber Serial Number:
Detector Serial Number: 11
Env. Background: System Bkgd 194871
Reagent Blank: <not performed>

Sample Size: 1.270E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:01 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.666 mL
Effective Efficiency: 0.2459 +/- 0.0123
Counting Efficiency: 0.1991 +/- 0.0034 on 11/19/2016 1:08:17 PM
Chem. Recovery Factor: 1.2348 +/- 0.0654

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

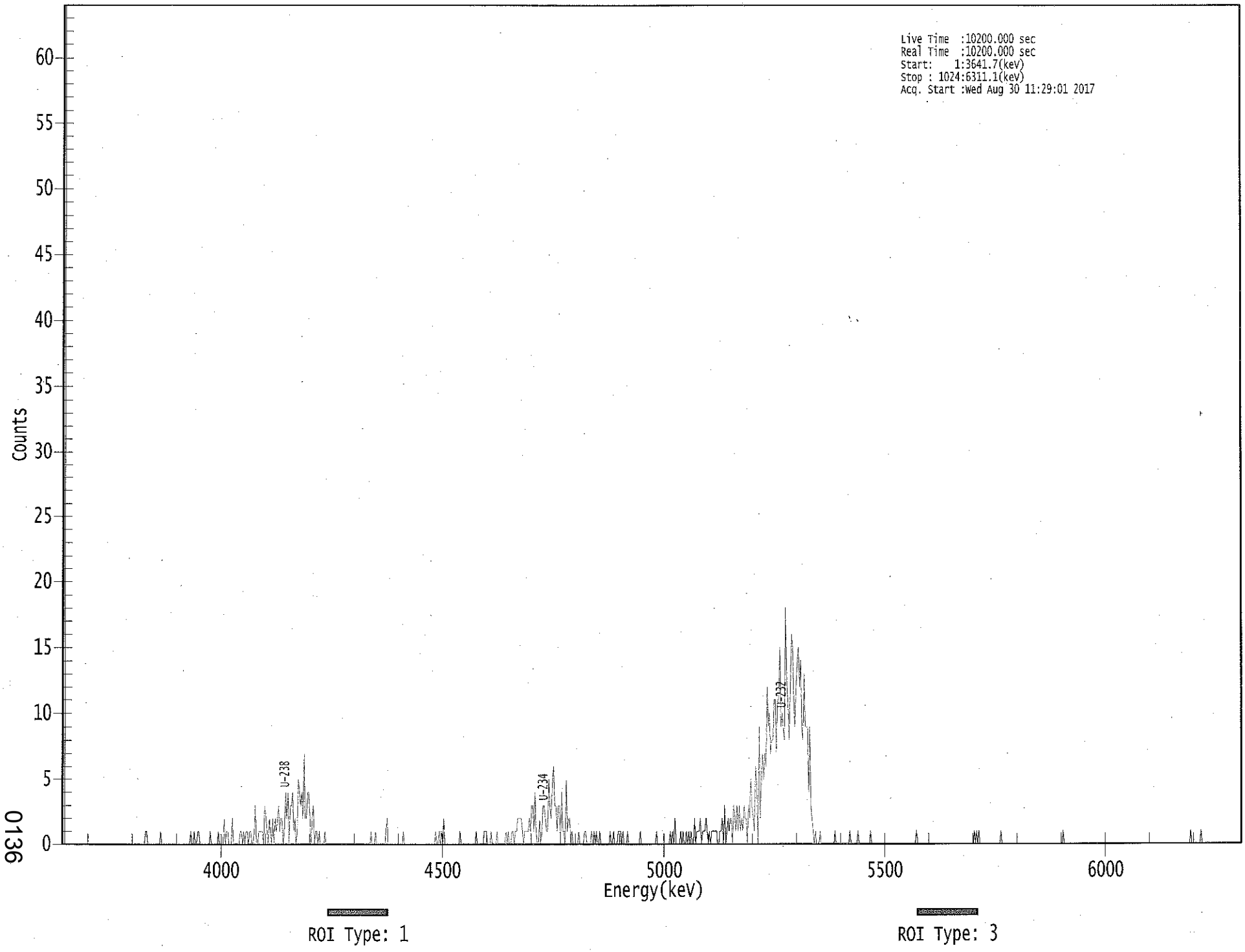
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.268	506.30	8.73	1.70	0.00E+000	9.3
U-234		4.730	102.62	19.61	2.38	0.00E+000	7.0
U-235		4.411	7.81	76.13	1.19	0.00E+000	3.9
U-238		4.144	116.98	18.21	1.02	0.00E+000	3.7

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	4.32E+000 +/- 4.24E-001	6.26E-002 +/- 6.15E-003
U-234	0.993	4761.50*	8.72E-001 +/- 1.91E-001	6.97E-002 +/- 6.85E-003
U-235	0.996	4385.50*	8.19E-002 +/- 6.29E-002	6.91E-002 +/- 6.79E-003
U-238	0.989	4184.40*	9.90E-001 +/- 2.05E-001	5.33E-002 +/- 5.24E-003

0000193098.CNF



0136

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

369:	0	0	0	1	0	0	0	0

Sample Title: 09

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

801:	0	0	0	0	0	0	0	0

Sample Title: 09

Channel								
809:	0	0	0	0	0	1	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	1	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	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	1	0	0	0	0	0
985:	0	0	0	1	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

NB 8/30/17

Apex-Alpha™

Sample Description: HTC-A07-S001-0006-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001930
Batch Identification: 1707090A-UU
Sample Identification: 10
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_012
Chamber Serial Number:
Detector Serial Number: 12
Env. Background: System Bkgd 194872
Reagent Blank: <not performed>

Sample Size: 1.270E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:02 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: 0.1967 +/- 0.0108
Counting Efficiency: 0.1881 +/- 0.0032 on 11/19/2016 1:08:18 PM
Chem. Recovery Factor: 1.0459 +/- 0.0602

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

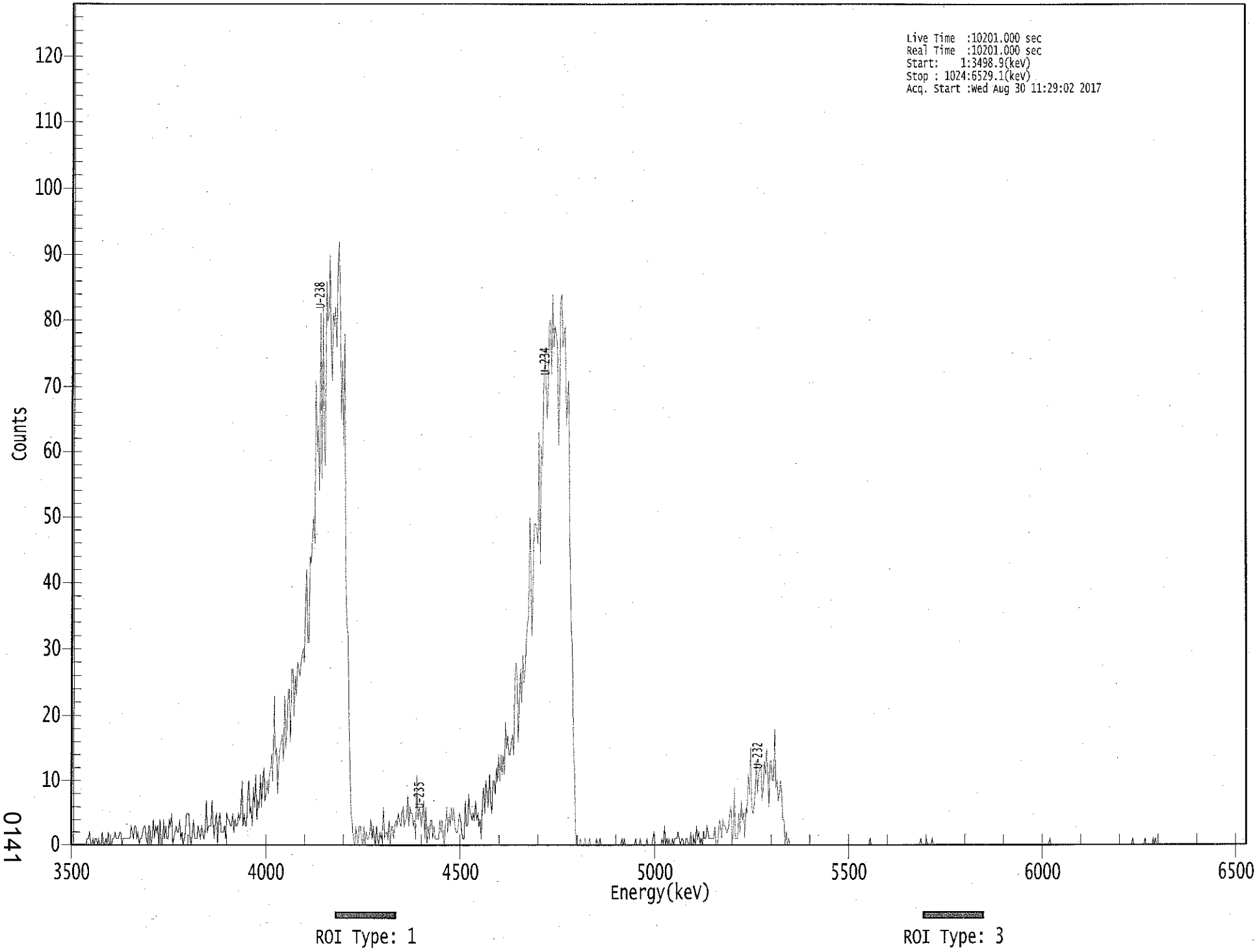
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.267	404.30	9.77	1.70	0.00E+000	16.5
U-234		4.719	2972.32	3.60	0.68	0.00E+000	95.5
U-235		4.397	231.98	12.90	1.02	0.00E+000	4.0
U-238		4.139	3118.64	3.51	1.36	0.00E+000	79.6

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	4.31E+000 +/- 4.64E-001	7.83E-002 +/- 8.43E-003
U-234	0.987	4761.50*	3.16E+001 +/- 3.58E+000	5.99E-002 +/- 6.45E-003
U-235	0.999	4385.50*	3.04E+000 +/- 5.11E-001	8.26E-002 +/- 8.89E-003
U-238	0.986	4184.40*	3.30E+001 +/- 3.74E+000	7.25E-002 +/- 7.81E-003

0000193099.CNF



0141

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

Sample Title: 10

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	1	1
17:	2	0	0	1	0	1	1	0
25:	1	0	0	2	0	0	1	0
33:	2	0	0	0	1	1	2	1
41:	1	1	2	2	0	1	1	1
49:	1	1	1	1	3	2	1	3
57:	3	1	2	0	1	1	2	3
65:	3	1	0	3	3	0	1	4
73:	1	3	2	3	0	4	0	0
81:	4	1	3	1	1	4	3	5
89:	0	1	2	3	2	2	4	1
97:	2	0	1	2	5	5	5	1
105:	0	2	4	1	1	1	3	2
113:	1	3	2	1	2	7	2	3
121:	3	3	7	3	1	4	5	0
129:	4	5	2	2	2	3	1	5
137:	4	4	3	3	5	2	4	3
145:	3	5	4	5	10	3	5	3
153:	3	8	10	5	6	3	9	6
161:	11	4	7	6	11	6	10	12
169:	7	8	10	8	11	12	14	10
177:	23	14	15	8	13	15	16	17
185:	13	23	15	18	24	24	16	27
193:	27	20	26	23	28	27	26	28
201:	29	30	28	37	42	31	31	44
209:	43	47	50	46	71	60	64	54
217:	81	56	82	62	58	86	80	81
225:	90	77	71	81	79	82	76	88
233:	92	83	65	74	61	78	41	34
241:	32	20	11	5	3	1	0	3
249:	1	0	3	3	1	0	3	0
257:	2	1	1	2	4	1	3	1
265:	0	3	1	0	2	1	2	6
273:	1	2	2	1	4	0	3	3
281:	1	3	4	3	5	4	3	5
289:	6	3	4	4	8	3	6	5
297:	5	3	4	1	11	4	6	5
305:	3	5	7	1	6	0	3	1
313:	4	4	1	3	1	1	1	1
321:	4	2	4	1	0	3	6	2
329:	5	3	6	4	6	3	2	2
337:	3	5	4	2	1	1	7	3
345:	3	8	5	5	4	5	4	7
353:	4	5	3	4	1	7	9	5
361:	10	8	6	11	7	5	10	10

369:	8	12	10	14	10	14	11	14

Sample Title: 10

Channel								
377:	11	19	15	17	14	14	16	17
385:	14	25	28	26	16	22	27	22
393:	29	25	27	31	34	35	50	40
401:	32	42	49	49	48	46	63	43
409:	61	58	69	76	71	65	69	80
417:	80	72	84	76	79	78	76	61
425:	69	83	84	76	78	79	64	68
433:	71	45	33	30	14	12	0	0
441:	0	0	1	0	0	0	1	0
449:	0	0	1	0	0	0	0	0
457:	1	0	0	1	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	1	0
481:	1	0	0	0	0	0	0	0
489:	0	0	1	0	0	0	1	0
497:	0	0	0	0	1	0	0	0
505:	0	1	2	0	0	0	0	0
513:	0	1	0	3	0	1	0	1
521:	0	0	1	0	1	1	1	2
529:	1	0	1	1	0	0	1	1
537:	0	0	2	0	0	1	0	3
545:	1	2	0	1	0	2	1	1
553:	3	2	1	1	1	1	1	3
561:	0	0	1	4	3	1	4	3
569:	3	2	2	3	5	6	1	1
577:	9	1	1	1	5	2	7	4
585:	5	1	6	5	11	8	15	6
593:	5	6	9	13	8	11	12	12
601:	7	9	13	11	15	11	6	13
609:	13	10	10	18	9	10	7	8
617:	10	8	4	4	0	2	0	1
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	1	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	1
745:	0	0	0	0	1	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 10

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

Apex-Alpha™

KB 8/30/17

Sample Description: HTC-A07-S001-0612-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 11
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_014
Chamber Serial Number:
Detector Serial Number: 14
Env. Background: System Bkgd 194873
Reagent Blank: <not performed>

Sample Size: 1.280E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:03 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: 0.1716 +/- 0.0100
Counting Efficiency: 0.1847 +/- 0.0032 on 11/19/2016 1:08:18 PM
Chem. Recovery Factor: 0.9288 +/- 0.0563

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

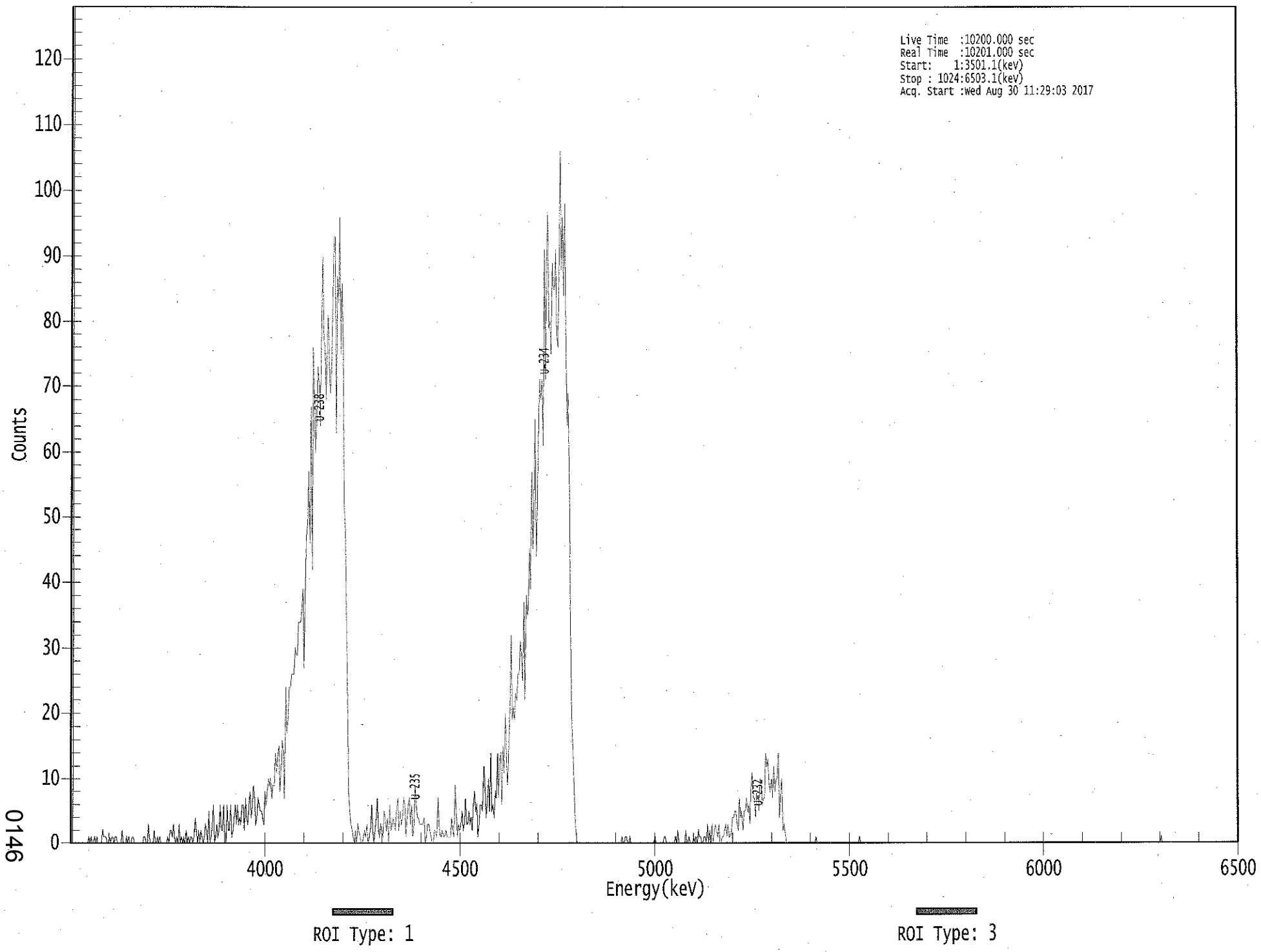
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.267	352.47	10.47	1.53	0.00E+000	20.5
U-234		4.719	3310.66	3.41	0.34	0.00E+000	82.1
U-235		4.389	209.49	13.56	0.51	0.00E+000	7.0
U-238		4.140	3276.15	3.42	0.85	0.00E+000	84.6

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	4.27E+000 +/- 4.87E-001	8.62E-002 +/- 9.82E-003
U-234	0.987	4761.50*	4.00E+001 +/- 4.76E+000	5.78E-002 +/- 6.59E-003
U-235	1.000	4385.50*	3.12E+000 +/- 5.54E-001	7.83E-002 +/- 8.92E-003
U-238	0.986	4184.40*	3.94E+001 +/- 4.69E+000	7.21E-002 +/- 8.21E-003

0000193100.CNF



0146

****
***** 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:	10201	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	1	0	1	0	0	1	0	1
25:	0	0	0	0	2	1	1	1
33:	0	0	1	0	1	1	0	1
41:	1	0	0	0	0	2	0	0
49:	0	1	0	1	0	0	1	1
57:	0	0	0	0	0	0	0	0
65:	1	1	0	0	3	1	0	0
73:	0	2	0	0	1	0	1	0
81:	0	0	0	0	0	1	0	2
89:	2	1	3	1	0	1	0	3
97:	0	1	0	1	0	2	0	1
105:	0	1	1	0	1	4	2	0
113:	2	0	2	1	0	1	3	2
121:	0	5	0	1	3	6	0	1
129:	3	1	2	6	2	2	6	0
137:	0	6	2	2	6	1	2	4
145:	6	3	6	3	4	3	6	6
153:	2	7	4	3	6	8	4	6
161:	9	7	3	4	7	6	5	5
169:	4	3	8	6	8	10	9	10
177:	7	9	9	14	11	14	15	8
185:	12	16	14	7	24	17	19	24
193:	24	26	26	26	30	29	29	34
201:	34	34	36	39	27	40	47	49
209:	57	46	67	42	76	66	60	66
217:	73	70	64	79	90	77	76	68
225:	76	81	73	69	73	83	93	93
233:	63	87	83	96	75	86	75	52
241:	48	34	22	8	5	3	2	1
249:	0	2	0	3	2	1	0	0
257:	1	2	1	3	0	1	2	6
265:	2	0	2	4	7	2	1	3
273:	2	1	5	4	2	4	0	6
281:	2	3	4	3	2	5	7	2
289:	5	3	4	7	6	1	4	6
297:	7	3	6	1	2	9	6	4
305:	4	3	3	3	3	4	0	1
313:	3	3	2	1	0	0	2	2
321:	1	7	3	1	1	2	1	1
329:	2	1	1	1	1	4	2	1
337:	9	5	1	3	2	3	5	2
345:	3	7	3	3	5	3	4	2
353:	6	8	5	6	1	3	6	6
361:	5	12	10	4	6	10	5	14

369:	5	6	4	8	7	14	7	13

Sample Title: 11

Channel								
377:	14	6	15	11	20	14	9	14
385:	21	32	19	21	19	23	22	26
393:	26	31	29	25	37	22	38	35
401:	36	45	39	57	45	53	65	44
409:	52	64	71	68	71	61	91	71
417:	89	97	79	80	75	89	85	85
425:	91	78	76	87	106	88	96	84
433:	98	79	64	69	54	33	18	15
441:	9	4	1	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	1	0	0	1	1	0
489:	0	1	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	0	0	0	0	0	0	1
521:	1	0	0	0	0	0	0	0
529:	0	1	0	2	0	0	0	0
537:	0	0	2	0	0	1	0	0
545:	0	1	0	1	0	2	1	1
553:	0	0	1	1	0	3	0	2
561:	0	3	0	2	3	2	1	3
569:	0	0	1	1	2	3	1	3
577:	1	1	2	4	4	5	5	3
585:	2	7	4	5	2	5	5	7
593:	5	6	3	8	11	7	7	4
601:	8	8	5	10	9	6	7	7
609:	14	12	13	9	8	10	7	12
617:	8	10	10	14	4	8	10	2
625:	3	2	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	1	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	1	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	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: 11

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

KD
8/30/17

Sample Description: HTC-A07-S001-0612-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 12
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_033
Chamber Serial Number: 04026479A
Detector Serial Number: 91132
Env. Background: System Bkgd 194874
Reagent Blank: <not performed>

Sample Size: 1.120E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:34 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: 0.2023 +/- 0.0110
Counting Efficiency: 0.1681 +/- 0.0029 on 11/18/2016 10:08:33 AM
Chem. Recovery Factor: 1.2033 +/- 0.0684

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

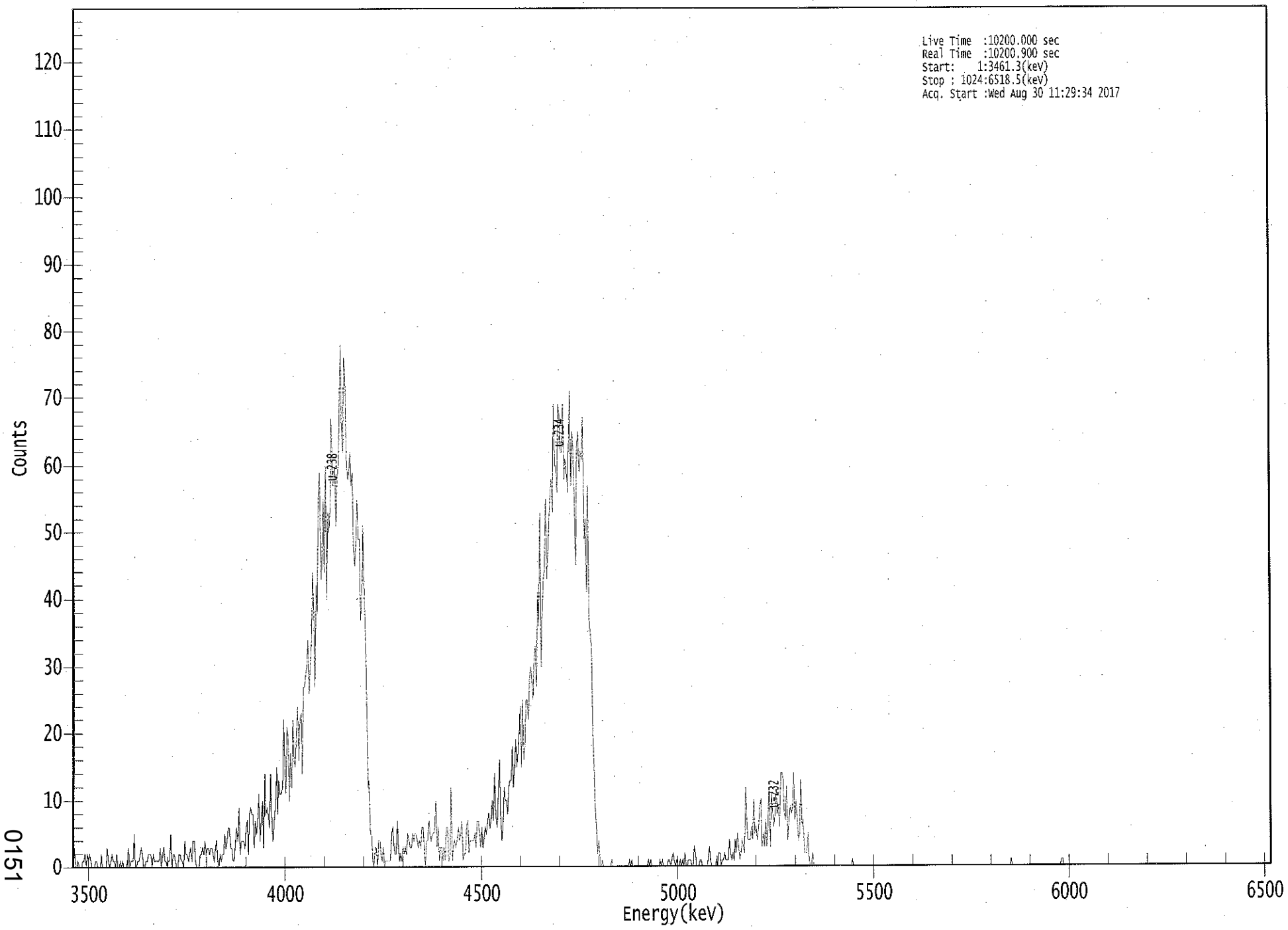
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.250	415.66	9.62	0.34	0.00E+000	14.6
U-234		4.705	2983.66	3.59	0.34	0.00E+000	122.4
U-235		4.402	274.66	11.84	0.34	0.00E+000	3.4
U-238		4.124	3030.83	3.56	0.17	0.00E+000	109.9

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.980	5302.50*	4.88E+000 +/- 5.19E-001	5.62E-002 +/- 5.97E-003
U-234	0.977	4761.50*	3.50E+001 +/- 3.92E+000	5.60E-002 +/- 5.95E-003
U-235	0.998	4385.50*	3.97E+000 +/- 6.31E-001	6.91E-002 +/- 7.34E-003
U-238	0.975	4184.40*	3.54E+001 +/- 3.96E+000	4.87E-002 +/- 5.17E-003

0000193108.CNF



0151

****
***** 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:	1	3	0	0	1	0	0	0
9:	1	1	2	0	2	1	2	1
17:	0	0	0	1	1	0	0	0
25:	2	0	0	0	0	3	1	0
33:	1	2	1	1	0	2	0	0
41:	1	0	1	0	0	0	1	3
49:	0	1	1	1	5	0	0	1
57:	1	2	3	2	0	0	1	1
65:	2	2	2	0	2	1	1	1
73:	1	1	3	0	2	3	1	1
81:	0	1	1	5	0	2	2	1
89:	0	0	2	2	1	1	0	4
97:	2	2	1	2	3	1	4	4
105:	1	0	0	0	2	2	3	2
113:	4	2	3	3	2	3	3	2
121:	1	3	4	1	0	2	1	2
129:	2	5	3	4	6	6	3	3
137:	1	1	4	6	4	9	2	4
145:	4	4	3	6	7	2	8	9
153:	8	8	3	7	5	7	11	4
161:	7	10	3	14	8	9	8	6
169:	14	7	4	7	9	15	8	13
177:	11	11	12	22	15	11	21	19
185:	10	17	12	22	16	15	20	24
193:	16	22	23	14	27	27	29	30
201:	34	26	30	34	44	38	27	42
209:	38	55	59	43	45	55	44	60
217:	40	53	50	54	67	57	57	60
225:	51	58	60	67	78	65	62	76
233:	73	61	58	59	62	57	59	48
241:	45	48	55	49	49	37	41	51
249:	39	35	25	12	13	5	5	1
257:	0	3	3	0	4	4	2	1
265:	3	0	1	1	1	1	1	5
273:	6	3	2	2	7	3	1	2
281:	1	3	2	3	2	5	4	3
289:	3	5	4	5	5	4	3	4
297:	3	6	6	3	0	4	4	7
305:	5	4	5	5	6	10	3	6
313:	1	3	3	1	3	1	6	6
321:	1	2	12	1	3	4	3	4
329:	6	4	5	7	1	2	2	6
337:	7	2	4	4	4	4	5	3
345:	7	7	5	3	6	3	4	6
353:	5	7	8	6	7	10	7	14
361:	8	6	10	16	8	4	6	12

369:	10	10	8	12	13	13	18	12

Sample Title: 12

Channel								
377:	15	19	15	17	20	24	15	25
385:	16	18	25	25	22	28	30	28
393:	25	31	33	27	41	36	53	30
401:	37	43	44	55	43	47	52	56
409:	58	53	69	60	60	56	69	67
417:	62	62	69	58	61	59	56	64
425:	71	57	65	62	53	45	62	65
433:	59	62	61	67	49	52	41	57
441:	37	35	33	20	15	9	6	2
449:	4	1	0	1	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	1	0	1	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	1	0	1	0	0	0
497:	0	0	0	0	1	0	1	0
505:	0	0	0	1	1	0	1	2
513:	1	0	1	0	0	1	0	1
521:	0	2	0	0	1	1	1	0
529:	0	3	2	0	0	0	1	1
537:	0	0	0	0	0	1	3	1
545:	0	0	0	0	1	0	2	2
553:	0	1	1	2	1	1	1	4
561:	2	1	2	1	4	2	5	3
569:	1	2	4	3	2	12	7	4
577:	4	4	6	4	10	5	6	4
585:	6	9	10	3	5	3	7	3
593:	7	12	3	11	8	6	8	12
601:	8	9	6	14	14	13	8	7
609:	12	4	7	9	8	9	14	7
617:	10	7	4	5	13	6	7	2
625:	2	2	5	1	0	0	2	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:	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:	1	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	1	1	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 8/30/17

Sample Description: HTC-A07-S001-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 13
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_034
Chamber Serial Number: 04026479B
Detector Serial Number: 91136
Env. Background: System Bkgd 194875
Reagent Blank: <not performed>

Sample Size: 1.010E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:35 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.673 mL
Effective Efficiency: 0.2372 +/- 0.0120
Counting Efficiency: 0.1728 +/- 0.0029 on 11/18/2016 10:08:58 AM
Chem. Recovery Factor: 1.3722 +/- 0.0733

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

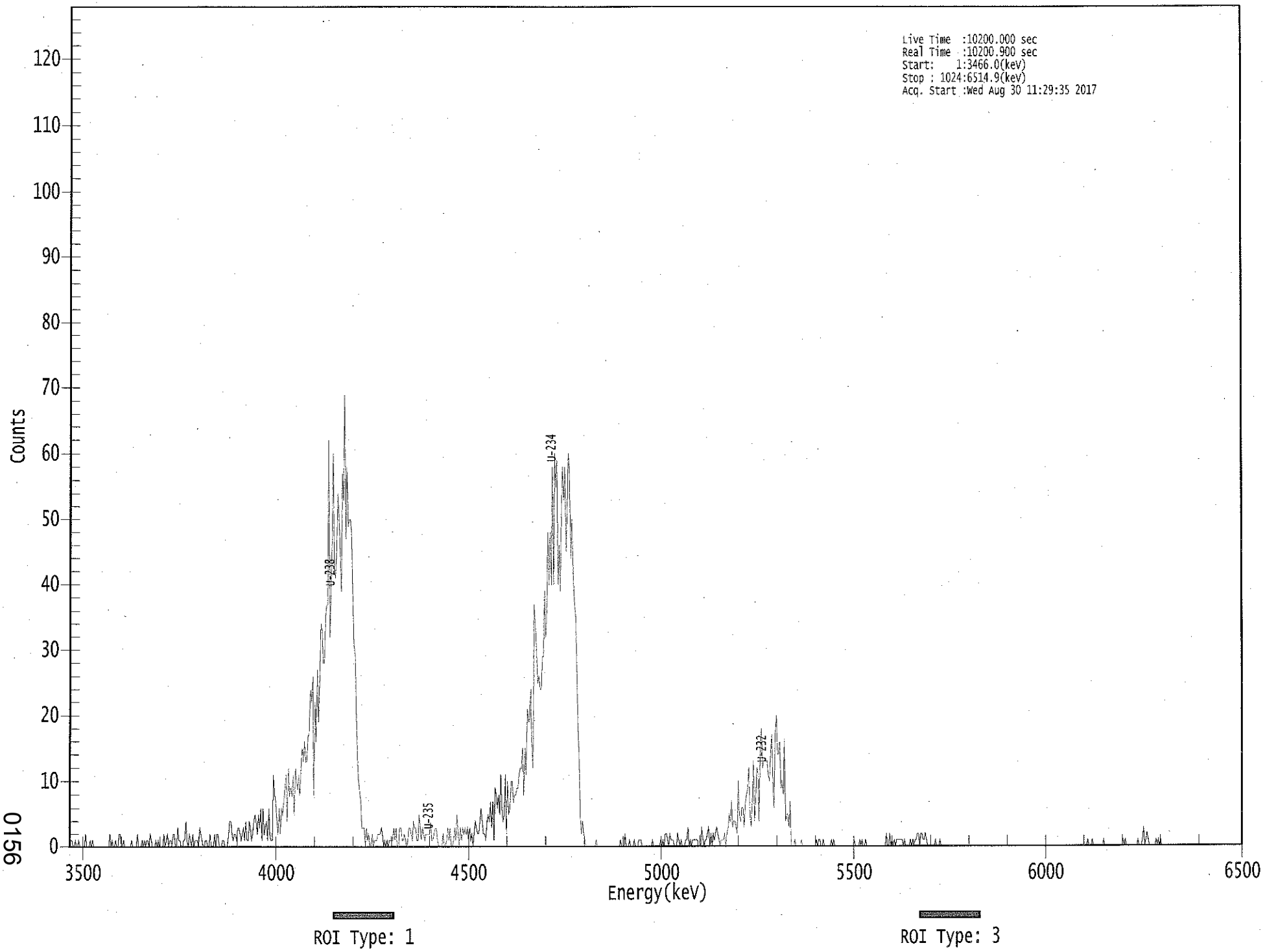
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.265	493.15	8.83	0.85	0.00E+000	16.4
U-234		4.718	1933.32	4.46	0.68	0.00E+000	85.0
U-235		4.399	119.66	17.95	0.34	0.00E+000	5.6
U-238		4.143	1923.49	4.47	0.51	0.00E+000	59.4

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	5.48E+000 +/- 5.44E-001	6.66E-002 +/- 6.60E-003
U-234	0.987	4761.50*	2.14E+001 +/- 2.33E+000	6.25E-002 +/- 6.20E-003
U-235	0.999	4385.50*	1.64E+000 +/- 3.36E-001	6.54E-002 +/- 6.49E-003
U-238	0.988	4184.40*	2.12E+001 +/- 2.31E+000	5.79E-002 +/- 5.75E-003

0000193109.CNF



0156

****
***** 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: 10201

Channel								
1:	0	1	1	0	0	1	0	0
9:	1	0	0	0	0	0	2	0
17:	0	0	1	0	1	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	2	0	1	0	0
41:	1	0	0	2	2	0	0	1
49:	0	0	0	0	0	0	1	0
57:	0	0	0	2	0	0	0	1
65:	0	1	0	1	1	0	2	1
73:	0	0	0	1	0	1	0	0
81:	0	0	2	0	1	2	0	1
89:	1	0	2	2	0	0	3	1
97:	1	0	0	1	1	4	1	0
105:	2	1	0	2	0	1	1	1
113:	0	3	2	1	0	0	1	1
121:	0	0	2	0	0	0	2	0
129:	2	2	0	0	0	1	1	0
137:	0	0	2	4	4	2	1	2
145:	2	1	3	3	2	1	2	3
153:	1	4	1	1	4	3	1	2
161:	4	5	4	2	5	3	6	1
169:	6	2	3	4	1	6	2	1
177:	1	11	8	7	4	2	6	2
185:	6	5	7	9	11	4	12	8
193:	9	8	11	5	12	10	9	11
201:	8	12	15	13	16	13	13	17
209:	17	24	22	26	8	22	16	27
217:	19	26	34	33	28	28	35	37
225:	37	62	32	39	47	60	42	41
233:	46	54	50	45	39	57	53	69
241:	47	58	49	50	50	48	36	31
249:	29	21	15	10	9	7	3	3
257:	3	0	3	1	2	0	0	2
265:	0	1	1	1	2	2	2	3
273:	2	0	1	0	1	0	1	1
281:	1	1	3	1	3	0	0	3
289:	3	1	1	2	1	0	1	3
297:	3	2	1	4	3	3	1	1
305:	5	3	1	3	2	1	2	2
313:	2	2	4	1	1	2	3	3
321:	1	0	0	0	0	2	0	0
329:	1	3	1	3	0	0	1	3
337:	1	5	2	0	3	1	3	2
345:	3	2	3	1	3	1	2	0
353:	2	4	3	2	2	4	6	4
361:	2	2	1	4	5	4	7	3

369:	7	1	9	8	6	8	5	11

Sample Title: 13

Channel								
377:	6	4	5	11	2	10	5	6
385:	10	10	7	8	8	9	9	11
393:	12	12	15	8	15	11	21	19
401:	19	24	17	12	37	34	30	25
409:	26	24	24	29	29	39	32	36
417:	48	40	48	40	58	40	60	55
425:	59	40	46	39	52	58	53	58
433:	45	51	60	58	44	50	41	37
441:	35	27	18	14	5	2	4	2
449:	1	0	0	0	0	0	0	0
457:	0	0	1	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	1
481:	0	0	0	2	0	0	0	1
489:	0	0	0	1	0	0	0	1
497:	1	1	0	0	0	0	0	0
505:	0	0	0	1	0	0	0	0
513:	0	0	1	0	1	0	2	2
521:	1	0	2	1	1	1	0	0
529:	0	2	1	0	1	0	0	0
537:	1	1	3	0	1	0	1	1
545:	1	1	1	0	0	0	3	1
553:	0	1	1	2	3	0	2	0
561:	2	1	2	3	2	1	0	1
569:	1	1	2	0	2	3	5	4
577:	7	3	4	4	3	2	10	5
585:	4	6	6	3	7	8	9	12
593:	5	3	7	13	4	7	12	11
601:	4	15	18	12	13	13	13	13
609:	11	10	14	17	10	6	17	20
617:	14	14	16	9	10	8	16	4
625:	5	5	3	7	0	0	0	1
633:	0	0	0	0	0	1	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	1	0	1	1	0	0
657:	1	0	0	0	0	0	0	1
665:	0	1	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	1	0	0	0	0
689:	1	0	1	0	0	1	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	2
713:	0	0	2	0	1	0	1	0
721:	1	1	1	1	1	1	0	1
729:	0	0	0	0	1	0	1	0
737:	1	1	2	2	0	2	2	1
745:	1	2	1	0	0	0	0	0
753:	0	0	1	0	0	0	1	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	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: 13

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

Apex-Alpha™

KB 8/30/17

Sample Description: HTC-A07-S001-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 14
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_035
Chamber Serial Number: 04026477A
Detector Serial Number: 58771
Env. Background: System Bkgd 194876
Reagent Blank: <not performed>

Sample Size: 1.070E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:37 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.666 mL
Effective Efficiency: 0.2217 +/- 0.0116
Counting Efficiency: 0.1580 +/- 0.0027 on 11/18/2016 10:08:56 AM
Chem. Recovery Factor: 1.4036 +/- 0.0772

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

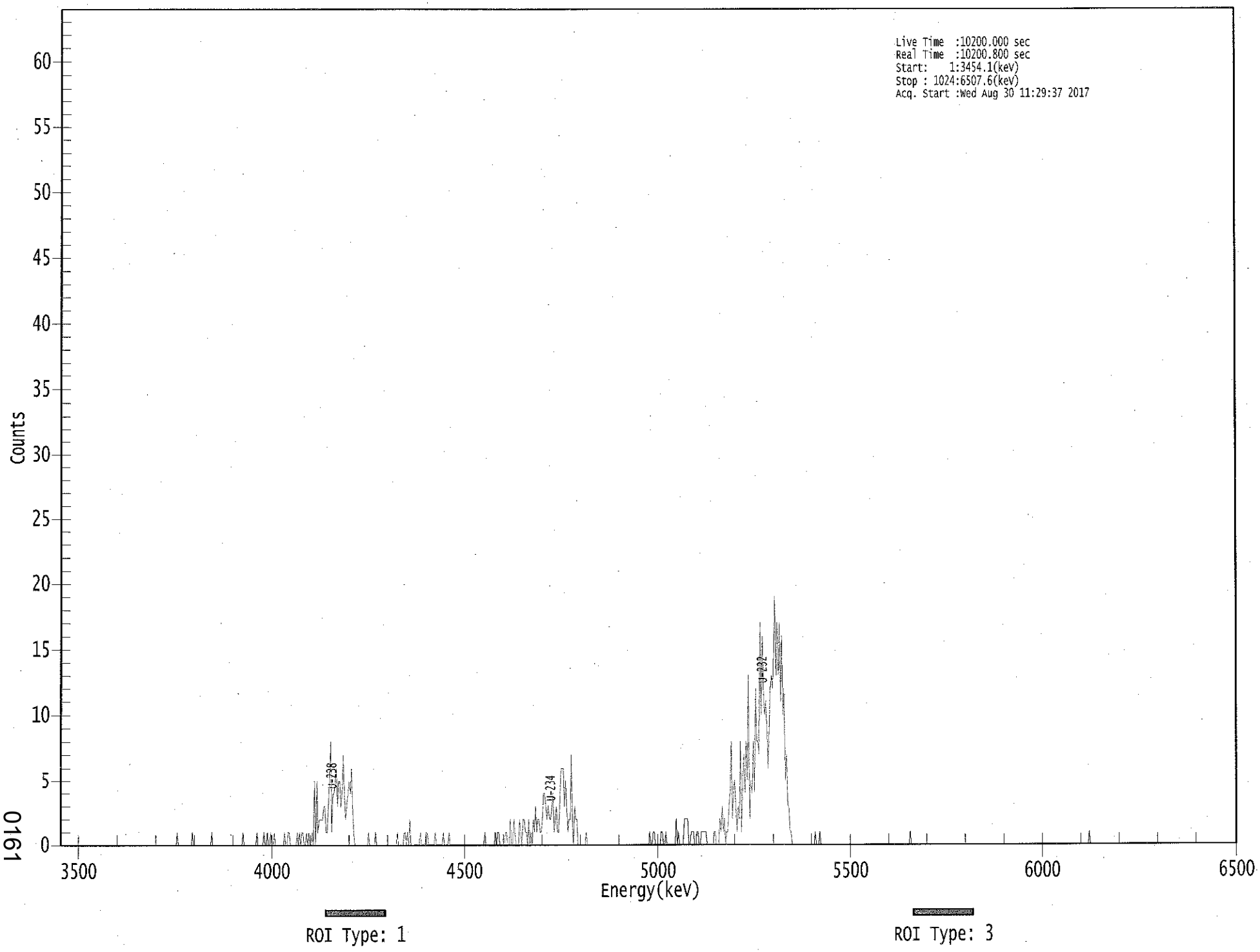
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.275	456.00	9.19	0.00	0.00E+000	39.4
U-234		4.724	123.00	17.74	0.00	0.00E+000	4.2
U-235		4.384	11.66	58.37	0.34	0.00E+000	3.0
U-238		4.158	135.66	16.85	0.34	0.00E+000	6.2

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	5.12E+000 +/- 5.24E-001	6.73E-002 +/- 6.89E-003
U-234	0.990	4761.50*	1.38E+000 +/- 2.82E-001	6.71E-002 +/- 6.87E-003
U-235	1.000	4385.50*	1.61E-001 +/- 9.54E-002	6.60E-002 +/- 6.76E-003
U-238	0.995	4184.40*	1.51E+000 +/- 2.98E-001	5.33E-002 +/- 5.45E-003

0000193104.CNF



0161

****
***** 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: 10201

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

369:	1	0	0	0	0	0	0	0

Sample Title: 14

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

801:	0	0	0	0	0	0	0	0

Sample Title: 14

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

ICB 9/30/17

Sample Description: HTC-A07-S001-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 15
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_036
Chamber Serial Number: 04026477B
Detector Serial Number: 84167
Env. Background: System Bkgd 194877
Reagent Blank: <not performed>

Sample Size: 1.100E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:40 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.667 mL
Effective Efficiency: 0.2079 +/- 0.0111
Counting Efficiency: 0.1824 +/- 0.0031 on 11/18/2016 10:08:54 AM
Chem. Recovery Factor: 1.1403 +/- 0.0641

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

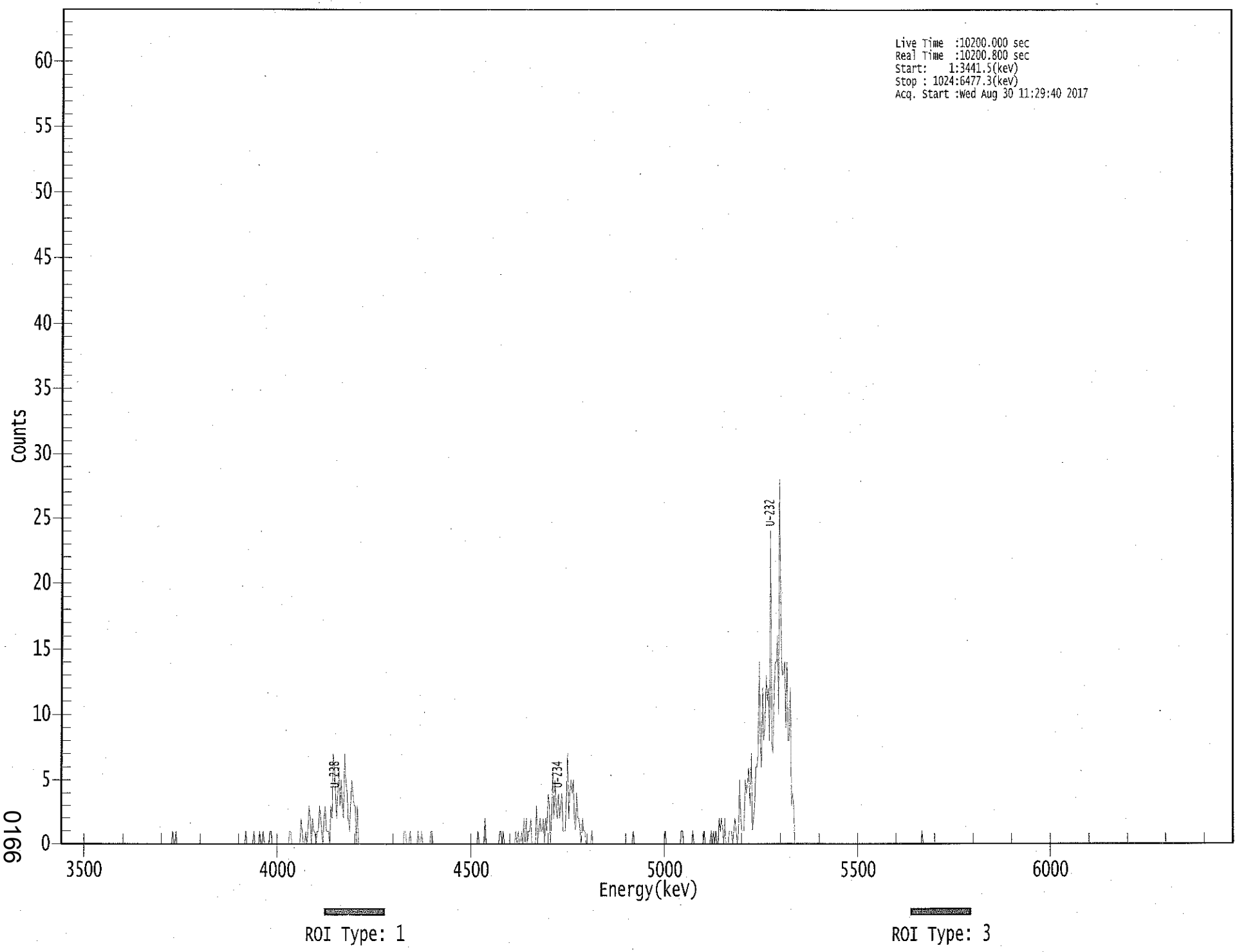
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.275	428.32	9.48	0.68	0.00E+000	7.3
U-234		4.727	114.32	18.40	0.68	0.00E+000	5.5
U-235		4.363	6.49	80.40	0.51	0.00E+000	5.9
U-238		4.150	118.15	18.11	0.85	0.00E+000	8.8

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	4.99E+000 +/- 5.23E-001	6.57E-002 +/- 6.89E-003
U-234	0.991	4761.50*	1.33E+000 +/- 2.81E-001	6.55E-002 +/- 6.87E-003
U-235	0.996	4385.50*	9.29E-002 +/- 7.53E-002	7.51E-002 +/- 7.89E-003
U-238	0.992	4184.40*	1.37E+000 +/- 2.86E-001	6.92E-002 +/- 7.26E-003

0000193105.CNF



0166

****
***** 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: 10201

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

369:	0	2	0	0	0	0	0	0

Sample Title: 15

Channel								
377:	0	0	0	0	0	0	1	1
385:	0	1	0	0	0	0	0	0
393:	0	0	0	0	1	0	1	0
401:	0	1	0	2	0	2	0	1
409:	1	2	0	0	0	0	3	0
417:	1	2	1	1	2	0	2	1
425:	4	3	0	2	6	2	5	3
433:	2	4	2	3	4	1	1	1
441:	4	7	2	4	5	4	5	2
449:	1	4	2	2	1	0	2	1
457:	1	0	0	0	0	0	1	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	1	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	1	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	1	1	0	0
545:	0	0	0	0	0	0	1	0
553:	0	0	0	0	0	0	0	0
561:	1	0	0	0	0	0	1	0
569:	1	0	1	0	0	2	1	2
577:	1	0	2	0	0	0	1	1
585:	1	0	1	2	1	0	1	5
593:	2	1	1	1	5	4	5	6
601:	3	7	1	2	3	6	6	7
609:	14	8	6	12	8	9	13	11
617:	12	8	24	8	7	12	14	14
625:	16	10	28	16	13	13	14	9
633:	14	8	8	12	3	4	3	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	1	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

KB 8/30/17

Apex-Alpha™

Sample Description: HTC-A07-S001-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 16
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_037
Chamber Serial Number: 04026478A
Detector Serial Number: 91133
Env. Background: System Bkgd 194878
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:42 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.682 mL
Effective Efficiency: 0.2236 +/- 0.0115
Counting Efficiency: 0.1587 +/- 0.0027 on 11/18/2016 10:08:53 AM
Chem. Recovery Factor: 1.4086 +/- 0.0765

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

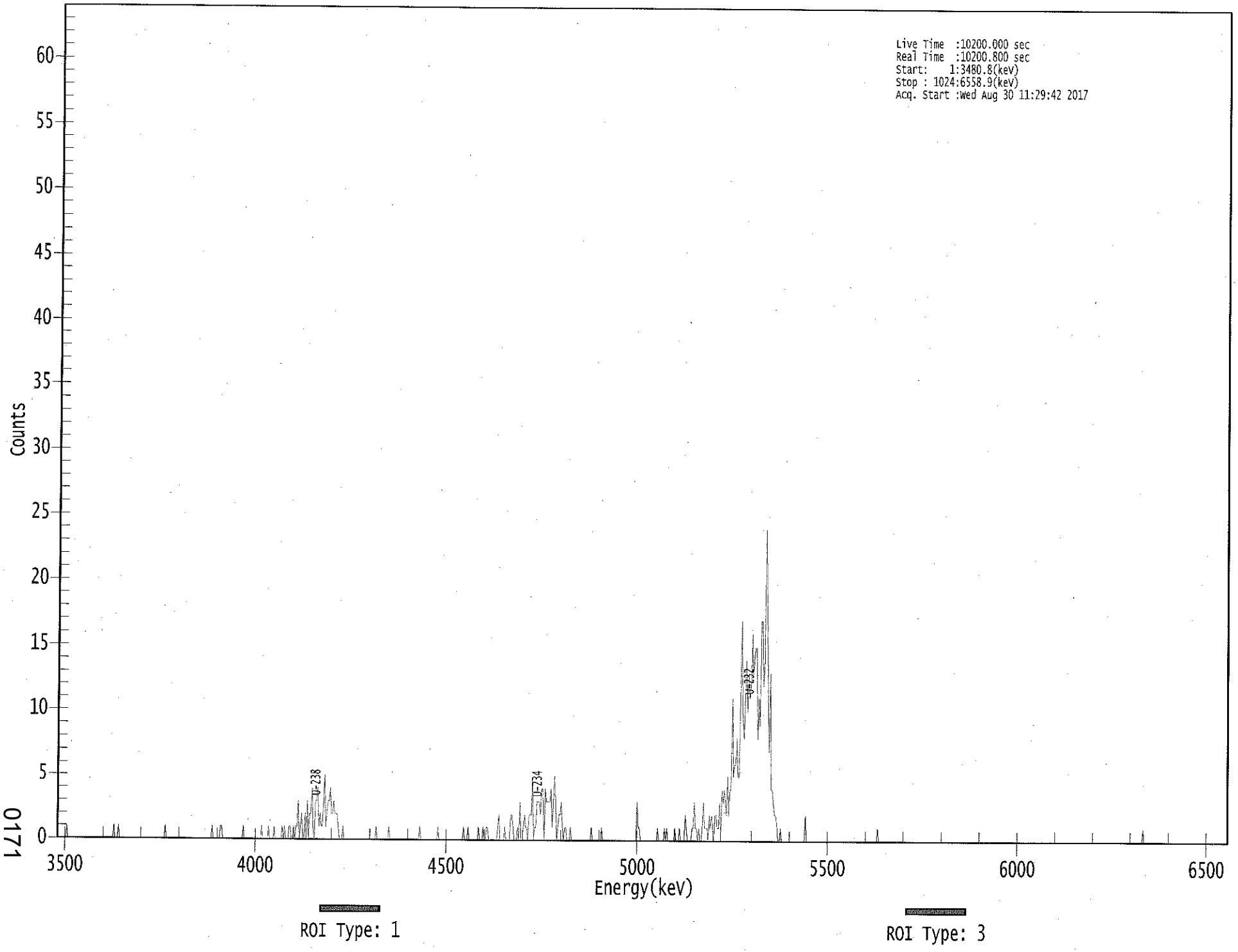
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.295	471.15	9.04	0.85	0.00E+000	11.4
U-234		4.743	97.00	20.00	0.00	0.00E+000	4.0
U-235		4.395	4.00	109.57	0.00	0.00E+000	3.0
U-238		4.160	80.83	21.83	0.17	0.00E+000	5.6

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	1.000	5302.50*	5.61E+000 +/- 5.67E-001	7.13E-002 +/- 7.20E-003
U-234	0.997	4761.50*	1.15E+000 +/- 2.58E-001	7.12E-002 +/- 7.19E-003
U-235	0.999	4385.50*	5.86E-002 +/- 6.45E-002	8.78E-002 +/- 8.87E-003
U-238	0.996	4184.40*	9.56E-001 +/- 2.30E-001	4.93E-002 +/- 4.98E-003

0000193102.CNF



0171

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

Sample Title: 16

Elapsed Live time: 10200
Elapsed Real Time: 10201

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

369:	0	0	0	1	0	0	1	1

Sample Title: 16

Channel								
377:	0	0	0	0	0	0	0	0
385:	1	2	0	0	0	0	1	0
393:	0	0	0	2	2	1	0	0
401:	0	1	0	3	0	0	1	2
409:	1	1	0	2	2	2	5	0
417:	1	1	3	3	3	2	4	4
425:	0	4	3	3	3	3	4	1
433:	3	5	3	0	1	2	2	3
441:	1	0	1	1	0	0	0	1
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	1	0	0	0	0	0	0
473:	0	0	1	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	3	1	1	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	1	0	0	0	0
529:	0	1	0	1	0	0	0	0
537:	0	0	1	0	0	0	1	0
545:	0	0	0	2	1	0	0	0
553:	0	1	1	3	1	1	0	1
561:	0	0	1	3	1	1	1	0
569:	2	1	2	1	0	2	2	1
577:	1	3	0	4	3	4	3	2
585:	5	2	4	4	11	5	6	6
593:	8	5	5	11	17	10	8	10
601:	14	10	13	11	12	16	13	14
609:	15	15	8	11	9	17	17	12
617:	14	24	19	10	7	13	4	4
625:	3	2	2	1	0	0	1	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	2	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	1	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: 16

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

Apex-Alpha™

KB 8/30/17

Sample Description: HTC-A07-S001-3642-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 17
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_038
Chamber Serial Number: 04026478B
Detector Serial Number: 91134
Env. Background: System Bkgd 194879
Reagent Blank: <not performed>

Sample Size: 1.180E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:45 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: 0.2138 +/- 0.0113
Counting Efficiency: 0.1543 +/- 0.0027 on 11/18/2016 10:08:51 AM
Chem. Recovery Factor: 1.3849 +/- 0.0772

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

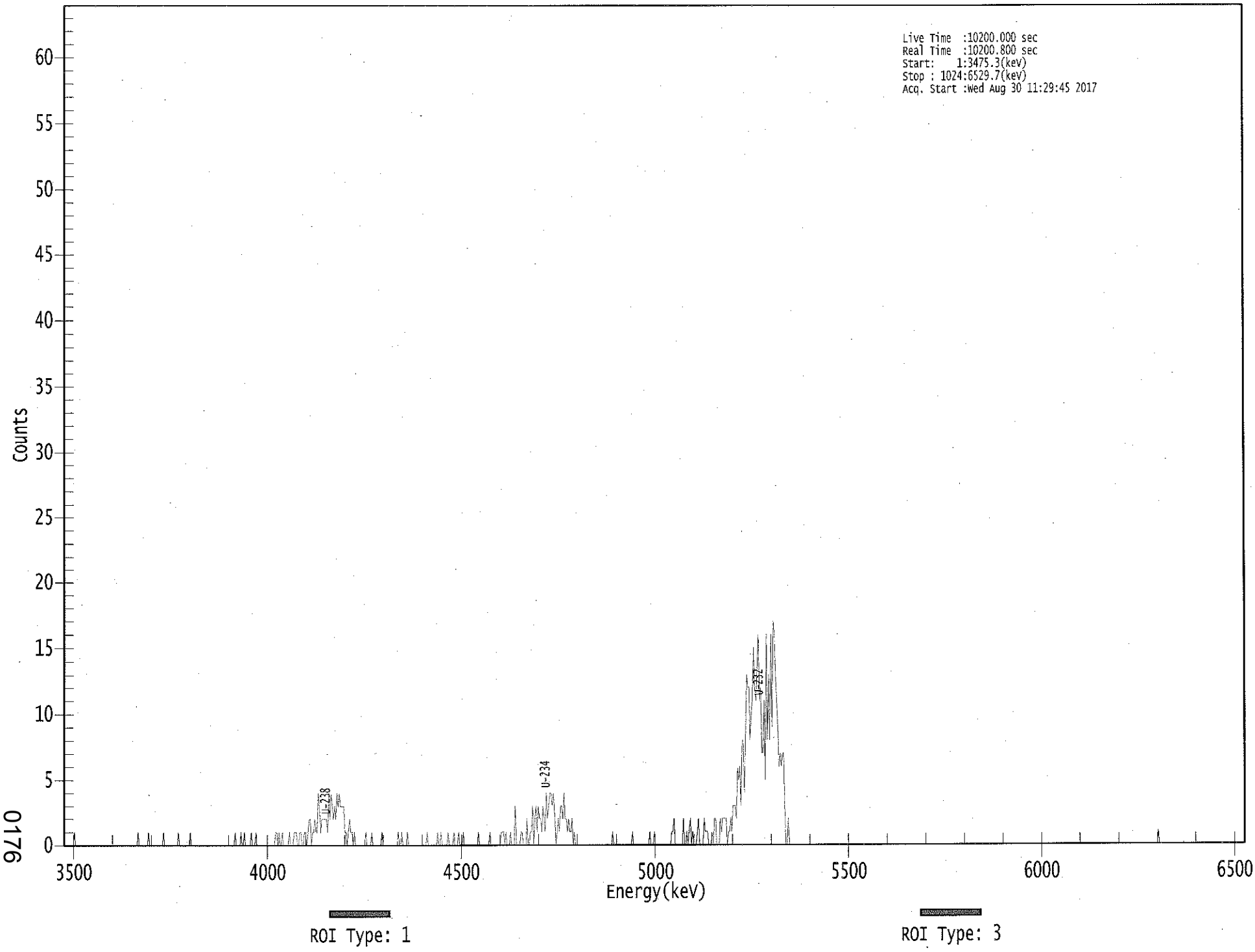
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.269	439.49	9.36	0.51	0.00E+000	21.2
U-234		4.721	89.98	20.80	1.02	0.00E+000	5.0
U-235		4.421	9.00	68.87	0.00	0.00E+000	3.0
U-238		4.154	94.49	20.23	0.51	0.00E+000	6.5

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.992	5302.50*	4.64E+000 +/- 4.82E-001	5.54E-002 +/- 5.75E-003
U-234	0.988	4761.50*	9.47E-001 +/- 2.20E-001	6.63E-002 +/- 6.89E-003
U-235	0.991	4385.50*	1.17E-001 +/- 8.14E-002	7.79E-002 +/- 8.09E-003
U-238	0.993	4184.40*	9.90E-001 +/- 2.25E-001	5.50E-002 +/- 5.71E-003

0000193103.CNF



0176

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

Sample Title: 17

Elapsed Live time: 10200
Elapsed Real Time: 10201

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

369:	1	0	0	0	0	0	0	0

Sample Title: 17

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

801:	0	0	0	0	0	0	0	0

Sample Title: 17

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

Apex-Alpha™

KB 8/30/17

Sample Description: HTC-A07-S001-4248-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 18
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_039
Chamber Serial Number: 06027396A
Detector Serial Number: 83109
Env. Background: System Bkgd 194880
Reagent Blank: <not performed>

Sample Size: 1.080E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:47 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.666 mL
Effective Efficiency: 0.2260 +/- 0.0117
Counting Efficiency: 0.1852 +/- 0.0031 on 11/18/2016 10:08:50 AM
Chem. Recovery Factor: 1.2202 +/- 0.0666

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

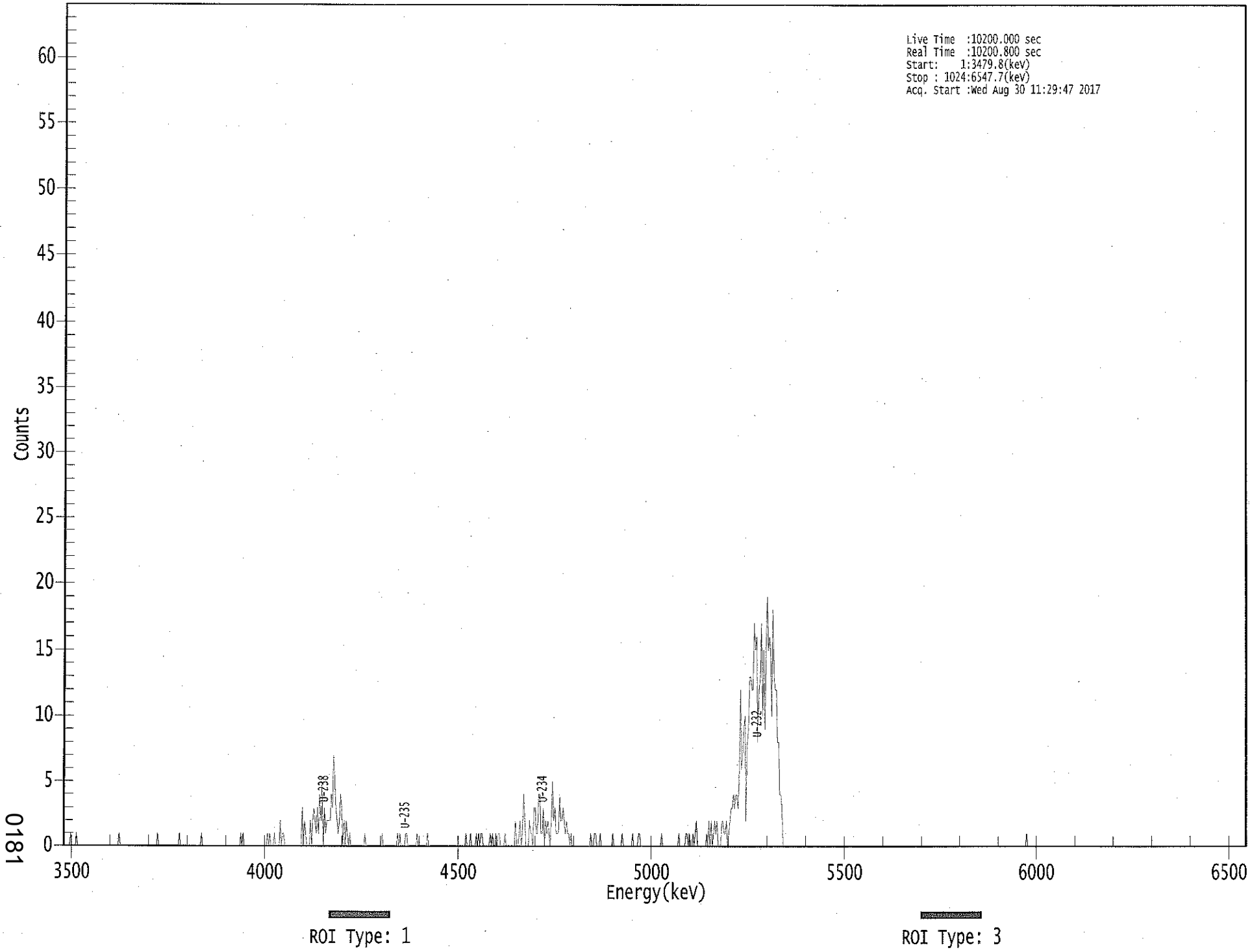
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.276	464.96	9.11	2.04	0.00E+000	31.6
U-234		4.721	79.81	22.13	1.19	0.00E+000	5.0
U-235		4.364	6.15	85.19	0.85	0.00E+000	3.0
U-238		4.154	90.83	20.59	0.17	0.00E+000	7.9

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	5.07E+000 +/- 5.16E-001	8.50E-002 +/- 8.64E-003
U-234	0.988	4761.50*	8.68E-001 +/- 2.11E-001	7.17E-002 +/- 7.29E-003
U-235	0.997	4385.50*	8.25E-002 +/- 7.08E-002	8.03E-002 +/- 8.17E-003
U-238	0.993	4184.40*	9.84E-001 +/- 2.26E-001	4.52E-002 +/- 4.60E-003

0000193106.CNF



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

Sample Title: 18

Elapsed Live time: 10200
Elapsed Real Time: 10201

Channel								
1:	0	0	0	0	0	0	1	0
9:	0	0	0	1	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:	1	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	1	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	1
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	1	0	1	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	1	0	1	0	0	0	1	0
185:	0	0	0	2	0	1	1	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	3	0
209:	2	1	0	0	0	2	0	2
217:	3	2	1	3	1	4	2	5
225:	0	3	1	2	2	2	2	4
233:	3	7	5	3	2	1	2	4
241:	3	0	2	0	2	1	0	1
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:	0	0	0	1	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	1	0	1	0	0	0	0	1
297:	1	0	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	0
313:	0	0	1	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	1	0	0	0	1
353:	0	0	0	0	1	0	1	0
361:	1	1	0	0	0	0	0	0

369:	1	0	1	0	0	1	0	1

Sample Title: 18

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

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	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	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 8/30/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD01-0006-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 19
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_040
Chamber Serial Number: 06027396B
Detector Serial Number: 91135
Env. Background: System Bkgd 194881
Reagent Blank: <not performed>

Sample Size: 1.310E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:50 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.667 mL
Effective Efficiency: 0.2346 +/- 0.0120
Counting Efficiency: 0.1813 +/- 0.0031 on 11/18/2016 10:08:48 AM
Chem. Recovery Factor: 1.2937 +/- 0.0695

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

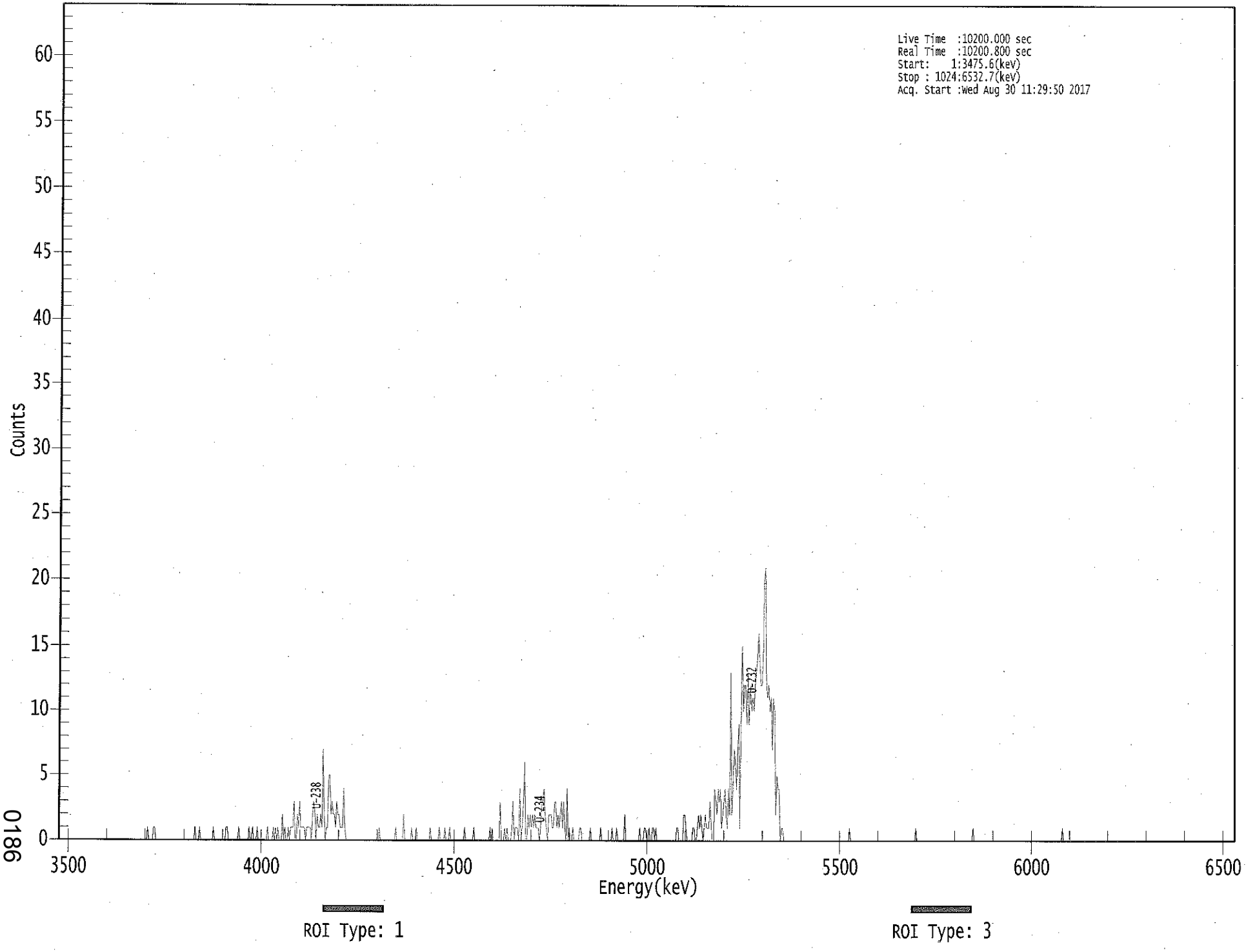
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.273	483.66	8.92	0.34	0.00E+000	40.3
U-234		4.723	90.49	20.67	0.51	0.00E+000	4.5
U-235		4.405	9.32	66.89	0.68	0.00E+000	3.0
U-238		4.146	87.15	21.11	0.85	0.00E+000	3.8

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	4.19E+000 +/- 4.19E-001	4.14E-002 +/- 4.14E-003
U-234	0.990	4761.50*	7.82E-001 +/- 1.79E-001	4.53E-002 +/- 4.53E-003
U-235	0.997	4385.50*	9.93E-002 +/- 6.72E-002	6.01E-002 +/- 6.01E-003
U-238	0.990	4184.40*	7.50E-001 +/- 1.75E-001	5.15E-002 +/- 5.15E-003

0000193107.CNF



0186

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

Sample Title: 19

Elapsed Live time: 10200
Elapsed Real Time: 10201

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

369:	0	0	0	0	0	0	1	0

Sample Title: 19

Channel								
377:	1	0	0	0	0	0	0	3
385:	0	0	0	1	0	1	0	0
393:	0	1	3	0	1	1	1	0
401:	4	0	1	3	6	0	0	2
409:	1	2	1	2	1	2	1	1
417:	1	0	1	3	3	4	2	1
425:	0	2	2	2	1	1	3	3
433:	1	2	1	2	3	1	3	1
441:	0	4	0	1	0	0	1	0
449:	0	0	0	0	1	1	0	0
457:	0	0	0	0	0	1	0	0
465:	0	0	0	0	0	0	1	0
473:	0	0	0	0	0	0	0	0
481:	1	0	0	0	1	0	0	0
489:	0	0	0	2	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	1	0	0	0	1	1	0	0
513:	1	0	0	1	1	0	1	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	1	1	0	0	0	0	2	2
545:	1	0	0	0	0	0	1	1
553:	0	0	1	2	1	2	1	0
561:	1	2	1	1	1	3	1	0
569:	0	4	3	2	4	3	4	1
577:	2	3	4	2	1	4	2	13
585:	2	4	7	6	4	7	9	1
593:	10	15	10	12	12	9	13	9
601:	12	10	11	10	12	13	14	16
609:	14	12	12	14	20	21	12	11
617:	12	10	11	7	11	10	2	5
625:	4	4	0	1	1	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	1	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	1	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	1	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 19

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

Apex-Alpha™

RB 8/30/17

Sample Description: HTC-A08-BKGD01-0612-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-UU
Sample Identification: 20
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_043
Chamber Serial Number: 04026481A
Detector Serial Number: 91088
Env. Background: System Bkgd 194882
Reagent Blank: <not performed>

Sample Size: 1.060E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:28:58 AM
Acquisition Date/Time: 8/30/2017 11:29:53 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.659 mL
Effective Efficiency: 0.1985 +/- 0.0109
Counting Efficiency: 0.1874 +/- 0.0032 on 11/18/2016 10:08:43 AM
Chem. Recovery Factor: 1.0592 +/- 0.0609

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

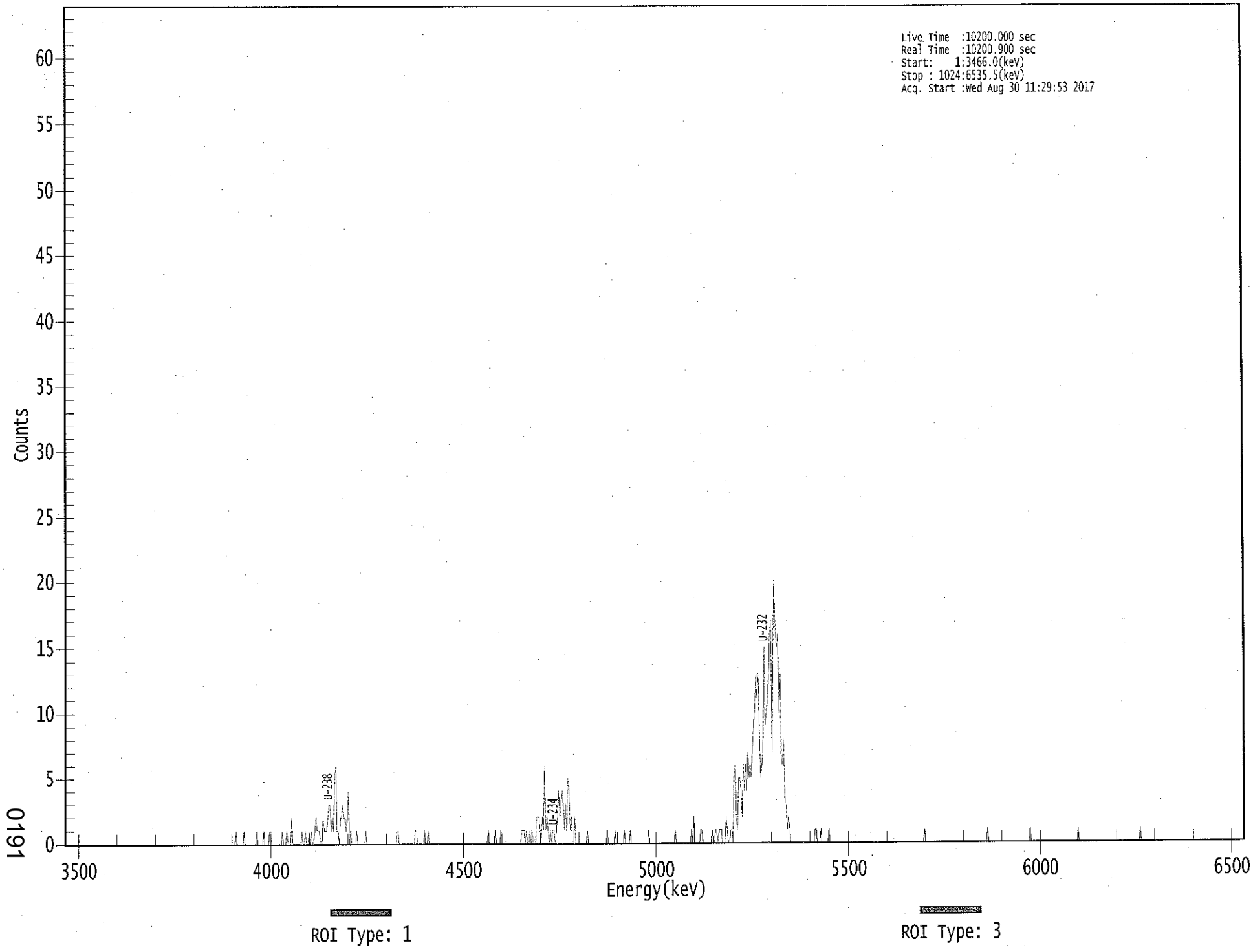
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.280	404.30	9.77	1.70	0.00E+000	17.0
U-234		4.734	67.13	24.31	1.87	0.00E+000	3.6
U-235		4.370	4.98	97.79	1.02	0.00E+000	6.0
U-238		4.151	66.66	24.08	0.34	0.00E+000	6.3

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*	5.12E+000 +/- 5.51E-001	9.29E-002 +/- 1.00E-002
U-234	0.995	4761.50*	8.47E-001 +/- 2.25E-001	9.55E-002 +/- 1.03E-002
U-235	0.998	4385.50*	7.75E-002 +/- 7.62E-002	9.80E-002 +/- 1.06E-002
U-238	0.992	4184.40*	8.37E-001 +/- 2.21E-001	6.01E-002 +/- 6.46E-003

0000193113.CNF



0191

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

Sample Title: 20

Elapsed Live time: 10200
Elapsed Real Time: 10201

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

369:	0	0	0	0	1	0	0	0

Sample Title: 20

Channel								
377:	0	1	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	1	1	1	0	1
401:	0	0	1	0	1	0	0	0
409:	2	2	2	1	0	2	1	6
417:	1	2	1	0	1	0	1	1
425:	0	1	2	4	2	3	4	3
433:	1	3	1	5	4	1	2	0
441:	0	2	0	0	0	0	0	0
449:	0	0	0	0	1	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	1	0	0
473:	0	0	0	0	1	0	0	0
481:	0	0	0	0	1	0	0	0
489:	0	1	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	1	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:	1	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	1	0
545:	2	0	0	0	0	0	1	1
553:	0	0	0	0	0	0	0	0
561:	1	0	0	1	1	0	1	1
569:	1	0	0	0	2	1	0	0
577:	1	1	0	5	6	2	1	5
585:	5	4	2	6	4	6	4	7
593:	5	6	5	7	9	10	13	11
601:	13	8	5	6	7	15	9	10
609:	11	13	16	17	7	16	20	16
617:	15	16	10	13	6	6	8	3
625:	3	1	2	1	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	1	1	0	0	0	1	0
657:	0	0	0	0	0	1	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:	1	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	1

801:	0	0	0	0	0	0	0	0

Sample Title: 20

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

8/30/2017 5:54:31 AM

Apex-Alpha™

QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 8/30/2017
Time : 5:54:31 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_001	21f	ALL	Not Done	
Alpha_002	21f	ALL	Not Done	
Alpha_003	21f	ALL	Passed	8/30/2017 5:22:20 AM
Alpha_004	21f	ALL	Passed	8/30/2017 5:22:21 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	8/30/2017 5:22:22 AM
Alpha_011	21f	ALL	Passed	8/30/2017 5:22:23 AM
Alpha_012	21f	ALL	Passed	8/30/2017 5:22:24 AM
Alpha_013	21f	ALL	Not Done	
Alpha_014	21f	ALL	Passed	8/30/2017 5:22:24 AM
Alpha_015	21f	ALL	Not Done	
Alpha_016	21f	ALL	Not Done	
Alpha_033	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:26 AM
Alpha_034	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:27 AM
Alpha_035	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:29 AM
Alpha_036	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:30 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:32 AM
Alpha_038	Alpha Analyst100DC	Peak Energy	Action	8/30/2017 5:22:34 AM
Alpha_039	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:36 AM
Alpha_040	Alpha Analyst100DC	Peak FWHM	Action	8/30/2017 5:22:38 AM
Alpha_041	Alpha Analyst100DC	ALL	Not Done	
Alpha_042	Alpha Analyst100DC	ALL	Not Done	
Alpha_043	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:40 AM
Alpha_044	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:43 AM
Alpha_045	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:45 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:48 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:50 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:53 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:55 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:22:58 AM
Alpha_051	Alpha Analyst100DC	ALL	Not Done	
Alpha_052	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:23:01 AM
Alpha_053	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:23:04 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:23:06 AM
Alpha_055	Alpha Analyst100DC	ALL	Not Done	
Alpha_056	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:23:09 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:23:11 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:23:14 AM

8/30/2017 5:54:31 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:23:17 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	8/30/2017 5:23:20 AM

APPROVED BY: _____

APPROVAL DATE: _____

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*********************************************************************
*****          L I B R A R Y   L I S T I N G   R E P O R T        *****
*********************************************************************
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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)

17-07090
ThISO
Run 1

Work Order	17-07090
Analysis Code	ThISO
Run	1
Date Received	7/18/2017
Lab Deadline	8/10/2017
Client	Weston Solutions, Inc.
Project	94759
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EPA 907.0 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		07/19/17 00:00	1.0000E+00
02	MBL	BLANK		07/19/17 00:00	1.0000E+00
03	DUP	HTC-A06-S001-1218-01	47	05/16/17 14:24	1.1300E+00
04	DO	HTC-A06-S001-1218-01	47	05/16/17 14:24	1.1289E+00
05	TRG	HTC-A06-S001-1824-01	57	05/16/17 14:22	1.2400E+00
06	TRG	HTC-A06-S001-2430-01	37	05/16/17 14:20	1.4800E+00
07	TRG	HTC-A06-S001-3036-01	39	05/16/17 14:18	1.2400E+00
08	TRG	HTC-A06-S001-3642-01	45	05/16/17 14:16	1.4100E+00
09	TRG	HTC-A06-S001-4248-01	41	05/16/17 14:14	1.1400E+00
10	TRG	HTC-A07-S001-0006-01	67	05/16/17 15:14	1.1100E+00
11	TRG	HTC-A07-S001-0612-01	76	05/16/17 15:12	1.5700E+00
12	TRG	HTC-A07-S001-0612-02	70	05/16/17 15:12	1.5700E+00
13	TRG	HTC-A07-S001-1218-01	51	05/16/17 15:10	1.2700E+00
14	TRG	HTC-A07-S001-1824-01	44	05/16/17 15:08	1.1300E+00
15	TRG	HTC-A07-S001-2430-01	55	05/16/17 15:06	1.1500E+00
16	TRG	HTC-A07-S001-3036-01	33	05/16/17 15:04	1.1000E+00
17	TRG	HTC-A07-S001-3642-01	39	05/16/17 15:02	1.4000E+00
18	TRG	HTC-A07-S001-4248-01	43	05/16/17 15:00	1.2500E+00
19	TRG	HTC-A08-BKGD01-0006-02	45	05/15/17 16:41	1.1200E+00
20	TRG	HTC-A08-BKGD01-0612-01	55	05/15/17 16:38	1.2200E+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.

17-07090
ThISO
Run 1

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	0.4503	10.1		0.00								
02	MBL	0.2339	5.3		0.00								
03	DUP	0.2269	5.1		0.00								
04	DO	0.2261	5.1		0.00								
05	TRG	0.2266	5.1		0.00								
06	TRG	0.2266	5.1		0.00								
07	TRG	0.2264	5.1		0.00								
08	TRG	0.2264	5.1		0.00								
09	TRG	0.2244	5.0		0.00								
10	TRG	0.2255	5.1		0.00								
11	TRG	0.2264	5.1		0.00								
12	TRG	0.2266	5.1		0.00								
13	TRG	0.2265	5.1		0.00								
14	TRG	0.2263	5.1		0.00								
15	TRG	0.2265	5.1		0.00								
16	TRG	0.2261	5.1		0.00								
17	TRG	0.2266	5.1		0.00								
18	TRG	0.2260	5.1		0.00								
19	TRG	0.2260	5.1		0.00								
20	TRG	0.2265	5.1		0.00								

0200

* 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.

17-07090
ThISO
Run 1

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			08/15/17 09:09	JPACHELLA				
02	MBL			08/15/17 09:09	JPACHELLA				
03	DUP			08/15/17 09:09	JPACHELLA				
04	DO	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
05	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
06	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
07	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
08	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
09	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
10	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
11	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
12	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
13	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
14	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
15	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
16	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
17	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
18	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
19	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	JPACHELLA				
20	TRG	08/02/17 09:01	KSALLINGS	08/15/17 09:09	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: 17-07090-ThISO-1

Client: Weston Solutions, Inc. 0202
Eberline Analytical Work Order: 17-07090
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-228	LCS	LCS	pCi/g	6.12E+00	8.98E-01	7.59E-02	4.97E+00	123.15	OK		OK	
02	TH-228	MBL	BLANK	pCi/g	5.92E-02	6.71E-02	9.37E-02					OK	OK
03	TH-228	DUP	HTC-A06-S001-1218-01	pCi/g	6.08E-01	1.99E-01	1.00E-01				OK	OK	
04	TH-228	DO	HTC-A06-S001-1218-01	pCi/g	5.86E-01	2.00E-01	7.07E-02					OK	
05	TH-228	TRG	HTC-A06-S001-1824-01	pCi/g	1.38E+00	3.35E-01	8.08E-02					OK	
06	TH-228	TRG	HTC-A06-S001-2430-01	pCi/g	1.38E+00	3.33E-01	7.63E-02					OK	
07	TH-228	TRG	HTC-A06-S001-3036-01	pCi/g	9.52E-01	2.97E-01	9.84E-02					OK	
08	TH-228	TRG	HTC-A06-S001-3642-01	pCi/g	1.22E+00	2.93E-01	5.73E-02					OK	
09	TH-228	TRG	HTC-A06-S001-4248-01	pCi/g	9.75E-01	3.12E-01	1.08E-01					OK	
10	TH-228	TRG	HTC-A07-S001-0006-01	pCi/g	3.46E-01	1.80E-01	1.58E-01					OK	
11	TH-228	TRG	HTC-A07-S001-0612-01	pCi/g	4.90E-01	2.14E-01	1.16E-01					OK	
12	TH-228	TRG	HTC-A07-S001-0612-02	pCi/g	4.64E-01	2.15E-01	9.38E-02					OK	
13	TH-228	TRG	HTC-A07-S001-1218-01	pCi/g	7.33E-01	2.67E-01	1.16E-01					OK	
14	TH-228	TRG	HTC-A07-S001-1824-01	pCi/g	1.27E+00	3.65E-01	1.28E-01					OK	
15	TH-228	TRG	HTC-A07-S001-2430-01	pCi/g	1.33E+00	3.54E-01	8.60E-02					OK	
16	TH-228	TRG	HTC-A07-S001-3036-01	pCi/g	1.28E+00	3.29E-01	7.01E-02					OK	
17	TH-228	TRG	HTC-A07-S001-3642-01	pCi/g	1.28E+00	3.39E-01	6.81E-02					OK	
18	TH-228	TRG	HTC-A07-S001-4248-01	pCi/g	1.33E+00	3.57E-01	1.10E-01					OK	
19	TH-228	TRG	HTC-A08-BKGD01-0006-02	pCi/g	1.22E+00	3.32E-01	1.02E-01					OK	
20	TH-228	TRG	HTC-A08-BKGD01-0612-01	pCi/g	1.19E+00	3.30E-01	9.84E-02					OK	

Preliminary Data Report & Analytical Calculations

Work Order: 17-07090-ThISO-1

Client: Weston Solutions, Inc. 0203
Eberline Analytical Work Order: 17-07090
Analysis Code: ThISO
Run: 1

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	07/19/17 00:00	1.00E+00	118.78	0.00	0.00			
02	TH-228	MBL	07/19/17 00:00	1.00E+00	98.29	0.00	0.00			
03	TH-228	DUP	05/16/17 14:24	1.13E+00	113.59	0.00	0.00			
04	TH-228	DO	05/16/17 14:24	1.13E+00	108.13	0.00	0.00			
05	TH-228	TRG	05/16/17 14:22	1.24E+00	119.49	0.00	0.00			
06	TH-228	TRG	05/16/17 14:20	1.48E+00	108.26	0.00	0.00			
07	TH-228	TRG	05/16/17 14:18	1.24E+00	93.87	0.00	0.00			
08	TH-228	TRG	05/16/17 14:16	1.41E+00	125.96	0.00	0.00			
09	TH-228	TRG	05/16/17 14:14	1.14E+00	101.55	0.00	0.00			
10	TH-228	TRG	05/16/17 15:14	1.11E+00	102.55	0.00	0.00			
11	TH-228	TRG	05/16/17 15:12	1.57E+00	61.36	0.00	0.00			
12	TH-228	TRG	05/16/17 15:12	1.57E+00	63.22	0.00	0.00			
13	TH-228	TRG	05/16/17 15:10	1.27E+00	97.12	0.00	0.00			
14	TH-228	TRG	05/16/17 15:08	1.13E+00	99.55	0.00	0.00			
15	TH-228	TRG	05/16/17 15:06	1.15E+00	108.65	0.00	0.00			
16	TH-228	TRG	05/16/17 15:04	1.10E+00	120.49	0.00	0.00			
17	TH-228	TRG	05/16/17 15:02	1.40E+00	91.43	0.00	0.00			
18	TH-228	TRG	05/16/17 15:00	1.25E+00	113.25	0.00	0.00			
19	TH-228	TRG	05/15/17 16:41	1.12E+00	117.95	0.00	0.00			
20	TH-228	TRG	05/15/17 16:38	1.22E+00	89.52	0.00	0.00			

Preliminary Data Report & Analytical Calculations

Work Order: 17-07090-ThISO-1

Run: 1
Analysis Code: ThISO
Eberline Analytical Work Order: 17-07090
Client: Weston Solutions, Inc.
0204

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-228	LCS	08/31/17 09:13		A_Spec	Alpha_039	170	5.08 E+02	6.00 E-03	18.5
02	TH-228	MBL	08/31/17 09:14		A_Spec	Alpha_040	170	3.98 E+00	6.00 E-03	18.1
03	TH-228	DUP	08/31/17 09:14		A_Spec	Alpha_043	170	4.96 E+01	1.40 E-02	18.7
04	TH-228	DO	08/31/17 09:14		A_Spec	Alpha_044	170	4.35 E+01	3.00 E-03	17.9
05	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_045	170	1.17 E+02	8.00 E-03	16.9
06	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_046	170	1.28 E+02	9.00 E-03	17.1
07	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_047	170	6.10 E+01	6.00 E-03	16.2
08	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_048	170	1.20 E+02	4.00 E-03	16.3
09	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_049	170	5.70 E+01	6.00 E-03	14.9
10	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_050	170	1.91 E+01	1.70 E-02	14.3
11	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_052	170	2.78 E+01	7.00 E-03	17.4
12	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_053	170	2.37 E+01	2.00 E-03	15.1
13	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_054	170	4.18 E+01	7.00 E-03	13.6
14	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_056	170	7.70 E+01	1.20 E-02	15.9
15	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_057	170	9.30 E+01	0.00 E+00	16.5
16	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_058	170	9.55 E+01	3.00 E-03	16.6
17	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_059	170	9.85 E+01	3.00 E-03	17.8
18	TH-228	TRG	08/31/17 09:14		A_Spec	Alpha_060	170	9.40 E+01	1.20 E-02	14.8
19	TH-228	TRG	08/31/17 12:11		A_Spec	Alpha_003	170.02	8.55 E+01	9.00 E-03	15.6
20	TH-228	TRG	08/31/17 12:11		A_Spec	Alpha_004	170.02	8.26 E+01	8.00 E-03	18.8

Eberline Analytical
Oak Ridge Laboratory

Preliminary Data Report & Analytical Calculations

Work Order: 17-07090-ThISO-1

Client: Weston Solutions, Inc. 0205
Eberline Analytical Work Order: 17-07090
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-230	LCS	LCS	pCi/g	6.41E+00	9.32E-01	7.95E-02	5.43E+00	118.03	OK		OK	
02	TH-230	MBL	BLANK	pCi/g	1.12E-01	8.51E-02	7.82E-02					OK	OK
03	TH-230	DUP	HTC-A06-S001-1218-01	pCi/g	7.66E-01	2.19E-01	7.84E-02				OK	OK	
04	TH-230	DO	HTC-A06-S001-1218-01	pCi/g	8.87E-01	2.51E-01	7.26E-02					OK	
05	TH-230	TRG	HTC-A06-S001-1824-01	pCi/g	1.12E+00	2.80E-01	5.99E-02					OK	
06	TH-230	TRG	HTC-A06-S001-2430-01	pCi/g	1.00E+00	2.57E-01	6.63E-02					OK	
07	TH-230	TRG	HTC-A06-S001-3036-01	pCi/g	1.31E+00	3.58E-01	7.93E-02					OK	
08	TH-230	TRG	HTC-A06-S001-3642-01	pCi/g	9.06E-01	2.30E-01	5.49E-02					OK	
09	TH-230	TRG	HTC-A06-S001-4248-01	pCi/g	8.88E-01	2.84E-01	1.06E-01					OK	
10	TH-230	TRG	HTC-A07-S001-0006-01	pCi/g	3.56E+01	6.78E+00	1.40E-01					OK	
11	TH-230	TRG	HTC-A07-S001-0612-01	pCi/g	3.54E+01	7.71E+00	8.95E-02					OK	
12	TH-230	TRG	HTC-A07-S001-0612-02	pCi/g	4.72E+01	1.07E+01	9.96E-02					OK	
13	TH-230	TRG	HTC-A07-S001-1218-01	pCi/g	2.43E+01	4.85E+00	1.08E-01					OK	
14	TH-230	TRG	HTC-A07-S001-1824-01	pCi/g	1.81E+00	4.57E-01	1.09E-01					OK	
15	TH-230	TRG	HTC-A07-S001-2430-01	pCi/g	1.44E+00	3.62E-01	6.17E-02					OK	
16	TH-230	TRG	HTC-A07-S001-3036-01	pCi/g	1.28E+00	3.20E-01	5.75E-02					OK	
17	TH-230	TRG	HTC-A07-S001-3642-01	pCi/g	1.06E+00	2.87E-01	6.13E-02					OK	
18	TH-230	TRG	HTC-A07-S001-4248-01	pCi/g	1.05E+00	2.93E-01	8.71E-02					OK	
19	TH-230	TRG	HTC-A08-BKGD01-0006-02	pCi/g	1.23E+00	3.23E-01	8.82E-02					OK	
20	TH-230	TRG	HTC-A08-BKGD01-0612-01	pCi/g	1.05E+00	2.95E-01	8.85E-02					OK	

Work Order: 17-07090-ThISO-1

Run: 1
Analysis Code: ThISO
Eberline Analytical Work Order: 17-07090
Client: Weston Solutions, Inc.
0206

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-230	LCS	07/19/17 00:00	1.00E+00	118.78	0.00	0.00			
02	TH-230	MBL	07/19/17 00:00	1.00E+00	98.29	0.00	0.00			
03	TH-230	DUP	05/16/17 14:24	1.13E+00	113.59	0.00	0.00			
04	TH-230	DO	05/16/17 14:24	1.13E+00	108.13	0.00	0.00			
05	TH-230	TRG	05/16/17 14:22	1.24E+00	119.49	0.00	0.00			
06	TH-230	TRG	05/16/17 14:20	1.48E+00	108.26	0.00	0.00			
07	TH-230	TRG	05/16/17 14:18	1.24E+00	93.87	0.00	0.00			
08	TH-230	TRG	05/16/17 14:16	1.41E+00	125.96	0.00	0.00			
09	TH-230	TRG	05/16/17 14:14	1.14E+00	101.55	0.00	0.00			
10	TH-230	TRG	05/16/17 15:14	1.11E+00	102.55	0.00	0.00			
11	TH-230	TRG	05/16/17 15:12	1.57E+00	61.36	0.00	0.00			
12	TH-230	TRG	05/16/17 15:12	1.57E+00	63.22	0.00	0.00			
13	TH-230	TRG	05/16/17 15:10	1.27E+00	97.12	0.00	0.00			
14	TH-230	TRG	05/16/17 15:08	1.13E+00	99.55	0.00	0.00			
15	TH-230	TRG	05/16/17 15:06	1.15E+00	108.65	0.00	0.00			
16	TH-230	TRG	05/16/17 15:04	1.10E+00	120.49	0.00	0.00			
17	TH-230	TRG	05/16/17 15:02	1.40E+00	91.43	0.00	0.00			
18	TH-230	TRG	05/16/17 15:00	1.25E+00	113.25	0.00	0.00			
19	TH-230	TRG	05/15/17 16:41	1.12E+00	117.95	0.00	0.00			
20	TH-230	TRG	05/15/17 16:38	1.22E+00	89.52	0.00	0.00			

Preliminary Data Report & Analytical Calculations

Work Order: 17-07090-ThISO-1

Client: Weston Solutions, Inc. 0207
Eberline Analytical Work Order: 17-07090
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-230	LCS	08/31/17 09:13		A_Spec	Alpha_039	170	5.31 E+02	7.00 E-03	18.5
02	TH-230	MBL	08/31/17 09:14		A_Spec	Alpha_040	170	7.49 E+00	3.00 E-03	18.1
03	TH-230	DUP	08/31/17 09:14		A_Spec	Alpha_043	170	6.95 E+01	9.00 E-03	18.7
04	TH-230	DO	08/31/17 09:14		A_Spec	Alpha_044	170	7.32 E+01	5.00 E-03	17.9
05	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_045	170	1.05 E+02	4.00 E-03	16.9
06	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_046	170	1.04 E+02	8.00 E-03	17.1
07	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_047	170	9.33 E+01	4.00 E-03	16.2
08	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_048	170	9.90 E+01	0.00 E+00	16.3
09	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_049	170	5.76 E+01	8.00 E-03	14.9
10	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_050	170	2.19 E+03	1.60 E-02	14.3
11	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_052	170	2.23 E+03	4.00 E-03	17.4
12	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_053	170	2.67 E+03	4.00 E-03	15.1
13	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_054	170	1.54 E+03	8.00 E-03	13.6
14	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_056	170	1.22 E+02	1.00 E-02	15.9
15	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_057	170	1.12 E+02	2.00 E-03	16.5
16	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_058	170	1.07 E+02	2.00 E-03	16.6
17	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_059	170	9.05 E+01	3.00 E-03	17.8
18	TH-230	TRG	08/31/17 09:14		A_Spec	Alpha_060	170	8.26 E+01	8.00 E-03	14.8
19	TH-230	TRG	08/31/17 12:11		A_Spec	Alpha_003	170.02	9.56 E+01	8.00 E-03	15.6
20	TH-230	TRG	08/31/17 12:11		A_Spec	Alpha_004	170.02	8.16 E+01	8.00 E-03	18.8

Preliminary Data Report & Analytical Calculations
Work Order: 17-07090-ThISO-1

Run: 1
Analysis Code: ThISO
Eberline Analytical Work Order: 17-07090
Client: Weston Solutions, Inc.
0208

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	6.15E+00	9.01E-01	6.32E-02	4.97E+00	123.67	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	3.70E-02	5.16E-02	7.80E-02					OK	OK
03	TH-232	DUP	HTC-A06-S001-1218-01	pCi/g	6.38E-01	1.94E-01	6.94E-02				INV	OK	
04	TH-232	DO	HTC-A06-S001-1218-01	pCi/g	4.82E-01	1.70E-01	5.05E-02					OK	
05	TH-232	TRG	HTC-A06-S001-1824-01	pCi/g	1.34E+00	3.19E-01	9.28E-02					OK	
06	TH-232	TRG	HTC-A06-S001-2430-01	pCi/g	8.80E-01	2.34E-01	7.31E-02					OK	
07	TH-232	TRG	HTC-A06-S001-3036-01	pCi/g	1.02E+00	3.01E-01	9.62E-02					OK	
08	TH-232	TRG	HTC-A06-S001-3642-01	pCi/g	1.14E+00	2.70E-01	3.81E-02					OK	
09	TH-232	TRG	HTC-A06-S001-4248-01	pCi/g	1.07E+00	3.20E-01	6.42E-02					OK	
10	TH-232	TRG	HTC-A07-S001-0006-01	pCi/g	5.63E-01	2.18E-01	1.11E-01					OK	
11	TH-232	TRG	HTC-A07-S001-0612-01	pCi/g	6.75E-01	2.50E-01	7.57E-02					OK	
12	TH-232	TRG	HTC-A07-S001-0612-02	pCi/g	7.31E-01	2.78E-01	9.25E-02					OK	
13	TH-232	TRG	HTC-A07-S001-1218-01	pCi/g	6.64E-01	2.40E-01	9.43E-02					OK	
14	TH-232	TRG	HTC-A07-S001-1824-01	pCi/g	1.22E+00	3.43E-01	1.05E-01					OK	
15	TH-232	TRG	HTC-A07-S001-2430-01	pCi/g	9.90E-01	2.78E-01	5.38E-02					OK	
16	TH-232	TRG	HTC-A07-S001-3036-01	pCi/g	1.12E+00	2.91E-01	6.77E-02					OK	
17	TH-232	TRG	HTC-A07-S001-3642-01	pCi/g	1.04E+00	2.85E-01	5.57E-02					OK	
18	TH-232	TRG	HTC-A07-S001-4248-01	pCi/g	1.06E+00	2.94E-01	6.65E-02					OK	
19	TH-232	TRG	HTC-A08-BKGD01-0006-02	pCi/g	1.14E+00	3.04E-01	6.74E-02					OK	
20	TH-232	TRG	HTC-A08-BKGD01-0612-01	pCi/g	1.26E+00	3.32E-01	6.76E-02					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 17-07090-ThISO-1

Client: Weston Solutions, Inc. 0209
Eberline Analytical Work Order: 17-07090
Analysis Code: ThISO
Run: 1

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-232	LCS	07/19/17 00:00	1.00E+00	118.78	0.00	0.00			
02	TH-232	MBL	07/19/17 00:00	1.00E+00	98.29	0.00	0.00			
03	TH-232	DUP	05/16/17 14:24	1.13E+00	113.59	0.00	0.00			
04	TH-232	DO	05/16/17 14:24	1.13E+00	108.13	0.00	0.00			
05	TH-232	TRG	05/16/17 14:22	1.24E+00	119.49	0.00	0.00			
06	TH-232	TRG	05/16/17 14:20	1.48E+00	108.26	0.00	0.00			
07	TH-232	TRG	05/16/17 14:18	1.24E+00	93.87	0.00	0.00			
08	TH-232	TRG	05/16/17 14:16	1.41E+00	125.96	0.00	0.00			
09	TH-232	TRG	05/16/17 14:14	1.14E+00	101.55	0.00	0.00			
10	TH-232	TRG	05/16/17 15:14	1.11E+00	102.55	0.00	0.00			
11	TH-232	TRG	05/16/17 15:12	1.57E+00	61.36	0.00	0.00			
12	TH-232	TRG	05/16/17 15:12	1.57E+00	63.22	0.00	0.00			
13	TH-232	TRG	05/16/17 15:10	1.27E+00	97.12	0.00	0.00			
14	TH-232	TRG	05/16/17 15:08	1.13E+00	99.55	0.00	0.00			
15	TH-232	TRG	05/16/17 15:06	1.15E+00	108.65	0.00	0.00			
16	TH-232	TRG	05/16/17 15:04	1.10E+00	120.49	0.00	0.00			
17	TH-232	TRG	05/16/17 15:02	1.40E+00	91.43	0.00	0.00			
18	TH-232	TRG	05/16/17 15:00	1.25E+00	113.25	0.00	0.00			
19	TH-232	TRG	05/15/17 16:41	1.12E+00	117.95	0.00	0.00			
20	TH-232	TRG	05/15/17 16:38	1.22E+00	89.52	0.00	0.00			

Preliminary Data Report & Analytical Calculations

Work Order: 17-07090-ThISO-1

Run: 1
Analysis Code: ThISO
Eberline Analytical Work Order: 17-07090
Client: Weston Solutions, Inc.
0210

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-232	LCS	08/31/17 09:13		A_Spec	Alpha_039	170	5.10 E+02	3.00 E-03	18.5
02	TH-232	MBL	08/31/17 09:14		A_Spec	Alpha_040	170	2.49 E+00	3.00 E-03	18.1
03	TH-232	DUP	08/31/17 09:14		A_Spec	Alpha_043	170	5.80 E+01	6.00 E-03	18.7
04	TH-232	DO	08/31/17 09:14		A_Spec	Alpha_044	170	3.98 E+01	1.00 E-03	17.9
05	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_045	170	1.26 E+02	1.70 E-02	16.9
06	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_046	170	9.11 E+01	1.10 E-02	17.1
07	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_047	170	7.26 E+01	8.00 E-03	16.2
08	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_048	170	1.25 E+02	1.00 E-03	16.3
09	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_049	170	6.98 E+01	1.00 E-03	14.9
10	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_050	170	3.46 E+01	8.00 E-03	14.3
11	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_052	170	4.27 E+01	2.00 E-03	17.4
12	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_053	170	4.15 E+01	3.00 E-03	15.1
13	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_054	170	4.22 E+01	5.00 E-03	13.6
14	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_056	170	8.25 E+01	9.00 E-03	15.9
15	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_057	170	7.68 E+01	1.00 E-03	16.5
16	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_058	170	9.33 E+01	4.00 E-03	16.6
17	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_059	170	8.97 E+01	2.00 E-03	17.8
18	TH-232	TRG	08/31/17 09:14		A_Spec	Alpha_060	170	8.35 E+01	3.00 E-03	14.8
19	TH-232	TRG	08/31/17 12:11		A_Spec	Alpha_003	170.02	8.85 E+01	3.00 E-03	15.6
20	TH-232	TRG	08/31/17 12:11		A_Spec	Alpha_004	170.02	9.75 E+01	3.00 E-03	18.8

Count Room Report
Client: Weston Solutions, Inc.

17-07090-ThISO-1 (pCi/g) in SO
Tracer ID: Th-18a

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	07/19/17 00:00	1.0000	0.4503	10.1137		0.00		
02	MBL	BLANK	07/19/17 00:00	1.0000	0.2339	5.2534		0.00		
03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	1.1300	0.2269	5.0962		0.00		
04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	1.1289	0.2261	5.0782		0.00		
05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	1.2400	0.2266	5.0894		0.00		
06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	1.4800	0.2266	5.0894		0.00		
07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	1.2400	0.2264	5.0849		0.00		
08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	1.4100	0.2264	5.0849		0.00		
09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	1.1400	0.2244	5.0400		0.00		
10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	1.1100	0.2255	5.0647		0.00		
11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	1.5700	0.2264	5.0849		0.00		
12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	1.5700	0.2266	5.0894		0.00		
13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	1.2700	0.2265	5.0872		0.00		
14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	1.1300	0.2263	5.0827		0.00		
15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	1.1500	0.2265	5.0872		0.00		
16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	1.1000	0.2261	5.0782		0.00		
17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	1.4000	0.2266	5.0894		0.00		
18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	1.2500	0.2260	5.0760		0.00		
19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	1.1200	0.2260	5.0760		0.00		
20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	1.2200	0.2265	5.0872		0.00		

Eberline Services
Oak Ridge Laboratory

Spike and Tracer Worksheet

Printed: 8/15/2017 9:09 AM

Internal Work Order	Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
17-07090	1	ThISO	8/15/2017 8:58	JPACHELLA		

LCS & Matrix Spikes					LCS	MS	LCSD	MSD	LCS		MS		LCSD		MSD	
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	Volume Used (g)	Volume Used (g)	Volume Used (g)	Known pCi	Error Estimate	Added pCi	Error Estimate	Known pCi	Error Estimate	Added pCi	Error Estimate
Th-228	Th-8b	103.560	8/15/2017	0.100	0.1066				4.97	0.179	0.00	0.000	0.00	0.000	0.00	0.000
Th-230	Th-1b	23.520	8/15/2017	0.500	0.5123				5.43	0.147	0.00	0.000	0.00	0.000	0.00	0.000
Th-232	Th-8b	103.560	8/15/2017	0.100	0.1066				4.97	0.179	0.00	0.000	0.00	0.000	0.00	0.000
Tc-99 MS	Tc-2a	22043.636	7/5/2014	0.1												

Tracers

fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition
01	Th-229	Th-18a	22.460	8/15/2017	0.4503	0.2200
02	Th-229	Th-18a	22.460	8/15/2017	0.2339	0.2200
03	Th-229	Th-18a	22.460	8/15/2017	0.2269	0.2200
04	Th-229	Th-18a	22.460	8/15/2017	0.2261	0.2200
05	Th-229	Th-18a	22.460	8/15/2017	0.2266	0.2200
06	Th-229	Th-18a	22.460	8/15/2017	0.2266	0.2200
07	Th-229	Th-18a	22.460	8/15/2017	0.2264	0.2200
08	Th-229	Th-18a	22.460	8/15/2017	0.2264	0.2200
09	Th-229	Th-18a	22.460	8/15/2017	0.2244	0.2200
10	Th-229	Th-18a	22.460	8/15/2017	0.2255	0.2200
11	Th-229	Th-18a	22.460	8/15/2017	0.2264	0.2200
12	Th-229	Th-18a	22.460	8/15/2017	0.2266	0.2200
13	Th-229	Th-18a	22.460	8/15/2017	0.2265	0.2200
14	Th-229	Th-18a	22.460	8/15/2017	0.2263	0.2200
15	Th-229	Th-18a	22.460	8/15/2017	0.2265	0.2200
16	Th-229	Th-18a	22.460	8/15/2017	0.2261	0.2200
17	Th-229	Th-18a	22.460	8/15/2017	0.2266	0.2200
18	Th-229	Th-18a	22.460	8/15/2017	0.2260	0.2200
19	Th-229	Th-18a	22.460	8/15/2017	0.2260	0.2200
20	Th-229	Th-18a	22.460	8/15/2017	0.2265	0.2200

Balance Printer Tapes

Tracer	LCS

Matrix Spike

0212

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
17-07090	1	ThISO	grams	8/10/2017	JPACHELLA

Lab Fraction	Weston Solutions, Inc. Client ID	Sample Type	Muffle Data Ratio Post/Pre	Dilution Data No of Dils	Dil Factor	Ratio	Aliquot Data Aliquot	Net Equiv	MS Aliquot Data Aliquot	Net Equiv	H-3 Solids Only Water Added (ml)	H3 Dist Aliq
01	LCS	LCS				1.00E+00	1.0000E+00	1.0000E+00				
02	BLANK	MBL				1.00E+00	1.0000E+00	1.0000E+00				
03	HTC-A06-S001-1218-01	DUP				1.00E+00	1.1300E+00	1.1300E+00				
04	HTC-A06-S001-1218-01	DO				1.00E+00	1.1289E+00	1.1289E+00				
05	HTC-A06-S001-1824-01	TRG				1.00E+00	1.2400E+00	1.2400E+00				
06	HTC-A06-S001-2430-01	TRG				1.00E+00	1.4800E+00	1.4800E+00				
07	HTC-A06-S001-3036-01	TRG				1.00E+00	1.2400E+00	1.2400E+00				
08	HTC-A06-S001-3642-01	TRG				1.00E+00	1.4100E+00	1.4100E+00				
09	HTC-A06-S001-4248-01	TRG				1.00E+00	1.1400E+00	1.1400E+00				
10	HTC-A07-S001-0006-01	TRG				1.00E+00	1.1100E+00	1.1100E+00				
11	HTC-A07-S001-0612-01	TRG				1.00E+00	1.5700E+00	1.5700E+00				
12	HTC-A07-S001-0612-02	TRG				1.00E+00	1.5700E+00	1.5700E+00				
13	HTC-A07-S001-1218-01	TRG				1.00E+00	1.2700E+00	1.2700E+00				
14	HTC-A07-S001-1824-01	TRG				1.00E+00	1.1300E+00	1.1300E+00				
15	HTC-A07-S001-2430-01	TRG				1.00E+00	1.1500E+00	1.1500E+00				
16	HTC-A07-S001-3036-01	TRG				1.00E+00	1.1000E+00	1.1000E+00				
17	HTC-A07-S001-3642-01	TRG				1.00E+00	1.4000E+00	1.4000E+00				
18	HTC-A07-S001-4248-01	TRG				1.00E+00	1.2500E+00	1.2500E+00				
19	HTC-A08-BKGD01-0006-02	TRG				1.00E+00	1.1200E+00	1.1200E+00				
20	HTC-A08-BKGD01-0612-01	TRG				1.00E+00	1.2200E+00	1.2200E+00				

Comments	

0213

Technician: JPachella Date: 8/15/17

Eberline Services - Oak Ridge
Prep Logbook
Version 2.0 8/1999

Rough Sample Preparation
Log Book

Printed: 8/2/2017 9:01 AM

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
17-07090	8/10/2017	8/1/2017	8/2/2017	8/3/2017	KSALLINGS

Bico Pulverizer: 000302 [✓] Jaw Crusher 68275 [ ]

Eberline	Weston Solutions, Inc.	Tare (g)	Gross (g)		Net (g)		Percent		Gamma		Special
Fraction	Client ID	Pan Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	Info
04	HTC-A06-S001-1218-01	14.4900	918.6800	691.4900	904.1900	677.0000	25.13%	74.87%	0.0000	0.0000	
05	HTC-A06-S001-1824-01	14.5100	851.0800	690.4600	836.5700	675.9500	19.20%	80.80%	0.0000	0.0000	
06	HTC-A06-S001-2430-01	14.5000	927.6800	764.7400	913.1800	750.2400	17.84%	82.16%	0.0000	0.0000	
07	HTC-A06-S001-3036-01	14.5300	922.2000	744.1300	907.6700	729.6000	19.62%	80.38%	0.0000	0.0000	
08	HTC-A06-S001-3642-01	14.5100	877.5400	709.1700	863.0300	694.6600	19.51%	80.49%	0.0000	0.0000	
09	HTC-A06-S001-4248-01	14.5400	850.2200	681.6600	835.6800	667.1200	20.17%	79.83%	0.0000	0.0000	
10	HTC-A07-S001-0006-01	14.6000	953.4000	867.7400	938.8000	853.1400	9.12%	90.88%	0.0000	0.0000	
11	HTC-A07-S001-0612-01	14.5700	902.1400	844.2800	887.5700	829.7100	6.52%	93.48%	0.0000	0.0000	
12	HTC-A07-S001-0612-02	14.5000	856.9800	805.7600	842.4800	791.2600	6.08%	93.92%	0.0000	0.0000	
13	HTC-A07-S001-1218-01	14.4700	912.9800	822.1400	898.5100	807.6700	10.11%	89.89%	0.0000	0.0000	
14	HTC-A07-S001-1824-01	14.4500	913.2600	751.5800	898.8100	737.1300	17.99%	82.01%	0.0000	0.0000	
15	HTC-A07-S001-2430-01	14.4200	954.4400	785.8100	940.0200	771.3900	17.94%	82.06%	0.0000	0.0000	
16	HTC-A07-S001-3036-01	14.4100	975.7400	794.6000	961.3300	780.1900	18.84%	81.16%	0.0000	0.0000	
17	HTC-A07-S001-3642-01	14.3500	1041.3800	838.3400	1027.0300	823.9900	19.77%	80.23%	0.0000	0.0000	
18	HTC-A07-S001-4248-01	14.4100	1057.6200	847.3000	1043.2100	832.8900	20.16%	79.84%	0.0000	0.0000	
19	HTC-A08-BKGD01-0006-02	14.4300	848.5800	678.8300	834.1500	664.4000	20.35%	79.65%	0.0000	0.0000	
20	HTC-A08-BKGD01-0612-01	14.5100	900.9800	717.0700	886.4700	702.5600	20.75%	79.25%	0.0000	0.0000	

OVENS Fisher Isotemp SN 00579 [✓] VWR SN 000588 [ ]

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

0214

Technician: Kerry Sai

Date: **Analysis: Rough Prep Logbook**

Analysis: ThISO Page No. 10179

Apex-Alpha™

JCB 8/31/17

Sample Description: SPIKE
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001932
Batch Identification: 1707090A-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 194880
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 8/31/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:13:59 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.450 mL
Effective Efficiency: 0.2200 +/- 0.0132
Counting Efficiency: 0.1852 +/- 0.0031 on 11/18/2016 10:08:50 AM
Chem. Recovery Factor: 1.1878 +/- 0.0742

Control Certificate Name: NatTh_Th-8
Chem. Recov. of Control: TH-232 1.236667 +/- 0.099566
Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

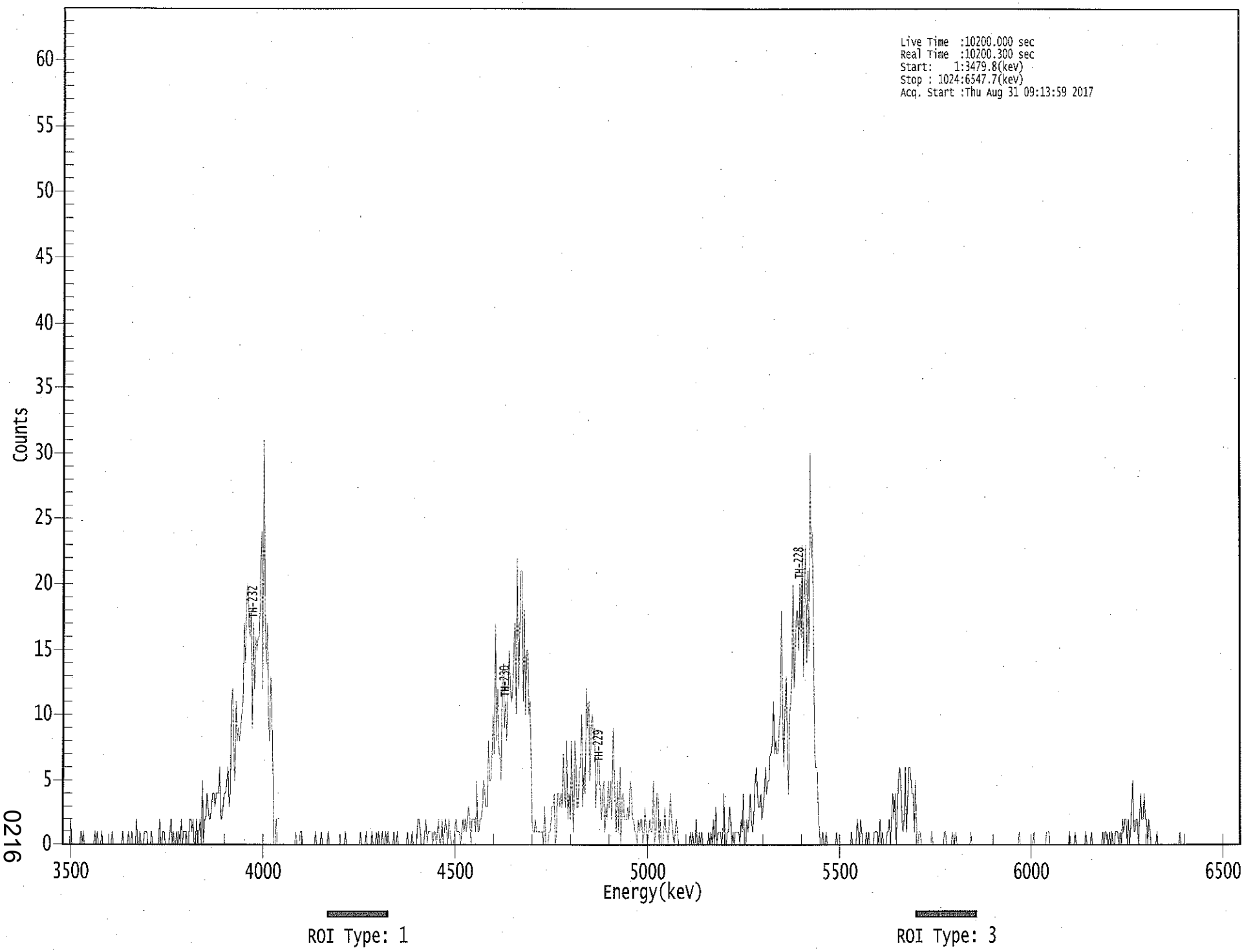
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.820	17.49	47.66	0.51	0.00E+000	3.0
TH-228		5.395	507.98	8.71	1.02	0.00E+000	12.3
TH-229	T	4.875	378.13	10.11	1.87	0.00E+000	10.7
TH-230		4.632	530.81	8.52	1.19	0.00E+000	17.7
TH-232		3.976	510.49	8.68	0.51	0.00E+000	7.3

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.995	5850.00*	2.16E-001 +/- 1.06E-001	6.48E-002 +/- 7.65E-003
TH-228	1.000	5400.00*	6.12E+000 +/- 8.98E-001	7.59E-002 +/- 8.96E-003
TH-229	1.000	4872.00*	4.58E+000 +/- 5.40E-001	9.17E-002 +/- 1.08E-002
TH-230	0.992	4672.00*	6.41E+000 +/- 9.32E-001	7.95E-002 +/- 9.38E-003
TH-232	0.998	3997.00*	6.15E+000 +/- 9.01E-001	6.32E-002 +/- 7.46E-003

0000193227.CNF



0216

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

369:	3	8	5	5	7	10	7	17

Sample Title: 01

Channel								
377:	8	12	7	7	5	13	14	9
385:	11	8	12	15	12	11	12	15
393:	17	10	22	12	15	21	21	11
401:	18	10	15	15	10	11	7	2
409:	1	1	2	1	1	1	1	1
417:	1	0	3	0	0	0	1	1
425:	3	3	4	0	1	4	4	3
433:	4	3	7	4	3	8	2	4
441:	2	8	3	1	8	6	3	3
449:	6	6	10	3	6	4	12	9
457:	11	5	9	10	8	9	3	5
465:	7	6	4	2	4	5	1	3
473:	2	5	3	5	2	9	6	3
481:	1	5	1	6	0	4	4	2
489:	2	2	3	2	5	4	2	2
497:	1	1	0	2	1	2	2	0
505:	1	3	1	0	1	2	1	1
513:	5	0	1	4	4	0	2	0
521:	0	1	3	1	1	0	2	4
529:	2	1	0	1	2	1	0	0
537:	0	0	0	0	0	0	0	0
545:	1	0	1	0	0	2	0	0
553:	1	0	1	0	0	0	0	0
561:	1	0	1	0	2	0	3	0
569:	1	1	1	0	1	4	0	0
577:	1	1	3	2	0	1	0	1
585:	1	1	1	0	2	1	4	0
593:	0	2	1	2	4	2	1	2
601:	5	6	4	3	3	4	2	3
609:	4	6	4	5	5	7	7	8
617:	11	7	8	7	7	9	10	18
625:	11	6	10	13	9	4	10	11
633:	13	20	12	15	18	18	15	20
641:	16	23	13	20	23	14	21	15
649:	30	22	24	16	7	6	6	3
657:	1	0	0	1	0	0	1	0
665:	0	0	0	0	0	0	0	1
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	1	0	0	0
689:	0	2	1	0	2	1	0	0
697:	0	1	0	1	0	0	0	0
705:	1	1	1	1	0	2	0	1
713:	0	0	0	1	1	2	0	2
721:	4	2	4	0	3	5	6	5
729:	2	1	2	6	1	3	6	6
737:	5	4	4	1	5	0	0	1
745:	1	0	0	0	0	0	0	0
753:	0	0	1	0	0	0	0	0
761:	0	0	0	0	0	1	1	0
769:	0	0	0	0	1	0	0	1
777:	0	0	0	0	0	0	0	0
785:	0	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: 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	1	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	1	0	0	0	0
849:	0	0	0	0	0	0	1	1
857:	1	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	1	0	0	0	0	1
881:	0	0	0	0	0	0	0	0
889:	1	0	0	0	0	1	0	0
897:	0	0	0	0	0	0	0	1
905:	0	1	1	0	0	1	0	1
913:	0	0	1	1	1	0	1	0
921:	2	1	2	2	0	2	0	1
929:	3	5	1	1	2	2	0	2
937:	4	2	2	4	2	2	0	2
945:	1	0	0	0	0	0	1	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	1	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KB 9/13/17

Apex-Alpha™

Sample Description: BLANK
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 02
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_040
Chamber Serial Number: 06027396B
Detector Serial Number: 91135
Env. Background: System Bkgd 194881
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 8/31/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:01 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.234 mL
Effective Efficiency: 0.1782 +/- 0.0152
Counting Efficiency: 0.1813 +/- 0.0031 on 11/18/2016 10:08:48 AM
Chem. Recovery Factor: 0.9829 +/- 0.0855

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

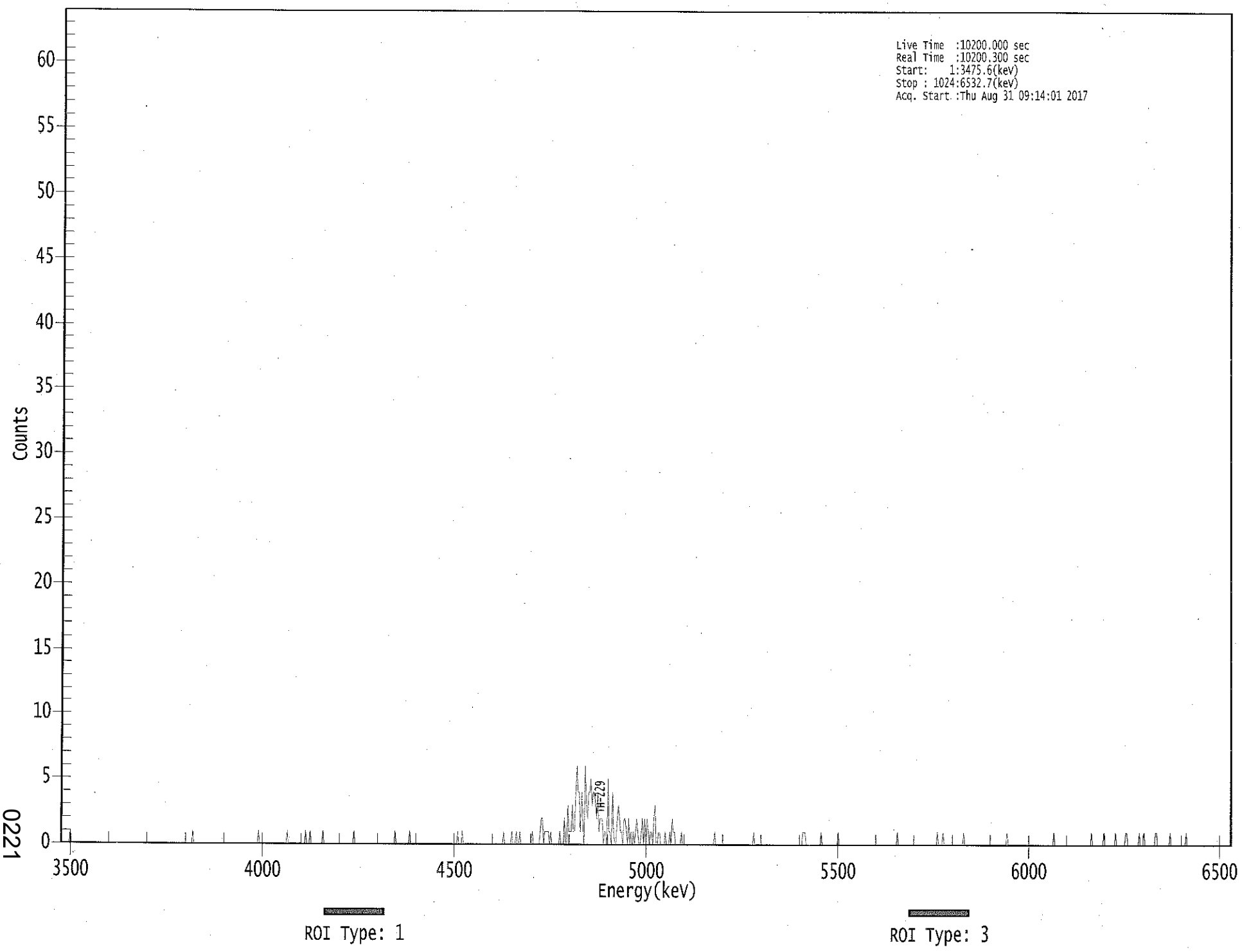
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.828	2.81	142.99	1.19	0.00E+000	3.0
TH-228		5.339	3.98	112.01	1.02	0.00E+000	3.0
TH-229	T	4.883	159.15	15.58	0.85	0.00E+000	11.0
TH-230		4.634	7.49	74.41	0.51	0.00E+000	3.0
TH-232		3.958	2.49	138.29	0.51	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	0.998	5850.00*	4.28E-002 +/- 6.17E-002	1.00E-001 +/- 1.68E-002
TH-228	0.981	5400.00*	5.92E-002 +/- 6.71E-002	9.37E-002 +/- 1.57E-002
TH-229	0.999	4872.00*	2.38E+000 +/- 3.98E-001	8.94E-002 +/- 1.50E-002
TH-230	0.992	4672.00*	1.12E-001 +/- 8.51E-002	7.82E-002 +/- 1.31E-002
TH-232	0.992	3997.00*	3.70E-002 +/- 5.16E-002	7.80E-002 +/- 1.30E-002

0000193191.CNF



0221

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

369:	0	0	0	0	0	0	0	0

Sample Title: 02

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

801:	0	0	0	0	0	0	0	0

Sample Title: 02

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	1	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	1	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	1	0	0	0
905:	0	0	0	0	0	0	0	1
913:	0	0	0	0	0	0	0	0
921:	0	1	0	0	0	0	0	0
929:	0	0	1	1	0	0	0	0
937:	0	0	0	0	0	0	1	0
945:	0	0	1	0	0	0	0	0
953:	0	0	0	0	1	1	0	0
961:	0	0	0	0	0	0	0	0
969:	0	1	0	0	0	0	0	0
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

Apex-Alpha™

KB 3/31/17

Sample Description: HTC-A06-S001-1218-01-DUP
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001932
Batch Identification: 1707090A-TH
Sample Identification: 03
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_043
Chamber Serial Number: 04026481A
Detector Serial Number: 91088
Env. Background: System Bkgd 194882
Reagent Blank: <not performed>

Sample Size: 1.130E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:02 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.2129 +/- 0.0171
Counting Efficiency: 0.1874 +/- 0.0032 on 11/18/2016 10:08:43 AM
Chem. Recovery Factor: 1.1359 +/- 0.0934

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

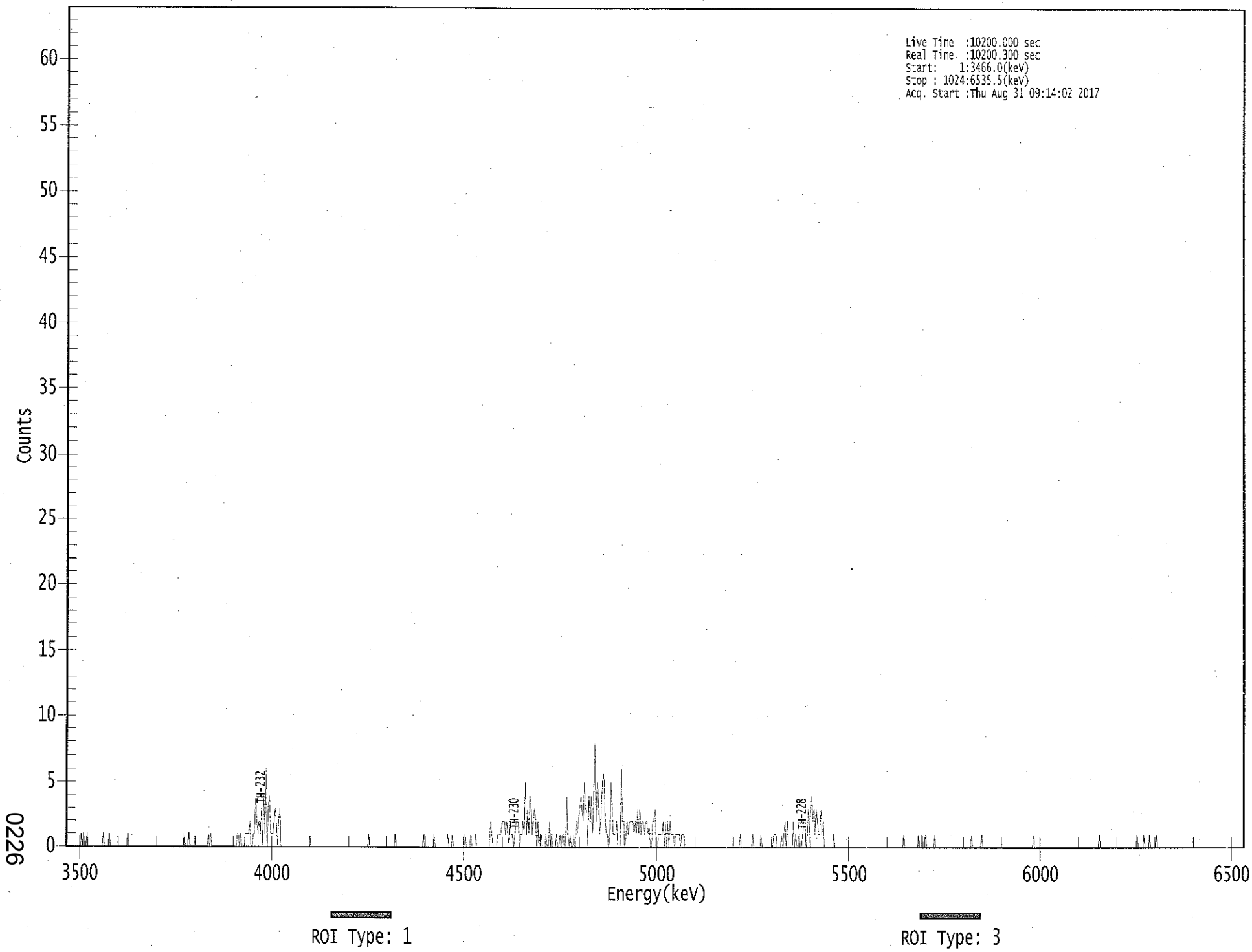
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.816	4.15	107.12	0.85	0.00E+000	3.0
TH-228		5.381	49.62	28.59	2.38	0.00E+000	7.5
TH-229	T	4.889	184.45	14.55	2.55	0.00E+000	5.0
TH-230		4.634	69.47	23.82	1.53	0.00E+000	3.8
TH-232		3.973	57.98	26.00	1.02	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)
TH-227	0.994	5850.00*	4.73E-002 +/- 5.12E-002	6.83E-002 +/- 1.08E-002
TH-228	0.998	5400.00*	6.08E-001 +/- 1.99E-001	1.00E-001 +/- 1.58E-002
TH-229	0.999	4872.00*	2.04E+000 +/- 3.22E-001	9.28E-002 +/- 1.46E-002
TH-230	0.993	4672.00*	7.66E-001 +/- 2.19E-001	7.84E-002 +/- 1.24E-002
TH-232	0.997	3997.00*	6.38E-001 +/- 1.94E-001	6.94E-002 +/- 1.09E-002

0000193200.CNF



0226

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

369:	2	1	0	0	0	0	1	1

Sample Title: 03

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

801:	0	0	0	0	0	0	0	0

Sample Title: 03

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	1
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:	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	1	0	0	0	0	0	1
937:	0	0	0	0	1	0	0	0
945:	0	0	1	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/31/17

Sample Description: HTC-A06-S001-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001932
Batch Identification: 1707090A-TH
Sample Identification: 04
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_044
Chamber Serial Number: 04026481B
Detector Serial Number: 84168
Env. Background: System Bkgd 194883
Reagent Blank: <not performed>

Sample Size: 1.129E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:05 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1938 +/- 0.0162
Counting Efficiency: 0.1793 +/- 0.0030 on 11/18/2016 10:08:42 AM
Chem. Recovery Factor: 1.0813 +/- 0.0921

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

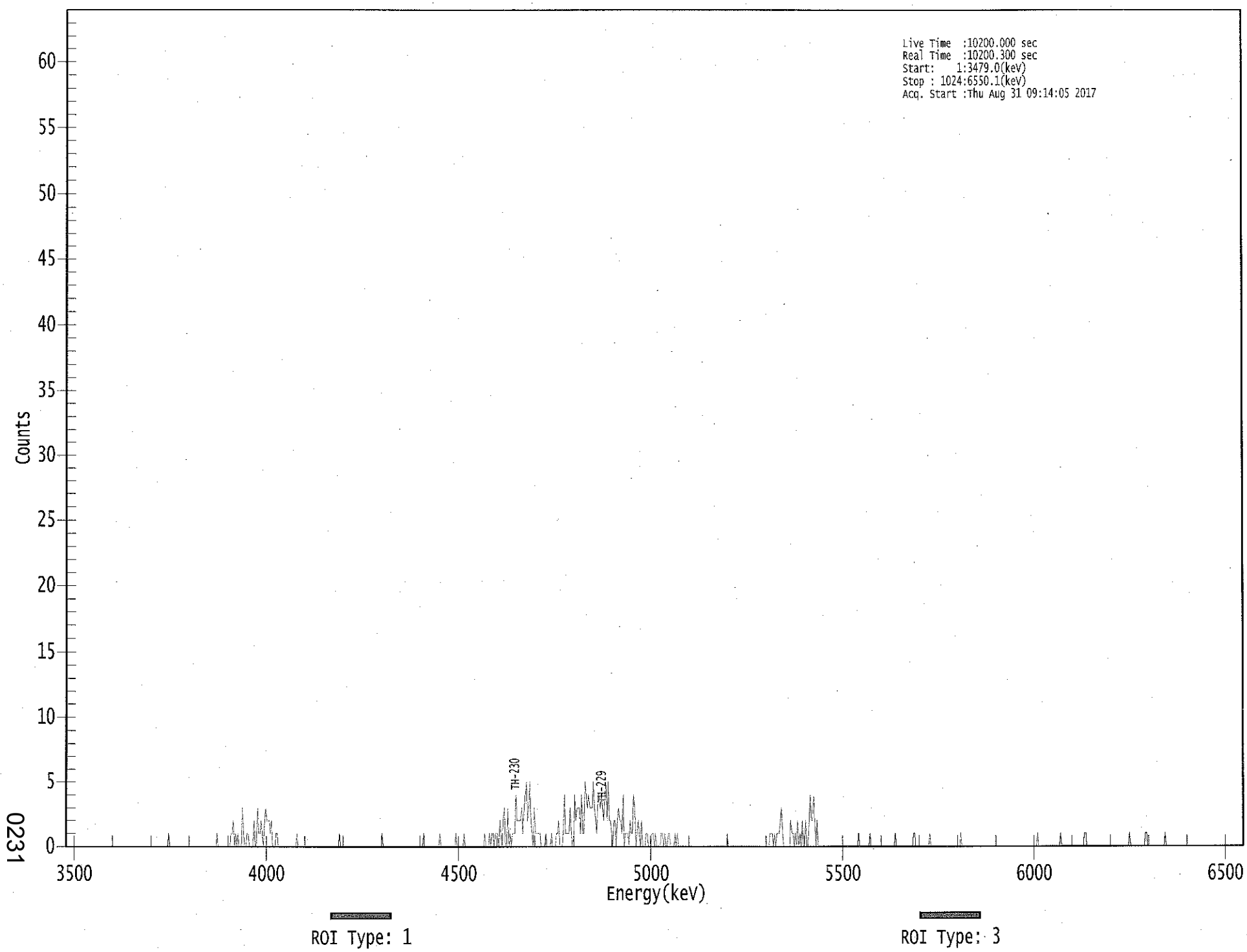
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.849	1.81	193.78	1.19	0.00E+000	3.0
TH-228		5.379	43.49	29.92	0.51	0.00E+000	6.0
TH-229	T	4.875	167.32	15.19	0.68	0.00E+000	27.4
TH-230		4.650	73.15	23.07	0.85	0.00E+000	9.3
TH-232		3.975	39.83	31.13	0.17	0.00E+000	3.8

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	2.27E-002 +/- 4.41E-002	8.26E-002 +/- 1.35E-002
TH-228	0.998	5400.00*	5.86E-001 +/- 2.00E-001	7.07E-002 +/- 1.16E-002
TH-229	1.000	4872.00*	2.04E+000 +/- 3.33E-001	6.86E-002 +/- 1.12E-002
TH-230	0.997	4672.00*	8.87E-001 +/- 2.51E-001	7.26E-002 +/- 1.19E-002
TH-232	0.997	3997.00*	4.82E-001 +/- 1.70E-001	5.05E-002 +/- 8.27E-003

0000193201.CNF



0231

****
***** 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	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	1	0	0	0	0	0	0
97:	0	0	0	0	0	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	1	0	0	0	0
137:	0	0	0	0	0	0	0	1
145:	1	2	0	1	0	1	0	0
153:	0	3	1	0	0	1	1	0
161:	0	0	0	2	0	0	3	1
169:	1	2	1	0	2	3	2	2
177:	2	1	2	0	0	0	1	1
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	1	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	1	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	1	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	1	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	1	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	1	0	0	0	0	0
345:	0	1	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	1	0	0	0	1

369:	0	1	1	0	1	1	1	0

Sample Title: 04

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

801:	0	0	0	0	0	0	0	0

Sample Title: 04

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

Apex-Alpha™

KB 8/31/17

Sample Description: HTC-A06-S001-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 05
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_045
Chamber Serial Number: 04026482A
Detector Serial Number: 91131
Env. Background: System Bkgd 194884
Reagent Blank: <not performed>

Sample Size: 1.240E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:07 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.2017 +/- 0.0165
Counting Efficiency: 0.1688 +/- 0.0029 on 11/18/2016 10:08:40 AM
Chem. Recovery Factor: 1.1949 +/- 0.1000

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

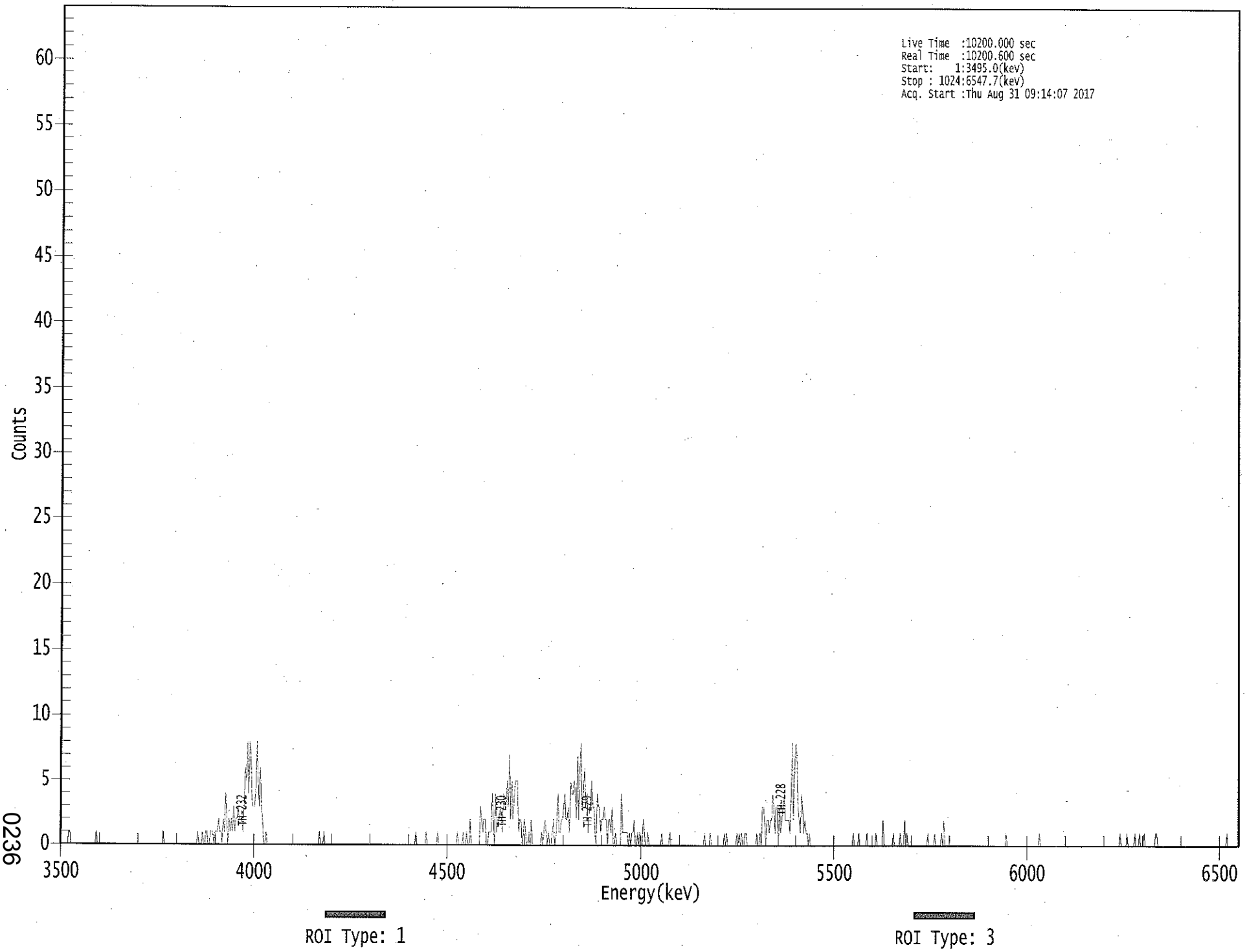
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.829	6.32	82.73	0.68	0.00E+000	3.0
TH-228		5.360	116.64	18.27	1.36	0.00E+000	5.0
TH-229	T	4.858	174.49	14.86	0.51	0.00E+000	6.9
TH-230		4.639	105.32	19.17	0.68	0.00E+000	4.7
TH-232		3.968	126.11	17.69	2.89	0.00E+000	10.9

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	6.93E-002 +/- 5.84E-002	6.19E-002 +/- 9.93E-003
TH-228	0.992	5400.00*	1.38E+000 +/- 3.35E-001	8.08E-002 +/- 1.30E-002
TH-229	0.999	4872.00*	1.86E+000 +/- 2.98E-001	5.59E-002 +/- 8.97E-003
TH-230	0.994	4672.00*	1.12E+000 +/- 2.80E-001	5.99E-002 +/- 9.61E-003
TH-232	0.996	3997.00*	1.34E+000 +/- 3.19E-001	9.28E-002 +/- 1.49E-002

0000193192.CNF



0236

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

369:	2	0	0	1	1	1	4	2

Sample Title: 05

Channel								
377:	0	4	1	2	2	3	2	1
385:	4	3	3	5	3	7	2	5
393:	2	4	5	5	5	1	2	2
401:	0	1	2	1	0	0	1	0
409:	2	0	0	0	0	0	0	0
417:	0	1	0	1	2	1	0	1
425:	0	0	1	2	0	0	2	4
433:	1	1	2	2	3	4	2	2
441:	3	1	5	4	4	5	4	2
449:	7	2	6	8	3	4	6	3
457:	4	1	3	3	5	3	3	1
465:	0	4	3	3	1	2	2	3
473:	2	2	0	2	2	1	3	0
481:	0	1	0	0	0	0	4	1
489:	1	1	1	1	0	1	0	1
497:	1	2	0	0	1	0	1	0
505:	0	2	1	0	0	1	0	0
513:	0	0	0	0	0	0	0	0
521:	0	1	0	0	0	0	0	0
529:	1	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	1	0
561:	0	0	0	1	0	0	0	0
569:	0	0	0	0	0	0	0	1
577:	0	1	0	0	0	0	0	0
585:	0	0	1	0	1	0	1	0
593:	0	1	1	0	0	0	0	0
601:	0	0	0	1	0	0	1	0
609:	3	3	2	0	2	2	1	2
617:	2	4	3	1	3	3	0	3
625:	1	2	3	4	2	2	2	2
633:	1	4	8	2	6	8	7	3
641:	2	1	4	3	1	2	1	1
649:	0	1	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	1
689:	0	0	0	0	1	0	0	0
697:	0	0	0	1	0	0	0	0
705:	0	0	0	1	0	0	0	0
713:	0	2	0	0	0	0	0	0
721:	0	0	1	0	0	0	0	0
729:	1	0	0	0	2	0	1	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	1	0	0	0	0	0	1	0
761:	0	0	0	0	1	0	2	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: 05

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	1	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	1	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	1
921:	0	0	0	0	0	1	0	0
929:	0	0	0	0	1	0	0	0
937:	1	0	0	0	1	0	0	0
945:	0	0	0	0	0	0	1	1
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	1	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 8/31/17

Sample Description: HTC-A06-S001-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 06
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_046
Chamber Serial Number: 04026482B
Detector Serial Number: 58762
Env. Background: System Bkgd 194885
Reagent Blank: <not performed>

Sample Size: 1.480E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:10 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.1855 +/- 0.0158
Counting Efficiency: 0.1713 +/- 0.0029 on 11/18/2016 10:08:38 AM
Chem. Recovery Factor: 1.0826 +/- 0.0941

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

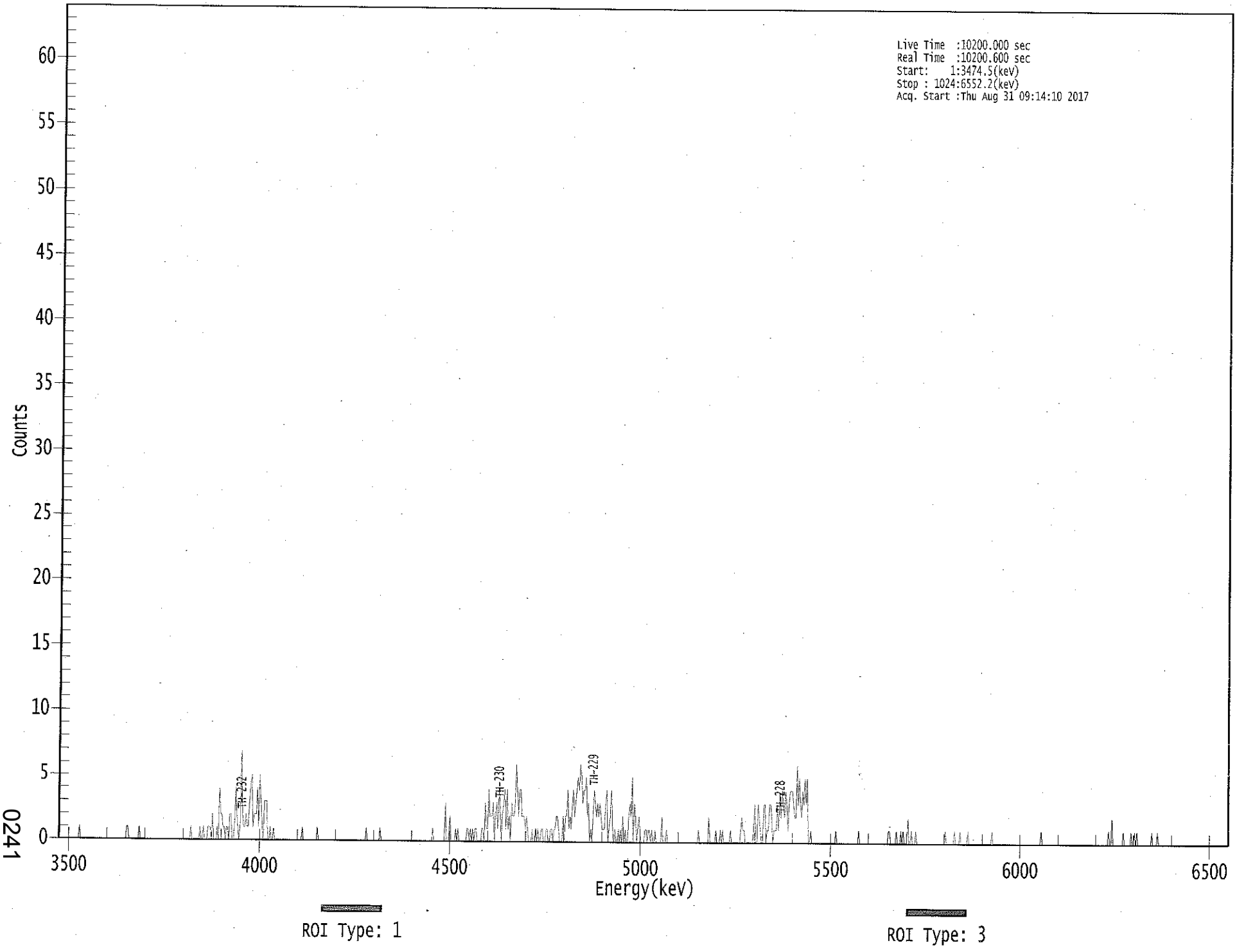
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.790	7.98	74.39	1.02	0.00E+000	3.0
TH-228		5.370	128.47	17.41	1.53	0.00E+000	5.3
TH-229	T	4.879	160.47	15.56	1.53	0.00E+000	18.1
TH-230		4.633	103.64	19.40	1.36	0.00E+000	7.5
TH-232		3.957	91.13	20.78	1.87	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)
TH-227	0.981	5850.00*	7.97E-002 +/- 6.08E-002	6.30E-002 +/- 1.05E-002
TH-228	0.995	5400.00*	1.38E+000 +/- 3.33E-001	7.63E-002 +/- 1.28E-002
TH-229	1.000	4872.00*	1.56E+000 +/- 2.60E-001	6.89E-002 +/- 1.15E-002
TH-230	0.992	4672.00*	1.00E+000 +/- 2.57E-001	6.63E-002 +/- 1.11E-002
TH-232	0.992	3997.00*	8.80E-001 +/- 2.34E-001	7.31E-002 +/- 1.22E-002

0000193193.CNF



0241

****
***** 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
9:	0	0	0	0	0	0	0	0
17:	0	0	1	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	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	1	1	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	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	1	0	0	0	0
121:	0	0	0	1	0	0	1	0
129:	0	0	1	1	1	0	2	0
137:	0	0	1	0	4	2	2	1
145:	1	0	1	1	0	2	2	0
153:	0	1	4	2	1	0	1	7
161:	2	1	1	2	1	1	3	4
169:	5	1	2	2	2	4	1	5
177:	3	1	0	3	3	3	0	0
185:	1	0	0	1	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	1	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	1	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	1	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:	0	0	0	0	0	0	1	0
329:	0	0	0	0	0	0	0	0
337:	0	3	0	0	0	2	0	0
345:	0	0	1	0	1	0	0	0
353:	0	0	0	0	1	1	0	1
361:	0	1	0	1	1	0	0	0

369:	0	1	1	0	3	1	1	4

Sample Title: 06

Channel								
377:	2	2	2	3	0	2	3	1
385:	4	3	0	2	3	4	1	4
393:	1	2	0	3	2	2	3	6
401:	4	2	4	4	2	2	2	1
409:	2	1	0	0	0	1	0	0
417:	1	0	1	0	0	1	1	0
425:	0	1	1	0	0	1	1	0
433:	1	1	2	2	1	0	0	0
441:	2	0	2	2	4	1	2	1
449:	3	4	2	3	4	5	4	6
457:	5	3	4	4	5	2	3	0
465:	1	0	2	4	3	2	3	2
473:	3	2	1	1	1	3	4	0
481:	1	2	4	1	0	1	0	0
489:	1	0	1	0	2	0	1	0
497:	0	2	3	2	5	0	3	2
505:	0	1	2	1	0	0	0	1
513:	1	0	1	1	0	1	0	0
521:	1	0	0	0	0	0	2	0
529:	0	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	1	0
561:	0	0	0	0	0	0	0	2
569:	0	0	0	0	0	1	0	0
577:	0	1	0	1	0	0	0	0
585:	0	0	1	0	0	0	0	0
593:	0	0	0	1	2	1	1	0
601:	0	0	0	0	0	0	1	3
609:	0	0	3	2	1	0	0	3
617:	3	0	1	1	3	3	2	0
625:	1	1	1	3	1	4	2	4
633:	3	2	4	3	1	3	4	4
641:	4	3	2	2	6	3	5	3
649:	2	4	3	5	3	5	0	0
657:	1	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	1	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	1	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	1	1	0	0
729:	0	0	0	1	0	0	0	1
737:	0	1	0	0	0	2	0	0
745:	1	0	0	0	1	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	1	0
777:	0	0	0	0	0	0	1	0
785:	0	0	0	1	0	0	0	0
793:	0	0	1	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	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	1	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	1	0	0
921:	2	0	0	0	0	0	0	0
929:	0	0	1	0	0	0	0	0
937:	0	1	0	0	1	0	1	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	1	0	0	0	0
961:	1	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 8/31/17

Sample Description: HTC-A06-S001-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 07
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_047
Chamber Serial Number: 02030596A
Detector Serial Number: 91086
Env. Background: System Bkgd 194886
Reagent Blank: <not performed>

Sample Size: 1.240E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:12 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1523 +/- 0.0141
Counting Efficiency: 0.1623 +/- 0.0028 on 11/18/2016 10:08:37 AM
Chem. Recovery Factor: 0.9387 +/- 0.0884

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

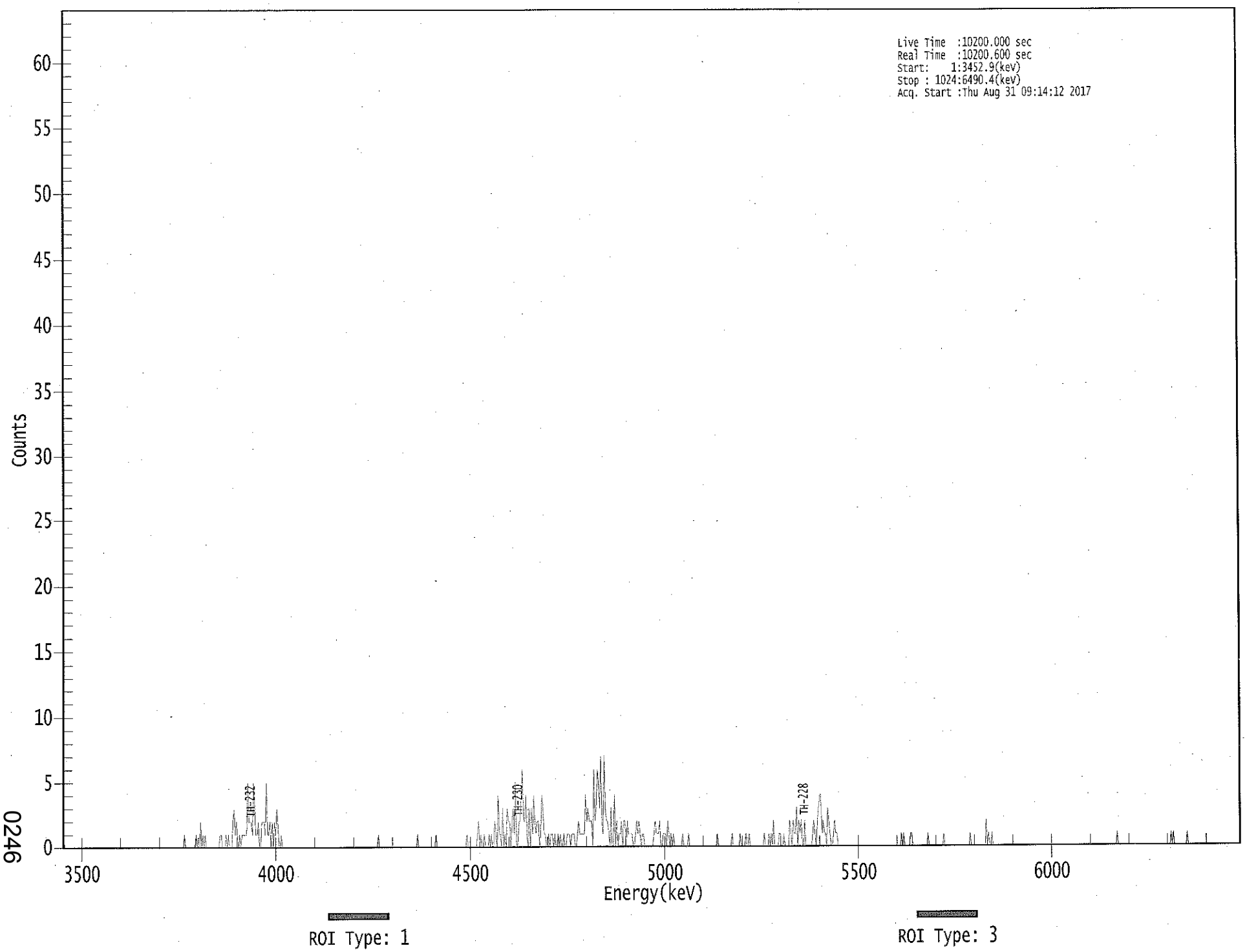
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.809	5.66	85.23	0.34	0.00E+000	3.0
TH-228		5.362	60.98	25.34	1.02	0.00E+000	10.9
TH-229	T	4.862	131.66	17.11	0.34	0.00E+000	4.7
TH-230		4.627	93.32	20.38	0.68	0.00E+000	6.7
TH-232		3.938	72.64	23.25	1.36	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	0.991	5850.00*	8.22E-002 +/- 7.16E-002	6.94E-002 +/- 1.26E-002
TH-228	0.992	5400.00*	9.52E-001 +/- 2.97E-001	9.84E-002 +/- 1.79E-002
TH-229	0.999	4872.00*	1.86E+000 +/- 3.37E-001	6.74E-002 +/- 1.22E-002
TH-230	0.989	4672.00*	1.31E+000 +/- 3.58E-001	7.93E-002 +/- 1.44E-002
TH-232	0.982	3997.00*	1.02E+000 +/- 3.01E-001	9.62E-002 +/- 1.75E-002

0000193196.CNF



0246

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

Sample Title: 07

Elapsed Live time: 10200
Elapsed Real Time: 10201

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

369:	0	1	0	1	0	0	2	1

Sample Title: 07

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

Sample Title: 07

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

KB 9/31/17

Apex-Alpha™

Sample Description: HTC-A06-S001-3642-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 08
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_048
Chamber Serial Number: 02030596B
Detector Serial Number: 83111
Env. Background: System Bkgd 194887
Reagent Blank: <not performed>

Sample Size: 1.410E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:15 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.2057 +/- 0.0167
Counting Efficiency: 0.1633 +/- 0.0028 on 11/18/2016 10:08:35 AM
Chem. Recovery Factor: 1.2596 +/- 0.1045

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

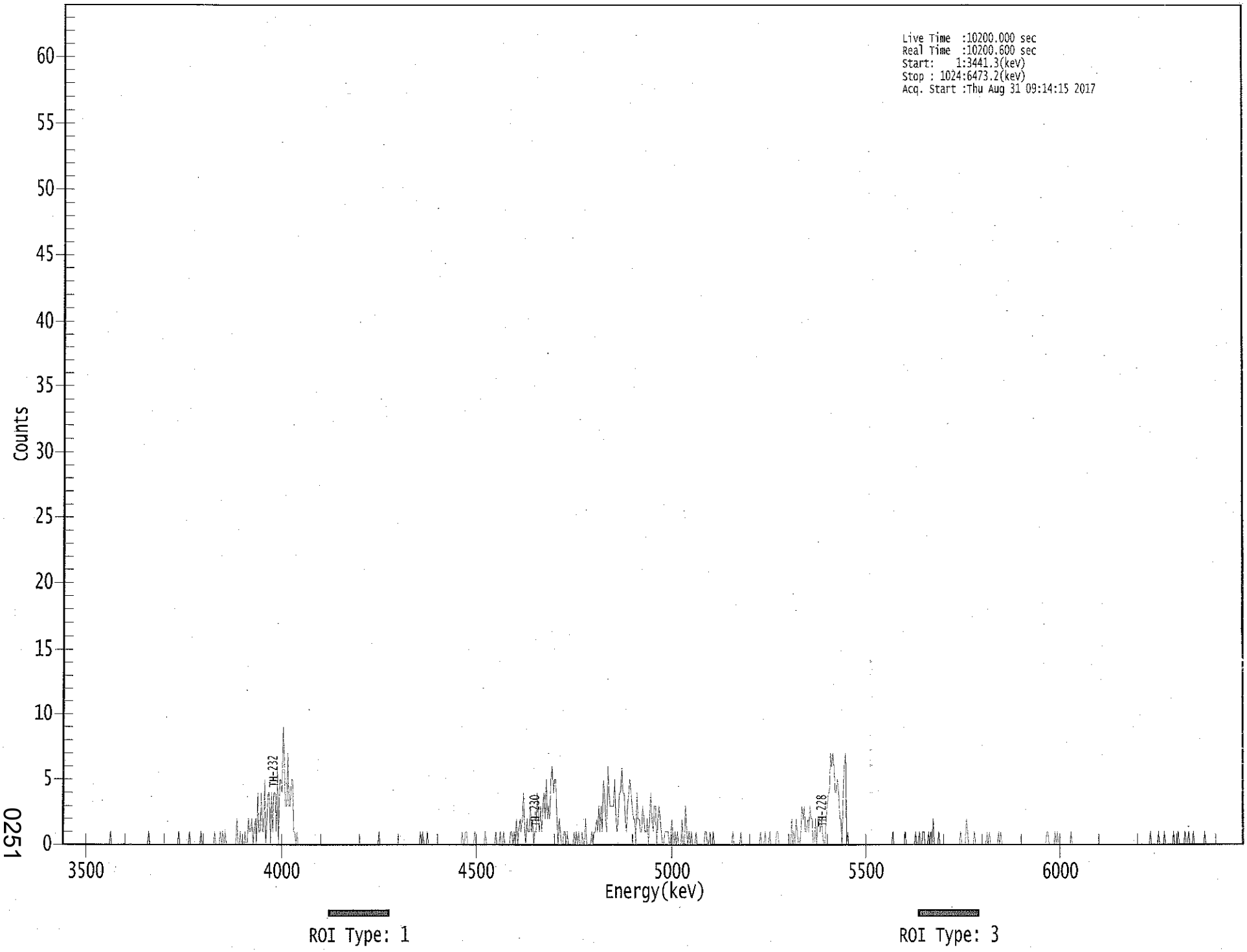
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.862	13.66	53.80	0.34	0.00E+000	4.4
TH-228		5.389	120.32	17.93	0.68	0.00E+000	28.9
TH-229	T	4.892	177.83	14.71	0.17	0.00E+000	7.7
TH-230		4.655	99.00	19.80	0.00	0.00E+000	15.8
TH-232		3.980	124.83	17.56	0.17	0.00E+000	7.1

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.29E-001 +/- 7.25E-002	4.52E-002 +/- 7.19E-003
TH-228	0.999	5400.00*	1.22E+000 +/- 2.93E-001	5.73E-002 +/- 9.12E-003
TH-229	0.998	4872.00*	1.63E+000 +/- 2.60E-001	3.83E-002 +/- 6.09E-003
TH-230	0.998	4672.00*	9.06E-001 +/- 2.30E-001	5.49E-002 +/- 8.73E-003
TH-232	0.998	3997.00*	1.14E+000 +/- 2.70E-001	3.81E-002 +/- 6.07E-003

0000193197.CNF



0251

****
***** 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: 10201

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

369:	0	0	0	0	0	0	1	0

Sample Title: 08

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

801:	1	0	1	0	0	0	0	0

Sample Title: 08

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

KP 8/31/17

Apex-Alpha™

Sample Description: HTC-A06-S001-4248-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 09
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_049
Chamber Serial Number: 10006121A
Detector Serial Number: 49
Env. Background: System Bkgd 194888
Reagent Blank: <not performed>

Sample Size: 1.140E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:17 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.224 mL
Effective Efficiency: 0.1512 +/- 0.0141
Counting Efficiency: 0.1488 +/- 0.0026 on 11/18/2016 3:34:20 PM
Chem. Recovery Factor: 1.0155 +/- 0.0965

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

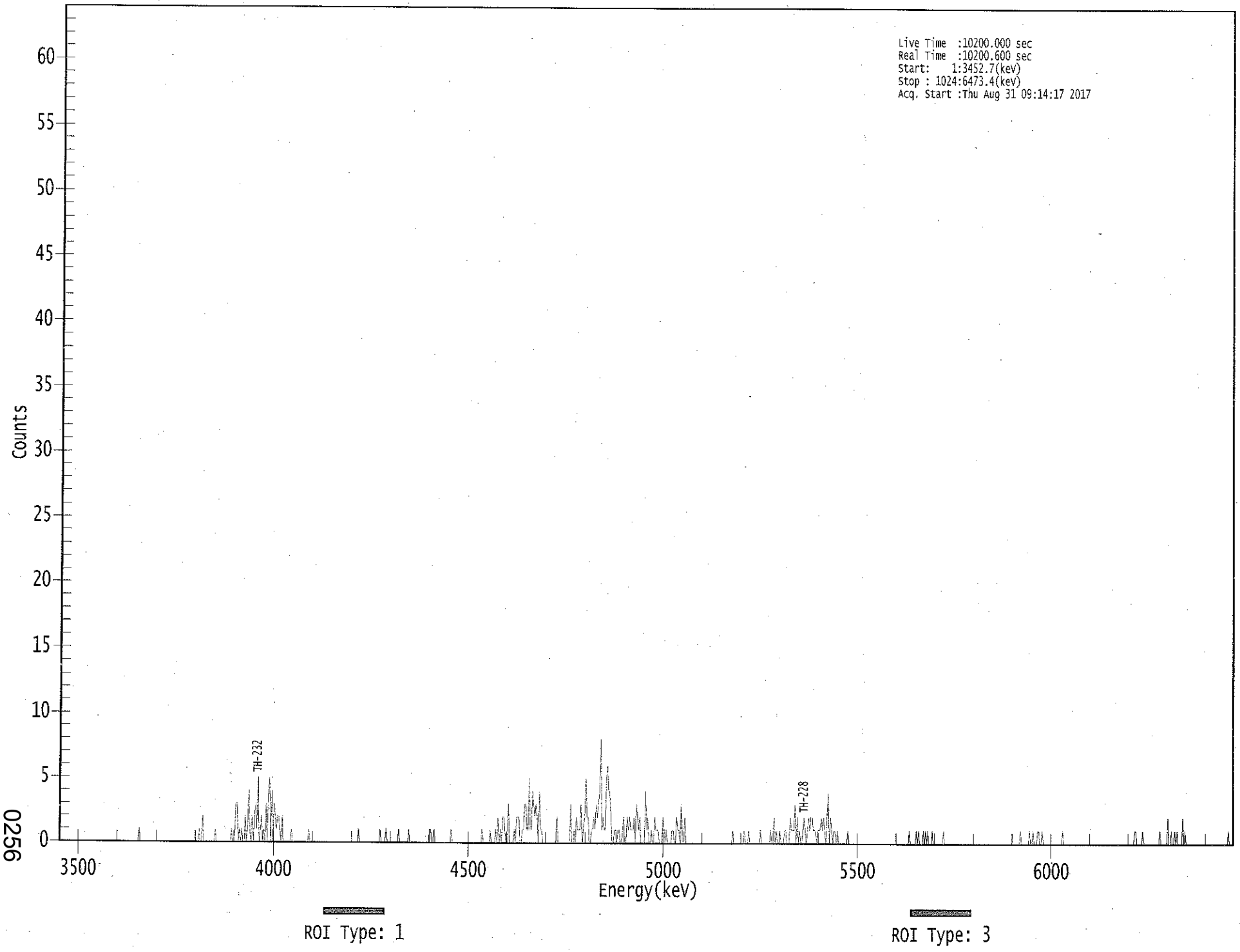
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.936	7.83	70.93	0.17	0.00E+000	3.0
TH-228		5.365	56.98	26.24	1.02	0.00E+000	4.4
TH-229	T	4.881	129.49	17.26	0.51	0.00E+000	4.6
TH-230		4.638	57.64	26.17	1.36	0.00E+000	3.7
TH-232		3.961	69.83	23.49	0.17	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)
TH-227	0.962	5850.00*	1.25E-001 +/- 9.13E-002	6.64E-002 +/- 1.22E-002
TH-228	0.993	5400.00*	9.75E-001 +/- 3.12E-001	1.08E-001 +/- 1.97E-002
TH-229	1.000	4872.00*	2.00E+000 +/- 3.66E-001	8.11E-002 +/- 1.48E-002
TH-230	0.994	4672.00*	8.88E-001 +/- 2.84E-001	1.06E-001 +/- 1.93E-002
TH-232	0.993	3997.00*	1.07E+000 +/- 3.20E-001	6.42E-002 +/- 1.17E-002

0000193188.CNF



0256

****
***** 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: 10201

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	1	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	1	0	0	2	0	0	0
129:	0	0	0	0	0	0	0	1
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	1	0	0
153:	1	3	3	0	1	0	1	0
161:	0	2	0	1	4	1	0	2
169:	0	2	3	1	5	0	1	2
177:	0	1	0	3	0	4	5	0
185:	4	0	3	2	1	2	2	1
193:	0	2	0	0	0	0	0	0
201:	0	1	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	1	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	1	0
281:	0	0	0	1	0	0	0	0
289:	0	0	0	0	0	0	1	0
297:	0	0	0	0	0	0	0	1
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	1	1	0	0	1	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	1	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	1

369:	0	0	0	0	0	0	1	0

Sample Title: 09

Channel								
377:	0	0	0	1	0	2	0	1
385:	0	2	2	1	0	0	3	0
393:	0	0	0	1	0	2	2	2
401:	0	0	1	1	3	3	1	1
409:	5	1	1	4	3	2	3	2
417:	0	4	1	1	0	0	0	0
425:	0	0	0	0	0	0	0	0
433:	2	0	0	0	0	0	0	0
441:	0	0	0	0	3	0	0	1
449:	0	2	1	1	1	3	0	1
457:	2	5	2	2	0	0	1	1
465:	2	1	3	2	3	4	8	1
473:	2	1	1	5	6	4	4	2
481:	0	0	1	1	0	1	1	0
489:	0	1	2	0	0	2	1	2
497:	1	1	1	2	0	3	2	1
505:	2	0	0	0	0	4	1	2
513:	0	0	1	0	0	2	1	1
521:	1	0	0	0	2	1	0	1
529:	0	0	0	0	1	1	0	0
537:	2	1	1	0	3	0	0	2
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	1	0	0	0	0	0	0
593:	0	0	0	1	0	0	0	1
601:	0	0	0	0	0	0	0	0
609:	0	1	0	0	0	0	0	0
617:	0	0	1	0	0	2	0	1
625:	0	0	1	0	0	0	1	1
633:	0	0	0	2	1	1	1	3
641:	0	2	0	1	0	0	1	2
649:	1	0	1	2	1	2	2	1
657:	1	1	0	1	1	1	2	1
665:	2	1	0	2	4	0	2	1
673:	0	1	1	0	1	0	0	0
681:	0	0	0	0	0	1	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	1	0	0	0	0
745:	0	1	0	1	0	0	0	1
753:	0	1	0	1	0	0	0	1
761:	0	0	0	0	0	0	0	0
769:	0	1	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	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	1	0	0	0
841:	0	0	0	0	1	0	0	1
849:	0	0	0	1	1	0	0	1
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	1	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	1	1	0	0	0	0	0	1
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	1	0
961:	0	0	0	0	0	2	0	0
969:	1	0	0	1	0	1	0	0
977:	0	0	2	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	1	0	0	0	0	0

Apex-Alpha™

KB 8/31/17

Sample Description: HTC-A07-S001-0006-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 10
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_050
Chamber Serial Number: 10006121B
Detector Serial Number: 50
Env. Background: System Bkgd 194889
Reagent Blank: <not performed>

Sample Size: 1.110E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:20 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1469 +/- 0.0139
Counting Efficiency: 0.1433 +/- 0.0025 on 11/18/2016 3:34:18 PM
Chem. Recovery Factor: 1.0255 +/- 0.0988

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

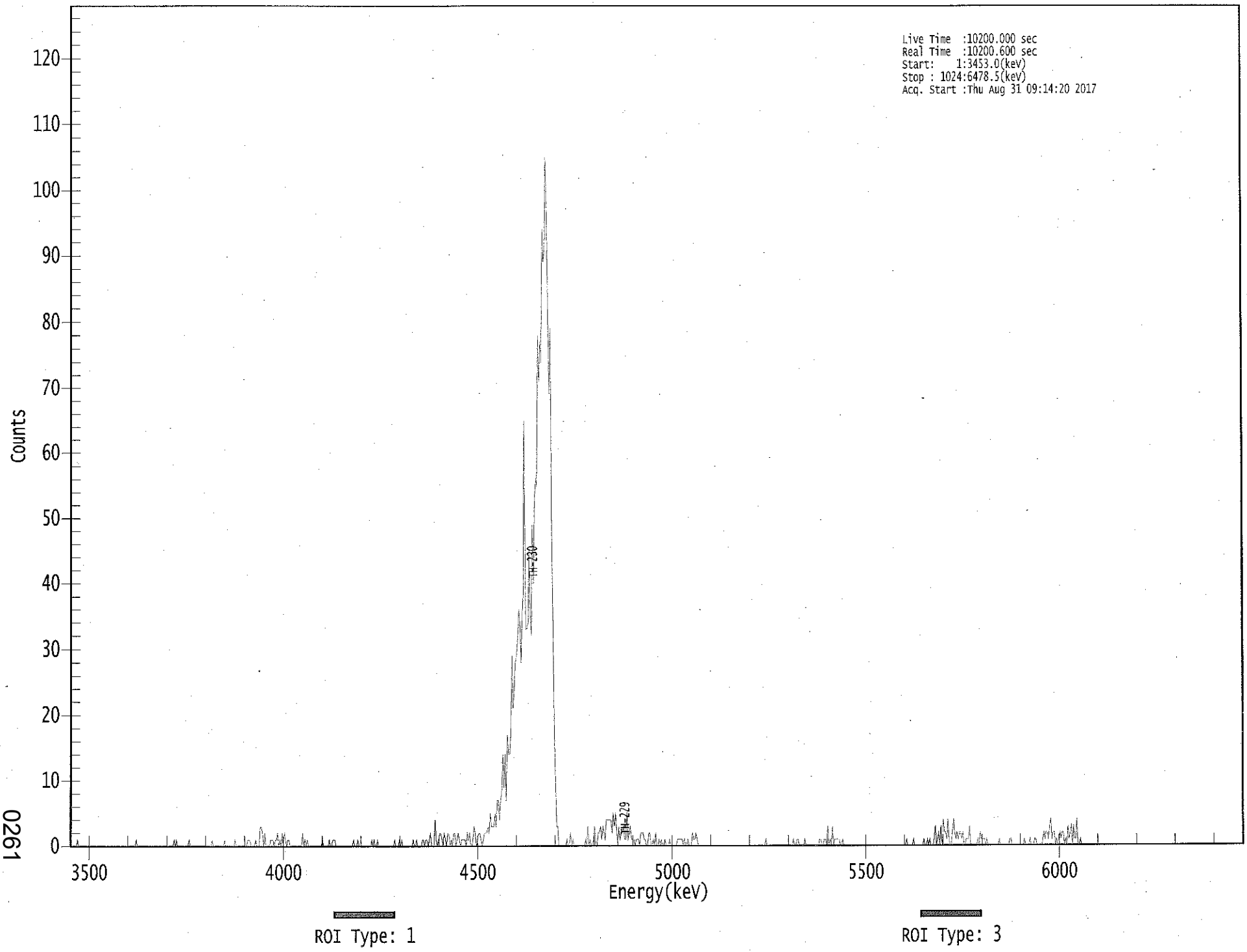
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.876	101.15	19.58	0.85	0.00E+000	4.4
TH-228		5.387	19.11	48.64	2.89	0.00E+000	3.0
TH-229	T	4.880	126.47	17.55	1.53	0.00E+000	11.8
TH-230		4.644	2187.28	4.19	2.72	0.00E+000	44.0
TH-232		3.965	34.64	34.06	1.36	0.00E+000	8.1

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.996	5850.00*	1.70E+000 +/- 4.59E-001	1.01E-001 +/- 1.87E-002
TH-228	0.999	5400.00*	3.46E-001 +/- 1.80E-001	1.58E-001 +/- 2.94E-002
TH-229	1.000	4872.00*	2.07E+000 +/- 3.84E-001	1.16E-001 +/- 2.16E-002
TH-230	0.996	4672.00*	3.56E+001 +/- 6.78E+000	1.40E-001 +/- 2.59E-002
TH-232	0.995	3997.00*	5.63E-001 +/- 2.18E-001	1.11E-001 +/- 2.07E-002

0000193189.CNF



0261

****
***** 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: 10201

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

369:	3	5	3	7	7	4	7	8

Sample Title: 10

Channel								
377:	14	9	14	7	17	14	14	17
385:	29	21	24	28	29	31	36	34
393:	28	35	38	65	33	33	34	45
401:	36	32	49	40	53	56	55	78
409:	71	77	74	94	89	91	105	96
417:	83	69	79	47	33	17	10	3
425:	3	0	0	0	0	0	0	0
433:	1	0	0	2	0	1	0	0
441:	0	0	0	0	0	0	0	0
449:	1	0	3	0	1	0	0	1
457:	3	0	0	2	2	3	1	3
465:	2	1	4	4	4	4	4	2
473:	5	3	5	3	0	3	1	2
481:	2	3	1	1	5	1	2	3
489:	1	1	1	0	1	1	1	0
497:	2	2	2	1	1	0	0	2
505:	2	0	0	1	0	2	0	0
513:	1	0	1	0	0	1	0	0
521:	0	1	0	0	0	0	0	0
529:	1	1	1	1	1	0	1	0
537:	0	1	0	0	0	2	1	1
545:	2	1	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	1	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	1	0	0
633:	1	1	0	0	0	0	0	1
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	1	1	0	0
657:	1	1	0	3	0	1	0	3
665:	0	1	1	1	1	1	0	0
673:	1	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	1	0	0	0	0	0	1	0
737:	0	0	0	0	0	0	0	1
745:	0	0	1	0	1	0	0	0
753:	1	3	0	1	2	0	3	0
761:	4	2	2	1	4	1	0	0
769:	2	4	2	1	2	1	2	2
777:	1	2	0	0	1	1	1	3
785:	0	0	0	0	0	0	1	0
793:	2	1	1	1	1	0	1	0

801:	0	0	0	0	0	0	0	0

Sample Title: 10

Channel								
809:	0	1	0	0	0	0	0	0
817:	0	0	1	1	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	1	0	0	0
841:	1	1	0	0	0	0	0	1
849:	2	1	2	2	1	3	4	1
857:	2	2	0	1	0	0	2	1
865:	2	2	0	1	0	3	1	2
873:	3	0	3	1	1	4	0	0
881:	1	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 8/31/17

Apex-Alpha™

Sample Description: HTC-A07-S001-0612-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 11
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_052
Chamber Serial Number: 10006123B
Detector Serial Number: 52
Env. Background: System Bkgd 194890
Reagent Blank: <not performed>

Sample Size: 1.570E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:22 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1066 +/- 0.0116
Counting Efficiency: 0.1737 +/- 0.0030 on 11/18/2016 3:34:15 PM
Chem. Recovery Factor: 0.6136 +/- 0.0678

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

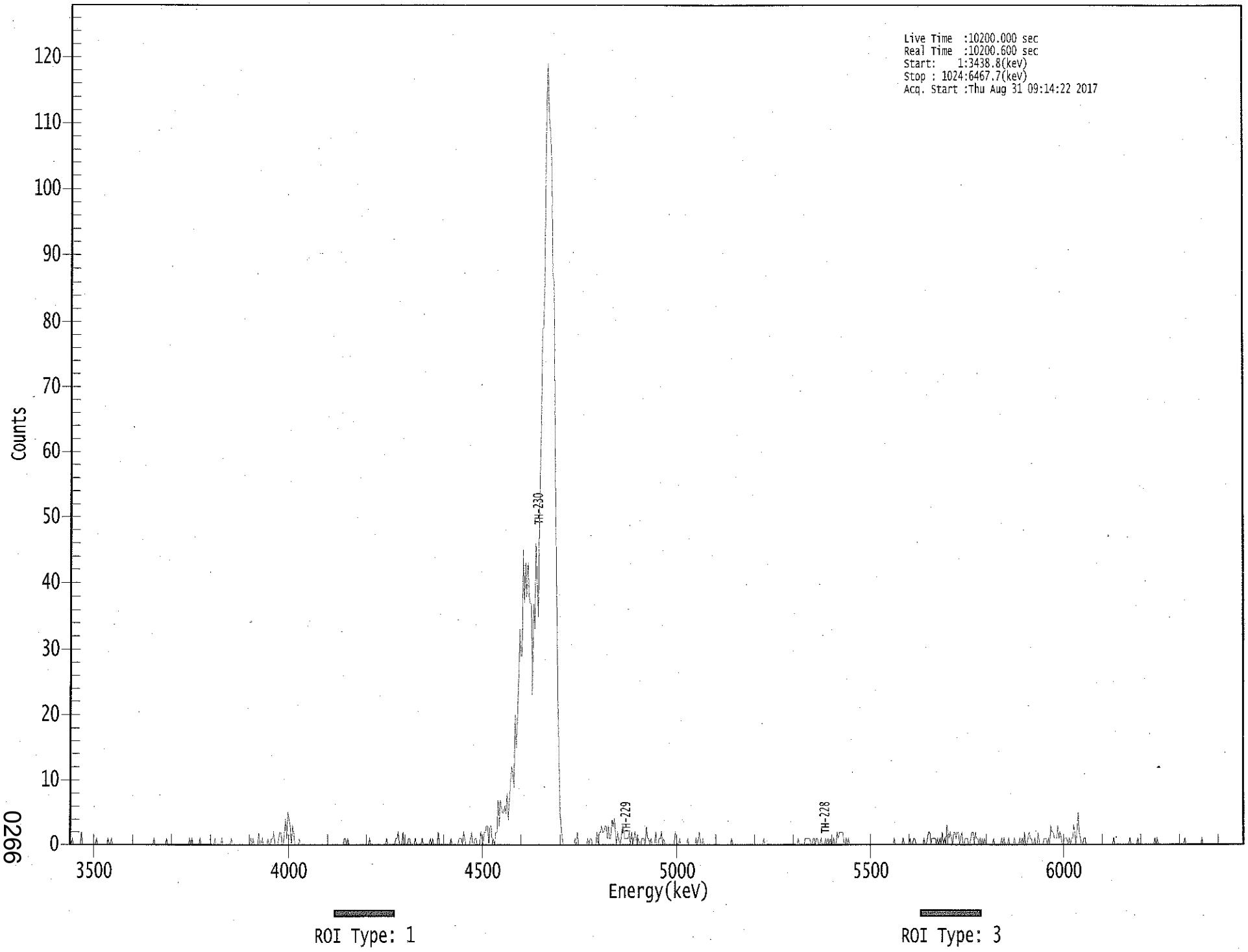
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.882	94.83	20.15	0.17	0.00E+000	4.9
TH-228		5.383	27.81	38.09	1.19	0.00E+000	4.4
TH-229	T	4.872	92.15	20.53	0.85	0.00E+000	10.9
TH-230		4.646	2230.32	4.15	0.68	0.00E+000	37.4
TH-232		3.972	42.66	30.15	0.34	0.00E+000	8.3

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.995	5850.00*	1.55E+000 +/- 4.57E-001	6.84E-002 +/- 1.46E-002
TH-228	0.998	5400.00*	4.90E-001 +/- 2.14E-001	1.16E-001 +/- 2.48E-002
TH-229	1.000	4872.00*	1.47E+000 +/- 3.14E-001	9.52E-002 +/- 2.04E-002
TH-230	0.996	4672.00*	3.54E+001 +/- 7.71E+000	8.95E-002 +/- 1.91E-002
TH-232	0.997	3997.00*	6.75E-001 +/- 2.50E-001	7.57E-002 +/- 1.62E-002

0000193190.CNF



0266

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

369:	1	0	2	2	7	3	7	6

Sample Title: 11

Channel								
377:	5	5	6	5	8	4	7	10
385:	12	11	9	20	15	19	26	33
393:	29	29	45	37	43	38	43	38
401:	37	37	23	37	33	46	41	35
409:	48	58	64	79	79	86	102	113
417:	119	111	109	104	87	86	56	38
425:	23	16	5	3	1	0	0	0
433:	0	0	0	0	0	0	0	1
441:	0	2	0	0	0	0	0	0
449:	0	0	1	0	1	1	0	0
457:	0	0	2	0	2	2	3	2
465:	2	3	3	1	3	1	1	4
473:	3	4	2	0	2	1	0	1
481:	3	3	1	1	1	1	2	0
489:	2	0	1	2	1	0	1	0
497:	0	1	1	1	0	3	1	1
505:	0	1	0	0	0	2	0	0
513:	1	1	2	0	1	0	0	0
521:	0	0	0	0	0	0	2	1
529:	0	0	1	0	0	0	0	0
537:	0	1	0	0	0	0	0	0
545:	1	0	1	2	0	0	1	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	1
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	1	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	1	0	0	0	0	0	1
641:	1	1	1	1	0	0	1	1
649:	0	1	1	0	0	1	0	0
657:	0	1	0	1	0	1	0	0
665:	1	0	0	2	1	2	2	2
673:	2	0	0	1	0	1	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	1	0	0
721:	0	0	0	0	0	1	0	0
729:	0	0	0	1	0	0	1	1
737:	0	0	0	0	0	0	0	1
745:	0	0	1	2	2	0	1	1
753:	1	1	0	1	0	1	0	2
761:	0	1	0	3	2	1	2	1
769:	0	2	2	1	2	2	0	1
777:	2	0	0	1	1	1	0	0
785:	1	2	2	0	2	1	1	0
793:	1	0	1	0	1	0	0	0

801:	0	0	0	0	1	0	0	0

Sample Title: 11

Channel								
809:	0	0	0	1	0	1	0	0
817:	0	1	0	0	0	0	1	0
825:	0	0	0	1	0	1	0	2
833:	0	0	1	2	1	1	0	0
841:	1	0	0	2	0	0	0	0
849:	1	1	1	0	1	0	3	2
857:	2	1	1	1	3	1	2	1
865:	0	0	1	1	1	0	1	0
873:	1	1	3	2	0	2	5	2
881:	1	0	0	1	1	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	1	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	1	0	0	0	0
929:	0	0	1	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	1	0	1	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	1	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	1	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™

Sample Description: HTC-A07-S001-0612-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001942
Batch Identification: 1707090A-TH
Sample Identification: 12
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_053
Chamber Serial Number: 10006122A
Detector Serial Number: 53
Env. Background: System Bkgd 194891
Reagent Blank: <not performed>

Sample Size: 1.570E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:25 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.0957 +/- 0.0109
Counting Efficiency: 0.1515 +/- 0.0026 on 11/18/2016 3:34:14 PM
Chem. Recovery Factor: 0.6322 +/- 0.0731

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

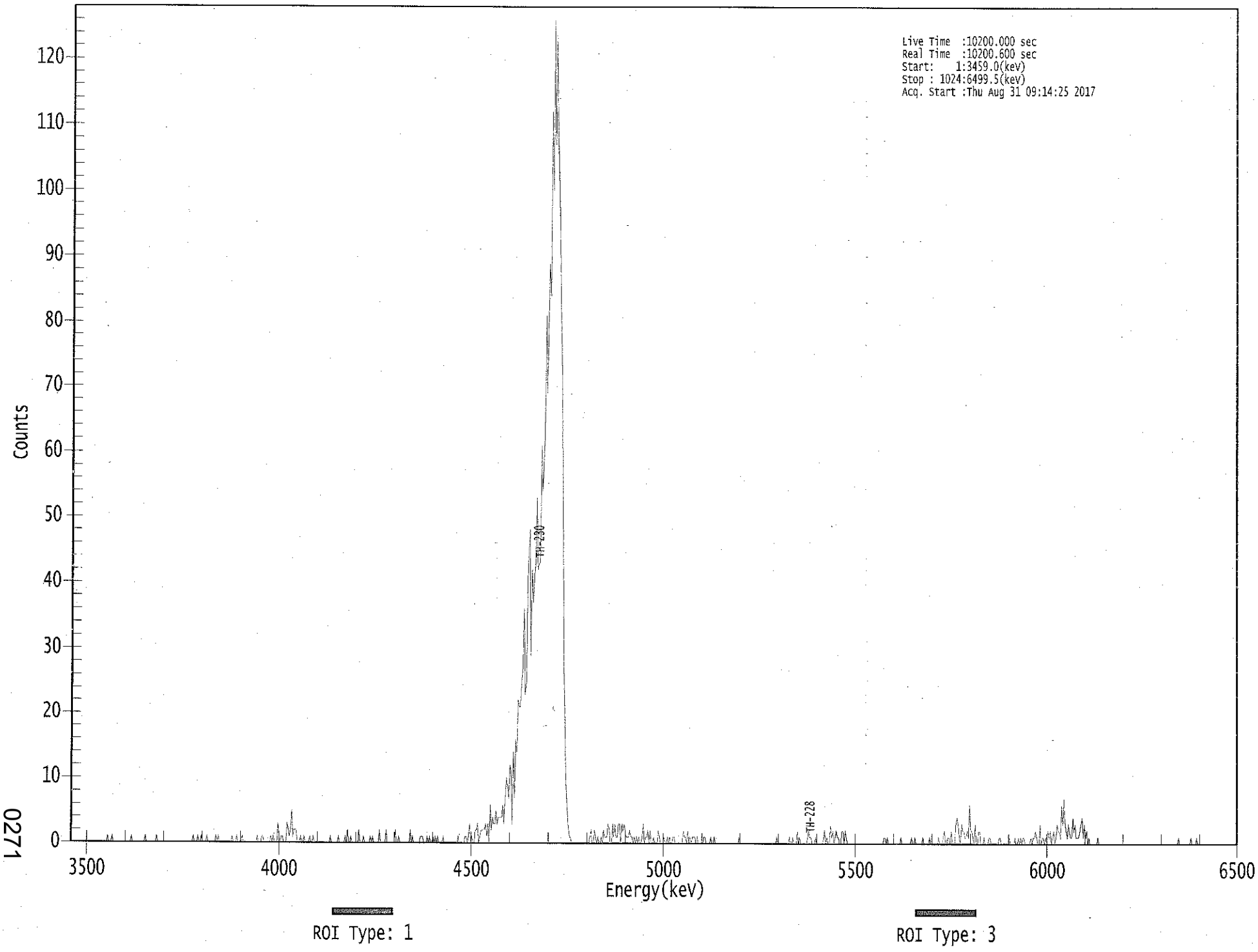
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.899	108.66	18.84	0.34	0.00E+000	5.2
TH-228		5.386	23.66	40.63	0.34	0.00E+000	3.7
TH-229	T	4.924	82.83	21.56	0.17	0.00E+000	5.9
TH-230		4.687	2671.32	3.79	0.68	0.00E+000	45.5
TH-232		3.993	41.49	30.65	0.51	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	0.987	5850.00*	1.98E+000 +/- 5.80E-001	8.72E-002 +/- 1.95E-002
TH-228	0.999	5400.00*	4.64E-001 +/- 2.15E-001	9.38E-002 +/- 2.10E-002
TH-229	0.986	4872.00*	1.47E+000 +/- 3.29E-001	7.39E-002 +/- 1.66E-002
TH-230	0.999	4672.00*	4.72E+001 +/- 1.07E+001	9.96E-002 +/- 2.23E-002
TH-232	1.000	3997.00*	7.31E-001 +/- 2.78E-001	9.25E-002 +/- 2.07E-002

0000193198.CNF



0271

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

Sample Title: 12

Elapsed Live time: 10200
Elapsed Real Time: 10201

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

369:	2	4	3	3	5	3	4	4

Sample Title: 12

Channel								
377:	4	4	6	3	7	10	9	7
385:	12	11	3	14	7	16	14	22
393:	21	21	25	27	36	23	25	40
401:	43	48	29	42	37	41	43	53
409:	42	43	43	61	54	59	63	81
417:	69	81	89	84	112	100	126	107
425:	124	109	101	94	79	71	46	27
433:	17	10	6	3	1	1	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	1	2
457:	0	0	2	1	0	1	0	0
465:	1	0	2	1	1	1	3	2
473:	0	0	3	1	3	1	1	3
481:	3	0	3	2	3	2	1	1
489:	1	2	1	1	0	1	0	1
497:	0	1	0	0	1	3	0	1
505:	1	2	0	2	0	0	1	0
513:	0	0	2	1	0	0	0	1
521:	0	0	1	0	1	0	0	1
529:	1	0	0	0	0	0	0	0
537:	2	1	1	0	2	0	1	0
545:	1	1	1	0	1	0	0	0
553:	0	0	1	1	0	0	0	0
561:	1	0	0	1	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	1	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	1	0	0	0	0	0
625:	0	0	0	0	0	1	0	0
633:	1	0	0	0	2	0	1	0
641:	0	0	0	0	0	1	2	1
649:	1	0	0	0	1	0	0	0
657:	0	0	0	1	2	0	1	0
665:	0	3	1	2	0	1	2	1
673:	1	0	0	2	2	0	2	1
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	1	1	0	1	0	0	0	0
721:	0	0	0	0	0	0	0	1
729:	0	0	0	0	0	0	0	0
737:	1	0	0	1	0	0	0	0
745:	0	0	1	0	0	0	0	0
753:	1	0	0	0	0	0	0	0
761:	1	0	0	0	1	2	0	0
769:	1	1	0	2	0	0	0	3
777:	4	3	1	0	3	2	2	1
785:	1	2	1	6	2	2	1	0
793:	3	0	0	2	2	0	0	0

801:	1	0	0	0	1	1	0	0

Sample Title: 12

Channel								
809:	0	0	0	0	0	1	1	0
817:	0	0	0	0	0	0	1	0
825:	0	0	0	1	0	0	1	0
833:	1	0	1	1	0	0	0	0
841:	0	1	0	1	1	2	1	0
849:	0	3	0	1	1	0	1	1
857:	2	1	2	0	1	2	0	1
865:	3	2	2	1	6	3	7	3
873:	2	1	3	2	1	1	4	2
881:	3	1	1	1	2	3	4	1
889:	3	1	2	0	1	0	0	0
897:	0	0	0	0	1	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	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	1	0	0	0	0
977:	0	0	0	0	0	0	1	0
985:	0	0	0	1	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 3/31/17

Sample Description: HTC-A07-S001-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 13
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_054
Chamber Serial Number: 10006122B
Detector Serial Number: 54
Env. Background: System Bkgd 194892
Reagent Blank: <not performed>

Sample Size: 1.270E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:27 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.1324 +/- 0.0131
Counting Efficiency: 0.1363 +/- 0.0024 on 11/18/2016 3:34:12 PM
Chem. Recovery Factor: 0.9712 +/- 0.0973

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

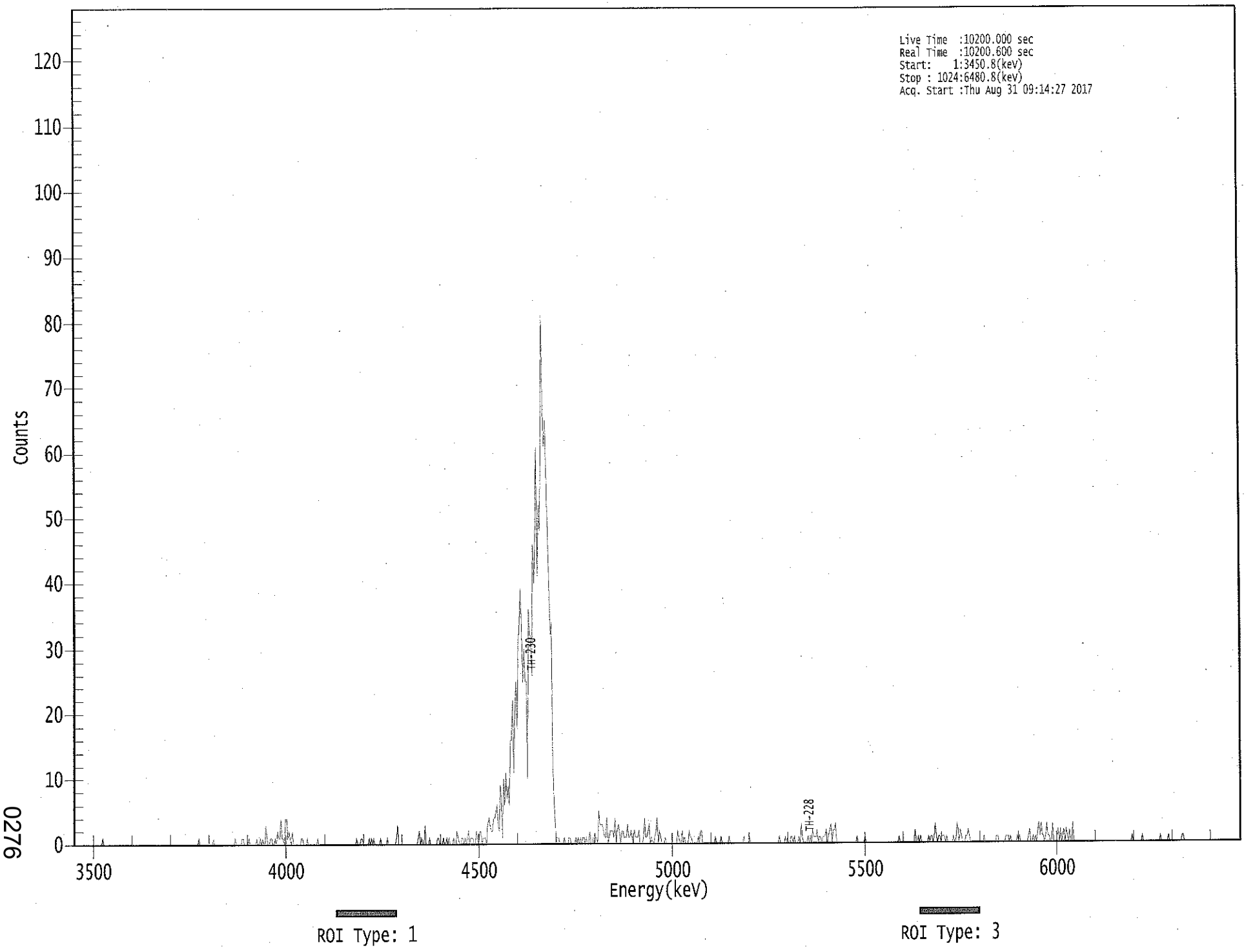
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.905	66.81	24.23	1.19	0.00E+000	5.2
TH-228		5.360	41.81	30.81	1.19	0.00E+000	3.7
TH-229	T	4.889	114.49	18.37	0.51	0.00E+000	11.8
TH-230		4.638	1537.64	5.00	1.36	0.00E+000	38.5
TH-232		3.976	42.15	30.54	0.85	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)
TH-227	0.984	5850.00*	1.09E+000 +/- 3.38E-001	1.07E-001 +/- 2.08E-002
TH-228	0.991	5400.00*	7.33E-001 +/- 2.67E-001	1.16E-001 +/- 2.23E-002
TH-229	0.998	4872.00*	1.81E+000 +/- 3.51E-001	8.31E-002 +/- 1.61E-002
TH-230	0.994	4672.00*	2.43E+001 +/- 4.85E+000	1.08E-001 +/- 2.09E-002
TH-232	0.998	3997.00*	6.64E-001 +/- 2.40E-001	9.43E-002 +/- 1.82E-002

0000193194.CNF



0276

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

369:	4	5	6	3	2	9	7	1

Sample Title: 13

Channel								
377:	10	6	11	7	9	6	16	16
385:	22	11	20	25	18	31	33	39
393:	34	25	30	25	25	10	36	32
401:	32	26	46	40	47	61	41	52
409:	48	59	81	66	61	65	57	48
417:	41	32	34	12	7	3	1	1
425:	1	0	0	0	0	1	0	0
433:	0	1	1	0	0	0	0	1
441:	0	1	0	1	0	1	1	0
449:	1	0	0	2	0	0	1	0
457:	1	1	0	5	3	3	3	2
465:	1	1	4	0	1	2	2	2
473:	1	4	0	2	3	2	0	2
481:	2	1	1	1	3	1	1	2
489:	1	0	2	1	1	1	2	0
497:	0	0	1	4	1	1	2	3
505:	0	1	0	0	1	2	4	0
513:	2	1	0	0	0	1	0	0
521:	0	0	0	0	0	0	0	0
529:	2	1	0	0	2	0	1	0
537:	0	0	2	1	1	0	0	0
545:	0	0	1	0	2	2	0	0
553:	0	0	0	0	0	0	0	0
561:	0	1	0	0	0	0	1	0
569:	0	0	0	0	0	1	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	1	0	0	0	0	1
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	1	0	0	0	0	1	0
625:	1	0	0	1	1	0	1	0
633:	0	0	1	0	3	1	0	0
641:	0	0	1	0	1	0	2	1
649:	1	1	2	0	1	1	0	1
657:	1	1	2	0	1	2	3	0
665:	2	2	3	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	1	0	0
689:	0	0	0	0	1	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	1	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	2	0	0	1	0	1	0	0
745:	0	0	0	0	1	0	1	1
753:	0	1	3	1	0	1	1	0
761:	1	1	1	0	1	0	0	0
769:	0	0	1	0	0	3	2	0
777:	2	1	0	0	0	1	1	2
785:	1	0	0	0	0	0	0	0
793:	0	0	0	0	0	1	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 13

Channel								
809:	1	1	0	0	0	0	0	0
817:	1	1	1	0	1	0	0	0
825:	0	0	1	0	1	0	0	0
833:	0	0	0	0	1	2	0	0
841:	1	0	1	0	2	3	1	3
849:	1	1	0	1	3	1	1	0
857:	0	3	0	0	0	1	2	0
865:	2	0	1	2	0	2	1	0
873:	2	0	0	3	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	1
929:	0	0	0	0	0	0	0	0
937:	1	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	1	0	0	0	0	0	0	1
961:	0	0	0	0	0	0	0	0
969:	0	0	0	1	1	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

NB 8/31/17

Apex-Alpha™

Sample Description: HTC-A07-S001-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 14
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_056
Chamber Serial Number: 10006124B
Detector Serial Number: 56
Env. Background: System Bkgd 194893
Reagent Blank: <not performed>

Sample Size: 1.130E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:29 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1587 +/- 0.0145
Counting Efficiency: 0.1595 +/- 0.0027 on 11/18/2016 3:34:09 PM
Chem. Recovery Factor: 0.9955 +/- 0.0923

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

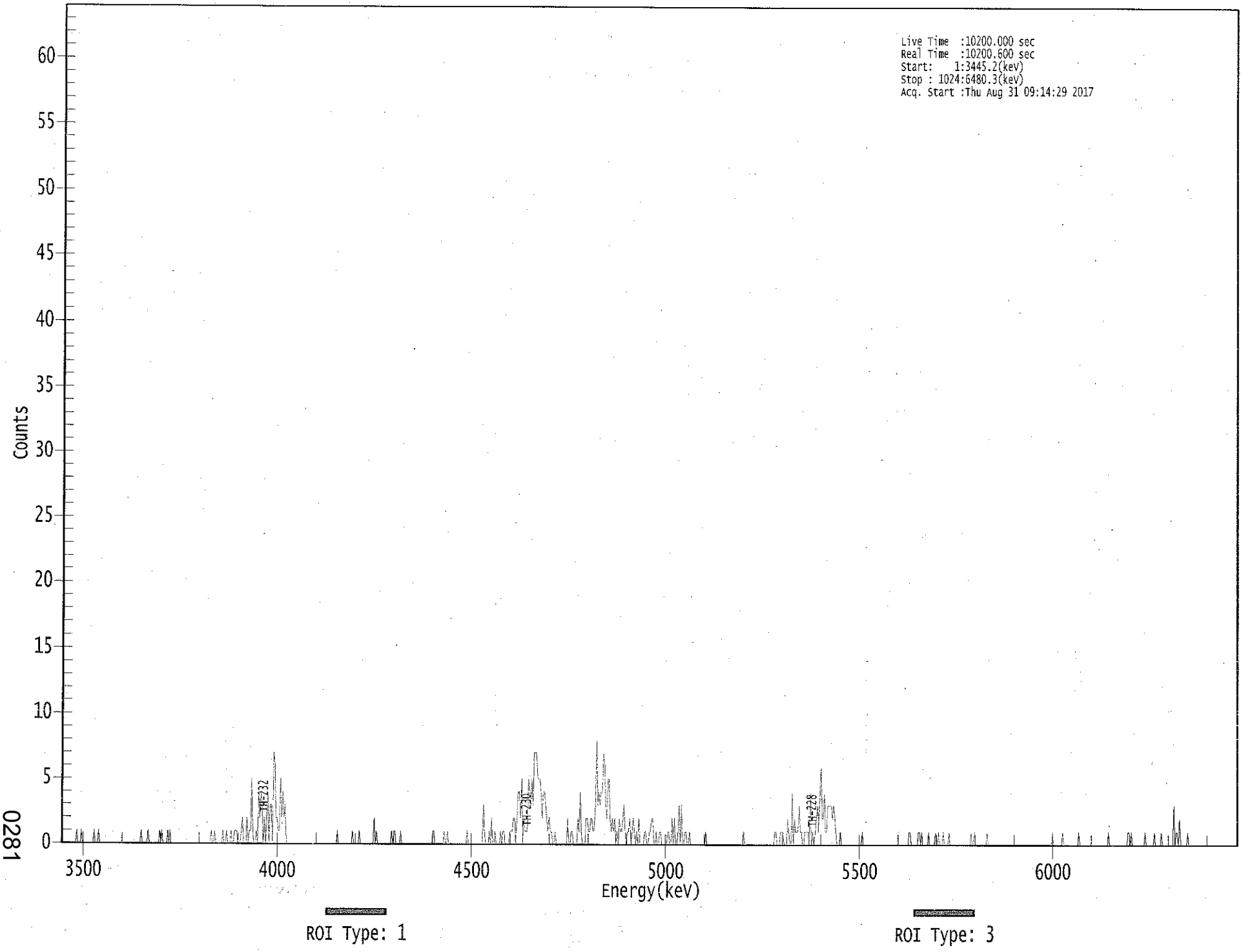
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.811	8.15	72.72	0.85	0.00E+000	3.0
TH-228		5.380	76.96	22.69	2.04	0.00E+000	6.2
TH-229	T	4.873	137.15	16.80	0.85	0.00E+000	4.7
TH-230		4.644	122.30	17.87	1.70	0.00E+000	21.1
TH-232		3.967	82.47	21.82	1.53	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	0.992	5850.00*	1.25E-001 +/- 9.33E-002	9.16E-002 +/- 1.64E-002
TH-228	0.998	5400.00*	1.27E+000 +/- 3.65E-001	1.28E-001 +/- 2.29E-002
TH-229	1.000	4872.00*	2.04E+000 +/- 3.64E-001	8.89E-002 +/- 1.59E-002
TH-230	0.996	4672.00*	1.81E+000 +/- 4.57E-001	1.09E-001 +/- 1.94E-002
TH-232	0.995	3997.00*	1.22E+000 +/- 3.43E-001	1.05E-001 +/- 1.88E-002

0000193199.CNF



0281

****
***** 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: 10201

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

369:	0	0	0	1	0	2	0	0

Sample Title: 14

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

801:	0	0	0	0	1	0	0	0

Sample Title: 14

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	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	1	0	0
865:	0	0	0	0	0	0	1	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	1	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	1	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	1
929:	1	0	1	0	0	0	0	0
937:	0	0	0	0	0	0	1	0
945:	0	0	0	0	0	0	1	0
953:	0	0	0	0	1	0	0	0
961:	0	0	0	0	0	0	0	3
969:	0	1	1	0	2	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	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

NS 3/31/18

Sample Description: HTC-A07-S001-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 15
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_057
Chamber Serial Number: 01017326A
Detector Serial Number: 57
Env. Background: System Bkgd 194894
Reagent Blank: <not performed>

Sample Size: 1.150E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:32 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.1789 +/- 0.0154
Counting Efficiency: 0.1646 +/- 0.0028 on 11/18/2016 3:34:08 PM
Chem. Recovery Factor: 1.0865 +/- 0.0956

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

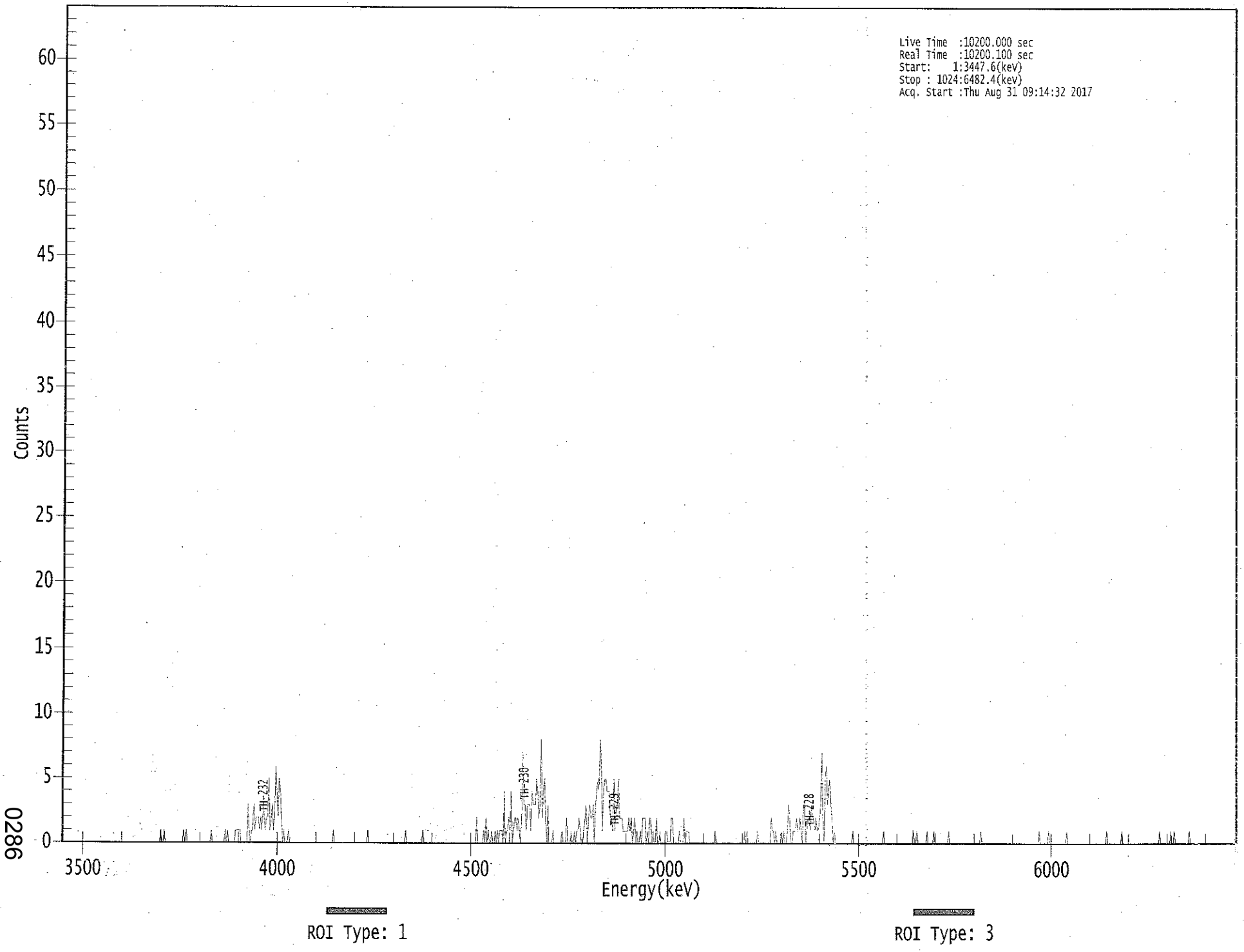
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.911	5.00	96.02	0.00	0.00E+000	3.0
TH-228		5.376	93.00	20.43	0.00	0.00E+000	4.7
TH-229	T	4.870	154.66	15.78	0.34	0.00E+000	7.1
TH-230		4.642	111.66	18.58	0.34	0.00E+000	4.4
TH-232		3.968	76.83	22.39	0.17	0.00E+000	6.7

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.981	5850.00*	6.67E-002 +/- 6.50E-002	8.00E-002 +/- 1.35E-002
TH-228	0.997	5400.00*	1.33E+000 +/- 3.54E-001	8.60E-002 +/- 1.45E-002
TH-229	1.000	4872.00*	2.00E+000 +/- 3.39E-001	6.19E-002 +/- 1.05E-002
TH-230	0.995	4672.00*	1.44E+000 +/- 3.62E-001	6.17E-002 +/- 1.04E-002
TH-232	0.996	3997.00*	9.90E-001 +/- 2.78E-001	5.38E-002 +/- 9.09E-003

0000193186.CNF



0286

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

Sample Title: 15

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	2	0	1	0	0	1	0	0

Sample Title: 15

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

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	1	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	1	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	1	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	1	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	1	0	0	0	0
961:	0	0	0	0	0	1	0	0
969:	1	0	0	0	0	0	0	0
977:	0	0	0	0	0	1	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

LB 8/31/17

Sample Description: HTC-A07-S001-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001931
Batch Identification: 1707090A-TH
Sample Identification: 16
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_058
Chamber Serial Number: 01017326B
Detector Serial Number: 58
Env. Background: System Bkgd 194895
Reagent Blank: <not performed>

Sample Size: 1.100E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:35 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.2006 +/- 0.0165
Counting Efficiency: 0.1665 +/- 0.0028 on 11/18/2016 3:34:06 PM
Chem. Recovery Factor: 1.2049 +/- 0.1012

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

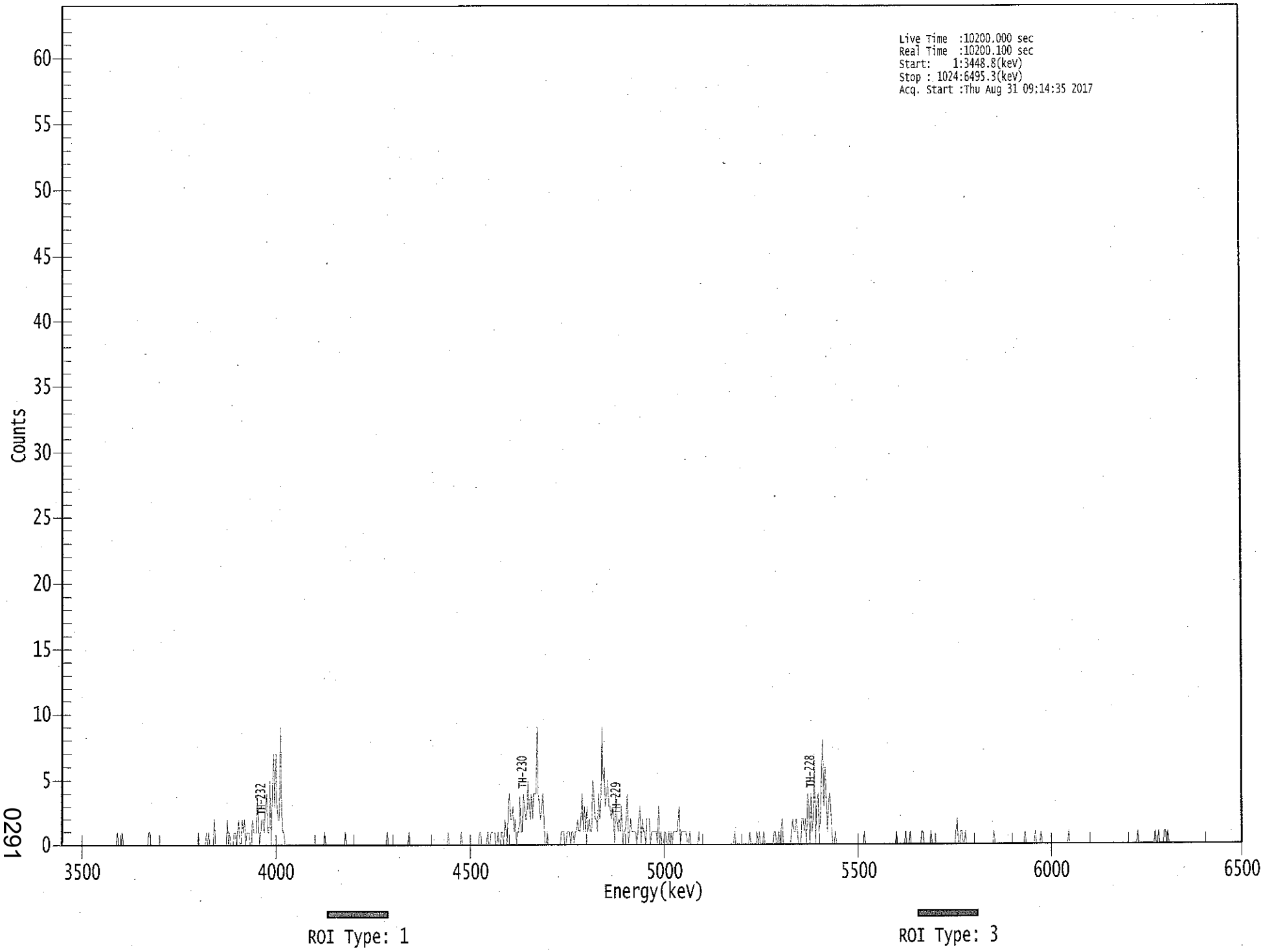
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.849	10.66	61.14	0.34	0.00E+000	4.5
TH-228		5.378	95.49	20.12	0.51	0.00E+000	6.4
TH-229	T	4.879	173.15	14.94	0.85	0.00E+000	9.7
TH-230		4.637	106.66	19.01	0.34	0.00E+000	5.4
TH-232		3.965	93.32	20.38	0.68	0.00E+000	4.1

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.33E-001 +/- 8.38E-002	5.94E-002 +/- 9.59E-003
TH-228	0.997	5400.00*	1.28E+000 +/- 3.29E-001	7.01E-002 +/- 1.13E-002
TH-229	1.000	4872.00*	2.09E+000 +/- 3.37E-001	7.22E-002 +/- 1.17E-002
TH-230	0.994	4672.00*	1.28E+000 +/- 3.20E-001	5.75E-002 +/- 9.28E-003
TH-232	0.995	3997.00*	1.12E+000 +/- 2.91E-001	6.77E-002 +/- 1.09E-002

0000193187.CNF



0291

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

Sample Title: 16

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	1	0	0	1	1	1	1	0

Sample Title: 16

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

Sample Title: 16

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

JCB 8/31/17

Apex-Alpha™

Sample Description: HTC-A07-S001-3642-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001932
Batch Identification: 1707090A-TH
Sample Identification: 17
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_059
Chamber Serial Number: 10006125A
Detector Serial Number: 59
Env. Background: System Bkgd 194896
Reagent Blank: <not performed>

Sample Size: 1.400E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:38 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.1624 +/- 0.0146
Counting Efficiency: 0.1776 +/- 0.0030 on 11/18/2016 3:40:57 PM
Chem. Recovery Factor: 0.9143 +/- 0.0838

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

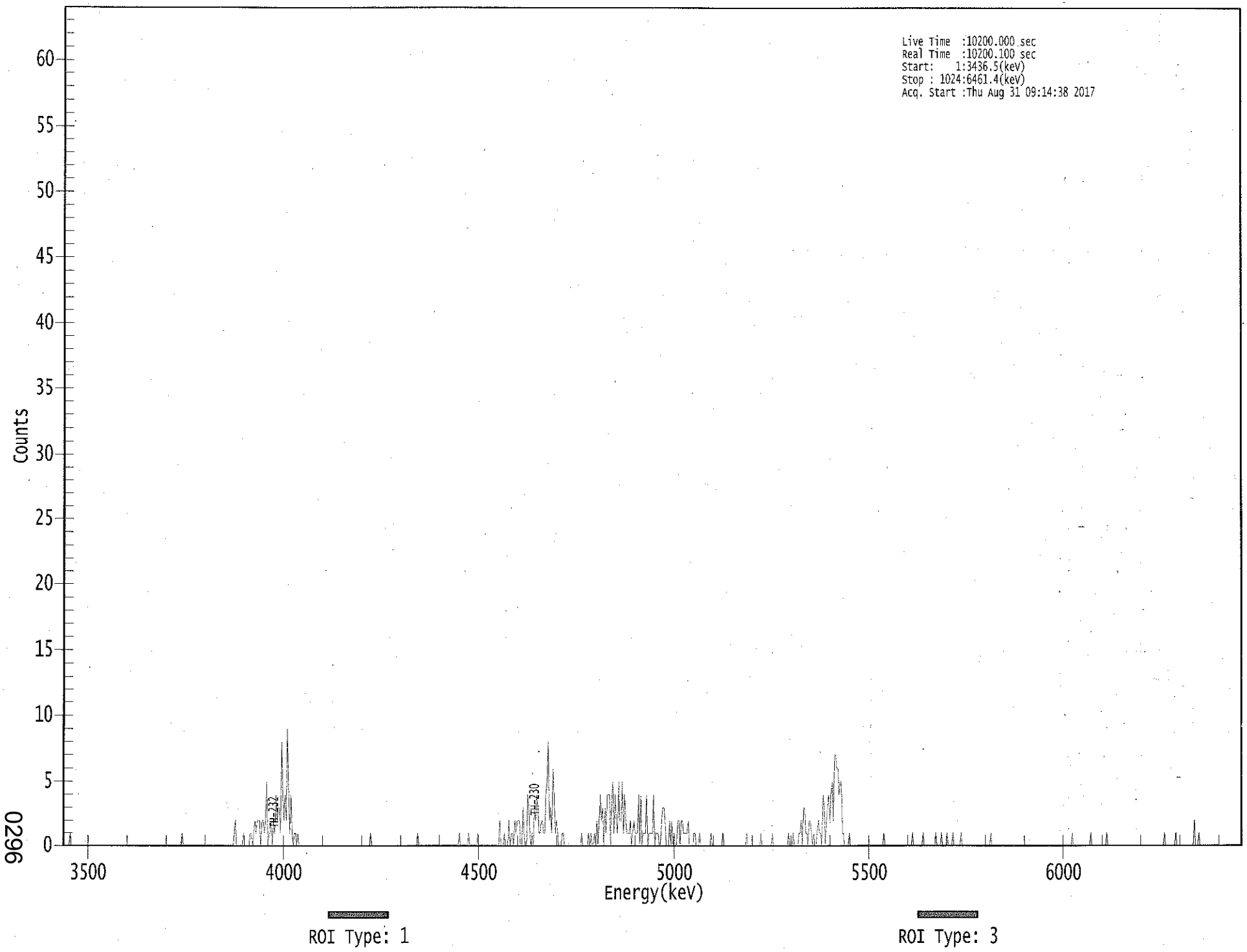
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.798	4.49	98.45	0.51	0.00E+000	3.0
TH-228		5.387	98.49	19.81	0.51	0.00E+000	20.9
TH-229	T	4.900	140.49	16.57	0.51	0.00E+000	5.9
TH-230		4.645	90.49	20.67	0.51	0.00E+000	7.9
TH-232		3.978	89.66	20.75	0.34	0.00E+000	4.6

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*	5.42E-002 +/- 5.42E-002	6.33E-002 +/- 1.12E-002
TH-228	0.999	5400.00*	1.28E+000 +/- 3.39E-001	6.81E-002 +/- 1.20E-002
TH-229	0.996	4872.00*	1.65E+000 +/- 2.90E-001	6.15E-002 +/- 1.08E-002
TH-230	0.996	4672.00*	1.06E+000 +/- 2.87E-001	6.13E-002 +/- 1.08E-002
TH-232	0.998	3997.00*	1.04E+000 +/- 2.85E-001	5.57E-002 +/- 9.83E-003

0000193202.CNF



0296

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

Sample Title: 17

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	0	0	0	0	0	0	0

Sample Title: 17

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

801:	0	0	0	0	1	0	0	0

Sample Title: 17

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

Apex-Alpha™

WB 8/31/17

Sample Description: HTC-A07-S001-4248-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001932
Batch Identification: 1707090A-TH
Sample Identification: 18
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_060
Chamber Serial Number: 10006125B
Detector Serial Number: 60
Env. Background: System Bkgd 194897
Reagent Blank: <not performed>

Sample Size: 1.250E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/16/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 9:14:41 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1672 +/- 0.0149
Counting Efficiency: 0.1477 +/- 0.0026 on 11/18/2016 3:34:04 PM
Chem. Recovery Factor: 1.1325 +/- 0.1031

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

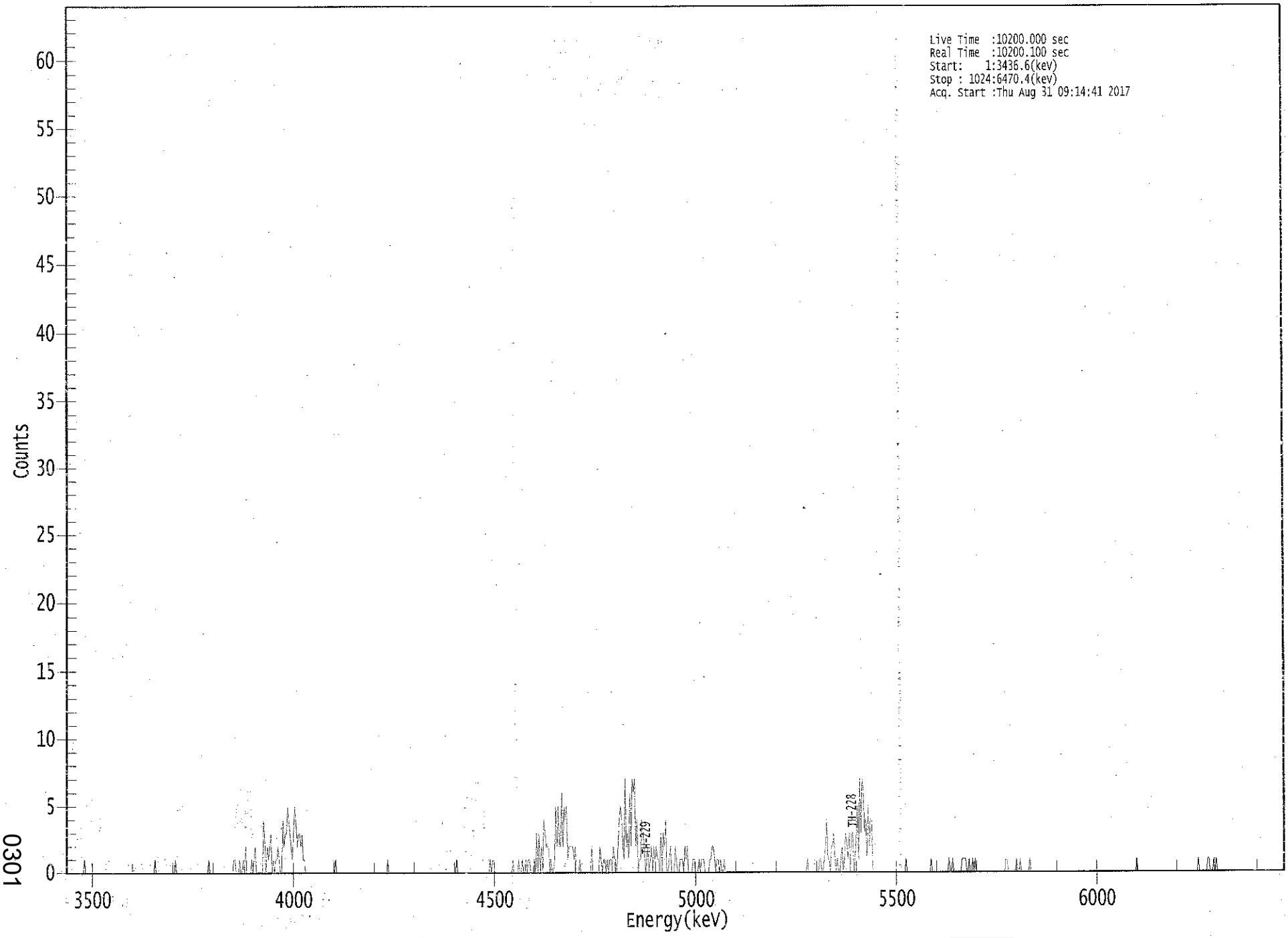
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.798	2.79	162.88	2.21	0.00E+000	5.9
TH-228		5.391	93.96	20.48	2.04	0.00E+000	4.3
TH-229	T	4.878	144.30	16.43	1.70	0.00E+000	3.8
TH-230		4.645	82.64	21.77	1.36	0.00E+000	4.4
TH-232		3.970	83.49	21.53	0.51	0.00E+000	14.8

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.986	5850.00*	3.66E-002 +/- 6.00E-002	1.05E-001 +/- 1.84E-002
TH-228	0.999	5400.00*	1.33E+000 +/- 3.57E-001	1.10E-001 +/- 1.92E-002
TH-229	1.000	4872.00*	1.84E+000 +/- 3.22E-001	9.36E-002 +/- 1.64E-002
TH-230	0.996	4672.00*	1.05E+000 +/- 2.93E-001	8.71E-002 +/- 1.52E-002
TH-232	0.996	3997.00*	1.06E+000 +/- 2.94E-001	6.65E-002 +/- 1.16E-002

0000193203.CNF



0301

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

Sample Title: 18

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	0	0	0	0	0	1	0

Sample Title: 18

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

801:	1	0	0	0	0	0	0	0

Sample Title: 18

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

KB 8/31/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD01-0006-02
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001932
Batch Identification: 1707090A-TH
Sample Identification: 19
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_003
Chamber Serial Number:
Detector Serial Number: 3
Env. Background: System Bkgd 194868
Reagent Blank: <not performed>

Sample Size: 1.120E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 12:11:38 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.226 mL
Effective Efficiency: 0.1843 +/- 0.0157
Counting Efficiency: 0.1562 +/- 0.0027 on 11/19/2016 1:08:16 PM
Chem. Recovery Factor: 1.1795 +/- 0.1028

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

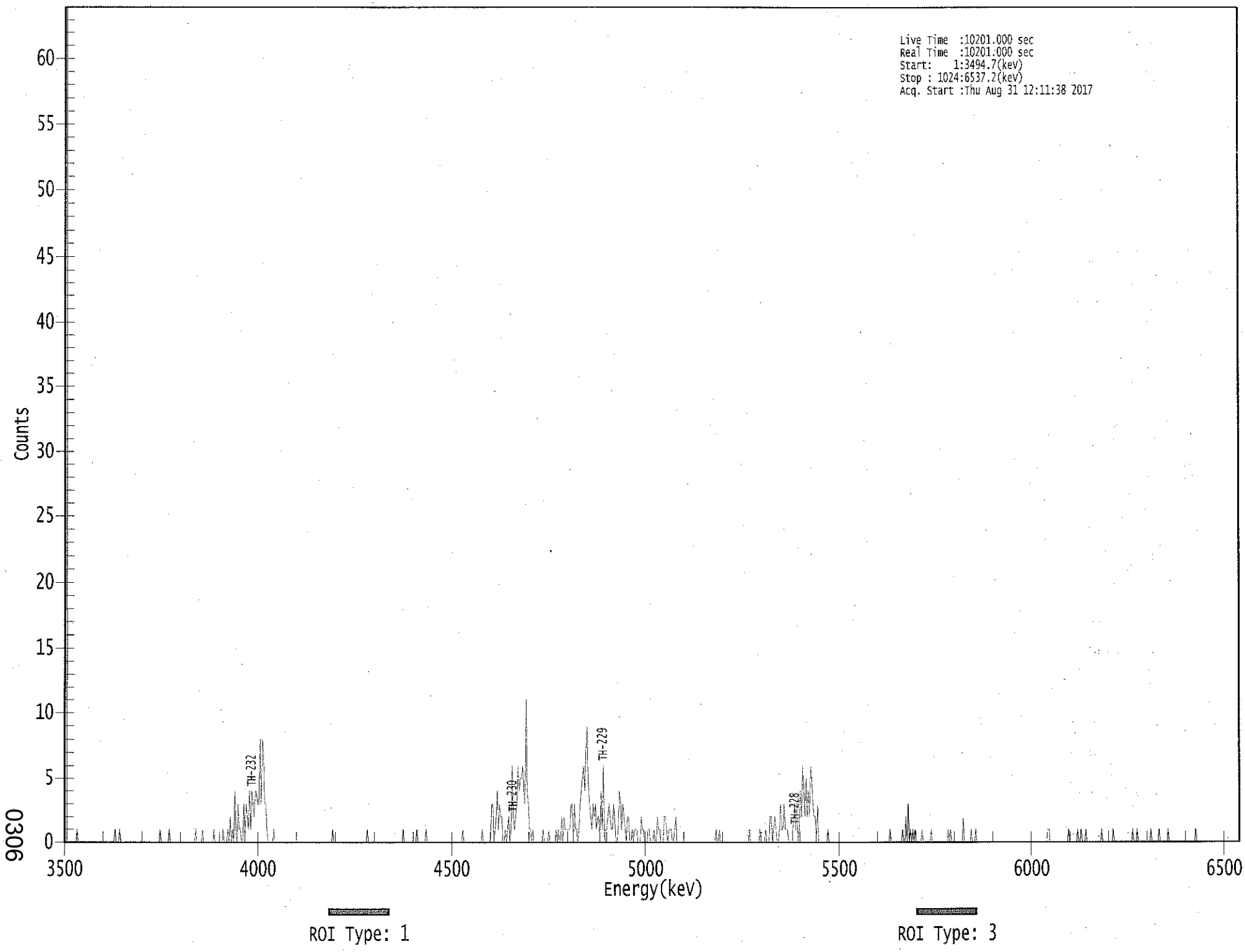
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.841	8.81	71.06	1.19	0.00E+000	3.0
TH-228		5.384	85.47	21.42	1.53	0.00E+000	6.7
TH-229	T	4.886	159.00	15.59	0.00	0.00E+000	9.2
TH-230		4.655	95.64	20.21	1.36	0.00E+000	4.4
TH-232		3.979	88.49	20.91	0.51	0.00E+000	4.8

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.17E-001 +/- 8.55E-002	8.76E-002 +/- 1.47E-002
TH-228	0.999	5400.00*	1.22E+000 +/- 3.32E-001	1.02E-001 +/- 1.70E-002
TH-229	0.999	4872.00*	2.05E+000 +/- 3.43E-001	7.73E-002 +/- 1.29E-002
TH-230	0.998	4672.00*	1.23E+000 +/- 3.23E-001	8.82E-002 +/- 1.48E-002
TH-232	0.998	3997.00*	1.14E+000 +/- 3.04E-001	6.74E-002 +/- 1.13E-002

0000193208.CNF



0306

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

Sample Title: 19

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	1	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	1	0	0	0
49:	1	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	1	0	0	0	0
89:	0	0	0	1	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	1	0	0	0	0	0
121:	1	0	0	0	0	0	0	0
129:	0	0	1	0	0	0	0	0
137:	0	0	1	0	0	0	1	0
145:	2	0	1	0	4	1	0	3
153:	1	1	0	0	3	0	3	2
161:	1	4	1	4	3	2	4	4
169:	3	3	8	3	8	7	3	3
177:	1	0	0	0	0	0	1	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	1	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	1
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	1	0
297:	0	0	0	0	0	0	0	0
305:	0	0	1	0	0	0	0	0
313:	0	0	1	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	1	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	1	0	0	0	0

369:	0	0	0	3	3	0	1	2

Sample Title: 19

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

801:	0	0	0	0	0	0	0	0

Sample Title: 19

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

Apex-Alpha™

VCR 8/30/17

Sample Description: HTC-A08-BKGD01-0612-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001932
Batch Identification: 1707090A-TH
Sample Identification: 20
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_004
Chamber Serial Number:
Detector Serial Number: 4
Env. Background: System Bkgd 194869
Reagent Blank: <not performed>

Sample Size: 1.220E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:09:58 AM
Acquisition Date/Time: 8/31/2017 12:11:39 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.227 mL
Effective Efficiency: 0.1686 +/- 0.0150
Counting Efficiency: 0.1883 +/- 0.0032 on 11/19/2016 1:08:17 PM
Chem. Recovery Factor: 0.8952 +/- 0.0810

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

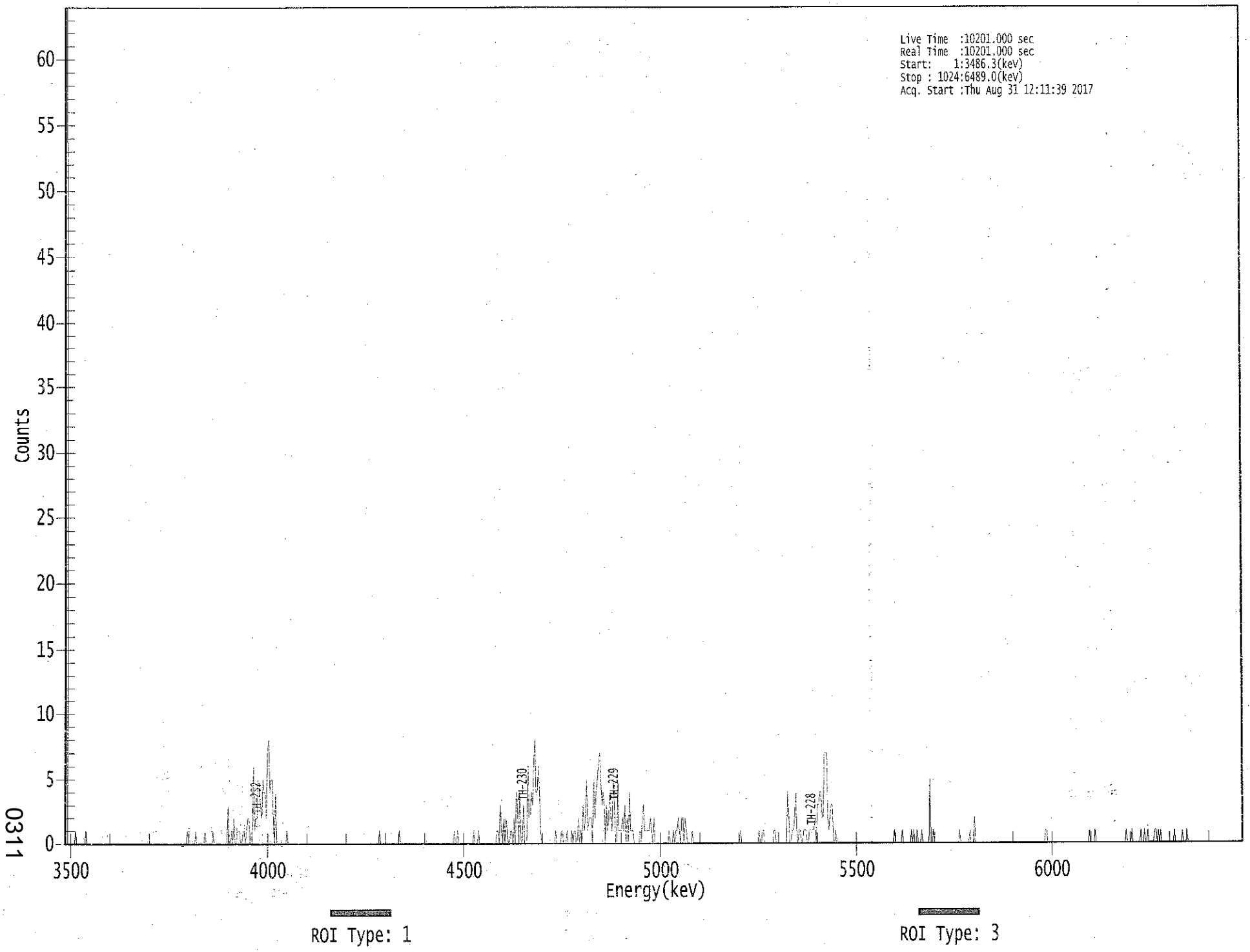
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.855	5.66	85.23	0.34	0.00E+000	2.9
TH-228		5.387	82.64	21.77	1.36	0.00E+000	10.0
TH-229	T	4.884	145.81	16.31	1.19	0.00E+000	14.7
TH-230		4.651	81.64	21.90	1.36	0.00E+000	7.8
TH-232		3.974	97.49	19.91	0.51	0.00E+000	7.6

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	7.55E-002 +/- 6.57E-002	6.38E-002 +/- 1.11E-002
TH-228	0.999	5400.00*	1.19E+000 +/- 3.30E-001	9.84E-002 +/- 1.71E-002
TH-229	0.999	4872.00*	1.89E+000 +/- 3.28E-001	8.53E-002 +/- 1.48E-002
TH-230	0.998	4672.00*	1.05E+000 +/- 2.95E-001	8.85E-002 +/- 1.54E-002
TH-232	0.997	3997.00*	1.26E+000 +/- 3.32E-001	6.76E-002 +/- 1.18E-002

0000193207.CNF



0311

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

Sample Title: 20

Elapsed Live time: 10201
Elapsed Real Time: 10201

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

369:	0	0	0	0	0	0	1	1

Sample Title: 20

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

801:	0	0	0	0	0	0	0	0

Sample Title: 20

Channel								
809:	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	1	1	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	1	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	1	0	0	0	0	1	0
929:	0	0	0	0	0	0	1	0
937:	0	1	0	0	1	0	0	0
945:	0	0	1	1	0	1	0	1
953:	0	0	0	0	0	0	0	0
961:	0	0	0	1	0	0	0	0
969:	0	0	1	0	0	0	1	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	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™

QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 8/31/2017
Time : 5:39:39 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_001	21f	ALL	Not Done	
Alpha_002	21f	ALL	Not Done	
Alpha_003	21f	ALL	Passed	8/31/2017 5:18:17 AM
Alpha_004	21f	ALL	Passed	8/31/2017 5:18:18 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	8/31/2017 5:18:19 AM
Alpha_011	21f	ALL	Passed	8/31/2017 5:18:19 AM
Alpha_012	21f	ALL	Passed	8/31/2017 5:18:20 AM
Alpha_013	21f	ALL	Not Done	
Alpha_014	21f	ALL	Passed	8/31/2017 5:18:21 AM
Alpha_015	21f	ALL	Not Done	
Alpha_016	21f	ALL	Not Done	
Alpha_033	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:22 AM
Alpha_034	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:24 AM
Alpha_035	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:25 AM
Alpha_036	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:27 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:29 AM
Alpha_038	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:31 AM
Alpha_039	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:33 AM
Alpha_040	Alpha Analyst100DC	Peak FWHM [illegible]	Action	8/31/2017 5:18:35 AM
Alpha_041	Alpha Analyst100DC	ALL	Not Done	
Alpha_042	Alpha Analyst100DC	ALL	Not Done	
Alpha_043	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:38 AM
Alpha_044	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:41 AM
Alpha_045	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:43 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:46 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:48 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:51 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:53 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:56 AM
Alpha_051	Alpha Analyst100DC	ALL	Not Done	
Alpha_052	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:18:59 AM
Alpha_053	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:19:01 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:19:04 AM
Alpha_055	Alpha Analyst100DC	ALL	Not Done	
Alpha_056	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:19:07 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:19:09 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:19:12 AM

8/31/2017 5:39:39 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:19:15 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	8/31/2017 5:19:18 AM

APPROVED BY: _____

APPROVAL DATE: 8/31/17

****
***** L I B R A R Y L I S T I N G R E P O R T *****
****

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)

17-07090
Gamma
Run 2

Work Order	17-07090
Analysis Code	Gamma
Run	2
Date Received	7/18/2017
Lab Deadline	8/10/2017
Client	Weston Solutions, Inc.
Project	94759
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EPA 901.1 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		07/19/17 00:00	1.0000E+00
02	MBL	BLANK		07/19/17 00:00	1.0000E+00
03	DUP	HTC-A06-S001-1218-01	47	05/16/17 14:24	6.0481E+02
04	DO	HTC-A06-S001-1218-01	47	05/16/17 14:24	6.0481E+02
05	TRG	HTC-A06-S001-1824-01	57	05/16/17 14:22	6.1801E+02
06	TRG	HTC-A06-S001-2430-01	37	05/16/17 14:20	6.3604E+02
07	TRG	HTC-A06-S001-3036-01	39	05/16/17 14:18	6.6661E+02
08	TRG	HTC-A06-S001-3642-01	45	05/16/17 14:16	6.1888E+02
09	TRG	HTC-A06-S001-4248-01	41	05/16/17 14:14	6.1234E+02
10	TRG	HTC-A07-S001-0006-01	67	05/16/17 15:14	7.7702E+02
11	TRG	HTC-A07-S001-0612-01	76	05/16/17 15:12	7.4892E+02
12	TRG	HTC-A07-S001-0612-02	70	05/16/17 15:12	7.3551E+02
13	TRG	HTC-A07-S001-1218-01	51	05/16/17 15:10	7.1397E+02
14	TRG	HTC-A07-S001-1824-01	44	05/16/17 15:08	6.5614E+02
15	TRG	HTC-A07-S001-2430-01	55	05/16/17 15:06	6.8519E+02
16	TRG	HTC-A07-S001-3036-01	33	05/16/17 15:04	6.9716E+02
17	TRG	HTC-A07-S001-3642-01	39	05/16/17 15:02	6.7121E+02
18	TRG	HTC-A07-S001-4248-01	43	05/16/17 15:00	6.6545E+02
19	TRG	HTC-A08-BKGD01-0006-02	45	05/15/17 16:41	5.9370E+02
20	TRG	HTC-A08-BKGD01-0612-01	55	05/15/17 16:38	6.3151E+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.

17-07090
Gamma
Run 2

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS				0.00								
02	MBL				0.00								
03	DUP				0.00								
04	DO				0.00								
05	TRG				0.00								
06	TRG				0.00								
07	TRG				0.00								
08	TRG				0.00								
09	TRG				0.00								
10	TRG				0.00								
11	TRG				0.00								
12	TRG				0.00								
13	TRG				0.00								
14	TRG				0.00								
15	TRG				0.00								
16	TRG				0.00								
17	TRG				0.00								
18	TRG				0.00								
19	TRG				0.00								
20	TRG				0.00								

0320

* 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.

17-07090
Gamma
Run 2

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	08/02/17 09:01	KSALLINGS						
05	TRG	08/02/17 09:01	KSALLINGS						
06	TRG	08/02/17 09:01	KSALLINGS						
07	TRG	08/02/17 09:01	KSALLINGS						
08	TRG	08/02/17 09:01	KSALLINGS						
09	TRG	08/02/17 09:01	KSALLINGS						
10	TRG	08/02/17 09:01	KSALLINGS						
11	TRG	08/02/17 09:01	KSALLINGS						
12	TRG	08/02/17 09:01	KSALLINGS						
13	TRG	08/02/17 09:01	KSALLINGS						
14	TRG	08/02/17 09:01	KSALLINGS						
15	TRG	08/02/17 09:01	KSALLINGS						
16	TRG	08/02/17 09:01	KSALLINGS						
17	TRG	08/02/17 09:01	KSALLINGS						
18	TRG	08/02/17 09:01	KSALLINGS						
19	TRG	08/02/17 09:01	KSALLINGS						
20	TRG	08/02/17 09:01	KSALLINGS						

0321

* 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.

Work Order: 17-07090-Gamma-2

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	1.25E+02	7.46E+00	1.53E+00	1.35E+02	92.28	OK		07/19/17 00:00	1.00E+00	08/23/17 11:51	YES
01	CS-137	LCS	LCS	pCi/g	8.28E+01	7.56E+00	1.88E+00	8.44E+01	98.16	OK		07/19/17 00:00	1.00E+00	08/23/17 11:51	YES
02	AC-228	MBL	BLANK	pCi/g	4.89E-02	6.31E-02	1.32E-01					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	BI-212	MBL	BLANK	pCi/g	3.34E-02	1.87E-01	3.11E-01					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	BI-214	MBL	BLANK	pCi/g	-1.21E-02	4.99E-02	7.35E-02					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	CS-137	MBL	BLANK	pCi/g	1.86E-02	2.47E-02	4.55E-02					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	K-40	MBL	BLANK	pCi/g	1.94E-01	2.32E-01	4.73E-01					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	PA-234M	MBL	BLANK	pCi/g	1.42E+00	2.50E+00	4.76E+00					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	PB-212	MBL	BLANK	pCi/g	6.05E-02	3.12E-02	5.87E-02					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	PB-214	MBL	BLANK	pCi/g	4.94E-02	3.81E-02	7.26E-02					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	RA-224	MBL	BLANK	pCi/g	4.20E-01	4.09E-01	6.72E-01					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	RA-226	MBL	BLANK	pCi/g	-1.21E-02	4.99E-02	7.35E-02					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	RA-228	MBL	BLANK	pCi/g	4.89E-02	6.31E-02	1.32E-01					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	TH-234	MBL	BLANK	pCi/g	4.23E-01	3.83E-01	5.74E-01					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
02	TL-208	MBL	BLANK	pCi/g	2.58E-02	6.13E-02	1.06E-01					07/19/17 00:00	1.00E+00	08/23/17 12:39	NO
03	AC-228	DUP	HTC-A06-S001-1218-01	pCi/g	1.38E+00	3.58E-01	7.44E-01					05/16/17 14:24	6.05E+02	08/23/17 11:19	YES
03	BI-212	DUP	HTC-A06-S001-1218-01	pCi/g	9.12E-01	9.41E-01	1.56E+00					05/16/17 14:24	6.05E+02	08/23/17 11:19	YES
03	BI-214	DUP	HTC-A06-S001-1218-01	pCi/g	1.71E+00	2.97E-01	3.64E-01				NA	05/16/17 14:24	6.05E+02	08/23/17 11:19	YES
03	CS-137	DUP	HTC-A06-S001-1218-01	pCi/g	3.73E-02	1.08E-01	1.55E-01					05/16/17 14:24	6.05E+02	08/23/17 11:19	NO
03	K-40	DUP	HTC-A06-S001-1218-01	pCi/g	2.12E+01	2.99E+00	2.20E+00				NA	05/16/17 14:24	6.05E+02	08/23/17 11:19	YES
03	PA-234M	DUP	HTC-A06-S001-1218-01	pCi/g	2.69E+01	2.07E+01	3.40E+01					05/16/17 14:24	6.05E+02	08/23/17 11:19	YES
03	PB-212	DUP	HTC-A06-S001-1218-01	pCi/g	1.21E+00	1.87E-01	3.70E-01					05/16/17 14:24	6.05E+02	08/23/17 11:19	YES
03	PB-214	DUP	HTC-A06-S001-1218-01	pCi/g	1.92E+00	2.39E-01	4.54E-01					05/16/17 14:24	6.05E+02	08/23/17 11:19	YES
03	RA-224	DUP	HTC-A06-S001-1218-01	pCi/g	1.65E+01	2.38E+00	3.66E+00					05/16/17 14:24	6.05E+02	08/23/17 11:19	NO
03	RA-226	DUP	HTC-A06-S001-1218-01	pCi/g	1.71E+00	2.97E-01	3.64E-01					05/16/17 14:24	6.05E+02	08/23/17 11:19	YES
03	RA-228	DUP	HTC-A06-S001-1218-01	pCi/g	1.38E+00	3.58E-01	7.44E-01				NA	05/16/17 14:24	6.05E+02	08/23/17 11:19	YES
03	TH-234	DUP	HTC-A06-S001-1218-01	pCi/g	1.58E+00	1.62E+00	2.41E+00					05/16/17 14:24	6.05E+02	08/23/17 11:19	NO
03	TL-208	DUP	HTC-A06-S001-1218-01	pCi/g	1.19E+00	2.74E-01	7.32E-02					05/16/17 14:24	6.05E+02	08/23/17 11:19	YES
04	AC-228	DO	HTC-A06-S001-1218-01	pCi/g	1.11E+00	2.97E-01	6.00E-01					05/16/17 14:24	6.05E+02	08/23/17 12:37	YES
04	BI-212	DO	HTC-A06-S001-1218-01	pCi/g	1.67E+00	1.58E+00	2.62E+00					05/16/17 14:24	6.05E+02	08/23/17 12:37	YES
04	BI-214	DO	HTC-A06-S001-1218-01	pCi/g	1.82E+00	2.88E-01	1.06E-01					05/16/17 14:24	6.05E+02	08/23/17 12:37	YES
04	CS-137	DO	HTC-A06-S001-1218-01	pCi/g	2.25E-02	1.07E-01	1.50E-01					05/16/17 14:24	6.05E+02	08/23/17 12:37	NO
04	K-40	DO	HTC-A06-S001-1218-01	pCi/g	2.44E+01	3.13E+00	1.44E+00					05/16/17 14:24	6.05E+02	08/23/17 12:37	YES
04	PA-234M	DO	HTC-A06-S001-1218-01	pCi/g	-6.32E-01	1.21E+01	1.56E+01					05/16/17 14:24	6.05E+02	08/23/17 12:37	NO
04	PB-212	DO	HTC-A06-S001-1218-01	pCi/g	1.31E+00	2.04E-01	3.94E-01					05/16/17 14:24	6.05E+02	08/23/17 12:37	YES
04	PB-214	DO	HTC-A06-S001-1218-01	pCi/g	1.92E+00	2.44E-01	3.85E-01					05/16/17 14:24	6.05E+02	08/23/17 12:37	YES
04	RA-224	DO	HTC-A06-S001-1218-01	pCi/g	1.72E+01	2.37E+00	3.63E+00					05/16/17 14:24	6.05E+02	08/23/17 12:37	NO
04	RA-226	DO	HTC-A06-S001-1218-01	pCi/g	1.82E+00	2.88E-01	1.06E-01					05/16/17 14:24	6.05E+02	08/23/17 12:37	YES

0322

Work Order: 17-07090-Gamma-2

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
04	RA-228	DO	HTC-A06-S001-1218-01	pCi/g	1.11E+00	2.97E-01	6.00E-01					05/16/17 14:24	6.05E+02	08/23/17 12:37	YES
04	TH-234	DO	HTC-A06-S001-1218-01	pCi/g	3.43E+00	1.62E+00	2.46E+00					05/16/17 14:24	6.05E+02	08/23/17 12:37	NO
04	TL-208	DO	HTC-A06-S001-1218-01	pCi/g	1.25E+00	2.76E-01	4.46E-01					05/16/17 14:24	6.05E+02	08/23/17 12:37	YES
05	AC-228	TRG	HTC-A06-S001-1824-01	pCi/g	1.52E+00	2.25E-01	4.25E-01					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
05	BI-212	TRG	HTC-A06-S001-1824-01	pCi/g	1.64E+00	6.10E-01	9.02E-01					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
05	BI-214	TRG	HTC-A06-S001-1824-01	pCi/g	1.14E+00	1.78E-01	2.67E-01					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
05	CS-137	TRG	HTC-A06-S001-1824-01	pCi/g	2.28E-02	5.48E-02	8.46E-02					05/16/17 14:22	6.18E+02	08/23/17 12:37	NO
05	K-40	TRG	HTC-A06-S001-1824-01	pCi/g	2.93E+01	3.07E+00	1.32E+00					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
05	PA-234M	TRG	HTC-A06-S001-1824-01	pCi/g	-6.52E-02	4.03E+00	7.87E+00					05/16/17 14:22	6.18E+02	08/23/17 12:37	NO
05	PB-212	TRG	HTC-A06-S001-1824-01	pCi/g	1.53E+00	1.67E-01	2.82E-01					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
05	PB-214	TRG	HTC-A06-S001-1824-01	pCi/g	1.25E+00	1.41E-01	1.82E-01					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
05	RA-224	TRG	HTC-A06-S001-1824-01	pCi/g	4.56E+00	1.61E+00	3.24E+00					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
05	RA-226	TRG	HTC-A06-S001-1824-01	pCi/g	1.14E+00	1.78E-01	2.67E-01					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
05	RA-228	TRG	HTC-A06-S001-1824-01	pCi/g	1.14E+00	1.78E-01	2.67E-01					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
05	TH-234	TRG	HTC-A06-S001-1824-01	pCi/g	1.58E+00	1.32E+00	2.18E+00					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
05	TL-208	TRG	HTC-A06-S001-1824-01	pCi/g	1.27E+00	1.85E-01	1.11E-01					05/16/17 14:22	6.18E+02	08/23/17 12:37	YES
06	AC-228	TRG	HTC-A06-S001-2430-01	pCi/g	1.15E+00	1.94E-01	3.84E-01					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	BI-212	TRG	HTC-A06-S001-2430-01	pCi/g	1.29E+00	5.66E-01	8.61E-01					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	BI-214	TRG	HTC-A06-S001-2430-01	pCi/g	9.10E-01	1.56E-01	1.94E-01					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	CS-137	TRG	HTC-A06-S001-2430-01	pCi/g	-2.45E-03	2.67E-02	7.63E-02					05/16/17 14:20	6.36E+02	08/23/17 12:37	NO
06	K-40	TRG	HTC-A06-S001-2430-01	pCi/g	2.17E+01	2.51E+00	1.12E+00					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	PA-234M	TRG	HTC-A06-S001-2430-01	pCi/g	4.34E+00	4.64E+00	7.67E+00					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	PB-212	TRG	HTC-A06-S001-2430-01	pCi/g	1.30E+00	1.39E-01	2.84E-01					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	PB-214	TRG	HTC-A06-S001-2430-01	pCi/g	1.02E+00	1.35E-01	2.21E-01					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	RA-224	TRG	HTC-A06-S001-2430-01	pCi/g	3.39E+00	1.33E+00	3.26E+00					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	RA-226	TRG	HTC-A06-S001-2430-01	pCi/g	9.10E-01	1.56E-01	1.94E-01					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	RA-228	TRG	HTC-A06-S001-2430-01	pCi/g	1.15E+00	1.94E-01	3.84E-01					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	TH-234	TRG	HTC-A06-S001-2430-01	pCi/g	2.19E+00	1.40E+00	2.30E+00					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
06	TL-208	TRG	HTC-A06-S001-2430-01	pCi/g	1.03E+00	1.52E-01	1.06E-01					05/16/17 14:20	6.36E+02	08/23/17 12:37	YES
07	AC-228	TRG	HTC-A06-S001-3036-01	pCi/g	1.36E+00	1.94E-01	3.51E-01					05/16/17 14:18	6.67E+02	08/23/17 13:39	YES
07	BI-212	TRG	HTC-A06-S001-3036-01	pCi/g	1.07E+00	3.75E-01	1.04E+00					05/16/17 14:18	6.67E+02	08/23/17 13:39	YES
07	BI-214	TRG	HTC-A06-S001-3036-01	pCi/g	1.01E+00	1.49E-01	2.03E-01					05/16/17 14:18	6.67E+02	08/23/17 13:39	YES
07	CS-137	TRG	HTC-A06-S001-3036-01	pCi/g	3.68E-04	1.88E-02	7.28E-02					05/16/17 14:18	6.67E+02	08/23/17 13:39	NO
07	K-40	TRG	HTC-A06-S001-3036-01	pCi/g	2.40E+01	2.51E+00	1.25E+00					05/16/17 14:18	6.67E+02	08/23/17 13:39	YES
07	PA-234M	TRG	HTC-A06-S001-3036-01	pCi/g	-1.01E+00	5.03E+00	7.40E+00					05/16/17 14:18	6.67E+02	08/23/17 13:39	NO
07	PB-212	TRG	HTC-A06-S001-3036-01	pCi/g	1.33E+00	1.47E-01	3.06E-01					05/16/17 14:18	6.67E+02	08/23/17 13:39	YES
07	PB-214	TRG	HTC-A06-S001-3036-01	pCi/g	1.12E+00	1.55E-01	2.28E-01					05/16/17 14:18	6.67E+02	08/23/17 13:39	YES
07	RA-224	TRG	HTC-A06-S001-3036-01	pCi/g	3.92E+00	1.26E+00	3.47E+00					05/16/17 14:18	6.67E+02	08/23/17 13:39	YES

0323

Work Order: 17-07090-Gamma-2

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
07	RA-226	TRG	HTC-A06-S001-3036-01	pCi/g	1.01E+00	1.49E-01	2.03E-01					05/16/17 14:18	6.67E+02	08/23/17 13:39	YES
07	RA-228	TRG	HTC-A06-S001-3036-01	pCi/g	1.36E+00	1.94E-01	3.51E-01					05/16/17 14:18	6.67E+02	08/23/17 13:39	YES
07	TH-234	TRG	HTC-A06-S001-3036-01	pCi/g	1.03E+00	1.17E+00	1.54E+00					05/16/17 14:18	6.67E+02	08/23/17 13:39	NO
07	TL-208	TRG	HTC-A06-S001-3036-01	pCi/g	1.16E+00	1.77E-01	1.41E-01					05/16/17 14:18	6.67E+02	08/23/17 13:39	YES
08	AC-228	TRG	HTC-A06-S001-3642-01	pCi/g	1.31E+00	2.45E-01	3.77E-01					05/16/17 14:16	6.19E+02	08/23/17 13:39	YES
08	BI-212	TRG	HTC-A06-S001-3642-01	pCi/g	1.20E+00	4.86E-01	7.11E-01					05/16/17 14:16	6.19E+02	08/23/17 13:39	YES
08	BI-214	TRG	HTC-A06-S001-3642-01	pCi/g	9.52E-01	1.50E-01	2.04E-01					05/16/17 14:16	6.19E+02	08/23/17 13:39	YES
08	CS-137	TRG	HTC-A06-S001-3642-01	pCi/g	-3.71E-02	5.59E-02	7.80E-02					05/16/17 14:16	6.19E+02	08/23/17 13:39	NO
08	K-40	TRG	HTC-A06-S001-3642-01	pCi/g	2.17E+01	2.50E+00	6.26E-01					05/16/17 14:16	6.19E+02	08/23/17 13:39	YES
08	PA-234M	TRG	HTC-A06-S001-3642-01	pCi/g	8.60E-02	3.18E+00	7.45E+00					05/16/17 14:16	6.19E+02	08/23/17 13:39	NO
08	PB-212	TRG	HTC-A06-S001-3642-01	pCi/g	1.16E+00	1.33E-01	2.19E-01					05/16/17 14:16	6.19E+02	08/23/17 13:39	YES
08	PB-214	TRG	HTC-A06-S001-3642-01	pCi/g	1.02E+00	1.46E-01	2.71E-01					05/16/17 14:16	6.19E+02	08/23/17 13:39	YES
08	RA-224	TRG	HTC-A06-S001-3642-01	pCi/g	2.41E+00	8.39E-01	2.47E+00					05/16/17 14:16	6.19E+02	08/23/17 13:39	YES
08	RA-226	TRG	HTC-A06-S001-3642-01	pCi/g	9.52E-01	1.50E-01	2.04E-01					05/16/17 14:16	6.19E+02	08/23/17 13:39	YES
08	RA-228	TRG	HTC-A06-S001-3642-01	pCi/g	1.31E+00	2.45E-01	3.77E-01					05/16/17 14:16	6.19E+02	08/23/17 13:39	YES
08	TH-234	TRG	HTC-A06-S001-3642-01	pCi/g	7.43E-01	8.00E-01	1.24E+00					05/16/17 14:16	6.19E+02	08/23/17 13:39	NO
08	TL-208	TRG	HTC-A06-S001-3642-01	pCi/g	1.13E+00	1.72E-01	1.09E-01					05/16/17 14:16	6.19E+02	08/23/17 13:39	YES
09	AC-228	TRG	HTC-A06-S001-4248-01	pCi/g	1.38E+00	2.91E-01	1.00E+00					05/16/17 14:14	6.12E+02	08/23/17 13:39	YES
09	BI-212	TRG	HTC-A06-S001-4248-01	pCi/g	9.50E-01	6.69E-01	1.06E+00					05/16/17 14:14	6.12E+02	08/23/17 13:39	YES
09	BI-214	TRG	HTC-A06-S001-4248-01	pCi/g	1.08E+00	2.40E-01	3.54E-01					05/16/17 14:14	6.12E+02	08/23/17 13:39	YES
09	CS-137	TRG	HTC-A06-S001-4248-01	pCi/g	1.21E-01	8.88E-02	1.44E-01					05/16/17 14:14	6.12E+02	08/23/17 13:39	NO
09	K-40	TRG	HTC-A06-S001-4248-01	pCi/g	1.90E+01	2.72E+00	1.91E+00					05/16/17 14:14	6.12E+02	08/23/17 13:39	YES
09	PA-234M	TRG	HTC-A06-S001-4248-01	pCi/g	8.80E-01	1.13E+01	1.56E+01					05/16/17 14:14	6.12E+02	08/23/17 13:39	NO
09	PB-212	TRG	HTC-A06-S001-4248-01	pCi/g	1.47E+00	1.97E-01	3.99E-01					05/16/17 14:14	6.12E+02	08/23/17 13:39	YES
09	PB-214	TRG	HTC-A06-S001-4248-01	pCi/g	1.20E+00	1.97E-01	3.30E-01					05/16/17 14:14	6.12E+02	08/23/17 13:39	YES
09	RA-224	TRG	HTC-A06-S001-4248-01	pCi/g	1.60E+01	2.22E+00	3.42E+00					05/16/17 14:14	6.12E+02	08/23/17 13:39	NO
09	RA-226	TRG	HTC-A06-S001-4248-01	pCi/g	1.08E+00	2.40E-01	3.54E-01					05/16/17 14:14	6.12E+02	08/23/17 13:39	YES
09	RA-228	TRG	HTC-A06-S001-4248-01	pCi/g	1.38E+00	2.91E-01	1.00E+00					05/16/17 14:14	6.12E+02	08/23/17 13:39	YES
09	TH-234	TRG	HTC-A06-S001-4248-01	pCi/g	2.15E+00	1.41E+00	2.15E+00					05/16/17 14:14	6.12E+02	08/23/17 13:39	NO
09	TL-208	TRG	HTC-A06-S001-4248-01	pCi/g	1.34E+00	2.76E-01	7.23E-02					05/16/17 14:14	6.12E+02	08/23/17 13:39	YES
10	AC-228	TRG	HTC-A07-S001-0006-01	pCi/g	9.18E-01	5.27E-01	8.21E-01					05/16/17 15:14	7.77E+02	08/23/17 13:39	NO
10	BI-212	TRG	HTC-A07-S001-0006-01	pCi/g	9.52E-01	1.03E+00	1.56E+00					05/16/17 15:14	7.77E+02	08/23/17 13:39	NO
10	BI-214	TRG	HTC-A07-S001-0006-01	pCi/g	3.70E+01	1.89E+00	6.50E-01					05/16/17 15:14	7.77E+02	08/23/17 13:39	YES
10	CS-137	TRG	HTC-A07-S001-0006-01	pCi/g	-2.02E-01	1.71E-01	2.33E-01					05/16/17 15:14	7.77E+02	08/23/17 13:39	NO
10	K-40	TRG	HTC-A07-S001-0006-01	pCi/g	4.55E+00	1.94E+00	3.04E+00					05/16/17 15:14	7.77E+02	08/23/17 13:39	YES
10	PA-234M	TRG	HTC-A07-S001-0006-01	pCi/g	4.34E+01	2.12E+01	3.41E+01					05/16/17 15:14	7.77E+02	08/23/17 13:39	YES
10	PB-212	TRG	HTC-A07-S001-0006-01	pCi/g	1.23E+00	4.52E-01	8.10E-01					05/16/17 15:14	7.77E+02	08/23/17 13:39	YES
10	PB-214	TRG	HTC-A07-S001-0006-01	pCi/g	3.82E+01	2.41E+00	6.79E-01					05/16/17 15:14	7.77E+02	08/23/17 13:39	YES

Work Order: 17-07090-Gamma-2

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
10	RA-224	TRG	HTC-A07-S001-0006-01	pCi/g	7.03E+01	6.93E+00	6.81E+00					05/16/17 15:14	7.77E+02	08/23/17 13:39	NO
10	RA-226	TRG	HTC-A07-S001-0006-01	pCi/g	3.70E+01	1.89E+00	6.50E-01					05/16/17 15:14	7.77E+02	08/23/17 13:39	YES
10	RA-228	TRG	HTC-A07-S001-0006-01	pCi/g	9.18E-01	5.27E-01	8.21E-01					05/16/17 15:14	7.77E+02	08/23/17 13:39	NO
10	TH-234	TRG	HTC-A07-S001-0006-01	pCi/g	2.46E+01	4.14E+00	6.09E+00					05/16/17 15:14	7.77E+02	08/23/17 13:39	YES
10	TL-208	TRG	HTC-A07-S001-0006-01	pCi/g	4.49E-01	1.62E-01	1.64E-01					05/16/17 15:14	7.77E+02	08/23/17 13:39	YES
11	AC-228	TRG	HTC-A07-S001-0612-01	pCi/g	4.26E-01	4.32E-01	6.49E-01					05/16/17 15:12	7.49E+02	08/23/17 14:40	NO
11	BI-212	TRG	HTC-A07-S001-0612-01	pCi/g	1.41E+00	9.37E-01	1.60E+00					05/16/17 15:12	7.49E+02	08/23/17 14:40	YES
11	BI-214	TRG	HTC-A07-S001-0612-01	pCi/g	4.37E+01	2.14E+00	8.23E-01					05/16/17 15:12	7.49E+02	08/23/17 14:40	YES
11	CS-137	TRG	HTC-A07-S001-0612-01	pCi/g	-1.74E-01	1.46E-01	1.97E-01					05/16/17 15:12	7.49E+02	08/23/17 14:40	NO
11	K-40	TRG	HTC-A07-S001-0612-01	pCi/g	5.58E+00	1.62E+00	2.42E+00					05/16/17 15:12	7.49E+02	08/23/17 14:40	YES
11	PA-234M	TRG	HTC-A07-S001-0612-01	pCi/g	4.02E+01	1.21E+01	2.75E+01					05/16/17 15:12	7.49E+02	08/23/17 14:40	YES
11	PB-212	TRG	HTC-A07-S001-0612-01	pCi/g	-8.24E+00	7.78E-01	3.82E-01					05/16/17 15:12	7.49E+02	08/23/17 14:40	NO
11	PB-214	TRG	HTC-A07-S001-0612-01	pCi/g	4.42E+01	2.63E+00	8.77E-01					05/16/17 15:12	7.49E+02	08/23/17 14:40	YES
11	RA-224	TRG	HTC-A07-S001-0612-01	pCi/g	8.15E+01	7.19E+00	8.06E+00					05/16/17 15:12	7.49E+02	08/23/17 14:40	YES
11	RA-226	TRG	HTC-A07-S001-0612-01	pCi/g	4.37E+01	2.14E+00	8.23E-01					05/16/17 15:12	7.49E+02	08/23/17 14:40	YES
11	RA-228	TRG	HTC-A07-S001-0612-01	pCi/g	4.26E-01	4.32E-01	6.49E-01					05/16/17 15:12	7.49E+02	08/23/17 14:40	NO
11	TH-234	TRG	HTC-A07-S001-0612-01	pCi/g	2.53E+01	4.30E+00	6.14E+00					05/16/17 15:12	7.49E+02	08/23/17 14:40	YES
11	TL-208	TRG	HTC-A07-S001-0612-01	pCi/g	6.56E-01	3.70E-01	3.79E-01					05/16/17 15:12	7.49E+02	08/23/17 14:40	NO
12	AC-228	TRG	HTC-A07-S001-0612-02	pCi/g	-2.51E-02	4.58E-01	6.68E-01					05/16/17 15:12	7.36E+02	08/23/17 14:40	NO
12	BI-212	TRG	HTC-A07-S001-0612-02	pCi/g	2.96E-01	8.97E-01	1.33E+00					05/16/17 15:12	7.36E+02	08/23/17 14:40	NO
12	BI-214	TRG	HTC-A07-S001-0612-02	pCi/g	4.12E+01	1.97E+00	5.67E-01					05/16/17 15:12	7.36E+02	08/23/17 14:40	YES
12	CS-137	TRG	HTC-A07-S001-0612-02	pCi/g	-9.09E-01	1.98E-01	1.83E-01					05/16/17 15:12	7.36E+02	08/23/17 14:40	NO
12	K-40	TRG	HTC-A07-S001-0612-02	pCi/g	3.73E+00	1.58E+00	2.47E+00					05/16/17 15:12	7.36E+02	08/23/17 14:40	YES
12	PA-234M	TRG	HTC-A07-S001-0612-02	pCi/g	3.68E+01	1.66E+01	2.65E+01					05/16/17 15:12	7.36E+02	08/23/17 14:40	YES
12	PB-212	TRG	HTC-A07-S001-0612-02	pCi/g	5.55E-01	1.88E-01	6.94E-01					05/16/17 15:12	7.36E+02	08/23/17 14:40	YES
12	PB-214	TRG	HTC-A07-S001-0612-02	pCi/g	4.20E+01	2.30E+00	5.69E-01					05/16/17 15:12	7.36E+02	08/23/17 14:40	YES
12	RA-224	TRG	HTC-A07-S001-0612-02	pCi/g	8.54E+01	7.30E+00	6.51E+00					05/16/17 15:12	7.36E+02	08/23/17 14:40	NO
12	RA-226	TRG	HTC-A07-S001-0612-02	pCi/g	4.12E+01	1.97E+00	5.67E-01					05/16/17 15:12	7.36E+02	08/23/17 14:40	YES
12	RA-228	TRG	HTC-A07-S001-0612-02	pCi/g	-2.51E-02	4.58E-01	6.68E-01					05/16/17 15:12	7.36E+02	08/23/17 14:40	NO
12	TH-234	TRG	HTC-A07-S001-0612-02	pCi/g	2.87E+01	4.07E+00	6.27E+00					05/16/17 15:12	7.36E+02	08/23/17 14:40	YES
12	TL-208	TRG	HTC-A07-S001-0612-02	pCi/g	3.84E-01	1.26E-01	1.62E-01					05/16/17 15:12	7.36E+02	08/23/17 14:40	YES
13	AC-228	TRG	HTC-A07-S001-1218-01	pCi/g	8.25E-01	4.47E-01	8.91E-01					05/16/17 15:10	7.14E+02	08/23/17 14:40	YES
13	BI-212	TRG	HTC-A07-S001-1218-01	pCi/g	8.87E-01	8.49E-01	1.41E+00					05/16/17 15:10	7.14E+02	08/23/17 14:40	YES
13	BI-214	TRG	HTC-A07-S001-1218-01	pCi/g	2.84E+01	1.49E+00	6.37E-01					05/16/17 15:10	7.14E+02	08/23/17 14:40	YES
13	CS-137	TRG	HTC-A07-S001-1218-01	pCi/g	-3.44E-01	1.60E-01	2.00E-01					05/16/17 15:10	7.14E+02	08/23/17 14:40	NO
13	K-40	TRG	HTC-A07-S001-1218-01	pCi/g	9.75E+00	2.14E+00	2.89E+00					05/16/17 15:10	7.14E+02	08/23/17 14:40	YES
13	PA-234M	TRG	HTC-A07-S001-1218-01	pCi/g	2.53E+01	1.74E+01	2.84E+01					05/16/17 15:10	7.14E+02	08/23/17 14:40	YES
13	PB-212	TRG	HTC-A07-S001-1218-01	pCi/g	3.84E-01	1.19E-01	5.36E-01					05/16/17 15:10	7.14E+02	08/23/17 14:40	YES

0325

Work Order: 17-07090-Gamma-2

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
13	PB-214	TRG	HTC-A07-S001-1218-01	pCi/g	2.95E+01	1.89E+00	7.19E-01					05/16/17 15:10	7.14E+02	08/23/17 14:40	YES
13	RA-224	TRG	HTC-A07-S001-1218-01	pCi/g	5.79E+01	5.94E+00	6.36E+00					05/16/17 15:10	7.14E+02	08/23/17 14:40	NO
13	RA-226	TRG	HTC-A07-S001-1218-01	pCi/g	2.84E+01	1.49E+00	6.37E-01					05/16/17 15:10	7.14E+02	08/23/17 14:40	YES
13	Ra-228	TRG	HTC-A07-S001-1218-01	pCi/g	8.25E-01	4.47E-01	8.91E-01					05/16/17 15:10	7.14E+02	08/23/17 14:40	YES
13	TH-234	TRG	HTC-A07-S001-1218-01	pCi/g	2.44E+01	3.61E+00	5.03E+00					05/16/17 15:10	7.14E+02	08/23/17 14:40	YES
13	TL-208	TRG	HTC-A07-S001-1218-01	pCi/g	8.30E-01	4.05E-01	4.44E-01					05/16/17 15:10	7.14E+02	08/23/17 14:40	NO
14	AC-228	TRG	HTC-A07-S001-1824-01	pCi/g	1.12E+00	2.76E-01	4.82E-01					05/16/17 15:08	6.56E+02	08/23/17 14:41	YES
14	BI-212	TRG	HTC-A07-S001-1824-01	pCi/g	7.94E-01	7.52E-01	1.16E+00					05/16/17 15:08	6.56E+02	08/23/17 14:41	NO
14	BI-214	TRG	HTC-A07-S001-1824-01	pCi/g	1.38E+00	2.57E-01	4.16E-01					05/16/17 15:08	6.56E+02	08/23/17 14:41	YES
14	CS-137	TRG	HTC-A07-S001-1824-01	pCi/g	-6.66E-02	1.14E-01	1.36E-01					05/16/17 15:08	6.56E+02	08/23/17 14:41	NO
14	K-40	TRG	HTC-A07-S001-1824-01	pCi/g	2.32E+01	2.89E+00	1.33E+00					05/16/17 15:08	6.56E+02	08/23/17 14:41	YES
14	PA-234M	TRG	HTC-A07-S001-1824-01	pCi/g	9.92E-01	1.07E+01	1.50E+01					05/16/17 15:08	6.56E+02	08/23/17 14:41	NO
14	PB-212	TRG	HTC-A07-S001-1824-01	pCi/g	1.25E+00	1.80E-01	2.76E-01					05/16/17 15:08	6.56E+02	08/23/17 14:41	YES
14	PB-214	TRG	HTC-A07-S001-1824-01	pCi/g	1.36E+00	2.02E-01	3.04E-01					05/16/17 15:08	6.56E+02	08/23/17 14:41	YES
14	RA-224	TRG	HTC-A07-S001-1824-01	pCi/g	3.76E+00	1.74E+00	3.12E+00					05/16/17 15:08	6.56E+02	08/23/17 14:41	YES
14	RA-226	TRG	HTC-A07-S001-1824-01	pCi/g	1.38E+00	2.57E-01	4.16E-01					05/16/17 15:08	6.56E+02	08/23/17 14:41	YES
14	RA-228	TRG	HTC-A07-S001-1824-01	pCi/g	1.12E+00	2.76E-01	4.82E-01					05/16/17 15:08	6.56E+02	08/23/17 14:41	YES
14	TH-234	TRG	HTC-A07-S001-1824-01	pCi/g	1.11E+00	1.42E+00	2.11E+00					05/16/17 15:08	6.56E+02	08/23/17 14:41	NO
14	TL-208	TRG	HTC-A07-S001-1824-01	pCi/g	1.22E+00	2.48E-01	3.90E-01					05/16/17 15:08	6.56E+02	08/23/17 14:41	YES
15	AC-228	TRG	HTC-A07-S001-2430-01	pCi/g	1.31E+00	1.84E-01	6.79E-01					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	BI-212	TRG	HTC-A07-S001-2430-01	pCi/g	1.00E+00	5.23E-01	8.20E-01					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	BI-214	TRG	HTC-A07-S001-2430-01	pCi/g	1.57E+00	1.74E-01	2.53E-01					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	CS-137	TRG	HTC-A07-S001-2430-01	pCi/g	-5.20E-02	5.29E-02	7.18E-02					05/16/17 15:06	6.85E+02	08/23/17 15:41	NO
15	K-40	TRG	HTC-A07-S001-2430-01	pCi/g	2.45E+01	2.54E+00	1.37E+00					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	PA-234M	TRG	HTC-A07-S001-2430-01	pCi/g	5.85E+00	4.65E+00	7.47E+00					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	PB-212	TRG	HTC-A07-S001-2430-01	pCi/g	1.52E+00	1.61E-01	3.02E-01					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	PB-214	TRG	HTC-A07-S001-2430-01	pCi/g	1.53E+00	1.59E-01	2.95E-01					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	RA-224	TRG	HTC-A07-S001-2430-01	pCi/g	4.56E+00	1.31E+00	3.42E+00					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	RA-226	TRG	HTC-A07-S001-2430-01	pCi/g	1.57E+00	1.74E-01	2.53E-01					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	RA-228	TRG	HTC-A07-S001-2430-01	pCi/g	1.31E+00	1.84E-01	6.79E-01					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	TH-234	TRG	HTC-A07-S001-2430-01	pCi/g	1.43E+00	1.11E+00	1.84E+00					05/16/17 15:06	6.85E+02	08/23/17 15:41	YES
15	TL-208	TRG	HTC-A07-S001-2430-01	pCi/g	1.31E+00	2.35E-01	3.89E-01					05/16/17 15:06	6.85E+02	08/23/17 15:41	NO
16	AC-228	TRG	HTC-A07-S001-3036-01	pCi/g	1.33E+00	3.09E-01	7.28E-01					05/16/17 15:04	6.97E+02	08/23/17 15:42	YES
16	BI-212	TRG	HTC-A07-S001-3036-01	pCi/g	3.47E-01	7.42E-01	1.08E+00					05/16/17 15:04	6.97E+02	08/23/17 15:42	NO
16	BI-214	TRG	HTC-A07-S001-3036-01	pCi/g	1.18E+00	2.25E-01	4.22E-01					05/16/17 15:04	6.97E+02	08/23/17 15:42	YES
16	CS-137	TRG	HTC-A07-S001-3036-01	pCi/g	6.85E-03	9.36E-02	1.31E-01					05/16/17 15:04	6.97E+02	08/23/17 15:42	NO
16	K-40	TRG	HTC-A07-S001-3036-01	pCi/g	2.26E+01	2.88E+00	1.48E+00					05/16/17 15:04	6.97E+02	08/23/17 15:42	YES
16	PA-234M	TRG	HTC-A07-S001-3036-01	pCi/g	2.22E-01	9.36E+00	1.33E+01					05/16/17 15:04	6.97E+02	08/23/17 15:42	NO

0326

Work Order: 17-07090-Gamma-2

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
16	PB-212	TRG	HTC-A07-S001-3036-01	pCi/g	1.55E+00	2.31E-01	2.85E-01					05/16/17 15:04	6.97E+02	08/23/17 15:42	YES
16	PB-214	TRG	HTC-A07-S001-3036-01	pCi/g	1.17E+00	2.02E-01	3.69E-01					05/16/17 15:04	6.97E+02	08/23/17 15:42	YES
16	RA-224	TRG	HTC-A07-S001-3036-01	pCi/g	1.58E+01	2.15E+00	3.25E+00					05/16/17 15:04	6.97E+02	08/23/17 15:42	NO
16	RA-226	TRG	HTC-A07-S001-3036-01	pCi/g	1.18E+00	2.25E-01	4.22E-01					05/16/17 15:04	6.97E+02	08/23/17 15:42	YES
16	RA-228	TRG	HTC-A07-S001-3036-01	pCi/g	1.33E+00	3.09E-01	7.28E-01					05/16/17 15:04	6.97E+02	08/23/17 15:42	YES
16	TH-234	TRG	HTC-A07-S001-3036-01	pCi/g	1.89E+00	1.49E+00	2.47E+00					05/16/17 15:04	6.97E+02	08/23/17 15:42	YES
16	TL-208	TRG	HTC-A07-S001-3036-01	pCi/g	1.34E+00	2.50E-01	6.35E-02					05/16/17 15:04	6.97E+02	08/23/17 15:42	YES
17	AC-228	TRG	HTC-A07-S001-3642-01	pCi/g	1.36E+00	1.82E-01	4.27E-01					05/16/17 15:02	6.71E+02	08/23/17 16:42	YES
17	BI-212	TRG	HTC-A07-S001-3642-01	pCi/g	4.48E-01	3.80E-01	6.31E-01					05/16/17 15:02	6.71E+02	08/23/17 16:42	NO
17	BI-214	TRG	HTC-A07-S001-3642-01	pCi/g	1.24E+00	1.69E-01	1.99E-01					05/16/17 15:02	6.71E+02	08/23/17 16:42	YES
17	CS-137	TRG	HTC-A07-S001-3642-01	pCi/g	-3.08E-02	5.10E-02	7.13E-02					05/16/17 15:02	6.71E+02	08/23/17 16:42	NO
17	K-40	TRG	HTC-A07-S001-3642-01	pCi/g	2.39E+01	2.55E+00	1.06E+00					05/16/17 15:02	6.71E+02	08/23/17 16:42	YES
17	PA-234M	TRG	HTC-A07-S001-3642-01	pCi/g	1.82E+00	4.94E+00	7.87E+00					05/16/17 15:02	6.71E+02	08/23/17 16:42	NO
17	PB-212	TRG	HTC-A07-S001-3642-01	pCi/g	1.41E+00	1.53E-01	2.18E-01					05/16/17 15:02	6.71E+02	08/23/17 16:42	YES
17	PB-214	TRG	HTC-A07-S001-3642-01	pCi/g	1.29E+00	1.42E-01	1.97E-01					05/16/17 15:02	6.71E+02	08/23/17 16:42	YES
17	RA-224	TRG	HTC-A07-S001-3642-01	pCi/g	4.87E+00	1.45E+00	2.49E+00					05/16/17 15:02	6.71E+02	08/23/17 16:42	YES
17	RA-226	TRG	HTC-A07-S001-3642-01	pCi/g	1.24E+00	1.69E-01	1.99E-01					05/16/17 15:02	6.71E+02	08/23/17 16:42	YES
17	RA-228	TRG	HTC-A07-S001-3642-01	pCi/g	1.36E+00	1.82E-01	4.27E-01					05/16/17 15:02	6.71E+02	08/23/17 16:42	YES
17	TH-234	TRG	HTC-A07-S001-3642-01	pCi/g	9.52E-01	1.22E+00	1.59E+00					05/16/17 15:02	6.71E+02	08/23/17 16:42	NO
17	TL-208	TRG	HTC-A07-S001-3642-01	pCi/g	1.06E+00	1.73E-01	2.05E-01					05/16/17 15:02	6.71E+02	08/23/17 16:42	YES
18	AC-228	TRG	HTC-A07-S001-4248-01	pCi/g	1.19E+00	2.54E-01	3.57E-01					05/16/17 15:00	6.65E+02	08/23/17 16:42	YES
18	BI-212	TRG	HTC-A07-S001-4248-01	pCi/g	2.25E-01	8.00E-01	1.14E+00					05/16/17 15:00	6.65E+02	08/23/17 16:42	NO
18	BI-214	TRG	HTC-A07-S001-4248-01	pCi/g	1.19E+00	2.42E-01	3.01E-01					05/16/17 15:00	6.65E+02	08/23/17 16:42	YES
18	CS-137	TRG	HTC-A07-S001-4248-01	pCi/g	4.72E-02	8.88E-02	1.32E-01					05/16/17 15:00	6.65E+02	08/23/17 16:42	NO
18	K-40	TRG	HTC-A07-S001-4248-01	pCi/g	2.07E+01	2.72E+00	1.41E+00					05/16/17 15:00	6.65E+02	08/23/17 16:42	YES
18	PA-234M	TRG	HTC-A07-S001-4248-01	pCi/g	6.61E+00	8.69E+00	1.37E+01					05/16/17 15:00	6.65E+02	08/23/17 16:42	NO
18	PB-212	TRG	HTC-A07-S001-4248-01	pCi/g	1.27E+00	1.76E-01	2.53E-01					05/16/17 15:00	6.65E+02	08/23/17 16:42	YES
18	PB-214	TRG	HTC-A07-S001-4248-01	pCi/g	1.04E+00	1.90E-01	2.68E-01					05/16/17 15:00	6.65E+02	08/23/17 16:42	YES
18	RA-224	TRG	HTC-A07-S001-4248-01	pCi/g	1.57E+01	2.14E+00	3.26E+00					05/16/17 15:00	6.65E+02	08/23/17 16:42	NO
18	RA-226	TRG	HTC-A07-S001-4248-01	pCi/g	1.19E+00	2.42E-01	3.01E-01					05/16/17 15:00	6.65E+02	08/23/17 16:42	YES
18	RA-228	TRG	HTC-A07-S001-4248-01	pCi/g	1.19E+00	2.54E-01	3.57E-01					05/16/17 15:00	6.65E+02	08/23/17 16:42	YES
18	TH-234	TRG	HTC-A07-S001-4248-01	pCi/g	2.57E+00	1.30E+00	2.00E+00					05/16/17 15:00	6.65E+02	08/23/17 16:42	NO
18	TL-208	TRG	HTC-A07-S001-4248-01	pCi/g	1.29E+00	2.65E-01	6.65E-02					05/16/17 15:00	6.65E+02	08/23/17 16:42	YES
19	AC-228	TRG	HTC-A08-BKGD01-0006-02	pCi/g	1.06E+00	1.77E-01	3.42E-01					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES
19	BI-212	TRG	HTC-A08-BKGD01-0006-02	pCi/g	5.42E-01	5.42E-01	8.97E-01					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES
19	BI-214	TRG	HTC-A08-BKGD01-0006-02	pCi/g	8.34E-01	1.45E-01	2.44E-01					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES
19	CS-137	TRG	HTC-A08-BKGD01-0006-02	pCi/g	1.93E-01	7.14E-02	1.03E-01					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES
19	K-40	TRG	HTC-A08-BKGD01-0006-02	pCi/g	1.91E+01	2.18E+00	1.06E+00					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES

Work Order: 17-07090-Gamma-2

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
19	PA-234M	TRG	HTC-A08-BKGD01-0006-02	pCi/g	3.57E+00	4.15E+00	7.27E+00					05/15/17 16:41	5.94E+02	08/24/17 05:59	NO
19	PB-212	TRG	HTC-A08-BKGD01-0006-02	pCi/g	1.16E+00	1.39E-01	2.22E-01					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES
19	PB-214	TRG	HTC-A08-BKGD01-0006-02	pCi/g	1.06E+00	1.45E-01	2.24E-01					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES
19	RA-224	TRG	HTC-A08-BKGD01-0006-02	pCi/g	2.94E+00	1.24E+00	2.50E+00					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES
19	RA-226	TRG	HTC-A08-BKGD01-0006-02	pCi/g	8.34E-01	1.45E-01	2.44E-01					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES
19	RA-228	TRG	HTC-A08-BKGD01-0006-02	pCi/g	1.06E+00	1.77E-01	3.42E-01					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES
19	TH-234	TRG	HTC-A08-BKGD01-0006-02	pCi/g	2.47E+00	1.12E+00	1.57E+00					05/15/17 16:41	5.94E+02	08/24/17 05:59	NO
19	TL-208	TRG	HTC-A08-BKGD01-0006-02	pCi/g	1.12E+00	1.71E-01	2.77E-01					05/15/17 16:41	5.94E+02	08/24/17 05:59	YES
20	AC-228	TRG	HTC-A08-BKGD01-0612-01	pCi/g	9.91E-01	2.10E-01	2.98E-01					05/15/17 16:38	6.32E+02	08/24/17 05:59	YES
20	BI-212	TRG	HTC-A08-BKGD01-0612-01	pCi/g	7.10E-01	3.58E-01	5.84E-01					05/15/17 16:38	6.32E+02	08/24/17 05:59	YES
20	BI-214	TRG	HTC-A08-BKGD01-0612-01	pCi/g	9.15E-01	1.45E-01	1.91E-01					05/15/17 16:38	6.32E+02	08/24/17 05:59	YES
20	CS-137	TRG	HTC-A08-BKGD01-0612-01	pCi/g	-1.89E-02	5.18E-02	7.55E-02					05/15/17 16:38	6.32E+02	08/24/17 05:59	NO
20	K-40	TRG	HTC-A08-BKGD01-0612-01	pCi/g	1.67E+01	2.04E+00	1.04E+00					05/15/17 16:38	6.32E+02	08/24/17 05:59	YES
20	PA-234M	TRG	HTC-A08-BKGD01-0612-01	pCi/g	8.28E-01	4.60E+00	7.31E+00					05/15/17 16:38	6.32E+02	08/24/17 05:59	NO
20	PB-212	TRG	HTC-A08-BKGD01-0612-01	pCi/g	9.46E-01	1.17E-01	1.99E-01					05/15/17 16:38	6.32E+02	08/24/17 05:59	YES
20	PB-214	TRG	HTC-A08-BKGD01-0612-01	pCi/g	8.97E-01	1.26E-01	2.06E-01					05/15/17 16:38	6.32E+02	08/24/17 05:59	YES
20	RA-224	TRG	HTC-A08-BKGD01-0612-01	pCi/g	2.50E+00	7.95E-01	2.24E+00					05/15/17 16:38	6.32E+02	08/24/17 05:59	YES
20	RA-228	TRG	HTC-A08-BKGD01-0612-01	pCi/g	9.91E-01	2.10E-01	2.98E-01					05/15/17 16:38	6.32E+02	08/24/17 05:59	YES
20	TH-234	TRG	HTC-A08-BKGD01-0612-01	pCi/g	1.47E+00	7.29E-01	1.20E+00					05/15/17 16:38	6.32E+02	08/24/17 05:59	NO
20	TL-208	TRG	HTC-A08-BKGD01-0612-01	pCi/g	8.63E-01	1.51E-01	1.88E-01					05/15/17 16:38	6.32E+02	08/24/17 05:59	YES

Count Room Report
Client: Weston Solutions, Inc.

17-07090-Gamma-2 (pCi/g) in SO
Tracer ID:

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	07/19/17 00:00	1.0000				0.00		
02	MBL	BLANK	07/19/17 00:00	1.0000				0.00		
03	DUP	HTC-A06-S001-1218-01	05/16/17 14:24	604.8100				0.00		
04	DO	HTC-A06-S001-1218-01	05/16/17 14:24	604.8100				0.00		
05	TRG	HTC-A06-S001-1824-01	05/16/17 14:22	618.0100				0.00		
06	TRG	HTC-A06-S001-2430-01	05/16/17 14:20	636.0400				0.00		
07	TRG	HTC-A06-S001-3036-01	05/16/17 14:18	666.6100				0.00		
08	TRG	HTC-A06-S001-3642-01	05/16/17 14:16	618.8800				0.00		
09	TRG	HTC-A06-S001-4248-01	05/16/17 14:14	612.3400				0.00		
10	TRG	HTC-A07-S001-0006-01	05/16/17 15:14	777.0200				0.00		
11	TRG	HTC-A07-S001-0612-01	05/16/17 15:12	748.9200				0.00		
12	TRG	HTC-A07-S001-0612-02	05/16/17 15:12	735.5100				0.00		
13	TRG	HTC-A07-S001-1218-01	05/16/17 15:10	713.9700				0.00		
14	TRG	HTC-A07-S001-1824-01	05/16/17 15:08	656.1400				0.00		
15	TRG	HTC-A07-S001-2430-01	05/16/17 15:06	685.1900				0.00		
16	TRG	HTC-A07-S001-3036-01	05/16/17 15:04	697.1600				0.00		
17	TRG	HTC-A07-S001-3642-01	05/16/17 15:02	671.2100				0.00		
18	TRG	HTC-A07-S001-4248-01	05/16/17 15:00	665.4500				0.00		
19	TRG	HTC-A08-BKGD01-0006-02	05/15/17 16:41	593.7000				0.00		
20	TRG	HTC-A08-BKGD01-0612-01	05/15/17 16:38	631.5100				0.00		

GEM

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
17-07090	2	Gamma	grams	8/10/2017	KSALLINGS

Lab Fraction	Weston Solutions, Inc. Client ID	Sample Type	Muffle Data	Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq
01	LCS	LCS					1.0000E+00	1.0000E+00				
02	BLANK	MBL					1.0000E+00	1.0000E+00				
03	HTC-A06-S001-1218-01	DUP					6.0481E+02	6.0481E+02				
04	HTC-A06-S001-1218-01	DO					6.0481E+02	6.0481E+02				
05	HTC-A06-S001-1824-01	TRG					6.1801E+02	6.1801E+02				
06	HTC-A06-S001-2430-01	TRG					6.3604E+02	6.3604E+02				
07	HTC-A06-S001-3036-01	TRG					6.6661E+02	6.6661E+02				
08	HTC-A06-S001-3642-01	TRG					6.1888E+02	6.1888E+02				
09	HTC-A06-S001-4248-01	TRG					6.1234E+02	6.1234E+02				
10	HTC-A07-S001-0006-01	TRG					7.7702E+02	7.7702E+02				
11	HTC-A07-S001-0612-01	TRG					7.4892E+02	7.4892E+02				
12	HTC-A07-S001-0612-02	TRG					7.3551E+02	7.3551E+02				
13	HTC-A07-S001-1218-01	TRG					7.1397E+02	7.1397E+02				
14	HTC-A07-S001-1824-01	TRG					6.5614E+02	6.5614E+02				
15	HTC-A07-S001-2430-01	TRG					6.8519E+02	6.8519E+02				
16	HTC-A07-S001-3036-01	TRG					6.9716E+02	6.9716E+02				
17	HTC-A07-S001-3642-01	TRG					6.7121E+02	6.7121E+02				
18	HTC-A07-S001-4248-01	TRG					6.6545E+02	6.6545E+02				
19	HTC-A08-BKGD01-0006-02	TRG					5.9370E+02	5.9370E+02				
20	HTC-A08-BKGD01-0612-01	TRG					6.3151E+02	6.3151E+02				

Comments	

0330

Technician: Kerry Sallings Date: 8/2/17

Eberline Services - Oak Ridge
Prep Logbook
Version 2.0 8/1999

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
17-07090	8/10/2017	8/1/2017	8/2/2017	8/3/2017	KSALLINGS

Bico Pulverizer: 000302 [✓] Jaw Crusher 68275 [ ]

Eberline Fraction	Weston Solutions, Inc. Client ID	Tare (g) Pan Wt	Gross (g) Wet Wt.	Gross (g) Dry Wt.	Net (g) Wet Wt.	Net (g) Dry Wt.	Percent Liquid	Percent Solid	Gamma Dry Wt.	Gamma LEPS Wt.	Special Info
04	HTC-A06-S001-1218-01	14.4900	918.6800	691.4900	904.1900	677.0000	25.13%	74.87%	0.0000	0.0000	
05	HTC-A06-S001-1824-01	14.5100	851.0800	690.4600	836.5700	675.9500	19.20%	80.80%	0.0000	0.0000	
06	HTC-A06-S001-2430-01	14.5000	927.6800	764.7400	913.1800	750.2400	17.84%	82.16%	0.0000	0.0000	
07	HTC-A06-S001-3036-01	14.5300	922.2000	744.1300	907.6700	729.6000	19.62%	80.38%	0.0000	0.0000	
08	HTC-A06-S001-3642-01	14.5100	877.5400	709.1700	863.0300	694.6600	19.51%	80.49%	0.0000	0.0000	
09	HTC-A06-S001-4248-01	14.5400	850.2200	681.6600	835.6800	667.1200	20.17%	79.83%	0.0000	0.0000	
10	HTC-A07-S001-0006-01	14.6000	953.4000	867.7400	938.8000	853.1400	9.12%	90.88%	0.0000	0.0000	
11	HTC-A07-S001-0612-01	14.5700	902.1400	844.2800	887.5700	829.7100	6.52%	93.48%	0.0000	0.0000	
12	HTC-A07-S001-0612-02	14.5000	856.9800	805.7600	842.4800	791.2600	6.08%	93.92%	0.0000	0.0000	
13	HTC-A07-S001-1218-01	14.4700	912.9800	822.1400	898.5100	807.6700	10.11%	89.89%	0.0000	0.0000	
14	HTC-A07-S001-1824-01	14.4500	913.2600	751.5800	898.8100	737.1300	17.99%	82.01%	0.0000	0.0000	
15	HTC-A07-S001-2430-01	14.4200	954.4400	785.8100	940.0200	771.3900	17.94%	82.06%	0.0000	0.0000	
16	HTC-A07-S001-3036-01	14.4100	975.7400	794.6000	961.3300	780.1900	18.84%	81.16%	0.0000	0.0000	
17	HTC-A07-S001-3642-01	14.3500	1041.3800	838.3400	1027.0300	823.9900	19.77%	80.23%	0.0000	0.0000	
18	HTC-A07-S001-4248-01	14.4100	1057.6200	847.3000	1043.2100	832.8900	20.16%	79.84%	0.0000	0.0000	
19	HTC-A08-BKGD01-0006-02	14.4300	848.5800	678.8300	834.1500	664.4000	20.35%	79.65%	0.0000	0.0000	
20	HTC-A08-BKGD01-0612-01	14.5100	900.9800	717.0700	886.4700	702.5600	20.75%	79.25%	0.0000	0.0000	

OVENS Fisher Isotemp SN 00579 [✓] VWR SN 000588 [ ]

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

0331

Technician: Kerry Sally

Date: **Analysis: Rough Prep Logbook**

Analysis: Gamma Page No. 10179

Eckert & Ziegler
Analytics

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

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

GAS-1402

98503

Sand in 16 Ounce PP Taral Jar Filled to Capacity

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

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

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

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

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

(Certificate continued on reverse side)

ANA Form005 Rev. —

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

VB 8/23/17

Apex-Gamma

Analysis Report for 1707090-01

GAS-1402

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-01
Sample Description	: GAS-1402
Sample Type	: SOIL
Sample Size	: 7.360E+02 grams
Facility	: Countroom
Sample Taken On	: 10/1/2014 8:49:55AM
Acquisition Started	: 8/23/2017 11:51:54AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 1800.0 seconds
Real Time	: 1835.7 seconds
Dead Time	: 1.94 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55802

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-01

GAS-1402

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 12:22:34PM
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	17.97	18.29	0.0000	0.00
2	22.59	22.91	0.0000	0.00
3	32.35	32.67	0.0000	0.00
4	51.12	51.43	0.0000	0.00
5	55.94	56.25	0.0000	0.00
6	59.66	59.96	0.0000	0.00
7	68.94	69.25	0.0000	0.00
8	88.24	88.53	0.0000	0.00
9	122.25	122.54	0.0000	0.00
10	136.75	137.03	0.0000	0.00
11	165.89	166.16	0.0000	0.00
12	238.38	238.63	0.0000	0.00
13	345.94	346.15	0.0000	0.00
14	354.03	354.24	0.0000	0.00
15	511.90	512.05	0.0000	0.00
16	547.88	548.02	0.0000	0.00
17	583.45	583.58	0.0000	0.00
18	661.61	661.71	0.0000	0.00
19	821.04	821.09	0.0000	0.00
20	1173.02	1172.95	0.0000	0.00
21	1232.14	1232.05	0.0000	0.00
22	1322.80	1322.68	0.0000	0.00
23	1332.25	1332.13	0.0000	0.00
24	1511.87	1511.69	0.0000	0.00
25	1537.08	1536.88	0.0000	0.00
26	1732.92	1732.66	0.0000	0.00
27	1759.89	1759.63	0.0000	0.00
28	1764.22	1763.95	0.0000	0.00
29	1834.47	1834.18	0.0000	0.00
30	2362.40	2361.93	0.0000	0.00
31	2504.72	2504.20	0.0000	0.00
32	2613.67	2613.12	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-01

GAS-1402

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 12:22:34PM

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	17.97	17 -	30	18.29	8.50E+02	193.17	1.13E+04	1.68
m	2	22.59	17 -	30	22.91	9.43E+04	776.04	2.29E+04	2.73
	3	32.35	31 -	35	32.67	1.87E+03	223.37	9.45E+03	2.11
M	4	51.12	45 -	63	51.43	1.22E+04	600.77	3.83E+04	3.80
m	5	55.94	45 -	63	56.25	1.17E+04	762.67	3.28E+04	3.48
m	6	59.66	45 -	63	59.96	9.40E+04	706.29	2.02E+04	2.20
	7	68.94	67 -	72	69.25	5.32E+02	309.67	1.88E+04	3.61
	8	88.24	84 -	94	88.53	3.01E+04	566.35	2.55E+04	2.14
	9	122.25	117 -	127	122.54	5.28E+03	383.32	1.67E+04	2.18
	10	136.75	134 -	140	137.03	5.64E+02	244.81	1.05E+04	1.64
	11	165.89	163 -	169	166.16	2.75E+02	230.82	9.50E+03	1.83
	12	238.38	236 -	241	238.63	1.88E+02	198.26	7.69E+03	1.34
	13	345.94	344 -	349	346.15	1.54E+02	158.62	4.91E+03	2.07
	14	354.03	352 -	357	354.24	2.04E+02	159.02	4.88E+03	3.63
	15	511.90	510 -	515	512.05	1.47E+02	131.04	3.31E+03	1.33
	16	547.88	545 -	551	548.02	1.44E+02	137.43	3.31E+03	3.01
	17	583.45	581 -	586	583.58	1.22E+02	116.88	2.62E+03	3.38
	18	661.61	649 -	667	661.71	2.11E+04	411.12	7.47E+03	2.21
	19	821.04	818 -	824	821.09	1.24E+02	126.96	2.84E+03	2.56
	20	1173.02	1166 -	1179	1172.95	1.65E+04	302.31	2.80E+03	2.50
	21	1232.14	1229 -	1235	1232.05	4.64E+01	52.86	4.65E+02	3.05
M	22	1322.80	1317 -	1341	1322.68	5.03E+01	46.00	4.05E+02	2.77
m	23	1332.25	1317 -	1341	1332.13	1.49E+04	246.69	2.71E+02	2.47
	24	1511.87	1508 -	1516	1511.69	2.21E+01	28.18	1.10E+02	2.62
	25	1537.08	1535 -	1540	1536.88	1.56E+01	18.73	5.89E+01	2.09
	26	1732.92	1728 -	1738	1732.66	2.59E+01	24.56	6.83E+01	6.99
M	27	1759.89	1758 -	1766	1759.63	9.79E+00	8.37	1.20E+01	3.65
m	28	1764.22	1758 -	1766	1763.95	1.49E+01	15.17	2.80E+01	2.43
	29	1834.47	1829 -	1838	1834.18	3.33E+01	27.00	8.53E+01	1.77
	30	2362.40	2358 -	2364	2361.93	8.30E+00	10.44	1.34E+01	1.38
	31	2504.72	2498 -	2508	2504.20	1.42E+02	23.83	0.00E+00	3.09
	32	2613.67	2608 -	2616	2613.12	1.70E+01	8.25	0.00E+00	1.93

Analysis Report for 1707090-01

GAS-1402

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 : 8/23/2017 12:22:34PM

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	17.97	17 -	30	8.50E+02	193.17	1.13E+04	1.75E+02
m	2	22.59	17 -	30	9.43E+04	776.04	2.29E+04	2.49E+02
	3	32.35	31 -	35	1.87E+03	223.37	9.45E+03	1.69E+02
M	4	51.12	45 -	63	1.22E+04	600.77	3.83E+04	3.22E+02
m	5	55.94	45 -	63	1.17E+04	762.67	3.28E+04	2.98E+02
m	6	59.66	45 -	63	9.40E+04	706.29	2.02E+04	2.34E+02
	7	68.94	67 -	72	5.32E+02	309.67	1.88E+04	2.52E+02
	8	88.24	84 -	94	3.01E+04	566.35	2.55E+04	3.68E+02
	9	122.25	117 -	127	5.28E+03	383.32	1.67E+04	2.92E+02
	10	136.75	134 -	140	5.64E+02	244.81	1.05E+04	1.97E+02
	11	165.89	163 -	169	2.75E+02	230.82	9.50E+03	1.88E+02
	12	238.38	236 -	241	1.88E+02	198.26	7.69E+03	1.61E+02
	13	345.94	344 -	349	1.54E+02	158.62	4.91E+03	1.29E+02
	14	354.03	352 -	357	2.04E+02	159.02	4.88E+03	1.29E+02
	15	511.90	510 -	515	1.47E+02	131.04	3.31E+03	1.06E+02
	16	547.88	545 -	551	1.44E+02	137.43	3.31E+03	1.11E+02
	17	583.45	581 -	586	1.22E+02	116.88	2.62E+03	9.43E+01
	18	661.61	649 -	667	2.11E+04	411.12	7.47E+03	8.83E+01
	19	821.04	818 -	824	1.24E+02	126.96	2.84E+03	1.03E+02
	20	1173.02	1166 -	1179	1.65E+04	302.31	2.80E+03	1.31E+02
	21	1232.14	1229 -	1235	4.64E+01	52.86	4.65E+02	4.20E+01
M	22	1322.80	1317 -	1341	5.03E+01	46.00	4.05E+02	3.31E+01
m	23	1332.25	1317 -	1341	1.49E+04	246.69	2.71E+02	2.71E+01
	24	1511.87	1508 -	1516	2.21E+01	28.18	1.10E+02	2.18E+01
	25	1537.08	1535 -	1540	1.56E+01	18.73	5.89E+01	1.40E+01
	26	1732.92	1728 -	1738	2.59E+01	24.56	6.83E+01	1.84E+01
M	27	1759.89	1758 -	1766	9.79E+00	8.37	1.20E+01	5.70E+00
m	28	1764.22	1758 -	1766	1.49E+01	15.17	2.80E+01	8.70E+00
	29	1834.47	1829 -	1838	3.33E+01	27.00	8.53E+01	2.01E+01
	30	2362.40	2358 -	2364	8.30E+00	10.44	1.34E+01	7.16E+00
	31	2504.72	2498 -	2508	1.42E+02	23.83	0.00E+00	0.00E+00

Analysis Report for 1707090-01

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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2613.67	2608 -	2616	1.70E+01	8.25	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 : 8/23/2017 12:22:34PM

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	17.97	17 -	30	18.29	8.50E+02	193.17	1.13E+04	.....
m	2	22.59	17 -	30	22.91	9.43E+04	776.04	2.29E+04	.....
	3	32.35	31 -	35	32.67	1.87E+03	223.37	9.45E+03	.....
M	4	51.12	45 -	63	51.43	1.22E+04	600.77	3.83E+04	.....
m	5	55.94	45 -	63	56.25	1.17E+04	762.67	3.28E+04	.....
m	6	59.66	45 -	63	59.96	9.40E+04	706.29	2.02E+04	AM-241
	7	68.94	67 -	72	69.25	5.32E+02	309.67	1.88E+04	.....
	8	88.24	84 -	94	88.53	3.01E+04	566.35	2.55E+04	LU-176 CD-109 SN-126
	9	122.25	117 -	127	122.54	5.28E+03	383.32	1.67E+04	CO-57 EU-152 EU-154
	10	136.75	134 -	140	137.03	5.64E+02	244.81	1.05E+04	CO-57 SE-75
	11	165.89	163 -	169	166.16	2.75E+02	230.82	9.50E+03	CE-139
	12	238.38	236 -	241	238.63	1.88E+02	198.26	7.69E+03	PB-212
	13	345.94	344 -	349	346.15	1.54E+02	158.62	4.91E+03	HF-181
	14	354.03	352 -	357	354.24	2.04E+02	159.02	4.88E+03	.....
	15	511.90	510 -	515	512.05	1.47E+02	131.04	3.31E+03	.....
	16	547.88	545 -	551	548.02	1.44E+02	137.43	3.31E+03	.....
	17	583.45	581 -	586	583.58	1.22E+02	116.88	2.62E+03	TL-208
	18	661.61	649 -	667	661.71	2.11E+04	411.12	7.47E+03	CS-137
	19	821.04	818 -	824	821.09	1.24E+02	126.96	2.84E+03	.....
	20	1173.02	1166 -	1179	1172.95	1.65E+04	302.31	2.80E+03	CO-60

Analysis Report for 1707090-01

GAS-1402

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	21	1232.14	1229 -	1235	1232.05	4.64E+01	52.86	4.65E+02	.....
M	22	1322.80	1317 -	1341	1322.68	5.03E+01	46.00	4.05E+02	.....
m	23	1332.25	1317 -	1341	1332.13	1.49E+04	246.69	2.71E+02	CO-60
	24	1511.87	1508 -	1516	1511.69	2.21E+01	28.18	1.10E+02	.....
	25	1537.08	1535 -	1540	1536.88	1.56E+01	18.73	5.89E+01	.....
	26	1732.92	1728 -	1738	1732.66	2.59E+01	24.56	6.83E+01	.....
M	27	1759.89	1758 -	1766	1759.63	9.79E+00	8.37	1.20E+01	.....
m	28	1764.22	1758 -	1766	1763.95	1.49E+01	15.17	2.80E+01	BI-214
	29	1834.47	1829 -	1838	1834.18	3.33E+01	27.00	8.53E+01	.....
	30	2362.40	2358 -	2364	2361.93	8.30E+00	10.44	1.34E+01	.....
	31	2504.72	2498 -	2508	2504.20	1.42E+02	23.83	0.00E+00	.....
	32	2613.67	2608 -	2616	2613.12	1.70E+01	8.25	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 : 8/23/2017 12:22:34PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	17.97	8.50E+02	193.17	3.71E-04	1.73E-03
m	2	22.59	9.43E+04	776.04	1.58E-03	1.73E-03
	3	32.35	1.87E+03	223.37	7.30E-03	1.73E-03
M	4	51.12	1.22E+04	600.77	1.98E-02	1.73E-03
m	5	55.94	1.17E+04	762.67	2.20E-02	1.73E-03
m	6	59.66	9.40E+04	706.29	2.33E-02	1.73E-03
	7	68.94	5.32E+02	309.67	2.57E-02	1.90E-03
	8	88.24	3.01E+04	566.35	2.72E-02	2.26E-03
	9	122.25	5.28E+03	383.32	2.52E-02	2.12E-03
	10	136.75	5.64E+02	244.81	2.39E-02	1.96E-03
	11	165.89	2.75E+02	230.82	2.12E-02	1.63E-03
	12	238.38	1.88E+02	198.26	1.61E-02	1.34E-03
	13	345.94	1.54E+02	158.62	1.17E-02	1.04E-03
	14	354.03	2.04E+02	159.02	1.15E-02	1.03E-03
	15	511.90	1.47E+02	131.04	8.24E-03	7.93E-04
	16	547.88	1.44E+02	137.43	7.75E-03	7.45E-04
	17	583.45	1.22E+02	116.88	7.32E-03	6.98E-04
	18	661.61	2.11E+04	411.12	6.54E-03	5.95E-04

Analysis Report for 1707090-01

GAS-1402

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	19	821.04	1.24E+02	126.96	5.39E-03	4.54E-04
	20	1173.02	1.65E+04	302.31	3.96E-03	3.41E-04
	21	1232.14	4.64E+01	52.86	3.80E-03	3.24E-04
M	22	1322.80	5.03E+01	46.00	3.58E-03	2.98E-04
m	23	1332.25	1.49E+04	246.69	3.56E-03	2.96E-04
	24	1511.87	2.21E+01	28.18	3.22E-03	2.67E-04
	25	1537.08	1.56E+01	18.73	3.18E-03	2.63E-04
	26	1732.92	2.59E+01	24.56	2.90E-03	2.32E-04
M	27	1759.89	9.79E+00	8.37	2.87E-03	2.27E-04
m	28	1764.22	1.49E+01	15.17	2.87E-03	2.26E-04
	29	1834.47	3.33E+01	27.00	2.79E-03	2.15E-04
	30	2362.40	8.30E+00	10.44	2.36E-03	2.15E-04
	31	2504.72	1.42E+02	23.83	2.29E-03	2.15E-04
	32	2613.67	1.70E+01	8.25	2.24E-03	2.15E-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 : 8/23/2017 12:22:34PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	17.97	8.50E+02	193.17			8.50E+02	1.93E+02
m	2	22.59	9.43E+04	776.04	1.19E+01	6.34E+00	9.43E+04	7.76E+02
	3	32.35	1.87E+03	223.37			1.87E+03	2.23E+02
M	4	51.12	1.22E+04	600.77			1.22E+04	6.01E+02
m	5	55.94	1.17E+04	762.67			1.17E+04	7.63E+02
m	6	59.66	9.40E+04	706.29	6.04E+00	1.98E+00	9.40E+04	7.06E+02
	7	68.94	5.32E+02	309.67			5.32E+02	3.10E+02
	8	88.24	3.01E+04	566.35			3.01E+04	5.66E+02
	9	122.25	5.28E+03	383.32			5.28E+03	3.83E+02
	10	136.75	5.64E+02	244.81			5.64E+02	2.45E+02
	11	165.89	2.75E+02	230.82			2.75E+02	2.31E+02
	12	238.38	1.88E+02	198.26	6.98E+00	1.36E+00	1.81E+02	1.98E+02
	13	345.94	1.54E+02	158.62			1.54E+02	1.59E+02
	14	354.03	2.04E+02	159.02			2.04E+02	1.59E+02
	15	511.90	1.47E+02	131.04	2.61E+01	2.37E+00	1.21E+02	1.31E+02
	16	547.88	1.44E+02	137.43			1.44E+02	1.37E+02

Analysis Report for 1707090-01

GAS-1402

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	17	583.45	1.22E+02	116.88			1.22E+02	1.17E+02
	18	661.61	2.11E+04	411.12			2.11E+04	4.11E+02
	19	821.04	1.24E+02	126.96			1.24E+02	1.27E+02
	20	1173.02	1.65E+04	302.31	1.20E+00	9.07E-01	1.65E+04	3.02E+02
	21	1232.14	4.64E+01	52.86			4.64E+01	5.29E+01
M	22	1322.80	5.03E+01	46.00			5.03E+01	4.60E+01
m	23	1332.25	1.49E+04	246.69	6.90E-01	9.16E-01	1.49E+04	2.47E+02
	24	1511.87	2.21E+01	28.18			2.21E+01	2.82E+01
	25	1537.08	1.56E+01	18.73			1.56E+01	1.87E+01
	26	1732.92	2.59E+01	24.56			2.59E+01	2.46E+01
M	27	1759.89	9.79E+00	8.37			9.79E+00	8.37E+00
m	28	1764.22	1.49E+01	15.17			1.49E+01	1.52E+01
	29	1834.47	3.33E+01	27.00			3.33E+01	2.70E+01
	30	2362.40	8.30E+00	10.44			8.30E+00	1.04E+01
	31	2504.72	1.42E+02	23.83			1.42E+02	2.38E+01
	32	2613.67	1.70E+01	8.25			1.70E+01	8.25E+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 : 8/23/2017 12:22:34PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	1	17.97	8.50E+02	193.17			8.50E+02	1.93E+02
m	2	22.59	9.43E+04	776.04	1.19E+01	6.34E+00	9.43E+04	7.76E+02
	3	32.35	1.87E+03	223.37			1.87E+03	2.23E+02
M	4	51.12	1.22E+04	600.77			1.22E+04	6.01E+02
m	5	55.94	1.17E+04	762.67			1.17E+04	7.63E+02
m	6	59.66	9.40E+04	706.29	6.04E+00	1.98E+00	9.40E+04	7.06E+02
	7	68.94	5.32E+02	309.67			5.32E+02	3.10E+02
	8	88.24	3.01E+04	566.35			3.01E+04	5.66E+02
	9	122.25	5.28E+03	383.32			5.28E+03	3.83E+02
	10	136.75	5.64E+02	244.81			5.64E+02	2.45E+02
	11	165.89	2.75E+02	230.82			2.75E+02	2.31E+02
	12	238.38	1.88E+02	198.26	6.98E+00	1.36E+00	1.81E+02	1.98E+02

Analysis Report for 1707090-01

GAS-1402

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	13	345.94	1.54E+02	158.62			1.54E+02	1.59E+02
	14	354.03	2.04E+02	159.02			2.04E+02	1.59E+02
	15	511.90	1.47E+02	131.04	2.61E+01	2.37E+00	1.21E+02	1.31E+02
	16	547.88	1.44E+02	137.43			1.44E+02	1.37E+02
	17	583.45	1.22E+02	116.88			1.22E+02	1.17E+02
	18	661.61	2.11E+04	411.12			2.11E+04	4.11E+02
	19	821.04	1.24E+02	126.96			1.24E+02	1.27E+02
	20	1173.02	1.65E+04	302.31	1.20E+00	9.07E-01	1.65E+04	3.02E+02
	21	1232.14	4.64E+01	52.86			4.64E+01	5.29E+01
M	22	1322.80	5.03E+01	46.00			5.03E+01	4.60E+01
m	23	1332.25	1.49E+04	246.69	6.90E-01	9.16E-01	1.49E+04	2.47E+02
	24	1511.87	2.21E+01	28.18			2.21E+01	2.82E+01
	25	1537.08	1.56E+01	18.73			1.56E+01	1.87E+01
	26	1732.92	2.59E+01	24.56			2.59E+01	2.46E+01
M	27	1759.89	9.79E+00	8.37			9.79E+00	8.37E+00
m	28	1764.22	1.49E+01	15.17			1.49E+01	1.52E+01
	29	1834.47	3.33E+01	27.00			3.33E+01	2.70E+01
	30	2362.40	8.30E+00	10.44			8.30E+00	1.04E+01
	31	2504.72	1.42E+02	23.83			1.42E+02	2.38E+01
	32	2613.67	1.70E+01	8.25			1.70E+01	8.25E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.921	122.06	*	85.51	7.48E+01	8.37E+00
		136.48	*	10.60	6.81E+01	3.01E+01
CO-60	0.991	1173.22	*	100.00	1.25E+02	1.10E+01
		1332.49	*	100.00	1.25E+02	1.06E+01
CD-109	0.968	88.03	*	3.72	2.95E+03	3.07E+02
SN-126	0.932	87.57	*	37.00	6.11E+01	5.21E+00
CS-137	1.000	661.65	*	85.12	8.28E+01	7.71E+00
CE-139	0.744	165.85	*	80.35	6.74E+01	5.68E+01
TL-208	0.806	583.14	*	30.22	1.12E+00	1.08E+00
		860.37		4.48		
		2614.66	*	35.85	4.32E-01	2.14E-01

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Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.887	238.63	*	44.60	5.12E-01	5.63E-01
		300.09		3.41		
AM-241	0.998	59.54	*	35.90	2.30E+02	1.71E+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 : 8/23/2017 12:22:34PM
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	17.97	4.72289E-01	11.36		
m	2	22.59	5.23906E+01	0.41		
	3	32.35	1.03636E+00	5.99		
M	4	51.12	6.76042E+00	2.47		
m	5	55.94	6.50847E+00	3.26		
	7	68.94	2.95779E-01	29.08		
	13	345.94	8.55098E-02	51.53	Tol.	HF-181
	14	354.03	1.13489E-01	38.92		
	15	511.90	6.73340E-02	54.07		
	16	547.88	7.97994E-02	47.84		
	19	821.04	6.89600E-02	51.14	S-Esc	
	21	1232.14	2.57676E-02	56.98	Sum	
M	22	1322.80	2.79205E-02	45.76	Sum	
	24	1511.87	1.22944E-02	63.67		
	25	1537.08	8.64815E-03	60.18		
	26	1732.92	1.43704E-02	47.47		
M	27	1759.89	5.43619E-03	42.75		
m	28	1764.22	8.26647E-03	50.96	Tol.	BI-214
	29	1834.47	1.85234E-02	40.49	Sum	
	30	2362.40	4.61111E-03	62.89		
	31	2504.72	7.88889E-02	8.39	Sum	

Analysis Report for 1707090-01
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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
CO-57	0.92	122.06	*	85.51	7.48E+01	8.37E+00
		136.48	*	10.60	6.81E+01	3.01E+01
CO-60	0.99	1173.22	*	100.00	1.25E+02	1.10E+01
		1332.49	*	100.00	1.25E+02	1.06E+01
CD-109	0.96	88.03	*	3.72	2.95E+03	3.07E+02
SN-126	0.93	87.57	*	37.00	6.11E+01	5.21E+00
CS-137	1.00	661.65	*	85.12	8.28E+01	7.71E+00
CE-139	0.74	165.85	*	80.35	6.74E+01	5.68E+01
TL-208	0.80	583.14	*	30.22	1.12E+00	1.08E+00
		860.37		4.48		
		2614.66	*	35.85	4.32E-01	2.14E-01
PB-212	0.88	238.63	*	44.60	5.12E-01	5.63E-01
		300.09		3.41		
AM-241	0.99	59.54	*	35.90	2.30E+02	1.71E+01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1707090-01

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	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	CO-57	0.921	7.43E+01	8.07E+00	
	CO-60	0.991	1.25E+02	7.62E+00	
?	CD-109	0.968	2.95E+03	3.07E+02	
?	SN-126	0.932	6.11E+01	5.21E+00	
	CS-137	1.000	8.28E+01	7.71E+00	
	CE-139	0.744	6.74E+01	5.68E+01	
	TL-208	0.806	4.58E-01	2.10E-01	
	PB-212	0.887	5.12E-01	5.63E-01	
	AM-241	0.998	2.30E+02	1.71E+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 1707090-01

GAS-1402

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 12:22:34PM
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	17.97	4.72289E-01	11.36		
m	2	22.59	5.23906E+01	0.41		
	3	32.35	1.03636E+00	5.99		
M	4	51.12	6.76042E+00	2.47		
m	5	55.94	6.50847E+00	3.26		
	7	68.94	2.95779E-01	29.08		
	13	345.94	8.55098E-02	51.53	Tol.	HF-181
	14	354.03	1.13489E-01	38.92		
	15	511.90	6.73340E-02	54.07		
	16	547.88	7.97994E-02	47.84		
	19	821.04	6.89600E-02	51.14	S-Esc	
	21	1232.14	2.57676E-02	56.98	Sum	
M	22	1322.80	2.79205E-02	45.76	Sum	
	24	1511.87	1.22944E-02	63.67		
	25	1537.08	8.64815E-03	60.18		
	26	1732.92	1.43704E-02	47.47		
M	27	1759.89	5.43619E-03	42.75		
m	28	1764.22	8.26647E-03	50.96	Tol.	BI-214
	29	1834.47	1.85234E-02	40.49	Sum	
	30	2362.40	4.61111E-03	62.89		
	31	2504.72	7.88889E-02	8.39	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

Analysis Report for 1707090-01

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		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		BE-7	477.59		10.42	5.59E+05	5.00E+06	5.00E+06
+		NA-22	1274.54		99.94	-2.25E-01	8.24E-01	8.24E-01
+	@	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	-1.32E-01	2.23E-01	2.23E-01
+		K-40	1460.81		10.67	1.99E+00	2.69E+00	2.69E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	4.96E-01	3.41E-01	3.70E-01
			78.34		96.00	-8.57E-02		3.41E-01
+		SC-46	889.25		99.98	-1.21E+03	4.82E+03	4.91E+03
			1120.51		99.99	-1.61E+03		4.82E+03
+	@	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	1.91E+11	1.33E+12	1.33E+12
+		MN-54	834.83		99.97	4.63E+00	7.47E+00	7.47E+00
+		CO-56	846.75		99.96	-3.57E+02	4.34E+03	7.89E+03
			1037.75		14.03	-1.87E+04		6.42E+04
			1238.25		67.00	2.53E+03		6.46E+03
			1771.40		15.51	2.07E+03		1.59E+04
			2598.48		16.90	5.90E+02		4.34E+03
+		CO-57	122.06	*	85.51	7.48E+01	8.30E+00	8.30E+00
			136.48	*	10.60	6.81E+01		4.80E+01
+		CO-58	810.76		99.40	-3.66E+01	2.11E+04	2.11E+04
+		FE-59	1099.22		56.50	1.47E+06	1.16E+07	2.08E+07
			1291.56		43.20	-5.23E+05		1.16E+07
+		CO-60	1173.22	*	100.00	1.25E+02	1.53E+00	1.99E+00
			1332.49	*	100.00	1.25E+02		1.53E+00
+		ZN-65	1115.52		50.75	9.27E+00	3.26E+01	3.26E+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	8.27E+03	2.00E+02	9.43E+02
			136.00		59.20	2.94E+02		2.00E+02
			264.65		59.80	1.61E+02		3.05E+02
			279.53		25.20	-6.17E+01		7.24E+02
			400.65		11.40	-6.62E+02		1.98E+03
+		RB-82	776.52		13.00	4.15E+11	1.38E+13	1.38E+13
+		RB-83	520.41		46.00	-1.13E+03	5.60E+03	5.60E+03
			529.64		30.30	1.42E+03		8.50E+03
			552.65		16.40	-7.06E+03		1.52E+04
+		KR-85	513.99		0.43	6.90E+00	1.49E+02	1.49E+02
+		SR-85	513.99		99.27	2.02E+03	4.36E+04	4.36E+04
+		Y-88	898.02		93.40	5.77E+02	2.99E+02	8.60E+02
			1836.01		99.38	-8.91E+00		2.99E+02
+		MO-93	263.06		56.72	-6.98E-02	2.88E-01	8.39E-01
			684.67		99.68	1.00E-01		6.70E-01
			1477.11		99.08	1.02E-01		2.88E-01

Analysis Report for 1707090-01

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		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		NB-93M	16.57		9.43	9.73E+01	5.90E+02	5.90E+02
+		NB-94	702.63		100.00	-5.00E-02	5.67E-01	5.67E-01
			871.10		100.00	-4.56E-01		7.51E-01
+		NB-95	765.79		99.81	-1.13E+08	7.39E+08	7.39E+08
+	@	NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26
+		ZR-95	724.18		43.70	7.21E+03	1.02E+05	1.24E+05
			756.72		55.30	-6.55E+04		1.02E+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	2.34E+06	7.41E+07	7.41E+07
+		RU-106	621.84		9.80	-3.74E+00	4.09E+01	4.09E+01
+		AG-108M	433.93		89.90	4.82E-01	6.15E-01	6.27E-01
			614.37		90.40	-4.70E-01		6.15E-01
			722.95		90.50	3.91E-02		6.48E-01
+		CD-109	88.03	*	3.72	2.95E+03	7.24E+01	7.24E+01
+		AG-110M	657.75		93.14	-1.59E+02	2.00E+01	2.83E+01
			677.61		10.53	6.66E+01		9.86E+01
			706.67		16.46	4.77E+01		6.67E+01
			763.93		21.98	4.79E+00		5.31E+01
			884.67		71.63	-3.01E+00		2.05E+01
			1384.27		23.94	1.05E+01		2.00E+01
+		CD-113M	263.70		0.02	3.83E+02	1.99E+03	1.99E+03
+		SN-113	255.12		1.93	7.47E+02	4.36E+02	1.19E+04
			391.69		64.90	-1.73E+02		4.36E+02
+		TE123M	159.00		84.10	-9.72E+00	1.38E+02	1.38E+02
+		SB-124	602.71		97.87	-1.14E+04	1.04E+05	1.04E+05
			645.85		7.26	5.92E+05		1.51E+06
			722.78		11.10	6.06E+04		1.00E+06
			1691.02		49.00	3.45E+04		1.09E+05
+		I-125	35.49		6.49	2.06E+06	2.22E+06	2.22E+06
+		SB-125	176.33		6.89	1.68E+00	3.70E+00	7.98E+00
			427.89		29.33	-3.40E+00		3.70E+00
			463.38		10.35	1.93E+00		1.19E+01
			600.56		17.80	-1.11E+00		6.04E+00
			635.90		11.32	1.23E+00		1.01E+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	6.11E+01	1.50E+00	1.50E+00
+	@	SB-127	473.00		25.00	1.00E+26	1.00E+26	1.00E+26
	@		685.20		35.70	1.00E+26		1.00E+26
	@		783.80		14.70	1.00E+26		1.00E+26
+		I-129	29.78		57.00	-5.20E+01	2.28E+00	2.28E+00
			33.60		13.20	1.98E+01		7.16E+00
			39.58		7.52	-2.55E+01		7.77E+00
+	@	I-131	284.30		6.05	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1707090-01

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		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	@	I-131	364.48		81.20	1.00E+26	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	-5.96E-01	9.30E-01	1.16E+00
			302.84		17.80	4.13E-01		2.83E+00
			356.01		60.00	-1.25E-01		9.30E-01
+	@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	@	XE-133	81.00		38.00	1.00E+26	1.00E+26	1.00E+26
+		CS-134	563.23		8.38	-4.96E+00	1.44E+00	1.66E+01
			569.32		15.43	7.35E+00		9.11E+00
			604.70		97.60	-8.31E-01		1.44E+00
			795.84		85.40	1.31E+00		2.06E+00
			801.93		8.73	-4.38E+00		2.00E+01
+		CS-135	268.24		16.00	-2.26E-01	2.51E+00	2.51E+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	8.28E+01	1.88E+00	1.88E+00
+		LA-138	788.74		34.00	-5.65E-01	3.40E-01	1.87E+00
			1435.80		66.00	-3.01E-02		3.40E-01
+		CE-139	165.85	*	80.35	6.74E+01	9.28E+01	9.28E+01
+	@	BA-140	162.64		6.70	1.00E+26	1.00E+26	1.00E+26
	@		304.84		4.50	1.00E+26		1.00E+26
	@		423.70		3.20	1.00E+26		1.00E+26
	@		437.55		2.00	1.00E+26		1.00E+26
	@		537.32		25.00	1.00E+26		1.00E+26
+	@	LA-140	328.77		20.50	1.00E+26	1.00E+26	1.00E+26
	@		487.03		45.50	1.00E+26		1.00E+26
	@		815.85		23.50	1.00E+26		1.00E+26
	@		1596.49		95.49	1.00E+26		1.00E+26
+		CE-141	145.44		48.40	-8.88E+07	3.17E+09	3.17E+09
+	@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26		42.00	1.00E+26		1.00E+26
	@		664.55		5.20	1.00E+26		1.00E+26
+		CE-144	133.54		10.80	2.72E+00	3.02E+01	3.02E+01
+		PM-144	476.78		42.00	5.02E+00	4.24E+00	1.05E+01
			618.01		98.60	1.62E+00		4.24E+00
			696.49		99.49	9.47E-01		4.24E+00

Analysis Report for 1707090-01

GAS-1402

		Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		PM-145	36.85	21.70	2.93E+00	1.82E+00	3.39E+00
			37.36	39.70	5.20E-01		1.82E+00
			42.30	15.10	-3.30E+00		4.33E+00
			72.40	2.31	-4.60E+00		1.57E+01
+		PM-146	453.90	39.94	8.58E-03	2.08E+00	2.08E+00
			735.90	14.01	-3.17E-01		6.17E+00
			747.13	13.10	9.18E-01		6.60E+00
+	@	ND-147	91.11	28.90	1.00E+26	1.00E+26	1.00E+26
	@		531.02	13.10	1.00E+26		1.00E+26
+	@	PM-149	285.90	3.10	1.00E+26	1.00E+26	1.00E+26
+		EU-152	121.78	20.50	2.29E+01	1.80E+00	2.02E+00
			244.69	5.40	-1.41E+00		8.51E+00
			344.27	19.13	-3.11E-01		2.73E+00
			778.89	9.20	-2.11E+00		7.94E+00
			964.01	10.40	6.82E-01		9.79E+00
			1085.78	7.22	-3.72E+00		1.34E+01
			1112.02	9.60	-3.18E+00		1.00E+01
			1407.95	14.94	4.93E-01		1.80E+00
+		GD-153	97.43	31.30	5.26E+00	1.53E+01	1.53E+01
			103.18	22.20	1.98E+00		2.17E+01
+		EU-154	123.07	40.50	1.30E+01	1.11E+00	1.11E+00
			723.30	19.70	2.22E-01		3.68E+00
			873.19	11.50	2.99E+00		8.34E+00
			996.32	10.30	-7.39E-02		9.93E+00
			1004.76	17.90	-9.16E-02		5.73E+00
			1274.45	35.50	-3.68E-01		1.35E+00
+		EU-155	86.50	30.90	8.69E+01	1.68E+00	3.12E+00
			105.30	20.70	4.64E-02		1.68E+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	2.44E-03	4.00E-01	4.00E-01
			280.45	29.60	-2.32E-01		1.36E+00
			410.94	11.10	2.78E+00		4.70E+00
			711.69	54.10	3.24E-01		1.07E+00
+		TM-171	66.72	0.14	-4.07E+02	6.79E+02	6.79E+02
+		HF-172	67.35	5.31	2.51E+01	6.54E+00	1.87E+01
			125.81	11.30	-6.35E+01		6.54E+00
+	@	LU-172	181.53	20.60	1.00E+26	1.00E+26	1.00E+26
	@		900.72	29.81	1.00E+26		1.00E+26
	@		1093.66	62.50	1.00E+26		1.00E+26
+		LU-173	100.72	5.24	-4.05E+00	8.15E+00	1.90E+01
			272.11	21.20	-2.43E+00		8.15E+00
+		HF-175	343.40	84.00	-2.15E+03	1.88E+04	1.88E+04
+		LU-176	88.34	13.30	1.67E+02	3.54E-01	4.95E+00
			201.83	86.00	-1.57E-01		3.54E-01
			306.78	94.00	-4.85E-01		4.39E-01
+		HF-181	133.02	41.70	1.62E+06	1.87E+07	1.87E+07
			345.85	17.20	5.39E+06		8.39E+07

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	HF-181	482.03		82.80	-3.62E+05	1.87E+07	2.15E+07
+	TA-182	67.75		41.20	6.66E+02	4.96E+02	4.96E+02
		1121.30		34.90	-2.48E+02		1.32E+03
		1189.05		16.23	-1.66E+03		2.00E+03
		1221.41		26.98	-6.28E+02		9.94E+02
		1231.02		11.44	1.23E+03		2.34E+03
+	IR-192	308.46		29.68	1.83E+03	2.46E+04	2.82E+04
		468.07		48.10	-1.39E+04		2.46E+04
+	HG-203	279.19		77.30	2.52E+05	3.51E+06	3.51E+06
+	TL-204	374.74		94.11	-1.50E-01	8.48E-01	8.48E-01
		899.15		99.16	4.83E-01		1.42E+00
		911.74		91.10	4.29E-02		1.56E+00
+	BI-207	569.67		97.72	1.34E-01	5.70E-01	5.70E-01
		1063.62		74.90	5.36E-01		1.18E+00
+	TL-208	583.14	*	30.22	1.12E+00	6.88E-02	1.77E+00
		860.37		4.48	-2.64E+00		1.64E+01
		2614.66	*	35.85	4.32E-01		6.88E-02
+	BI-210M	262.00		45.00	-4.13E-01	8.75E-01	8.75E-01
		300.00		23.00	2.77E-01		1.81E+00
+	PB-210	46.50		4.25	-8.74E+01	1.64E+01	1.64E+01
+	PB-211	404.84		2.90	-1.73E+00	1.74E+01	1.74E+01
		831.96		2.90	-1.22E+01		2.42E+01
+	BI-212	727.17		11.80	-6.13E-01	4.96E+00	4.96E+00
		1620.62		2.75	1.79E+00		9.12E+00
+	PB-212	238.63	*	44.60	5.12E-01	9.23E-01	9.23E-01
		300.09		3.41	1.87E+00		1.22E+01
+	BI-214	609.31		46.30	2.31E-01	1.19E+00	1.19E+00
		1120.29		15.10	-1.70E+00		5.11E+00
		1764.49		15.80	-1.29E-02		1.45E+00
		2204.22		4.98	2.93E+00		5.41E+00
+	PB-214	295.21		19.19	1.20E+00	1.23E+00	2.17E+00
		351.92		37.19	-2.46E-01		1.23E+00
+	RN-219	401.80		6.50	-7.37E-01	7.66E+00	7.66E+00
+	RA-223	323.87		3.88	1.39E+00	1.11E+01	1.11E+01
+	RA-224	240.98		3.95	2.90E-02	1.02E+01	1.02E+01
+	@ RA-225	40.00		31.00	1.00E+26	1.00E+26	1.00E+26
+	RA-226	186.21		3.28	2.65E-01	8.98E+00	8.98E+00
+	TH-227	50.10		8.40	3.69E+01	3.51E+00	8.44E+00
		236.00		11.50	-5.86E-01		3.51E+00
		256.20		6.30	-2.45E-01		6.22E+00
+	AC-228	338.32		11.40	1.32E+00	3.01E+00	3.89E+00
		911.07		27.70	5.87E-01		3.01E+00
		969.11		16.60	2.99E+00		5.15E+00
+	TH-230	48.44		16.90	1.10E+01	4.17E+00	4.17E+00
		62.85		4.60	-3.35E+00		1.45E+01
		67.67		0.37	1.23E+02		9.16E+01
+	PA-231	283.67		1.60	-1.32E+01	1.81E+01	2.52E+01
		302.67		2.30	2.64E+00		1.81E+01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-231	25.64		14.70	-4.11E+02	5.66E+00	4.54E+01
		84.21		6.40	-3.21E+02		5.66E+00
+	PA-233	311.98		38.60	2.61E+11	6.74E+11	6.74E+11
+	PA-234	131.20		20.40	4.60E-01	1.19E+00	1.19E+00
		733.99		8.80	3.96E-01		6.81E+00
		946.00		12.00	-1.98E+00		7.62E+00
+	PA-234M	1001.03		0.92	-3.38E+01	8.71E+01	8.71E+01
+	TH-234	63.29		3.80	-7.44E+00	9.71E+00	9.71E+00
+	U-235	143.76		10.50	-1.10E+00	2.33E+00	2.33E+00
		163.35		4.70	2.22E+00		5.69E+00
		205.31		4.70	3.12E+00		7.83E+00
+	NP-237	86.50		12.60	1.42E+02	5.11E+00	5.11E+00
+	@ NP-239	106.10		22.70	1.00E+26	1.00E+26	1.00E+26
	@	228.18		10.70	1.00E+26		1.00E+26
	@	277.60		14.10	1.00E+26		1.00E+26
+	AM-241	59.54	*	35.90	2.30E+02	3.13E+00	3.13E+00
+	AM-243	74.67		66.00	-3.93E-01	4.82E-01	4.82E-01
+	CM-243	209.75		3.29	-4.81E+00	3.07E+00	1.22E+01
		228.14		10.60	1.27E-01		4.03E+00
		277.60		14.00	4.69E-01		3.07E+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	5.00E+06	5.00E+06	5.59E+05	2.47E+06

Analysis Report for 1707090-01

GAS-1402

	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	8.24E-01	8.24E-01	-2.25E-01	3.96E-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	2.23E-01	2.23E-01	-1.32E-01	1.01E-01
	K-40	1460.81		10.67	2.69E+00	2.69E+00	1.99E+00	1.27E+00
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	3.70E-01	3.41E-01	4.96E-01	1.84E-01
		78.34		96.00	3.41E-01		-8.57E-02	1.70E-01
	SC-46	889.25		99.98	4.91E+03	4.82E+03	-1.21E+03	2.42E+03
		1120.51		99.99	4.82E+03		-1.61E+03	2.37E+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	1.33E+12	1.33E+12	1.91E+11	6.60E+11
	MN-54	834.83		99.97	7.47E+00	7.47E+00	4.63E+00	3.68E+00
	CO-56	846.75		99.96	7.89E+03	4.34E+03	-3.57E+02	3.89E+03
		1037.75		14.03	6.42E+04		-1.87E+04	3.16E+04
		1238.25		67.00	6.46E+03		2.53E+03	3.11E+03
		1771.40		15.51	1.59E+04		2.07E+03	7.25E+03
		2598.48		16.90	4.34E+03		5.90E+02	1.37E+03
+	CO-57	122.06	*	85.51	8.30E+00	8.30E+00	7.48E+01	4.13E+00
		136.48	*	10.60	4.80E+01		6.81E+01	2.38E+01
	CO-58	810.76		99.40	2.11E+04	2.11E+04	-3.66E+01	1.04E+04
	FE-59	1099.22		56.50	2.08E+07	1.16E+07	1.47E+06	1.02E+07
		1291.56		43.20	1.16E+07		-5.23E+05	5.58E+06
+	CO-60	1173.22	*	100.00	1.99E+00	1.53E+00	1.25E+02	9.85E-01
		1332.49	*	100.00	1.53E+00		1.25E+02	7.53E-01
	ZN-65	1115.52		50.75	3.26E+01	3.26E+01	9.27E+00	1.60E+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	9.43E+02	2.00E+02	8.27E+03	4.69E+02
		136.00		59.20	2.00E+02		2.94E+02	9.94E+01
		264.65		59.80	3.05E+02		1.61E+02	1.51E+02
		279.53		25.20	7.24E+02		-6.17E+01	3.59E+02
		400.65		11.40	1.98E+03		-6.62E+02	9.77E+02
	RB-82	776.52		13.00	1.38E+13	1.38E+13	4.15E+11	6.79E+12
	RB-83	520.41		46.00	5.60E+03	5.60E+03	-1.13E+03	2.76E+03
		529.64		30.30	8.50E+03		1.42E+03	4.20E+03
		552.65		16.40	1.52E+04		-7.06E+03	7.48E+03
	KR-85	513.99		0.43	1.49E+02	1.49E+02	6.90E+00	7.34E+01
	SR-85	513.99		99.27	4.36E+04	4.36E+04	2.02E+03	2.15E+04
	Y-88	898.02		93.40	8.60E+02	2.99E+02	5.77E+02	4.24E+02
		1836.01		99.38	2.99E+02		-8.91E+00	1.40E+02
	MO-93	263.06		56.72	8.39E-01	2.88E-01	-6.98E-02	4.16E-01
		684.67		99.68	6.70E-01		1.00E-01	3.30E-01
		1477.11		99.08	2.88E-01		1.02E-01	1.34E-01
	NB-93M	16.57		9.43	5.90E+02	5.90E+02	9.73E+01	2.93E+02
	NB-94	702.63		100.00	5.67E-01	5.67E-01	-5.00E-02	2.79E-01
		871.10		100.00	7.51E-01		-4.56E-01	3.70E-01
	NB-95	765.79		99.81	7.39E+08	7.39E+08	-1.13E+08	3.64E+08
@	NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	ZR-95	724.18		43.70	1.24E+05	1.02E+05	7.21E+03	6.13E+04
		756.72		55.30	1.02E+05		-6.55E+04	5.03E+04

Analysis Report for 1707090-01

GAS-1402

	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	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		739.58		12.80	1.00E+26		1.00E+26	1.00E+20
@		778.00		4.50	1.00E+26		1.00E+26	1.00E+20
	RU-103	497.08		89.00	7.41E+07	7.41E+07	2.34E+06	3.66E+07
	RU-106	621.84		9.80	4.09E+01	4.09E+01	-3.74E+00	2.02E+01
	AG-108M	433.93		89.90	6.27E-01	6.15E-01	4.82E-01	3.10E-01
		614.37		90.40	6.15E-01		-4.70E-01	3.03E-01
		722.95		90.50	6.48E-01		3.91E-02	3.19E-01
+	CD-109	88.03	*	3.72	7.24E+01	7.24E+01	2.95E+03	3.61E+01
	AG-110M	657.75		93.14	2.83E+01	2.00E+01	-1.59E+02	1.41E+01
		677.61		10.53	9.86E+01		6.66E+01	4.85E+01
		706.67		16.46	6.67E+01		4.77E+01	3.28E+01
		763.93		21.98	5.31E+01		4.79E+00	2.61E+01
		884.67		71.63	2.05E+01		-3.01E+00	1.01E+01
		1384.27		23.94	2.00E+01		1.05E+01	9.39E+00
	CD-113M	263.70		0.02	1.99E+03	1.99E+03	3.83E+02	9.88E+02
	SN-113	255.12		1.93	1.19E+04	4.36E+02	7.47E+02	5.90E+03
		391.69		64.90	4.36E+02		-1.73E+02	2.16E+02
	TE123M	159.00		84.10	1.38E+02	1.38E+02	-9.72E+00	6.85E+01
	SB-124	602.71		97.87	1.04E+05	1.04E+05	-1.14E+04	5.12E+04
		645.85		7.26	1.51E+06		5.92E+05	7.46E+05
		722.78		11.10	1.00E+06		6.06E+04	4.94E+05
		1691.02		49.00	1.09E+05		3.45E+04	5.07E+04
	I-125	35.49		6.49	2.22E+06	2.22E+06	2.06E+06	1.10E+06
	SB-125	176.33		6.89	7.98E+00	3.70E+00	1.68E+00	3.95E+00
		427.89		29.33	3.70E+00		-3.40E+00	1.83E+00
		463.38		10.35	1.19E+01		1.93E+00	5.89E+00
		600.56		17.80	6.04E+00		-1.11E+00	2.98E+00
		635.90		11.32	1.01E+01		1.23E+00	4.95E+00
@	SB-126	414.70		83.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		666.33		99.60	1.00E+26		1.00E+26	1.00E+20
@		695.00		99.60	1.00E+26		1.00E+26	1.00E+20
@		720.50		53.80	1.00E+26		1.00E+26	1.00E+20
+	SN-126	87.57	*	37.00	1.50E+00	1.50E+00	6.11E+01	7.48E-01
@	SB-127	473.00		25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		685.20		35.70	1.00E+26		1.00E+26	1.00E+20
@		783.80		14.70	1.00E+26		1.00E+26	1.00E+20
	I-129	29.78		57.00	2.28E+00	2.28E+00	-5.20E+01	1.13E+00
		33.60		13.20	7.16E+00		1.98E+01	3.56E+00
		39.58		7.52	7.77E+00		-2.55E+01	3.86E+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	1.16E+00	9.30E-01	-5.96E-01	5.76E-01
		302.84		17.80	2.83E+00		4.13E-01	1.40E+00
		356.01		60.00	9.30E-01		-1.25E-01	4.60E-01
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	XE-133	81.00		38.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CS-134	563.23		8.38	1.66E+01	1.44E+00	-4.96E+00	8.17E+00
		569.32		15.43	9.11E+00		7.35E+00	4.49E+00

Analysis Report for 1707090-01

GAS-1402

	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	1.44E+00	1.44E+00	-8.31E-01	7.11E-01
		795.84		85.40	2.06E+00		1.31E+00	1.02E+00
		801.93		8.73	2.00E+01		-4.38E+00	9.83E+00
	CS-135	268.24		16.00	2.51E+00	2.51E+00	-2.26E-01	1.24E+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	1.88E+00	1.88E+00	8.28E+01	9.36E-01
	LA-138	788.74		34.00	1.87E+00	3.40E-01	-5.65E-01	9.23E-01
		1435.80		66.00	3.40E-01		-3.01E-02	1.58E-01
+	CE-139	165.85	*	80.35	9.28E+01	9.28E+01	6.74E+01	4.61E+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	3.17E+09	3.17E+09	-8.88E+07	1.57E+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	3.02E+01	3.02E+01	2.72E+00	1.50E+01
	PM-144	476.78		42.00	1.05E+01	4.24E+00	5.02E+00	5.19E+00
		618.01		98.60	4.24E+00		1.62E+00	2.09E+00
		696.49		99.49	4.24E+00		9.47E-01	2.09E+00
	PM-145	36.85		21.70	3.39E+00	1.82E+00	2.93E+00	1.68E+00
		37.36		39.70	1.82E+00		5.20E-01	9.03E-01
		42.30		15.10	4.33E+00		-3.30E+00	2.15E+00
		72.40		2.31	1.57E+01		-4.60E+00	7.81E+00
	PM-146	453.90		39.94	2.08E+00	2.08E+00	8.58E-03	1.03E+00
		735.90		14.01	6.17E+00		-3.17E-01	3.04E+00
		747.13		13.10	6.60E+00		9.18E-01	3.25E+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	2.02E+00	1.80E+00	2.29E+01	1.01E+00
		244.69		5.40	8.51E+00		-1.41E+00	4.22E+00
		344.27		19.13	2.73E+00		-3.11E-01	1.35E+00
		778.89		9.20	7.94E+00		-2.11E+00	3.91E+00
		964.01		10.40	9.79E+00		6.82E-01	4.83E+00
		1085.78		7.22	1.34E+01		-3.72E+00	6.62E+00
		1112.02		9.60	1.00E+01		-3.18E+00	4.93E+00

Analysis Report for 1707090-01

GAS-1402

	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	1.80E+00	1.80E+00	4.93E-01	8.37E-01
	GD-153	97.43		31.30	1.53E+01	1.53E+01	5.26E+00	7.58E+00
		103.18		22.20	2.17E+01		1.98E+00	1.08E+01
	EU-154	123.07		40.50	1.11E+00	1.11E+00	1.30E+01	5.54E-01
		723.30		19.70	3.68E+00		2.22E-01	1.81E+00
		873.19		11.50	8.34E+00		2.99E+00	4.11E+00
		996.32		10.30	9.93E+00		-7.39E-02	4.89E+00
		1004.76		17.90	5.73E+00		-9.16E-02	2.82E+00
		1274.45		35.50	1.35E+00		-3.68E-01	6.47E-01
	EU-155	86.50		30.90	3.12E+00	1.68E+00	8.69E+01	1.56E+00
		105.30		20.70	1.68E+00		4.64E-02	8.35E-01
@	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	4.00E-01	4.00E-01	2.44E-03	1.98E-01
		280.45		29.60	1.36E+00		-2.32E-01	6.75E-01
		410.94		11.10	4.70E+00		2.78E+00	2.33E+00
		711.69		54.10	1.07E+00		3.24E-01	5.26E-01
	TM-171	66.72		0.14	6.79E+02	6.79E+02	-4.07E+02	3.37E+02
	HF-172	67.35		5.31	1.87E+01	6.54E+00	2.51E+01	9.29E+00
		125.81		11.30	6.54E+00		-6.35E+01	3.24E+00
@	LU-172	181.53		20.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		900.72		29.81	1.00E+26		1.00E+26	1.00E+20
@		1093.66		62.50	1.00E+26		1.00E+26	1.00E+20
	LU-173	100.72		5.24	1.90E+01	8.15E+00	-4.05E+00	9.43E+00
		272.11		21.20	8.15E+00		-2.43E+00	4.04E+00
	HF-175	343.40		84.00	1.88E+04	1.88E+04	-2.15E+03	9.33E+03
	LU-176	88.34		13.30	4.95E+00	3.54E-01	1.67E+02	2.47E+00
		201.83		86.00	3.54E-01		-1.57E-01	1.75E-01
		306.78		94.00	4.39E-01		-4.85E-01	2.17E-01
	HF-181	133.02		41.70	1.87E+07	1.87E+07	1.62E+06	9.27E+06
		345.85		17.20	8.39E+07		5.39E+06	4.15E+07
		482.03		82.80	2.15E+07		-3.62E+05	1.06E+07
	TA-182	67.75		41.20	4.96E+02	4.96E+02	6.66E+02	2.47E+02
		1121.30		34.90	1.32E+03		-2.48E+02	6.48E+02
		1189.05		16.23	2.00E+03		-1.66E+03	9.74E+02
		1221.41		26.98	9.94E+02		-6.28E+02	4.81E+02
		1231.02		11.44	2.34E+03		1.23E+03	1.13E+03
	IR-192	308.46		29.68	2.82E+04	2.46E+04	1.83E+03	1.40E+04
		468.07		48.10	2.46E+04		-1.39E+04	1.22E+04
	HG-203	279.19		77.30	3.51E+06	3.51E+06	2.52E+05	1.74E+06
	TL-204	374.74		94.11	8.48E-01	8.48E-01	-1.50E-01	4.19E-01
		899.15		99.16	1.42E+00		4.83E-01	6.98E-01
		911.74		91.10	1.56E+00		4.29E-02	7.68E-01
	BI-207	569.67		97.72	5.70E-01	5.70E-01	1.34E-01	2.81E-01
		1063.62		74.90	1.18E+00		5.36E-01	5.81E-01
+	TL-208	583.14	*	30.22	1.77E+00	6.88E-02	1.12E+00	8.70E-01
		860.37		4.48	1.64E+01		-2.64E+00	8.10E+00
		2614.66	*	35.85	6.88E-02		4.32E-01	0.00E+00
	BI-210M	262.00		45.00	8.75E-01	8.75E-01	-4.13E-01	4.33E-01
		300.00		23.00	1.81E+00		2.77E-01	8.95E-01
	PB-210	46.50		4.25	1.64E+01	1.64E+01	-8.74E+01	8.15E+00
	PB-211	404.84		2.90	1.74E+01	1.74E+01	-1.73E+00	8.59E+00

Analysis Report for 1707090-01

GAS-1402

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PB-211	831.96		2.90	2.42E+01	1.74E+01	-1.22E+01	1.19E+01
	BI-212	727.17		11.80	4.96E+00	4.96E+00	-6.13E-01	2.44E+00
		1620.62		2.75	9.12E+00		1.79E+00	4.23E+00
+	PB-212	238.63	*	44.60	9.23E-01	9.23E-01	5.12E-01	4.58E-01
		300.09		3.41	1.22E+01		1.87E+00	6.04E+00
	BI-214	609.31		46.30	1.19E+00	1.19E+00	2.31E-01	5.84E-01
		1120.29		15.10	5.11E+00		-1.70E+00	2.51E+00
		1764.49		15.80	1.45E+00		-1.29E-02	6.64E-01
		2204.22		4.98	5.41E+00		2.93E+00	2.48E+00
	PB-214	295.21		19.19	2.17E+00	1.23E+00	1.20E+00	1.08E+00
		351.92		37.19	1.23E+00		-2.46E-01	6.09E-01
	RN-219	401.80		6.50	7.66E+00	7.66E+00	-7.37E-01	3.79E+00
	RA-223	323.87		3.88	1.11E+01	1.11E+01	1.39E+00	5.51E+00
	RA-224	240.98		3.95	1.02E+01	1.02E+01	2.90E-02	5.08E+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	8.98E+00	8.98E+00	2.65E-01	4.45E+00
	TH-227	50.10		8.40	8.44E+00	3.51E+00	3.69E+01	4.20E+00
		236.00		11.50	3.51E+00		-5.86E-01	1.74E+00
		256.20		6.30	6.22E+00		-2.45E-01	3.08E+00
	AC-228	338.32		11.40	3.89E+00	3.01E+00	1.32E+00	1.92E+00
		911.07		27.70	3.01E+00		5.87E-01	1.49E+00
		969.11		16.60	5.15E+00		2.99E+00	2.54E+00
	TH-230	48.44		16.90	4.17E+00	4.17E+00	1.10E+01	2.08E+00
		62.85		4.60	1.45E+01		-3.35E+00	7.23E+00
		67.67		0.37	9.16E+01		1.23E+02	4.55E+01
	PA-231	283.67		1.60	2.52E+01	1.81E+01	-1.32E+01	1.25E+01
		302.67		2.30	1.81E+01		2.64E+00	8.94E+00
	TH-231	25.64		14.70	4.54E+01	5.66E+00	-4.11E+02	2.27E+01
		84.21		6.40	5.66E+00		-3.21E+02	2.81E+00
	PA-233	311.98		38.60	6.74E+11	6.74E+11	2.61E+11	3.33E+11
	PA-234	131.20		20.40	1.19E+00	1.19E+00	4.60E-01	5.87E-01
		733.99		8.80	6.81E+00		3.96E-01	3.35E+00
		946.00		12.00	7.62E+00		-1.98E+00	3.76E+00
	PA-234M	1001.03		0.92	8.71E+01	8.71E+01	-3.38E+01	4.29E+01
	TH-234	63.29		3.80	9.71E+00	9.71E+00	-7.44E+00	4.83E+00
	U-235	143.76		10.50	2.33E+00	2.33E+00	-1.10E+00	1.16E+00
		163.35		4.70	5.69E+00		2.22E+00	2.82E+00
		205.31		4.70	7.83E+00		3.12E+00	3.88E+00
	NP-237	86.50		12.60	5.11E+00	5.11E+00	1.42E+02	2.55E+00
@	NP-239	106.10		22.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		228.18		10.70	1.00E+26		1.00E+26	1.00E+20
@		277.60		14.10	1.00E+26		1.00E+26	1.00E+20
+	AM-241	59.54	*	35.90	3.13E+00	3.13E+00	2.30E+02	1.56E+00
	AM-243	74.67		66.00	4.82E-01	4.82E-01	-3.93E-01	2.40E-01
	CM-243	209.75		3.29	1.22E+01	3.07E+00	-4.81E+00	6.06E+00
		228.14		10.60	4.03E+00		1.27E-01	2.00E+00
		277.60		14.00	3.07E+00		4.69E-01	1.52E+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 1707090-01
GAS-1402

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: GAS-1402

Elapsed Live time: 1800
Elapsed Real Time: 1836

Channel								
1:	0	0	0	0	0	0	0	0
9:	126	1484	2531	4431	4550	2532	2233	1924
17:	1891	2361	1892	2310	9178	36482	39714	13218
25:	13054	12068	3861	1206	842	836	1010	1659
33:	1803	1210	910	1008	1156	1180	1060	1099
41:	1196	1415	1625	1735	1905	2019	2390	2928
49:	3982	4569	4579	4517	4413	4352	4627	4711
57:	5075	6723	22405	45053	21604	3486	1273	1321
65:	1345	1476	1610	1696	1666	1682	1630	1636
73:	1524	1527	1596	1565	1570	1659	1576	1517
81:	1623	1610	1649	1614	1694	1777	3833	12806
89:	13575	3885	1084	840	876	853	823	859
97:	801	879	859	817	813	810	862	842
105:	855	835	817	803	813	835	821	791
113:	864	792	810	819	791	829	852	830
121:	1085	2813	2865	1362	803	694	721	722
129:	731	785	746	774	751	756	732	898
137:	1056	831	774	758	732	708	701	691
145:	726	696	735	707	720	716	708	711
153:	725	686	701	696	708	684	678	629
161:	688	669	671	664	726	847	782	656
169:	677	692	624	635	606	649	672	659
177:	613	633	627	629	633	687	692	672
185:	711	763	714	751	738	746	685	767
193:	752	723	761	718	718	722	716	691
201:	688	633	724	688	716	689	679	701
209:	690	726	661	704	750	721	746	736
217:	724	715	750	730	733	695	774	696
225:	704	713	720	701	665	681	672	685
233:	637	637	679	642	686	674	750	659
241:	622	632	633	604	613	615	583	601
249:	567	639	568	618	545	554	570	563
257:	581	533	526	543	510	538	541	598
265:	501	553	558	552	518	536	537	523
273:	513	508	494	509	516	500	522	508
281:	485	483	497	503	512	492	465	497
289:	521	474	510	492	475	498	486	522
297:	456	499	452	448	468	515	484	435
305:	448	461	406	491	426	479	510	459
313:	453	493	421	435	461	459	445	404
321:	456	466	439	471	433	446	417	452
329:	458	447	435	466	422	412	473	429
337:	426	417	457	435	441	444	401	415
345:	455	476	433	441	389	431	402	434
353:	468	444	460	427	412	386	413	429
361:	403	409	433	398	431	409	383	425

369:	449	411	416	421	415	389	394	393

Sample Title: GAS-1402

Channel								
377:	417	417	412	413	392	409	430	423
385:	414	378	423	405	398	415	393	437
393:	431	385	364	436	404	408	429	382
401:	422	403	384	398	410	415	402	442
409:	394	443	432	444	408	414	408	392
417:	433	388	419	417	415	368	429	429
425:	415	372	423	366	417	380	448	457
433:	425	420	427	458	425	439	393	446
441:	430	451	411	414	435	445	410	464
449:	437	422	418	435	418	427	449	460
457:	444	445	436	436	458	422	475	480
465:	415	441	456	444	454	439	425	435
473:	459	452	469	392	425	399	376	358
481:	377	335	373	369	332	326	320	320
489:	341	315	342	303	330	326	337	336
497:	309	330	314	307	321	330	278	277
505:	273	268	298	325	293	277	355	310
513:	305	298	255	283	280	275	278	247
521:	292	277	294	289	274	301	241	295
529:	271	274	261	276	276	259	239	276
537:	257	271	268	224	243	256	214	272
545:	230	285	242	303	262	240	238	214
553:	239	240	241	220	239	271	254	236
561:	245	264	244	230	230	250	238	247
569:	243	256	232	241	205	225	224	236
577:	238	222	230	241	219	249	266	247
585:	251	201	220	258	225	207	226	215
593:	219	211	255	217	202	238	187	210
601:	214	197	223	220	243	204	231	216
609:	262	241	237	215	230	207	245	228
617:	217	221	263	226	210	202	239	204
625:	205	227	227	235	225	224	219	215
633:	222	220	206	239	205	210	203	223
641:	193	235	231	248	208	221	235	205
649:	210	213	226	247	228	238	187	204
657:	223	223	342	1695	6464	9052	3819	738
665:	193	197	182	173	195	175	171	195
673:	166	177	208	200	161	195	204	208
681:	170	186	171	195	209	203	182	193
689:	194	179	159	181	206	168	181	208
697:	189	186	188	198	164	185	174	199
705:	199	210	206	186	200	197	203	163
713:	200	194	189	157	196	160	172	199
721:	169	179	195	198	170	196	217	182
729:	197	172	199	197	197	193	201	187
737:	196	201	202	207	189	167	198	201
745:	188	196	206	166	201	182	174	210
753:	192	196	187	196	172	182	195	191
761:	200	213	224	184	179	195	180	199
769:	191	201	179	204	196	193	189	221
777:	188	194	199	183	192	189	217	202
785:	199	198	194	193	204	206	184	186
793:	215	193	237	207	192	207	215	206

801:	192	198	201	219	187	214	215	209

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Channel								
809:	193	194	208	217	195	226	210	189
817:	200	200	221	221	243	232	220	209
825:	202	232	207	232	225	196	211	221
833:	203	214	241	252	221	212	201	218
841:	228	218	225	237	220	218	232	197
849:	226	204	216	223	224	220	224	228
857:	216	210	238	241	236	198	229	232
865:	228	241	218	224	235	224	210	246
873:	237	216	237	272	203	239	234	243
881:	250	255	230	241	241	245	220	249
889:	235	250	247	235	260	243	255	264
897:	257	295	255	254	275	226	256	249
905:	239	244	252	263	241	262	268	271
913:	265	255	256	265	255	282	240	269
921:	274	296	278	276	306	274	263	294
929:	267	280	270	267	271	274	279	290
937:	261	307	245	275	296	305	297	291
945:	277	278	304	305	302	311	293	307
953:	288	305	305	326	288	316	276	256
961:	277	271	278	280	225	237	261	253
969:	256	247	219	242	217	206	230	215
977:	234	218	211	235	218	216	222	230
985:	241	247	196	210	203	214	223	227
993:	207	215	231	237	206	182	202	199
1001:	205	200	204	229	213	199	223	201
1009:	212	221	190	205	195	200	206	192
1017:	204	216	194	208	182	211	191	223
1025:	222	189	212	184	191	198	189	189
1033:	189	216	188	213	208	192	186	208
1041:	205	212	210	197	186	190	203	200
1049:	226	188	210	199	214	177	188	215
1057:	187	175	192	189	215	193	196	192
1065:	179	210	196	187	178	184	204	198
1073:	198	184	201	239	183	164	202	185
1081:	189	211	185	215	196	184	172	206
1089:	192	205	194	212	197	197	182	200
1097:	198	212	205	210	207	197	215	209
1105:	200	179	191	204	176	186	188	183
1113:	176	179	185	196	171	157	158	162
1121:	143	124	164	147	135	133	139	117
1129:	104	141	118	132	117	116	143	108
1137:	116	109	112	111	113	122	123	110
1145:	117	116	103	123	106	111	101	108
1153:	124	121	110	110	97	97	100	115
1161:	102	115	110	100	110	108	104	114
1169:	114	239	1183	4242	6533	3888	926	191
1177:	105	90	99	84	86	79	74	84
1185:	91	74	48	67	66	74	70	67
1193:	81	63	74	64	69	59	72	56
1201:	53	63	69	51	50	64	70	49
1209:	62	57	59	56	52	58	29	55
1217:	51	44	52	39	33	46	52	34
1225:	52	45	46	42	37	42	46	50

1233:	42	37	25	33	35	41	28	38

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Channel								
1241:	29	23	33	25	46	29	22	37
1249:	32	30	38	27	29	28	35	35
1257:	19	34	31	26	26	30	27	23
1265:	37	19	33	34	41	31	32	37
1273:	29	31	33	19	22	27	31	33
1281:	26	34	32	24	23	25	27	28
1289:	28	28	22	30	21	32	37	20
1297:	32	27	23	23	21	26	20	24
1305:	29	28	35	20	25	24	28	25
1313:	31	27	22	29	22	28	21	28
1321:	31	32	48	28	28	21	36	32
1329:	99	773	3191	5668	4118	1109	158	46
1337:	21	15	20	13	8	14	7	10
1345:	2	19	9	11	10	10	9	11
1353:	10	12	9	13	12	9	7	8
1361:	12	2	22	10	7	19	7	6
1369:	11	14	9	4	10	12	11	9
1377:	10	15	8	12	11	9	16	12
1385:	11	8	9	6	6	9	6	14
1393:	14	7	9	11	7	6	14	10
1401:	11	12	9	7	9	11	12	11
1409:	7	1	9	7	6	8	9	10
1417:	8	7	10	9	11	10	6	5
1425:	4	6	6	10	6	11	6	11
1433:	6	15	12	3	6	7	5	10
1441:	6	7	10	6	12	12	6	7
1449:	5	9	6	9	8	8	6	5
1457:	7	11	13	10	12	9	9	7
1465:	11	7	6	8	5	6	6	5
1473:	4	12	6	5	6	6	5	7
1481:	7	6	3	4	7	9	8	10
1489:	7	4	9	9	5	9	10	10
1497:	12	7	5	9	11	9	8	13
1505:	5	11	6	4	8	7	17	6
1513:	12	11	6	6	8	7	5	3
1521:	11	9	9	10	5	8	10	9
1529:	6	11	15	6	5	3	5	9
1537:	12	8	5	6	5	8	8	5
1545:	7	5	9	8	6	7	8	2
1553:	8	11	7	8	6	6	5	14
1561:	10	7	8	7	15	10	10	5
1569:	6	9	10	7	8	6	10	8
1577:	6	10	9	9	5	6	8	7
1585:	11	11	7	6	6	4	9	5
1593:	9	8	6	7	6	12	5	7
1601:	4	6	7	5	8	7	8	2
1609:	5	8	9	3	8	3	4	8
1617:	4	7	4	9	3	6	7	8
1625:	9	5	2	4	12	2	6	7
1633:	3	10	4	4	4	3	6	6
1641:	4	6	5	8	4	4	6	5
1649:	6	4	6	9	7	3	5	7
1657:	5	6	4	2	9	4	5	4

1665:	1	6	4	4	9	2	7	6

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Channel								
1673:	9	5	8	2	5	8	3	6
1681:	5	5	8	10	3	3	8	8
1689:	10	5	12	5	4	6	6	9
1697:	6	8	4	6	8	9	6	4
1705:	7	3	3	4	4	5	8	3
1713:	4	5	5	3	7	3	10	5
1721:	4	3	5	4	8	3	1	3
1729:	4	7	5	10	8	3	3	10
1737:	6	1	7	4	5	2	7	8
1745:	7	3	3	5	6	3	4	2
1753:	7	4	2	6	2	2	7	4
1761:	2	4	5	12	4	2	2	5
1769:	3	5	5	2	4	9	3	5
1777:	4	6	4	4	2	4	5	9
1785:	2	4	3	3	4	5	3	8
1793:	4	5	8	8	4	5	3	2
1801:	3	6	5	4	4	3	2	3
1809:	4	7	4	5	3	10	6	4
1817:	4	3	4	4	2	4	6	5
1825:	1	4	1	4	3	6	6	6
1833:	8	8	19	13	4	3	7	3
1841:	7	5	5	2	9	4	7	3
1849:	6	8	4	5	1	2	7	2
1857:	3	6	6	5	4	4	3	6
1865:	4	4	2	3	6	4	3	2
1873:	4	6	5	6	3	3	5	4
1881:	6	6	8	7	5	3	2	3
1889:	7	1	5	3	5	4	7	7
1897:	5	4	3	4	5	3	4	3
1905:	5	1	1	3	7	4	2	3
1913:	6	3	6	5	3	3	2	1
1921:	7	6	0	10	5	6	2	3
1929:	5	5	1	6	5	4	4	5
1937:	4	3	3	4	7	2	2	5
1945:	3	4	5	5	6	4	2	5
1953:	7	3	5	4	6	4	3	5
1961:	1	6	8	4	4	7	6	5
1969:	5	2	8	5	6	6	5	5
1977:	5	5	5	3	5	3	3	3
1985:	8	5	5	5	6	1	2	1
1993:	8	6	9	4	1	3	1	9
2001:	6	4	4	2	5	1	6	3
2009:	3	3	4	3	4	3	8	9
2017:	2	7	4	4	6	6	4	7
2025:	7	3	2	5	5	7	2	6
2033:	3	2	7	3	4	7	2	4
2041:	5	3	2	5	1	4	2	3
2049:	7	3	4	2	6	6	4	1
2057:	5	3	3	4	4	2	4	3
2065:	3	3	5	7	6	1	3	3
2073:	4	3	2	4	3	2	3	3
2081:	6	2	2	3	1	6	2	3
2089:	4	2	2	1	3	3	3	3

2097:	5	2	7	4	7	6	6	2

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Channel								
2105:	5	2	7	4	6	4	3	3
2113:	4	2	3	2	4	4	3	3
2121:	2	5	4	3	6	4	3	1
2129:	3	5	3	4	3	4	6	4
2137:	5	3	3	0	3	4	5	0
2145:	5	6	2	4	1	2	4	6
2153:	2	5	4	2	0	1	3	3
2161:	3	3	2	4	3	4	3	4
2169:	4	3	2	4	11	3	4	6
2177:	1	3	1	1	4	2	4	2
2185:	6	4	3	4	6	8	4	5
2193:	2	3	10	1	1	3	5	10
2201:	4	1	5	5	1	7	4	4
2209:	6	1	0	2	7	3	2	0
2217:	3	7	2	2	6	6	2	2
2225:	6	2	6	3	1	5	2	3
2233:	4	2	3	2	4	3	4	3
2241:	5	6	4	3	3	2	4	2
2249:	6	3	4	2	5	3	4	4
2257:	2	3	5	3	2	6	3	3
2265:	1	2	1	3	1	6	4	5
2273:	5	4	4	5	6	2	7	4
2281:	5	5	6	1	1	3	1	2
2289:	2	1	3	4	5	5	4	5
2297:	1	3	1	3	4	4	1	3
2305:	4	1	3	1	2	2	3	2
2313:	1	3	2	3	3	1	1	0
2321:	1	0	0	2	2	1	2	3
2329:	3	2	2	2	3	1	1	4
2337:	0	2	2	3	1	2	3	4
2345:	0	1	0	1	1	2	0	3
2353:	1	1	2	1	1	2	1	2
2361:	2	3	5	0	1	3	2	1
2369:	2	0	2	0	2	0	0	0
2377:	1	1	0	0	0	0	1	1
2385:	2	3	1	4	3	0	0	1
2393:	2	1	1	2	0	1	2	1
2401:	2	0	1	1	0	0	3	0
2409:	0	3	0	0	1	0	0	3
2417:	0	1	2	2	1	1	3	0
2425:	3	0	1	0	1	1	0	1
2433:	0	1	1	0	1	1	0	0
2441:	1	0	1	0	0	1	0	1
2449:	2	0	0	0	1	2	1	2
2457:	1	1	1	0	2	0	2	2
2465:	0	0	0	0	1	0	2	0
2473:	0	0	0	0	1	0	0	0
2481:	2	0	0	0	1	0	0	2
2489:	0	1	0	1	1	0	0	1
2497:	0	0	1	1	3	5	31	38
2505:	43	16	4	0	0	0	0	0
2513:	0	0	1	1	0	0	0	0
2521:	0	0	0	0	0	0	0	0

2529:	0	0	0	0	0	0	0	0

Sample Title: GAS-1402

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

2961:	0	0	0	0	1	0	0	0

Sample Title: GAS-1402

Channel								
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	1	1
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	1	0	0	0	0	0	1
3033:	0	0	0	0	0	1	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	1	0	0	0	0	1	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	1	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	0	0	0	0	0	1
3113:	0	0	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	0	0	0	0	1
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	1	0	1	0	0	0	0	0
3169:	0	0	0	1	0	1	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	1	0
3201:	0	0	0	0	0	0	0	1
3209:	0	1	0	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	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	1	0	0	0	0	1
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	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	1	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	1	0	0	0	0	0
3329:	0	0	0	0	0	0	0	1
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	1	0	0	0	0	0	0
3361:	0	1	0	0	0	0	0	0
3369:	0	0	0	0	0	0	1	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393:	0	0	0	0	0	0	0	0

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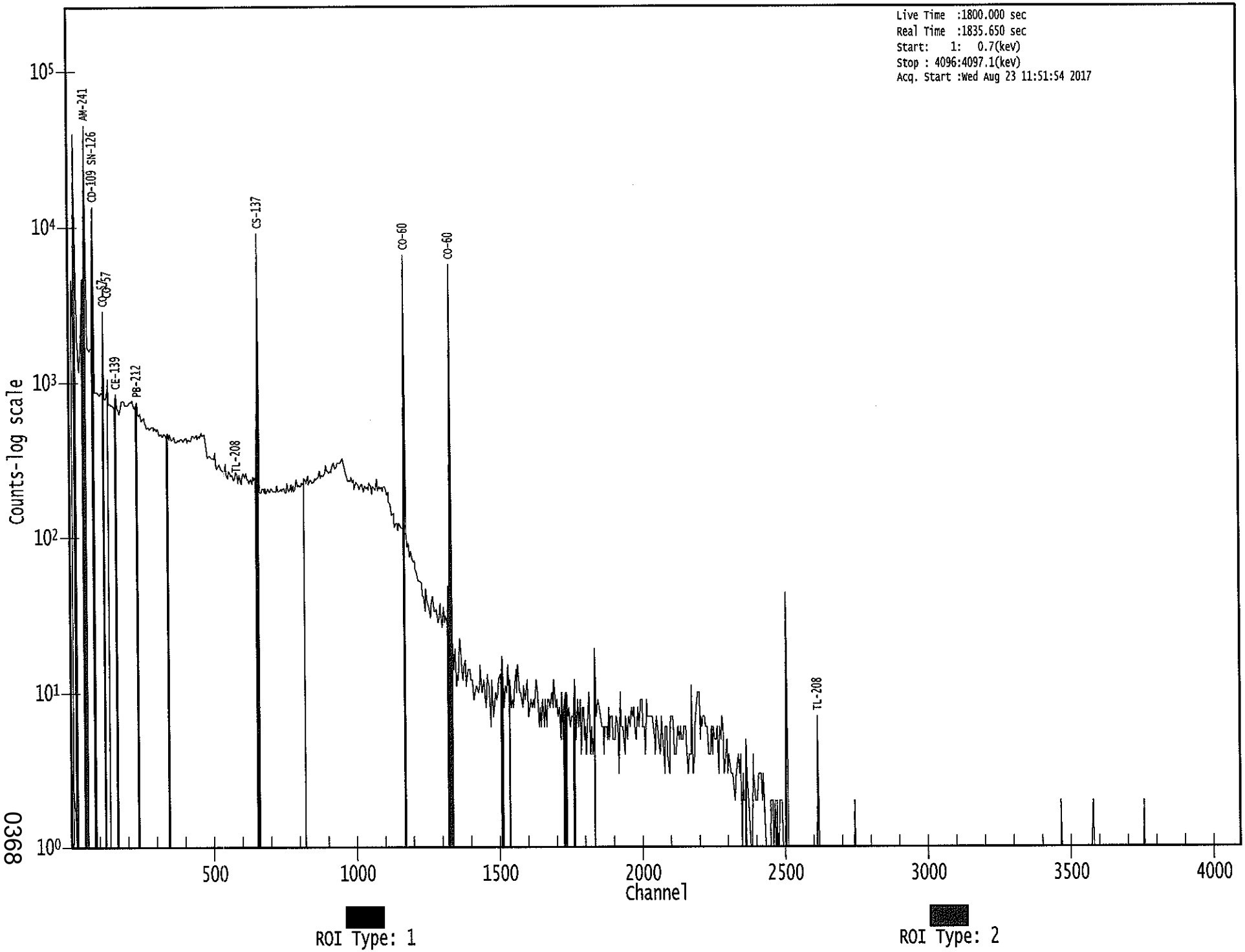
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	1	0	0	0	1
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	2	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	1	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	1	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	1	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	1	0	0	0
3577:	0	2	0	0	0	0	0	0
3585:	0	0	0	1	1	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	1
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	1	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	1	0	0	0	0
3681:	0	1	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	1	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	1	0	0
3721:	0	0	0	0	0	0	0	0
3729:	1	0	0	0	0	1	0	0
3737:	0	0	0	1	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	2	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	1	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	1	0	0	0	1	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: GAS-1402

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

0000055802.CNF



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Apex-Gamma

Analysis Report for 1707090-02
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GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-02
Sample Description	: BLANK
Sample Type	: SOIL
Sample Size	: 7.834E+02 grams
Facility	: Countroom
Sample Taken On	: 8/23/2017 8:50:16AM
Acquisition Started	: 8/23/2017 12:39:01PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3606.5 seconds
Dead Time	: 0.18 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 10 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55811

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-02

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PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 1:39:28PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	77.07	77.37	0.0000	0.00
2	99.28	99.58	0.0000	0.00
3	142.64	142.92	0.0000	0.00
4	191.92	192.18	0.0000	0.00
5	246.24	246.48	0.0000	0.00
6	289.19	289.42	0.0000	0.00
7	394.02	394.21	0.0000	0.00
8	628.04	628.16	0.0000	0.00
9	764.77	764.84	0.0000	0.00
10	813.38	813.43	0.0000	0.00
11	1019.35	1019.34	0.0000	0.00
12	1072.39	1072.36	0.0000	0.00
13	1082.29	1082.25	0.0000	0.00
14	1208.28	1208.20	0.0000	0.00
15	1280.72	1280.62	0.0000	0.00
16	1304.03	1303.92	0.0000	0.00
17	1392.14	1392.00	0.0000	0.00
18	1705.58	1705.33	0.0000	0.00
19	2120.39	2120.00	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-02

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PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 1:39:28PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	77.07	74 -	80	77.37	2.51E+01	31.42	1.62E+02	2.57
m	2	99.28	89 -	104	99.58	2.16E+01	25.26	1.05E+02	2.06
	3	142.64	140 -	146	142.92	2.01E+01	26.00	1.08E+02	3.08
	4	191.92	180 -	210	192.18	9.72E+01	86.34	4.10E+02	22.44
	5	246.24	234 -	262	246.48	1.42E+02	58.64	1.74E+02	19.70
	6	289.19	284 -	295	289.42	3.57E+01	25.92	6.65E+01	8.72
	7	394.02	390 -	397	394.21	1.50E+01	14.28	2.40E+01	1.19
	8	628.04	625 -	631	628.16	1.10E+01	11.88	1.80E+01	2.20
	9	764.77	760 -	768	764.84	1.19E+01	13.90	2.22E+01	3.51
	10	813.38	811 -	815	813.43	7.00E+00	5.29	0.00E+00	1.77
	11	1019.35	1015 -	1022	1019.34	8.00E+00	7.48	4.00E+00	2.55
	12	1072.39	1070 -	1075	1072.36	8.90E+00	7.00	2.20E+00	1.56
	13	1082.29	1080 -	1084	1082.25	6.94E+00	6.18	2.13E+00	1.73
	14	1208.28	1205 -	1210	1208.20	5.25E+00	7.07	5.50E+00	1.84
	15	1280.72	1277 -	1283	1280.62	5.50E+00	7.78	7.00E+00	2.38
	16	1304.03	1299 -	1307	1303.92	5.69E+00	7.23	4.63E+00	3.31
	17	1392.14	1388 -	1394	1392.00	6.00E+00	4.90	0.00E+00	2.88
	18	1705.58	1701 -	1707	1705.33	6.00E+00	4.90	0.00E+00	1.92
	19	2120.39	2116 -	2122	2120.00	5.00E+00	4.47	0.00E+00	2.98

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 1:39:28PM

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

Analysis Report for 1707090-02

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	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	77.07	74 -	80	2.51E+01	31.42	1.62E+02	2.45E+01
m	2	99.28	89 -	104	2.16E+01	25.26	1.05E+02	1.68E+01
	3	142.64	140 -	146	2.01E+01	26.00	1.08E+02	2.01E+01
	4	191.92	180 -	210	9.72E+01	86.34	4.10E+02	6.91E+01
	5	246.24	234 -	262	1.42E+02	58.64	1.74E+02	4.40E+01
	6	289.19	284 -	295	3.57E+01	25.92	6.65E+01	1.89E+01
	7	394.02	390 -	397	1.50E+01	14.28	2.40E+01	9.86E+00
	8	628.04	625 -	631	1.10E+01	11.88	1.80E+01	8.11E+00
	9	764.77	760 -	768	1.19E+01	13.90	2.22E+01	9.92E+00
	10	813.38	811 -	815	7.00E+00	5.29	0.00E+00	0.00E+00
	11	1019.35	1015 -	1022	8.00E+00	7.48	4.00E+00	4.03E+00
	12	1072.39	1070 -	1075	8.90E+00	7.00	2.20E+00	3.01E+00
	13	1082.29	1080 -	1084	6.94E+00	6.18	2.13E+00	2.66E+00
	14	1208.28	1205 -	1210	5.25E+00	7.07	5.50E+00	4.43E+00
	15	1280.72	1277 -	1283	5.50E+00	7.78	7.00E+00	5.10E+00
	16	1304.03	1299 -	1307	5.69E+00	7.23	4.63E+00	4.46E+00
	17	1392.14	1388 -	1394	6.00E+00	4.90	0.00E+00	0.00E+00
	18	1705.58	1701 -	1707	6.00E+00	4.90	0.00E+00	0.00E+00
	19	2120.39	2116 -	2122	5.00E+00	4.47	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/23/2017 1:39:28PM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	77.07	74 -	80	77.37	2.51E+01	31.42	1.62E+02	.....
m	2	99.28	89 -	104	99.58	2.16E+01	25.26	1.05E+02	.....
	3	142.64	140 -	146	142.92	2.01E+01	26.00	1.08E+02	.....
	4	191.92	180 -	210	192.18	9.72E+01	86.34	4.10E+02	.....
	5	246.24	234 -	262	246.48	1.42E+02	58.64	1.74E+02	.....
	6	289.19	284 -	295	289.42	3.57E+01	25.92	6.65E+01	.....

Analysis Report for 1707090-02

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
7	394.02	390 -	397	394.21	1.50E+01	14.28	2.40E+01	.....
8	628.04	625 -	631	628.16	1.10E+01	11.88	1.80E+01	.....
9	764.77	760 -	768	764.84	1.19E+01	13.90	2.22E+01	AG-110M
10	813.38	811 -	815	813.43	7.00E+00	5.29	0.00E+00	.....
11	1019.35	1015 -	1022	1019.34	8.00E+00	7.48	4.00E+00	.....
12	1072.39	1070 -	1075	1072.36	8.90E+00	7.00	2.20E+00	.....
13	1082.29	1080 -	1084	1082.25	6.94E+00	6.18	2.13E+00	.....
14	1208.28	1205 -	1210	1208.20	5.25E+00	7.07	5.50E+00	.....
15	1280.72	1277 -	1283	1280.62	5.50E+00	7.78	7.00E+00	.....
16	1304.03	1299 -	1307	1303.92	5.69E+00	7.23	4.63E+00	.....
17	1392.14	1388 -	1394	1392.00	6.00E+00	4.90	0.00E+00	.....
18	1705.58	1701 -	1707	1705.33	6.00E+00	4.90	0.00E+00	.....
19	2120.39	2116 -	2122	2120.00	5.00E+00	4.47	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/23/2017 1:39:28PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	77.07	2.51E+01	31.42	2.67E-02	2.05E-03
m	2	99.28	2.16E+01	25.26	2.69E-02	2.21E-03
	3	142.64	2.01E+01	26.00	2.33E-02	1.89E-03
	4	191.92	9.72E+01	86.34	1.91E-02	1.52E-03
	5	246.24	1.42E+02	58.64	1.57E-02	1.31E-03
	6	289.19	3.57E+01	25.92	1.37E-02	1.16E-03
	7	394.02	1.50E+01	14.28	1.04E-02	9.49E-04
	8	628.04	1.10E+01	11.88	6.85E-03	6.39E-04
	9	764.77	1.19E+01	13.90	5.74E-03	5.04E-04
	10	813.38	7.00E+00	5.29	5.44E-03	4.61E-04
	11	1019.35	8.00E+00	7.48	4.46E-03	3.66E-04
	12	1072.39	8.90E+00	7.00	4.27E-03	3.57E-04
	13	1082.29	6.94E+00	6.18	4.24E-03	3.56E-04
	14	1208.28	5.25E+00	7.07	3.86E-03	3.31E-04
	15	1280.72	5.50E+00	7.78	3.68E-03	3.10E-04
	16	1304.03	5.69E+00	7.23	3.63E-03	3.04E-04
	17	1392.14	6.00E+00	4.90	3.44E-03	2.86E-04

Analysis Report for 1707090-02

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Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
18	1705.58	6.00E+00	4.90	2.94E-03	2.36E-04
19	2120.39	5.00E+00	4.47	2.53E-03	2.15E-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 : 8/23/2017 1:39:28PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	77.07	2.51E+01	31.42			2.51E+01	3.14E+01
m	2	99.28	2.16E+01	25.26			2.16E+01	2.53E+01
	3	142.64	2.01E+01	26.00			2.01E+01	2.60E+01
	4	191.92	9.72E+01	86.34			9.72E+01	8.63E+01
	5	246.24	1.42E+02	58.64	1.49E+00	1.07E+00	1.41E+02	5.87E+01
	6	289.19	3.57E+01	25.92			3.57E+01	2.59E+01
	7	394.02	1.50E+01	14.28			1.50E+01	1.43E+01
	8	628.04	1.10E+01	11.88			1.10E+01	1.19E+01
	9	764.77	1.19E+01	13.90			1.19E+01	1.39E+01
	10	813.38	7.00E+00	5.29			7.00E+00	5.29E+00
	11	1019.35	8.00E+00	7.48			8.00E+00	7.48E+00
	12	1072.39	8.90E+00	7.00			8.90E+00	7.00E+00
	13	1082.29	6.94E+00	6.18			6.94E+00	6.18E+00
	14	1208.28	5.25E+00	7.07			5.25E+00	7.07E+00
	15	1280.72	5.50E+00	7.78			5.50E+00	7.78E+00
	16	1304.03	5.69E+00	7.23			5.69E+00	7.23E+00
	17	1392.14	6.00E+00	4.90			6.00E+00	4.90E+00
	18	1705.58	6.00E+00	4.90			6.00E+00	4.90E+00
	19	2120.39	5.00E+00	4.47			5.00E+00	4.47E+00

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

Analysis Report for 1707090-02

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AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 1:39:28PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.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	77.07	2.51E+01	31.42			2.51E+01	3.14E+01
m	2	99.28	2.16E+01	25.26			2.16E+01	2.53E+01
	3	142.64	2.01E+01	26.00			2.01E+01	2.60E+01
	4	191.92	9.72E+01	86.34			9.72E+01	8.63E+01
	5	246.24	1.42E+02	58.64	1.49E+00	1.07E+00	1.41E+02	5.87E+01
	6	289.19	3.57E+01	25.92			3.57E+01	2.59E+01
	7	394.02	1.50E+01	14.28			1.50E+01	1.43E+01
	8	628.04	1.10E+01	11.88			1.10E+01	1.19E+01
	9	764.77	1.19E+01	13.90			1.19E+01	1.39E+01
	10	813.38	7.00E+00	5.29			7.00E+00	5.29E+00
	11	1019.35	8.00E+00	7.48			8.00E+00	7.48E+00
	12	1072.39	8.90E+00	7.00			8.90E+00	7.00E+00
	13	1082.29	6.94E+00	6.18			6.94E+00	6.18E+00
	14	1208.28	5.25E+00	7.07			5.25E+00	7.07E+00
	15	1280.72	5.50E+00	7.78			5.50E+00	7.78E+00
	16	1304.03	5.69E+00	7.23			5.69E+00	7.23E+00
	17	1392.14	6.00E+00	4.90			6.00E+00	4.90E+00
	18	1705.58	6.00E+00	4.90			6.00E+00	4.90E+00
	19	2120.39	5.00E+00	4.47			5.00E+00	4.47E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1707090-02

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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
		*		?	
		*		?	

* = 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 : 8/23/2017 1:39:28PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	77.07	6.97851E-03	62.54		
m	2	99.28	5.99283E-03	58.54		
	3	142.64	5.58371E-03	64.66		
	4	191.92	2.70042E-02	44.41		
	5	246.24	3.90319E-02	20.87		
	6	289.19	9.92955E-03	36.26		
	7	394.02	4.16667E-03	47.61		
	8	628.04	3.05556E-03	54.02		
	9	764.77	3.30918E-03	58.35	Tol.	AG-110M
	10	813.38	1.94444E-03	37.80		
	11	1019.35	2.22222E-03	46.77		
	12	1072.39	2.47222E-03	39.33		
	13	1082.29	1.92708E-03	44.57		
	14	1208.28	1.45833E-03	67.34		
	15	1280.72	1.52778E-03	70.71		
	16	1304.03	1.57986E-03	63.55		
	17	1392.14	1.66667E-03	40.82		
	18	1705.58	1.66667E-03	40.82		
	19	2120.39	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 1707090-02
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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

* = 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

? = 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 1707090-02
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 1:39:28PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	77.07	6.97851E-03	62.54		
m	2	99.28	5.99283E-03	58.54		
	3	142.64	5.58371E-03	64.66		
	4	191.92	2.70042E-02	44.41		
	5	246.24	3.90319E-02	20.87		
	6	289.19	9.92955E-03	36.26		
	7	394.02	4.16667E-03	47.61		
	8	628.04	3.05556E-03	54.02		
	9	764.77	3.30918E-03	58.35	Tol.	AG-110M
	10	813.38	1.94444E-03	37.80		
	11	1019.35	2.22222E-03	46.77		
	12	1072.39	2.47222E-03	39.33		
	13	1082.29	1.92708E-03	44.57		
	14	1208.28	1.45833E-03	67.34		
	15	1280.72	1.52778E-03	70.71		
	16	1304.03	1.57986E-03	63.55		
	17	1392.14	1.66667E-03	40.82		
	18	1705.58	1.66667E-03	40.82		
	19	2120.39	1.38889E-03	44.72		

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

NUCLIDE MDA REPORT

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

Analysis Report for 1707090-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	1.05E-02	2.87E-01	2.87E-01
+	NA-22	1274.54	99.94	7.78E-03	3.66E-02	3.66E-02
+	NA-24	1368.53	99.99	-3.35E-03	3.95E-02	4.03E-02
		2754.09	99.86	-7.15E-03		3.95E-02
+	AL-26	1808.65	99.76	3.41E-03	3.67E-02	3.67E-02
+	K-40	1460.81	10.67	1.94E-01	4.73E-01	4.73E-01
+	AR-41	1293.64	99.16	-6.76E-03	1.46E-01	1.46E-01
+	TI-44	67.88	94.40	4.26E-03	1.65E-02	1.75E-02
		78.34	96.00	7.03E-03		1.65E-02
+	SC-46	889.25	99.98	5.13E-03	2.80E-02	3.03E-02
		1120.51	99.99	-2.04E-03		2.80E-02
+	V-48	983.52	99.98	-1.15E-02	2.55E-02	2.75E-02
		1312.10	97.50	-1.37E-03		2.55E-02
+	CR-51	320.08	9.83	1.02E-01	2.59E-01	2.59E-01
+	MN-54	834.83	99.97	-1.62E-02	2.37E-02	2.37E-02
+	CO-56	846.75	99.96	1.28E-02	3.68E-02	3.68E-02
		1037.75	14.03	3.56E-02		2.34E-01
		1238.25	67.00	-6.94E-03		4.07E-02
		1771.40	15.51	1.08E-02		2.84E-01
		2598.48	16.90	7.59E-02		2.72E-01
+	CO-57	122.06	85.51	-1.57E-03	1.66E-02	1.66E-02
		136.48	10.60	-2.65E-02		1.32E-01
+	CO-58	810.76	99.40	3.10E-03	2.95E-02	2.95E-02
+	FE-59	1099.22	56.50	0.00E+00	3.77E-02	3.77E-02
		1291.56	43.20	1.83E-02		6.55E-02
+	CO-60	1173.22	100.00	-8.07E-03	3.41E-02	3.41E-02
		1332.49	100.00	1.88E-02		4.04E-02
+	ZN-65	1115.52	50.75	5.22E-03	6.87E-02	6.87E-02
+	GA-67	93.31	35.70	8.13E-02	5.68E-02	5.68E-02
		208.95	2.24	2.34E-01		1.03E+00
		300.22	16.00	-3.23E-02		1.42E-01
+	SE-75	121.11	16.70	1.01E-02	2.60E-02	8.67E-02
		136.00	59.20	1.29E-02		2.60E-02
		264.65	59.80	1.69E-03		3.60E-02
		279.53	25.20	6.10E-02		9.24E-02
		400.65	11.40	3.42E-02		2.16E-01
+	RB-82	776.52	13.00	-1.68E-02	2.63E-01	2.63E-01
+	RB-83	520.41	46.00	2.36E-02	6.91E-02	6.91E-02
		529.64	30.30	2.38E-02		9.72E-02
		552.65	16.40	-5.82E-03		1.67E-01
+	KR-85	513.99	0.43	2.03E+00	9.84E+00	9.84E+00
+	SR-85	513.99	99.27	8.91E-03	4.31E-02	4.31E-02
+	Y-88	898.02	93.40	-2.99E-02	1.52E-02	1.52E-02
		1836.01	99.38	1.73E-02		4.55E-02
+	MO-93	263.06	56.72	-7.66E-03	2.41E-02	3.65E-02
		684.67	99.68	-6.16E-03		2.41E-02
		1477.11	99.08	1.47E-02		3.87E-02

Analysis Report for 1707090-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-93M	16.57	9.43	-1.70E+01	3.20E+01	3.20E+01
+	NB-94	702.63	100.00	4.83E-03	3.40E-02	3.64E-02
		871.10	100.00	9.36E-04		3.40E-02
+	NB-95	765.79	99.81	1.60E-02	3.95E-02	3.95E-02
+	NB-95M	235.69	25.00	-1.22E-02	8.91E-02	8.91E-02
+	ZR-95	724.18	43.70	1.52E-02	4.99E-02	8.57E-02
		756.72	55.30	-1.61E-02		4.99E-02
+	MO-99	181.06	6.20	-2.09E-01	2.25E-01	2.25E-01
		739.58	12.80	2.80E-02		2.90E-01
		778.00	4.50	-1.77E-01		7.67E-01
+	RU-103	497.08	89.00	3.51E-03	3.13E-02	3.13E-02
+	RU-106	621.84	9.80	2.70E-02	2.66E-01	2.66E-01
+	AG-108M	433.93	89.90	8.54E-03	2.84E-02	2.84E-02
		614.37	90.40	2.82E-03		3.40E-02
		722.95	90.50	2.97E-03		3.94E-02
+	CD-109	88.03	3.72	-8.78E-02	3.73E-01	3.73E-01
+	AG-110M	657.75	93.14	-2.11E-02	3.51E-02	3.51E-02
		677.61	10.53	1.14E-02		2.48E-01
		706.67	16.46	-9.45E-03		1.65E-01
		763.93	21.98	9.95E-02		1.86E-01
		884.67	71.63	-7.95E-03		4.20E-02
		1384.27	23.94	1.93E-02		1.25E-01
+	CD-113M	263.70	0.02	-7.37E+00	9.23E+01	9.23E+01
+	SN-113	255.12	1.93	2.30E-01	3.31E-02	1.18E+00
		391.69	64.90	1.41E-03		3.31E-02
+	TE123M	159.00	84.10	-3.62E-03	1.68E-02	1.68E-02
+	SB-124	602.71	97.87	-1.53E-03	3.17E-02	3.17E-02
		645.85	7.26	-2.00E-01		3.14E-01
		722.78	11.10	2.43E-02		3.21E-01
		1691.02	49.00	3.36E-02		1.05E-01
+	I-125	35.49	6.49	6.52E-01	9.16E-01	9.16E-01
+	SB-125	176.33	6.89	1.02E-02	7.93E-02	2.09E-01
		427.89	29.33	-1.70E-02		7.93E-02
		463.38	10.35	-3.68E-02		2.36E-01
		600.56	17.80	9.32E-03		1.65E-01
		635.90	11.32	-3.02E-02		2.35E-01
+	SB-126	414.70	83.30	3.77E-03	2.55E-02	2.55E-02
		666.33	99.60	-1.29E-02		3.10E-02
		695.00	99.60	1.25E-02		3.96E-02
		720.50	53.80	-9.55E-03		5.97E-02
+	SN-126	87.57	37.00	-8.83E-03	3.75E-02	3.75E-02
+	SB-127	473.00	25.00	-7.61E-02	6.94E-02	1.00E-01
		685.20	35.70	-1.78E-02		6.94E-02
		783.80	14.70	1.56E-02		2.48E-01
+	I-129	29.78	57.00	2.26E-02	1.90E-01	1.90E-01
		33.60	13.20	-2.78E-01		5.13E-01
		39.58	7.52	-6.03E-01		5.31E-01
+	I-131	284.30	6.05	0.00E+00	3.02E-02	3.45E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-131	364.48	81.20	2.68E-04	3.02E-02	3.02E-02
		636.97	7.26	-1.41E-01		3.86E-01
		722.89	1.80	1.52E-01		2.01E+00
+	TE-132	49.72	13.10	-1.90E-01	2.49E-02	2.23E-01
		228.16	88.00	1.87E-03		2.49E-02
+	BA-133	81.00	33.00	-2.58E-02	4.06E-02	4.36E-02
		302.84	17.80	-2.84E-02		1.30E-01
		356.01	60.00	3.32E-03		4.06E-02
+	I-133	529.87	86.30	9.63E-03	3.94E-02	3.94E-02
+	XE-133	81.00	38.00	-2.30E-02	3.88E-02	3.88E-02
+	CS-134	563.23	8.38	-6.05E-02	3.18E-02	3.56E-01
		569.32	15.43	2.71E-02		2.19E-01
		604.70	97.60	-1.49E-02		3.18E-02
		795.84	85.40	-1.59E-02		3.21E-02
		801.93	8.73	4.83E-02		3.88E-01
+	CS-135	268.24	16.00	2.05E-02	1.44E-01	1.44E-01
+	I-135	1131.51	22.50	1.23E-02	1.52E-01	1.97E-01
		1260.41	28.60	-7.29E-02		1.52E-01
		1678.03	9.54	-4.25E-01		3.91E-01
+	CS-136	153.22	7.46	3.59E-02	2.69E-02	1.91E-01
		163.89	4.61	9.80E-02		3.68E-01
		176.55	13.56	5.26E-03		1.07E-01
		273.65	12.66	-4.87E-02		1.80E-01
		340.57	48.50	2.36E-03		4.87E-02
		818.50	99.70	3.84E-04		2.69E-02
		1048.07	79.60	7.61E-03		5.43E-02
		1235.34	19.70	6.47E-02		1.70E-01
+	CS-137	661.65	85.12	1.86E-02	4.55E-02	4.55E-02
+	LA-138	788.74	34.00	2.81E-02	3.18E-02	1.01E-01
		1435.80	66.00	-1.30E-02		3.18E-02
+	CE-139	165.85	80.35	7.67E-03	2.09E-02	2.09E-02
+	BA-140	162.64	6.70	1.34E-01	1.02E-01	2.60E-01
		304.84	4.50	1.63E-01		5.45E-01
		423.70	3.20	1.12E-01		7.28E-01
		437.55	2.00	1.71E-01		1.22E+00
		537.32	25.00	-8.83E-03		1.02E-01
+	LA-140	328.77	20.50	3.08E-02	3.05E-02	1.09E-01
		487.03	45.50	-1.53E-03		5.93E-02
		815.85	23.50	-3.16E-02		1.32E-01
		1596.49	95.49	-3.28E-03		3.05E-02
+	CE-141	145.44	48.40	-3.17E-03	2.89E-02	2.89E-02
+	CE-143	57.36	11.80	-7.95E-02	5.99E-02	2.16E-01
		293.26	42.00	2.97E-03		5.99E-02
		664.55	5.20	2.48E-01		7.60E-01
+	CE-144	133.54	10.80	2.10E-02	1.36E-01	1.36E-01
+	PM-144	476.78	42.00	2.45E-03	2.44E-02	6.98E-02
		618.01	98.60	-2.10E-02		2.44E-02
		696.49	99.49	-1.38E-02		3.71E-02
+	PM-145	36.85	21.70	9.71E-02	1.24E-01	2.42E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-145	37.36	39.70	-3.15E-03	1.24E-01	1.24E-01
		42.30	15.10	-3.60E-02		2.36E-01
		72.40	2.31	-2.62E-02		6.27E-01
+	PM-146	453.90	39.94	-2.61E-03	5.57E-02	5.57E-02
		735.90	14.01	-1.76E-02		2.52E-01
		747.13	13.10	-2.58E-02		2.51E-01
+	ND-147	91.11	28.90	1.34E-02	6.14E-02	6.14E-02
		531.02	13.10	-5.62E-02		2.08E-01
+	PM-149	285.90	3.10	-1.20E-01	7.14E-01	7.14E-01
+	EU-152	121.78	20.50	-6.52E-03	6.89E-02	6.89E-02
		244.69	5.40	-1.36E-01		4.32E-01
		344.27	19.13	-4.54E-02		1.13E-01
		778.89	9.20	-6.19E-02		3.71E-01
		964.01	10.40	-1.08E-01		3.70E-01
		1085.78	7.22	-1.10E-01		4.71E-01
		1112.02	9.60	3.27E-02		3.62E-01
		1407.95	14.94	1.88E-02		2.03E-01
+	GD-153	97.43	31.30	-2.15E-02	4.57E-02	4.57E-02
		103.18	22.20	-3.42E-02		5.50E-02
+	EU-154	123.07	40.50	-1.12E-02	3.54E-02	3.54E-02
		723.30	19.70	1.37E-02		1.81E-01
		873.19	11.50	8.16E-03		2.96E-01
		996.32	10.30	1.84E-02		3.56E-01
		1004.76	17.90	1.01E-01		2.38E-01
		1274.45	35.50	2.19E-02		1.03E-01
+	EU-155	86.50	30.90	6.82E-04	4.69E-02	4.69E-02
		105.30	20.70	5.97E-04		5.98E-02
+	EU-156	811.77	10.40	1.71E-02	2.46E-01	2.71E-01
		1153.47	7.20	-1.67E-01		2.46E-01
		1230.71	8.90	7.13E-02		4.02E-01
+	HO-166M	184.41	72.60	2.00E-02	2.86E-02	2.86E-02
		280.45	29.60	3.10E-02		7.22E-02
		410.94	11.10	1.93E-02		2.19E-01
		711.69	54.10	-1.47E-02		4.34E-02
+	TM-171	66.72	0.14	-1.76E+01	1.21E+01	1.21E+01
+	HF-172	67.35	5.31	7.61E-02	1.36E-01	3.12E-01
		125.81	11.30	6.20E-02		1.36E-01
+	LU-172	181.53	20.60	-4.02E-02	5.24E-02	7.37E-02
		900.72	29.81	1.10E-03		9.29E-02
		1093.66	62.50	1.24E-02		5.24E-02
+	LU-173	100.72	5.24	1.79E-01	1.06E-01	2.79E-01
		272.11	21.20	-4.32E-02		1.06E-01
+	HF-175	343.40	84.00	-1.03E-02	2.56E-02	2.56E-02
+	LU-176	88.34	13.30	-4.09E-03	2.21E-02	1.03E-01
		201.83	86.00	2.99E-03		2.21E-02
		306.78	94.00	5.48E-03		2.57E-02
+	HF-181	133.02	41.70	8.25E-03	3.54E-02	3.54E-02
		345.85	17.20	1.04E-02		1.36E-01
		482.03	82.80	7.24E-03		3.65E-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	9.79E-03	2.51E-02	4.01E-02
		1121.30	34.90	-3.23E-02		7.19E-02
		1189.05	16.23	-1.51E-03		1.98E-01
		1221.41	26.98	0.00E+00		2.51E-02
		1231.02	11.44	5.51E-02		3.11E-01
+	IR-192	308.46	29.68	2.33E-03	5.70E-02	7.74E-02
		468.07	48.10	1.01E-02		5.70E-02
+	HG-203	279.19	77.30	2.48E-02	3.16E-02	3.16E-02
+	TL-204	374.74	94.11	-5.60E-03	2.33E-02	2.71E-02
		899.15	99.16	-3.88E-03		2.33E-02
		911.74	91.10	1.28E-02		3.88E-02
+	BI-207	569.67	97.72	-7.43E-03	3.34E-02	3.34E-02
		1063.62	74.90	8.26E-04		4.95E-02
+	TL-208	583.14	30.22	2.58E-02	1.06E-01	1.06E-01
		860.37	4.48	-1.86E-01		6.89E-01
		2614.66	35.85	2.29E-02		1.43E-01
+	BI-210M	262.00	45.00	-4.07E-03	4.53E-02	4.53E-02
		300.00	23.00	-2.16E-02		9.48E-02
+	PB-210	46.50	4.25	6.73E-01	8.29E-01	8.29E-01
+	PB-211	404.84	2.90	-3.76E-01	7.80E-01	7.80E-01
		831.96	2.90	-1.55E-01		8.74E-01
+	BI-212	727.17	11.80	3.34E-02	3.11E-01	3.11E-01
		1620.62	2.75	6.85E-01		1.61E+00
+	PB-212	238.63	44.60	6.05E-02	5.87E-02	5.87E-02
		300.09	3.41	-1.46E-01		6.40E-01
+	BI-214	609.31	46.30	-1.21E-02	7.35E-02	7.35E-02
		1120.29	15.10	-1.35E-02		1.85E-01
		1764.49	15.80	4.76E-02		2.54E-01
		2204.22	4.98	-1.56E-01		5.75E-01
+	PB-214	295.21	19.19	-1.05E-02	7.26E-02	1.18E-01
		351.92	37.19	4.94E-02		7.26E-02
+	RN-219	401.80	6.50	2.54E-01	3.80E-01	3.80E-01
+	RA-223	323.87	3.88	-1.94E-01	5.77E-01	5.77E-01
+	RA-224	240.98	3.95	4.20E-01	6.72E-01	6.72E-01
+	RA-225	40.00	31.00	-1.44E-01	1.27E-01	1.27E-01
+	RA-226	186.21	3.28	7.05E-01	6.77E-01	6.77E-01
+	TH-227	50.10	8.40	-2.82E-01	1.87E-01	3.31E-01
		236.00	11.50	-2.55E-02		1.87E-01
		256.20	6.30	2.60E-03		3.56E-01
+	AC-228	338.32	11.40	3.77E-02	1.32E-01	2.07E-01
		911.07	27.70	4.89E-02		1.32E-01
		969.11	16.60	1.02E-01		2.49E-01
+	TH-230	48.44	16.90	1.53E-01	1.93E-01	1.93E-01
		62.85	4.60	1.97E-01		4.88E-01
		67.67	0.37	1.09E+00		4.46E+00
+	PA-231	283.67	1.60	1.55E-01	1.00E+00	1.26E+00
		302.67	2.30	-2.20E-01		1.00E+00
+	TH-231	25.64	14.70	1.67E-01	2.46E-01	1.47E+00

Analysis Report for 1707090-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-231	84.21	6.40	1.38E-01	2.46E-01	2.46E-01
+	PA-233	311.98	38.60	-2.17E-02	5.95E-02	5.95E-02
+	PA-234	131.20	20.40	-5.11E-02	6.40E-02	6.40E-02
		733.99	8.80	1.94E-02		3.90E-01
		946.00	12.00	-9.46E-02		2.52E-01
+	PA-234M	1001.03	0.92	1.42E+00	4.76E+00	4.76E+00
+	TH-234	63.29	3.80	4.23E-01	5.74E-01	5.74E-01
+	U-235	143.76	10.50	5.70E-02	1.49E-01	1.49E-01
		163.35	4.70	9.51E-02		3.57E-01
		205.31	4.70	9.80E-02		4.79E-01
+	NP-237	86.50	12.60	1.67E-03	1.15E-01	1.15E-01
+	NP-239	106.10	22.70	5.75E-04	5.76E-02	5.76E-02
		228.18	10.70	1.56E-02		2.08E-01
		277.60	14.10	1.01E-01		1.83E-01
+	AM-241	59.54	35.90	-5.03E-03	6.03E-02	6.03E-02
+	AM-243	74.67	66.00	-6.04E-03	2.30E-02	2.30E-02
+	CM-243	209.75	3.29	4.88E-02	1.75E-01	6.06E-01
		228.14	10.60	1.49E-02		1.99E-01
		277.60	14.00	9.65E-02		1.75E-01

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

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	2.87E-01	2.87E-01	1.05E-02	1.29E-01
NA-22	1274.54	99.94	3.66E-02	3.66E-02	7.78E-03	1.48E-02
NA-24	1368.53	99.99	4.03E-02	3.95E-02	-3.35E-03	1.56E-02

Analysis Report for 1707090-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NA-24	2754.09	99.86	3.95E-02	3.95E-02	-7.15E-03	1.25E-02
AL-26	1808.65	99.76	3.67E-02	3.67E-02	3.41E-03	1.38E-02
K-40	1460.81	10.67	4.73E-01	4.73E-01	1.94E-01	2.00E-01
AR-41	1293.64	99.16	1.46E-01	1.46E-01	-6.76E-03	5.45E-02
TI-44	67.88	94.40	1.75E-02	1.65E-02	4.26E-03	8.19E-03
	78.34	96.00	1.65E-02		7.03E-03	7.74E-03
SC-46	889.25	99.98	3.03E-02	2.80E-02	5.13E-03	1.26E-02
	1120.51	99.99	2.80E-02		-2.04E-03	1.08E-02
V-48	983.52	99.98	2.75E-02	2.55E-02	-1.15E-02	1.09E-02
	1312.10	97.50	2.55E-02		-1.37E-03	9.03E-03
CR-51	320.08	9.83	2.59E-01	2.59E-01	1.02E-01	1.19E-01
MN-54	834.83	99.97	2.37E-02	2.37E-02	-1.62E-02	9.39E-03
CO-56	846.75	99.96	3.68E-02	3.68E-02	1.28E-02	1.59E-02
	1037.75	14.03	2.34E-01		3.56E-02	9.58E-02
	1238.25	67.00	4.07E-02		-6.94E-03	1.53E-02
	1771.40	15.51	2.84E-01		1.08E-02	1.13E-01
	2598.48	16.90	2.72E-01		7.59E-02	1.02E-01
CO-57	122.06	85.51	1.66E-02	1.66E-02	-1.57E-03	7.68E-03
	136.48	10.60	1.32E-01		-2.65E-02	6.10E-02
CO-58	810.76	99.40	2.95E-02	2.95E-02	3.10E-03	1.24E-02
FE-59	1099.22	56.50	3.77E-02	3.77E-02	0.00E+00	1.34E-02
	1291.56	43.20	6.55E-02		1.83E-02	2.45E-02
CO-60	1173.22	100.00	3.41E-02	3.41E-02	-8.07E-03	1.38E-02
	1332.49	100.00	4.04E-02		1.88E-02	1.66E-02
ZN-65	1115.52	50.75	6.87E-02	6.87E-02	5.22E-03	2.81E-02
GA-67	93.31	35.70	5.68E-02	5.68E-02	8.13E-02	2.70E-02
	208.95	2.24	1.03E+00		2.34E-01	4.82E-01
	300.22	16.00	1.42E-01		-3.23E-02	6.45E-02
SE-75	121.11	16.70	8.67E-02	2.60E-02	1.01E-02	4.03E-02
	136.00	59.20	2.60E-02		1.29E-02	1.21E-02
	264.65	59.80	3.60E-02		1.69E-03	1.65E-02
	279.53	25.20	9.24E-02		6.10E-02	4.25E-02
	400.65	11.40	2.16E-01		3.42E-02	9.71E-02
RB-82	776.52	13.00	2.63E-01	2.63E-01	-1.68E-02	1.14E-01
RB-83	520.41	46.00	6.91E-02	6.91E-02	2.36E-02	3.11E-02
	529.64	30.30	9.72E-02		2.38E-02	4.33E-02
	552.65	16.40	1.67E-01		-5.82E-03	7.30E-02
KR-85	513.99	0.43	9.84E+00	9.84E+00	2.03E+00	4.56E+00
SR-85	513.99	99.27	4.31E-02	4.31E-02	8.91E-03	2.00E-02
Y-88	898.02	93.40	1.52E-02	1.52E-02	-2.99E-02	4.79E-03
	1836.01	99.38	4.55E-02		1.73E-02	1.80E-02
MO-93	263.06	56.72	3.65E-02	2.41E-02	-7.66E-03	1.67E-02
	684.67	99.68	2.41E-02		-6.16E-03	9.98E-03
	1477.11	99.08	3.87E-02		1.47E-02	1.53E-02
NB-93M	16.57	9.43	3.20E+01	3.20E+01	-1.70E+01	1.53E+01
NB-94	702.63	100.00	3.64E-02	3.40E-02	4.83E-03	1.61E-02
	871.10	100.00	3.40E-02		9.36E-04	1.44E-02
NB-95	765.79	99.81	3.95E-02	3.95E-02	1.60E-02	1.75E-02
NB-95M	235.69	25.00	8.91E-02	8.91E-02	-1.22E-02	4.12E-02
ZR-95	724.18	43.70	8.57E-02	4.99E-02	1.52E-02	3.79E-02
	756.72	55.30	4.99E-02		-1.61E-02	2.09E-02
MO-99	181.06	6.20	2.25E-01	2.25E-01	-2.09E-01	1.01E-01
	739.58	12.80	2.90E-01		2.80E-02	1.27E-01

Analysis Report for 1707090-02

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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	778.00	4.50	7.67E-01	2.25E-01	-1.77E-01	3.30E-01
RU-103	497.08	89.00	3.13E-02	3.13E-02	3.51E-03	1.39E-02
RU-106	621.84	9.80	2.66E-01	2.66E-01	2.70E-02	1.14E-01
AG-108M	433.93	89.90	2.84E-02	2.84E-02	8.54E-03	1.27E-02
	614.37	90.40	3.40E-02		2.82E-03	1.50E-02
	722.95	90.50	3.94E-02		2.97E-03	1.73E-02
CD-109	88.03	3.72	3.73E-01	3.73E-01	-8.78E-02	1.74E-01
AG-110M	657.75	93.14	3.51E-02	3.51E-02	-2.11E-02	1.55E-02
	677.61	10.53	2.48E-01		1.14E-02	1.05E-01
	706.67	16.46	1.65E-01		-9.45E-03	6.95E-02
	763.93	21.98	1.86E-01		9.95E-02	8.28E-02
	884.67	71.63	4.20E-02		-7.95E-03	1.74E-02
	1384.27	23.94	1.25E-01		1.93E-02	4.67E-02
CD-113M	263.70	0.02	9.23E+01	9.23E+01	-7.37E+00	4.23E+01
SN-113	255.12	1.93	1.18E+00	3.31E-02	2.30E-01	5.46E-01
	391.69	64.90	3.31E-02		1.41E-03	1.47E-02
TE123M	159.00	84.10	1.68E-02	1.68E-02	-3.62E-03	7.69E-03
SB-124	602.71	97.87	3.17E-02	3.17E-02	-1.53E-03	1.40E-02
	645.85	7.26	3.14E-01		-2.00E-01	1.30E-01
	722.78	11.10	3.21E-01		2.43E-02	1.41E-01
	1691.02	49.00	1.05E-01		3.36E-02	4.36E-02
I-125	35.49	6.49	9.16E-01	9.16E-01	6.52E-01	4.37E-01
SB-125	176.33	6.89	2.09E-01	7.93E-02	1.02E-02	9.54E-02
	427.89	29.33	7.93E-02		-1.70E-02	3.51E-02
	463.38	10.35	2.36E-01		-3.68E-02	1.04E-01
	600.56	17.80	1.65E-01		9.32E-03	7.24E-02
	635.90	11.32	2.35E-01		-3.02E-02	1.01E-01
SB-126	414.70	83.30	2.55E-02	2.55E-02	3.77E-03	1.12E-02
	666.33	99.60	3.10E-02		-1.29E-02	1.35E-02
	695.00	99.60	3.96E-02		1.25E-02	1.77E-02
	720.50	53.80	5.97E-02		-9.55E-03	2.59E-02
SN-126	87.57	37.00	3.75E-02	3.75E-02	-8.83E-03	1.75E-02
SB-127	473.00	25.00	1.00E-01	6.94E-02	-7.61E-02	4.42E-02
	685.20	35.70	6.94E-02		-1.78E-02	2.88E-02
	783.80	14.70	2.48E-01		1.56E-02	1.08E-01
I-129	29.78	57.00	1.90E-01	1.90E-01	2.26E-02	9.07E-02
	33.60	13.20	5.13E-01		-2.78E-01	2.44E-01
	39.58	7.52	5.31E-01		-6.03E-01	2.52E-01
I-131	284.30	6.05	3.45E-01	3.02E-02	0.00E+00	1.57E-01
	364.48	81.20	3.02E-02		2.68E-04	1.37E-02
	636.97	7.26	3.86E-01		-1.41E-01	1.66E-01
	722.89	1.80	2.01E+00		1.52E-01	8.83E-01
TE-132	49.72	13.10	2.23E-01	2.49E-02	-1.90E-01	1.06E-01
	228.16	88.00	2.49E-02		1.87E-03	1.16E-02
BA-133	81.00	33.00	4.36E-02	4.06E-02	-2.58E-02	2.03E-02
	302.84	17.80	1.30E-01		-2.84E-02	5.94E-02
	356.01	60.00	4.06E-02		3.32E-03	1.84E-02
I-133	529.87	86.30	3.94E-02	3.94E-02	9.63E-03	1.75E-02
XE-133	81.00	38.00	3.88E-02	3.88E-02	-2.30E-02	1.81E-02
CS-134	563.23	8.38	3.56E-01	3.18E-02	-6.05E-02	1.57E-01
	569.32	15.43	2.19E-01		2.71E-02	9.84E-02
	604.70	97.60	3.18E-02		-1.49E-02	1.40E-02
	795.84	85.40	3.21E-02		-1.59E-02	1.33E-02

Analysis Report for 1707090-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	801.93	8.73	3.88E-01	3.18E-02	4.83E-02	1.67E-01
CS-135	268.24	16.00	1.44E-01	1.44E-01	2.05E-02	6.67E-02
I-135	1131.51	22.50	1.97E-01	1.52E-01	1.23E-02	7.63E-02
	1260.41	28.60	1.52E-01		-7.29E-02	5.69E-02
	1678.03	9.54	3.91E-01		-4.25E-01	1.23E-01
CS-136	153.22	7.46	1.91E-01	2.69E-02	3.59E-02	8.75E-02
	163.89	4.61	3.68E-01		9.80E-02	1.71E-01
	176.55	13.56	1.07E-01		5.26E-03	4.90E-02
	273.65	12.66	1.80E-01		-4.87E-02	8.29E-02
	340.57	48.50	4.87E-02		2.36E-03	2.21E-02
	818.50	99.70	2.69E-02		3.84E-04	1.10E-02
	1048.07	79.60	5.43E-02		7.61E-03	2.34E-02
	1235.34	19.70	1.70E-01		6.47E-02	6.74E-02
CS-137	661.65	85.12	4.55E-02	4.55E-02	1.86E-02	2.04E-02
LA-138	788.74	34.00	1.01E-01	3.18E-02	2.81E-02	4.39E-02
	1435.80	66.00	3.18E-02		-1.30E-02	1.01E-02
CE-139	165.85	80.35	2.09E-02	2.09E-02	7.67E-03	9.70E-03
BA-140	162.64	6.70	2.60E-01	1.02E-01	1.34E-01	1.21E-01
	304.84	4.50	5.45E-01		1.63E-01	2.50E-01
	423.70	3.20	7.28E-01		1.12E-01	3.22E-01
	437.55	2.00	1.22E+00		1.71E-01	5.43E-01
	537.32	25.00	1.02E-01		-8.83E-03	4.42E-02
LA-140	328.77	20.50	1.09E-01	3.05E-02	3.08E-02	4.91E-02
	487.03	45.50	5.93E-02		-1.53E-03	2.63E-02
	815.85	23.50	1.32E-01		-3.16E-02	5.58E-02
	1596.49	95.49	3.05E-02		-3.28E-03	1.08E-02
CE-141	145.44	48.40	2.89E-02	2.89E-02	-3.17E-03	1.33E-02
CE-143	57.36	11.80	2.16E-01	5.99E-02	-7.95E-02	1.03E-01
	293.26	42.00	5.99E-02		2.97E-03	2.75E-02
	664.55	5.20	7.60E-01		2.48E-01	3.38E-01
CE-144	133.54	10.80	1.36E-01	1.36E-01	2.10E-02	6.28E-02
PM-144	476.78	42.00	6.98E-02	2.44E-02	2.45E-03	3.14E-02
	618.01	98.60	2.44E-02		-2.10E-02	1.03E-02
	696.49	99.49	3.71E-02		-1.38E-02	1.64E-02
PM-145	36.85	21.70	2.42E-01	1.24E-01	9.71E-02	1.15E-01
	37.36	39.70	1.24E-01		-3.15E-03	5.89E-02
	42.30	15.10	2.36E-01		-3.60E-02	1.12E-01
	72.40	2.31	6.27E-01		-2.62E-02	2.92E-01
PM-146	453.90	39.94	5.57E-02	5.57E-02	-2.61E-03	2.43E-02
	735.90	14.01	2.52E-01		-1.76E-02	1.10E-01
	747.13	13.10	2.51E-01		-2.58E-02	1.09E-01
ND-147	91.11	28.90	6.14E-02	6.14E-02	1.34E-02	2.90E-02
	531.02	13.10	2.08E-01		-5.62E-02	9.16E-02
PM-149	285.90	3.10	7.14E-01	7.14E-01	-1.20E-01	3.25E-01
EU-152	121.78	20.50	6.89E-02	6.89E-02	-6.52E-03	3.20E-02
	244.69	5.40	4.32E-01		-1.36E-01	2.01E-01
	344.27	19.13	1.13E-01		-4.54E-02	5.05E-02
	778.89	9.20	3.71E-01		-6.19E-02	1.60E-01
	964.01	10.40	3.70E-01		-1.08E-01	1.58E-01
	1085.78	7.22	4.71E-01		-1.10E-01	1.93E-01
	1112.02	9.60	3.62E-01		3.27E-02	1.48E-01
	1407.95	14.94	2.03E-01		1.88E-02	7.58E-02
GD-153	97.43	31.30	4.57E-02	4.57E-02	-2.15E-02	2.13E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
GD-153	103.18	22.20	5.50E-02	4.57E-02	-3.42E-02	2.53E-02
EU-154	123.07	40.50	3.54E-02	3.54E-02	-1.12E-02	1.64E-02
	723.30	19.70	1.81E-01		1.37E-02	7.95E-02
	873.19	11.50	2.96E-01		8.16E-03	1.26E-01
	996.32	10.30	3.56E-01		1.84E-02	1.50E-01
	1004.76	17.90	2.38E-01		1.01E-01	1.03E-01
	1274.45	35.50	1.03E-01		2.19E-02	4.16E-02
EU-155	86.50	30.90	4.69E-02	4.69E-02	6.82E-04	2.19E-02
	105.30	20.70	5.98E-02		5.97E-04	2.75E-02
EU-156	811.77	10.40	2.71E-01	2.46E-01	1.71E-02	1.12E-01
	1153.47	7.20	2.46E-01		-1.67E-01	7.77E-02
	1230.71	8.90	4.02E-01		7.13E-02	1.63E-01
HO-166M	184.41	72.60	2.86E-02	2.86E-02	2.00E-02	1.34E-02
	280.45	29.60	7.22E-02		3.10E-02	3.30E-02
	410.94	11.10	2.19E-01		1.93E-02	9.79E-02
	711.69	54.10	4.34E-02		-1.47E-02	1.78E-02
TM-171	66.72	0.14	1.21E+01	1.21E+01	-1.76E+01	5.68E+00
HF-172	67.35	5.31	3.12E-01	1.36E-01	7.61E-02	1.46E-01
	125.81	11.30	1.36E-01		6.20E-02	6.35E-02
LU-172	181.53	20.60	7.37E-02	5.24E-02	-4.02E-02	3.36E-02
	900.72	29.81	9.29E-02		1.10E-03	3.75E-02
	1093.66	62.50	5.24E-02		1.24E-02	2.12E-02
LU-173	100.72	5.24	2.79E-01	1.06E-01	1.79E-01	1.30E-01
	272.11	21.20	1.06E-01		-4.32E-02	4.88E-02
HF-175	343.40	84.00	2.56E-02	2.56E-02	-1.03E-02	1.15E-02
LU-176	88.34	13.30	1.03E-01	2.21E-02	-4.09E-03	4.78E-02
	201.83	86.00	2.21E-02		2.99E-03	1.02E-02
	306.78	94.00	2.57E-02		5.48E-03	1.18E-02
HF-181	133.02	41.70	3.54E-02	3.54E-02	8.25E-03	1.64E-02
	345.85	17.20	1.36E-01		1.04E-02	6.18E-02
	482.03	82.80	3.65E-02		7.24E-03	1.64E-02
TA-182	67.75	41.20	4.01E-02	2.51E-02	9.79E-03	1.88E-02
	1121.30	34.90	7.19E-02		-3.23E-02	2.69E-02
	1189.05	16.23	1.98E-01		-1.51E-03	7.85E-02
	1221.41	26.98	2.51E-02		0.00E+00	0.00E+00
	1231.02	11.44	3.11E-01		5.51E-02	1.26E-01
IR-192	308.46	29.68	7.74E-02	5.70E-02	2.33E-03	3.53E-02
	468.07	48.10	5.70E-02		1.01E-02	2.55E-02
HG-203	279.19	77.30	3.16E-02	3.16E-02	2.48E-02	1.46E-02
TL-204	374.74	94.11	2.71E-02	2.33E-02	-5.60E-03	1.23E-02
	899.15	99.16	2.33E-02		-3.88E-03	9.03E-03
	911.74	91.10	3.88E-02		1.28E-02	1.65E-02
BI-207	569.67	97.72	3.34E-02	3.34E-02	-7.43E-03	1.49E-02
	1063.62	74.90	4.95E-02		8.26E-04	2.07E-02
TL-208	583.14	30.22	1.06E-01	1.06E-01	2.58E-02	4.72E-02
	860.37	4.48	6.89E-01		-1.86E-01	2.88E-01
	2614.66	35.85	1.43E-01		2.29E-02	5.56E-02
BI-210M	262.00	45.00	4.53E-02	4.53E-02	-4.07E-03	2.07E-02
	300.00	23.00	9.48E-02		-2.16E-02	4.32E-02
PB-210	46.50	4.25	8.29E-01	8.29E-01	6.73E-01	3.97E-01
PB-211	404.84	2.90	7.80E-01	7.80E-01	-3.76E-01	3.46E-01
	831.96	2.90	8.74E-01		-1.55E-01	3.53E-01
BI-212	727.17	11.80	3.11E-01	3.11E-01	3.34E-02	1.37E-01

Analysis Report for 1707090-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BI-212	1620.62	2.75	1.61E+00	3.11E-01	6.85E-01	6.50E-01
PB-212	238.63	44.60	5.87E-02	5.87E-02	6.05E-02	2.75E-02
	300.09	3.41	6.40E-01		-1.46E-01	2.91E-01
BI-214	609.31	46.30	7.35E-02	7.35E-02	-1.21E-02	3.28E-02
	1120.29	15.10	1.85E-01		-1.35E-02	7.17E-02
	1764.49	15.80	2.54E-01		4.76E-02	9.85E-02
	2204.22	4.98	5.75E-01		-1.56E-01	1.82E-01
PB-214	295.21	19.19	1.18E-01	7.26E-02	-1.05E-02	5.39E-02
	351.92	37.19	7.26E-02		4.94E-02	3.33E-02
RN-219	401.80	6.50	3.80E-01	3.80E-01	2.54E-01	1.71E-01
RA-223	323.87	3.88	5.77E-01	5.77E-01	-1.94E-01	2.62E-01
RA-224	240.98	3.95	6.72E-01	6.72E-01	4.20E-01	3.15E-01
RA-225	40.00	31.00	1.27E-01	1.27E-01	-1.44E-01	6.02E-02
RA-226	186.21	3.28	6.77E-01	6.77E-01	7.05E-01	3.18E-01
TH-227	50.10	8.40	3.31E-01	1.87E-01	-2.82E-01	1.58E-01
	236.00	11.50	1.87E-01		-2.55E-02	8.67E-02
	256.20	6.30	3.56E-01		2.60E-03	1.65E-01
AC-228	338.32	11.40	2.07E-01	1.32E-01	3.77E-02	9.40E-02
	911.07	27.70	1.32E-01		4.89E-02	5.66E-02
	969.11	16.60	2.49E-01		1.02E-01	1.08E-01
TH-230	48.44	16.90	1.93E-01	1.93E-01	1.53E-01	9.22E-02
	62.85	4.60	4.88E-01		1.97E-01	2.33E-01
	67.67	0.37	4.46E+00		1.09E+00	2.09E+00
PA-231	283.67	1.60	1.26E+00	1.00E+00	1.55E-01	5.74E-01
	302.67	2.30	1.00E+00		-2.20E-01	4.59E-01
TH-231	25.64	14.70	1.47E+00	2.46E-01	1.67E-01	7.04E-01
	84.21	6.40	2.46E-01		1.38E-01	1.16E-01
PA-233	311.98	38.60	5.95E-02	5.95E-02	-2.17E-02	2.71E-02
PA-234	131.20	20.40	6.40E-02	6.40E-02	-5.11E-02	2.94E-02
	733.99	8.80	3.90E-01		1.94E-02	1.70E-01
	946.00	12.00	2.52E-01		-9.46E-02	1.03E-01
PA-234M	1001.03	0.92	4.76E+00	4.76E+00	1.42E+00	2.07E+00
TH-234	63.29	3.80	5.74E-01	5.74E-01	4.23E-01	2.73E-01
U-235	143.76	10.50	1.49E-01	1.49E-01	5.70E-02	6.91E-02
	163.35	4.70	3.57E-01		9.51E-02	1.65E-01
	205.31	4.70	4.79E-01		9.80E-02	2.24E-01
NP-237	86.50	12.60	1.15E-01	1.15E-01	1.67E-03	5.38E-02
NP-239	106.10	22.70	5.76E-02	5.76E-02	5.75E-04	2.65E-02
	228.18	10.70	2.08E-01		1.56E-02	9.65E-02
	277.60	14.10	1.83E-01		1.01E-01	8.46E-02
AM-241	59.54	35.90	6.03E-02	6.03E-02	-5.03E-03	2.86E-02
AM-243	74.67	66.00	2.30E-02	2.30E-02	-6.04E-03	1.07E-02
CM-243	209.75	3.29	6.06E-01	1.75E-01	4.88E-02	2.81E-01
	228.14	10.60	1.99E-01		1.49E-02	9.24E-02
	277.60	14.00	1.75E-01		9.65E-02	8.08E-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

Analysis Report for 1707090-02

BLANK

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: BLANK

Elapsed Live time: 3600
Elapsed Real Time: 3607

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	98	138	96	63	57	25	46
17:	35	25	37	29	27	37	34	43
25:	44	28	39	36	38	27	29	32
33:	26	25	32	26	38	28	18	23
41:	24	22	33	22	21	28	55	37
49:	29	25	19	21	26	26	32	28
57:	22	19	30	26	27	13	25	52
65:	19	20	11	18	13	16	10	15
73:	13	9	16	16	17	17	22	9
81:	15	8	12	23	20	12	14	11
89:	11	14	10	26	41	30	20	10
97:	7	10	16	22	9	8	12	8
105:	8	8	11	11	10	8	10	14
113:	15	11	8	12	8	9	15	11
121:	9	14	9	12	12	11	17	12
129:	10	5	12	7	9	20	7	11
137:	10	11	9	7	10	17	13	14
145:	10	3	12	5	15	7	6	11
153:	10	5	10	6	3	11	10	6
161:	10	9	12	11	18	6	10	10
169:	10	4	8	11	11	9	12	6
177:	9	4	5	4	7	6	7	13
185:	16	18	20	17	5	11	4	8
193:	11	13	9	5	3	10	7	8
201:	9	12	11	13	4	17	11	11
209:	7	5	12	7	2	7	5	5
217:	11	6	5	9	8	8	11	11
225:	7	8	5	7	15	7	5	4
233:	5	1	6	7	4	15	15	14
241:	13	11	6	6	9	8	8	11
249:	7	8	6	7	9	6	6	10
257:	10	4	5	7	8	2	4	8
265:	5	6	9	9	8	8	4	7
273:	6	7	5	7	9	9	6	9
281:	7	4	2	1	3	7	9	8
289:	5	7	5	5	4	12	3	5
297:	3	7	5	5	5	6	4	9
305:	6	4	7	7	4	5	6	4
313:	3	4	10	4	9	7	5	3
321:	5	11	3	2	3	6	2	7
329:	7	4	2	2	4	3	3	5
337:	5	7	5	6	3	2	5	4
345:	2	6	4	2	8	5	6	6
353:	6	5	5	3	2	6	5	1
361:	5	1	3	7	4	4	6	5

369:	8	3	3	5	4	6	7	3

Sample Title: BLANK

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

801:	2	0	3	3	2	1	0	1

Sample Title: BLANK

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

1233:	1	1	1	0	1	0	0	0

Sample Title: BLANK

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

1665:	0	1	0	0	1	0	0	0

Sample Title: BLANK

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

2097:	0	1	2	1	0	0	1	1

Sample Title: BLANK

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

2529:	0	0	0	0	0	0	1	0

Sample Title: BLANK

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

2961:	0	0	0	0	0	0	0	0

Sample Title: BLANK

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

3393:	0	1	0	0	1	0	0	0

Sample Title: BLANK

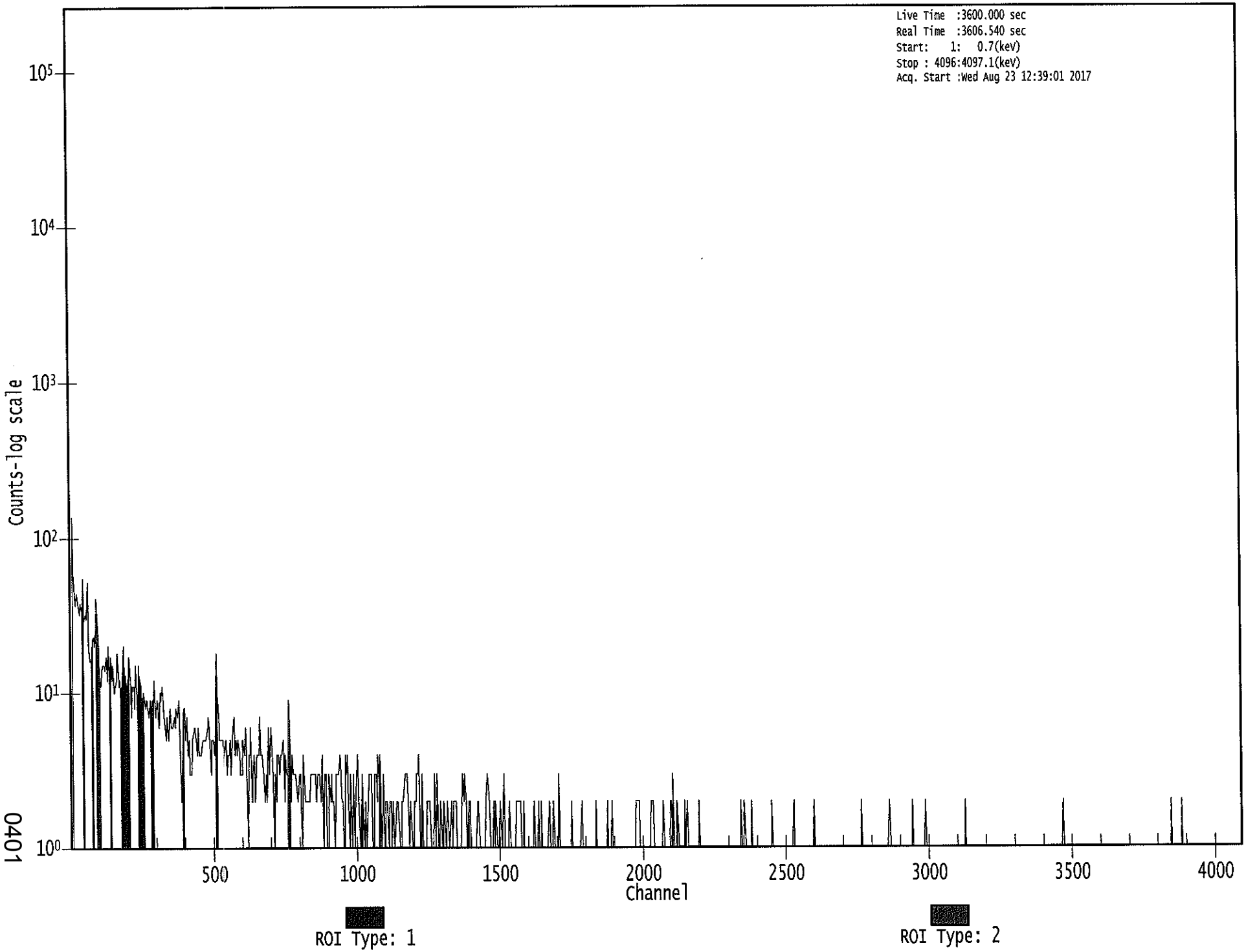
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	1	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	1	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	1
3449:	0	0	0	1	0	0	1	0
3457:	0	0	0	0	0	0	0	0
3465:	1	0	0	0	2	0	0	0
3473:	1	0	0	0	1	0	0	0
3481:	0	0	0	1	1	0	0	0
3489:	0	0	0	0	0	1	0	0
3497:	0	0	0	0	1	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	1	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	1	0
3537:	0	1	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	1
3553:	0	0	0	0	1	0	0	0
3561:	0	0	0	0	0	1	0	0
3569:	1	0	1	0	0	1	0	1
3577:	0	0	0	1	0	0	0	0
3585:	0	1	0	0	1	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	1	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	1	1	1	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	1	0
3665:	0	0	0	0	0	1	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	1	1	1	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	1	0	0	0	0	0	0
3745:	0	0	1	1	0	0	0	0
3753:	0	0	0	1	0	0	0	0
3761:	0	0	0	0	0	0	0	1
3769:	0	1	1	0	0	0	0	0
3777:	0	0	0	0	0	1	0	0
3785:	1	0	0	0	0	0	0	0
3793:	0	0	0	0	0	1	0	0
3801:	0	0	0	0	1	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	1	0	0	0

3825:	0	0	0	0	0	0	1	0

Sample Title: BLANK

Channel								
3833:	1	0	1	1	0	0	0	0
3841:	0	0	0	0	1	0	2	0
3849:	0	1	0	0	0	0	0	0
3857:	0	0	0	0	1	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	2	0	0	0	0
3889:	0	0	0	0	0	0	0	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	1
3929:	0	0	0	1	1	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	1	0	0	1	0	0	1
3953:	0	0	0	0	0	0	0	1
3961:	0	0	0	0	0	0	1	1
3969:	0	0	0	1	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	1	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	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	0	0	0
4033:	0	0	0	0	1	0	0	0
4041:	1	0	0	0	0	0	0	0
4049:	0	0	0	0	1	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	1	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055811.CNF



0401

Apex-Gamma

Analysis Report for 1707090-03
HTC-A06-S001-1218-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-03
Sample Description	: HTC-A06-S001-1218-01
Sample Type	: SOIL
Sample Size	: 6.048E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:50:43AM
Acquisition Started	: 8/23/2017 11:19:34AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3613.7 seconds
Dead Time	: 0.38 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55801

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 12:20:02PM
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	46.81	45.86	0.0000	0.00
2	76.15	75.20	0.0000	0.00
3	87.67	86.73	0.0000	0.00
4	92.88	91.94	0.0000	0.00
5	143.08	142.16	0.0000	0.00
6	185.93	185.02	0.0000	0.00
7	208.65	207.75	0.0000	0.00
8	238.68	237.79	0.0000	0.00
9	242.10	241.21	0.0000	0.00
10	269.67	268.79	0.0000	0.00
11	295.20	294.33	0.0000	0.00
12	338.28	337.42	0.0000	0.00
13	345.03	344.17	0.0000	0.00
14	351.99	351.14	0.0000	0.00
15	359.37	358.52	0.0000	0.00
16	408.74	407.91	0.0000	0.00
17	464.15	463.34	0.0000	0.00
18	510.53	509.73	0.0000	0.00
19	583.31	582.54	0.0000	0.00
20	609.39	608.63	0.0000	0.00
21	726.23	725.52	0.0000	0.00
22	893.06	892.42	0.0000	0.00
23	911.48	910.85	0.0000	0.00
24	935.26	934.63	0.0000	0.00
25	959.25	958.63	0.0000	0.00
26	968.86	968.25	0.0000	0.00
27	1000.47	999.88	0.0000	0.00
28	1015.51	1014.92	0.0000	0.00
29	1035.90	1035.32	0.0000	0.00
30	1121.42	1120.88	0.0000	0.00
31	1237.94	1237.45	0.0000	0.00
32	1280.48	1280.01	0.0000	0.00
33	1339.32	1338.88	0.0000	0.00
34	1378.30	1377.88	0.0000	0.00
35	1460.71	1460.33	0.0000	0.00
36	1522.35	1522.00	0.0000	0.00
37	1729.43	1729.20	0.0000	0.00
38	1738.76	1738.53	0.0000	0.00
39	1763.73	1763.51	0.0000	0.00
40	1784.51	1784.31	0.0000	0.00
41	1847.33	1847.16	0.0000	0.00
42	2102.87	2102.86	0.0000	0.00

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2203.40	2203.45	0.0000	0.00
44	2270.21	2270.30	0.0000	0.00
45	2335.04	2335.17	0.0000	0.00
46	2421.05	2421.24	0.0000	0.00
47	2444.94	2445.14	0.0000	0.00
48	2613.74	2614.05	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 12:20:02PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.81	43 -	49	45.86	1.07E+02	88.04	1.34E+03	2.12
	2	76.15	69 -	80	75.20	1.43E+03	177.02	3.19E+03	4.20
M	3	87.67	82 -	95	86.73	3.43E+02	133.89	2.35E+03	3.87
m	4	92.88	82 -	95	91.94	3.52E+02	101.65	1.43E+03	2.40
	5	143.08	139 -	145	142.16	9.25E+01	79.69	1.09E+03	2.38
	6	185.93	180 -	190	185.02	2.16E+02	106.49	1.40E+03	1.79
	7	208.65	204 -	211	207.75	9.43E+01	72.06	7.99E+02	2.05
M	8	238.68	232 -	246	237.79	6.00E+02	78.78	6.60E+02	2.33
m	9	242.10	232 -	246	241.21	2.06E+02	76.85	5.95E+02	2.33
	10	269.67	265 -	272	268.79	5.96E+01	57.55	5.13E+02	1.68
	11	295.20	290 -	299	294.33	2.83E+02	76.67	6.87E+02	2.19
	12	338.28	333 -	341	337.42	1.33E+02	57.76	4.30E+02	2.18
M	13	345.03	342 -	356	344.17	3.81E+01	28.77	1.83E+02	2.71
m	14	351.99	342 -	356	351.14	5.58E+02	62.50	3.05E+02	2.25
	15	359.37	356 -	361	358.52	3.91E+01	34.16	2.04E+02	1.26
	16	408.74	403 -	418	407.91	7.81E+01	78.31	5.74E+02	6.40
	17	464.15	458 -	470	463.34	6.35E+01	56.90	3.51E+02	3.00
	18	510.53	498 -	517	509.73	1.60E+02	80.02	4.82E+02	3.34
	19	583.31	576 -	589	582.54	1.95E+02	56.30	2.64E+02	2.36
	20	609.39	604 -	613	608.63	3.22E+02	55.12	2.49E+02	2.27
	21	726.23	720 -	730	725.52	3.86E+01	40.41	1.95E+02	1.93
	22	893.06	890 -	896	892.42	2.28E+01	20.99	6.44E+01	3.29
	23	911.48	906 -	915	910.85	1.00E+02	40.19	1.70E+02	2.28
	24	935.26	931 -	940	934.63	3.42E+01	30.58	1.12E+02	2.27
	25	959.25	956 -	961	958.63	2.29E+01	18.68	5.23E+01	3.37
	26	968.86	963 -	974	968.25	7.07E+01	38.52	1.51E+02	3.19
	27	1000.47	988 -	1009	999.88	6.65E+01	51.93	1.87E+02	18.09
	28	1015.51	1010 -	1022	1014.92	3.03E+01	32.59	1.11E+02	10.62
	29	1035.90	1033 -	1037	1035.32	1.53E+01	16.40	4.13E+01	1.97
	30	1121.42	1115 -	1129	1120.88	1.08E+02	40.35	1.20E+02	3.52
	31	1237.94	1234 -	1242	1237.45	3.25E+01	30.18	1.17E+02	2.67
	32	1280.48	1275 -	1284	1280.01	2.41E+01	26.10	7.99E+01	2.26
	33	1339.32	1336 -	1341	1338.88	1.61E+01	12.25	1.58E+01	2.01
	34	1378.30	1372 -	1384	1377.88	2.88E+01	26.92	7.24E+01	5.14
	35	1460.71	1454 -	1466	1460.33	4.35E+02	49.02	7.76E+01	2.89
	36	1522.35	1519 -	1525	1522.00	9.00E+00	6.00	0.00E+00	1.47
	37	1729.43	1721 -	1735	1729.20	2.11E+01	12.50	7.84E+00	6.56
	38	1738.76	1736 -	1741	1738.53	6.31E+00	6.40	3.38E+00	1.58
	39	1763.73	1758 -	1769	1763.51	5.07E+01	17.32	1.26E+01	3.48
	40	1784.51	1779 -	1789	1784.31	1.30E+01	7.21	0.00E+00	3.06

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1847.33	1844 -	1849	1847.16	5.60E+00	8.19	8.80E+00	2.56
42	2102.87	2098 -	2106	2102.86	9.57E+00	9.82	8.86E+00	1.97
43	2203.40	2199 -	2207	2203.45	1.25E+01	12.85	1.71E+01	1.79
44	2270.21	2266 -	2273	2270.30	5.21E+00	6.63	3.57E+00	1.85
45	2335.04	2332 -	2337	2335.17	5.25E+00	7.07	5.50E+00	2.65
46	2421.05	2418 -	2424	2421.24	7.17E+00	6.95	3.67E+00	4.40
47	2444.94	2441 -	2448	2445.14	7.27E+00	8.72	7.45E+00	2.77
48	2613.74	2610 -	2617	2614.05	3.80E+01	12.33	0.00E+00	2.36

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 : 8/23/2017 12:20:02PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.81	43 -	49	1.07E+02	88.04	1.34E+03	7.03E+01
	2	76.15	69 -	80	1.43E+03	177.02	3.19E+03	1.32E+02
M	3	87.67	82 -	95	3.43E+02	133.89	2.35E+03	7.97E+01
m	4	92.88	82 -	95	3.52E+02	101.65	1.43E+03	6.22E+01
	5	143.08	139 -	145	9.25E+01	79.69	1.09E+03	6.36E+01
	6	185.93	180 -	190	2.16E+02	106.49	1.40E+03	4.90E+01
	7	208.65	204 -	211	9.43E+01	72.06	7.99E+02	5.70E+01
M	8	238.68	232 -	246	6.00E+02	78.78	6.60E+02	4.22E+01
m	9	242.10	232 -	246	2.06E+02	76.85	5.95E+02	4.01E+01
	10	269.67	265 -	272	5.96E+01	57.55	5.13E+02	4.56E+01
	11	295.20	290 -	299	2.83E+02	76.67	6.87E+02	5.66E+01
	12	338.28	333 -	341	1.33E+02	57.76	4.30E+02	4.35E+01
M	13	345.03	342 -	356	3.81E+01	28.77	1.83E+02	2.22E+01
m	14	351.99	342 -	356	5.58E+02	62.50	3.05E+02	2.87E+01
	15	359.37	356 -	361	3.91E+01	34.16	2.04E+02	2.61E+01
	16	408.74	403 -	418	7.81E+01	78.31	5.74E+02	6.27E+01
	17	464.15	458 -	470	6.35E+01	56.90	3.51E+02	4.49E+01
	18	510.53	498 -	517	1.60E+02	80.02	4.82E+02	2.66E+01
	19	583.31	576 -	589	1.95E+02	56.30	2.64E+02	4.02E+01

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
20	609.39	604 -	613	3.22E+02	55.12	2.49E+02	3.44E+01
21	726.23	720 -	730	3.86E+01	40.41	1.95E+02	3.16E+01
22	893.06	890 -	896	2.28E+01	20.99	6.44E+01	1.54E+01
23	911.48	906 -	915	1.00E+02	40.19	1.70E+02	2.86E+01
24	935.26	931 -	940	3.42E+01	30.58	1.12E+02	2.32E+01
25	959.25	956 -	961	2.29E+01	18.68	5.23E+01	1.32E+01
26	968.86	963 -	974	7.07E+01	38.52	1.51E+02	2.85E+01
27	1000.47	988 -	1009	6.65E+01	51.93	1.87E+02	4.05E+01
28	1015.51	1010 -	1022	3.03E+01	32.59	1.11E+02	2.52E+01
29	1035.90	1033 -	1037	1.53E+01	16.40	4.13E+01	1.18E+01
30	1121.42	1115 -	1129	1.08E+02	40.35	1.20E+02	2.84E+01
31	1237.94	1234 -	1242	3.25E+01	30.18	1.17E+02	2.30E+01
32	1280.48	1275 -	1284	2.41E+01	26.10	7.99E+01	1.99E+01
33	1339.32	1336 -	1341	1.61E+01	12.25	1.58E+01	7.61E+00
34	1378.30	1372 -	1384	2.88E+01	26.92	7.24E+01	2.03E+01
35	1460.71	1454 -	1466	4.35E+02	49.02	7.76E+01	2.12E+01
36	1522.35	1519 -	1525	9.00E+00	6.00	0.00E+00	0.00E+00
37	1729.43	1721 -	1735	2.11E+01	12.50	7.84E+00	6.97E+00
38	1738.76	1736 -	1741	6.31E+00	6.40	3.38E+00	3.26E+00
39	1763.73	1758 -	1769	5.07E+01	17.32	1.26E+01	8.10E+00
40	1784.51	1779 -	1789	1.30E+01	7.21	0.00E+00	0.00E+00
41	1847.33	1844 -	1849	5.60E+00	8.19	8.80E+00	5.49E+00
42	2102.87	2098 -	2106	9.57E+00	9.82	8.86E+00	6.27E+00
43	2203.40	2199 -	2207	1.25E+01	12.85	1.71E+01	8.82E+00
44	2270.21	2266 -	2273	5.21E+00	6.63	3.57E+00	3.95E+00
45	2335.04	2332 -	2337	5.25E+00	7.07	5.50E+00	4.43E+00
46	2421.05	2418 -	2424	7.17E+00	6.95	3.67E+00	3.64E+00
47	2444.94	2441 -	2448	7.27E+00	8.72	7.45E+00	5.63E+00
48	2613.74	2610 -	2617	3.80E+01	12.33	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/23/2017 12:20:02PM

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

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

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.81	43 -	49	45.86	1.07E+02	88.04	1.34E+03	PB-210
	2	76.15	69 -	80	75.20	1.43E+03	177.02	3.19E+03	.....
M	3	87.67	82 -	95	86.73	3.43E+02	133.89	2.35E+03	SN-126
									CD-109
									LU-176
m	4	92.88	82 -	95	91.94	3.52E+02	101.65	1.43E+03	GA-67
	5	143.08	139 -	145	142.16	9.25E+01	79.69	1.09E+03	U-235
	6	185.93	180 -	190	185.02	2.16E+02	106.49	1.40E+03	RA-226
	7	208.65	204 -	211	207.75	9.43E+01	72.06	7.99E+02	GA-67
M	8	238.68	232 -	246	237.79	6.00E+02	78.78	6.60E+02	PB-212
m	9	242.10	232 -	246	241.21	2.06E+02	76.85	5.95E+02	.....
	10	269.67	265 -	272	268.79	5.96E+01	57.55	5.13E+02	.....
	11	295.20	290 -	299	294.33	2.83E+02	76.67	6.87E+02	PB-214
	12	338.28	333 -	341	337.42	1.33E+02	57.76	4.30E+02	AC-228
M	13	345.03	342 -	356	344.17	3.81E+01	28.77	1.83E+02	EU-152
									HF-181
m	14	351.99	342 -	356	351.14	5.58E+02	62.50	3.05E+02	PB-214
	15	359.37	356 -	361	358.52	3.91E+01	34.16	2.04E+02	.....
	16	408.74	403 -	418	407.91	7.81E+01	78.31	5.74E+02	.....
	17	464.15	458 -	470	463.34	6.35E+01	56.90	3.51E+02	SB-125
	18	510.53	498 -	517	509.73	1.60E+02	80.02	4.82E+02	.....
	19	583.31	576 -	589	582.54	1.95E+02	56.30	2.64E+02	TL-208
	20	609.39	604 -	613	608.63	3.22E+02	55.12	2.49E+02	BI-214
	21	726.23	720 -	730	725.52	3.86E+01	40.41	1.95E+02	BI-212
	22	893.06	890 -	896	892.42	2.28E+01	20.99	6.44E+01	.....
	23	911.48	906 -	915	910.85	1.00E+02	40.19	1.70E+02	TL-204
									AC-228
	24	935.26	931 -	940	934.63	3.42E+01	30.58	1.12E+02	.....
	25	959.25	956 -	961	958.63	2.29E+01	18.68	5.23E+01	.....
	26	968.86	963 -	974	968.25	7.07E+01	38.52	1.51E+02	AC-228
	27	1000.47	988 -	1009	999.88	6.65E+01	51.93	1.87E+02	PA-234M
	28	1015.51	1010 -	1022	1014.92	3.03E+01	32.59	1.11E+02	.....
	29	1035.90	1033 -	1037	1035.32	1.53E+01	16.40	4.13E+01	.....
	30	1121.42	1115 -	1129	1120.88	1.08E+02	40.35	1.20E+02	TA-182
									SC-46
	31	1237.94	1234 -	1242	1237.45	3.25E+01	30.18	1.17E+02	CO-56
	32	1280.48	1275 -	1284	1280.01	2.41E+01	26.10	7.99E+01	.....
	33	1339.32	1336 -	1341	1338.88	1.61E+01	12.25	1.58E+01	.....
	34	1378.30	1372 -	1384	1377.88	2.88E+01	26.92	7.24E+01	.....
	35	1460.71	1454 -	1466	1460.33	4.35E+02	49.02	7.76E+01	K-40
	36	1522.35	1519 -	1525	1522.00	9.00E+00	6.00	0.00E+00	.....
	37	1729.43	1721 -	1735	1729.20	2.11E+01	12.50	7.84E+00	.....
	38	1738.76	1736 -	1741	1738.53	6.31E+00	6.40	3.38E+00	.....
	39	1763.73	1758 -	1769	1763.51	5.07E+01	17.32	1.26E+01	BI-214
	40	1784.51	1779 -	1789	1784.31	1.30E+01	7.21	0.00E+00	.....
	41	1847.33	1844 -	1849	1847.16	5.60E+00	8.19	8.80E+00	.....
	42	2102.87	2098 -	2106	2102.86	9.57E+00	9.82	8.86E+00	.....
	43	2203.40	2199 -	2207	2203.45	1.25E+01	12.85	1.71E+01	BI-214
	44	2270.21	2266 -	2273	2270.30	5.21E+00	6.63	3.57E+00	.....
	45	2335.04	2332 -	2337	2335.17	5.25E+00	7.07	5.50E+00	.....
	46	2421.05	2418 -	2424	2421.24	7.17E+00	6.95	3.67E+00	.....

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
47	2444.94	2441 -	2448	2445.14	7.27E+00	8.72	7.45E+00	.....
48	2613.74	2610 -	2617	2614.05	3.80E+01	12.33	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/23/2017 12:20:02PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.81	1.07E+02	88.04	1.66E-02	1.56E-03
	2	76.15	1.43E+03	177.02	2.32E-02	1.91E-03
M	3	87.67	3.43E+02	133.89	2.37E-02	2.16E-03
m	4	92.88	3.52E+02	101.65	2.37E-02	2.09E-03
	5	143.08	9.25E+01	79.69	2.04E-02	1.58E-03
	6	185.93	2.16E+02	106.49	1.69E-02	1.40E-03
	7	208.65	9.43E+01	72.06	1.54E-02	1.29E-03
M	8	238.68	6.00E+02	78.78	1.36E-02	1.14E-03
m	9	242.10	2.06E+02	76.85	1.34E-02	1.13E-03
	10	269.67	5.96E+01	57.55	1.21E-02	9.93E-04
	11	295.20	2.83E+02	76.67	1.10E-02	9.13E-04
	12	338.28	1.33E+02	57.76	9.60E-03	8.23E-04
M	13	345.03	3.81E+01	28.77	9.41E-03	8.09E-04
m	14	351.99	5.58E+02	62.50	9.21E-03	7.94E-04
	15	359.37	3.91E+01	34.16	9.02E-03	7.78E-04
	16	408.74	7.81E+01	78.31	7.90E-03	7.03E-04
	17	464.15	6.35E+01	56.90	6.93E-03	6.81E-04
	18	510.53	1.60E+02	80.02	6.29E-03	6.61E-04
	19	583.31	1.95E+02	56.30	5.50E-03	6.31E-04
	20	609.39	3.22E+02	55.12	5.27E-03	6.20E-04
	21	726.23	3.86E+01	40.41	4.46E-03	5.18E-04
	22	893.06	2.28E+01	20.99	3.68E-03	3.08E-04
	23	911.48	1.00E+02	40.19	3.62E-03	2.99E-04
	24	935.26	3.42E+01	30.58	3.54E-03	2.93E-04
	25	959.25	2.29E+01	18.68	3.46E-03	2.88E-04
	26	968.86	7.07E+01	38.52	3.43E-03	2.85E-04
	27	1000.47	6.65E+01	51.93	3.33E-03	2.78E-04
	28	1015.51	3.03E+01	32.59	3.29E-03	2.74E-04

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
29	1035.90	1.53E+01	16.40	3.23E-03	2.70E-04
30	1121.42	1.08E+02	40.35	3.01E-03	2.50E-04
31	1237.94	3.25E+01	30.18	2.76E-03	2.33E-04
32	1280.48	2.41E+01	26.10	2.68E-03	2.31E-04
33	1339.32	1.61E+01	12.25	2.58E-03	2.26E-04
34	1378.30	2.88E+01	26.92	2.51E-03	2.20E-04
35	1460.71	4.35E+02	49.02	2.38E-03	2.08E-04
36	1522.35	9.00E+00	6.00	2.30E-03	1.99E-04
37	1729.43	2.11E+01	12.50	2.04E-03	1.67E-04
38	1738.76	6.31E+00	6.40	2.03E-03	1.66E-04
39	1763.73	5.07E+01	17.32	2.00E-03	1.62E-04
40	1784.51	1.30E+01	7.21	1.98E-03	1.59E-04
41	1847.33	5.60E+00	8.19	1.91E-03	1.51E-04
42	2102.87	9.57E+00	9.82	1.67E-03	1.51E-04
43	2203.40	1.25E+01	12.85	1.58E-03	1.51E-04
44	2270.21	5.21E+00	6.63	1.53E-03	1.51E-04
45	2335.04	5.25E+00	7.07	1.48E-03	1.51E-04
46	2421.05	7.17E+00	6.95	1.41E-03	1.51E-04
47	2444.94	7.27E+00	8.72	1.40E-03	1.51E-04
48	2613.74	3.80E+01	12.33	1.28E-03	1.51E-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 : 8/23/2017 12:20:02PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.81	1.07E+02	88.04	2.81E+01	8.29E+00	7.92E+01	8.84E+01
	2	76.15	1.43E+03	177.02			1.43E+03	1.77E+02
M	3	87.67	3.43E+02	133.89			3.43E+02	1.34E+02
m	4	92.88	3.52E+02	101.65	5.99E+01	8.61E+00	2.93E+02	1.02E+02
	5	143.08	9.25E+01	79.69			9.25E+01	7.97E+01
	6	185.93	2.16E+02	106.49	2.43E+01	7.50E+00	1.92E+02	1.07E+02
	7	208.65	9.43E+01	72.06			9.43E+01	7.21E+01
M	8	238.68	6.00E+02	78.78	1.06E+01	6.01E+00	5.89E+02	7.90E+01
m	9	242.10	2.06E+02	76.85			2.06E+02	7.68E+01
	10	269.67	5.96E+01	57.55			5.96E+01	5.75E+01

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	11	295.20	2.83E+02	76.67			2.83E+02	7.67E+01
	12	338.28	1.33E+02	57.76			1.33E+02	5.78E+01
M	13	345.03	3.81E+01	28.77			3.81E+01	2.88E+01
m	14	351.99	5.58E+02	62.50			5.58E+02	6.25E+01
	15	359.37	3.91E+01	34.16			3.91E+01	3.42E+01
	16	408.74	7.81E+01	78.31			7.81E+01	7.83E+01
	17	464.15	6.35E+01	56.90			6.35E+01	5.69E+01
	18	510.53	1.60E+02	80.02	4.55E+01	4.99E+00	1.15E+02	8.02E+01
	19	583.31	1.95E+02	56.30			1.95E+02	5.63E+01
	20	609.39	3.22E+02	55.12			3.22E+02	5.51E+01
	21	726.23	3.86E+01	40.41			3.86E+01	4.04E+01
	22	893.06	2.28E+01	20.99			2.28E+01	2.10E+01
	23	911.48	1.00E+02	40.19			1.00E+02	4.02E+01
	24	935.26	3.42E+01	30.58			3.42E+01	3.06E+01
	25	959.25	2.29E+01	18.68			2.29E+01	1.87E+01
	26	968.86	7.07E+01	38.52			7.07E+01	3.85E+01
	27	1000.47	6.65E+01	51.93			6.65E+01	5.19E+01
	28	1015.51	3.03E+01	32.59			3.03E+01	3.26E+01
	29	1035.90	1.53E+01	16.40			1.53E+01	1.64E+01
	30	1121.42	1.08E+02	40.35			1.08E+02	4.04E+01
	31	1237.94	3.25E+01	30.18			3.25E+01	3.02E+01
	32	1280.48	2.41E+01	26.10			2.41E+01	2.61E+01
	33	1339.32	1.61E+01	12.25			1.61E+01	1.22E+01
	34	1378.30	2.88E+01	26.92			2.88E+01	2.69E+01
	35	1460.71	4.35E+02	49.02			4.35E+02	4.90E+01
	36	1522.35	9.00E+00	6.00			9.00E+00	6.00E+00
	37	1729.43	2.11E+01	12.50			2.11E+01	1.25E+01
	38	1738.76	6.31E+00	6.40			6.31E+00	6.40E+00
	39	1763.73	5.07E+01	17.32			5.07E+01	1.73E+01
	40	1784.51	1.30E+01	7.21			1.30E+01	7.21E+00
	41	1847.33	5.60E+00	8.19			5.60E+00	8.19E+00
	42	2102.87	9.57E+00	9.82			9.57E+00	9.82E+00
	43	2203.40	1.25E+01	12.85			1.25E+01	1.28E+01
	44	2270.21	5.21E+00	6.63			5.21E+00	6.63E+00
	45	2335.04	5.25E+00	7.07			5.25E+00	7.07E+00
	46	2421.05	7.17E+00	6.95			7.17E+00	6.95E+00
	47	2444.94	7.27E+00	8.72			7.27E+00	8.72E+00
	48	2613.74	3.80E+01	12.33			3.80E+01	1.23E+01

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

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 12:20:02PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.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	46.81	1.07E+02	88.04	2.81E+01	8.29E+00	7.92E+01	8.84E+01
	2	76.15	1.43E+03	177.02			1.43E+03	1.77E+02
M	3	87.67	3.43E+02	133.89			3.43E+02	1.34E+02
m	4	92.88	3.52E+02	101.65	5.99E+01	8.61E+00	2.93E+02	1.02E+02
	5	143.08	9.25E+01	79.69			9.25E+01	7.97E+01
	6	185.93	2.16E+02	106.49	2.43E+01	7.50E+00	1.92E+02	1.07E+02
	7	208.65	9.43E+01	72.06			9.43E+01	7.21E+01
M	8	238.68	6.00E+02	78.78	1.06E+01	6.01E+00	5.89E+02	7.90E+01
m	9	242.10	2.06E+02	76.85			2.06E+02	7.68E+01
	10	269.67	5.96E+01	57.55			5.96E+01	5.75E+01
	11	295.20	2.83E+02	76.67			2.83E+02	7.67E+01
	12	338.28	1.33E+02	57.76			1.33E+02	5.78E+01
M	13	345.03	3.81E+01	28.77			3.81E+01	2.88E+01
m	14	351.99	5.58E+02	62.50			5.58E+02	6.25E+01
	15	359.37	3.91E+01	34.16			3.91E+01	3.42E+01
	16	408.74	7.81E+01	78.31			7.81E+01	7.83E+01
	17	464.15	6.35E+01	56.90			6.35E+01	5.69E+01
	18	510.53	1.60E+02	80.02	4.55E+01	4.99E+00	1.15E+02	8.02E+01
	19	583.31	1.95E+02	56.30			1.95E+02	5.63E+01
	20	609.39	3.22E+02	55.12			3.22E+02	5.51E+01
	21	726.23	3.86E+01	40.41			3.86E+01	4.04E+01
	22	893.06	2.28E+01	20.99			2.28E+01	2.10E+01
	23	911.48	1.00E+02	40.19			1.00E+02	4.02E+01
	24	935.26	3.42E+01	30.58			3.42E+01	3.06E+01
	25	959.25	2.29E+01	18.68			2.29E+01	1.87E+01
	26	968.86	7.07E+01	38.52			7.07E+01	3.85E+01
	27	1000.47	6.65E+01	51.93			6.65E+01	5.19E+01
	28	1015.51	3.03E+01	32.59			3.03E+01	3.26E+01
	29	1035.90	1.53E+01	16.40			1.53E+01	1.64E+01
	30	1121.42	1.08E+02	40.35			1.08E+02	4.04E+01
	31	1237.94	3.25E+01	30.18			3.25E+01	3.02E+01
	32	1280.48	2.41E+01	26.10			2.41E+01	2.61E+01
	33	1339.32	1.61E+01	12.25			1.61E+01	1.22E+01
	34	1378.30	2.88E+01	26.92			2.88E+01	2.69E+01
	35	1460.71	4.35E+02	49.02			4.35E+02	4.90E+01
	36	1522.35	9.00E+00	6.00			9.00E+00	6.00E+00
	37	1729.43	2.11E+01	12.50			2.11E+01	1.25E+01
	38	1738.76	6.31E+00	6.40			6.31E+00	6.40E+00
	39	1763.73	5.07E+01	17.32			5.07E+01	1.73E+01
	40	1784.51	1.30E+01	7.21			1.30E+01	7.21E+00
	41	1847.33	5.60E+00	8.19			5.60E+00	8.19E+00

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	2102.87	9.57E+00	9.82			9.57E+00	9.82E+00
43	2203.40	1.25E+01	12.85			1.25E+01	1.28E+01
44	2270.21	5.21E+00	6.63			5.21E+00	6.63E+00
45	2335.04	5.25E+00	7.07			5.25E+00	7.07E+00
46	2421.05	7.17E+00	6.95			7.17E+00	6.95E+00
47	2444.94	7.27E+00	8.72			7.27E+00	8.72E+00
48	2613.74	3.80E+01	12.33			3.80E+01	1.23E+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	2.12E+01	3.05E+00
CD-109	0.979	88.03	*	3.72	5.61E+00	2.27E+00
SN-126	0.998	87.57	*	37.00	4.87E-01	1.95E-01
TL-208	0.815	583.14	*	30.22	1.46E+00	4.52E-01
		860.37		4.48		
		2614.66	*	35.85	1.03E+00	3.55E-01
PB-210	0.985	46.50	*	4.25	1.41E+00	1.58E+00
BI-212	0.668	727.17	*	11.80	9.12E-01	9.60E-01
		1620.62		2.75		
PB-212	0.897	238.63	*	44.60	1.21E+00	1.91E-01
		300.09		3.41		
BI-214	0.715	609.31	*	46.30	1.64E+00	3.40E-01
		1120.29		15.10		
		1764.49	*	15.80	1.99E+00	7.00E-01
		2204.22	*	4.98	1.96E+00	2.03E+00
PB-214	0.999	295.21	*	19.19	1.66E+00	4.70E-01
		351.92	*	37.19	2.02E+00	2.86E-01
RA-226	0.988	186.21	*	3.28	4.29E+00	8.20E+00
AC-228	0.984	338.32	*	11.40	1.51E+00	6.68E-01
		911.07	*	27.70	1.24E+00	5.08E-01
		969.11	*	16.60	1.54E+00	8.51E-01
PA-234M	0.952	1001.03	*	0.92	2.69E+01	2.12E+01

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

* = 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 : 8/23/2017 12:20:02PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.15	3.97889E-01	6.18		
m	4	92.88	8.12800E-02	17.43	Sum	
	5	143.08	2.56914E-02	43.08	Tol.	U-235
	7	208.65	2.61831E-02	38.22	Tol.	GA-67
m	9	242.10	5.72892E-02	18.63		
	10	269.67	1.65603E-02	48.27		
M	13	345.03	1.05749E-02	37.79	Tol.	EU-152 HF-181
	15	359.37	1.08688E-02	43.65		
	16	408.74	2.16895E-02	50.14		
	17	464.15	1.76389E-02	44.80	Tol.	SB-125
	18	510.53	3.18522E-02	34.96		
	22	893.06	6.33333E-03	46.03		
	24	935.26	9.50463E-03	44.68	Sum	
	25	959.25	6.34921E-03	40.87	Sum	
	28	1015.51	8.41731E-03	53.78	Sum	
	29	1035.90	4.25926E-03	53.48		
	30	1121.42	3.00289E-02	18.66	Tol.	TA-182
	31	1237.94	9.02473E-03	46.44		
	32	1280.48	6.68620E-03	54.21		
	33	1339.32	4.46759E-03	38.07	Sum	
	34	1378.30	8.00000E-03	46.74		
	36	1522.35	2.50000E-03	33.33		
	37	1729.43	5.85556E-03	29.65		
	38	1738.76	1.75347E-03	50.72		
	40	1784.51	3.61111E-03	27.74		
	41	1847.33	1.55556E-03	73.08		
	42	2102.87	2.65873E-03	51.32	S-Esc	
	44	2270.21	1.44841E-03	63.61		
	45	2335.04	1.45833E-03	67.34		
	46	2421.05	1.99074E-03	48.46		
	47	2444.94	2.02020E-03	59.93		

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

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	0.99	1460.81	*	10.67	2.12E+01	3.05E+00
CD-109	0.97	88.03	*	3.72	5.61E+00	2.27E+00
SN-126	0.99	87.57	*	37.00	4.87E-01	1.95E-01
TL-208	0.81	583.14	*	30.22	1.46E+00	4.52E-01
		860.37		4.48		
		2614.66	*	35.85	1.03E+00	3.55E-01
PB-210	0.98	46.50	*	4.25	1.41E+00	1.58E+00
BI-212	0.66	727.17	*	11.80	9.12E-01	9.60E-01
		1620.62		2.75		
PB-212	0.89	238.63	*	44.60	1.21E+00	1.91E-01
		300.09		3.41		
BI-214	0.71	609.31	*	46.30	1.64E+00	3.40E-01
		1120.29		15.10		
		1764.49	*	15.80	1.99E+00	7.00E-01
		2204.22	*	4.98	1.96E+00	2.03E+00
PB-214	0.99	295.21	*	19.19	1.66E+00	4.70E-01
		351.92	*	37.19	2.02E+00	2.86E-01
RA-226	0.98	186.21	*	3.28	4.29E+00	8.20E+00
AC-228	0.98	338.32	*	11.40	1.51E+00	6.68E-01
		911.07	*	27.70	1.24E+00	5.08E-01
		969.11	*	16.60	1.54E+00	8.51E-01
PA-234M	0.95	1001.03	*	0.92	2.69E+01	2.12E+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 1707090-03

HTC-A06-S001-1218-01

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.998	2.12E+01	3.05E+00	
?	CD-109	0.979	5.61E+00	2.27E+00	
?	SN-126	0.998	4.87E-01	1.95E-01	
	TL-208	0.815	1.19E+00	2.79E-01	
	PB-210	0.985	1.41E+00	1.58E+00	
	BI-212	0.668	9.12E-01	9.60E-01	
	PB-212	0.897	1.21E+00	1.91E-01	
	BI-214	0.715	1.71E+00	3.03E-01	
	PB-214	0.999	1.92E+00	2.44E-01	
	RA-226	0.988	4.29E+00	8.20E+00	
	AC-228	0.984	1.38E+00	3.65E-01	
	PA-234M	0.952	2.69E+01	2.12E+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 1707090-03

HTC-A06-S001-1218-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 12:20:02PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.15	3.97889E-01	6.18		
m	4	92.88	8.12800E-02	17.43	Sum	
	5	143.08	2.56914E-02	43.08	Tol.	U-235
	7	208.65	2.61831E-02	38.22	Tol.	GA-67
m	9	242.10	5.72892E-02	18.63		
	10	269.67	1.65603E-02	48.27		
M	13	345.03	1.05749E-02	37.79	Tol.	EU-152 HF-181
	15	359.37	1.08688E-02	43.65		
	16	408.74	2.16895E-02	50.14		
	17	464.15	1.76389E-02	44.80	Tol.	SB-125
	18	510.53	3.18522E-02	34.96		
	22	893.06	6.33333E-03	46.03		
	24	935.26	9.50463E-03	44.68	Sum	
	25	959.25	6.34921E-03	40.87	Sum	
	28	1015.51	8.41731E-03	53.78	Sum	
	29	1035.90	4.25926E-03	53.48		
	30	1121.42	3.00289E-02	18.66	Tol.	TA-182
	31	1237.94	9.02473E-03	46.44		
	32	1280.48	6.68620E-03	54.21		
	33	1339.32	4.46759E-03	38.07	Sum	
	34	1378.30	8.00000E-03	46.74		
	36	1522.35	2.50000E-03	33.33		
	37	1729.43	5.85556E-03	29.65		
	38	1738.76	1.75347E-03	50.72		
	40	1784.51	3.61111E-03	27.74		
	41	1847.33	1.55556E-03	73.08		
	42	2102.87	2.65873E-03	51.32	S-Esc	
	44	2270.21	1.44841E-03	63.61		
	45	2335.04	1.45833E-03	67.34		
	46	2421.05	1.99074E-03	48.46		
	47	2444.94	2.02020E-03	59.93		

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

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	2.08E+00	3.53E+00	3.53E+00
+		NA-22	1274.54		99.94	5.90E-04	1.80E-01	1.80E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	-1.51E-02	1.01E-01	1.01E-01
+		K-40	1460.81	*	10.67	2.12E+01	2.20E+00	2.20E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-5.36E-02	9.10E-02	9.10E-02
			78.34		96.00	4.99E-01		1.19E-01
+		SC-46	889.25		99.98	3.74E-02	3.40E-01	3.40E-01
			1120.51		99.99	6.64E-01		5.27E-01
+		V-48	983.52		99.98	3.28E+00	1.11E+01	1.11E+01
			1312.10		97.50	1.43E+00		1.15E+01
+		CR-51	320.08		9.83	3.85E+00	1.03E+01	1.03E+01
+		MN-54	834.83		99.97	-9.78E-02	1.64E-01	1.64E-01
+		CO-56	846.75		99.96	-4.26E-02	3.11E-01	3.11E-01
			1037.75		14.03	-2.63E-01		2.42E+00
			1238.25		67.00	3.05E-01		7.56E-01
			1771.40		15.51	2.89E-01		1.60E+00
			2598.48		16.90	-5.90E-01		1.00E+00
+		CO-57	122.06		85.51	-9.29E-02	9.48E-02	9.48E-02
			136.48		10.60	1.56E-01		8.20E-01
+		CO-58	810.76		99.40	1.27E-01	3.41E-01	3.41E-01
+		FE-59	1099.22		56.50	2.20E-01	1.22E+00	1.22E+00
			1291.56		43.20	2.42E-01		1.83E+00
+		CO-60	1173.22		100.00	2.08E-02	1.42E-01	1.96E-01
			1332.49		100.00	3.88E-03		1.42E-01
+		ZN-65	1115.52		50.75	5.78E-03	5.02E-01	5.02E-01
+		GA-67	93.31		35.70	3.37E+08	3.29E+08	3.29E+08
			208.95		2.24	4.27E+09		5.13E+09
			300.22		16.00	2.79E+08		8.20E+08
+		SE-75	121.11		16.70	-3.55E-01	2.02E-01	6.71E-01

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	-3.64E-02	2.02E-01	2.02E-01
		264.65		59.80	3.21E-02		2.29E-01
		279.53		25.20	2.04E-01		5.91E-01
		400.65		11.40	-5.27E-01		1.39E+00
+	RB-82	776.52		13.00	-7.39E+00	1.50E+01	1.50E+01
+	RB-83	520.41		46.00	5.62E-02	4.43E-01	4.43E-01
		529.64		30.30	2.05E-01		7.39E-01
		552.65		16.40	4.08E-01		1.32E+00
+	KR-85	513.99		0.43	3.18E+01	3.04E+01	3.04E+01
+	SR-85	513.99		99.27	3.94E-01	3.77E-01	3.77E-01
+	Y-88	898.02		93.40	-4.25E-02	2.16E-01	2.61E-01
		1836.01		99.38	-7.43E-03		2.16E-01
+	MO-93	263.06		56.72	4.12E-03	1.15E-01	1.38E-01
		684.67		99.68	2.98E-02		1.20E-01
		1477.11		99.08	5.40E-03		1.15E-01
+	NB-93M	16.57		9.43	1.67E+01	8.83E+00	8.83E+00
+	NB-94	702.63		100.00	3.65E-02	1.32E-01	1.32E-01
		871.10		100.00	2.98E-03		1.41E-01
+	NB-95	765.79		99.81	3.52E-01	9.95E-01	9.95E-01
+	NB-95M	235.69		25.00	1.65E+08	9.04E+07	9.04E+07
+	ZR-95	724.18		43.70	6.85E-01	6.83E-01	1.02E+00
		756.72		55.30	1.44E-01		6.83E-01
+	MO-99	181.06		6.20	2.70E+10	6.94E+10	8.58E+10
		739.58		12.80	-2.41E+10		6.94E+10
		778.00		4.50	-1.38E+11		2.02E+11
+	RU-103	497.08		89.00	-5.66E-02	5.58E-01	5.58E-01
+	RU-106	621.84		9.80	-8.72E-01	1.26E+00	1.26E+00
+	AG-108M	433.93		89.90	-5.76E-03	1.02E-01	1.02E-01
		614.37		90.40	1.68E-02		1.28E-01
		722.95		90.50	9.70E-03		1.60E-01
+	CD-109	88.03	*	3.72	5.61E+00	4.44E+00	4.44E+00
+	AG-110M	657.75		93.14	-1.00E-01	1.75E-01	1.75E-01
		677.61		10.53	8.22E-02		1.55E+00
		706.67		16.46	-1.46E-01		1.05E+00
		763.93		21.98	-3.78E-01		7.98E-01
		884.67		71.63	1.58E-01		2.57E-01
		1384.27		23.94	-2.17E-02		8.25E-01
+	CD-113M	263.70		0.02	-6.35E+01	3.35E+02	3.35E+02
+	SN-113	255.12		1.93	-5.96E-01	2.47E-01	7.95E+00
		391.69		64.90	-1.42E-01		2.47E-01
+	TE123M	159.00		84.10	-9.90E-02	1.47E-01	1.47E-01
+	SB-124	602.71		97.87	3.45E-02	3.42E-01	3.42E-01
		645.85		7.26	2.15E-01		4.59E+00
		722.78		11.10	2.47E-01		4.08E+00
		1691.02		49.00	-7.62E-02		5.72E-01
+	I-125	35.49		6.49	-3.69E+00	5.96E+00	5.96E+00
+	SB-125	176.33		6.89	8.41E-01	3.18E-01	1.15E+00
		427.89		29.33	-8.23E-02		3.18E-01

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	6.05E-01	3.18E-01	1.09E+00
		600.56		17.80	2.47E-01		6.54E-01
		635.90		11.32	-9.51E-02		9.66E-01
+	SB-126	414.70		83.30	-1.83E+01	2.65E+01	2.65E+01
		666.33		99.60	1.59E+01		3.44E+01
		695.00		99.60	-1.02E+01		3.14E+01
		720.50		53.80	-2.34E+00		6.26E+01
+	SN-126	87.57	*	37.00	4.87E-01	3.85E-01	3.85E-01
+	SB-127	473.00		25.00	1.66E+06	1.85E+07	2.21E+07
		685.20		35.70	4.61E+06		1.85E+07
		783.80		14.70	2.43E+07		5.67E+07
+	I-129	29.78		57.00	5.42E-02	3.20E-01	3.20E-01
		33.60		13.20	-2.90E-01		1.05E+00
		39.58		7.52	2.47E-01		1.44E+00
+	I-131	284.30		6.05	-1.47E+03	5.30E+02	6.90E+03
		364.48		81.20	-2.27E+02		5.30E+02
		636.97		7.26	-5.98E+02		7.40E+03
		722.89		1.80	2.51E+03		4.14E+04
+	TE-132	49.72		13.10	8.09E+06	1.25E+08	1.03E+09
		228.16		88.00	-1.61E+07		1.25E+08
+	BA-133	81.00		33.00	-7.41E-01	2.06E-01	2.74E-01
		302.84		17.80	4.88E-02		4.85E-01
		356.01		60.00	-1.55E-01		2.06E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-3.11E+05	1.15E+05	1.15E+05
+	CS-134	563.23		8.38	5.72E-01	1.49E-01	1.39E+00
		569.32		15.43	4.85E-02		7.17E-01
		604.70		97.60	2.75E-02		1.49E-01
		795.84		85.40	5.87E-02		1.76E-01
		801.93		8.73	-9.51E-01		1.63E+00
+	CS-135	268.24		16.00	1.96E-01	5.18E-01	5.18E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	-3.12E+01	2.37E+01	1.74E+02
		163.89		4.61	7.62E+01		2.88E+02
		176.55		13.56	8.88E+01		1.03E+02
		273.65		12.66	-1.99E+01		1.19E+02
		340.57		48.50	1.54E+01		3.97E+01
		818.50		99.70	1.51E+00		2.37E+01
		1048.07		79.60	2.23E+00		3.50E+01
		1235.34		19.70	-7.13E+00		2.09E+02
+	CS-137	661.65		85.12	3.73E-02	1.55E-01	1.55E-01
+	LA-138	788.74		34.00	8.62E-02	2.05E-01	4.31E-01
		1435.80		66.00	6.21E-02		2.05E-01
+	CE-139	165.85		80.35	4.89E-02	1.46E-01	1.46E-01
+	BA-140	162.64		6.70	1.20E+02	8.30E+01	2.31E+02
		304.84		4.50	-1.66E+02		3.84E+02
		423.70		3.20	-1.00E+02		6.12E+02

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	437.55	2.00	2.94E+02	8.30E+01	9.94E+02
		537.32	25.00	5.15E+00		8.30E+01
+	LA-140	328.77	20.50	4.75E+01	3.36E+01	9.21E+01
		487.03	45.50	3.18E+01		4.80E+01
		815.85	23.50	-4.90E+01		1.12E+02
		1596.49	95.49	6.46E+00		3.36E+01
+	CE-141	145.44	48.40	5.51E-01	1.27E+00	1.27E+00
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-5.32E-01	7.86E-01	7.86E-01
+	PM-144	476.78	42.00	2.51E-02	1.36E-01	2.88E-01
		618.01	98.60	3.72E-02		1.36E-01
		696.49	99.49	3.29E-02		1.55E-01
+	PM-145	36.85	21.70	-4.61E-01	2.87E-01	5.37E-01
		37.36	39.70	-2.46E-01		2.87E-01
		42.30	15.10	1.04E-01		6.75E-01
		72.40	2.31	-1.21E+01		4.31E+00
+	PM-146	453.90	39.94	1.01E-01	2.46E-01	2.46E-01
		735.90	14.01	4.79E-01		9.29E-01
		747.13	13.10	-9.22E-02		9.71E-01
+	ND-147	91.11	28.90	3.29E+02	1.61E+02	1.61E+02
		531.02	13.10	9.27E+01		3.91E+02
+	PM-149	285.90	3.10	1.15E+13	8.07E+13	8.07E+13
+	EU-152	121.78	20.50	-3.05E-01	3.11E-01	3.11E-01
		244.69	5.40	1.20E-01		1.83E+00
		344.27	19.13	-2.26E-01		4.70E-01
		778.89	9.20	-9.90E-01		1.49E+00
		964.01	10.40	-2.18E+00		1.59E+00
		1085.78	7.22	5.16E-01		2.11E+00
		1112.02	9.60	5.13E-01		1.79E+00
		1407.95	14.94	-3.68E-01		8.21E-01
+	GD-153	97.43	31.30	4.67E-02	2.95E-01	2.95E-01
		103.18	22.20	-1.39E-01		3.78E-01
+	EU-154	123.07	40.50	-1.01E-01	1.60E-01	1.60E-01
		723.30	19.70	5.30E-01		7.88E-01
		873.19	11.50	-1.51E-01		1.20E+00
		996.32	10.30	-5.80E-01		1.46E+00
		1004.76	17.90	7.41E-01		9.46E-01
		1274.45	35.50	1.58E-03		4.81E-01
+	EU-155	86.50	30.90	1.40E-01	2.88E-01	2.88E-01
		105.30	20.70	-2.15E-01		3.13E-01
+	EU-156	811.77	10.40	2.74E+00	1.09E+02	1.09E+02
		1153.47	7.20	2.78E+01		2.29E+02
		1230.71	8.90	2.42E+01		1.99E+02
+	HO-166M	184.41	72.60	1.71E-01	1.22E-01	1.22E-01
		280.45	29.60	4.04E-02		2.82E-01
		410.94	11.10	6.88E-01		9.40E-01
		711.69	54.10	5.00E-02		2.30E-01

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	-4.35E+00	6.95E+01	6.95E+01
+	HF-172	67.35		5.31	-1.14E-01	6.64E-01	1.83E+00
		125.81		11.30	7.45E-02		6.64E-01
+	LU-172	181.53		20.60	5.64E+02	6.53E+03	1.06E+04
		900.72		29.81	-8.40E+03		1.17E+04
		1093.66		62.50	-2.04E+03		6.53E+03
+	LU-173	100.72		5.24	-8.56E-01	4.57E-01	1.37E+00
		272.11		21.20	-2.40E-02		4.57E-01
+	HF-175	343.40		84.00	-1.35E-01	2.81E-01	2.81E-01
+	LU-176	88.34		13.30	-3.78E-01	8.26E-02	6.45E-01
		201.83		86.00	9.58E-03		9.07E-02
		306.78		94.00	-2.52E-02		8.26E-02
+	HF-181	133.02		41.70	-1.63E-01	6.01E-01	8.18E-01
		345.85		17.20	-1.07E+01		2.53E+00
		482.03		82.80	-4.41E-03		6.01E-01
+	TA-182	67.75		41.20	-2.23E-01	3.79E-01	3.79E-01
		1121.30		34.90	1.73E+00		1.22E+00
		1189.05		16.23	-7.75E-02		1.97E+00
		1221.41		26.98	2.63E-01		1.29E+00
		1231.02		11.44	6.90E-02		3.04E+00
+	IR-192	308.46		29.68	-2.07E-02	4.92E-01	6.58E-01
		468.07		48.10	-3.44E-01		4.92E-01
+	HG-203	279.19		77.30	1.90E-01	4.78E-01	4.78E-01
+	TL-204	374.74		94.11	-8.53E-03	1.01E-01	1.01E-01
		899.15		99.16	-4.50E-02		1.30E-01
		911.74		91.10	3.86E-01		2.56E-01
+	BI-207	569.67		97.72	7.04E-03	1.04E-01	1.04E-01
		1063.62		74.90	7.96E-02		2.05E-01
+	TL-208	583.14	*	30.22	1.46E+00	7.32E-02	6.20E-01
		860.37		4.48	4.22E-02		3.13E+00
		2614.66	*	35.85	1.03E+00		7.32E-02
+	BI-210M	262.00		45.00	3.55E-04	1.77E-01	1.77E-01
		300.00		23.00	1.37E-01		4.03E-01
+	PB-210	46.50	*	4.25	1.41E+00	2.58E+00	2.58E+00
+	PB-211	404.84		2.90	-8.05E-02	3.45E+00	3.45E+00
		831.96		2.90	1.20E+00		4.91E+00
+	BI-212	727.17	*	11.80	9.12E-01	1.56E+00	1.56E+00
		1620.62		2.75	-6.10E-01		4.19E+00
+	PB-212	238.63	*	44.60	1.21E+00	3.70E-01	3.70E-01
		300.09		3.41	9.24E-01		2.72E+00
+	BI-214	609.31	*	46.30	1.64E+00	3.64E-01	3.64E-01
		1120.29		15.10	1.94E+00		1.54E+00
		1764.49	*	15.80	1.99E+00		7.44E-01
		2204.22	*	4.98	1.96E+00		3.21E+00
+	PB-214	295.21	*	19.19	1.66E+00	4.54E-01	6.81E-01
		351.92	*	37.19	2.02E+00		4.54E-01
+	RN-219	401.80		6.50	3.81E-02	1.44E+00	1.44E+00
+	RA-223	323.87		3.88	-1.09E+00	2.14E+00	2.14E+00

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98		3.95	1.65E+01	3.66E+00	3.66E+00
+	RA-225	40.00		31.00	6.11E+00	3.57E+01	3.57E+01
+	RA-226	186.21	*	3.28	4.29E+00	3.85E+00	3.85E+00
+	TH-227	50.10		8.40	8.71E-03	1.07E+00	1.11E+00
		236.00		11.50	1.95E+00		1.07E+00
		256.20		6.30	7.63E-01		1.37E+00
+	AC-228	338.32	*	11.40	1.51E+00	7.44E-01	1.02E+00
		911.07	*	27.70	1.24E+00		7.44E-01
		969.11	*	16.60	1.54E+00		1.30E+00
+	TH-230	48.44		16.90	3.44E-01	5.71E-01	5.71E-01
		62.85		4.60	1.31E+00		2.00E+00
		67.67		0.37	-1.37E+01		2.32E+01
+	PA-231	283.67		1.60	-1.08E+00	3.68E+00	5.06E+00
		302.67		2.30	3.70E-01		3.68E+00
+	TH-231	25.64		14.70	-3.05E-01	1.25E+00	1.78E+00
		84.21		6.40	-1.90E+00		1.25E+00
+	PA-233	311.98		38.60	-1.21E-01	2.62E+00	2.62E+00
+	PA-234	131.20		20.40	2.88E-02	3.37E-01	3.37E-01
		733.99		8.80	4.83E-01		1.42E+00
		946.00		12.00	5.65E-01		1.23E+00
+	PA-234M	1001.03	*	0.92	2.69E+01	3.40E+01	3.40E+01
+	TH-234	63.29		3.80	1.58E+00	2.41E+00	2.41E+00
+	U-235	143.76		10.50	2.44E-01	7.03E-01	7.03E-01
		163.35		4.70	7.96E-01		1.53E+00
		205.31		4.70	-1.32E-01		1.64E+00
+	NP-237	86.50		12.60	3.31E-01	6.79E-01	6.79E-01
+	NP-239	106.10		22.70	-5.88E+11	1.30E+12	1.30E+12
		228.18		10.70	-4.31E+11		3.36E+12
		277.60		14.10	7.21E+11		2.77E+12
+	AM-241	59.54		35.90	-5.88E-02	2.55E-01	2.55E-01
+	AM-243	74.67		66.00	9.70E-01	1.84E-01	1.84E-01
+	CM-243	209.75		3.29	-6.67E-01	6.00E-01	2.43E+00
		228.14		10.60	-9.34E-02		7.29E-01
		277.60		14.00	1.56E-01		6.00E-01

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

Analysis Report for 1707090-03

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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	3.53E+00	3.53E+00	2.08E+00	1.68E+00
	NA-22	1274.54		99.94	1.80E-01	1.80E-01	5.90E-04	8.32E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	1.01E-01	1.01E-01	-1.51E-02	4.20E-02
+	K-40	1460.81	*	10.67	2.20E+00	2.20E+00	2.12E+01	1.03E+00
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	9.10E-02	9.10E-02	-5.36E-02	4.47E-02
		78.34		96.00	1.19E-01		4.99E-01	5.88E-02
	SC-46	889.25		99.98	3.40E-01	3.40E-01	3.74E-02	1.59E-01
		1120.51		99.99	5.27E-01		6.64E-01	2.51E-01
	V-48	983.52		99.98	1.11E+01	1.11E+01	3.28E+00	5.20E+00
		1312.10		97.50	1.15E+01		1.43E+00	5.27E+00
	CR-51	320.08		9.83	1.03E+01	1.03E+01	3.85E+00	4.94E+00
	MN-54	834.83		99.97	1.64E-01	1.64E-01	-9.78E-02	7.69E-02
	CO-56	846.75		99.96	3.11E-01	3.11E-01	-4.26E-02	1.45E-01
		1037.75		14.03	2.42E+00		-2.63E-01	1.12E+00
		1238.25		67.00	7.56E-01		3.05E-01	3.56E-01
		1771.40		15.51	1.60E+00		2.89E-01	6.71E-01
		2598.48		16.90	1.00E+00		-5.90E-01	3.17E-01
	CO-57	122.06		85.51	9.48E-02	9.48E-02	-9.29E-02	4.62E-02
		136.48		10.60	8.20E-01		1.56E-01	4.00E-01
	CO-58	810.76		99.40	3.41E-01	3.41E-01	1.27E-01	1.59E-01
	FE-59	1099.22		56.50	1.22E+00	1.22E+00	2.20E-01	5.66E-01
		1291.56		43.20	1.83E+00		2.42E-01	8.45E-01
	CO-60	1173.22		100.00	1.96E-01	1.42E-01	2.08E-02	9.19E-02
		1332.49		100.00	1.42E-01		3.88E-03	6.44E-02
	ZN-65	1115.52		50.75	5.02E-01	5.02E-01	5.78E-03	2.36E-01
	GA-67	93.31		35.70	3.29E+08	3.29E+08	3.37E+08	1.62E+08
		208.95		2.24	5.13E+09		4.27E+09	2.49E+09
		300.22		16.00	8.20E+08		2.79E+08	3.96E+08
	SE-75	121.11		16.70	6.71E-01	2.02E-01	-3.55E-01	3.27E-01
		136.00		59.20	2.02E-01		-3.64E-02	9.85E-02
		264.65		59.80	2.29E-01		3.21E-02	1.10E-01
		279.53		25.20	5.91E-01		2.04E-01	2.85E-01
		400.65		11.40	1.39E+00		-5.27E-01	6.62E-01
	RB-82	776.52		13.00	1.50E+01	1.50E+01	-7.39E+00	7.03E+00
	RB-83	520.41		46.00	4.43E-01	4.43E-01	5.62E-02	2.08E-01
		529.64		30.30	7.39E-01		2.05E-01	3.49E-01
		552.65		16.40	1.32E+00		4.08E-01	6.20E-01
	KR-85	513.99		0.43	3.04E+01	3.04E+01	3.18E+01	1.46E+01
	SR-85	513.99		99.27	3.77E-01	3.77E-01	3.94E-01	1.81E-01

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	2.61E-01	2.16E-01	-4.25E-02	1.21E-01
		1836.01		99.38	2.16E-01		-7.43E-03	9.11E-02
	MO-93	263.06		56.72	1.38E-01	1.15E-01	4.12E-03	6.65E-02
		684.67		99.68	1.20E-01		2.98E-02	5.63E-02
		1477.11		99.08	1.15E-01		5.40E-03	5.02E-02
	NB-93M	16.57		9.43	8.83E+00	8.83E+00	1.67E+01	4.30E+00
	NB-94	702.63		100.00	1.32E-01	1.32E-01	3.65E-02	6.22E-02
		871.10		100.00	1.41E-01		2.98E-03	6.59E-02
	NB-95	765.79		99.81	9.95E-01	9.95E-01	3.52E-01	4.69E-01
	NB-95M	235.69		25.00	9.04E+07	9.04E+07	1.65E+08	4.43E+07
	ZR-95	724.18		43.70	1.02E+00	6.83E-01	6.85E-01	4.84E-01
		756.72		55.30	6.83E-01		1.44E-01	3.21E-01
	MO-99	181.06		6.20	8.58E+10	6.94E+10	2.70E+10	4.18E+10
		739.58		12.80	6.94E+10		-2.41E+10	3.26E+10
		778.00		4.50	2.02E+11		-1.38E+11	9.48E+10
	RU-103	497.08		89.00	5.58E-01	5.58E-01	-5.66E-02	2.62E-01
	RU-106	621.84		9.80	1.26E+00	1.26E+00	-8.72E-01	5.91E-01
	AG-108M	433.93		89.90	1.02E-01	1.02E-01	-5.76E-03	4.85E-02
		614.37		90.40	1.28E-01		1.68E-02	6.02E-02
		722.95		90.50	1.60E-01		9.70E-03	7.59E-02
+	CD-109	88.03	*	3.72	4.44E+00	4.44E+00	5.61E+00	2.20E+00
	AG-110M	657.75		93.14	1.75E-01	1.75E-01	-1.00E-01	8.25E-02
		677.61		10.53	1.55E+00		8.22E-02	7.32E-01
		706.67		16.46	1.05E+00		-1.46E-01	4.95E-01
		763.93		21.98	7.98E-01		-3.78E-01	3.75E-01
		884.67		71.63	2.57E-01		1.58E-01	1.20E-01
		1384.27		23.94	8.25E-01		-2.17E-02	3.75E-01
	CD-113M	263.70		0.02	3.35E+02	3.35E+02	-6.35E+01	1.61E+02
	SN-113	255.12		1.93	7.95E+00	2.47E-01	-5.96E-01	3.85E+00
		391.69		64.90	2.47E-01		-1.42E-01	1.18E-01
	TE123M	159.00		84.10	1.47E-01	1.47E-01	-9.90E-02	7.19E-02
	SB-124	602.71		97.87	3.42E-01	3.42E-01	3.45E-02	1.61E-01
		645.85		7.26	4.59E+00		2.15E-01	2.15E+00
		722.78		11.10	4.08E+00		2.47E-01	1.93E+00
		1691.02		49.00	5.72E-01		-7.62E-02	2.34E-01
	I-125	35.49		6.49	5.96E+00	5.96E+00	-3.69E+00	2.91E+00
	SB-125	176.33		6.89	1.15E+00	3.18E-01	8.41E-01	5.62E-01
		427.89		29.33	3.18E-01		-8.23E-02	1.51E-01
		463.38		10.35	1.09E+00		6.05E-01	5.18E-01
		600.56		17.80	6.54E-01		2.47E-01	3.08E-01
		635.90		11.32	9.66E-01		-9.51E-02	4.52E-01
	SB-126	414.70		83.30	2.65E+01	2.65E+01	-1.83E+01	1.26E+01
		666.33		99.60	3.44E+01		1.59E+01	1.63E+01
		695.00		99.60	3.14E+01		-1.02E+01	1.48E+01
		720.50		53.80	6.26E+01		-2.34E+00	2.95E+01
+	SN-126	87.57	*	37.00	3.85E-01	3.85E-01	4.87E-01	1.91E-01
	SB-127	473.00		25.00	2.21E+07	1.85E+07	1.66E+06	1.05E+07
		685.20		35.70	1.85E+07		4.61E+06	8.70E+06
		783.80		14.70	5.67E+07		2.43E+07	2.68E+07
	I-129	29.78		57.00	3.20E-01	3.20E-01	5.42E-02	1.56E-01
		33.60		13.20	1.05E+00		-2.90E-01	5.10E-01
		39.58		7.52	1.44E+00		2.47E-01	7.03E-01
	I-131	284.30		6.05	6.90E+03	5.30E+02	-1.47E+03	3.33E+03

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	364.48	81.20	5.30E+02	5.30E+02	-2.27E+02	2.53E+02
	636.97	7.26	7.40E+03		-5.98E+02	3.46E+03
	722.89	1.80	4.14E+04		2.51E+03	1.96E+04
TE-132	49.72	13.10	1.03E+09	1.25E+08	8.09E+06	5.04E+08
	228.16	88.00	1.25E+08		-1.61E+07	6.08E+07
BA-133	81.00	33.00	2.74E-01	2.06E-01	-7.41E-01	1.35E-01
	302.84	17.80	4.85E-01		4.88E-02	2.34E-01
	356.01	60.00	2.06E-01		-1.55E-01	9.99E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	1.15E+05	1.15E+05	-3.11E+05	5.65E+04
CS-134	563.23	8.38	1.39E+00	1.49E-01	5.72E-01	6.56E-01
	569.32	15.43	7.17E-01		4.85E-02	3.37E-01
	604.70	97.60	1.49E-01		2.75E-02	7.12E-02
	795.84	85.40	1.76E-01		5.87E-02	8.30E-02
	801.93	8.73	1.63E+00		-9.51E-01	7.62E-01
CS-135	268.24	16.00	5.18E-01	5.18E-01	1.96E-01	2.51E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.74E+02	2.37E+01	-3.12E+01	8.50E+01
	163.89	4.61	2.88E+02		7.62E+01	1.40E+02
	176.55	13.56	1.03E+02		8.88E+01	5.02E+01
	273.65	12.66	1.19E+02		-1.99E+01	5.74E+01
	340.57	48.50	3.97E+01		1.54E+01	1.92E+01
	818.50	99.70	2.37E+01		1.51E+00	1.11E+01
	1048.07	79.60	3.50E+01		2.23E+00	1.63E+01
	1235.34	19.70	2.09E+02		-7.13E+00	9.90E+01
CS-137	661.65	85.12	1.55E-01	1.55E-01	3.73E-02	7.35E-02
LA-138	788.74	34.00	4.31E-01	2.05E-01	8.62E-02	2.04E-01
	1435.80	66.00	2.05E-01		6.21E-02	9.21E-02
CE-139	165.85	80.35	1.46E-01	1.46E-01	4.89E-02	7.13E-02
BA-140	162.64	6.70	2.31E+02	8.30E+01	1.20E+02	1.12E+02
	304.84	4.50	3.84E+02		-1.66E+02	1.84E+02
	423.70	3.20	6.12E+02		-1.00E+02	2.91E+02
	437.55	2.00	9.94E+02		2.94E+02	4.72E+02
	537.32	25.00	8.30E+01		5.15E+00	3.91E+01
LA-140	328.77	20.50	9.21E+01	3.36E+01	4.75E+01	4.42E+01
	487.03	45.50	4.80E+01		3.18E+01	2.28E+01
	815.85	23.50	1.12E+02		-4.90E+01	5.21E+01
	1596.49	95.49	3.36E+01		6.46E+00	1.51E+01
CE-141	145.44	48.40	1.27E+00	1.27E+00	5.51E-01	6.19E-01
@ 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	7.86E-01	7.86E-01	-5.32E-01	3.84E-01
PM-144	476.78	42.00	2.88E-01	1.36E-01	2.51E-02	1.37E-01
	618.01	98.60	1.36E-01		3.72E-02	6.42E-02
	696.49	99.49	1.55E-01		3.29E-02	7.30E-02
PM-145	36.85	21.70	5.37E-01	2.87E-01	-4.61E-01	2.62E-01
	37.36	39.70	2.87E-01		-2.46E-01	1.40E-01
	42.30	15.10	6.75E-01		1.04E-01	3.30E-01
	72.40	2.31	4.31E+00		-1.21E+01	2.12E+00
PM-146	453.90	39.94	2.46E-01	2.46E-01	1.01E-01	1.17E-01

Analysis Report for 1707090-03

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	735.90	14.01	9.29E-01	2.46E-01	4.79E-01	4.36E-01
	747.13	13.10	9.71E-01		-9.22E-02	4.55E-01
ND-147	91.11	28.90	1.61E+02	1.61E+02	3.29E+02	7.91E+01
	531.02	13.10	3.91E+02		9.27E+01	1.85E+02
PM-149	285.90	3.10	8.07E+13	8.07E+13	1.15E+13	3.89E+13
EU-152	121.78	20.50	3.11E-01	3.11E-01	-3.05E-01	1.52E-01
	244.69	5.40	1.83E+00		1.20E-01	8.91E-01
	344.27	19.13	4.70E-01		-2.26E-01	2.26E-01
	778.89	9.20	1.49E+00		-9.90E-01	7.03E-01
	964.01	10.40	1.59E+00		-2.18E+00	7.50E-01
	1085.78	7.22	2.11E+00		5.16E-01	9.79E-01
	1112.02	9.60	1.79E+00		5.13E-01	8.35E-01
	1407.95	14.94	8.21E-01		-3.68E-01	3.64E-01
GD-153	97.43	31.30	2.95E-01	2.95E-01	4.67E-02	1.44E-01
	103.18	22.20	3.78E-01		-1.39E-01	1.85E-01
EU-154	123.07	40.50	1.60E-01	1.60E-01	-1.01E-01	7.83E-02
	723.30	19.70	7.88E-01		5.30E-01	3.74E-01
	873.19	11.50	1.20E+00		-1.51E-01	5.58E-01
	996.32	10.30	1.46E+00		-5.80E-01	6.80E-01
	1004.76	17.90	9.46E-01		7.41E-01	4.44E-01
	1274.45	35.50	4.81E-01		1.58E-03	2.23E-01
EU-155	86.50	30.90	2.88E-01	2.88E-01	1.40E-01	1.41E-01
	105.30	20.70	3.13E-01		-2.15E-01	1.53E-01
EU-156	811.77	10.40	1.09E+02	1.09E+02	2.74E+00	5.09E+01
	1153.47	7.20	2.29E+02		2.78E+01	1.07E+02
	1230.71	8.90	1.99E+02		2.42E+01	9.32E+01
HO-166M	184.41	72.60	1.22E-01	1.22E-01	1.71E-01	5.99E-02
	280.45	29.60	2.82E-01		4.04E-02	1.36E-01
	410.94	11.10	9.40E-01		6.88E-01	4.51E-01
	711.69	54.10	2.30E-01		5.00E-02	1.08E-01
TM-171	66.72	0.14	6.95E+01	6.95E+01	-4.35E+00	3.42E+01
HF-172	67.35	5.31	1.83E+00	6.64E-01	-1.14E-01	8.99E-01
	125.81	11.30	6.64E-01		7.45E-02	3.24E-01
LU-172	181.53	20.60	1.06E+04	6.53E+03	5.64E+02	5.17E+03
	900.72	29.81	1.17E+04		-8.40E+03	5.43E+03
	1093.66	62.50	6.53E+03		-2.04E+03	3.02E+03
LU-173	100.72	5.24	1.37E+00	4.57E-01	-8.56E-01	6.69E-01
	272.11	21.20	4.57E-01		-2.40E-02	2.21E-01
HF-175	343.40	84.00	2.81E-01	2.81E-01	-1.35E-01	1.35E-01
LU-176	88.34	13.30	6.45E-01	8.26E-02	-3.78E-01	3.17E-01
	201.83	86.00	9.07E-02		9.58E-03	4.41E-02
	306.78	94.00	8.26E-02		-2.52E-02	3.96E-02
HF-181	133.02	41.70	8.18E-01	6.01E-01	-1.63E-01	3.99E-01
	345.85	17.20	2.53E+00		-1.07E+01	1.21E+00
	482.03	82.80	6.01E-01		-4.41E-03	2.85E-01
TA-182	67.75	41.20	3.79E-01	3.79E-01	-2.23E-01	1.86E-01
	1121.30	34.90	1.22E+00		1.73E+00	5.80E-01
	1189.05	16.23	1.97E+00		-7.75E-02	9.21E-01
	1221.41	26.98	1.29E+00		2.63E-01	6.05E-01
	1231.02	11.44	3.04E+00		6.90E-02	1.43E+00
IR-192	308.46	29.68	6.58E-01	4.92E-01	-2.07E-02	3.16E-01
	468.07	48.10	4.92E-01		-3.44E-01	2.33E-01
HG-203	279.19	77.30	4.78E-01	4.78E-01	1.90E-01	2.31E-01

Analysis Report for 1707090-03

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	1.01E-01	1.01E-01	-8.53E-03	4.81E-02
		899.15		99.16	1.30E-01		-4.50E-02	6.03E-02
		911.74		91.10	2.56E-01		3.86E-01	1.23E-01
	BI-207	569.67		97.72	1.04E-01	1.04E-01	7.04E-03	4.89E-02
		1063.62		74.90	2.05E-01		7.96E-02	9.52E-02
+	TL-208	583.14	*	30.22	6.20E-01	7.32E-02	1.46E+00	3.00E-01
		860.37		4.48	3.13E+00		4.22E-02	1.46E+00
		2614.66	*	35.85	7.32E-02		1.03E+00	0.00E+00
	BI-210M	262.00		45.00	1.77E-01	1.77E-01	3.55E-04	8.57E-02
		300.00		23.00	4.03E-01		1.37E-01	1.95E-01
+	PB-210	46.50	*	4.25	2.58E+00	2.58E+00	1.41E+00	1.27E+00
	PB-211	404.84		2.90	3.45E+00	3.45E+00	-8.05E-02	1.65E+00
		831.96		2.90	4.91E+00		1.20E+00	2.31E+00
+	BI-212	727.17	*	11.80	1.56E+00	1.56E+00	9.12E-01	7.47E-01
		1620.62		2.75	4.19E+00		-6.10E-01	1.81E+00
+	PB-212	238.63	*	44.60	3.70E-01	3.70E-01	1.21E+00	1.82E-01
		300.09		3.41	2.72E+00		9.24E-01	1.32E+00
+	BI-214	609.31	*	46.30	3.64E-01	3.64E-01	1.64E+00	1.75E-01
		1120.29		15.10	1.54E+00		1.94E+00	7.32E-01
		1764.49	*	15.80	7.44E-01		1.99E+00	3.19E-01
		2204.22	*	4.98	3.21E+00		1.96E+00	1.39E+00
+	PB-214	295.21	*	19.19	6.81E-01	4.54E-01	1.66E+00	3.32E-01
		351.92	*	37.19	4.54E-01		2.02E+00	2.22E-01
	RN-219	401.80		6.50	1.44E+00	1.44E+00	3.81E-02	6.88E-01
	RA-223	323.87		3.88	2.14E+00	2.14E+00	-1.09E+00	1.02E+00
	RA-224	240.98		3.95	3.66E+00	3.66E+00	1.65E+01	1.80E+00
	RA-225	40.00		31.00	3.57E+01	3.57E+01	6.11E+00	1.74E+01
+	RA-226	186.21	*	3.28	3.85E+00	3.85E+00	4.29E+00	1.90E+00
	TH-227	50.10		8.40	1.11E+00	1.07E+00	8.71E-03	5.43E-01
		236.00		11.50	1.07E+00		1.95E+00	5.23E-01
		256.20		6.30	1.37E+00		7.63E-01	6.64E-01
+	AC-228	338.32	*	11.40	1.02E+00	7.44E-01	1.51E+00	4.94E-01
		911.07	*	27.70	7.44E-01		1.24E+00	3.55E-01
		969.11	*	16.60	1.30E+00		1.54E+00	6.22E-01
	TH-230	48.44		16.90	5.71E-01	5.71E-01	3.44E-01	2.80E-01
		62.85		4.60	2.00E+00		1.31E+00	9.84E-01
		67.67		0.37	2.32E+01		-1.37E+01	1.14E+01
	PA-231	283.67		1.60	5.06E+00	3.68E+00	-1.08E+00	2.44E+00
		302.67		2.30	3.68E+00		3.70E-01	1.77E+00
	TH-231	25.64		14.70	1.78E+00	1.25E+00	-3.05E-01	8.71E-01
		84.21		6.40	1.25E+00		-1.90E+00	6.12E-01
	PA-233	311.98		38.60	2.62E+00	2.62E+00	-1.21E-01	1.26E+00
	PA-234	131.20		20.40	3.37E-01	3.37E-01	2.88E-02	1.64E-01
		733.99		8.80	1.42E+00		4.83E-01	6.65E-01
		946.00		12.00	1.23E+00		5.65E-01	5.75E-01
+	PA-234M	1001.03	*	0.92	3.40E+01	3.40E+01	2.69E+01	1.64E+01
	TH-234	63.29		3.80	2.41E+00	2.41E+00	1.58E+00	1.19E+00
	U-235	143.76		10.50	7.03E-01	7.03E-01	2.44E-01	3.43E-01
		163.35		4.70	1.53E+00		7.96E-01	7.46E-01
		205.31		4.70	1.64E+00		-1.32E-01	7.99E-01
	NP-237	86.50		12.60	6.79E-01	6.79E-01	3.31E-01	3.34E-01
	NP-239	106.10		22.70	1.30E+12	1.30E+12	-5.88E+11	6.36E+11
		228.18		10.70	3.36E+12		-4.31E+11	1.63E+12

Analysis Report for 1707090-03

HTC-A06-S001-1218-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NP-239	277.60	14.10	2.77E+12	1.30E+12	7.21E+11	1.34E+12
AM-241	59.54	35.90	2.55E-01	2.55E-01	-5.88E-02	1.25E-01
AM-243	74.67	66.00	1.84E-01	1.84E-01	9.70E-01	9.07E-02
CM-243	209.75	3.29	2.43E+00	6.00E-01	-6.67E-01	1.18E+00
	228.14	10.60	7.29E-01		-9.34E-02	3.53E-01
	277.60	14.00	6.00E-01		1.56E-01	2.90E-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

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: HTC-A06-S001-1218-01

Elapsed Live time: 3600
Elapsed Real Time: 3614

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	9	107
17:	126	100	86	97	84	94	91	92
25:	81	93	67	79	94	79	91	78
33:	73	78	61	82	67	90	76	95
41:	89	87	89	91	136	147	116	104
49:	94	109	97	128	111	124	114	140
57:	137	136	124	129	171	200	207	158
65:	142	165	145	151	138	159	175	184
73:	296	375	367	489	409	192	142	102
81:	143	125	154	157	158	189	207	176
89:	148	161	194	242	162	122	88	94
97:	108	93	101	99	75	73	66	97
105:	109	94	87	86	104	99	102	78
113:	83	98	98	84	90	82	77	77
121:	74	76	83	82	91	109	78	107
129:	99	96	73	72	91	81	73	83
137:	83	86	73	95	92	102	113	90
145:	70	82	87	94	52	78	75	74
153:	91	90	76	67	73	70	61	81
161:	76	77	75	80	65	56	66	76
169:	57	56	49	60	82	67	62	70
177:	85	64	74	54	70	85	55	99
185:	168	118	63	88	61	53	73	65
193:	54	59	62	63	66	79	65	61
201:	63	59	52	53	66	61	57	75
209:	77	51	54	42	58	74	51	49
217:	50	60	52	57	40	48	44	52
225:	47	49	48	35	56	46	53	50
233:	46	46	56	98	227	294	165	105
241:	134	111	60	47	44	31	49	35
249:	41	54	36	51	48	44	49	57
257:	41	48	47	30	37	32	43	38
265:	25	40	36	42	59	44	41	29
273:	36	35	41	36	43	44	27	42
281:	39	36	31	32	36	25	33	42
289:	28	23	27	33	68	156	152	56
297:	38	35	38	46	38	33	30	24
305:	22	25	31	23	32	24	26	26
313:	26	32	23	31	27	23	28	29
321:	29	38	25	23	26	21	35	38
329:	32	33	23	26	24	29	28	41
337:	76	58	40	32	20	26	23	41
345:	29	22	20	19	48	132	248	186
353:	53	21	19	10	32	24	25	25
361:	25	13	24	22	20	17	30	24

369:	27	16	24	25	28	25	26	17

Sample Title: HTC-A06-S001-1218-01

Channel								
377:	21	27	26	25	25	21	20	23
385:	19	28	24	22	30	19	18	16
393:	23	16	29	21	15	23	18	23
401:	22	22	18	29	29	27	28	35
409:	34	30	19	21	18	13	16	19
417:	17	12	21	19	23	19	25	18
425:	13	13	25	19	16	12	17	15
433:	21	18	25	17	19	19	16	11
441:	13	15	18	17	21	25	20	12
449:	19	14	17	21	14	21	21	15
457:	14	13	16	20	23	24	32	22
465:	10	14	15	19	20	11	16	16
473:	21	23	13	13	23	12	18	25
481:	10	9	20	22	13	18	12	23
489:	13	12	16	16	10	16	7	13
497:	15	13	9	14	11	16	18	23
505:	14	14	16	24	39	43	50	28
513:	21	13	16	10	9	11	14	10
521:	9	16	16	14	13	20	10	13
529:	13	17	14	13	14	9	7	17
537:	12	19	11	13	9	13	16	10
545:	11	12	10	14	6	14	12	13
553:	11	18	11	7	10	17	13	15
561:	11	22	15	15	7	10	9	13
569:	17	16	12	9	13	12	8	13
577:	13	12	14	19	28	74	58	35
585:	10	16	16	8	11	6	7	9
593:	10	11	8	11	13	13	9	12
601:	15	14	14	12	10	24	47	100
609:	144	69	18	11	12	12	15	13
617:	16	14	12	7	5	16	9	11
625:	19	11	16	18	10	11	9	10
633:	15	5	10	13	6	11	13	9
641:	15	10	10	14	8	9	14	9
649:	9	9	17	11	17	9	9	8
657:	9	12	10	10	14	18	10	10
665:	17	13	13	9	11	13	10	7
673:	16	10	14	8	16	5	10	6
681:	8	10	12	12	4	9	6	14
689:	10	6	8	7	14	6	18	11
697:	5	11	8	13	8	14	14	11
705:	10	9	11	10	14	3	7	17
713:	6	9	8	6	9	13	12	9
721:	15	13	7	10	11	23	25	9
729:	8	6	9	4	12	10	9	13
737:	9	7	8	5	7	11	12	10
745:	11	4	7	5	9	6	11	10
753:	6	13	7	7	8	10	10	10
761:	9	6	8	7	7	10	18	20
769:	9	8	6	16	8	12	11	7
777:	8	5	9	5	12	16	9	18
785:	8	12	12	8	14	7	10	9
793:	10	6	18	9	2	10	10	7

801:	4	15	10	11	4	10	7	9

Sample Title: HTC-A06-S001-1218-01

Channel								
809:	6	10	6	9	5	8	4	6
817:	8	6	10	15	4	7	11	4
825:	8	8	15	8	12	5	7	7
833:	6	7	16	10	6	6	11	11
841:	6	10	7	6	5	6	10	4
849:	9	9	9	6	6	7	9	4
857:	8	10	7	12	13	6	6	9
865:	6	11	12	9	7	7	8	9
873:	9	2	9	8	8	2	10	8
881:	1	7	10	5	9	11	7	13
889:	4	4	12	9	12	8	4	6
897:	4	9	8	2	4	7	8	4
905:	16	8	6	7	20	44	52	24
913:	8	10	6	5	8	5	5	4
921:	4	8	4	3	7	7	9	7
929:	11	7	6	8	12	19	16	6
937:	8	6	7	2	8	7	11	7
945:	8	9	5	10	5	7	6	6
953:	6	7	3	4	8	11	11	12
961:	3	7	5	8	14	10	14	25
969:	20	20	8	7	10	5	8	10
977:	11	6	10	3	10	9	8	9
985:	2	13	4	5	4	9	8	9
993:	4	4	3	10	7	8	5	13
1001:	10	8	10	6	6	10	8	9
1009:	4	4	9	9	9	9	7	5
1017:	2	8	7	5	8	4	5	7
1025:	5	4	2	9	6	6	6	10
1033:	6	8	11	10	1	3	7	4
1041:	4	5	6	7	9	4	6	3
1049:	10	8	7	7	9	8	7	7
1057:	3	6	3	7	4	7	9	9
1065:	4	3	14	6	5	4	6	7
1073:	7	8	9	4	8	5	3	8
1081:	12	4	6	8	4	5	3	6
1089:	8	4	6	7	5	3	6	4
1097:	7	9	8	4	5	6	4	6
1105:	6	6	10	6	7	11	8	8
1113:	8	5	6	8	6	18	23	28
1121:	20	10	8	12	9	7	6	4
1129:	3	3	6	11	11	5	5	10
1137:	7	9	15	8	5	7	15	4
1145:	8	5	6	10	7	7	9	9
1153:	5	8	12	9	7	11	5	8
1161:	9	5	6	6	7	3	2	13
1169:	11	14	10	9	6	8	5	10
1177:	6	12	8	9	9	9	7	6
1185:	7	6	4	10	8	7	7	10
1193:	7	9	3	11	7	10	5	10
1201:	8	8	17	4	9	11	10	12
1209:	11	6	11	9	8	9	5	11
1217:	10	10	8	9	7	10	4	10
1225:	7	8	6	6	6	18	11	4

1233:	12	4	7	17	16	23	8	8

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Channel								
1241:	5	3	8	6	8	7	5	8
1249:	8	7	9	9	8	3	6	6
1257:	3	2	0	1	4	5	8	3
1265:	3	6	4	3	6	6	6	8
1273:	1	7	5	9	5	5	7	11
1281:	10	4	4	4	1	7	7	8
1289:	7	9	3	2	9	4	3	7
1297:	5	6	5	7	6	8	5	5
1305:	3	2	7	4	4	2	7	3
1313:	6	5	6	3	1	5	6	4
1321:	8	2	5	4	6	2	2	4
1329:	3	7	3	0	4	5	3	2
1337:	5	4	6	7	0	1	3	5
1345:	1	2	9	2	1	3	3	5
1353:	4	2	2	6	5	5	3	7
1361:	3	2	2	2	2	1	1	5
1369:	1	7	1	3	4	1	3	6
1377:	12	9	5	2	9	6	2	3
1385:	4	3	3	3	3	2	5	4
1393:	3	2	3	2	2	4	5	4
1401:	5	6	2	1	1	1	2	7
1409:	1	3	2	3	1	1	6	2
1417:	2	1	2	3	2	2	3	2
1425:	3	2	2	1	4	1	2	2
1433:	2	3	1	4	2	3	7	1
1441:	2	3	0	4	2	2	1	2
1449:	3	3	0	1	5	2	1	5
1457:	10	23	82	129	143	59	14	3
1465:	2	1	4	4	1	4	1	0
1473:	2	1	3	2	0	2	1	3
1481:	2	3	1	1	1	1	0	1
1489:	3	3	5	0	4	1	4	0
1497:	1	4	0	2	1	2	2	4
1505:	3	3	4	2	5	0	2	2
1513:	2	3	3	1	2	0	0	0
1521:	4	2	2	1	0	0	1	0
1529:	2	2	0	1	3	2	3	0
1537:	4	5	0	2	2	2	2	1
1545:	2	0	2	0	1	1	0	2
1553:	3	1	3	0	1	2	1	1
1561:	1	0	2	1	3	5	1	2
1569:	1	2	2	1	4	1	4	1
1577:	1	1	3	1	2	1	3	0
1585:	3	0	4	3	6	2	3	5
1593:	8	2	2	0	1	3	4	1
1601:	0	1	4	1	2	1	2	1
1609:	1	1	2	2	4	0	0	1
1617:	1	2	2	2	3	0	1	2
1625:	2	4	1	2	3	2	5	1
1633:	3	0	2	1	0	2	3	1
1641:	0	0	1	2	1	1	3	2
1649:	2	0	2	1	0	1	2	2
1657:	0	1	1	3	1	0	0	3

1665:	1	1	1	0	0	1	1	0

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Channel								
1673:	2	1	1	1	2	3	4	1
1681:	0	2	0	0	2	1	1	0
1689:	0	0	0	1	3	0	2	2
1697:	0	1	1	1	1	1	1	0
1705:	1	0	2	0	0	1	1	1
1713:	1	1	0	2	3	1	0	1
1721:	0	1	2	1	0	0	1	6
1729:	4	4	1	1	1	3	0	0
1737:	1	2	4	1	0	1	0	0
1745:	4	1	0	1	0	0	0	0
1753:	0	1	1	1	0	0	2	2
1761:	2	6	11	14	13	5	1	1
1769:	0	2	3	0	1	1	0	1
1777:	1	0	0	1	0	1	2	3
1785:	3	1	1	1	0	0	1	0
1793:	0	0	2	1	3	1	2	1
1801:	0	1	2	1	1	0	0	0
1809:	2	1	2	1	3	1	0	1
1817:	3	1	1	2	0	0	1	0
1825:	0	0	0	1	1	1	0	0
1833:	1	1	2	1	3	0	0	2
1841:	1	3	1	1	0	3	2	4
1849:	0	1	1	0	1	1	1	0
1857:	1	0	1	2	2	0	1	1
1865:	0	2	0	1	1	0	0	1
1873:	0	1	1	0	0	0	1	0
1881:	0	1	2	0	0	0	1	2
1889:	1	2	0	2	1	1	1	2
1897:	1	1	0	1	0	0	2	1
1905:	1	0	2	0	3	1	0	0
1913:	0	1	2	1	0	0	0	1
1921:	1	0	1	1	0	0	0	0
1929:	2	1	2	0	2	2	0	0
1937:	1	0	0	2	1	0	1	3
1945:	1	2	1	1	1	1	2	1
1953:	2	1	0	0	1	1	2	1
1961:	1	3	1	3	1	0	1	0
1969:	2	0	0	2	0	3	0	1
1977:	0	1	3	0	3	0	1	1
1985:	1	3	0	1	0	1	1	1
1993:	0	0	4	1	0	1	2	2
2001:	1	0	0	0	1	1	0	0
2009:	1	1	1	0	0	1	1	1
2017:	1	1	0	0	0	1	0	1
2025:	2	2	0	0	2	2	2	1
2033:	0	1	1	1	1	0	1	1
2041:	0	0	1	1	0	1	1	1
2049:	1	0	0	0	1	0	0	0
2057:	1	0	1	0	1	0	1	1
2065:	0	0	1	0	2	0	1	0
2073:	0	0	1	2	0	1	2	0
2081:	1	0	0	0	0	0	1	0
2089:	1	1	0	0	0	0	1	0

2097:	2	0	2	1	0	2	5	3

Sample Title: HTC-A06-S001-1218-01

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

2529:	1	0	0	0	0	0	0	0

Sample Title: HTC-A06-S001-1218-01

Channel								
2537:	1	0	0	0	1	0	1	0
2545:	0	0	2	0	0	1	1	0
2553:	0	0	0	0	0	0	1	0
2561:	0	1	0	0	1	0	0	0
2569:	0	0	1	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	1	0	0	0	0	0	0	0
2593:	0	0	0	1	0	0	0	0
2601:	0	0	0	1	1	0	1	0
2609:	0	0	2	4	5	10	13	4
2617:	0	0	0	0	0	0	2	0
2625:	0	0	0	0	0	0	1	0
2633:	0	0	1	0	0	0	0	1
2641:	1	1	0	0	0	1	1	0
2649:	1	0	0	0	0	0	0	0
2657:	0	0	0	0	0	1	1	1
2665:	0	0	0	0	1	0	0	0
2673:	0	0	0	0	0	1	0	0
2681:	0	0	1	0	1	0	0	0
2689:	1	0	0	0	0	0	0	0
2697:	0	0	1	0	0	0	0	0
2705:	0	0	0	0	0	0	0	1
2713:	0	0	0	1	0	0	0	0
2721:	0	0	1	1	1	0	0	0
2729:	0	0	0	0	0	1	0	0
2737:	0	1	0	0	0	1	1	0
2745:	0	0	2	0	0	0	1	1
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	0	2	0	0	0
2769:	0	0	1	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	1	0	0	0	0	0	1	0
2793:	0	0	0	0	0	0	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	1	0	0	0	0	0
2817:	1	0	0	0	1	1	0	0
2825:	0	1	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	1	0	1	2
2849:	0	0	0	0	0	1	0	0
2857:	1	0	0	0	0	0	0	0
2865:	1	1	0	0	0	0	0	0
2873:	1	0	0	0	0	1	0	0
2881:	0	0	0	2	1	0	1	0
2889:	0	1	0	0	1	1	0	1
2897:	0	2	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	1	1	0	0
2921:	0	0	0	0	0	1	0	0
2929:	0	0	0	1	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	1	2	0	1	1	0
2953:	0	0	0	0	0	0	0	0

2961:	0	0	1	0	0	1	1	0

Sample Title: HTC-A06-S001-1218-01

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

Sample Title: HTC-A06-S001-1218-01

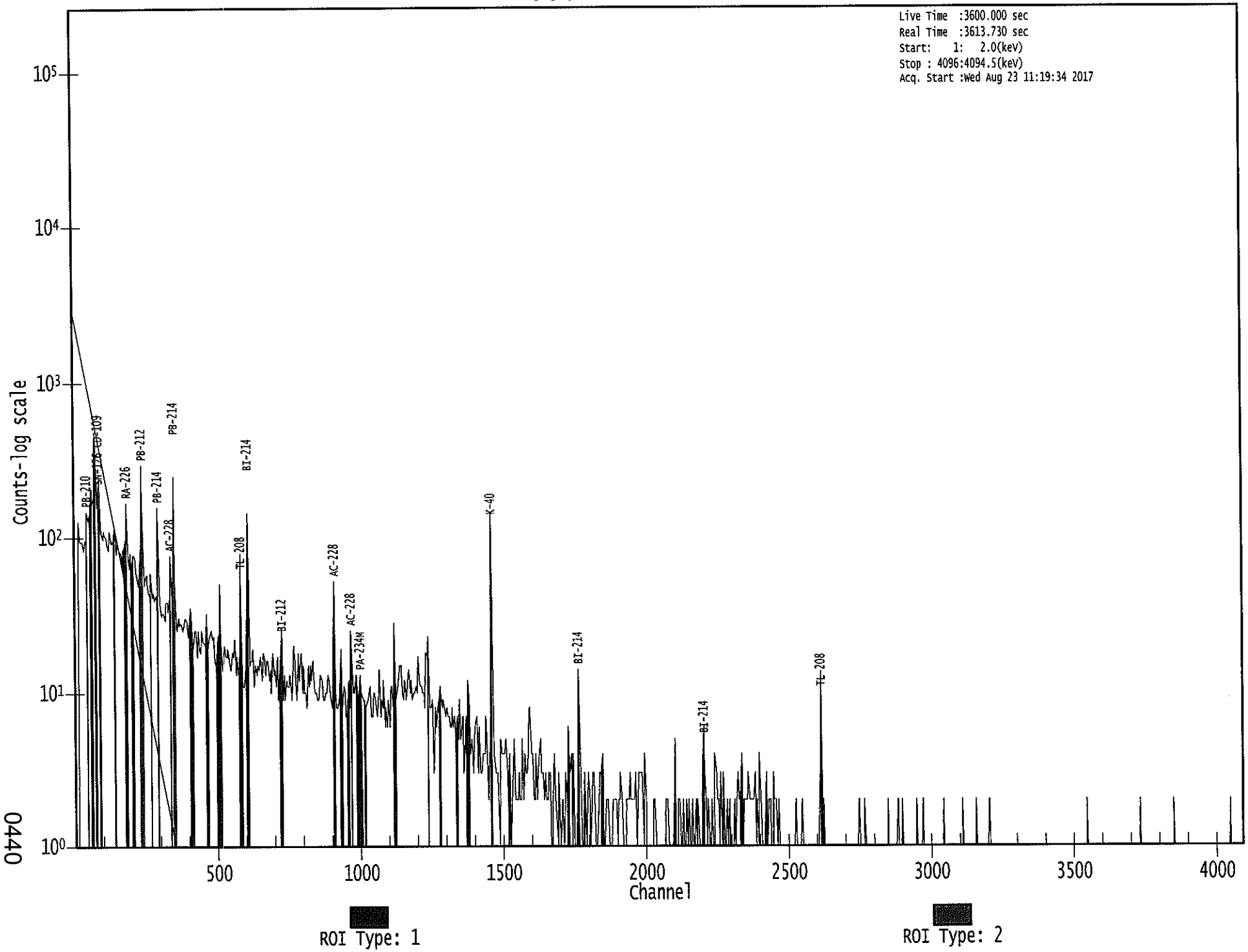
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	1	0	0	0
3417:	0	0	0	0	0	0	0	1
3425:	1	0	0	0	0	0	0	0
3433:	0	0	1	0	0	1	0	0
3441:	0	1	0	1	0	1	0	0
3449:	1	0	0	0	0	0	0	0
3457:	0	0	0	0	0	1	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	1
3481:	0	0	0	0	0	0	1	0
3489:	0	0	0	0	1	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	1	0	0	0
3513:	1	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	1
3537:	0	0	0	0	0	0	0	0
3545:	2	0	0	0	1	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	1	0	0	0	0	0	1	0
3569:	0	0	1	0	0	1	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	1	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	1	0	0	0	0	0
3625:	1	0	0	1	0	0	1	0
3633:	0	1	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	1	1	0	0	0	0
3657:	1	0	0	0	0	0	1	0
3665:	0	0	0	1	0	1	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	1	1	0
3697:	0	0	0	0	0	1	0	0
3705:	1	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	2	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	1	1	0	0	1	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	1	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	1	0	0	0
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	1

Sample Title: HTC-A06-S001-1218-01

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

0000055801.CNF



0440

Apex-Gamma

Analysis Report for 1707090-04
HTC-A06-S001-1218-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-04
Sample Description	: HTC-A06-S001-1218-01
Sample Type	: SOIL
Sample Size	: 6.048E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:51:10AM
Acquisition Started	: 8/23/2017 12:37:28PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3621.6 seconds
Dead Time	: 0.60 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55808

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 1:38:55PM
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	45.89	44.94	0.0000	0.00
2	75.94	75.00	0.0000	0.00
3	83.62	82.68	0.0000	0.00
4	87.68	86.74	0.0000	0.00
5	92.86	91.92	0.0000	0.00
6	185.94	185.03	0.0000	0.00
7	238.88	237.99	0.0000	0.00
8	241.99	241.10	0.0000	0.00
9	277.36	276.48	0.0000	0.00
10	295.23	294.36	0.0000	0.00
11	299.85	298.98	0.0000	0.00
12	338.71	337.86	0.0000	0.00
13	352.04	351.18	0.0000	0.00
14	376.74	375.89	0.0000	0.00
15	462.88	462.07	0.0000	0.00
16	511.43	510.63	0.0000	0.00
17	583.05	582.28	0.0000	0.00
18	609.41	608.65	0.0000	0.00
19	726.89	726.18	0.0000	0.00
20	768.02	767.32	0.0000	0.00
21	821.25	820.57	0.0000	0.00
22	860.46	859.80	0.0000	0.00
23	870.27	869.61	0.0000	0.00
24	911.02	910.38	0.0000	0.00
25	968.61	968.00	0.0000	0.00
26	971.70	971.09	0.0000	0.00
27	1031.52	1030.94	0.0000	0.00
28	1037.63	1037.05	0.0000	0.00
29	1076.69	1076.12	0.0000	0.00
30	1120.10	1119.56	0.0000	0.00
31	1238.27	1237.78	0.0000	0.00
32	1460.78	1460.41	0.0000	0.00
33	1592.15	1591.84	0.0000	0.00
34	1660.71	1660.44	0.0000	0.00
35	1728.66	1728.43	0.0000	0.00
36	1744.53	1744.31	0.0000	0.00
37	1764.37	1764.15	0.0000	0.00
38	1810.61	1810.43	0.0000	0.00
39	1846.33	1846.16	0.0000	0.00
40	1992.23	1992.14	0.0000	0.00
41	2104.18	2104.16	0.0000	0.00
42	2203.02	2203.07	0.0000	0.00

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2614.00	2614.31	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 1:38:55PM

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	45.89	42 -	48	44.94	1.18E+02	89.38	1.38E+03	4.00
	2	75.94	70 -	80	75.00	1.27E+03	161.90	2.81E+03	3.93
M	3	83.62	81 -	107	82.68	7.20E+01	38.28	4.91E+02	2.14
m	4	87.68	81 -	107	86.74	4.37E+02	132.43	2.27E+03	3.29
m	5	92.86	81 -	107	91.92	3.36E+02	119.34	1.85E+03	2.91
	6	185.94	180 -	190	185.03	2.57E+02	101.33	1.23E+03	2.55
M	7	238.88	233 -	248	237.99	6.48E+02	86.65	7.53E+02	2.53
m	8	241.99	233 -	248	241.10	2.00E+02	85.81	6.86E+02	2.56
	9	277.36	275 -	278	276.48	3.47E+01	36.28	2.93E+02	1.61
M	10	295.23	289 -	303	294.36	3.23E+02	58.92	3.29E+02	2.61
m	11	299.85	289 -	303	298.98	5.13E+01	54.41	3.66E+02	2.61
	12	338.71	333 -	342	337.86	1.13E+02	67.05	5.72E+02	2.55
	13	352.04	346 -	356	351.18	5.37E+02	78.13	5.27E+02	2.35
	14	376.74	371 -	380	375.89	4.76E+01	49.11	3.11E+02	7.53
	15	462.88	459 -	465	462.07	4.85E+01	34.01	1.75E+02	1.45
	16	511.43	505 -	517	510.63	1.32E+02	55.31	2.94E+02	2.75
	17	583.05	578 -	586	582.28	1.56E+02	44.40	2.09E+02	2.31
	18	609.41	603 -	613	608.65	3.46E+02	59.05	2.79E+02	2.40
	19	726.89	716 -	736	726.18	7.06E+01	67.87	3.43E+02	10.23
	20	768.02	762 -	771	767.32	4.84E+01	35.76	1.55E+02	2.92
	21	821.25	817 -	824	820.57	2.13E+01	23.83	8.14E+01	3.54
M	22	860.46	853 -	873	859.80	3.26E+01	26.93	6.61E+01	3.21
m	23	870.27	853 -	873	869.61	2.73E+01	20.30	4.91E+01	3.22
	24	911.02	906 -	915	910.38	8.71E+01	33.50	1.12E+02	2.04
M	25	968.61	965 -	973	968.00	4.92E+01	23.69	1.07E+02	2.45
m	26	971.70	965 -	973	971.09	1.28E+01	21.38	4.77E+01	2.17
	27	1031.52	1028 -	1033	1030.94	2.03E+01	18.38	4.74E+01	2.86
	28	1037.63	1035 -	1039	1037.05	1.90E+01	14.53	3.00E+01	2.72
	29	1076.69	1072 -	1080	1076.12	2.23E+01	27.89	1.01E+02	2.03
	30	1120.10	1113 -	1126	1119.56	9.05E+01	41.00	1.45E+02	2.64
	31	1238.27	1231 -	1244	1237.78	6.95E+01	40.77	1.53E+02	2.31
	32	1460.78	1456 -	1468	1460.41	5.01E+02	47.62	2.62E+01	3.15
	33	1592.15	1587 -	1596	1591.84	1.99E+01	17.75	3.03E+01	2.42
	34	1660.71	1657 -	1662	1660.44	5.29E+00	6.08	3.43E+00	1.72
	35	1728.66	1724 -	1733	1728.43	1.24E+01	12.45	1.52E+01	3.56
	36	1744.53	1739 -	1749	1744.31	1.30E+01	7.21	0.00E+00	1.32
	37	1764.37	1758 -	1767	1764.15	4.60E+01	13.56	0.00E+00	3.00
	38	1810.61	1806 -	1814	1810.43	6.83E+00	7.50	4.33E+00	6.75
	39	1846.33	1841 -	1850	1846.16	1.36E+01	9.43	4.88E+00	1.80
	40	1992.23	1989 -	1994	1992.14	7.00E+00	5.29	0.00E+00	2.70

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2104.18	2099 -	2109	2104.16	1.19E+01	13.07	1.62E+01	5.07
42	2203.02	2198 -	2207	2203.07	1.86E+01	10.44	4.86E+00	2.09
43	2614.00	2610 -	2619	2614.31	5.00E+01	16.43	1.00E+01	4.48

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 : 8/23/2017 1:38:55PM

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	45.89	42 -	48	1.18E+02	89.38	1.38E+03	7.13E+01
	2	75.94	70 -	80	1.27E+03	161.90	2.81E+03	1.20E+02
M	3	83.62	81 -	107	7.20E+01	38.28	4.91E+02	3.64E+01
m	4	87.68	81 -	107	4.37E+02	132.43	2.27E+03	7.83E+01
m	5	92.86	81 -	107	3.36E+02	119.34	1.85E+03	7.07E+01
	6	185.94	180 -	190	2.57E+02	101.33	1.23E+03	7.90E+01
M	7	238.88	233 -	248	6.48E+02	86.65	7.53E+02	4.51E+01
m	8	241.99	233 -	248	2.00E+02	85.81	6.86E+02	4.31E+01
	9	277.36	275 -	278	3.47E+01	36.28	2.93E+02	2.82E+01
M	10	295.23	289 -	303	3.23E+02	58.92	3.29E+02	2.98E+01
m	11	299.85	289 -	303	5.13E+01	54.41	3.66E+02	3.15E+01
	12	338.71	333 -	342	1.13E+02	67.05	5.72E+02	5.23E+01
	13	352.04	346 -	356	5.37E+02	78.13	5.27E+02	5.17E+01
	14	376.74	371 -	380	4.76E+01	49.11	3.11E+02	3.87E+01
	15	462.88	459 -	465	4.85E+01	34.01	1.75E+02	2.55E+01
	16	511.43	505 -	517	1.32E+02	55.31	2.94E+02	4.14E+01
	17	583.05	578 -	586	1.56E+02	44.40	2.09E+02	3.02E+01
	18	609.41	603 -	613	3.46E+02	59.05	2.79E+02	3.77E+01
	19	726.89	716 -	736	7.06E+01	67.87	3.43E+02	5.41E+01
	20	768.02	762 -	771	4.84E+01	35.76	1.55E+02	2.71E+01
	21	821.25	817 -	824	2.13E+01	23.83	8.14E+01	1.81E+01
M	22	860.46	853 -	873	3.26E+01	26.93	6.61E+01	1.34E+01
m	23	870.27	853 -	873	2.73E+01	20.30	4.91E+01	1.15E+01
	24	911.02	906 -	915	8.71E+01	33.50	1.12E+02	2.29E+01

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	25	968.61	965 -	973	4.92E+01	23.69	1.07E+02	1.70E+01
m	26	971.70	965 -	973	1.28E+01	21.38	4.77E+01	1.14E+01
	27	1031.52	1028 -	1033	2.03E+01	18.38	4.74E+01	1.32E+01
	28	1037.63	1035 -	1039	1.90E+01	14.53	3.00E+01	9.55E+00
	29	1076.69	1072 -	1080	2.23E+01	27.89	1.01E+02	2.16E+01
	30	1120.10	1113 -	1126	9.05E+01	41.00	1.45E+02	2.99E+01
	31	1238.27	1231 -	1244	6.95E+01	40.77	1.53E+02	3.06E+01
	32	1460.78	1456 -	1468	5.01E+02	47.62	2.62E+01	1.33E+01
	33	1592.15	1587 -	1596	1.99E+01	17.75	3.03E+01	1.26E+01
	34	1660.71	1657 -	1662	5.29E+00	6.08	3.43E+00	3.27E+00
	35	1728.66	1724 -	1733	1.24E+01	12.45	1.52E+01	8.44E+00
	36	1744.53	1739 -	1749	1.30E+01	7.21	0.00E+00	0.00E+00
	37	1764.37	1758 -	1767	4.60E+01	13.56	0.00E+00	0.00E+00
	38	1810.61	1806 -	1814	6.83E+00	7.50	4.33E+00	4.42E+00
	39	1846.33	1841 -	1850	1.36E+01	9.43	4.88E+00	4.85E+00
	40	1992.23	1989 -	1994	7.00E+00	5.29	0.00E+00	0.00E+00
	41	2104.18	2099 -	2109	1.19E+01	13.07	1.62E+01	9.12E+00
	42	2203.02	2198 -	2207	1.86E+01	10.44	4.86E+00	4.84E+00
	43	2614.00	2610 -	2619	5.00E+01	16.43	1.00E+01	6.88E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/23/2017 1:38:55PM

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	45.89	42 -	48	44.94	1.18E+02	89.38	1.38E+03	PB-210
	2	75.94	70 -	80	75.00	1.27E+03	161.90	2.81E+03	.....
M	3	83.62	81 -	107	82.68	7.20E+01	38.28	4.91E+02	TH-231
m	4	87.68	81 -	107	86.74	4.37E+02	132.43	2.27E+03	SN-126
									CD-109
									LU-176

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	5	92.86	81 -	107	91.92	3.36E+02	119.34	1.85E+03	GA-67
	6	185.94	180 -	190	185.03	2.57E+02	101.33	1.23E+03	RA-226
M	7	238.88	233 -	248	237.99	6.48E+02	86.65	7.53E+02	PB-212
m	8	241.99	233 -	248	241.10	2.00E+02	85.81	6.86E+02	.....
	9	277.36	275 -	278	276.48	3.47E+01	36.28	2.93E+02	CM-243
									NP-239
M	10	295.23	289 -	303	294.36	3.23E+02	58.92	3.29E+02	PB-214
m	11	299.85	289 -	303	298.98	5.13E+01	54.41	3.66E+02	BI-210M
									PB-212
									GA-67
	12	338.71	333 -	342	337.86	1.13E+02	67.05	5.72E+02	AC-228
	13	352.04	346 -	356	351.18	5.37E+02	78.13	5.27E+02	PB-214
	14	376.74	371 -	380	375.89	4.76E+01	49.11	3.11E+02	.....
	15	462.88	459 -	465	462.07	4.85E+01	34.01	1.75E+02	SB-125
	16	511.43	505 -	517	510.63	1.32E+02	55.31	2.94E+02	.....
	17	583.05	578 -	586	582.28	1.56E+02	44.40	2.09E+02	TL-208
	18	609.41	603 -	613	608.65	3.46E+02	59.05	2.79E+02	BI-214
	19	726.89	716 -	736	726.18	7.06E+01	67.87	3.43E+02	BI-212
	20	768.02	762 -	771	767.32	4.84E+01	35.76	1.55E+02	.....
	21	821.25	817 -	824	820.57	2.13E+01	23.83	8.14E+01	.....
M	22	860.46	853 -	873	859.80	3.26E+01	26.93	6.61E+01	TL-208
m	23	870.27	853 -	873	869.61	2.73E+01	20.30	4.91E+01	NB-94
	24	911.02	906 -	915	910.38	8.71E+01	33.50	1.12E+02	AC-228
									TL-204
M	25	968.61	965 -	973	968.00	4.92E+01	23.69	1.07E+02	AC-228
m	26	971.70	965 -	973	971.09	1.28E+01	21.38	4.77E+01	.....
	27	1031.52	1028 -	1033	1030.94	2.03E+01	18.38	4.74E+01	.....
	28	1037.63	1035 -	1039	1037.05	1.90E+01	14.53	3.00E+01	CO-56
	29	1076.69	1072 -	1080	1076.12	2.23E+01	27.89	1.01E+02	.....
	30	1120.10	1113 -	1126	1119.56	9.05E+01	41.00	1.45E+02	BI-214
									SC-46
	31	1238.27	1231 -	1244	1237.78	6.95E+01	40.77	1.53E+02	CO-56
	32	1460.78	1456 -	1468	1460.41	5.01E+02	47.62	2.62E+01	K-40
	33	1592.15	1587 -	1596	1591.84	1.99E+01	17.75	3.03E+01	.....
	34	1660.71	1657 -	1662	1660.44	5.29E+00	6.08	3.43E+00	.....
	35	1728.66	1724 -	1733	1728.43	1.24E+01	12.45	1.52E+01	.....
	36	1744.53	1739 -	1749	1744.31	1.30E+01	7.21	0.00E+00	.....
	37	1764.37	1758 -	1767	1764.15	4.60E+01	13.56	0.00E+00	BI-214
	38	1810.61	1806 -	1814	1810.43	6.83E+00	7.50	4.33E+00	.....
	39	1846.33	1841 -	1850	1846.16	1.36E+01	9.43	4.88E+00	.....
	40	1992.23	1989 -	1994	1992.14	7.00E+00	5.29	0.00E+00	.....
	41	2104.18	2099 -	2109	2104.16	1.19E+01	13.07	1.62E+01	.....
	42	2203.02	2198 -	2207	2203.07	1.86E+01	10.44	4.86E+00	.....
	43	2614.00	2610 -	2619	2614.31	5.00E+01	16.43	1.00E+01	TL-208

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

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 : 8/23/2017 1:38:55PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	45.89	1.18E+02	89.38	1.62E-02	1.56E-03
	2	75.94	1.27E+03	161.90	2.32E-02	1.91E-03
M	3	83.62	7.20E+01	38.28	2.36E-02	2.07E-03
m	4	87.68	4.37E+02	132.43	2.37E-02	2.16E-03
m	5	92.86	3.36E+02	119.34	2.37E-02	2.09E-03
	6	185.94	2.57E+02	101.33	1.69E-02	1.40E-03
M	7	238.88	6.48E+02	86.65	1.36E-02	1.14E-03
m	8	241.99	2.00E+02	85.81	1.34E-02	1.13E-03
	9	277.36	3.47E+01	36.28	1.17E-02	9.56E-04
M	10	295.23	3.23E+02	58.92	1.10E-02	9.13E-04
m	11	299.85	5.13E+01	54.41	1.09E-02	9.03E-04
	12	338.71	1.13E+02	67.05	9.59E-03	8.22E-04
	13	352.04	5.37E+02	78.13	9.21E-03	7.94E-04
	14	376.74	4.76E+01	49.11	8.59E-03	7.42E-04
	15	462.88	4.85E+01	34.01	6.95E-03	6.81E-04
	16	511.43	1.32E+02	55.31	6.28E-03	6.61E-04
	17	583.05	1.56E+02	44.40	5.51E-03	6.31E-04
	18	609.41	3.46E+02	59.05	5.27E-03	6.20E-04
	19	726.89	7.06E+01	67.87	4.45E-03	5.17E-04
	20	768.02	4.84E+01	35.76	4.23E-03	4.65E-04
	21	821.25	2.13E+01	23.83	3.98E-03	3.98E-04
M	22	860.46	3.26E+01	26.93	3.81E-03	3.49E-04
m	23	870.27	2.73E+01	20.30	3.77E-03	3.37E-04
	24	911.02	8.71E+01	33.50	3.62E-03	2.99E-04
M	25	968.61	4.92E+01	23.69	3.43E-03	2.85E-04
m	26	971.70	1.28E+01	21.38	3.42E-03	2.85E-04
	27	1031.52	2.03E+01	18.38	3.24E-03	2.71E-04
	28	1037.63	1.90E+01	14.53	3.22E-03	2.69E-04
	29	1076.69	2.23E+01	27.89	3.12E-03	2.60E-04
	30	1120.10	9.05E+01	41.00	3.02E-03	2.50E-04
	31	1238.27	6.95E+01	40.77	2.76E-03	2.33E-04
	32	1460.78	5.01E+02	47.62	2.38E-03	2.08E-04
	33	1592.15	1.99E+01	17.75	2.20E-03	1.88E-04
	34	1660.71	5.29E+00	6.08	2.12E-03	1.78E-04

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1728.66	1.24E+01	12.45	2.04E-03	1.67E-04
36	1744.53	1.30E+01	7.21	2.02E-03	1.65E-04
37	1764.37	4.60E+01	13.56	2.00E-03	1.62E-04
38	1810.61	6.83E+00	7.50	1.95E-03	1.55E-04
39	1846.33	1.36E+01	9.43	1.91E-03	1.51E-04
40	1992.23	7.00E+00	5.29	1.77E-03	1.51E-04
41	2104.18	1.19E+01	13.07	1.67E-03	1.51E-04
42	2203.02	1.86E+01	10.44	1.58E-03	1.51E-04
43	2614.00	5.00E+01	16.43	1.28E-03	1.51E-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 : 8/23/2017 1:38:55PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	45.89	1.18E+02	89.38	2.81E+01	8.29E+00	8.95E+01	8.98E+01
	2	75.94	1.27E+03	161.90	2.66E+01	8.34E+00	1.24E+03	1.62E+02
M	3	83.62	7.20E+01	38.28			7.20E+01	3.83E+01
m	4	87.68	4.37E+02	132.43			4.37E+02	1.32E+02
m	5	92.86	3.36E+02	119.34	5.99E+01	8.61E+00	2.76E+02	1.20E+02
	6	185.94	2.57E+02	101.33	2.43E+01	7.50E+00	2.33E+02	1.02E+02
M	7	238.88	6.48E+02	86.65	1.06E+01	6.01E+00	6.37E+02	8.69E+01
m	8	241.99	2.00E+02	85.81			2.00E+02	8.58E+01
	9	277.36	3.47E+01	36.28			3.47E+01	3.63E+01
M	10	295.23	3.23E+02	58.92			3.23E+02	5.89E+01
m	11	299.85	5.13E+01	54.41			5.13E+01	5.44E+01
	12	338.71	1.13E+02	67.05			1.13E+02	6.71E+01
	13	352.04	5.37E+02	78.13			5.37E+02	7.81E+01
	14	376.74	4.76E+01	49.11			4.76E+01	4.91E+01
	15	462.88	4.85E+01	34.01			4.85E+01	3.40E+01
	16	511.43	1.32E+02	55.31	4.55E+01	4.99E+00	8.64E+01	5.55E+01
	17	583.05	1.56E+02	44.40			1.56E+02	4.44E+01
	18	609.41	3.46E+02	59.05			3.46E+02	5.90E+01
	19	726.89	7.06E+01	67.87			7.06E+01	6.79E+01
	20	768.02	4.84E+01	35.76			4.84E+01	3.58E+01
	21	821.25	2.13E+01	23.83			2.13E+01	2.38E+01

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	22	860.46	3.26E+01	26.93			3.26E+01	2.69E+01
m	23	870.27	2.73E+01	20.30			2.73E+01	2.03E+01
	24	911.02	8.71E+01	33.50			8.71E+01	3.35E+01
M	25	968.61	4.92E+01	23.69			4.92E+01	2.37E+01
m	26	971.70	1.28E+01	21.38			1.28E+01	2.14E+01
	27	1031.52	2.03E+01	18.38			2.03E+01	1.84E+01
	28	1037.63	1.90E+01	14.53			1.90E+01	1.45E+01
	29	1076.69	2.23E+01	27.89			2.23E+01	2.79E+01
	30	1120.10	9.05E+01	41.00			9.05E+01	4.10E+01
	31	1238.27	6.95E+01	40.77			6.95E+01	4.08E+01
	32	1460.78	5.01E+02	47.62			5.01E+02	4.76E+01
	33	1592.15	1.99E+01	17.75			1.99E+01	1.77E+01
	34	1660.71	5.29E+00	6.08			5.29E+00	6.08E+00
	35	1728.66	1.24E+01	12.45			1.24E+01	1.24E+01
	36	1744.53	1.30E+01	7.21			1.30E+01	7.21E+00
	37	1764.37	4.60E+01	13.56			4.60E+01	1.36E+01
	38	1810.61	6.83E+00	7.50			6.83E+00	7.50E+00
	39	1846.33	1.36E+01	9.43			1.36E+01	9.43E+00
	40	1992.23	7.00E+00	5.29			7.00E+00	5.29E+00
	41	2104.18	1.19E+01	13.07			1.19E+01	1.31E+01
	42	2203.02	1.86E+01	10.44			1.86E+01	1.04E+01
	43	2614.00	5.00E+01	16.43			5.00E+01	1.64E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 1:38:55PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.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	45.89	1.18E+02	89.38	2.81E+01	8.29E+00	8.95E+01	8.98E+01
	2	75.94	1.27E+03	161.90	2.66E+01	8.34E+00	1.24E+03	1.62E+02
M	3	83.62	7.20E+01	38.28			7.20E+01	3.83E+01
m	4	87.68	4.37E+02	132.43			4.37E+02	1.32E+02
m	5	92.86	3.36E+02	119.34	5.99E+01	8.61E+00	2.76E+02	1.20E+02
	6	185.94	2.57E+02	101.33	2.43E+01	7.50E+00	2.33E+02	1.02E+02

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	7	238.88	6.48E+02	86.65	1.06E+01	6.01E+00	6.37E+02	8.69E+01
m	8	241.99	2.00E+02	85.81			2.00E+02	8.58E+01
	9	277.36	3.47E+01	36.28			3.47E+01	3.63E+01
M	10	295.23	3.23E+02	58.92			3.23E+02	5.89E+01
m	11	299.85	5.13E+01	54.41			5.13E+01	5.44E+01
	12	338.71	1.13E+02	67.05			1.13E+02	6.71E+01
	13	352.04	5.37E+02	78.13			5.37E+02	7.81E+01
	14	376.74	4.76E+01	49.11			4.76E+01	4.91E+01
	15	462.88	4.85E+01	34.01			4.85E+01	3.40E+01
	16	511.43	1.32E+02	55.31	4.55E+01	4.99E+00	8.64E+01	5.55E+01
	17	583.05	1.56E+02	44.40			1.56E+02	4.44E+01
	18	609.41	3.46E+02	59.05			3.46E+02	5.90E+01
	19	726.89	7.06E+01	67.87			7.06E+01	6.79E+01
	20	768.02	4.84E+01	35.76			4.84E+01	3.58E+01
	21	821.25	2.13E+01	23.83			2.13E+01	2.38E+01
M	22	860.46	3.26E+01	26.93			3.26E+01	2.69E+01
m	23	870.27	2.73E+01	20.30			2.73E+01	2.03E+01
	24	911.02	8.71E+01	33.50			8.71E+01	3.35E+01
M	25	968.61	4.92E+01	23.69			4.92E+01	2.37E+01
m	26	971.70	1.28E+01	21.38			1.28E+01	2.14E+01
	27	1031.52	2.03E+01	18.38			2.03E+01	1.84E+01
	28	1037.63	1.90E+01	14.53			1.90E+01	1.45E+01
	29	1076.69	2.23E+01	27.89			2.23E+01	2.79E+01
	30	1120.10	9.05E+01	41.00			9.05E+01	4.10E+01
	31	1238.27	6.95E+01	40.77			6.95E+01	4.08E+01
	32	1460.78	5.01E+02	47.62			5.01E+02	4.76E+01
	33	1592.15	1.99E+01	17.75			1.99E+01	1.77E+01
	34	1660.71	5.29E+00	6.08			5.29E+00	6.08E+00
	35	1728.66	1.24E+01	12.45			1.24E+01	1.24E+01
	36	1744.53	1.30E+01	7.21			1.30E+01	7.21E+00
	37	1764.37	4.60E+01	13.56			4.60E+01	1.36E+01
	38	1810.61	6.83E+00	7.50			6.83E+00	7.50E+00
	39	1846.33	1.36E+01	9.43			1.36E+01	9.43E+00
	40	1992.23	7.00E+00	5.29			7.00E+00	5.29E+00
	41	2104.18	1.19E+01	13.07			1.19E+01	1.31E+01
	42	2203.02	1.86E+01	10.44			1.86E+01	1.04E+01
	43	2614.00	5.00E+01	16.43			5.00E+01	1.64E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.000	1460.81	*	10.67	2.44E+01	3.19E+00
CD-109	0.980	88.03	*	3.72	7.14E+00	2.30E+00
SN-126	0.998	87.57	*	37.00	6.19E-01	1.96E-01
TL-208	0.964	583.14	*	30.22	1.16E+00	3.57E-01
		860.37	*	4.48	2.37E+00	1.97E+00
		2614.66	*	35.85	1.35E+00	4.72E-01
PB-210	0.943	46.50	*	4.25	1.63E+00	1.64E+00
BI-212	0.766	727.17	*	11.80	1.67E+00	1.62E+00
		1620.62		2.75		
PB-212	0.990	238.63	*	44.60	1.31E+00	2.09E-01
		300.09	*	3.41	1.72E+00	1.83E+00
BI-214	0.935	609.31	*	46.30	1.76E+00	3.65E-01
		1120.29	*	15.10	2.47E+00	1.14E+00
		1764.49	*	15.80	1.81E+00	5.53E-01
		2204.22		4.98		
PB-214	0.999	295.21	*	19.19	1.89E+00	3.79E-01
		351.92	*	37.19	1.94E+00	3.29E-01
RA-226	0.989	186.21	*	3.28	5.20E+00	9.79E+00
AC-228	0.983	338.32	*	11.40	1.28E+00	7.69E-01
		911.07	*	27.70	1.08E+00	4.24E-01
		969.11	*	16.60	1.07E+00	5.25E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 1:38:55PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	75.94	3.44211E-01	6.54		
M	3	83.62	1.99962E-02	26.59	Tol.	TH-231
m	5	92.86	7.65712E-02	21.70		
m	8	241.99	5.55243E-02	21.47		
	9	277.36	9.63628E-03	52.29	Tol.	NP-239

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
						CM-243
	14	376.74	1.32088E-02	51.64		
	15	462.88	1.34722E-02	35.06	Tol.	SB-125
	16	511.43	2.40066E-02	32.13		
	20	768.02	1.34568E-02	36.91	Sum	
	21	821.25	5.92294E-03	55.89	Sum	
m	23	870.27	7.57022E-03	37.24	Tol.	NB-94
m	26	971.70	3.55498E-03	83.52		
	27	1031.52	5.63763E-03	45.29		
	28	1037.63	5.27778E-03	38.23		
	29	1076.69	6.18341E-03	62.65		
	31	1238.27	1.93037E-02	29.33		
	33	1592.15	5.51587E-03	44.69	D-Esc	
	34	1660.71	1.46825E-03	57.54		
	35	1728.66	3.44444E-03	50.20	Sum	
	36	1744.53	3.61111E-03	27.74		
	38	1810.61	1.89815E-03	54.88	Sum	
	39	1846.33	3.76736E-03	34.78	Sum	
	40	1992.23	1.94444E-03	37.80		
	41	2104.18	3.30556E-03	54.90		
	42	2203.02	5.15873E-03	28.11		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.00	1460.81	*	10.67	2.44E+01	3.19E+00
CD-109	0.98	88.03	*	3.72	7.14E+00	2.30E+00
SN-126	0.99	87.57	*	37.00	6.19E-01	1.96E-01
TL-208	0.96	583.14	*	30.22	1.16E+00	3.57E-01
		860.37	*	4.48	2.37E+00	1.97E+00
		2614.66	*	35.85	1.35E+00	4.72E-01
PB-210	0.94	46.50	*	4.25	1.63E+00	1.64E+00

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.76	727.17	*	11.80	1.67E+00	1.62E+00
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.31E+00	2.09E-01
		300.09	*	3.41	1.72E+00	1.83E+00
BI-214	0.93	609.31	*	46.30	1.76E+00	3.65E-01
		1120.29	*	15.10	2.47E+00	1.14E+00
		1764.49	*	15.80	1.81E+00	5.53E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.89E+00	3.79E-01
		351.92	*	37.19	1.94E+00	3.29E-01
RA-226	0.98	186.21	*	3.28	5.20E+00	9.79E+00
AC-228	0.98	338.32	*	11.40	1.28E+00	7.69E-01
		911.07	*	27.70	1.08E+00	4.24E-01
		969.11	*	16.60	1.07E+00	5.25E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	1.000	2.44E+01	3.19E+00	
?	CD-109	0.980	7.14E+00	2.30E+00	
?	SN-126	0.998	6.19E-01	1.96E-01	
	TL-208	0.964	1.25E+00	2.82E-01	
	PB-210	0.943	1.63E+00	1.64E+00	
	BI-212	0.766	1.67E+00	1.62E+00	
	PB-212	0.990	1.31E+00	2.08E-01	
	BI-214	0.935	1.82E+00	2.94E-01	
	PB-214	0.999	1.92E+00	2.49E-01	
	RA-226	0.989	5.20E+00	9.79E+00	
	AC-228	0.983	1.11E+00	3.03E-01	

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

? = 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 1707090-04

HTC-A06-S001-1218-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 1:38:55PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	75.94	3.44211E-01	6.54		
M	3	83.62	1.99962E-02	26.59	Tol.	TH-231
m	5	92.86	7.65712E-02	21.70		
m	8	241.99	5.55243E-02	21.47		
	9	277.36	9.63628E-03	52.29	Tol.	NP-239 CM-243
	14	376.74	1.32088E-02	51.64		
	15	462.88	1.34722E-02	35.06	Tol.	SB-125
	16	511.43	2.40066E-02	32.13		
	20	768.02	1.34568E-02	36.91	Sum	
	21	821.25	5.92294E-03	55.89	Sum	
m	23	870.27	7.57022E-03	37.24	Tol.	NB-94
m	26	971.70	3.55498E-03	83.52		
	27	1031.52	5.63763E-03	45.29		
	28	1037.63	5.27778E-03	38.23		
	29	1076.69	6.18341E-03	62.65		
	31	1238.27	1.93037E-02	29.33		
	33	1592.15	5.51587E-03	44.69	D-Esc	
	34	1660.71	1.46825E-03	57.54		
	35	1728.66	3.44444E-03	50.20	Sum	
	36	1744.53	3.61111E-03	27.74		
	38	1810.61	1.89815E-03	54.88	Sum	
	39	1846.33	3.76736E-03	34.78	Sum	
	40	1992.23	1.94444E-03	37.80		
	41	2104.18	3.30556E-03	54.90		
	42	2203.02	5.15873E-03	28.11		

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 1707090-04

HTC-A06-S001-1218-01

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	2.56E-01	3.32E+00	3.32E+00
+		NA-22	1274.54		99.94	-4.09E-02	1.81E-01	1.81E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	-1.06E-02	1.01E-01	1.01E-01
+		K-40	1460.81	*	10.67	2.44E+01	1.44E+00	1.44E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-2.82E-02	9.16E-02	9.16E-02
			78.34		96.00	4.37E-01		1.14E-01
+		SC-46	889.25		99.98	-6.62E-02	3.04E-01	3.04E-01
			1120.51		99.99	8.17E-01		5.35E-01
+		V-48	983.52		99.98	1.01E-01	1.00E+01	1.00E+01
			1312.10		97.50	-8.20E-01		1.24E+01
+		CR-51	320.08		9.83	-2.51E-03	9.63E+00	9.63E+00
+		MN-54	834.83		99.97	2.01E-02	1.80E-01	1.80E-01
+		CO-56	846.75		99.96	-6.93E-02	3.39E-01	3.39E-01
			1037.75		14.03	1.37E-02		2.23E+00
			1238.25		67.00	7.74E-01		8.24E-01
			1771.40		15.51	-2.04E+00		1.36E+00
			2598.48		16.90	2.04E-01		1.27E+00
+		CO-57	122.06		85.51	-1.29E-02	9.64E-02	9.64E-02
			136.48		10.60	1.40E-01		8.33E-01
+		CO-58	810.76		99.40	1.68E-01	3.44E-01	3.44E-01
+		FE-59	1099.22		56.50	2.31E-01	1.32E+00	1.32E+00
			1291.56		43.20	-1.55E-01		1.78E+00
+		CO-60	1173.22		100.00	3.38E-02	1.50E-01	1.89E-01
			1332.49		100.00	3.42E-02		1.50E-01
+		ZN-65	1115.52		50.75	1.14E-02	5.20E-01	5.20E-01
+		GA-67	93.31		35.70	3.40E+08	3.36E+08	3.36E+08
			208.95		2.24	3.18E+09		5.22E+09
			300.22		16.00	-1.69E+09		8.27E+08
+		SE-75	121.11		16.70	-1.57E-01	2.05E-01	6.73E-01
			136.00		59.20	2.88E-02		2.05E-01
			264.65		59.80	-2.24E-01		2.25E-01
			279.53		25.20	-6.51E-02		6.01E-01
			400.65		11.40	5.66E-01		1.53E+00
+		RB-82	776.52		13.00	5.91E+00	1.50E+01	1.50E+01
+		RB-83	520.41		46.00	-7.51E-02	4.18E-01	4.18E-01
			529.64		30.30	5.24E-02		6.88E-01
			552.65		16.40	-4.83E-01		1.37E+00
+		KR-85	513.99		0.43	3.54E+01	3.02E+01	3.02E+01
+		SR-85	513.99		99.27	4.39E-01	3.74E-01	3.74E-01

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02		93.40	3.80E-02	1.86E-01	2.93E-01
		1836.01		99.38	-3.54E-03		1.86E-01
+	MO-93	263.06		56.72	-1.72E-02	1.26E-01	1.36E-01
		684.67		99.68	-2.55E-02		1.26E-01
		1477.11		99.08	1.50E-02		1.32E-01
+	NB-93M	16.57		9.43	1.89E+01	8.84E+00	8.84E+00
+	NB-94	702.63		100.00	2.68E-02	1.22E-01	1.41E-01
		871.10		100.00	-6.28E-03		1.22E-01
+	NB-95	765.79		99.81	6.30E-01	1.11E+00	1.11E+00
+	NB-95M	235.69		25.00	1.31E+08	9.06E+07	9.06E+07
+	ZR-95	724.18		43.70	-2.07E-01	7.06E-01	9.87E-01
		756.72		55.30	1.42E-01		7.06E-01
+	MO-99	181.06		6.20	-1.29E+10	7.36E+10	8.38E+10
		739.58		12.80	1.83E+10		7.36E+10
		778.00		4.50	-5.57E+10		2.04E+11
+	RU-103	497.08		89.00	-4.34E-02	5.80E-01	5.80E-01
+	RU-106	621.84		9.80	1.08E+00	1.38E+00	1.38E+00
+	AG-108M	433.93		89.90	1.72E-02	1.00E-01	1.00E-01
		614.37		90.40	-6.45E-03		1.07E-01
		722.95		90.50	-4.34E-02		1.62E-01
+	CD-109	88.03	*	3.72	7.14E+00	7.71E+00	7.71E+00
+	AG-110M	657.75		93.14	-5.56E-02	1.72E-01	1.72E-01
		677.61		10.53	-1.57E-01		1.49E+00
		706.67		16.46	1.83E-01		1.14E+00
		763.93		21.98	1.56E-01		8.65E-01
		884.67		71.63	5.90E-02		2.54E-01
		1384.27		23.94	-1.94E-02		8.35E-01
+	CD-113M	263.70		0.02	-2.21E+02	3.30E+02	3.30E+02
+	SN-113	255.12		1.93	8.03E-02	2.50E-01	7.40E+00
		391.69		64.90	7.30E-02		2.50E-01
+	TE123M	159.00		84.10	-8.91E-03	1.49E-01	1.49E-01
+	SB-124	602.71		97.87	4.87E-02	3.58E-01	3.58E-01
		645.85		7.26	7.65E-01		4.32E+00
		722.78		11.10	-1.11E+00		4.13E+00
		1691.02		49.00	-6.92E-02		6.35E-01
+	I-125	35.49		6.49	-2.58E+00	6.14E+00	6.14E+00
+	SB-125	176.33		6.89	4.55E-01	3.35E-01	1.12E+00
		427.89		29.33	8.30E-02		3.35E-01
		463.38		10.35	7.79E-01		1.05E+00
		600.56		17.80	2.42E-01		6.90E-01
		635.90		11.32	3.19E-01		1.03E+00
+	SB-126	414.70		83.30	-5.54E+00	2.88E+01	2.88E+01
		666.33		99.60	-7.75E+00		3.27E+01
		695.00		99.60	5.85E+00		3.47E+01
		720.50		53.80	-4.14E+01		6.38E+01
+	SN-126	87.57	*	37.00	6.19E-01	6.68E-01	6.68E-01
+	SB-127	473.00		25.00	-3.49E+06	1.97E+07	2.16E+07
		685.20		35.70	-3.99E+06		1.97E+07

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-127	783.80	14.70	1.35E+07	1.97E+07	5.75E+07
+	I-129	29.78	57.00	6.46E-02	3.29E-01	3.29E-01
		33.60	13.20	1.78E-01		1.09E+00
		39.58	7.52	-1.15E+00		1.42E+00
+	I-131	284.30	6.05	1.79E+03	5.55E+02	6.68E+03
		364.48	81.20	1.70E+02		5.55E+02
		636.97	7.26	7.53E+03		8.02E+03
		722.89	1.80	-1.13E+04		4.21E+04
+	TE-132	49.72	13.10	-4.50E+07	1.26E+08	1.05E+09
		228.16	88.00	-1.71E+07		1.26E+08
+	BA-133	81.00	33.00	-9.30E-01	2.09E-01	2.62E-01
		302.84	17.80	6.01E-02		4.80E-01
		356.01	60.00	1.76E-03		2.09E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-3.92E+05	1.10E+05	1.10E+05
+	CS-134	563.23	8.38	5.33E-02	1.49E-01	1.22E+00
		569.32	15.43	2.19E-01		6.89E-01
		604.70	97.60	2.36E-02		1.49E-01
		795.84	85.40	-7.91E-02		1.80E-01
		801.93	8.73	1.18E-01		1.73E+00
+	CS-135	268.24	16.00	-5.91E-02	5.17E-01	5.17E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-3.05E+00	2.38E+01	1.75E+02
		163.89	4.61	1.50E+02		2.91E+02
		176.55	13.56	3.10E+01		9.84E+01
		273.65	12.66	-4.15E+01		1.29E+02
		340.57	48.50	3.88E+01		4.11E+01
		818.50	99.70	-3.41E-02		2.38E+01
		1048.07	79.60	8.57E+00		3.56E+01
		1235.34	19.70	1.86E+02		2.16E+02
+	CS-137	661.65	85.12	2.25E-02	1.50E-01	1.50E-01
+	LA-138	788.74	34.00	-4.20E-02	1.94E-01	4.52E-01
		1435.80	66.00	-4.42E-02		1.94E-01
+	CE-139	165.85	80.35	-2.49E-02	1.46E-01	1.46E-01
+	BA-140	162.64	6.70	9.12E+01	8.01E+01	2.32E+02
		304.84	4.50	-8.71E+00		3.79E+02
		423.70	3.20	9.41E+01		6.38E+02
		437.55	2.00	-3.10E+02		9.62E+02
		537.32	25.00	1.22E-01		8.01E+01
+	LA-140	328.77	20.50	2.14E+00	3.32E+01	9.25E+01
		487.03	45.50	6.73E+00		4.44E+01
		815.85	23.50	1.28E+01		1.10E+02
		1596.49	95.49	2.61E+00		3.32E+01
+	CE-141	145.44	48.40	2.87E-01	1.22E+00	1.22E+00
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CE-144	133.54	10.80	-2.35E-01	8.05E-01	8.05E-01
+	PM-144	476.78	42.00	-4.16E-02	1.18E-01	2.69E-01
		618.01	98.60	-4.97E-02		1.18E-01
		696.49	99.49	-8.22E-03		1.65E-01
+	PM-145	36.85	21.70	-3.16E-01	2.95E-01	5.53E-01
		37.36	39.70	-1.69E-01		2.95E-01
		42.30	15.10	-1.36E-01		6.92E-01
		72.40	2.31	-2.25E-01		4.22E+00
+	PM-146	453.90	39.94	2.84E-03	2.43E-01	2.43E-01
		735.90	14.01	2.00E-02		9.23E-01
		747.13	13.10	-2.28E-01		1.04E+00
+	ND-147	91.11	28.90	2.51E+02	1.63E+02	1.63E+02
		531.02	13.10	6.21E+01		3.77E+02
+	PM-149	285.90	3.10	-1.95E+12	7.56E+13	7.56E+13
+	EU-152	121.78	20.50	-4.24E-02	3.16E-01	3.16E-01
		244.69	5.40	-1.72E+00		1.71E+00
		344.27	19.13	8.23E-02		4.69E-01
		778.89	9.20	-1.70E+00		1.38E+00
		964.01	10.40	-8.62E-02		1.59E+00
		1085.78	7.22	9.30E-01		2.36E+00
		1112.02	9.60	4.36E-01		1.75E+00
		1407.95	14.94	-1.46E-01		8.21E-01
+	GD-153	97.43	31.30	-2.45E-01	3.03E-01	3.03E-01
		103.18	22.20	2.57E-02		3.83E-01
+	EU-154	123.07	40.50	-1.94E-02	1.61E-01	1.61E-01
		723.30	19.70	-1.60E-01		7.63E-01
		873.19	11.50	8.92E-03		1.13E+00
		996.32	10.30	-1.72E-01		1.34E+00
		1004.76	17.90	-3.05E-02		9.01E-01
		1274.45	35.50	-1.09E-01		4.85E-01
+	EU-155	86.50	30.90	3.35E-01	2.98E-01	2.98E-01
		105.30	20.70	-2.55E-02		3.19E-01
+	EU-156	811.77	10.40	6.09E+01	1.13E+02	1.13E+02
		1153.47	7.20	-3.75E+01		2.21E+02
		1230.71	8.90	-7.22E+00		1.91E+02
+	HO-166M	184.41	72.60	2.18E-01	1.21E-01	1.21E-01
		280.45	29.60	-4.40E-02		2.79E-01
		410.94	11.10	-1.03E-01		8.45E-01
		711.69	54.10	9.73E-02		2.58E-01
+	TM-171	66.72	0.14	-3.08E+00	7.04E+01	7.04E+01
+	HF-172	67.35	5.31	-8.09E-02	6.43E-01	1.85E+00
		125.81	11.30	-4.02E-01		6.43E-01
+	LU-172	181.53	20.60	-7.12E+02	7.68E+03	1.05E+04
		900.72	29.81	3.53E+03		1.35E+04
		1093.66	62.50	9.67E+02		7.68E+03
+	LU-173	100.72	5.24	-6.95E-01	4.81E-01	1.39E+00
		272.11	21.20	1.72E-01		4.81E-01
+	HF-175	343.40	84.00	4.92E-02	2.80E-01	2.80E-01
+	LU-176	88.34	13.30	2.97E-02	8.15E-02	6.63E-01

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	201.83		86.00	-1.28E-02	8.15E-02	8.84E-02
		306.78		94.00	-5.17E-03		8.15E-02
+	HF-181	133.02		41.70	-6.93E-02	5.39E-01	8.43E-01
		345.85		17.20	4.59E-01		2.46E+00
		482.03		82.80	-3.01E-01		5.39E-01
+	TA-182	67.75		41.20	-1.17E-01	3.82E-01	3.82E-01
		1121.30		34.90	1.55E+00		1.21E+00
		1189.05		16.23	-6.66E-02		2.20E+00
		1221.41		26.98	3.99E-01		1.35E+00
		1231.02		11.44	-5.34E-01		2.91E+00
+	IR-192	308.46		29.68	5.64E-02	4.79E-01	6.60E-01
		468.07		48.10	-5.68E-02		4.79E-01
+	HG-203	279.19		77.30	1.03E-01	4.97E-01	4.97E-01
+	TL-204	374.74		94.11	1.61E-02	9.70E-02	9.70E-02
		899.15		99.16	5.52E-03		1.50E-01
		911.74		91.10	3.23E-01		2.27E-01
+	BI-207	569.67		97.72	3.18E-02	9.99E-02	9.99E-02
		1063.62		74.90	-1.06E-02		2.06E-01
+	TL-208	583.14	*	30.22	1.16E+00	4.46E-01	4.71E-01
		860.37	*	4.48	2.37E+00		4.93E+00
		2614.66	*	35.85	1.35E+00		4.46E-01
+	BI-210M	262.00		45.00	3.71E-02	1.70E-01	1.70E-01
		300.00		23.00	-8.20E-01		4.02E-01
+	PB-210	46.50	*	4.25	1.63E+00	2.68E+00	2.68E+00
+	PB-211	404.84		2.90	-1.92E-01	3.31E+00	3.31E+00
		831.96		2.90	5.45E-02		4.74E+00
+	BI-212	727.17	*	11.80	1.67E+00	2.62E+00	2.62E+00
		1620.62		2.75	-7.95E-01		4.06E+00
+	PB-212	238.63	*	44.60	1.31E+00	3.94E-01	3.94E-01
		300.09	*	3.41	1.72E+00		4.19E+00
+	BI-214	609.31	*	46.30	1.76E+00	1.06E-01	3.97E-01
		1120.29	*	15.10	2.47E+00		1.70E+00
		1764.49	*	15.80	1.81E+00		1.06E-01
		2204.22		4.98	1.58E+00		3.71E+00
+	PB-214	295.21	*	19.19	1.89E+00	3.85E-01	7.27E-01
		351.92	*	37.19	1.94E+00		3.85E-01
+	RN-219	401.80		6.50	4.64E-01	1.50E+00	1.50E+00
+	RA-223	323.87		3.88	-1.51E+00	2.06E+00	2.06E+00
+	RA-224	240.98		3.95	1.72E+01	3.63E+00	3.63E+00
+	RA-225	40.00		31.00	-2.87E+01	3.52E+01	3.52E+01
+	RA-226	186.21	*	3.28	5.20E+00	3.62E+00	3.62E+00
+	TH-227	50.10		8.40	-4.79E-02	1.06E+00	1.12E+00
		236.00		11.50	1.53E+00		1.06E+00
		256.20		6.30	4.14E-02		1.24E+00
+	AC-228	338.32	*	11.40	1.28E+00	6.00E-01	1.22E+00
		911.07	*	27.70	1.08E+00		6.00E-01
		969.11	*	16.60	1.07E+00		1.16E+00
+	TH-230	48.44		16.90	4.15E-02	5.84E-01	5.84E-01

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-230	62.85	4.60	2.84E+00	5.84E-01	2.04E+00
		67.67	0.37	-7.17E+00		2.33E+01
+	PA-231	283.67	1.60	1.31E+00	3.65E+00	4.88E+00
		302.67	2.30	4.57E-01		3.65E+00
+	TH-231	25.64	14.70	5.02E-01	1.28E+00	1.82E+00
		84.21	6.40	-1.47E+00		1.28E+00
+	PA-233	311.98	38.60	8.84E-01	2.58E+00	2.58E+00
+	PA-234	131.20	20.40	7.26E-02	3.40E-01	3.40E-01
		733.99	8.80	-1.58E+00		1.40E+00
		946.00	12.00	-3.22E-01		1.24E+00
+	PA-234M	1001.03	0.92	-6.32E-01	1.56E+01	1.56E+01
+	TH-234	63.29	3.80	3.43E+00	2.46E+00	2.46E+00
+	U-235	143.76	10.50	-3.26E-02	6.68E-01	6.68E-01
		163.35	4.70	6.04E-01		1.53E+00
		205.31	4.70	-7.94E-01		1.65E+00
+	NP-237	86.50	12.60	7.90E-01	7.03E-01	7.03E-01
+	NP-239	106.10	22.70	1.23E+11	1.34E+12	1.34E+12
		228.18	10.70	-4.60E+11		3.39E+12
		277.60	14.10	2.11E+12		2.95E+12
+	AM-241	59.54	35.90	-2.05E-01	2.48E-01	2.48E-01
+	AM-243	74.67	66.00	9.25E-01	1.77E-01	1.77E-01
+	CM-243	209.75	3.29	9.46E-01	6.28E-01	2.46E+00
		228.14	10.60	-9.81E-02		7.24E-01
		277.60	14.00	4.49E-01		6.28E-01

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

NUCLIDE MDA REPORT

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

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	3.32E+00	3.32E+00	2.56E-01	1.57E+00
	NA-22	1274.54		99.94	1.81E-01	1.81E-01	-4.09E-02	8.40E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	1.01E-01	1.01E-01	-1.06E-02	4.20E-02
+	K-40	1460.81	*	10.67	1.44E+00	1.44E+00	2.44E+01	6.52E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	9.16E-02	9.16E-02	-2.82E-02	4.50E-02
		78.34		96.00	1.14E-01		4.37E-01	5.65E-02
	SC-46	889.25		99.98	3.04E-01	3.04E-01	-6.62E-02	1.42E-01
		1120.51		99.99	5.35E-01		8.17E-01	2.55E-01
	V-48	983.52		99.98	1.00E+01	1.00E+01	1.01E-01	4.65E+00
		1312.10		97.50	1.24E+01		-8.20E-01	5.73E+00
	CR-51	320.08		9.83	9.63E+00	9.63E+00	-2.51E-03	4.61E+00
	MN-54	834.83		99.97	1.80E-01	1.80E-01	2.01E-02	8.47E-02
	CO-56	846.75		99.96	3.39E-01	3.39E-01	-6.93E-02	1.59E-01
		1037.75		14.03	2.23E+00		1.37E-02	1.03E+00
		1238.25		67.00	8.24E-01		7.74E-01	3.90E-01
		1771.40		15.51	1.36E+00		-2.04E+00	5.48E-01
		2598.48		16.90	1.27E+00		2.04E-01	4.48E-01
	CO-57	122.06		85.51	9.64E-02	9.64E-02	-1.29E-02	4.70E-02
		136.48		10.60	8.33E-01		1.40E-01	4.07E-01
	CO-58	810.76		99.40	3.44E-01	3.44E-01	1.68E-01	1.61E-01
	FE-59	1099.22		56.50	1.32E+00	1.32E+00	2.31E-01	6.13E-01
		1291.56		43.20	1.78E+00		-1.55E-01	8.20E-01
	CO-60	1173.22		100.00	1.89E-01	1.50E-01	3.38E-02	8.83E-02
		1332.49		100.00	1.50E-01		3.42E-02	6.84E-02
	ZN-65	1115.52		50.75	5.20E-01	5.20E-01	1.14E-02	2.45E-01
	GA-67	93.31		35.70	3.36E+08	3.36E+08	3.40E+08	1.65E+08
		208.95		2.24	5.22E+09		3.18E+09	2.54E+09
		300.22		16.00	8.27E+08		-1.69E+09	4.00E+08
	SE-75	121.11		16.70	6.73E-01	2.05E-01	-1.57E-01	3.29E-01
		136.00		59.20	2.05E-01		2.88E-02	1.00E-01
		264.65		59.80	2.25E-01		-2.24E-01	1.08E-01
		279.53		25.20	6.01E-01		-6.51E-02	2.91E-01
		400.65		11.40	1.53E+00		5.66E-01	7.32E-01
	RB-82	776.52		13.00	1.50E+01	1.50E+01	5.91E+00	7.04E+00
	RB-83	520.41		46.00	4.18E-01	4.18E-01	-7.51E-02	1.96E-01
		529.64		30.30	6.88E-01		5.24E-02	3.24E-01
		552.65		16.40	1.37E+00		-4.83E-01	6.46E-01
	KR-85	513.99		0.43	3.02E+01	3.02E+01	3.54E+01	1.45E+01
	SR-85	513.99		99.27	3.74E-01	3.74E-01	4.39E-01	1.79E-01
	Y-88	898.02		93.40	2.93E-01	1.86E-01	3.80E-02	1.37E-01
		1836.01		99.38	1.86E-01		-3.54E-03	7.62E-02
	MO-93	263.06		56.72	1.36E-01	1.26E-01	-1.72E-02	6.58E-02
		684.67		99.68	1.26E-01		-2.55E-02	5.93E-02
		1477.11		99.08	1.32E-01		1.50E-02	5.89E-02
	NB-93M	16.57		9.43	8.84E+00	8.84E+00	1.89E+01	4.30E+00
	NB-94	702.63		100.00	1.41E-01	1.22E-01	2.68E-02	6.68E-02
		871.10		100.00	1.22E-01		-6.28E-03	5.63E-02
	NB-95	765.79		99.81	1.11E+00	1.11E+00	6.30E-01	5.29E-01
	NB-95M	235.69		25.00	9.06E+07	9.06E+07	1.31E+08	4.44E+07
	ZR-95	724.18		43.70	9.87E-01	7.06E-01	-2.07E-01	4.68E-01

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	ZR-95	756.72		55.30	7.06E-01	7.06E-01	1.42E-01	3.32E-01
	MO-99	181.06		6.20	8.38E+10	7.36E+10	-1.29E+10	4.08E+10
		739.58		12.80	7.36E+10		1.83E+10	3.47E+10
		778.00		4.50	2.04E+11		-5.57E+10	9.55E+10
	RU-103	497.08		89.00	5.80E-01	5.80E-01	-4.34E-02	2.73E-01
	RU-106	621.84		9.80	1.38E+00	1.38E+00	1.08E+00	6.48E-01
	AG-108M	433.93		89.90	1.00E-01	1.00E-01	1.72E-02	4.77E-02
		614.37		90.40	1.07E-01		-6.45E-03	5.01E-02
		722.95		90.50	1.62E-01		-4.34E-02	7.69E-02
+	CD-109	88.03	*	3.72	7.71E+00	7.71E+00	7.14E+00	3.83E+00
	AG-110M	657.75		93.14	1.72E-01	1.72E-01	-5.56E-02	8.13E-02
		677.61		10.53	1.49E+00		-1.57E-01	7.00E-01
		706.67		16.46	1.14E+00		1.83E-01	5.39E-01
		763.93		21.98	8.65E-01		1.56E-01	4.09E-01
		884.67		71.63	2.54E-01		5.90E-02	1.19E-01
		1384.27		23.94	8.35E-01		-1.94E-02	3.81E-01
	CD-113M	263.70		0.02	3.30E+02	3.30E+02	-2.21E+02	1.59E+02
	SN-113	255.12		1.93	7.40E+00	2.50E-01	8.03E-02	3.58E+00
		391.69		64.90	2.50E-01		7.30E-02	1.19E-01
	TE123M	159.00		84.10	1.49E-01	1.49E-01	-8.91E-03	7.25E-02
	SB-124	602.71		97.87	3.58E-01	3.58E-01	4.87E-02	1.69E-01
		645.85		7.26	4.32E+00		7.65E-01	2.02E+00
		722.78		11.10	4.13E+00		-1.11E+00	1.96E+00
		1691.02		49.00	6.35E-01		-6.92E-02	2.66E-01
	I-125	35.49		6.49	6.14E+00	6.14E+00	-2.58E+00	3.00E+00
	SB-125	176.33		6.89	1.12E+00	3.35E-01	4.55E-01	5.43E-01
		427.89		29.33	3.35E-01		8.30E-02	1.60E-01
		463.38		10.35	1.05E+00		7.79E-01	5.02E-01
		600.56		17.80	6.90E-01		2.42E-01	3.26E-01
		635.90		11.32	1.03E+00		3.19E-01	4.83E-01
	SB-126	414.70		83.30	2.88E+01	2.88E+01	-5.54E+00	1.37E+01
		666.33		99.60	3.27E+01		-7.75E+00	1.55E+01
		695.00		99.60	3.47E+01		5.85E+00	1.64E+01
		720.50		53.80	6.38E+01		-4.14E+01	3.01E+01
+	SN-126	87.57	*	37.00	6.68E-01	6.68E-01	6.19E-01	3.32E-01
	SB-127	473.00		25.00	2.16E+07	1.97E+07	-3.49E+06	1.02E+07
		685.20		35.70	1.97E+07		-3.99E+06	9.26E+06
		783.80		14.70	5.75E+07		1.35E+07	2.72E+07
	I-129	29.78		57.00	3.29E-01	3.29E-01	6.46E-02	1.61E-01
		33.60		13.20	1.09E+00		1.78E-01	5.31E-01
		39.58		7.52	1.42E+00		-1.15E+00	6.91E-01
	I-131	284.30		6.05	6.68E+03	5.55E+02	1.79E+03	3.22E+03
		364.48		81.20	5.55E+02		1.70E+02	2.66E+02
		636.97		7.26	8.02E+03		7.53E+03	3.78E+03
		722.89		1.80	4.21E+04		-1.13E+04	2.00E+04
	TE-132	49.72		13.10	1.05E+09	1.26E+08	-4.50E+07	5.16E+08
		228.16		88.00	1.26E+08		-1.71E+07	6.11E+07
	BA-133	81.00		33.00	2.62E-01	2.09E-01	-9.30E-01	1.29E-01
		302.84		17.80	4.80E-01		6.01E-02	2.31E-01
		356.01		60.00	2.09E-01		1.76E-03	1.01E-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	1.10E+05	1.10E+05	-3.92E+05	5.43E+04
	CS-134	563.23		8.38	1.22E+00	1.49E-01	5.33E-02	5.70E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	569.32	15.43	6.89E-01	1.49E-01	2.19E-01	3.23E-01
	604.70	97.60	1.49E-01		2.36E-02	7.09E-02
	795.84	85.40	1.80E-01		-7.91E-02	8.49E-02
	801.93	8.73	1.73E+00		1.18E-01	8.12E-01
CS-135	268.24	16.00	5.17E-01	5.17E-01	-5.91E-02	2.50E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.75E+02	2.38E+01	-3.05E+00	8.55E+01
	163.89	4.61	2.91E+02		1.50E+02	1.42E+02
	176.55	13.56	9.84E+01		3.10E+01	4.79E+01
	273.65	12.66	1.29E+02		-4.15E+01	6.22E+01
	340.57	48.50	4.11E+01		3.88E+01	1.99E+01
	818.50	99.70	2.38E+01		-3.41E-02	1.11E+01
	1048.07	79.60	3.56E+01		8.57E+00	1.66E+01
	1235.34	19.70	2.16E+02		1.86E+02	1.02E+02
CS-137	661.65	85.12	1.50E-01	1.50E-01	2.25E-02	7.08E-02
LA-138	788.74	34.00	4.52E-01	1.94E-01	-4.20E-02	2.14E-01
	1435.80	66.00	1.94E-01		-4.42E-02	8.66E-02
CE-139	165.85	80.35	1.46E-01	1.46E-01	-2.49E-02	7.10E-02
BA-140	162.64	6.70	2.32E+02	8.01E+01	9.12E+01	1.13E+02
	304.84	4.50	3.79E+02		-8.71E+00	1.82E+02
	423.70	3.20	6.38E+02		9.41E+01	3.04E+02
	437.55	2.00	9.62E+02		-3.10E+02	4.56E+02
	537.32	25.00	8.01E+01		1.22E-01	3.76E+01
LA-140	328.77	20.50	9.25E+01	3.32E+01	2.14E+00	4.45E+01
	487.03	45.50	4.44E+01		6.73E+00	2.10E+01
	815.85	23.50	1.10E+02		1.28E+01	5.09E+01
	1596.49	95.49	3.32E+01		2.61E+00	1.49E+01
CE-141	145.44	48.40	1.22E+00	1.22E+00	2.87E-01	5.98E-01
@ 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	8.05E-01	8.05E-01	-2.35E-01	3.93E-01
PM-144	476.78	42.00	2.69E-01	1.18E-01	-4.16E-02	1.28E-01
	618.01	98.60	1.18E-01		-4.97E-02	5.53E-02
	696.49	99.49	1.65E-01		-8.22E-03	7.79E-02
PM-145	36.85	21.70	5.53E-01	2.95E-01	-3.16E-01	2.70E-01
	37.36	39.70	2.95E-01		-1.69E-01	1.44E-01
	42.30	15.10	6.92E-01		-1.36E-01	3.38E-01
	72.40	2.31	4.22E+00		-2.25E-01	2.08E+00
PM-146	453.90	39.94	2.43E-01	2.43E-01	2.84E-03	1.15E-01
	735.90	14.01	9.23E-01		2.00E-02	4.33E-01
	747.13	13.10	1.04E+00		-2.28E-01	4.87E-01
ND-147	91.11	28.90	1.63E+02	1.63E+02	2.51E+02	8.03E+01
	531.02	13.10	3.77E+02		6.21E+01	1.77E+02
PM-149	285.90	3.10	7.56E+13	7.56E+13	-1.95E+12	3.63E+13
EU-152	121.78	20.50	3.16E-01	3.16E-01	-4.24E-02	1.54E-01
	244.69	5.40	1.71E+00		-1.72E+00	8.32E-01
	344.27	19.13	4.69E-01		8.23E-02	2.25E-01
	778.89	9.20	1.38E+00		-1.70E+00	6.47E-01
	964.01	10.40	1.59E+00		-8.62E-02	7.45E-01
	1085.78	7.22	2.36E+00		9.30E-01	1.10E+00

Analysis Report for 1707090-04

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	1112.02		9.60	1.75E+00	3.16E-01	4.36E-01	8.17E-01
		1407.95		14.94	8.21E-01		-1.46E-01	3.64E-01
	GD-153	97.43		31.30	3.03E-01	3.03E-01	-2.45E-01	1.48E-01
		103.18		22.20	3.83E-01		2.57E-02	1.87E-01
	EU-154	123.07		40.50	1.61E-01	1.61E-01	-1.94E-02	7.86E-02
		723.30		19.70	7.63E-01		-1.60E-01	3.62E-01
		873.19		11.50	1.13E+00		8.92E-03	5.24E-01
		996.32		10.30	1.34E+00		-1.72E-01	6.18E-01
		1004.76		17.90	9.01E-01		-3.05E-02	4.22E-01
		1274.45		35.50	4.85E-01		-1.09E-01	2.25E-01
	EU-155	86.50		30.90	2.98E-01	2.98E-01	3.35E-01	1.46E-01
		105.30		20.70	3.19E-01		-2.55E-02	1.56E-01
	EU-156	811.77		10.40	1.13E+02	1.13E+02	6.09E+01	5.26E+01
		1153.47		7.20	2.21E+02		-3.75E+01	1.03E+02
		1230.71		8.90	1.91E+02		-7.22E+00	8.90E+01
	HO-166M	184.41		72.60	1.21E-01	1.21E-01	2.18E-01	5.90E-02
		280.45		29.60	2.79E-01		-4.40E-02	1.34E-01
		410.94		11.10	8.45E-01		-1.03E-01	4.03E-01
		711.69		54.10	2.58E-01		9.73E-02	1.22E-01
	TM-171	66.72		0.14	7.04E+01	7.04E+01	-3.08E+00	3.46E+01
	HF-172	67.35		5.31	1.85E+00	6.43E-01	-8.09E-02	9.11E-01
		125.81		11.30	6.43E-01		-4.02E-01	3.14E-01
	LU-172	181.53		20.60	1.05E+04	7.68E+03	-7.12E+02	5.10E+03
		900.72		29.81	1.35E+04		3.53E+03	6.33E+03
		1093.66		62.50	7.68E+03		9.67E+02	3.59E+03
	LU-173	100.72		5.24	1.39E+00	4.81E-01	-6.95E-01	6.78E-01
		272.11		21.20	4.81E-01		1.72E-01	2.33E-01
	HF-175	343.40		84.00	2.80E-01	2.80E-01	4.92E-02	1.35E-01
	LU-176	88.34		13.30	6.63E-01	8.15E-02	2.97E-02	3.26E-01
		201.83		86.00	8.84E-02		-1.28E-02	4.29E-02
		306.78		94.00	8.15E-02		-5.17E-03	3.91E-02
	HF-181	133.02		41.70	8.43E-01	5.39E-01	-6.93E-02	4.12E-01
		345.85		17.20	2.46E+00		4.59E-01	1.18E+00
		482.03		82.80	5.39E-01		-3.01E-01	2.54E-01
	TA-182	67.75		41.20	3.82E-01	3.82E-01	-1.17E-01	1.88E-01
		1121.30		34.90	1.21E+00		1.55E+00	5.75E-01
		1189.05		16.23	2.20E+00		-6.66E-02	1.03E+00
		1221.41		26.98	1.35E+00		3.99E-01	6.36E-01
		1231.02		11.44	2.91E+00		-5.34E-01	1.36E+00
	IR-192	308.46		29.68	6.60E-01	4.79E-01	5.64E-02	3.17E-01
		468.07		48.10	4.79E-01		-5.68E-02	2.27E-01
	HG-203	279.19		77.30	4.97E-01	4.97E-01	1.03E-01	2.40E-01
	TL-204	374.74		94.11	9.70E-02	9.70E-02	1.61E-02	4.63E-02
		899.15		99.16	1.50E-01		5.52E-03	6.99E-02
		911.74		91.10	2.27E-01		3.23E-01	1.08E-01
	BI-207	569.67		97.72	9.99E-02	9.99E-02	3.18E-02	4.69E-02
		1063.62		74.90	2.06E-01		-1.06E-02	9.60E-02
+	TL-208	583.14	*	30.22	4.71E-01	4.46E-01	1.16E+00	2.25E-01
		860.37	*	4.48	4.93E+00		2.37E+00	2.37E+00
		2614.66	*	35.85	4.46E-01		1.35E+00	1.86E-01
	BI-210M	262.00		45.00	1.70E-01	1.70E-01	3.71E-02	8.20E-02
		300.00		23.00	4.02E-01		-8.20E-01	1.94E-01
+	PB-210	46.50	*	4.25	2.68E+00	2.68E+00	1.63E+00	1.31E+00

Analysis Report for 1707090-04

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PB-211	404.84		2.90	3.31E+00	3.31E+00	-1.92E-01	1.58E+00
		831.96		2.90	4.74E+00		5.45E-02	2.22E+00
+	BI-212	727.17	*	11.80	2.62E+00	2.62E+00	1.67E+00	1.28E+00
		1620.62		2.75	4.06E+00		-7.95E-01	1.75E+00
+	PB-212	238.63	*	44.60	3.94E-01	3.94E-01	1.31E+00	1.94E-01
		300.09	*	3.41	4.19E+00		1.72E+00	2.05E+00
+	BI-214	609.31	*	46.30	3.97E-01	1.06E-01	1.76E+00	1.92E-01
		1120.29	*	15.10	1.70E+00		2.47E+00	8.15E-01
		1764.49	*	15.80	1.06E-01		1.81E+00	0.00E+00
		2204.22		4.98	3.71E+00		1.58E+00	1.64E+00
+	PB-214	295.21	*	19.19	7.27E-01	3.85E-01	1.89E+00	3.56E-01
		351.92	*	37.19	3.85E-01		1.94E+00	1.87E-01
	RN-219	401.80		6.50	1.50E+00	1.50E+00	4.64E-01	7.17E-01
	RA-223	323.87		3.88	2.06E+00	2.06E+00	-1.51E+00	9.89E-01
	RA-224	240.98		3.95	3.63E+00	3.63E+00	1.72E+01	1.78E+00
	RA-225	40.00		31.00	3.52E+01	3.52E+01	-2.87E+01	1.72E+01
+	RA-226	186.21	*	3.28	3.62E+00	3.62E+00	5.20E+00	1.78E+00
	TH-227	50.10		8.40	1.12E+00	1.06E+00	-4.79E-02	5.48E-01
		236.00		11.50	1.06E+00		1.53E+00	5.19E-01
		256.20		6.30	1.24E+00		4.14E-02	5.97E-01
+	AC-228	338.32	*	11.40	1.22E+00	6.00E-01	1.28E+00	5.94E-01
		911.07	*	27.70	6.00E-01		1.08E+00	2.83E-01
		969.11	*	16.60	1.16E+00		1.07E+00	5.51E-01
	TH-230	48.44		16.90	5.84E-01	5.84E-01	4.15E-02	2.86E-01
		62.85		4.60	2.04E+00		2.84E+00	1.00E+00
		67.67		0.37	2.33E+01		-7.17E+00	1.15E+01
	PA-231	283.67		1.60	4.88E+00	3.65E+00	1.31E+00	2.35E+00
		302.67		2.30	3.65E+00		4.57E-01	1.75E+00
	TH-231	25.64		14.70	1.82E+00	1.28E+00	5.02E-01	8.89E-01
		84.21		6.40	1.28E+00		-1.47E+00	6.29E-01
	PA-233	311.98		38.60	2.58E+00	2.58E+00	8.84E-01	1.24E+00
	PA-234	131.20		20.40	3.40E-01	3.40E-01	7.26E-02	1.66E-01
		733.99		8.80	1.40E+00		-1.58E+00	6.57E-01
		946.00		12.00	1.24E+00		-3.22E-01	5.79E-01
	PA-234M	1001.03		0.92	1.56E+01	1.56E+01	-6.32E-01	7.24E+00
	TH-234	63.29		3.80	2.46E+00	2.46E+00	3.43E+00	1.21E+00
	U-235	143.76		10.50	6.68E-01	6.68E-01	-3.26E-02	3.26E-01
		163.35		4.70	1.53E+00		6.04E-01	7.48E-01
		205.31		4.70	1.65E+00		-7.94E-01	8.03E-01
	NP-237	86.50		12.60	7.03E-01	7.03E-01	7.90E-01	3.46E-01
	NP-239	106.10		22.70	1.34E+12	1.34E+12	1.23E+11	6.54E+11
		228.18		10.70	3.39E+12		-4.60E+11	1.64E+12
		277.60		14.10	2.95E+12		2.11E+12	1.43E+12
	AM-241	59.54		35.90	2.48E-01	2.48E-01	-2.05E-01	1.22E-01
	AM-243	74.67		66.00	1.77E-01	1.77E-01	9.25E-01	8.73E-02
	CM-243	209.75		3.29	2.46E+00	6.28E-01	9.46E-01	1.20E+00
		228.14		10.60	7.24E-01		-9.81E-02	3.51E-01
		277.60		14.00	6.28E-01		4.49E-01	3.04E-01

Analysis Report for 1707090-04

HTC-A06-S001-1218-01

+ = 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

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: HTC-A06-S001-1218-01

Elapsed Live time: 3600
Elapsed Real Time: 3622

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	15	106
17:	118	96	94	71	93	100	96	85
25:	77	82	91	92	81	91	89	90
33:	75	100	76	66	79	76	86	84
41:	93	82	123	106	137	135	120	103
49:	111	121	109	113	120	114	134	117
57:	108	125	131	134	179	187	191	187
65:	164	151	151	155	136	127	173	184
73:	272	368	365	453	311	176	126	118
81:	132	129	160	152	156	237	228	188
89:	154	149	200	210	191	128	106	103
97:	83	101	99	88	90	89	81	93
105:	96	96	80	91	86	88	89	109
113:	92	98	78	104	73	84	74	87
121:	87	83	75	80	78	82	89	100
129:	109	91	79	77	84	100	81	86
137:	88	71	78	80	87	74	93	83
145:	88	75	87	94	78	80	72	78
153:	69	82	81	65	70	81	63	81
161:	71	70	76	95	62	64	60	64
169:	69	72	55	56	61	61	78	70
177:	64	67	56	56	73	62	73	96
185:	135	125	75	58	70	50	62	53
193:	59	56	54	62	60	54	60	64
201:	54	70	52	55	69	51	64	66
209:	72	64	60	53	59	44	52	49
217:	59	57	47	42	46	41	54	48
225:	47	56	55	41	42	40	44	55
233:	51	55	51	104	203	286	209	109
241:	128	98	47	29	43	32	38	28
249:	49	39	45	40	29	40	50	32
257:	45	37	37	35	33	39	38	33
265:	32	28	39	49	55	46	53	36
273:	43	36	41	51	58	31	40	38
281:	36	23	30	35	27	34	34	15
289:	22	23	26	44	66	147	118	74
297:	30	36	46	31	29	36	24	24
305:	36	21	26	27	24	26	24	32
313:	21	29	23	22	28	30	22	22
321:	29	25	27	23	18	34	44	30
329:	35	23	25	37	29	28	30	44
337:	69	65	45	35	30	24	26	27
345:	29	21	22	20	43	142	247	167
353:	58	25	31	24	22	28	21	26
361:	17	26	17	24	29	18	34	13

369:	24	22	17	26	16	19	25	26

Sample Title: HTC-A06-S001-1218-01

Channel								
377:	25	16	21	12	13	21	23	22
385:	24	19	20	16	25	24	17	18
393:	24	24	19	17	26	27	18	26
401:	35	17	23	22	25	17	22	20
409:	29	19	17	21	20	23	23	18
417:	23	18	24	31	16	20	12	19
425:	25	18	21	14	15	18	16	18
433:	20	19	18	12	19	15	21	12
441:	23	15	15	14	18	14	18	19
449:	22	15	14	18	20	15	19	18
457:	18	10	15	19	14	35	23	20
465:	10	15	15	13	18	14	16	18
473:	16	16	14	16	23	12	10	20
481:	12	16	7	15	12	18	11	18
489:	21	18	8	16	14	10	9	15
497:	12	13	17	15	14	10	15	17
505:	9	12	20	19	33	47	50	24
513:	16	9	17	15	8	12	15	15
521:	8	8	9	13	13	13	12	16
529:	12	16	9	8	13	9	11	11
537:	9	10	20	11	11	14	12	12
545:	8	12	13	13	10	13	13	18
553:	14	11	13	19	16	4	15	11
561:	10	9	11	7	11	11	10	8
569:	16	11	15	8	7	12	14	18
577:	11	8	12	13	37	71	73	21
585:	16	9	18	9	7	14	4	10
593:	10	15	8	13	11	17	14	11
601:	16	18	14	11	11	12	53	132
609:	151	68	15	9	10	9	9	6
617:	9	9	8	16	17	11	16	12
625:	10	5	7	10	11	12	8	6
633:	16	9	8	16	13	12	12	6
641:	5	8	6	12	12	10	5	12
649:	10	11	14	14	7	9	9	8
657:	8	16	9	14	15	14	7	8
665:	11	11	13	16	7	15	9	13
673:	11	10	5	8	7	6	10	11
681:	17	8	10	8	14	12	2	8
689:	12	14	9	12	11	14	9	13
697:	11	13	14	9	15	10	10	16
705:	10	16	15	7	18	12	9	14
713:	11	10	12	7	8	17	17	8
721:	8	8	9	15	11	23	18	23
729:	9	7	5	9	15	9	10	6
737:	8	12	6	13	4	12	18	7
745:	12	4	10	8	9	6	14	10
753:	3	12	12	14	9	5	13	9
761:	10	5	11	7	9	17	20	25
769:	15	12	5	11	10	9	11	8
777:	6	8	10	8	6	6	16	16
785:	18	13	9	11	15	4	12	10
793:	14	13	9	13	8	8	1	13

801:	14	10	13	10	6	7	7	9

Sample Title: HTC-A06-S001-1218-01

Channel								
809:	8	7	6	7	10	10	4	3
817:	5	5	9	9	9	14	6	5
825:	7	10	5	9	6	10	8	10
833:	10	12	7	5	12	11	11	9
841:	18	9	7	12	13	6	9	5
849:	9	9	10	4	3	10	8	9
857:	7	9	16	13	14	9	10	5
865:	8	4	4	7	6	14	9	4
873:	3	3	6	6	8	9	6	13
881:	10	4	9	5	6	7	9	6
889:	7	5	7	8	9	9	9	7
897:	3	15	6	8	7	5	10	9
905:	4	5	7	7	12	43	31	18
913:	6	7	7	6	9	9	6	8
921:	11	8	5	8	8	5	3	10
929:	8	8	8	7	16	13	7	9
937:	9	7	6	7	11	9	6	8
945:	5	7	10	10	5	9	13	5
953:	11	8	1	11	6	10	5	6
961:	6	6	9	19	10	10	12	28
969:	24	11	15	5	3	4	9	8
977:	8	6	7	4	4	11	2	4
985:	4	8	10	4	6	5	5	8
993:	8	1	3	6	5	3	5	13
1001:	6	9	6	6	12	10	3	7
1009:	7	15	6	8	6	3	10	5
1017:	10	7	7	3	4	5	10	4
1025:	4	9	7	7	6	11	7	11
1033:	2	2	4	9	7	12	2	4
1041:	3	5	4	7	4	8	7	10
1049:	11	6	5	10	5	8	8	9
1057:	5	9	3	4	6	4	5	7
1065:	10	11	11	9	5	7	9	7
1073:	7	8	14	13	6	8	6	4
1081:	4	7	8	7	13	8	9	7
1089:	8	6	8	6	12	5	7	7
1097:	11	6	7	7	8	4	5	4
1105:	5	6	8	8	9	6	6	9
1113:	3	9	8	10	5	15	32	32
1121:	18	8	9	8	5	1	8	7
1129:	6	7	8	3	5	11	9	6
1137:	4	9	1	7	14	4	7	4
1145:	5	6	9	8	7	4	8	6
1153:	10	12	10	5	5	8	9	9
1161:	4	6	4	6	10	5	5	15
1169:	9	5	8	9	6	10	8	8
1177:	10	7	4	8	7	16	10	5
1185:	14	5	10	12	7	9	8	9
1193:	9	3	8	15	9	8	11	12
1201:	13	8	8	10	10	5	16	10
1209:	1	8	10	8	7	5	5	9
1217:	5	9	7	14	12	7	8	13
1225:	8	12	7	8	6	6	6	7

1233:	9	7	11	14	18	25	11	6

Sample Title: HTC-A06-S001-1218-01

Channel								
1241:	8	9	9	6	4	4	6	8
1249:	9	6	3	3	4	3	6	8
1257:	6	3	5	5	3	8	2	6
1265:	5	4	7	2	5	6	7	4
1273:	5	5	5	6	9	6	9	7
1281:	10	5	4	6	6	7	7	2
1289:	8	6	2	6	4	10	4	4
1297:	6	6	1	5	8	2	2	6
1305:	4	7	6	3	8	5	6	3
1313:	10	4	5	3	7	4	5	7
1321:	4	4	2	5	6	0	5	4
1329:	2	5	3	5	3	6	4	3
1337:	2	1	5	3	4	2	3	0
1345:	8	2	1	10	0	3	8	3
1353:	2	2	2	2	2	3	2	3
1361:	2	3	1	3	4	3	2	3
1369:	1	2	5	1	4	4	3	8
1377:	4	6	5	5	4	5	1	4
1385:	2	8	2	5	5	2	3	3
1393:	2	5	4	3	1	5	2	2
1401:	6	1	6	0	3	5	2	4
1409:	2	1	2	2	2	3	0	1
1417:	2	2	1	2	6	3	2	1
1425:	2	4	4	4	3	1	1	3
1433:	4	2	2	4	0	2	5	4
1441:	3	4	2	4	3	6	1	5
1449:	3	2	1	3	2	7	3	1
1457:	5	30	101	138	148	64	15	4
1465:	2	3	2	1	0	2	2	3
1473:	5	1	1	2	5	1	2	5
1481:	0	2	3	1	4	0	5	3
1489:	1	1	1	1	1	3	5	0
1497:	1	1	3	3	1	0	3	3
1505:	1	2	3	2	1	2	2	2
1513:	1	1	2	3	2	0	1	0
1521:	1	2	1	0	0	1	0	2
1529:	2	3	2	2	1	4	1	3
1537:	2	0	1	0	0	3	4	2
1545:	1	1	2	3	2	2	1	1
1553:	0	2	1	2	1	4	1	2
1561:	3	2	0	0	1	0	1	1
1569:	2	1	1	2	0	1	1	1
1577:	5	0	0	5	2	0	3	4
1585:	2	2	4	3	1	3	6	7
1593:	9	1	1	0	1	0	2	4
1601:	2	2	2	1	0	2	3	5
1609:	1	4	1	2	2	0	1	1
1617:	1	0	3	0	3	4	1	0
1625:	5	1	2	3	1	2	5	1
1633:	3	0	0	0	1	2	2	1
1641:	2	3	1	0	2	0	2	0
1649:	0	0	0	1	0	1	0	1
1657:	0	0	0	4	3	0	0	1

1665:	2	1	1	2	2	3	1	1

Sample Title: HTC-A06-S001-1218-01

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

2097:	0	0	0	1	1	2	2	2

Sample Title: HTC-A06-S001-1218-01

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

2529:	0	0	0	0	0	1	0	0

Sample Title: HTC-A06-S001-1218-01

Channel								
2537:	1	0	1	0	0	0	0	0
2545:	0	0	0	0	0	0	1	0
2553:	0	0	0	0	0	0	0	1
2561:	1	1	0	0	0	0	0	0
2569:	1	1	0	1	0	0	0	0
2577:	1	1	1	0	0	1	0	0
2585:	0	0	0	0	0	1	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	1	1	0	0	1	0	0
2609:	1	0	1	6	12	12	10	8
2617:	5	1	0	1	0	0	1	0
2625:	2	1	0	0	0	0	0	1
2633:	1	0	1	0	0	1	0	0
2641:	0	0	0	0	0	0	1	0
2649:	0	1	1	0	0	1	0	0
2657:	0	0	1	0	0	0	0	0
2665:	1	1	0	0	1	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	1	0	0	0	0
2689:	1	1	0	0	0	1	0	0
2697:	0	0	0	0	0	0	0	0
2705:	1	0	1	0	0	0	1	0
2713:	0	0	0	0	0	1	0	1
2721:	0	0	0	1	0	0	0	0
2729:	0	0	0	0	0	1	0	0
2737:	0	0	1	0	1	0	0	0
2745:	0	0	0	0	0	1	1	0
2753:	0	0	0	0	0	0	0	0
2761:	1	0	1	0	0	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	1	0	0	0	0
2801:	1	0	1	0	0	0	0	1
2809:	0	1	0	0	0	0	0	0
2817:	0	0	0	0	1	0	1	1
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	1	0	0	0	1
2841:	0	0	0	1	0	1	0	0
2849:	0	0	0	0	1	0	0	0
2857:	1	0	0	0	0	0	0	2
2865:	1	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	1	0
2881:	0	0	0	0	0	0	1	0
2889:	1	0	1	0	0	0	0	0
2897:	1	0	0	0	0	0	0	0
2905:	0	0	0	0	0	1	0	0
2913:	1	0	0	0	0	0	1	2
2921:	0	0	0	0	0	0	0	1
2929:	0	0	1	0	0	0	0	0
2937:	0	0	0	1	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	1	0	0	0	0	0	0

2961:	0	0	0	0	0	0	0	0

Sample Title: HTC-A06-S001-1218-01

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

3393:	0	0	0	0	0	0	0	0

Sample Title: HTC-A06-S001-1218-01

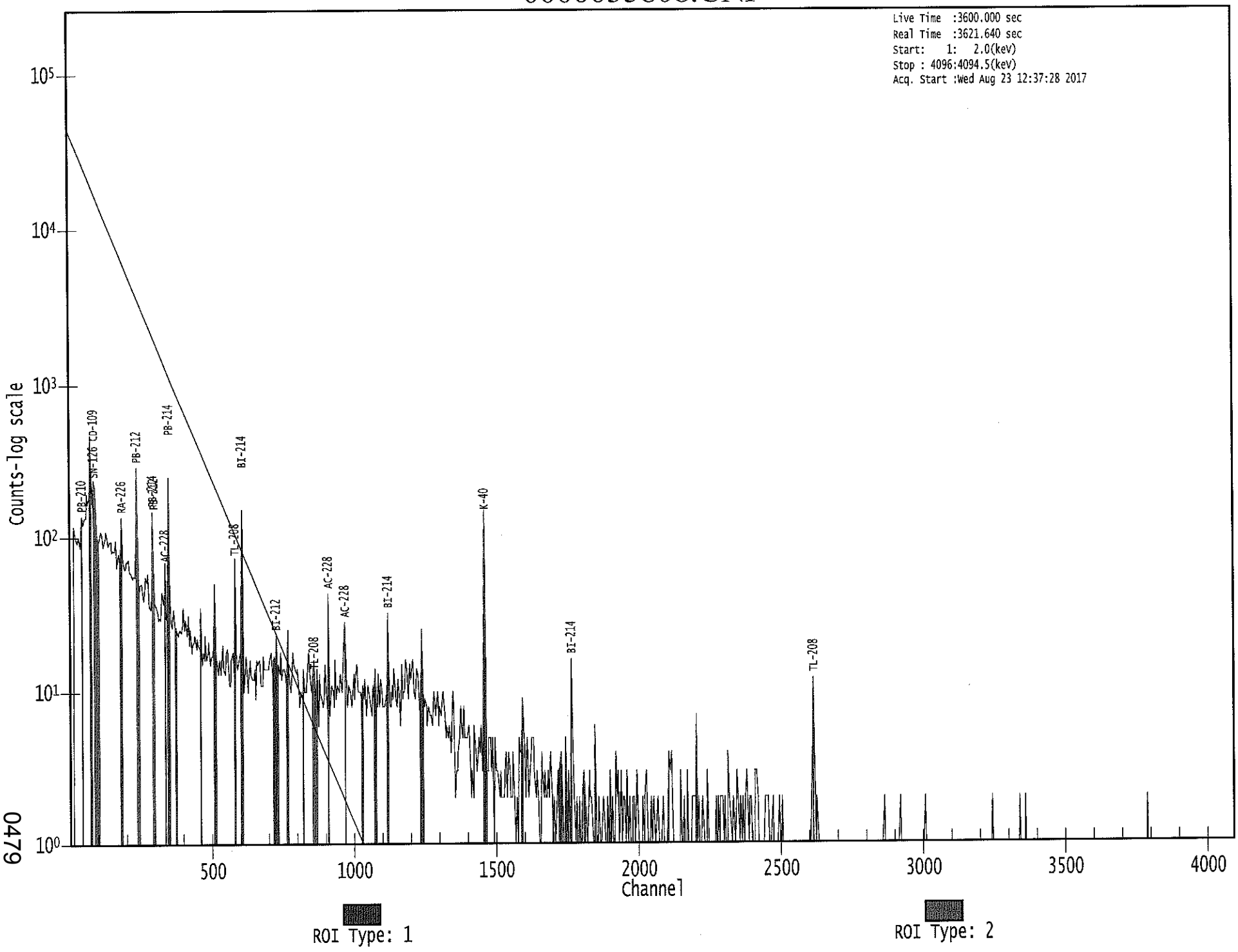
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	1	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	1	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	1	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	1	0	0	0	0	0
3513:	0	0	0	1	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	1	0	0	0
3537:	0	0	1	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	1	1	0	0	0	1
3569:	0	0	0	0	0	0	0	0
3577:	1	0	0	0	1	0	0	0
3585:	0	0	0	0	1	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	1	0	0	0
3609:	0	0	1	0	0	0	0	0
3617:	0	0	0	0	0	0	0	1
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	1
3641:	0	0	0	0	1	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	1	1	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	1	0	0	0
3681:	0	0	0	0	0	0	0	1
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	1	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	1	0	0	0	0
3729:	0	0	0	0	1	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	1
3761:	0	1	0	0	1	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	2	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	1	0	0	0	0	0	1	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A06-S001-1218-01

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

0000055808.CNF



0479

Apex-Gamma

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-05
Sample Description	: HTC-A06-S001-1824-01
Sample Type	: SOIL
Sample Size	: 6.180E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:51:36AM
Acquisition Started	: 8/23/2017 12:37:37PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.6 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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55809

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 1:37:44PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	63.13	63.73	0.0000	0.00
2	74.66	75.25	0.0000	0.00
3	77.16	77.76	0.0000	0.00
4	87.57	88.15	0.0000	0.00
5	92.30	92.87	0.0000	0.00
6	98.97	99.54	0.0000	0.00
7	186.43	186.91	0.0000	0.00
8	238.56	238.99	0.0000	0.00
9	241.43	241.85	0.0000	0.00
10	295.22	295.59	0.0000	0.00
11	300.19	300.55	0.0000	0.00
12	327.90	328.23	0.0000	0.00
13	338.48	338.81	0.0000	0.00
14	348.34	348.66	0.0000	0.00
15	351.96	352.27	0.0000	0.00
16	439.00	439.22	0.0000	0.00
17	463.24	463.44	0.0000	0.00
18	510.78	510.93	0.0000	0.00
19	583.46	583.54	0.0000	0.00
20	609.54	609.59	0.0000	0.00
21	727.87	727.80	0.0000	0.00
22	738.03	737.95	0.0000	0.00
23	767.31	767.20	0.0000	0.00
24	786.81	786.68	0.0000	0.00
25	806.55	806.41	0.0000	0.00
26	831.77	831.60	0.0000	0.00
27	836.39	836.21	0.0000	0.00
28	861.23	861.03	0.0000	0.00
29	911.52	911.27	0.0000	0.00
30	933.05	932.77	0.0000	0.00
31	949.78	949.49	0.0000	0.00
32	964.02	963.72	0.0000	0.00
33	969.18	968.87	0.0000	0.00
34	1008.32	1007.98	0.0000	0.00
35	1023.74	1023.37	0.0000	0.00
36	1120.61	1120.15	0.0000	0.00
37	1238.60	1238.02	0.0000	0.00
38	1282.65	1282.03	0.0000	0.00
39	1378.95	1378.24	0.0000	0.00
40	1407.36	1406.62	0.0000	0.00
41	1461.40	1460.60	0.0000	0.00
42	1512.04	1511.20	0.0000	0.00

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1587.90	1586.98	0.0000	0.00
44	1593.72	1592.80	0.0000	0.00
45	1630.35	1629.39	0.0000	0.00
46	1730.93	1729.88	0.0000	0.00
47	1765.19	1764.10	0.0000	0.00
48	1867.04	1865.85	0.0000	0.00
49	1966.48	1965.19	0.0000	0.00
50	1972.35	1971.05	0.0000	0.00
51	2058.08	2056.70	0.0000	0.00
52	2103.82	2102.40	0.0000	0.00
53	2117.73	2116.30	0.0000	0.00
54	2204.68	2203.17	0.0000	0.00
55	2271.98	2270.40	0.0000	0.00
56	2298.89	2297.29	0.0000	0.00
57	2447.98	2446.23	0.0000	0.00
58	2615.43	2613.52	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 1:37:44PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	63.13	61 -	67	63.73	2.23E+02	111.94	2.13E+03	1.41
M	2	74.66	71 -	83	75.25	5.22E+02	102.12	1.57E+03	1.81
m	3	77.16	71 -	83	77.76	7.77E+02	109.51	1.54E+03	1.82
m	4	87.57	83 -	97	88.15	2.70E+02	85.28	1.31E+03	1.67
m	5	92.30	83 -	97	92.87	3.07E+02	87.13	1.22E+03	1.67
	6	98.97	97 -	101	99.54	7.09E+01	69.20	9.90E+02	1.09
	7	186.43	183 -	192	186.91	2.68E+02	103.80	1.36E+03	2.02
M	8	238.56	233 -	247	238.99	1.09E+03	82.32	5.57E+02	1.70
m	9	241.43	233 -	247	241.85	2.78E+02	97.46	7.63E+02	2.43
	10	295.22	292 -	298	295.59	2.99E+02	63.15	5.08E+02	1.84
	11	300.19	299 -	304	300.55	4.77E+01	49.63	4.57E+02	1.57
	12	327.90	324 -	332	328.23	6.38E+01	62.57	5.54E+02	1.68
	13	338.48	335 -	343	338.81	2.28E+02	65.43	5.20E+02	1.77
M	14	348.34	348 -	355	348.66	2.68E+01	19.44	9.55E+01	2.09
m	15	351.96	348 -	355	352.27	5.83E+02	59.05	2.70E+02	1.67
	16	439.00	437 -	441	439.22	2.41E+01	30.61	1.86E+02	1.73
	17	463.24	460 -	467	463.44	4.53E+01	47.67	3.49E+02	2.14
	18	510.78	507 -	515	510.93	2.09E+02	53.98	3.20E+02	2.15
	19	583.46	578 -	589	583.54	3.74E+02	64.19	3.22E+02	2.01
	20	609.54	604 -	615	609.59	4.12E+02	70.46	4.15E+02	2.02
	21	727.87	722 -	733	727.80	1.34E+02	48.95	2.29E+02	1.85
	22	738.03	736 -	742	737.95	2.14E+01	26.38	1.15E+02	1.42
	23	767.31	763 -	770	767.20	3.17E+01	37.36	2.11E+02	5.51
	24	786.81	784 -	791	786.68	4.51E+01	33.82	1.62E+02	2.62
	25	806.55	804 -	809	806.41	2.32E+01	23.09	8.96E+01	2.32
M	26	831.77	830 -	842	831.60	2.13E+01	12.12	3.33E+01	2.82
m	27	836.39	830 -	842	836.21	2.86E+01	29.76	1.39E+02	2.28
	28	861.23	856 -	866	861.03	5.10E+01	43.01	2.18E+02	1.94
	29	911.52	907 -	916	911.27	2.11E+02	49.16	2.24E+02	1.95
	30	933.05	929 -	936	932.77	2.93E+01	32.50	1.57E+02	1.30
	31	949.78	945 -	954	949.49	5.08E+01	32.82	1.24E+02	7.15
M	32	964.02	960 -	975	963.72	4.64E+01	31.05	1.24E+02	2.69
m	33	969.18	960 -	975	968.87	1.73E+02	37.74	1.13E+02	2.63
	34	1008.32	1003 -	1011	1007.98	2.30E+01	28.46	1.06E+02	3.60
	35	1023.74	1021 -	1026	1023.37	2.20E+01	22.63	8.59E+01	2.63
	36	1120.61	1115 -	1123	1120.15	8.20E+01	40.19	1.98E+02	2.08
	37	1238.60	1235 -	1242	1238.02	3.90E+01	33.41	1.60E+02	2.22
	38	1282.65	1276 -	1287	1282.03	3.20E+01	36.44	1.50E+02	5.42
	39	1378.95	1374 -	1384	1378.24	3.35E+01	26.60	7.50E+01	2.26
	40	1407.36	1403 -	1410	1406.62	1.81E+01	20.49	5.38E+01	2.30

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1461.40	1455 -	1467	1460.60	1.29E+03	79.23	1.26E+02	2.29
42	1512.04	1505 -	1518	1511.20	4.30E+01	17.26	1.40E+01	9.35
43	1587.90	1583 -	1589	1586.98	1.22E+01	13.48	2.36E+01	1.70
44	1593.72	1590 -	1597	1592.80	2.26E+01	12.65	1.08E+01	3.87
45	1630.35	1624 -	1633	1629.39	1.20E+01	16.06	3.00E+01	1.72
46	1730.93	1726 -	1733	1729.88	1.40E+01	12.33	1.60E+01	1.77
47	1765.19	1759 -	1769	1764.10	7.62E+01	23.53	3.35E+01	2.11
48	1867.04	1862 -	1869	1865.85	1.12E+01	8.25	3.69E+00	2.93
49	1966.48	1963 -	1968	1965.19	7.22E+00	6.71	3.56E+00	2.63
50	1972.35	1969 -	1973	1971.05	6.00E+00	5.85	2.00E+00	2.38
51	2058.08	2052 -	2061	2056.70	2.00E+01	8.94	0.00E+00	6.99
52	2103.82	2098 -	2106	2102.40	2.50E+01	10.00	0.00E+00	5.54
53	2117.73	2114 -	2118	2116.30	1.00E+01	6.32	0.00E+00	1.91
54	2204.68	2200 -	2205	2203.17	1.50E+01	12.25	1.80E+01	1.70
55	2271.98	2267 -	2272	2270.40	5.00E+00	4.47	0.00E+00	1.70
56	2298.89	2295 -	2299	2297.29	7.00E+00	5.29	0.00E+00	2.10
57	2447.98	2443 -	2449	2446.23	1.12E+01	8.02	3.69E+00	3.23
58	2615.43	2609 -	2620	2613.52	1.13E+02	21.26	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 : 8/23/2017 1:37:44PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	63.13	61 -	67	2.23E+02	111.94	2.13E+03	8.87E+01
M	2	74.66	71 -	83	5.22E+02	102.12	1.57E+03	6.52E+01
m	3	77.16	71 -	83	7.77E+02	109.51	1.54E+03	6.45E+01
m	4	87.57	83 -	97	2.70E+02	85.28	1.31E+03	5.95E+01
m	5	92.30	83 -	97	3.07E+02	87.13	1.22E+03	5.74E+01
	6	98.97	97 -	101	7.09E+01	69.20	9.90E+02	5.52E+01
	7	186.43	183 -	192	2.68E+02	103.80	1.36E+03	8.10E+01
M	8	238.56	233 -	247	1.09E+03	82.32	5.57E+02	3.88E+01
m	9	241.43	233 -	247	2.78E+02	97.46	7.63E+02	4.54E+01
	10	295.22	292 -	298	2.99E+02	63.15	5.08E+02	4.34E+01

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	11	300.19	299 -	304	4.77E+01	49.63	4.57E+02	3.92E+01
	12	327.90	324 -	332	6.38E+01	62.57	5.54E+02	4.97E+01
	13	338.48	335 -	343	2.28E+02	65.43	5.20E+02	4.77E+01
M	14	348.34	348 -	355	2.68E+01	19.44	9.55E+01	1.61E+01
m	15	351.96	348 -	355	5.83E+02	59.05	2.70E+02	2.70E+01
	16	439.00	437 -	441	2.41E+01	30.61	1.86E+02	2.38E+01
	17	463.24	460 -	467	4.53E+01	47.67	3.49E+02	3.76E+01
	18	510.78	507 -	515	2.09E+02	53.98	3.20E+02	3.75E+01
	19	583.46	578 -	589	3.74E+02	64.19	3.22E+02	4.21E+01
	20	609.54	604 -	615	4.12E+02	70.46	4.15E+02	4.73E+01
	21	727.87	722 -	733	1.34E+02	48.95	2.29E+02	3.55E+01
	22	738.03	736 -	742	2.14E+01	26.38	1.15E+02	2.03E+01
	23	767.31	763 -	770	3.17E+01	37.36	2.11E+02	2.93E+01
	24	786.81	784 -	791	4.51E+01	33.82	1.62E+02	2.55E+01
	25	806.55	804 -	809	2.32E+01	23.09	8.96E+01	1.72E+01
M	26	831.77	830 -	842	2.13E+01	12.12	3.33E+01	9.49E+00
m	27	836.39	830 -	842	2.86E+01	29.76	1.39E+02	1.94E+01
	28	861.23	856 -	866	5.10E+01	43.01	2.18E+02	3.33E+01
	29	911.52	907 -	916	2.11E+02	49.16	2.24E+02	3.26E+01
	30	933.05	929 -	936	2.93E+01	32.50	1.57E+02	2.52E+01
	31	949.78	945 -	954	5.08E+01	32.82	1.24E+02	2.43E+01
M	32	964.02	960 -	975	4.64E+01	31.05	1.24E+02	1.83E+01
m	33	969.18	960 -	975	1.73E+02	37.74	1.13E+02	1.75E+01
	34	1008.32	1003 -	1011	2.30E+01	28.46	1.06E+02	2.20E+01
	35	1023.74	1021 -	1026	2.20E+01	22.63	8.59E+01	1.69E+01
	36	1120.61	1115 -	1123	8.20E+01	40.19	1.98E+02	2.95E+01
	37	1238.60	1235 -	1242	3.90E+01	33.41	1.60E+02	2.55E+01
	38	1282.65	1276 -	1287	3.20E+01	36.44	1.50E+02	2.85E+01
	39	1378.95	1374 -	1384	3.35E+01	26.60	7.50E+01	1.97E+01
	40	1407.36	1403 -	1410	1.81E+01	20.49	5.38E+01	1.53E+01
	41	1461.40	1455 -	1467	1.29E+03	79.23	1.26E+02	2.72E+01
	42	1512.04	1505 -	1518	4.30E+01	17.26	1.40E+01	9.23E+00
	43	1587.90	1583 -	1589	1.22E+01	13.48	2.36E+01	9.48E+00
	44	1593.72	1590 -	1597	2.26E+01	12.65	1.08E+01	6.85E+00
	45	1630.35	1624 -	1633	1.20E+01	16.06	3.00E+01	1.19E+01
	46	1730.93	1726 -	1733	1.40E+01	12.33	1.60E+01	8.05E+00
	47	1765.19	1759 -	1769	7.62E+01	23.53	3.35E+01	1.30E+01
	48	1867.04	1862 -	1869	1.12E+01	8.25	3.69E+00	3.98E+00
	49	1966.48	1963 -	1968	7.22E+00	6.71	3.56E+00	3.30E+00
	50	1972.35	1969 -	1973	6.00E+00	5.85	2.00E+00	2.63E+00
	51	2058.08	2052 -	2061	2.00E+01	8.94	0.00E+00	0.00E+00
	52	2103.82	2098 -	2106	2.50E+01	10.00	0.00E+00	0.00E+00
	53	2117.73	2114 -	2118	1.00E+01	6.32	0.00E+00	0.00E+00
	54	2204.68	2200 -	2205	1.50E+01	12.25	1.80E+01	7.80E+00
	55	2271.98	2267 -	2272	5.00E+00	4.47	0.00E+00	0.00E+00
	56	2298.89	2295 -	2299	7.00E+00	5.29	0.00E+00	0.00E+00
	57	2447.98	2443 -	2449	1.12E+01	8.02	3.69E+00	3.64E+00
	58	2615.43	2609 -	2620	1.13E+02	21.26	0.00E+00	0.00E+00

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

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 : 8/23/2017 1:37:44PM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	63.13	61 -	67	63.73	2.23E+02	111.94	2.13E+03	TH-234
									TH-230
M	2	74.66	71 -	83	75.25	5.22E+02	102.12	1.57E+03	AM-243
m	3	77.16	71 -	83	77.76	7.77E+02	109.51	1.54E+03	.....
m	4	87.57	83 -	97	88.15	2.70E+02	85.28	1.31E+03	SN-126
									CD-109
									LU-176
m	5	92.30	83 -	97	92.87	3.07E+02	87.13	1.22E+03	.....
	6	98.97	97 -	101	99.54	7.09E+01	69.20	9.90E+02	.....
	7	186.43	183 -	192	186.91	2.68E+02	103.80	1.36E+03	RA-226
M	8	238.56	233 -	247	238.99	1.09E+03	82.32	5.57E+02	PB-212
m	9	241.43	233 -	247	241.85	2.78E+02	97.46	7.63E+02	RA-224
	10	295.22	292 -	298	295.59	2.99E+02	63.15	5.08E+02	PB-214
	11	300.19	299 -	304	300.55	4.77E+01	49.63	4.57E+02	GA-67
									PB-212
									BI-210M
	12	327.90	324 -	332	328.23	6.38E+01	62.57	5.54E+02	LA-140
	13	338.48	335 -	343	338.81	2.28E+02	65.43	5.20E+02	AC-228
M	14	348.34	348 -	355	348.66	2.68E+01	19.44	9.55E+01	.....
m	15	351.96	348 -	355	352.27	5.83E+02	59.05	2.70E+02	PB-214
	16	439.00	437 -	441	439.22	2.41E+01	30.61	1.86E+02	.....
	17	463.24	460 -	467	463.44	4.53E+01	47.67	3.49E+02	SB-125
	18	510.78	507 -	515	510.93	2.09E+02	53.98	3.20E+02	.....
	19	583.46	578 -	589	583.54	3.74E+02	64.19	3.22E+02	TL-208
	20	609.54	604 -	615	609.59	4.12E+02	70.46	4.15E+02	BI-214
	21	727.87	722 -	733	727.80	1.34E+02	48.95	2.29E+02	BI-212
	22	738.03	736 -	742	737.95	2.14E+01	26.38	1.15E+02	.....
	23	767.31	763 -	770	767.20	3.17E+01	37.36	2.11E+02	.....
	24	786.81	784 -	791	786.68	4.51E+01	33.82	1.62E+02	.....
	25	806.55	804 -	809	806.41	2.32E+01	23.09	8.96E+01	.....

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	26	831.77	830 -	842	831.60	2.13E+01	12.12	3.33E+01	PB-211
m	27	836.39	830 -	842	836.21	2.86E+01	29.76	1.39E+02	.....
	28	861.23	856 -	866	861.03	5.10E+01	43.01	2.18E+02	TL-208
	29	911.52	907 -	916	911.27	2.11E+02	49.16	2.24E+02	TL-204 AC-228
	30	933.05	929 -	936	932.77	2.93E+01	32.50	1.57E+02	.....
	31	949.78	945 -	954	949.49	5.08E+01	32.82	1.24E+02	.....
M	32	964.02	960 -	975	963.72	4.64E+01	31.05	1.24E+02	EU-152
m	33	969.18	960 -	975	968.87	1.73E+02	37.74	1.13E+02	AC-228
	34	1008.32	1003 -	1011	1007.98	2.30E+01	28.46	1.06E+02	.....
	35	1023.74	1021 -	1026	1023.37	2.20E+01	22.63	8.59E+01	.....
	36	1120.61	1115 -	1123	1120.15	8.20E+01	40.19	1.98E+02	SC-46 BI-214 TA-182
	37	1238.60	1235 -	1242	1238.02	3.90E+01	33.41	1.60E+02	CO-56
	38	1282.65	1276 -	1287	1282.03	3.20E+01	36.44	1.50E+02	.....
	39	1378.95	1374 -	1384	1378.24	3.35E+01	26.60	7.50E+01	.....
	40	1407.36	1403 -	1410	1406.62	1.81E+01	20.49	5.38E+01	EU-152
	41	1461.40	1455 -	1467	1460.60	1.29E+03	79.23	1.26E+02	K-40
	42	1512.04	1505 -	1518	1511.20	4.30E+01	17.26	1.40E+01	.....
	43	1587.90	1583 -	1589	1586.98	1.22E+01	13.48	2.36E+01	.....
	44	1593.72	1590 -	1597	1592.80	2.26E+01	12.65	1.08E+01	.....
	45	1630.35	1624 -	1633	1629.39	1.20E+01	16.06	3.00E+01	.....
	46	1730.93	1726 -	1733	1729.88	1.40E+01	12.33	1.60E+01	.....
	47	1765.19	1759 -	1769	1764.10	7.62E+01	23.53	3.35E+01	BI-214
	48	1867.04	1862 -	1869	1865.85	1.12E+01	8.25	3.69E+00	.....
	49	1966.48	1963 -	1968	1965.19	7.22E+00	6.71	3.56E+00	.....
	50	1972.35	1969 -	1973	1971.05	6.00E+00	5.85	2.00E+00	.....
	51	2058.08	2052 -	2061	2056.70	2.00E+01	8.94	0.00E+00	.....
	52	2103.82	2098 -	2106	2102.40	2.50E+01	10.00	0.00E+00	.....
	53	2117.73	2114 -	2118	2116.30	1.00E+01	6.32	0.00E+00	.....
	54	2204.68	2200 -	2205	2203.17	1.50E+01	12.25	1.80E+01	BI-214
	55	2271.98	2267 -	2272	2270.40	5.00E+00	4.47	0.00E+00	.....
	56	2298.89	2295 -	2299	2297.29	7.00E+00	5.29	0.00E+00	.....
	57	2447.98	2443 -	2449	2446.23	1.12E+01	8.02	3.69E+00	.....
	58	2615.43	2609 -	2620	2613.52	1.13E+02	21.26	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 : 8/23/2017 1:37:44PM

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.13	2.23E+02	111.94	2.70E-02	2.26E-03
M	2	74.66	5.22E+02	102.12	2.75E-02	2.38E-03
m	3	77.16	7.77E+02	109.51	2.75E-02	2.40E-03
m	4	87.57	2.70E+02	85.28	2.74E-02	2.52E-03
m	5	92.30	3.07E+02	87.13	2.73E-02	2.45E-03
	6	98.97	7.09E+01	69.20	2.70E-02	2.34E-03
	7	186.43	2.68E+02	103.80	2.17E-02	1.68E-03
M	8	238.56	1.09E+03	82.32	1.89E-02	1.53E-03
m	9	241.43	2.78E+02	97.46	1.87E-02	1.52E-03
	10	295.22	2.99E+02	63.15	1.64E-02	1.37E-03
	11	300.19	4.77E+01	49.63	1.63E-02	1.36E-03
	12	327.90	6.38E+01	62.57	1.53E-02	1.29E-03
	13	338.48	2.28E+02	65.43	1.50E-02	1.27E-03
M	14	348.34	2.68E+01	19.44	1.46E-02	1.25E-03
m	15	351.96	5.83E+02	59.05	1.45E-02	1.24E-03
	16	439.00	2.41E+01	30.61	1.24E-02	1.11E-03
	17	463.24	4.53E+01	47.67	1.19E-02	1.10E-03
	18	510.78	2.09E+02	53.98	1.10E-02	1.07E-03
	19	583.46	3.74E+02	64.19	9.96E-03	1.02E-03
	20	609.54	4.12E+02	70.46	9.63E-03	1.01E-03
	21	727.87	1.34E+02	48.95	8.41E-03	8.67E-04
	22	738.03	2.14E+01	26.38	8.32E-03	8.51E-04
	23	767.31	3.17E+01	37.36	8.07E-03	8.04E-04
	24	786.81	4.51E+01	33.82	7.92E-03	7.73E-04
	25	806.55	2.32E+01	23.09	7.77E-03	7.42E-04
M	26	831.77	2.13E+01	12.12	7.59E-03	7.02E-04
m	27	836.39	2.86E+01	29.76	7.56E-03	6.94E-04
	28	861.23	5.10E+01	43.01	7.39E-03	6.55E-04
	29	911.52	2.11E+02	49.16	7.08E-03	5.91E-04
	30	933.05	2.93E+01	32.50	6.96E-03	5.83E-04
	31	949.78	5.08E+01	32.82	6.87E-03	5.77E-04
M	32	964.02	4.64E+01	31.05	6.79E-03	5.71E-04
m	33	969.18	1.73E+02	37.74	6.76E-03	5.69E-04
	34	1008.32	2.30E+01	28.46	6.57E-03	5.54E-04
	35	1023.74	2.20E+01	22.63	6.49E-03	5.48E-04
	36	1120.61	8.20E+01	40.19	6.07E-03	5.11E-04
	37	1238.60	3.90E+01	33.41	5.64E-03	4.76E-04
	38	1282.65	3.20E+01	36.44	5.50E-03	4.66E-04
	39	1378.95	3.35E+01	26.60	5.22E-03	4.44E-04
	40	1407.36	1.81E+01	20.49	5.14E-03	4.37E-04
	41	1461.40	1.29E+03	79.23	5.00E-03	4.25E-04
	42	1512.04	4.30E+01	17.26	4.88E-03	4.13E-04
	43	1587.90	1.22E+01	13.48	4.72E-03	3.95E-04
	44	1593.72	2.26E+01	12.65	4.70E-03	3.94E-04
	45	1630.35	1.20E+01	16.06	4.63E-03	3.85E-04
	46	1730.93	1.40E+01	12.33	4.43E-03	3.62E-04
	47	1765.19	7.62E+01	23.53	4.37E-03	3.54E-04
	48	1867.04	1.12E+01	8.25	4.20E-03	3.38E-04
	49	1966.48	7.22E+00	6.71	4.05E-03	3.38E-04
	50	1972.35	6.00E+00	5.85	4.04E-03	3.38E-04

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
51	2058.08	2.00E+01	8.94	3.92E-03	3.38E-04
52	2103.82	2.50E+01	10.00	3.86E-03	3.38E-04
53	2117.73	1.00E+01	6.32	3.84E-03	3.38E-04
54	2204.68	1.50E+01	12.25	3.74E-03	3.38E-04
55	2271.98	5.00E+00	4.47	3.66E-03	3.38E-04
56	2298.89	7.00E+00	5.29	3.63E-03	3.38E-04
57	2447.98	1.12E+01	8.02	3.47E-03	3.38E-04
58	2615.43	1.13E+02	21.26	3.31E-03	3.38E-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 : 8/23/2017 1:37:44PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	63.13	2.23E+02	111.94	8.94E+01	1.41E+01	1.33E+02	1.13E+02
M	2	74.66	5.22E+02	102.12			5.22E+02	1.02E+02
m	3	77.16	7.77E+02	109.51	7.20E+00	1.47E+00	7.70E+02	1.10E+02
m	4	87.57	2.70E+02	85.28			2.70E+02	8.53E+01
m	5	92.30	3.07E+02	87.13	1.38E+02	1.72E+01	1.69E+02	8.88E+01
	6	98.97	7.09E+01	69.20	9.68E+00	3.41E+00	6.12E+01	6.93E+01
	7	186.43	2.68E+02	103.80	5.22E+01	7.59E+00	2.16E+02	1.04E+02
M	8	238.56	1.09E+03	82.32	2.13E+01	6.33E+00	1.07E+03	8.26E+01
m	9	241.43	2.78E+02	97.46			2.78E+02	9.75E+01
	10	295.22	2.99E+02	63.15			2.99E+02	6.32E+01
	11	300.19	4.77E+01	49.63			4.77E+01	4.96E+01
	12	327.90	6.38E+01	62.57			6.38E+01	6.26E+01
	13	338.48	2.28E+02	65.43			2.28E+02	6.54E+01
M	14	348.34	2.68E+01	19.44			2.68E+01	1.94E+01
m	15	351.96	5.83E+02	59.05	5.79E+00	4.49E+00	5.77E+02	5.92E+01
	16	439.00	2.41E+01	30.61			2.41E+01	3.06E+01
	17	463.24	4.53E+01	47.67			4.53E+01	4.77E+01
	18	510.78	2.09E+02	53.98	7.28E+01	5.30E+00	1.36E+02	5.42E+01
	19	583.46	3.74E+02	64.19	2.72E+00	3.05E+00	3.71E+02	6.43E+01
	20	609.54	4.12E+02	70.46	6.35E+00	4.02E+00	4.06E+02	7.06E+01
	21	727.87	1.34E+02	48.95			1.34E+02	4.89E+01
	22	738.03	2.14E+01	26.38			2.14E+01	2.64E+01

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	23	767.31	3.17E+01	37.36			3.17E+01	3.74E+01
	24	786.81	4.51E+01	33.82			4.51E+01	3.38E+01
	25	806.55	2.32E+01	23.09			2.32E+01	2.31E+01
M	26	831.77	2.13E+01	12.12			2.13E+01	1.21E+01
m	27	836.39	2.86E+01	29.76			2.86E+01	2.98E+01
	28	861.23	5.10E+01	43.01			5.10E+01	4.30E+01
	29	911.52	2.11E+02	49.16	5.31E+00	3.00E+00	2.06E+02	4.93E+01
	30	933.05	2.93E+01	32.50			2.93E+01	3.25E+01
	31	949.78	5.08E+01	32.82			5.08E+01	3.28E+01
M	32	964.02	4.64E+01	31.05			4.64E+01	3.10E+01
m	33	969.18	1.73E+02	37.74			1.73E+02	3.77E+01
	34	1008.32	2.30E+01	28.46			2.30E+01	2.85E+01
	35	1023.74	2.20E+01	22.63			2.20E+01	2.26E+01
	36	1120.61	8.20E+01	40.19			8.20E+01	4.02E+01
	37	1238.60	3.90E+01	33.41			3.90E+01	3.34E+01
	38	1282.65	3.20E+01	36.44			3.20E+01	3.64E+01
	39	1378.95	3.35E+01	26.60			3.35E+01	2.66E+01
	40	1407.36	1.81E+01	20.49			1.81E+01	2.05E+01
	41	1461.40	1.29E+03	79.23	8.09E+00	2.23E+00	1.29E+03	7.93E+01
	42	1512.04	4.30E+01	17.26			4.30E+01	1.73E+01
	43	1587.90	1.22E+01	13.48			1.22E+01	1.35E+01
	44	1593.72	2.26E+01	12.65			2.26E+01	1.26E+01
	45	1630.35	1.20E+01	16.06			1.20E+01	1.61E+01
	46	1730.93	1.40E+01	12.33			1.40E+01	1.23E+01
	47	1765.19	7.62E+01	23.53			7.62E+01	2.35E+01
	48	1867.04	1.12E+01	8.25			1.12E+01	8.25E+00
	49	1966.48	7.22E+00	6.71			7.22E+00	6.71E+00
	50	1972.35	6.00E+00	5.85			6.00E+00	5.85E+00
	51	2058.08	2.00E+01	8.94			2.00E+01	8.94E+00
	52	2103.82	2.50E+01	10.00			2.50E+01	1.00E+01
	53	2117.73	1.00E+01	6.32			1.00E+01	6.32E+00
	54	2204.68	1.50E+01	12.25			1.50E+01	1.22E+01
	55	2271.98	5.00E+00	4.47			5.00E+00	4.47E+00
	56	2298.89	7.00E+00	5.29			7.00E+00	5.29E+00
	57	2447.98	1.12E+01	8.02			1.12E+01	8.02E+00
	58	2615.43	1.13E+02	21.26	5.63E+00	1.38E+00	1.07E+02	2.13E+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 1707090-05

HTC-A06-S001-1824-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 1:37:44PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	63.13	2.23E+02	111.94	8.94E+01	1.41E+01	1.33E+02	1.13E+02
M	2	74.66	5.22E+02	102.12			5.22E+02	1.02E+02
m	3	77.16	7.77E+02	109.51	7.20E+00	1.47E+00	7.70E+02	1.10E+02
m	4	87.57	2.70E+02	85.28			2.70E+02	8.53E+01
m	5	92.30	3.07E+02	87.13	1.38E+02	1.72E+01	1.69E+02	8.88E+01
	6	98.97	7.09E+01	69.20	9.68E+00	3.41E+00	6.12E+01	6.93E+01
	7	186.43	2.68E+02	103.80	5.22E+01	7.59E+00	2.16E+02	1.04E+02
M	8	238.56	1.09E+03	82.32	2.13E+01	6.33E+00	1.07E+03	8.26E+01
m	9	241.43	2.78E+02	97.46			2.78E+02	9.75E+01
	10	295.22	2.99E+02	63.15			2.99E+02	6.32E+01
	11	300.19	4.77E+01	49.63			4.77E+01	4.96E+01
	12	327.90	6.38E+01	62.57			6.38E+01	6.26E+01
	13	338.48	2.28E+02	65.43			2.28E+02	6.54E+01
M	14	348.34	2.68E+01	19.44			2.68E+01	1.94E+01
m	15	351.96	5.83E+02	59.05	5.79E+00	4.49E+00	5.77E+02	5.92E+01
	16	439.00	2.41E+01	30.61			2.41E+01	3.06E+01
	17	463.24	4.53E+01	47.67			4.53E+01	4.77E+01
	18	510.78	2.09E+02	53.98	7.28E+01	5.30E+00	1.36E+02	5.42E+01
	19	583.46	3.74E+02	64.19	2.72E+00	3.05E+00	3.71E+02	6.43E+01
	20	609.54	4.12E+02	70.46	6.35E+00	4.02E+00	4.06E+02	7.06E+01
	21	727.87	1.34E+02	48.95			1.34E+02	4.89E+01
	22	738.03	2.14E+01	26.38			2.14E+01	2.64E+01
	23	767.31	3.17E+01	37.36			3.17E+01	3.74E+01
	24	786.81	4.51E+01	33.82			4.51E+01	3.38E+01
	25	806.55	2.32E+01	23.09			2.32E+01	2.31E+01
M	26	831.77	2.13E+01	12.12			2.13E+01	1.21E+01
m	27	836.39	2.86E+01	29.76			2.86E+01	2.98E+01
	28	861.23	5.10E+01	43.01			5.10E+01	4.30E+01
	29	911.52	2.11E+02	49.16	5.31E+00	3.00E+00	2.06E+02	4.93E+01
	30	933.05	2.93E+01	32.50			2.93E+01	3.25E+01
	31	949.78	5.08E+01	32.82			5.08E+01	3.28E+01
M	32	964.02	4.64E+01	31.05			4.64E+01	3.10E+01
m	33	969.18	1.73E+02	37.74			1.73E+02	3.77E+01
	34	1008.32	2.30E+01	28.46			2.30E+01	2.85E+01
	35	1023.74	2.20E+01	22.63			2.20E+01	2.26E+01
	36	1120.61	8.20E+01	40.19			8.20E+01	4.02E+01
	37	1238.60	3.90E+01	33.41			3.90E+01	3.34E+01
	38	1282.65	3.20E+01	36.44			3.20E+01	3.64E+01
	39	1378.95	3.35E+01	26.60			3.35E+01	2.66E+01
	40	1407.36	1.81E+01	20.49			1.81E+01	2.05E+01
	41	1461.40	1.29E+03	79.23	8.09E+00	2.23E+00	1.29E+03	7.93E+01

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1512.04	4.30E+01	17.26			4.30E+01	1.73E+01
43	1587.90	1.22E+01	13.48			1.22E+01	1.35E+01
44	1593.72	2.26E+01	12.65			2.26E+01	1.26E+01
45	1630.35	1.20E+01	16.06			1.20E+01	1.61E+01
46	1730.93	1.40E+01	12.33			1.40E+01	1.23E+01
47	1765.19	7.62E+01	23.53			7.62E+01	2.35E+01
48	1867.04	1.12E+01	8.25			1.12E+01	8.25E+00
49	1966.48	7.22E+00	6.71			7.22E+00	6.71E+00
50	1972.35	6.00E+00	5.85			6.00E+00	5.85E+00
51	2058.08	2.00E+01	8.94			2.00E+01	8.94E+00
52	2103.82	2.50E+01	10.00			2.50E+01	1.00E+01
53	2117.73	1.00E+01	6.32			1.00E+01	6.32E+00
54	2204.68	1.50E+01	12.25			1.50E+01	1.22E+01
55	2271.98	5.00E+00	4.47			5.00E+00	4.47E+00
56	2298.89	7.00E+00	5.29			7.00E+00	5.29E+00
57	2447.98	1.12E+01	8.02			1.12E+01	8.02E+00
58	2615.43	1.13E+02	21.26	5.63E+00	1.38E+00	1.07E+02	2.13E+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	0.946	1460.81	*	10.67	2.93E+01	3.13E+00
CD-109	0.966	88.03	*	3.72	3.73E+00	1.25E+00
SN-126	1.000	87.57	*	37.00	3.24E-01	1.06E-01
TL-208	0.939	583.14	*	30.22	1.50E+00	3.02E-01
		860.37	*	4.48	1.87E+00	1.59E+00
		2614.66	*	35.85	1.10E+00	2.46E-01
BI-212	0.702	727.17	*	11.80	1.64E+00	6.23E-01
		1620.62		2.75		
PB-212	0.999	238.63	*	44.60	1.54E+00	1.72E-01
		300.09	*	3.41	1.04E+00	1.09E+00
BI-214	0.976	609.31	*	46.30	1.11E+00	2.24E-01
		1120.29	*	15.10	1.09E+00	5.40E-01
		1764.49	*	15.80	1.34E+00	4.28E-01
		2204.22	*	4.98	9.80E-01	8.05E-01

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	1.000	295.21	*	19.19	1.15E+00	2.62E-01
		351.92	*	37.19	1.30E+00	1.73E-01
RA-224	0.968	240.98	*	3.95	4.56E+00	1.64E+00
RA-226	0.992	186.21	*	3.28	3.69E+00	6.99E+00
AC-228	0.983	338.32	*	11.40	1.62E+00	4.86E-01
		911.07	*	27.70	1.27E+00	3.23E-01
		969.11	*	16.60	1.88E+00	4.38E-01
TH-234	0.996	63.29	*	3.80	1.58E+00	1.34E+00
AM-243	1.000	74.67	*	66.00	3.50E-01	7.48E-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 : 8/23/2017 1:37:44PM
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	77.16	2.13903E-01	7.11		
m	5	92.30	4.70517E-02	26.21		
	6	98.97	1.70036E-02	56.59	D-Esc	
	12	327.90	1.77354E-02	49.00	Tol.	LA-140
M	14	348.34	7.44050E-03	36.29		
	16	439.00	6.68447E-03	63.59	D-Esc	
	17	463.24	1.25789E-02	52.63	Tol.	SB-125
	18	510.78	3.78418E-02	19.91		
	22	738.03	5.95640E-03	61.50		
	23	767.31	8.80880E-03	58.91		
	24	786.81	1.25331E-02	37.48		
	25	806.55	6.44812E-03	49.73		
M	26	831.77	5.92935E-03	28.40	Tol.	PB-211
m	27	836.39	7.94090E-03	52.05		
	30	933.05	8.13271E-03	55.50		
	31	949.78	1.41028E-02	32.32	S-Esc	
M	32	964.02	1.28892E-02	33.46	Tol.	EU-152
	34	1008.32	6.39072E-03	61.86		
	35	1023.74	6.12393E-03	51.32	Sum	
	37	1238.60	1.08333E-02	42.83	Tol.	CO-56

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
38	1282.65	8.89278E-03	56.92		
39	1378.95	9.30751E-03	39.69		
40	1407.36	5.03086E-03	56.58	Tol.	EU-152
42	1512.04	1.19444E-02	20.07		
43	1587.90	3.38542E-03	55.31		
44	1593.72	6.28472E-03	27.95	D-Esc	
45	1630.35	3.33333E-03	66.93		
46	1730.93	3.88889E-03	44.03	Sum	
48	1867.04	3.09829E-03	36.97		
49	1966.48	2.00617E-03	46.44		
50	1972.35	1.66667E-03	48.77		
51	2058.08	5.55556E-03	22.36		
52	2103.82	6.94444E-03	20.00	S-Esc	
53	2117.73	2.77778E-03	31.62	Sum	
55	2271.98	1.38889E-03	44.72		
56	2298.89	1.94444E-03	37.80		
57	2447.98	3.09829E-03	35.93		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.94	1460.81	*	10.67	2.93E+01	3.13E+00
CD-109	0.96	88.03	*	3.72	3.73E+00	1.25E+00
SN-126	1.00	87.57	*	37.00	3.24E-01	1.06E-01
TL-208	0.93	583.14	*	30.22	1.50E+00	3.02E-01
		860.37	*	4.48	1.87E+00	1.59E+00
		2614.66	*	35.85	1.10E+00	2.46E-01
BI-212	0.70	727.17	*	11.80	1.64E+00	6.23E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.54E+00	1.72E-01
		300.09	*	3.41	1.04E+00	1.09E+00
BI-214	0.97	609.31	*	46.30	1.11E+00	2.24E-01

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.97	1120.29	*	15.10	1.09E+00	5.40E-01
		1764.49	*	15.80	1.34E+00	4.28E-01
		2204.22	*	4.98	9.80E-01	8.05E-01
PB-214	1.00	295.21	*	19.19	1.15E+00	2.62E-01
		351.92	*	37.19	1.30E+00	1.73E-01
RA-224	0.96	240.98	*	3.95	4.56E+00	1.64E+00
RA-226	0.99	186.21	*	3.28	3.69E+00	6.99E+00
AC-228	0.98	338.32	*	11.40	1.62E+00	4.86E-01
		911.07	*	27.70	1.27E+00	3.23E-01
		969.11	*	16.60	1.88E+00	4.38E-01
TH-234	0.99	63.29	*	3.80	1.58E+00	1.34E+00
AM-243	1.00	74.67	*	66.00	3.50E-01	7.48E-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	0.946	2.93E+01	3.13E+00	
?	CD-109	0.966	3.73E+00	1.25E+00	
?	SN-126	1.000	3.24E-01	1.06E-01	
	TL-208	0.939	1.27E+00	1.89E-01	
	BI-212	0.702	1.64E+00	6.23E-01	
	PB-212	0.999	1.53E+00	1.70E-01	
	BI-214	0.976	1.14E+00	1.82E-01	
	PB-214	1.000	1.25E+00	1.44E-01	
	RA-224	0.968	4.56E+00	1.64E+00	
	RA-226	0.992	3.69E+00	6.99E+00	
	AC-228	0.983	1.52E+00	2.29E-01	
	TH-234	0.996	1.58E+00	1.34E+00	
	AM-243	1.000	3.50E-01	7.48E-02	

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

? = 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 1707090-05

HTC-A06-S001-1824-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 1:37:44PM
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	77.16	2.13903E-01	7.11		
m	5	92.30	4.70517E-02	26.21		
	6	98.97	1.70036E-02	56.59	D-Esc	
	12	327.90	1.77354E-02	49.00	Tol.	LA-140
M	14	348.34	7.44050E-03	36.29		
	16	439.00	6.68447E-03	63.59	D-Esc	
	17	463.24	1.25789E-02	52.63	Tol.	SB-125
	18	510.78	3.78418E-02	19.91		
	22	738.03	5.95640E-03	61.50		
	23	767.31	8.80880E-03	58.91		
	24	786.81	1.25331E-02	37.48		
	25	806.55	6.44812E-03	49.73		
M	26	831.77	5.92935E-03	28.40	Tol.	PB-211
m	27	836.39	7.94090E-03	52.05		
	30	933.05	8.13271E-03	55.50		
	31	949.78	1.41028E-02	32.32	S-Esc	
M	32	964.02	1.28892E-02	33.46	Tol.	EU-152
	34	1008.32	6.39072E-03	61.86		
	35	1023.74	6.12393E-03	51.32	Sum	
	37	1238.60	1.08333E-02	42.83	Tol.	CO-56
	38	1282.65	8.89278E-03	56.92		
	39	1378.95	9.30751E-03	39.69		
	40	1407.36	5.03086E-03	56.58	Tol.	EU-152
	42	1512.04	1.19444E-02	20.07		
	43	1587.90	3.38542E-03	55.31		
	44	1593.72	6.28472E-03	27.95	D-Esc	
	45	1630.35	3.33333E-03	66.93		
	46	1730.93	3.88889E-03	44.03	Sum	
	48	1867.04	3.09829E-03	36.97		
	49	1966.48	2.00617E-03	46.44		
	50	1972.35	1.66667E-03	48.77		
	51	2058.08	5.55556E-03	22.36		
	52	2103.82	6.94444E-03	20.00	S-Esc	
	53	2117.73	2.77778E-03	31.62	Sum	
	55	2271.98	1.38889E-03	44.72		

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	2298.89	1.94444E-03	37.80		
57	2447.98	3.09829E-03	35.93		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	9.79E-01	2.16E+00	2.16E+00
+	NA-22	1274.54		99.94	2.29E-02	8.73E-02	8.73E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	1.88E-02	4.49E-02	4.49E-02
+	K-40	1460.81	*	10.67	2.93E+01	1.32E+00	1.32E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	6.16E-03	6.44E-02	6.44E-02
		78.34		96.00	2.02E-01		8.50E-02
+	SC-46	889.25		99.98	-8.88E-03	1.57E-01	1.57E-01
		1120.51		99.99	3.33E-01		2.80E-01
+	V-48	983.52		99.98	-6.45E-01	5.21E+00	5.21E+00
		1312.10		97.50	-1.30E+00		6.07E+00
+	CR-51	320.08		9.83	-5.26E-01	7.22E+00	7.22E+00
+	MN-54	834.83		99.97	7.00E-03	9.75E-02	9.75E-02
+	CO-56	846.75		99.96	4.15E-02	1.73E-01	1.73E-01
		1037.75		14.03	-1.17E-01		1.26E+00
		1238.25		67.00	2.56E-01		3.98E-01
		1771.40		15.51	-1.29E-01		9.41E-01
		2598.48		16.90	-4.75E-01		5.58E-01
+	CO-57	122.06		85.51	-2.51E-02	7.16E-02	7.16E-02
		136.48		10.60	-1.99E-01		5.96E-01
+	CO-58	810.76		99.40	7.88E-02	1.78E-01	1.78E-01
+	FE-59	1099.22		56.50	1.16E-01	6.36E-01	6.36E-01
		1291.56		43.20	-2.39E-01		8.77E-01
+	CO-60	1173.22		100.00	3.42E-02	8.30E-02	9.62E-02
		1332.49		100.00	6.50E-02		8.30E-02

Analysis Report for 1707090-05

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52		50.75	1.04E-02	2.25E-01	2.25E-01
+	GA-67	93.31		35.70	4.41E+08	2.61E+08	2.61E+08
		208.95		2.24	1.31E+09		3.66E+09
		300.22		16.00	-1.54E+09		5.64E+08
+	SE-75	121.11		16.70	-2.45E-01	1.47E-01	5.04E-01
		136.00		59.20	-4.91E-02		1.47E-01
		264.65		59.80	-8.64E-02		1.62E-01
		279.53		25.20	2.44E-01		4.21E-01
		400.65		11.40	-4.39E-01		9.56E-01
+	RB-82	776.52		13.00	1.98E+00	8.02E+00	8.02E+00
+	RB-83	520.41		46.00	-9.73E-02	2.94E-01	2.94E-01
		529.64		30.30	-6.43E-02		4.63E-01
		552.65		16.40	-1.04E-01		8.77E-01
+	KR-85	513.99		0.43	1.21E+00	2.09E+01	2.09E+01
+	SR-85	513.99		99.27	1.51E-02	2.59E-01	2.59E-01
+	Y-88	898.02		93.40	-1.35E-04	9.54E-02	1.38E-01
		1836.01		99.38	1.31E-02		9.54E-02
+	MO-93	263.06		56.72	-1.05E-01	5.50E-02	9.48E-02
		684.67		99.68	2.13E-02		6.86E-02
		1477.11		99.08	8.94E-03		5.50E-02
+	NB-93M	16.57		9.43	-1.58E-01	5.53E-01	5.53E-01
+	NB-94	702.63		100.00	-4.48E-02	6.79E-02	6.79E-02
		871.10		100.00	1.48E-02		7.08E-02
+	NB-95	765.79		99.81	3.58E-01	5.88E-01	5.88E-01
+	NB-95M	235.69		25.00	-3.52E+08	5.09E+07	5.09E+07
+	ZR-95	724.18		43.70	-4.51E-02	3.93E-01	5.57E-01
		756.72		55.30	-1.40E-02		3.93E-01
+	MO-99	181.06		6.20	-2.46E+09	3.76E+10	5.96E+10
		739.58		12.80	1.12E+08		3.76E+10
		778.00		4.50	-6.51E+10		1.06E+11
+	RU-103	497.08		89.00	5.62E-02	3.67E-01	3.67E-01
+	RU-106	621.84		9.80	-2.51E-01	7.64E-01	7.64E-01
+	AG-108M	433.93		89.90	-1.50E-02	6.48E-02	6.48E-02
		614.37		90.40	6.82E-03		8.65E-02
		722.95		90.50	-9.02E-03		8.09E-02
+	CD-109	88.03	*	3.72	3.73E+00	4.07E+00	4.07E+00
+	AG-110M	657.75		93.14	1.42E-02	9.61E-02	9.61E-02
		677.61		10.53	2.99E-01		8.14E-01
		706.67		16.46	-1.05E-01		5.72E-01
		763.93		21.98	-5.05E-02		4.55E-01
		884.67		71.63	-5.49E-02		1.19E-01
		1384.27		23.94	4.49E-02		3.56E-01
+	CD-113M	263.70		0.02	-1.65E+02	2.37E+02	2.37E+02
+	SN-113	255.12		1.93	-2.23E+00	1.69E-01	4.64E+00
		391.69		64.90	-1.82E-02		1.69E-01
+	TE123M	159.00		84.10	1.48E-02	1.10E-01	1.10E-01
+	SB-124	602.71		97.87	-2.40E-02	2.02E-01	2.02E-01
		645.85		7.26	-6.26E-01		2.52E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	722.78		11.10	-2.30E-01	2.02E-01	2.06E+00
		1691.02		49.00	-3.08E-02		2.59E-01
+	I-125	35.49		6.49	1.01E+00	2.75E+00	2.75E+00
+	SB-125	176.33		6.89	1.58E-01	2.16E-01	7.80E-01
		427.89		29.33	7.71E-02		2.16E-01
		463.38		10.35	4.03E-01		7.32E-01
		600.56		17.80	-1.61E-01		3.83E-01
		635.90		11.32	-2.01E-01		5.71E-01
+	SB-126	414.70		83.30	-2.05E+01	1.78E+01	1.80E+01
		666.33		99.60	6.77E+00		1.84E+01
		695.00		99.60	5.88E+00		1.78E+01
		720.50		53.80	-4.61E+00		3.31E+01
+	SN-126	87.57	*	37.00	3.24E-01	3.53E-01	3.53E-01
+	SB-127	473.00		25.00	-7.12E+06	1.07E+07	1.34E+07
		685.20		35.70	3.32E+06		1.07E+07
		783.80		14.70	-1.34E+06		3.15E+07
+	I-129	29.78		57.00	-1.05E-01	1.07E-01	1.07E-01
		33.60		13.20	1.91E-01		4.50E-01
		39.58		7.52	5.04E-02		7.12E-01
+	I-131	284.30		6.05	-6.17E+02	3.66E+02	4.72E+03
		364.48		81.20	6.20E+01		3.66E+02
		636.97		7.26	6.21E+02		4.49E+03
		722.89		1.80	-2.34E+03		2.10E+04
+	TE-132	49.72		13.10	-4.51E+08	8.87E+07	5.71E+08
		228.16		88.00	3.42E+07		8.87E+07
+	BA-133	81.00		33.00	-7.30E-01	1.39E-01	1.79E-01
		302.84		17.80	-8.34E-03		3.69E-01
		356.01		60.00	2.88E-02		1.39E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-3.08E+05	7.57E+04	7.57E+04
+	CS-134	563.23		8.38	4.89E-01	8.18E-02	7.99E-01
		569.32		15.43	-1.62E-01		4.16E-01
		604.70		97.60	5.30E-03		8.18E-02
		795.84		85.40	8.00E-02		1.09E-01
		801.93		8.73	2.52E-01		8.55E-01
+	CS-135	268.24		16.00	1.71E-01	3.87E-01	3.87E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	1.64E+01	1.13E+01	1.29E+02
		163.89		4.61	6.63E+00		1.99E+02
		176.55		13.56	1.39E+01		6.88E+01
		273.65		12.66	-5.29E+00		9.30E+01
		340.57		48.50	6.46E+01		3.11E+01
		818.50		99.70	-4.66E+00		1.13E+01
		1048.07		79.60	1.14E+01		1.90E+01
		1235.34		19.70	2.39E+01		1.05E+02
+	CS-137	661.65		85.12	2.28E-02	8.46E-02	8.46E-02
+	LA-138	788.74		34.00	-1.39E-01	9.76E-02	2.27E-01

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		Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		LA-138	1435.80	66.00	1.47E-02	9.76E-02	9.76E-02
+		CE-139	165.85	80.35	-5.42E-02	9.86E-02	9.86E-02
+		BA-140	162.64	6.70	6.79E+01	5.35E+01	1.65E+02
			304.84	4.50	1.14E+02		2.92E+02
			423.70	3.20	-2.07E+02		3.76E+02
			437.55	2.00	-3.02E+00		6.50E+02
			537.32	25.00	-1.80E+01		5.35E+01
+		LA-140	328.77	20.50	2.45E+01	1.34E+01	6.59E+01
			487.03	45.50	-4.98E+00		2.73E+01
			815.85	23.50	-2.93E+01		5.53E+01
			1596.49	95.49	-3.90E-01		1.34E+01
+		CE-141	145.44	48.40	1.71E-01	8.82E-01	8.82E-01
+	@	CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26	42.00	1.00E+26		1.00E+26
	@		664.55	5.20	1.00E+26		1.00E+26
+		CE-144	133.54	10.80	-5.63E-02	5.92E-01	5.92E-01
+		PM-144	476.78	42.00	-4.52E-02	7.76E-02	1.74E-01
			618.01	98.60	-3.62E-02		7.76E-02
			696.49	99.49	5.29E-02		8.59E-02
+		PM-145	36.85	21.70	-3.97E-02	1.38E-01	2.56E-01
			37.36	39.70	-1.26E-01		1.38E-01
			42.30	15.10	-5.91E-03		3.49E-01
			72.40	2.31	-3.86E+00		3.13E+00
+		PM-146	453.90	39.94	-5.88E-02	1.49E-01	1.49E-01
			735.90	14.01	-1.41E-01		4.45E-01
			747.13	13.10	5.57E-02		5.60E-01
+		ND-147	91.11	28.90	2.10E+02	1.26E+02	1.26E+02
			531.02	13.10	3.32E+01		2.55E+02
+		PM-149	285.90	3.10	-1.35E+13	5.59E+13	5.59E+13
+		EU-152	121.78	20.50	-1.14E-01	2.35E-01	2.35E-01
			244.69	5.40	-1.03E+00		1.08E+00
			344.27	19.13	-6.86E-02		3.05E-01
			778.89	9.20	-2.39E-01		7.26E-01
			964.01	10.40	-2.22E+00		9.32E-01
			1085.78	7.22	-9.31E-02		1.07E+00
			1112.02	9.60	3.06E-01		9.03E-01
			1407.95	14.94	2.97E-01		5.21E-01
+		GD-153	97.43	31.30	-1.68E-01	2.20E-01	2.20E-01
			103.18	22.20	-8.17E-02		2.92E-01
+		EU-154	123.07	40.50	1.13E-02	1.23E-01	1.23E-01
			723.30	19.70	-4.23E-02		3.79E-01
			873.19	11.50	7.16E-02		6.10E-01
			996.32	10.30	-2.39E-01		7.21E-01
			1004.76	17.90	5.26E-02		4.17E-01
			1274.45	35.50	6.14E-02		2.33E-01
+		EU-155	86.50	30.90	1.81E-01	2.23E-01	2.23E-01
			105.30	20.70	1.09E-01		2.49E-01
+		EU-156	811.77	10.40	8.47E+00	5.77E+01	5.77E+01
			1153.47	7.20	3.46E+01		1.28E+02

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-156	1230.71		8.90	4.47E+01	5.77E+01	1.06E+02
+	HO-166M	184.41		72.60	1.42E-01	8.83E-02	8.83E-02
		280.45		29.60	3.17E-02		1.97E-01
		410.94		11.10	2.35E-01		5.65E-01
		711.69		54.10	-2.80E-02		1.26E-01
+	TM-171	66.72		0.14	4.04E+00	4.84E+01	4.84E+01
+	HF-172	67.35		5.31	1.21E-01	4.82E-01	1.26E+00
		125.81		11.30	-4.50E-01		4.82E-01
+	LU-172	181.53		20.60	-2.98E+02	3.43E+03	7.20E+03
		900.72		29.81	-2.14E+03		6.41E+03
		1093.66		62.50	-1.35E+02		3.43E+03
+	LU-173	100.72		5.24	-2.86E-01	3.51E-01	1.08E+00
		272.11		21.20	1.79E-01		3.51E-01
+	HF-175	343.40		84.00	-4.10E-02	1.86E-01	1.86E-01
+	LU-176	88.34		13.30	-5.27E-03	5.91E-02	5.06E-01
		201.83		86.00	-3.21E-02		5.91E-02
		306.78		94.00	2.05E-02		6.50E-02
+	HF-181	133.02		41.70	-5.78E-02	3.53E-01	6.09E-01
		345.85		17.20	-3.82E-01		1.71E+00
		482.03		82.80	-1.08E-01		3.53E-01
+	TA-182	67.75		41.20	2.57E-02	2.68E-01	2.68E-01
		1121.30		34.90	7.11E-01		6.44E-01
		1189.05		16.23	-5.07E-01		9.71E-01
		1221.41		26.98	1.07E-01		6.61E-01
		1231.02		11.44	6.86E-01		1.63E+00
+	IR-192	308.46		29.68	2.87E-01	3.22E-01	5.21E-01
		468.07		48.10	-2.76E-02		3.22E-01
+	HG-203	279.19		77.30	1.96E-01	3.38E-01	3.38E-01
+	TL-204	374.74		94.11	4.07E-02	6.64E-02	6.64E-02
		899.15		99.16	-3.73E-02		7.08E-02
		911.74		91.10	4.20E-01		1.62E-01
+	BI-207	569.67		97.72	-2.79E-02	6.04E-02	6.04E-02
		1063.62		74.90	3.98E-02		1.13E-01
+	TL-208	583.14	*	30.22	1.50E+00	1.11E-01	3.52E-01
		860.37	*	4.48	1.87E+00		2.55E+00
		2614.66	*	35.85	1.10E+00		1.11E-01
+	BI-210M	262.00		45.00	-2.34E-02	1.23E-01	1.23E-01
		300.00		23.00	-1.08E+00		2.83E-01
+	PB-210	46.50		4.25	9.89E-01	1.28E+00	1.28E+00
+	PB-211	404.84		2.90	-1.53E+00	2.08E+00	2.08E+00
		831.96		2.90	-1.73E+00		2.50E+00
+	BI-212	727.17	*	11.80	1.64E+00	9.02E-01	9.02E-01
		1620.62		2.75	2.46E-01		2.38E+00
+	PB-212	238.63	*	44.60	1.54E+00	2.82E-01	2.82E-01
		300.09	*	3.41	1.04E+00		1.78E+00
+	BI-214	609.31	*	46.30	1.11E+00	2.67E-01	2.67E-01
		1120.29	*	15.10	1.09E+00		8.18E-01
		1764.49	*	15.80	1.34E+00		5.04E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	2204.22	*	4.98	9.80E-01	2.67E-01	1.20E+00
+	PB-214	295.21	*	19.19	1.15E+00	1.82E-01	3.45E-01
		351.92	*	37.19	1.30E+00		1.82E-01
+	RN-219	401.80		6.50	1.31E-01	9.63E-01	9.63E-01
+	RA-223	323.87		3.88	-1.48E-01	1.55E+00	1.55E+00
+	RA-224	240.98	*	3.95	4.56E+00	3.24E+00	3.24E+00
+	RA-225	40.00		31.00	1.53E+00	1.78E+01	1.78E+01
+	RA-226	186.21	*	3.28	3.69E+00	2.85E+00	2.85E+00
+	TH-227	50.10		8.40	-7.25E-01	5.94E-01	6.02E-01
		236.00		11.50	-4.11E+00		5.94E-01
		256.20		6.30	6.56E-01		9.44E-01
+	AC-228	338.32	*	11.40	1.62E+00	4.25E-01	7.00E-01
		911.07	*	27.70	1.27E+00		4.25E-01
		969.11	*	16.60	1.88E+00		8.41E-01
+	TH-230	48.44		16.90	1.49E-01	3.19E-01	3.19E-01
		62.85		4.60	2.11E+00		1.44E+00
		67.67		0.37	1.57E+00		1.64E+01
+	PA-231	283.67		1.60	-8.88E-01	2.80E+00	3.46E+00
		302.67		2.30	-6.34E-02		2.80E+00
+	TH-231	25.64		14.70	-2.96E+00	5.45E-01	5.45E-01
		84.21		6.40	-8.17E-01		9.55E-01
+	PA-233	311.98		38.60	-1.04E+00	1.90E+00	1.90E+00
+	PA-234	131.20		20.40	6.85E-03	2.56E-01	2.56E-01
		733.99		8.80	-2.17E-01		7.50E-01
		946.00		12.00	-8.36E-02		6.04E-01
+	PA-234M	1001.03		0.92	-6.52E-02	7.87E+00	7.87E+00
+	TH-234	63.29	*	3.80	1.58E+00	2.18E+00	2.18E+00
+	U-235	143.76		10.50	1.70E-01	4.95E-01	4.95E-01
		163.35		4.70	3.50E-02		1.05E+00
		205.31		4.70	-2.10E+00		1.10E+00
+	NP-237	86.50		12.60	4.28E-01	5.26E-01	5.26E-01
+	NP-239	106.10		22.70	-7.76E+10	1.03E+12	1.03E+12
		228.18		10.70	9.21E+11		2.39E+12
		277.60		14.10	6.25E+11		2.06E+12
+	AM-241	59.54		35.90	4.29E-02	1.63E-01	1.63E-01
+	AM-243	74.67	*	66.00	3.50E-01	1.91E-01	1.91E-01
+	CM-243	209.75		3.29	1.20E+00	4.40E-01	1.81E+00
		228.14		10.60	1.97E-01		5.09E-01
		277.60		14.00	1.33E-01		4.40E-01

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

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	2.16E+00	2.16E+00	9.79E-01	1.03E+00
	NA-22	1274.54		99.94	8.73E-02	8.73E-02	2.29E-02	4.04E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.49E-02	4.49E-02	1.88E-02	1.86E-02
+	K-40	1460.81	*	10.67	1.32E+00	1.32E+00	2.93E+01	6.30E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	6.44E-02	6.44E-02	6.16E-03	3.16E-02
		78.34		96.00	8.50E-02		2.02E-01	4.19E-02
	SC-46	889.25		99.98	1.57E-01	1.57E-01	-8.88E-03	7.33E-02
		1120.51		99.99	2.80E-01		3.33E-01	1.34E-01
	V-48	983.52		99.98	5.21E+00	5.21E+00	-6.45E-01	2.42E+00
		1312.10		97.50	6.07E+00		-1.30E+00	2.81E+00
	CR-51	320.08		9.83	7.22E+00	7.22E+00	-5.26E-01	3.48E+00
	MN-54	834.83		99.97	9.75E-02	9.75E-02	7.00E-03	4.60E-02
	CO-56	846.75		99.96	1.73E-01	1.73E-01	4.15E-02	8.13E-02
		1037.75		14.03	1.26E+00		-1.17E-01	5.86E-01
		1238.25		67.00	3.98E-01		2.56E-01	1.89E-01
		1771.40		15.51	9.41E-01		-1.29E-01	4.12E-01
		2598.48		16.90	5.58E-01		-4.75E-01	2.09E-01
	CO-57	122.06		85.51	7.16E-02	7.16E-02	-2.51E-02	3.48E-02
		136.48		10.60	5.96E-01		-1.99E-01	2.90E-01
	CO-58	810.76		99.40	1.78E-01	1.78E-01	7.88E-02	8.34E-02
	FE-59	1099.22		56.50	6.36E-01	6.36E-01	1.16E-01	2.96E-01
		1291.56		43.20	8.77E-01		-2.39E-01	4.06E-01
	CO-60	1173.22		100.00	9.62E-02	8.30E-02	3.42E-02	4.52E-02
		1332.49		100.00	8.30E-02		6.50E-02	3.83E-02
	ZN-65	1115.52		50.75	2.25E-01	2.25E-01	1.04E-02	1.06E-01
	GA-67	93.31		35.70	2.61E+08	2.61E+08	4.41E+08	1.28E+08
		208.95		2.24	3.66E+09		1.31E+09	1.78E+09
		300.22		16.00	5.64E+08		-1.54E+09	2.73E+08
	SE-75	121.11		16.70	5.04E-01	1.47E-01	-2.45E-01	2.45E-01
		136.00		59.20	1.47E-01		-4.91E-02	7.14E-02
		264.65		59.80	1.62E-01		-8.64E-02	7.84E-02
		279.53		25.20	4.21E-01		2.44E-01	2.04E-01
		400.65		11.40	9.56E-01		-4.39E-01	4.58E-01
	RB-82	776.52		13.00	8.02E+00	8.02E+00	1.98E+00	3.78E+00

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

	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	2.94E-01	2.94E-01	-9.73E-02	1.40E-01
		529.64		30.30	4.63E-01		-6.43E-02	2.20E-01
		552.65		16.40	8.77E-01		-1.04E-01	4.17E-01
	KR-85	513.99		0.43	2.09E+01	2.09E+01	1.21E+00	1.01E+01
	SR-85	513.99		99.27	2.59E-01	2.59E-01	1.51E-02	1.25E-01
	Y-88	898.02		93.40	1.38E-01	9.54E-02	-1.35E-04	6.44E-02
		1836.01		99.38	9.54E-02		1.31E-02	4.03E-02
	MO-93	263.06		56.72	9.48E-02	5.50E-02	-1.05E-01	4.57E-02
		684.67		99.68	6.86E-02		2.13E-02	3.24E-02
		1477.11		99.08	5.50E-02		8.94E-03	2.41E-02
	NB-93M	16.57		9.43	5.53E-01	5.53E-01	-1.58E-01	2.60E-01
	NB-94	702.63		100.00	6.79E-02	6.79E-02	-4.48E-02	3.21E-02
		871.10		100.00	7.08E-02		1.48E-02	3.32E-02
	NB-95	765.79		99.81	5.88E-01	5.88E-01	3.58E-01	2.79E-01
	NB-95M	235.69		25.00	5.09E+07	5.09E+07	-3.52E+08	2.48E+07
	ZR-95	724.18		43.70	5.57E-01	3.93E-01	-4.51E-02	2.65E-01
		756.72		55.30	3.93E-01		-1.40E-02	1.86E-01
	MO-99	181.06		6.20	5.96E+10	3.76E+10	-2.46E+09	2.89E+10
		739.58		12.80	3.76E+10		1.12E+08	1.77E+10
		778.00		4.50	1.06E+11		-6.51E+10	4.95E+10
	RU-103	497.08		89.00	3.67E-01	3.67E-01	5.62E-02	1.74E-01
	RU-106	621.84		9.80	7.64E-01	7.64E-01	-2.51E-01	3.61E-01
	AG-108M	433.93		89.90	6.48E-02	6.48E-02	-1.50E-02	3.09E-02
		614.37		90.40	8.65E-02		6.82E-03	4.14E-02
		722.95		90.50	8.09E-02		-9.02E-03	3.83E-02
+	CD-109	88.03	*	3.72	4.07E+00	4.07E+00	3.73E+00	2.01E+00
	AG-110M	657.75		93.14	9.61E-02	9.61E-02	1.42E-02	4.55E-02
		677.61		10.53	8.14E-01		2.99E-01	3.84E-01
		706.67		16.46	5.72E-01		-1.05E-01	2.71E-01
		763.93		21.98	4.55E-01		-5.05E-02	2.15E-01
		884.67		71.63	1.19E-01		-5.49E-02	5.55E-02
		1384.27		23.94	3.56E-01		4.49E-02	1.61E-01
	CD-113M	263.70		0.02	2.37E+02	2.37E+02	-1.65E+02	1.14E+02
	SN-113	255.12		1.93	4.64E+00	1.69E-01	-2.23E+00	2.24E+00
		391.69		64.90	1.69E-01		-1.82E-02	8.09E-02
	TE123M	159.00		84.10	1.10E-01	1.10E-01	1.48E-02	5.36E-02
	SB-124	602.71		97.87	2.02E-01	2.02E-01	-2.40E-02	9.54E-02
		645.85		7.26	2.52E+00		-6.26E-01	1.18E+00
		722.78		11.10	2.06E+00		-2.30E-01	9.76E-01
		1691.02		49.00	2.59E-01		-3.08E-02	1.06E-01
	I-125	35.49		6.49	2.75E+00	2.75E+00	1.01E+00	1.34E+00
	SB-125	176.33		6.89	7.80E-01	2.16E-01	1.58E-01	3.79E-01
		427.89		29.33	2.16E-01		7.71E-02	1.03E-01
		463.38		10.35	7.32E-01		4.03E-01	3.52E-01
		600.56		17.80	3.83E-01		-1.61E-01	1.81E-01
		635.90		11.32	5.71E-01		-2.01E-01	2.69E-01
	SB-126	414.70		83.30	1.80E+01	1.78E+01	-2.05E+01	8.59E+00
		666.33		99.60	1.84E+01		6.77E+00	8.72E+00
		695.00		99.60	1.78E+01		5.88E+00	8.41E+00
		720.50		53.80	3.31E+01		-4.61E+00	1.56E+01
+	SN-126	87.57	*	37.00	3.53E-01	3.53E-01	3.24E-01	1.75E-01
	SB-127	473.00		25.00	1.34E+07	1.07E+07	-7.12E+06	6.39E+06
		685.20		35.70	1.07E+07		3.32E+06	5.06E+06

Analysis Report for 1707090-05

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-127	783.80	14.70	3.15E+07	1.07E+07	-1.34E+06	1.49E+07
I-129	29.78	57.00	1.07E-01	1.07E-01	-1.05E-01	5.22E-02
	33.60	13.20	4.50E-01		1.91E-01	2.19E-01
	39.58	7.52	7.12E-01		5.04E-02	3.47E-01
I-131	284.30	6.05	4.72E+03	3.66E+02	-6.17E+02	2.28E+03
	364.48	81.20	3.66E+02		6.20E+01	1.76E+02
	636.97	7.26	4.49E+03		6.21E+02	2.12E+03
	722.89	1.80	2.10E+04		-2.34E+03	9.93E+03
TE-132	49.72	13.10	5.71E+08	8.87E+07	-4.51E+08	2.78E+08
	228.16	88.00	8.87E+07		3.42E+07	4.29E+07
BA-133	81.00	33.00	1.79E-01	1.39E-01	-7.30E-01	8.79E-02
	302.84	17.80	3.69E-01		-8.34E-03	1.79E-01
	356.01	60.00	1.39E-01		2.88E-02	6.74E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	7.57E+04	7.57E+04	-3.08E+05	3.71E+04
CS-134	563.23	8.38	7.99E-01	8.18E-02	4.89E-01	3.79E-01
	569.32	15.43	4.16E-01		-1.62E-01	1.97E-01
	604.70	97.60	8.18E-02		5.30E-03	3.90E-02
	795.84	85.40	1.09E-01		8.00E-02	5.20E-02
	801.93	8.73	8.55E-01		2.52E-01	4.01E-01
CS-135	268.24	16.00	3.87E-01	3.87E-01	1.71E-01	1.88E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.29E+02	1.13E+01	1.64E+01	6.30E+01
	163.89	4.61	1.99E+02		6.63E+00	9.68E+01
	176.55	13.56	6.88E+01		1.39E+01	3.34E+01
	273.65	12.66	9.30E+01		-5.29E+00	4.51E+01
	340.57	48.50	3.11E+01		6.46E+01	1.51E+01
	818.50	99.70	1.13E+01		-4.66E+00	5.26E+00
	1048.07	79.60	1.90E+01		1.14E+01	8.89E+00
	1235.34	19.70	1.05E+02		2.39E+01	4.99E+01
CS-137	661.65	85.12	8.46E-02	8.46E-02	2.28E-02	4.01E-02
LA-138	788.74	34.00	2.27E-01	9.76E-02	-1.39E-01	1.07E-01
	1435.80	66.00	9.76E-02		1.47E-02	4.39E-02
CE-139	165.85	80.35	9.86E-02	9.86E-02	-5.42E-02	4.78E-02
BA-140	162.64	6.70	1.65E+02	5.35E+01	6.79E+01	8.02E+01
	304.84	4.50	2.92E+02		1.14E+02	1.41E+02
	423.70	3.20	3.76E+02		-2.07E+02	1.79E+02
	437.55	2.00	6.50E+02		-3.02E+00	3.11E+02
	537.32	25.00	5.35E+01		-1.80E+01	2.54E+01
LA-140	328.77	20.50	6.59E+01	1.34E+01	2.45E+01	3.18E+01
	487.03	45.50	2.73E+01		-4.98E+00	1.30E+01
	815.85	23.50	5.53E+01		-2.93E+01	2.57E+01
	1596.49	95.49	1.34E+01		-3.90E-01	5.93E+00
CE-141	145.44	48.40	8.82E-01	8.82E-01	1.71E-01	4.29E-01
@ 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	5.92E-01	5.92E-01	-5.63E-02	2.88E-01
PM-144	476.78	42.00	1.74E-01	7.76E-02	-4.52E-02	8.31E-02
	618.01	98.60	7.76E-02		-3.62E-02	3.67E-02
	696.49	99.49	8.59E-02		5.29E-02	4.07E-02

Analysis Report for 1707090-05

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-145	36.85	21.70	2.56E-01	1.38E-01	-3.97E-02	1.24E-01
	37.36	39.70	1.38E-01		-1.26E-01	6.69E-02
	42.30	15.10	3.49E-01		-5.91E-03	1.70E-01
	72.40	2.31	3.13E+00		-3.86E+00	1.54E+00
PM-146	453.90	39.94	1.49E-01	1.49E-01	-5.88E-02	7.11E-02
	735.90	14.01	4.45E-01		-1.41E-01	2.08E-01
	747.13	13.10	5.60E-01		5.57E-02	2.64E-01
ND-147	91.11	28.90	1.26E+02	1.26E+02	2.10E+02	6.21E+01
	531.02	13.10	2.55E+02		3.32E+01	1.21E+02
PM-149	285.90	3.10	5.59E+13	5.59E+13	-1.35E+13	2.70E+13
EU-152	121.78	20.50	2.35E-01	2.35E-01	-1.14E-01	1.14E-01
	244.69	5.40	1.08E+00		-1.03E+00	5.23E-01
	344.27	19.13	3.05E-01		-6.86E-02	1.47E-01
	778.89	9.20	7.26E-01		-2.39E-01	3.40E-01
	964.01	10.40	9.32E-01		-2.22E+00	4.43E-01
	1085.78	7.22	1.07E+00		-9.31E-02	4.99E-01
	1112.02	9.60	9.03E-01		3.06E-01	4.23E-01
	1407.95	14.94	5.21E-01		2.97E-01	2.39E-01
GD-153	97.43	31.30	2.20E-01	2.20E-01	-1.68E-01	1.07E-01
	103.18	22.20	2.92E-01		-8.17E-02	1.42E-01
EU-154	123.07	40.50	1.23E-01	1.23E-01	1.13E-02	5.99E-02
	723.30	19.70	3.79E-01		-4.23E-02	1.79E-01
	873.19	11.50	6.10E-01		7.16E-02	2.85E-01
	996.32	10.30	7.21E-01		-2.39E-01	3.36E-01
	1004.76	17.90	4.17E-01		5.26E-02	1.94E-01
	1274.45	35.50	2.33E-01		6.14E-02	1.08E-01
EU-155	86.50	30.90	2.23E-01	2.23E-01	1.81E-01	1.09E-01
	105.30	20.70	2.49E-01		1.09E-01	1.21E-01
EU-156	811.77	10.40	5.77E+01	5.77E+01	8.47E+00	2.70E+01
	1153.47	7.20	1.28E+02		3.46E+01	6.07E+01
	1230.71	8.90	1.06E+02		4.47E+01	4.99E+01
HO-166M	184.41	72.60	8.83E-02	8.83E-02	1.42E-01	4.31E-02
	280.45	29.60	1.97E-01		3.17E-02	9.53E-02
	410.94	11.10	5.65E-01		2.35E-01	2.71E-01
	711.69	54.10	1.26E-01		-2.80E-02	5.92E-02
TM-171	66.72	0.14	4.84E+01	4.84E+01	4.04E+00	2.37E+01
HF-172	67.35	5.31	1.26E+00	4.82E-01	1.21E-01	6.20E-01
	125.81	11.30	4.82E-01		-4.50E-01	2.35E-01
LU-172	181.53	20.60	7.20E+03	3.43E+03	-2.98E+02	3.49E+03
	900.72	29.81	6.41E+03		-2.14E+03	2.98E+03
	1093.66	62.50	3.43E+03		-1.35E+02	1.59E+03
LU-173	100.72	5.24	1.08E+00	3.51E-01	-2.86E-01	5.27E-01
	272.11	21.20	3.51E-01		1.79E-01	1.70E-01
HF-175	343.40	84.00	1.86E-01	1.86E-01	-4.10E-02	8.96E-02
LU-176	88.34	13.30	5.06E-01	5.91E-02	-5.27E-03	2.49E-01
	201.83	86.00	5.91E-02		-3.21E-02	2.86E-02
	306.78	94.00	6.50E-02		2.05E-02	3.14E-02
HF-181	133.02	41.70	6.09E-01	3.53E-01	-5.78E-02	2.96E-01
	345.85	17.20	1.71E+00		-3.82E-01	8.22E-01
	482.03	82.80	3.53E-01		-1.08E-01	1.68E-01
TA-182	67.75	41.20	2.68E-01	2.68E-01	2.57E-02	1.32E-01
	1121.30	34.90	6.44E-01		7.11E-01	3.08E-01
	1189.05	16.23	9.71E-01		-5.07E-01	4.54E-01

Analysis Report for 1707090-05

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TA-182	1221.41		26.98	6.61E-01	2.68E-01	1.07E-01	3.11E-01
		1231.02		11.44	1.63E+00		6.86E-01	7.67E-01
	IR-192	308.46		29.68	5.21E-01	3.22E-01	2.87E-01	2.52E-01
		468.07		48.10	3.22E-01		-2.76E-02	1.54E-01
	HG-203	279.19		77.30	3.38E-01	3.38E-01	1.96E-01	1.64E-01
	TL-204	374.74		94.11	6.64E-02	6.64E-02	4.07E-02	3.19E-02
		899.15		99.16	7.08E-02		-3.73E-02	3.30E-02
		911.74		91.10	1.62E-01		4.20E-01	7.83E-02
	BI-207	569.67		97.72	6.04E-02	6.04E-02	-2.79E-02	2.85E-02
		1063.62		74.90	1.13E-01		3.98E-02	5.31E-02
+	TL-208	583.14	*	30.22	3.52E-01	1.11E-01	1.50E+00	1.71E-01
		860.37	*	4.48	2.55E+00		1.87E+00	1.22E+00
		2614.66	*	35.85	1.11E-01		1.10E+00	4.17E-02
	BI-210M	262.00		45.00	1.23E-01	1.23E-01	-2.34E-02	5.96E-02
		300.00		23.00	2.83E-01		-1.08E+00	1.37E-01
	PB-210	46.50		4.25	1.28E+00	1.28E+00	9.89E-01	6.27E-01
	PB-211	404.84		2.90	2.08E+00	2.08E+00	-1.53E+00	9.96E-01
		831.96		2.90	2.50E+00		-1.73E+00	1.18E+00
+	BI-212	727.17	*	11.80	9.02E-01	9.02E-01	1.64E+00	4.35E-01
		1620.62		2.75	2.38E+00		2.46E-01	1.06E+00
+	PB-212	238.63	*	44.60	2.82E-01	2.82E-01	1.54E+00	1.39E-01
		300.09	*	3.41	1.78E+00		1.04E+00	8.59E-01
+	BI-214	609.31	*	46.30	2.67E-01	2.67E-01	1.11E+00	1.30E-01
		1120.29	*	15.10	8.18E-01		1.09E+00	3.91E-01
		1764.49	*	15.80	5.04E-01		1.34E+00	2.28E-01
		2204.22	*	4.98	1.20E+00		9.80E-01	5.10E-01
+	PB-214	295.21	*	19.19	3.45E-01	1.82E-01	1.15E+00	1.67E-01
		351.92	*	37.19	1.82E-01		1.30E+00	8.82E-02
	RN-219	401.80		6.50	9.63E-01	9.63E-01	1.31E-01	4.62E-01
	RA-223	323.87		3.88	1.55E+00	1.55E+00	-1.48E-01	7.48E-01
+	RA-224	240.98	*	3.95	3.24E+00	3.24E+00	4.56E+00	1.60E+00
	RA-225	40.00		31.00	1.78E+01	1.78E+01	1.53E+00	8.68E+00
+	RA-226	186.21	*	3.28	2.85E+00	2.85E+00	3.69E+00	1.40E+00
	TH-227	50.10		8.40	6.02E-01	5.94E-01	-7.25E-01	2.93E-01
		236.00		11.50	5.94E-01		-4.11E+00	2.89E-01
		256.20		6.30	9.44E-01		6.56E-01	4.58E-01
+	AC-228	338.32	*	11.40	7.00E-01	4.25E-01	1.62E+00	3.40E-01
		911.07	*	27.70	4.25E-01		1.27E+00	2.04E-01
		969.11	*	16.60	8.41E-01		1.88E+00	4.06E-01
	TH-230	48.44		16.90	3.19E-01	3.19E-01	1.49E-01	1.56E-01
		62.85		4.60	1.44E+00		2.11E+00	7.08E-01
		67.67		0.37	1.64E+01		1.57E+00	8.04E+00
	PA-231	283.67		1.60	3.46E+00	2.80E+00	-8.88E-01	1.67E+00
		302.67		2.30	2.80E+00		-6.34E-02	1.36E+00
	TH-231	25.64		14.70	5.45E-01	5.45E-01	-2.96E+00	2.66E-01
		84.21		6.40	9.55E-01		-8.17E-01	4.68E-01
	PA-233	311.98		38.60	1.90E+00	1.90E+00	-1.04E+00	9.16E-01
	PA-234	131.20		20.40	2.56E-01	2.56E-01	6.85E-03	1.25E-01
		733.99		8.80	7.50E-01		-2.17E-01	3.52E-01
		946.00		12.00	6.04E-01		-8.36E-02	2.82E-01
	PA-234M	1001.03		0.92	7.87E+00	7.87E+00	-6.52E-02	3.66E+00
+	TH-234	63.29	*	3.80	2.18E+00	2.18E+00	1.58E+00	1.08E+00
	U-235	143.76		10.50	4.95E-01	4.95E-01	1.70E-01	2.41E-01

Analysis Report for 1707090-05

HTC-A06-S001-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	U-235	163.35		4.70	1.05E+00	4.95E-01	3.50E-02	5.11E-01
		205.31		4.70	1.10E+00		-2.10E+00	5.31E-01
	NP-237	86.50		12.60	5.26E-01	5.26E-01	4.28E-01	2.58E-01
	NP-239	106.10		22.70	1.03E+12	1.03E+12	-7.76E+10	5.04E+11
		228.18		10.70	2.39E+12		9.21E+11	1.15E+12
		277.60		14.10	2.06E+12		6.25E+11	9.99E+11
	AM-241	59.54		35.90	1.63E-01	1.63E-01	4.29E-02	8.00E-02
+	AM-243	74.67	*	66.00	1.91E-01	1.91E-01	3.50E-01	9.45E-02
	CM-243	209.75		3.29	1.81E+00	4.40E-01	1.20E+00	8.78E-01
		228.14		10.60	5.09E-01		1.97E-01	2.47E-01
		277.60		14.00	4.40E-01		1.33E-01	2.13E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

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: HTC-A06-S001-1824-01

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	0	0
17:	0	0	85	98	78	172	525	176
25:	84	89	100	88	74	78	73	85
33:	97	82	100	83	86	90	70	93
41:	104	86	88	84	89	89	145	115
49:	93	93	99	104	100	129	122	114
57:	130	149	153	136	137	159	199	289
65:	181	161	163	166	170	162	161	181
73:	183	196	441	382	435	561	209	168
81:	148	155	132	166	191	169	190	287
89:	162	210	178	135	308	267	127	117
97:	105	120	103	143	95	87	100	106
105:	102	115	102	98	99	93	119	98
113:	102	118	110	111	104	105	99	84
121:	89	91	96	86	83	111	87	103
129:	127	128	109	97	89	93	101	90
137:	83	79	87	110	84	79	98	101
145:	107	92	68	96	96	82	99	84
153:	79	83	104	104	88	85	100	80
161:	96	81	85	73	81	66	66	73
169:	79	83	77	96	69	57	85	58
177:	79	78	70	71	79	77	81	76
185:	84	181	161	91	71	71	76	58
193:	63	56	84	68	71	69	61	67
201:	70	68	58	65	77	86	50	53
209:	128	114	59	73	63	87	64	59
217:	52	66	61	60	58	61	66	58
225:	57	56	51	60	81	67	58	53
233:	61	55	65	62	76	242	702	267
241:	142	175	98	72	63	49	53	54
249:	39	50	42	51	53	55	52	40
257:	40	44	65	43	29	32	35	42
265:	39	36	51	38	38	67	71	46
273:	47	47	46	49	48	56	45	39
281:	39	41	37	31	28	39	39	38
289:	36	37	36	36	29	55	146	198
297:	56	33	40	57	73	37	34	35
305:	43	40	44	46	41	31	41	35
313:	29	30	34	35	39	35	32	39
321:	28	37	38	34	41	31	42	60
329:	43	39	32	19	35	28	27	23
337:	38	104	150	45	38	36	27	33
345:	33	33	18	29	39	22	88	344
353:	213	39	23	36	46	33	21	28
361:	28	24	23	29	27	31	28	30

369:	25	23	14	27	29	26	30	26

Sample Title: HTC-A06-S001-1824-01

Channel								
377:	31	28	24	26	23	30	29	34
385:	31	27	24	28	28	32	24	21
393:	30	31	23	26	33	30	29	28
401:	26	20	27	30	37	29	17	20
409:	34	39	29	21	23	25	24	23
417:	21	26	35	31	21	25	20	16
425:	20	16	24	19	19	38	23	17
433:	25	22	24	18	21	20	33	29
441:	14	22	21	26	21	22	21	22
449:	20	29	22	17	21	18	19	17
457:	23	17	26	16	25	24	44	43
465:	29	20	19	26	25	19	10	25
473:	19	19	21	22	21	23	16	19
481:	26	19	13	10	22	18	20	22
489:	17	13	25	17	15	17	24	11
497:	14	18	13	19	15	15	20	21
505:	16	22	13	25	35	56	105	73
513:	29	19	14	22	18	19	17	23
521:	14	17	15	19	19	22	19	18
529:	17	16	16	16	28	21	17	14
537:	12	16	25	17	15	22	12	16
545:	19	14	20	17	28	16	24	25
553:	12	19	16	16	19	15	8	13
561:	16	20	15	15	13	18	12	10
569:	16	15	13	15	18	20	18	20
577:	22	12	19	23	17	43	177	147
585:	34	18	17	16	12	9	13	13
593:	19	8	20	21	23	14	18	8
601:	16	19	15	18	14	15	23	38
609:	185	200	45	19	20	23	20	16
617:	17	12	11	13	13	14	16	15
625:	15	13	22	12	13	7	14	10
633:	15	11	12	12	13	14	11	23
641:	11	15	14	12	10	8	14	13
649:	9	13	13	16	14	9	12	19
657:	16	8	14	16	22	14	19	13
665:	20	17	17	16	15	12	10	12
673:	6	8	17	19	11	12	15	11
681:	8	11	15	22	12	13	12	13
689:	14	13	8	11	19	18	11	15
697:	13	15	15	12	11	14	16	10
705:	18	15	22	20	14	7	19	16
713:	13	16	9	10	11	11	14	19
721:	8	16	18	14	16	16	52	37
729:	15	14	22	19	9	6	5	5
737:	18	13	13	12	10	8	13	17
745:	17	13	9	11	14	14	9	20
753:	11	9	23	12	9	10	16	24
761:	10	19	10	22	11	18	16	24
769:	25	11	13	15	19	11	22	9
777:	11	11	6	8	11	20	10	9
785:	27	21	20	14	9	19	7	14
793:	13	27	33	14	19	7	14	11

801:	16	14	7	4	12	14	20	11

Sample Title: HTC-A06-S001-1824-01

Channel								
809:	7	11	13	15	8	9	6	7
817:	12	9	7	7	11	17	8	7
825:	7	5	17	6	11	5	22	12
833:	9	9	16	24	17	11	16	11
841:	12	7	16	11	14	10	14	9
849:	13	10	11	7	12	8	14	8
857:	10	16	13	25	30	13	9	11
865:	14	11	7	13	11	8	14	7
873:	10	11	7	12	9	5	11	10
881:	12	6	11	9	9	8	5	13
889:	10	11	4	17	11	11	10	7
897:	7	5	13	9	13	8	7	19
905:	6	10	13	11	11	41	114	79
913:	19	14	11	10	12	6	14	6
921:	13	11	12	15	9	7	12	7
929:	11	12	16	11	13	25	14	6
937:	15	11	12	8	16	13	10	6
945:	7	13	12	15	5	17	15	11
953:	12	6	6	12	5	14	10	6
961:	8	14	17	29	16	11	24	52
969:	68	46	16	7	10	11	5	8
977:	9	7	4	8	12	16	3	7
985:	8	6	13	10	10	8	9	11
993:	9	8	9	13	9	9	6	10
1001:	13	8	10	6	8	5	13	11
1009:	11	9	3	4	8	4	12	9
1017:	11	7	11	7	5	12	14	18
1025:	10	6	10	10	9	11	6	12
1033:	7	7	3	12	10	10	11	8
1041:	9	9	3	8	8	13	9	12
1049:	11	11	10	9	7	10	8	10
1057:	12	8	14	10	12	6	8	10
1065:	15	17	8	6	16	9	12	10
1073:	11	14	10	14	8	4	9	7
1081:	13	8	10	5	5	11	12	10
1089:	7	10	4	7	9	9	7	12
1097:	6	11	12	5	9	6	10	5
1105:	9	8	7	3	10	10	10	12
1113:	10	10	13	7	15	9	22	46
1121:	49	13	7	14	15	14	17	9
1129:	11	19	9	9	9	12	16	11
1137:	7	13	13	8	13	10	8	10
1145:	9	6	10	13	8	17	9	17
1153:	13	19	15	9	20	7	11	14
1161:	8	11	11	12	12	7	12	10
1169:	10	12	9	14	10	16	6	15
1177:	8	10	8	12	7	18	10	16
1185:	11	7	10	10	13	13	4	12
1193:	14	11	8	12	13	14	12	10
1201:	12	10	12	13	10	14	13	12
1209:	15	8	14	15	14	13	18	13
1217:	10	15	7	11	11	13	16	13
1225:	11	11	14	16	15	10	8	17

1233:	13	12	8	13	22	27	17	10

Sample Title: HTC-A06-S001-1824-01

Channel								
1241:	14	8	12	15	8	10	12	4
1249:	11	6	9	16	6	10	8	7
1257:	4	5	13	5	9	8	7	8
1265:	7	3	7	12	9	12	12	5
1273:	6	9	13	0	9	7	6	14
1281:	12	14	8	12	10	9	6	6
1289:	9	11	6	11	4	6	10	10
1297:	7	7	11	8	11	7	7	10
1305:	4	9	8	6	8	6	5	5
1313:	14	6	10	6	7	7	5	2
1321:	4	3	9	3	7	5	6	3
1329:	9	3	7	12	5	6	7	3
1337:	1	5	4	2	4	6	7	6
1345:	4	4	5	3	3	2	5	1
1353:	8	4	3	3	3	5	5	2
1361:	5	2	5	0	3	6	5	1
1369:	4	5	4	6	5	3	3	8
1377:	15	14	5	5	7	6	3	2
1385:	4	4	3	2	3	3	3	3
1393:	3	8	2	4	5	1	1	6
1401:	9	7	4	7	7	6	9	8
1409:	3	1	3	1	3	0	2	8
1417:	3	3	2	2	3	5	1	8
1425:	5	5	1	6	3	4	2	5
1433:	2	3	5	4	4	4	6	1
1441:	5	3	3	0	3	2	5	1
1449:	4	2	5	3	3	7	5	6
1457:	9	29	147	487	442	150	32	21
1465:	18	8	4	4	2	2	4	1
1473:	2	5	3	0	1	1	5	0
1481:	3	2	3	0	3	0	6	2
1489:	1	4	3	3	4	2	6	5
1497:	2	2	3	6	3	4	3	0
1505:	1	3	2	5	7	8	3	4
1513:	2	5	2	2	5	1	0	4
1521:	4	1	2	3	0	5	0	2
1529:	0	3	3	2	1	2	3	2
1537:	1	4	3	1	1	1	2	3
1545:	2	1	3	2	2	0	4	1
1553:	1	2	1	4	1	3	1	1
1561:	0	0	4	3	1	2	3	1
1569:	0	3	0	1	2	0	0	2
1577:	0	0	1	2	1	3	2	2
1585:	5	2	6	7	0	2	5	5
1593:	6	7	2	1	0	1	2	4
1601:	1	2	0	0	0	1	0	3
1609:	1	2	3	2	0	1	5	2
1617:	1	2	3	10	6	1	0	3
1625:	2	1	1	1	3	8	5	2
1633:	1	2	2	2	2	2	1	2
1641:	1	0	0	2	1	1	0	1
1649:	3	2	3	2	2	1	0	1
1657:	0	2	1	3	4	0	5	0

1665:	1	1	4	1	1	2	3	1

Sample Title: HTC-A06-S001-1824-01

Channel								
1673:	0	0	1	1	3	0	3	4
1681:	1	1	2	2	1	1	0	2
1689:	0	2	1	0	2	2	1	2
1697:	3	1	3	1	1	0	2	1
1705:	1	0	1	0	3	1	0	0
1713:	1	2	1	2	2	1	0	0
1721:	1	2	1	0	1	1	0	1
1729:	7	9	1	3	0	2	2	4
1737:	1	3	1	2	1	1	2	4
1745:	0	1	4	2	0	3	3	0
1753:	5	1	1	1	3	0	1	3
1761:	1	4	15	32	20	5	5	3
1769:	4	1	0	2	2	1	0	2
1777:	1	0	0	0	0	0	1	0
1785:	1	0	1	1	1	0	2	1
1793:	0	0	1	1	0	0	1	1
1801:	1	0	0	0	1	0	0	0
1809:	2	4	1	1	0	1	1	1
1817:	2	3	1	2	1	0	2	1
1825:	0	1	1	1	1	1	0	4
1833:	0	1	0	1	1	3	1	2
1841:	0	0	1	2	1	2	1	1
1849:	0	2	1	2	0	1	6	1
1857:	0	3	0	0	1	0	2	1
1865:	2	4	2	2	0	0	0	3
1873:	1	2	2	1	2	3	1	2
1881:	0	6	2	0	1	3	1	2
1889:	2	0	2	3	0	1	3	3
1897:	0	3	0	1	1	4	0	0
1905:	0	0	3	0	1	2	1	2
1913:	0	3	1	3	1	1	0	2
1921:	2	1	1	1	3	3	1	0
1929:	2	0	2	2	2	3	0	5
1937:	2	0	2	1	1	1	1	1
1945:	2	2	1	0	1	0	2	0
1953:	1	2	3	1	0	0	1	2
1961:	2	0	0	3	2	2	1	1
1969:	0	2	3	2	0	0	1	0
1977:	0	1	0	0	0	2	1	1
1985:	0	1	0	2	1	2	1	2
1993:	0	0	2	0	0	1	4	1
2001:	2	0	1	2	1	0	0	0
2009:	1	2	0	0	2	2	2	1
2017:	1	5	0	1	0	0	0	2
2025:	2	1	0	1	0	0	2	0
2033:	2	0	0	2	0	2	2	1
2041:	3	0	0	1	0	1	1	1
2049:	1	3	0	0	0	4	4	3
2057:	2	1	2	4	0	0	1	1
2065:	1	0	0	0	0	2	2	0
2073:	1	0	0	1	0	0	0	0
2081:	0	1	2	0	0	1	1	1
2089:	0	0	1	2	1	0	0	0

2097:	0	0	0	4	5	4	4	5

Sample Title: HTC-A06-S001-1824-01

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

2529:	0	1	0	0	0	0	1	1

Sample Title: HTC-A06-S001-1824-01

Channel								
2537:	0	1	0	0	0	1	0	1
2545:	1	0	1	1	1	0	1	0
2553:	1	0	1	2	0	0	0	1
2561:	0	0	0	1	1	0	0	0
2569:	0	0	2	2	0	1	0	0
2577:	1	0	0	0	0	1	0	0
2585:	0	0	0	1	0	1	0	3
2593:	0	0	0	0	0	0	0	1
2601:	2	1	0	1	1	0	0	0
2609:	0	3	6	16	31	31	19	4
2617:	1	1	1	0	0	0	0	0
2625:	1	1	0	0	0	0	1	1
2633:	1	0	0	0	0	0	1	0
2641:	1	1	0	0	0	0	0	0
2649:	1	0	0	0	0	1	0	0
2657:	0	0	1	0	1	0	0	1
2665:	0	0	1	0	1	1	0	0
2673:	2	0	0	0	0	0	0	0
2681:	0	1	1	1	0	1	0	0
2689:	0	0	1	1	1	0	0	1
2697:	0	1	0	0	0	0	0	0
2705:	1	2	1	0	1	0	0	1
2713:	1	0	1	1	0	0	0	0
2721:	1	0	0	0	0	1	1	0
2729:	1	1	0	0	0	0	1	0
2737:	0	2	1	0	0	0	0	0
2745:	1	0	0	0	0	0	1	0
2753:	1	0	0	0	1	1	0	0
2761:	0	0	0	0	0	2	1	0
2769:	0	0	0	0	0	0	0	1
2777:	1	0	0	0	0	2	2	0
2785:	2	1	0	2	0	0	0	1
2793:	0	0	0	0	0	0	1	1
2801:	0	0	2	0	0	0	1	0
2809:	0	1	1	1	0	1	1	0
2817:	0	0	0	0	0	0	2	0
2825:	1	1	1	0	1	0	1	1
2833:	0	2	0	0	0	0	1	1
2841:	0	0	0	0	0	1	2	1
2849:	0	0	0	0	0	1	1	1
2857:	1	2	0	0	0	0	1	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	1	0	2	0
2881:	0	1	0	0	0	1	1	0
2889:	1	0	1	0	0	0	0	0
2897:	1	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	1	0	0	0	0	0	0
2921:	0	0	0	1	0	1	0	1
2929:	0	1	0	1	1	0	0	0
2937:	0	0	0	0	0	0	0	1
2945:	0	0	0	1	0	0	1	0
2953:	0	0	1	0	1	0	0	0

2961:	0	0	0	1	0	0	0	0

Sample Title: HTC-A06-S001-1824-01

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

3393:	0	0	0	0	0	1	0	0

Sample Title: HTC-A06-S001-1824-01

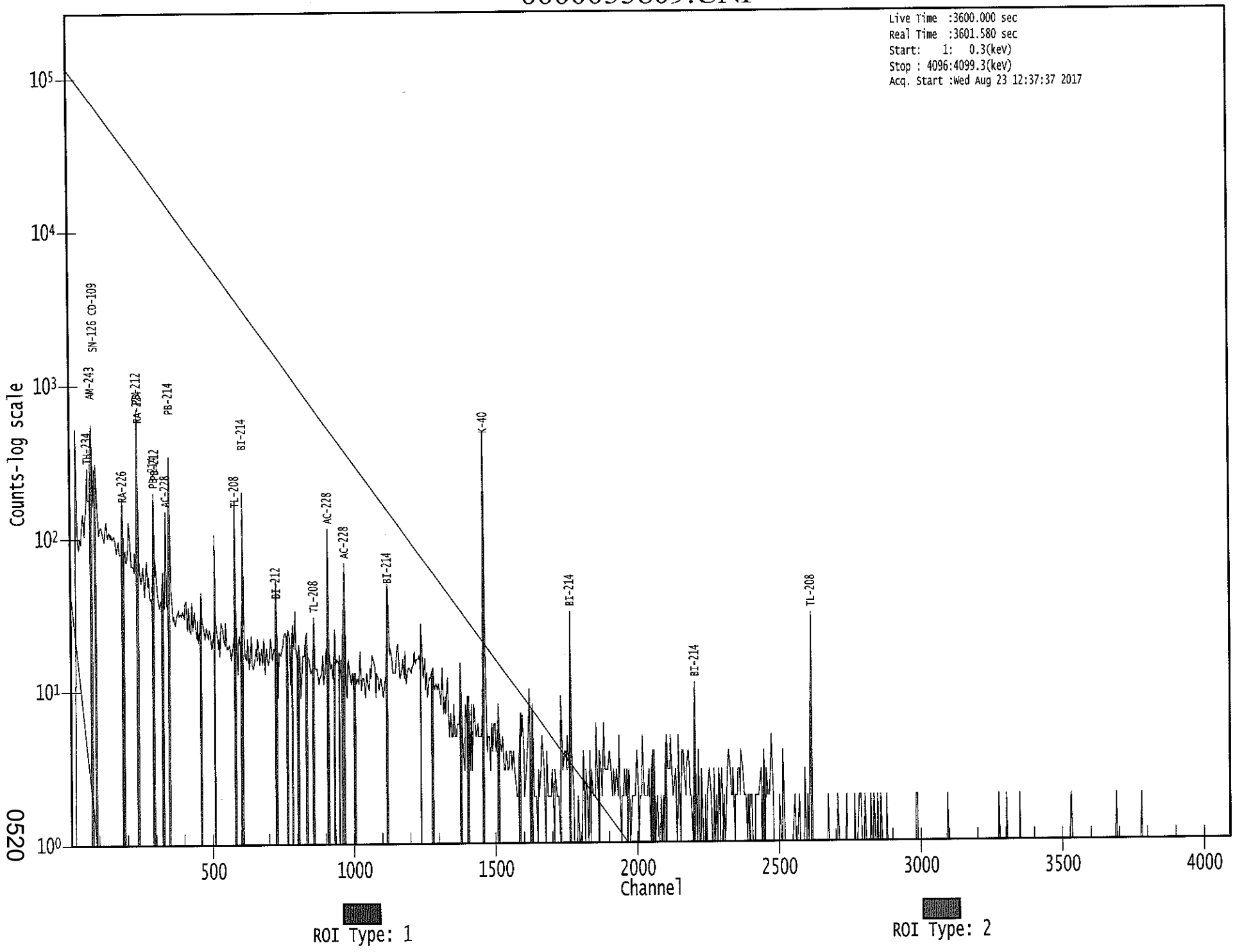
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	1
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	1	0	0	0	0	0	0	1
3441:	0	1	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	1	0	0
3473:	0	0	0	0	1	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	0	0	0	0	1
3497:	0	0	0	0	0	0	0	1
3505:	0	0	0	1	0	0	0	0
3513:	1	0	0	0	0	1	1	0
3521:	0	0	0	0	0	1	0	0
3529:	2	0	2	0	0	0	1	0
3537:	0	1	0	0	0	0	1	0
3545:	0	0	0	0	1	0	0	0
3553:	0	0	0	1	0	1	0	0
3561:	1	0	0	1	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	1	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	1	0	0	0	0	0	0	0
3601:	0	1	0	0	0	0	0	1
3609:	1	0	0	0	0	0	0	1
3617:	0	0	0	0	0	0	0	1
3625:	0	0	0	0	0	0	1	0
3633:	0	0	0	0	0	1	0	0
3641:	0	0	0	0	1	0	0	0
3649:	1	0	0	0	0	1	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	1
3673:	0	0	0	0	0	0	1	0
3681:	0	0	0	0	0	0	1	0
3689:	0	0	2	0	0	0	0	0
3697:	0	0	0	0	0	0	1	0
3705:	1	1	1	1	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	1
3737:	0	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	1
3777:	1	0	0	2	0	0	0	0
3785:	1	0	0	0	0	0	0	1
3793:	0	0	1	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	1	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A06-S001-1824-01

Channel								
3833:	0	1	0	1	0	0	0	1
3841:	0	0	0	0	1	0	0	1
3849:	0	0	1	1	0	1	0	0
3857:	0	0	0	0	1	0	0	0
3865:	0	0	0	0	1	0	0	0
3873:	1	0	0	1	0	0	0	0
3881:	1	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	1	0
3897:	0	0	0	0	1	1	0	1
3905:	0	0	0	0	1	1	0	0
3913:	0	0	1	0	0	0	0	0
3921:	1	0	0	0	0	0	0	1
3929:	0	1	0	0	1	0	0	0
3937:	0	0	0	1	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	1	1
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	1	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	1	1
4001:	0	0	0	0	0	0	0	0
4009:	0	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	0	0	0	0	0
4041:	0	0	1	0	1	0	0	1
4049:	0	0	0	0	1	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

0000055809.CNF



0520

KB 8/23/17

Apex-Gamma

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-06
Sample Description	: HTC-A06-S001-2430-01
Sample Type	: SOIL
Sample Size	: 6.360E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:52:03AM
Acquisition Started	: 8/23/2017 12:37:46PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.2 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55810

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 1:38:20PM
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	46.67	47.02	0.0000	0.00
2	63.17	63.49	0.0000	0.00
3	76.16	76.47	0.0000	0.00
4	128.72	128.97	0.0000	0.00
5	185.70	185.89	0.0000	0.00
6	209.57	209.74	0.0000	0.00
7	238.72	238.86	0.0000	0.00
8	241.69	241.83	0.0000	0.00
9	272.67	272.77	0.0000	0.00
10	295.34	295.41	0.0000	0.00
11	300.01	300.08	0.0000	0.00
12	317.73	317.79	0.0000	0.00
13	338.60	338.63	0.0000	0.00
14	352.13	352.14	0.0000	0.00
15	408.68	408.64	0.0000	0.00
16	463.06	462.97	0.0000	0.00
17	496.52	496.39	0.0000	0.00
18	510.96	510.81	0.0000	0.00
19	519.05	518.90	0.0000	0.00
20	583.21	582.99	0.0000	0.00
21	609.58	609.33	0.0000	0.00
22	666.67	666.36	0.0000	0.00
23	709.25	708.91	0.0000	0.00
24	726.85	726.49	0.0000	0.00
25	795.48	795.05	0.0000	0.00
26	861.24	860.75	0.0000	0.00
27	908.53	907.99	0.0000	0.00
28	911.57	911.03	0.0000	0.00
29	969.52	968.93	0.0000	0.00
30	1002.01	1001.39	0.0000	0.00
31	1032.20	1031.56	0.0000	0.00
32	1046.45	1045.79	0.0000	0.00
33	1051.53	1050.87	0.0000	0.00
34	1120.88	1120.15	0.0000	0.00
35	1239.48	1238.64	0.0000	0.00
36	1356.36	1355.43	0.0000	0.00
37	1363.18	1362.23	0.0000	0.00
38	1373.21	1372.26	0.0000	0.00
39	1377.44	1376.49	0.0000	0.00
40	1388.00	1387.04	0.0000	0.00
41	1406.92	1405.94	0.0000	0.00
42	1440.36	1439.36	0.0000	0.00

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1456.52	1455.50	0.0000	0.00
44	1461.43	1460.40	0.0000	0.00
45	1590.15	1589.02	0.0000	0.00
46	1631.69	1630.53	0.0000	0.00
47	1681.66	1680.45	0.0000	0.00
48	1730.95	1729.70	0.0000	0.00
49	1765.70	1764.43	0.0000	0.00
50	1898.11	1896.73	0.0000	0.00
51	1913.32	1911.94	0.0000	0.00
52	2103.44	2101.91	0.0000	0.00
53	2140.62	2139.07	0.0000	0.00
54	2153.64	2152.08	0.0000	0.00
55	2204.00	2202.40	0.0000	0.00
56	2265.12	2263.48	0.0000	0.00
57	2382.90	2381.18	0.0000	0.00
58	2390.78	2389.06	0.0000	0.00
59	2448.04	2446.28	0.0000	0.00
60	2615.52	2613.66	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 1:38:20PM

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	46.67	44 -	49	47.02	1.02E+02	69.90	8.98E+02	1.29
	2	63.17	60 -	67	63.49	2.30E+02	107.41	1.77E+03	1.50
	3	76.16	72 -	83	76.47	1.05E+03	161.20	2.70E+03	4.08
	4	128.72	125 -	133	128.97	9.13E+01	94.30	1.32E+03	1.66
	5	185.70	181 -	190	185.89	2.58E+02	91.37	1.05E+03	1.72
	6	209.57	206 -	214	209.74	8.18E+01	80.40	9.32E+02	1.69
M	7	238.72	230 -	245	238.86	8.48E+02	68.56	3.56E+02	1.47
m	8	241.69	230 -	245	241.83	1.94E+02	76.47	4.86E+02	2.14
	9	272.67	267 -	280	272.77	1.03E+02	89.72	8.54E+02	8.71
M	10	295.34	292 -	304	295.41	2.86E+02	49.10	2.90E+02	1.72
m	11	300.01	292 -	304	300.08	6.90E+01	40.04	2.96E+02	1.73
	12	317.73	314 -	320	317.79	3.66E+01	43.57	3.19E+02	2.58
	13	338.60	335 -	343	338.63	1.80E+02	57.01	3.73E+02	2.02
	14	352.13	348 -	356	352.14	3.87E+02	65.97	4.30E+02	1.44
	15	408.68	406 -	411	408.64	3.21E+01	31.65	1.76E+02	3.12
	16	463.06	459 -	466	462.97	3.80E+01	36.39	1.94E+02	1.30
	17	496.52	493 -	499	496.39	3.20E+01	29.35	1.34E+02	1.94
	18	510.96	506 -	515	510.81	1.93E+02	51.52	2.65E+02	2.29
	19	519.05	517 -	521	518.90	2.38E+01	23.24	9.44E+01	2.83
	20	583.21	578 -	586	582.99	2.86E+02	47.81	1.77E+02	1.95
	21	609.58	605 -	613	609.33	3.07E+02	51.22	2.12E+02	1.90
m	22	666.67	661 -	679	666.36	2.21E+01	25.59	1.11E+02	2.10
	23	709.25	704 -	713	708.91	3.76E+01	37.03	1.73E+02	1.86
	24	726.85	721 -	731	726.49	9.60E+01	42.24	1.86E+02	1.99
	25	795.48	792 -	800	795.05	2.65E+01	31.17	1.29E+02	1.90
	26	861.24	855 -	866	860.75	5.96E+01	37.74	1.43E+02	2.16
M	27	908.53	907 -	918	907.99	1.95E+01	5.10	1.20E+01	3.16
m	28	911.57	907 -	918	911.03	1.69E+02	34.09	8.40E+01	2.18
	29	969.52	966 -	972	968.93	7.78E+01	36.68	1.80E+02	1.30
	30	1002.01	998 -	1004	1001.39	2.35E+01	20.99	6.30E+01	2.84
	31	1032.20	1027 -	1036	1031.56	2.92E+01	28.64	1.02E+02	1.62
M	32	1046.45	1042 -	1053	1045.79	2.45E+01	23.10	9.03E+01	2.29
m	33	1051.53	1042 -	1053	1050.87	2.65E+01	21.95	6.23E+01	2.29
	34	1120.88	1115 -	1124	1120.15	7.23E+01	33.03	1.13E+02	2.94
	35	1239.48	1234 -	1243	1238.64	3.36E+01	37.70	1.81E+02	1.76
M	36	1356.36	1349 -	1369	1355.43	1.79E+01	17.36	3.31E+01	3.08
m	37	1363.18	1349 -	1369	1362.23	1.31E+01	15.15	1.31E+01	3.08
M	38	1373.21	1371 -	1381	1372.26	7.02E+00	6.22	5.48E+00	2.92
m	39	1377.44	1371 -	1381	1376.49	1.77E+01	12.81	1.16E+01	2.82
	40	1388.00	1381 -	1393	1387.04	2.50E+01	17.92	2.60E+01	9.21

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1406.92	1397 -	1417	1405.94	2.98E+01	32.25	7.43E+01	8.13
	42	1440.36	1435 -	1443	1439.36	1.60E+01	14.47	2.20E+01	3.27
M	43	1456.52	1453 -	1467	1455.50	3.14E+01	14.97	2.01E+01	2.88
m	44	1461.43	1453 -	1467	1460.40	8.41E+02	60.58	3.18E+01	2.29
	45	1590.15	1583 -	1593	1589.02	2.73E+01	17.76	2.73E+01	5.86
	46	1631.69	1626 -	1633	1630.53	1.58E+01	11.66	1.24E+01	3.34
	47	1681.66	1676 -	1684	1680.45	1.05E+01	10.02	9.00E+00	6.42
	48	1730.95	1725 -	1734	1729.70	1.48E+01	9.64	4.47E+00	1.43
	49	1765.70	1760 -	1769	1764.43	5.50E+01	17.03	1.00E+01	2.28
	50	1898.11	1892 -	1899	1896.73	6.00E+00	8.49	8.00E+00	2.81
	51	1913.32	1909 -	1915	1911.94	7.50E+00	8.28	7.00E+00	1.31
	52	2103.44	2097 -	2105	2101.91	1.20E+01	8.73	4.00E+00	3.57
	53	2140.62	2134 -	2143	2139.07	1.40E+01	7.48	0.00E+00	3.00
	54	2153.64	2146 -	2156	2152.08	1.11E+01	9.29	5.71E+00	6.44
	55	2204.00	2197 -	2207	2202.40	1.73E+01	10.50	5.30E+00	5.55
	56	2265.12	2260 -	2266	2263.48	7.82E+00	8.28	6.36E+00	1.34
	57	2382.90	2377 -	2384	2381.18	1.10E+01	6.63	0.00E+00	3.20
	58	2390.78	2386 -	2391	2389.06	6.63E+00	6.40	2.75E+00	1.11
	59	2448.04	2442 -	2449	2446.28	1.04E+01	9.38	7.29E+00	2.97
	60	2615.52	2609 -	2619	2613.66	8.70E+01	18.65	0.00E+00	3.24

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 : 8/23/2017 1:38:20PM

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	46.67	44 -	49	1.02E+02	69.90	8.98E+02	5.50E+01
	2	63.17	60 -	67	2.30E+02	107.41	1.77E+03	8.47E+01
	3	76.16	72 -	83	1.05E+03	161.20	2.70E+03	1.21E+02
	4	128.72	125 -	133	9.13E+01	94.30	1.32E+03	7.59E+01
	5	185.70	181 -	190	2.58E+02	91.37	1.05E+03	7.03E+01
	6	209.57	206 -	214	8.18E+01	80.40	9.32E+02	6.44E+01
M	7	238.72	230 -	245	8.48E+02	68.56	3.56E+02	3.10E+01
m	8	241.69	230 -	245	1.94E+02	76.47	4.86E+02	3.63E+01

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	9	272.67	267 -	280	1.03E+02	89.72	8.54E+02	2.79E+01
M	10	295.34	292 -	304	2.86E+02	49.10	2.90E+02	2.80E+01
m	11	300.01	292 -	304	6.90E+01	40.04	2.96E+02	2.83E+01
	12	317.73	314 -	320	3.66E+01	43.57	3.19E+02	3.44E+01
	13	338.60	335 -	343	1.80E+02	57.01	3.73E+02	4.13E+01
	14	352.13	348 -	356	3.87E+02	65.97	4.30E+02	4.35E+01
	15	408.68	406 -	411	3.21E+01	31.65	1.76E+02	2.43E+01
	16	463.06	459 -	466	3.80E+01	36.39	1.94E+02	2.81E+01
	17	496.52	493 -	499	3.20E+01	29.35	1.34E+02	2.23E+01
	18	510.96	506 -	515	1.93E+02	51.52	2.65E+02	3.56E+01
	19	519.05	517 -	521	2.38E+01	23.24	9.44E+01	1.73E+01
	20	583.21	578 -	586	2.86E+02	47.81	1.77E+02	2.78E+01
	21	609.58	605 -	613	3.07E+02	51.22	2.12E+02	3.07E+01
m	22	666.67	661 -	679	2.21E+01	25.59	1.11E+02	1.73E+01
	23	709.25	704 -	713	3.76E+01	37.03	1.73E+02	2.87E+01
	24	726.85	721 -	731	9.60E+01	42.24	1.86E+02	3.08E+01
	25	795.48	792 -	800	2.65E+01	31.17	1.29E+02	2.42E+01
	26	861.24	855 -	866	5.96E+01	37.74	1.43E+02	2.83E+01
M	27	908.53	907 -	918	1.95E+01	5.10	1.20E+01	5.70E+00
m	28	911.57	907 -	918	1.69E+02	34.09	8.40E+01	1.51E+01
	29	969.52	966 -	972	7.78E+01	36.68	1.80E+02	2.64E+01
	30	1002.01	998 -	1004	2.35E+01	20.99	6.30E+01	1.53E+01
	31	1032.20	1027 -	1036	2.92E+01	28.64	1.02E+02	2.18E+01
M	32	1046.45	1042 -	1053	2.45E+01	23.10	9.03E+01	1.56E+01
m	33	1051.53	1042 -	1053	2.65E+01	21.95	6.23E+01	1.30E+01
	34	1120.88	1115 -	1124	7.23E+01	33.03	1.13E+02	2.33E+01
	35	1239.48	1234 -	1243	3.36E+01	37.70	1.81E+02	2.95E+01
M	36	1356.36	1349 -	1369	1.79E+01	17.36	3.31E+01	9.46E+00
m	37	1363.18	1349 -	1369	1.31E+01	15.15	1.31E+01	5.96E+00
M	38	1373.21	1371 -	1381	7.02E+00	6.22	5.48E+00	3.85E+00
m	39	1377.44	1371 -	1381	1.77E+01	12.81	1.16E+01	5.60E+00
	40	1388.00	1381 -	1393	2.50E+01	17.92	2.60E+01	1.22E+01
	41	1406.92	1397 -	1417	2.98E+01	32.25	7.43E+01	2.49E+01
	42	1440.36	1435 -	1443	1.60E+01	14.47	2.20E+01	9.91E+00
M	43	1456.52	1453 -	1467	3.14E+01	14.97	2.01E+01	7.37E+00
m	44	1461.43	1453 -	1467	8.41E+02	60.58	3.18E+01	9.27E+00
	45	1590.15	1583 -	1593	2.73E+01	17.76	2.73E+01	1.18E+01
	46	1631.69	1626 -	1633	1.58E+01	11.66	1.24E+01	7.01E+00
	47	1681.66	1676 -	1684	1.05E+01	10.02	9.00E+00	6.29E+00
	48	1730.95	1725 -	1734	1.48E+01	9.64	4.47E+00	4.79E+00
	49	1765.70	1760 -	1769	5.50E+01	17.03	1.00E+01	6.88E+00
	50	1898.11	1892 -	1899	6.00E+00	8.49	8.00E+00	5.70E+00
	51	1913.32	1909 -	1915	7.50E+00	8.28	7.00E+00	5.10E+00
	52	2103.44	2097 -	2105	1.20E+01	8.73	4.00E+00	4.37E+00
	53	2140.62	2134 -	2143	1.40E+01	7.48	0.00E+00	0.00E+00
	54	2153.64	2146 -	2156	1.11E+01	9.29	5.71E+00	5.31E+00
	55	2204.00	2197 -	2207	1.73E+01	10.50	5.30E+00	5.25E+00
	56	2265.12	2260 -	2266	7.82E+00	8.28	6.36E+00	5.02E+00
	57	2382.90	2377 -	2384	1.10E+01	6.63	0.00E+00	0.00E+00
	58	2390.78	2386 -	2391	6.63E+00	6.40	2.75E+00	3.13E+00
	59	2448.04	2442 -	2449	1.04E+01	9.38	7.29E+00	5.61E+00

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
60	2615.52	2609 -	2619	8.70E+01	18.65	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 : 8/23/2017 1:38:20PM

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	46.67	44 -	49	47.02	1.02E+02	69.90	8.98E+02	PB-210
	2	63.17	60 -	67	63.49	2.30E+02	107.41	1.77E+03	TH-234
									TH-230
	3	76.16	72 -	83	76.47	1.05E+03	161.20	2.70E+03	.....
	4	128.72	125 -	133	128.97	9.13E+01	94.30	1.32E+03	.....
	5	185.70	181 -	190	185.89	2.58E+02	91.37	1.05E+03	RA-226
	6	209.57	206 -	214	209.74	8.18E+01	80.40	9.32E+02	CM-243
									GA-67
M	7	238.72	230 -	245	238.86	8.48E+02	68.56	3.56E+02	PB-212
m	8	241.69	230 -	245	241.83	1.94E+02	76.47	4.86E+02	RA-224
	9	272.67	267 -	280	272.77	1.03E+02	89.72	8.54E+02	LU-173
									CS-136
M	10	295.34	292 -	304	295.41	2.86E+02	49.10	2.90E+02	PB-214
m	11	300.01	292 -	304	300.08	6.90E+01	40.04	2.96E+02	BI-210M
									PB-212
									GA-67
	12	317.73	314 -	320	317.79	3.66E+01	43.57	3.19E+02	.....
	13	338.60	335 -	343	338.63	1.80E+02	57.01	3.73E+02	AC-228
	14	352.13	348 -	356	352.14	3.87E+02	65.97	4.30E+02	PB-214
	15	408.68	406 -	411	408.64	3.21E+01	31.65	1.76E+02	.....
	16	463.06	459 -	466	462.97	3.80E+01	36.39	1.94E+02	SB-125
	17	496.52	493 -	499	496.39	3.20E+01	29.35	1.34E+02	RU-103
	18	510.96	506 -	515	510.81	1.93E+02	51.52	2.65E+02	.....
	19	519.05	517 -	521	518.90	2.38E+01	23.24	9.44E+01	.....
	20	583.21	578 -	586	582.99	2.86E+02	47.81	1.77E+02	TL-208

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	21	609.58	605 -	613	609.33	3.07E+02	51.22	2.12E+02	BI-214
m	22	666.67	661 -	679	666.36	2.21E+01	25.59	1.11E+02	SB-126
	23	709.25	704 -	713	708.91	3.76E+01	37.03	1.73E+02	.....
	24	726.85	721 -	731	726.49	9.60E+01	42.24	1.86E+02	BI-212
	25	795.48	792 -	800	795.05	2.65E+01	31.17	1.29E+02	CS-134
	26	861.24	855 -	866	860.75	5.96E+01	37.74	1.43E+02	TL-208
M	27	908.53	907 -	918	907.99	1.95E+01	5.10	1.20E+01	.....
m	28	911.57	907 -	918	911.03	1.69E+02	34.09	8.40E+01	TL-204
									AC-228
	29	969.52	966 -	972	968.93	7.78E+01	36.68	1.80E+02	AC-228
	30	1002.01	998 -	1004	1001.39	2.35E+01	20.99	6.30E+01	PA-234M
	31	1032.20	1027 -	1036	1031.56	2.92E+01	28.64	1.02E+02	.....
M	32	1046.45	1042 -	1053	1045.79	2.45E+01	23.10	9.03E+01	.....
m	33	1051.53	1042 -	1053	1050.87	2.65E+01	21.95	6.23E+01	.....
	34	1120.88	1115 -	1124	1120.15	7.23E+01	33.03	1.13E+02	SC-46
									TA-182
									BI-214
	35	1239.48	1234 -	1243	1238.64	3.36E+01	37.70	1.81E+02	.....
M	36	1356.36	1349 -	1369	1355.43	1.79E+01	17.36	3.31E+01	.....
m	37	1363.18	1349 -	1369	1362.23	1.31E+01	15.15	1.31E+01	.....
M	38	1373.21	1371 -	1381	1372.26	7.02E+00	6.22	5.48E+00	.....
m	39	1377.44	1371 -	1381	1376.49	1.77E+01	12.81	1.16E+01	.....
	40	1388.00	1381 -	1393	1387.04	2.50E+01	17.92	2.60E+01	.....
	41	1406.92	1397 -	1417	1405.94	2.98E+01	32.25	7.43E+01	.....
	42	1440.36	1435 -	1443	1439.36	1.60E+01	14.47	2.20E+01	.....
M	43	1456.52	1453 -	1467	1455.50	3.14E+01	14.97	2.01E+01	.....
m	44	1461.43	1453 -	1467	1460.40	8.41E+02	60.58	3.18E+01	K-40
	45	1590.15	1583 -	1593	1589.02	2.73E+01	17.76	2.73E+01	.....
	46	1631.69	1626 -	1633	1630.53	1.58E+01	11.66	1.24E+01	.....
	47	1681.66	1676 -	1684	1680.45	1.05E+01	10.02	9.00E+00	.....
	48	1730.95	1725 -	1734	1729.70	1.48E+01	9.64	4.47E+00	.....
	49	1765.70	1760 -	1769	1764.43	5.50E+01	17.03	1.00E+01	.....
	50	1898.11	1892 -	1899	1896.73	6.00E+00	8.49	8.00E+00	.....
	51	1913.32	1909 -	1915	1911.94	7.50E+00	8.28	7.00E+00	.....
	52	2103.44	2097 -	2105	2101.91	1.20E+01	8.73	4.00E+00	.....
	53	2140.62	2134 -	2143	2139.07	1.40E+01	7.48	0.00E+00	.....
	54	2153.64	2146 -	2156	2152.08	1.11E+01	9.29	5.71E+00	.....
	55	2204.00	2197 -	2207	2202.40	1.73E+01	10.50	5.30E+00	BI-214
	56	2265.12	2260 -	2266	2263.48	7.82E+00	8.28	6.36E+00	.....
	57	2382.90	2377 -	2384	2381.18	1.10E+01	6.63	0.00E+00	.....
	58	2390.78	2386 -	2391	2389.06	6.63E+00	6.40	2.75E+00	.....
	59	2448.04	2442 -	2449	2446.28	1.04E+01	9.38	7.29E+00	.....
	60	2615.52	2609 -	2619	2613.66	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

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/23/2017 1:38:20PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.67	1.02E+02	69.90	1.59E-02	1.67E-03
	2	63.17	2.30E+02	107.41	2.38E-02	1.77E-03
	3	76.16	1.05E+03	161.20	2.63E-02	2.11E-03
	4	128.72	9.13E+01	94.30	2.48E-02	1.75E-03
	5	185.70	2.58E+02	91.37	2.03E-02	1.53E-03
	6	209.57	8.18E+01	80.40	1.88E-02	1.43E-03
M	7	238.72	8.48E+02	68.56	1.72E-02	1.30E-03
m	8	241.69	1.94E+02	76.47	1.71E-02	1.28E-03
	9	272.67	1.03E+02	89.72	1.57E-02	1.15E-03
M	10	295.34	2.86E+02	49.10	1.48E-02	1.10E-03
m	11	300.01	6.90E+01	40.04	1.47E-02	1.09E-03
	12	317.73	3.66E+01	43.57	1.41E-02	1.07E-03
	13	338.60	1.80E+02	57.01	1.34E-02	1.04E-03
	14	352.13	3.87E+02	65.97	1.31E-02	1.02E-03
	15	408.68	3.21E+01	31.65	1.17E-02	9.54E-04
	16	463.06	3.80E+01	36.39	1.06E-02	9.07E-04
	17	496.52	3.20E+01	29.35	1.01E-02	8.78E-04
	18	510.96	1.93E+02	51.52	9.87E-03	8.65E-04
	19	519.05	2.38E+01	23.24	9.75E-03	8.58E-04
	20	583.21	2.86E+02	47.81	8.90E-03	8.02E-04
	21	609.58	3.07E+02	51.22	8.60E-03	7.79E-04
m	22	666.67	2.21E+01	25.59	8.01E-03	7.29E-04
	23	709.25	3.76E+01	37.03	7.62E-03	6.88E-04
	24	726.85	9.60E+01	42.24	7.47E-03	6.71E-04
	25	795.48	2.65E+01	31.17	6.94E-03	6.05E-04
	26	861.24	5.96E+01	37.74	6.50E-03	5.42E-04
M	27	908.53	1.95E+01	5.10	6.23E-03	5.02E-04
m	28	911.57	1.69E+02	34.09	6.21E-03	5.01E-04
	29	969.52	7.78E+01	36.68	5.90E-03	4.81E-04
	30	1002.01	2.35E+01	20.99	5.74E-03	4.70E-04
	31	1032.20	2.92E+01	28.64	5.61E-03	4.59E-04
M	32	1046.45	2.45E+01	23.10	5.54E-03	4.54E-04
m	33	1051.53	2.65E+01	21.95	5.52E-03	4.53E-04
	34	1120.88	7.23E+01	33.03	5.24E-03	4.28E-04
	35	1239.48	3.36E+01	37.70	4.84E-03	4.16E-04
M	36	1356.36	1.79E+01	17.36	4.51E-03	4.18E-04
m	37	1363.18	1.31E+01	15.15	4.49E-03	4.16E-04
M	38	1373.21	7.02E+00	6.22	4.47E-03	4.13E-04
m	39	1377.44	1.77E+01	12.81	4.45E-03	4.12E-04
	40	1388.00	2.50E+01	17.92	4.43E-03	4.09E-04
	41	1406.92	2.98E+01	32.25	4.38E-03	4.03E-04
	42	1440.36	1.60E+01	14.47	4.31E-03	3.94E-04
M	43	1456.52	3.14E+01	14.97	4.27E-03	3.89E-04
m	44	1461.43	8.41E+02	60.58	4.26E-03	3.87E-04
	45	1590.15	2.73E+01	17.76	4.01E-03	3.50E-04

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
46	1631.69	1.58E+01	11.66	3.94E-03	3.38E-04
47	1681.66	1.05E+01	10.02	3.86E-03	3.24E-04
48	1730.95	1.48E+01	9.64	3.79E-03	3.10E-04
49	1765.70	5.50E+01	17.03	3.74E-03	2.99E-04
50	1898.11	6.00E+00	8.49	3.59E-03	2.79E-04
51	1913.32	7.50E+00	8.28	3.57E-03	2.79E-04
52	2103.44	1.20E+01	8.73	3.41E-03	2.79E-04
53	2140.62	1.40E+01	7.48	3.38E-03	2.79E-04
54	2153.64	1.11E+01	9.29	3.37E-03	2.79E-04
55	2204.00	1.73E+01	10.50	3.34E-03	2.79E-04
56	2265.12	7.82E+00	8.28	3.31E-03	2.79E-04
57	2382.90	1.10E+01	6.63	3.26E-03	2.79E-04
58	2390.78	6.63E+00	6.40	3.25E-03	2.79E-04
59	2448.04	1.04E+01	9.38	3.23E-03	2.79E-04
60	2615.52	8.70E+01	18.65	3.20E-03	2.79E-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 : 8/23/2017 1:38:20PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.67	1.02E+02	69.90	3.74E+01	5.77E+00	6.46E+01	7.01E+01
	2	63.17	2.30E+02	107.41	6.29E+01	1.34E+01	1.68E+02	1.08E+02
	3	76.16	1.05E+03	161.20			1.05E+03	1.61E+02
	4	128.72	9.13E+01	94.30			9.13E+01	9.43E+01
	5	185.70	2.58E+02	91.37	3.48E+01	7.32E+00	2.23E+02	9.17E+01
	6	209.57	8.18E+01	80.40			8.18E+01	8.04E+01
M	7	238.72	8.48E+02	68.56	7.09E+00	6.85E+00	8.41E+02	6.89E+01
m	8	241.69	1.94E+02	76.47			1.94E+02	7.65E+01
	9	272.67	1.03E+02	89.72	0.00E+00	0.00E+00	1.03E+02	8.97E+01
M	10	295.34	2.86E+02	49.10			2.86E+02	4.91E+01
m	11	300.01	6.90E+01	40.04			6.90E+01	4.00E+01
	12	317.73	3.66E+01	43.57			3.66E+01	4.36E+01
	13	338.60	1.80E+02	57.01			1.80E+02	5.70E+01
	14	352.13	3.87E+02	65.97	1.04E+01	5.08E+00	3.77E+02	6.62E+01
	15	408.68	3.21E+01	31.65			3.21E+01	3.17E+01

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	16	463.06	3.80E+01	36.39			3.80E+01	3.64E+01
	17	496.52	3.20E+01	29.35			3.20E+01	2.94E+01
	18	510.96	1.93E+02	51.52	7.08E+01	4.94E+00	1.23E+02	5.18E+01
	19	519.05	2.38E+01	23.24			2.38E+01	2.32E+01
	20	583.21	2.86E+02	47.81	5.65E+00	3.57E+00	2.80E+02	4.79E+01
	21	609.58	3.07E+02	51.22	1.07E+01	3.96E+00	2.96E+02	5.14E+01
m	22	666.67	2.21E+01	25.59			2.21E+01	2.56E+01
	23	709.25	3.76E+01	37.03			3.76E+01	3.70E+01
	24	726.85	9.60E+01	42.24			9.60E+01	4.22E+01
	25	795.48	2.65E+01	31.17			2.65E+01	3.12E+01
	26	861.24	5.96E+01	37.74			5.96E+01	3.77E+01
M	27	908.53	1.95E+01	5.10			1.95E+01	5.10E+00
m	28	911.57	1.69E+02	34.09	2.63E+00	2.49E+00	1.66E+02	3.42E+01
	29	969.52	7.78E+01	36.68			7.78E+01	3.67E+01
	30	1002.01	2.35E+01	20.99	4.07E+00	2.59E+00	1.94E+01	2.11E+01
	31	1032.20	2.92E+01	28.64			2.92E+01	2.86E+01
M	32	1046.45	2.45E+01	23.10			2.45E+01	2.31E+01
m	33	1051.53	2.65E+01	21.95			2.65E+01	2.19E+01
	34	1120.88	7.23E+01	33.03	2.45E+00	2.38E+00	6.98E+01	3.31E+01
	35	1239.48	3.36E+01	37.70			3.36E+01	3.77E+01
M	36	1356.36	1.79E+01	17.36			1.79E+01	1.74E+01
m	37	1363.18	1.31E+01	15.15			1.31E+01	1.51E+01
M	38	1373.21	7.02E+00	6.22			7.02E+00	6.22E+00
m	39	1377.44	1.77E+01	12.81			1.77E+01	1.28E+01
	40	1388.00	2.50E+01	17.92			2.50E+01	1.79E+01
	41	1406.92	2.98E+01	32.25			2.98E+01	3.22E+01
	42	1440.36	1.60E+01	14.47			1.60E+01	1.45E+01
M	43	1456.52	3.14E+01	14.97			3.14E+01	1.50E+01
m	44	1461.43	8.41E+02	60.58	5.90E+00	2.63E+00	8.35E+02	6.06E+01
	45	1590.15	2.73E+01	17.76			2.73E+01	1.78E+01
	46	1631.69	1.58E+01	11.66			1.58E+01	1.17E+01
	47	1681.66	1.05E+01	10.02			1.05E+01	1.00E+01
	48	1730.95	1.48E+01	9.64			1.48E+01	9.64E+00
	49	1765.70	5.50E+01	17.03	3.33E+00	1.73E+00	5.17E+01	1.71E+01
	50	1898.11	6.00E+00	8.49			6.00E+00	8.49E+00
	51	1913.32	7.50E+00	8.28			7.50E+00	8.28E+00
	52	2103.44	1.20E+01	8.73			1.20E+01	8.73E+00
	53	2140.62	1.40E+01	7.48			1.40E+01	7.48E+00
	54	2153.64	1.11E+01	9.29			1.11E+01	9.29E+00
	55	2204.00	1.73E+01	10.50			1.73E+01	1.05E+01
	56	2265.12	7.82E+00	8.28			7.82E+00	8.28E+00
	57	2382.90	1.10E+01	6.63			1.10E+01	6.63E+00
	58	2390.78	6.63E+00	6.40			6.63E+00	6.40E+00
	59	2448.04	1.04E+01	9.38			1.04E+01	9.38E+00
	60	2615.52	8.70E+01	18.65	4.77E+00	1.52E+00	8.22E+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

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 1:38:20PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.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	46.67	1.02E+02	69.90	3.74E+01	5.77E+00	6.46E+01	7.01E+01
	2	63.17	2.30E+02	107.41	6.29E+01	1.34E+01	1.68E+02	1.08E+02
	3	76.16	1.05E+03	161.20			1.05E+03	1.61E+02
	4	128.72	9.13E+01	94.30			9.13E+01	9.43E+01
	5	185.70	2.58E+02	91.37	3.48E+01	7.32E+00	2.23E+02	9.17E+01
	6	209.57	8.18E+01	80.40			8.18E+01	8.04E+01
M	7	238.72	8.48E+02	68.56	7.09E+00	6.85E+00	8.41E+02	6.89E+01
m	8	241.69	1.94E+02	76.47			1.94E+02	7.65E+01
	9	272.67	1.03E+02	89.72	0.00E+00	0.00E+00	1.03E+02	8.97E+01
M	10	295.34	2.86E+02	49.10			2.86E+02	4.91E+01
m	11	300.01	6.90E+01	40.04			6.90E+01	4.00E+01
	12	317.73	3.66E+01	43.57			3.66E+01	4.36E+01
	13	338.60	1.80E+02	57.01			1.80E+02	5.70E+01
	14	352.13	3.87E+02	65.97	1.04E+01	5.08E+00	3.77E+02	6.62E+01
	15	408.68	3.21E+01	31.65			3.21E+01	3.17E+01
	16	463.06	3.80E+01	36.39			3.80E+01	3.64E+01
	17	496.52	3.20E+01	29.35			3.20E+01	2.94E+01
	18	510.96	1.93E+02	51.52	7.08E+01	4.94E+00	1.23E+02	5.18E+01
	19	519.05	2.38E+01	23.24			2.38E+01	2.32E+01
	20	583.21	2.86E+02	47.81	5.65E+00	3.57E+00	2.80E+02	4.79E+01
	21	609.58	3.07E+02	51.22	1.07E+01	3.96E+00	2.96E+02	5.14E+01
m	22	666.67	2.21E+01	25.59			2.21E+01	2.56E+01
	23	709.25	3.76E+01	37.03			3.76E+01	3.70E+01
	24	726.85	9.60E+01	42.24			9.60E+01	4.22E+01
	25	795.48	2.65E+01	31.17			2.65E+01	3.12E+01
	26	861.24	5.96E+01	37.74			5.96E+01	3.77E+01
M	27	908.53	1.95E+01	5.10			1.95E+01	5.10E+00
m	28	911.57	1.69E+02	34.09	2.63E+00	2.49E+00	1.66E+02	3.42E+01
	29	969.52	7.78E+01	36.68			7.78E+01	3.67E+01
	30	1002.01	2.35E+01	20.99	4.07E+00	2.59E+00	1.94E+01	2.11E+01
	31	1032.20	2.92E+01	28.64			2.92E+01	2.86E+01
M	32	1046.45	2.45E+01	23.10			2.45E+01	2.31E+01
m	33	1051.53	2.65E+01	21.95			2.65E+01	2.19E+01
	34	1120.88	7.23E+01	33.03	2.45E+00	2.38E+00	6.98E+01	3.31E+01
	35	1239.48	3.36E+01	37.70			3.36E+01	3.77E+01
M	36	1356.36	1.79E+01	17.36			1.79E+01	1.74E+01
m	37	1363.18	1.31E+01	15.15			1.31E+01	1.51E+01
M	38	1373.21	7.02E+00	6.22			7.02E+00	6.22E+00
m	39	1377.44	1.77E+01	12.81			1.77E+01	1.28E+01

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	40	1388.00	2.50E+01	17.92			2.50E+01	1.79E+01
	41	1406.92	2.98E+01	32.25			2.98E+01	3.22E+01
	42	1440.36	1.60E+01	14.47			1.60E+01	1.45E+01
M	43	1456.52	3.14E+01	14.97			3.14E+01	1.50E+01
m	44	1461.43	8.41E+02	60.58	5.90E+00	2.63E+00	8.35E+02	6.06E+01
	45	1590.15	2.73E+01	17.76			2.73E+01	1.78E+01
	46	1631.69	1.58E+01	11.66			1.58E+01	1.17E+01
	47	1681.66	1.05E+01	10.02			1.05E+01	1.00E+01
	48	1730.95	1.48E+01	9.64			1.48E+01	9.64E+00
	49	1765.70	5.50E+01	17.03	3.33E+00	1.73E+00	5.17E+01	1.71E+01
	50	1898.11	6.00E+00	8.49			6.00E+00	8.49E+00
	51	1913.32	7.50E+00	8.28			7.50E+00	8.28E+00
	52	2103.44	1.20E+01	8.73			1.20E+01	8.73E+00
	53	2140.62	1.40E+01	7.48			1.40E+01	7.48E+00
	54	2153.64	1.11E+01	9.29			1.11E+01	9.29E+00
	55	2204.00	1.73E+01	10.50			1.73E+01	1.05E+01
	56	2265.12	7.82E+00	8.28			7.82E+00	8.28E+00
	57	2382.90	1.10E+01	6.63			1.10E+01	6.63E+00
	58	2390.78	6.63E+00	6.40			6.63E+00	6.40E+00
	59	2448.04	1.04E+01	9.38			1.04E+01	9.38E+00
	60	2615.52	8.70E+01	18.65	4.77E+00	1.52E+00	8.22E+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

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	0.941	1460.81	*	10.67	2.17E+01	2.56E+00
RU-103	0.921	497.08	*	89.00	2.41E-01	2.24E-01
LU-173	0.570	100.72		5.24		
		272.11	*	21.20	4.19E-01	3.66E-01
TL-208	0.934	583.14	*	30.22	1.23E+00	2.38E-01
		860.37	*	4.48	2.42E+00	1.54E+00
		2614.66	*	35.85	8.47E-01	2.07E-01
PB-210	0.995	46.50	*	4.25	1.14E+00	1.24E+00
BI-212	0.755	727.17	*	11.80	1.29E+00	5.77E-01
		1620.62		2.75		

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.999	238.63	*	44.60	1.29E+00	1.44E-01
		300.09	*	3.41	1.63E+00	9.52E-01
BI-214	0.750	609.31	*	46.30	8.78E-01	1.72E-01
		1120.29	*	15.10	1.04E+00	5.01E-01
		1764.49		15.80		
		2204.22	*	4.98	1.23E+00	7.52E-01
PB-214	0.995	295.21	*	19.19	1.19E+00	2.22E-01
		351.92	*	37.19	9.16E-01	1.76E-01
RA-224	0.922	240.98	*	3.95	3.39E+00	1.36E+00
RA-226	0.959	186.21	*	3.28	3.95E+00	7.41E+00
AC-228	0.970	338.32	*	11.40	1.39E+00	4.52E-01
		911.07	*	27.70	1.14E+00	2.52E-01
		969.11	*	16.60	9.37E-01	4.49E-01
PA-234M	0.857	1001.03	*	0.92	4.34E+00	4.74E+00
TH-234	0.998	63.29	*	3.80	2.19E+00	1.42E+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 : 8/23/2017 1:38:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	76.16	2.92071E-01	7.67		
	4	128.72	2.53539E-02	51.66		
	6	209.57	2.27106E-02	49.17	Tol.	GA-67 CM-243
	12	317.73	1.01630E-02	59.55		
	15	408.68	8.91204E-03	49.33		
	16	463.06	1.05504E-02	47.90	Tol.	SB-125
	18	510.96	3.40304E-02	21.12	Sum	
	19	519.05	6.61581E-03	48.80		
m	22	666.67	6.15232E-03	57.78	Tol.	SB-126
	23	709.25	1.04357E-02	49.28		
	25	795.48	7.35653E-03	58.85	Sum	
M	27	908.53	5.42416E-03	13.06	Sum	
	31	1032.20	8.10417E-03	49.08	Sum	

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	32	1046.45	6.81110E-03	47.11	Sum	
m	33	1051.53	7.36413E-03	41.40		
	35	1239.48	9.33804E-03	56.07		
M	36	1356.36	4.96188E-03	48.60		
m	37	1363.18	3.64146E-03	57.78	Sum	
M	38	1373.21	1.94883E-03	44.36		
m	39	1377.44	4.90709E-03	36.25		
	40	1388.00	6.94444E-03	35.83		
	41	1406.92	8.28980E-03	54.02		
	42	1440.36	4.44444E-03	45.20		
M	43	1456.52	8.72093E-03	23.85		
	45	1590.15	7.59485E-03	32.47		
	46	1631.69	4.38763E-03	36.92		
	47	1681.66	2.91667E-03	47.74		
	48	1730.95	4.10131E-03	32.66	Sum	
	49	1765.70	1.43527E-02	16.56		
	50	1898.11	1.66667E-03	70.71		
	51	1913.32	2.08333E-03	55.18	Sum	
	52	2103.44	3.33333E-03	36.38		
	53	2140.62	3.88889E-03	26.73		
	54	2153.64	3.09524E-03	41.67		
	56	2265.12	2.17172E-03	52.93		
	57	2382.90	3.05556E-03	30.15		
	58	2390.78	1.84028E-03	48.33		
	59	2448.04	2.87698E-03	45.29		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.94	1460.81	*	10.67	2.17E+01	2.56E+00
RU-103	0.92	497.08	*	89.00	2.41E-01	2.24E-01
LU-173	0.57	100.72		5.24		

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
LU-173	0.57	272.11	*	21.20	4.19E-01	3.66E-01
TL-208	0.93	583.14	*	30.22	1.23E+00	2.38E-01
		860.37	*	4.48	2.42E+00	1.54E+00
		2614.66	*	35.85	8.47E-01	2.07E-01
PB-210	0.99	46.50	*	4.25	1.14E+00	1.24E+00
BI-212	0.75	727.17	*	11.80	1.29E+00	5.77E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.29E+00	1.44E-01
		300.09	*	3.41	1.63E+00	9.52E-01
BI-214	0.75	609.31	*	46.30	8.78E-01	1.72E-01
		1120.29	*	15.10	1.04E+00	5.01E-01
		1764.49		15.80		
		2204.22	*	4.98	1.23E+00	7.52E-01
PB-214	0.99	295.21	*	19.19	1.19E+00	2.22E-01
		351.92	*	37.19	9.16E-01	1.76E-01
RA-224	0.92	240.98	*	3.95	3.39E+00	1.36E+00
RA-226	0.95	186.21	*	3.28	3.95E+00	7.41E+00
AC-228	0.97	338.32	*	11.40	1.39E+00	4.52E-01
		911.07	*	27.70	1.14E+00	2.52E-01
		969.11	*	16.60	9.37E-01	4.49E-01
PA-234M	0.85	1001.03	*	0.92	4.34E+00	4.74E+00
TH-234	0.99	63.29	*	3.80	2.19E+00	1.42E+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	0.941	2.17E+01	2.56E+00	
RU-103	0.921	2.41E-01	2.24E-01	
LU-173	0.570	4.19E-01	3.66E-01	
TL-208	0.934	1.03E+00	1.55E-01	
PB-210	0.995	1.14E+00	1.24E+00	

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-212	0.755	1.29E+00	5.77E-01	
PB-212	0.999	1.30E+00	1.42E-01	
BI-214	0.750	9.10E-01	1.59E-01	
PB-214	0.995	1.02E+00	1.38E-01	
RA-224	0.922	3.39E+00	1.36E+00	
RA-226	0.959	3.95E+00	7.41E+00	
AC-228	0.970	1.15E+00	1.98E-01	
PA-234M	0.857	4.34E+00	4.74E+00	
TH-234	0.998	2.19E+00	1.42E+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 1707090-06

HTC-A06-S001-2430-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 1:38:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	76.16	2.92071E-01	7.67		
	4	128.72	2.53539E-02	51.66		
	6	209.57	2.27106E-02	49.17	Tol.	GA-67 CM-243
	12	317.73	1.01630E-02	59.55		
	15	408.68	8.91204E-03	49.33		
	16	463.06	1.05504E-02	47.90	Tol.	SB-125
	18	510.96	3.40304E-02	21.12	Sum	
	19	519.05	6.61581E-03	48.80		
m	22	666.67	6.15232E-03	57.78	Tol.	SB-126
	23	709.25	1.04357E-02	49.28		
	25	795.48	7.35653E-03	58.85	Sum	
M	27	908.53	5.42416E-03	13.06	Sum	
	31	1032.20	8.10417E-03	49.08	Sum	
M	32	1046.45	6.81110E-03	47.11	Sum	
m	33	1051.53	7.36413E-03	41.40		
	35	1239.48	9.33804E-03	56.07		
M	36	1356.36	4.96188E-03	48.60		
m	37	1363.18	3.64146E-03	57.78	Sum	
M	38	1373.21	1.94883E-03	44.36		
m	39	1377.44	4.90709E-03	36.25		
	40	1388.00	6.94444E-03	35.83		
	41	1406.92	8.28980E-03	54.02		
	42	1440.36	4.44444E-03	45.20		
M	43	1456.52	8.72093E-03	23.85		
	45	1590.15	7.59485E-03	32.47		
	46	1631.69	4.38763E-03	36.92		
	47	1681.66	2.91667E-03	47.74		
	48	1730.95	4.10131E-03	32.66	Sum	
	49	1765.70	1.43527E-02	16.56		
	50	1898.11	1.66667E-03	70.71		
	51	1913.32	2.08333E-03	55.18	Sum	
	52	2103.44	3.33333E-03	36.38		
	53	2140.62	3.88889E-03	26.73		
	54	2153.64	3.09524E-03	41.67		

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	2265.12	2.17172E-03	52.93		
57	2382.90	3.05556E-03	30.15		
58	2390.78	1.84028E-03	48.33		
59	2448.04	2.87698E-03	45.29		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-6.31E-01	1.69E+00	1.69E+00
+	NA-22	1274.54		99.94	2.01E-02	8.52E-02	8.52E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	1.31E-02	5.34E-02	5.34E-02
+	K-40	1460.81	*	10.67	2.17E+01	1.12E+00	1.12E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	8.70E-03	4.46E-02	4.46E-02
		78.34		96.00	6.64E-02		5.59E-02
+	SC-46	889.25		99.98	-6.44E-02	1.48E-01	1.48E-01
		1120.51		99.99	3.40E-01		2.60E-01
+	V-48	983.52		99.98	-3.14E+00	5.19E+00	5.19E+00
		1312.10		97.50	-9.19E-01		5.55E+00
+	CR-51	320.08		9.83	8.90E-01	6.08E+00	6.08E+00
+	MN-54	834.83		99.97	1.10E-02	9.94E-02	9.94E-02
+	CO-56	846.75		99.96	-2.91E-02	1.61E-01	1.61E-01
		1037.75		14.03	-2.08E-01		1.22E+00
		1238.25		67.00	1.62E-01		4.17E-01
		1771.40		15.51	-4.33E-02		9.18E-01
		2598.48		16.90	-1.74E-01		4.85E-01
+	CO-57	122.06		85.51	-2.09E-02	4.80E-02	4.80E-02
		136.48		10.60	8.54E-02		5.39E-01
+	CO-58	810.76		99.40	-1.10E-01	1.75E-01	1.75E-01
+	FE-59	1099.22		56.50	3.45E-04	6.70E-01	6.70E-01
		1291.56		43.20	-5.04E-01		7.32E-01

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-60	1173.22		100.00	2.78E-02	7.99E-02	9.23E-02
		1332.49		100.00	3.59E-02		7.99E-02
+	ZN-65	1115.52		50.75	1.76E-02	2.23E-01	2.23E-01
+	GA-67	93.31		35.70	3.69E+08	1.86E+08	1.86E+08
		208.95		2.24	2.98E+09		3.55E+09
		300.22		16.00	3.44E+08		5.11E+08
+	SE-75	121.11		16.70	9.98E-02	1.33E-01	3.54E-01
		136.00		59.20	-2.11E-02		1.33E-01
		264.65		59.80	4.12E-02		1.33E-01
		279.53		25.20	-3.93E-02		3.46E-01
		400.65		11.40	-5.85E-02		7.94E-01
+	RB-82	776.52		13.00	9.36E-01	7.44E+00	7.44E+00
+	RB-83	520.41		46.00	-1.04E-01	2.37E-01	2.37E-01
		529.64		30.30	5.40E-02		3.70E-01
		552.65		16.40	4.33E-01		7.35E-01
+	KR-85	513.99		0.43	-1.35E+01	1.42E+01	1.42E+01
+	SR-85	513.99		99.27	-1.67E-01	1.76E-01	1.76E-01
+	Y-88	898.02		93.40	5.17E-02	1.32E-01	1.41E-01
		1836.01		99.38	3.48E-02		1.32E-01
+	MO-93	263.06		56.72	1.54E-02	5.94E-02	8.12E-02
		684.67		99.68	2.28E-02		6.53E-02
		1477.11		99.08	-2.02E-02		5.94E-02
+	NB-93M	16.57		9.43	0.00E+00	6.90E+00	6.90E+00
+	NB-94	702.63		100.00	9.20E-03	6.61E-02	6.61E-02
		871.10		100.00	4.77E-03		6.99E-02
+	NB-95	765.79		99.81	1.95E-01	5.47E-01	5.47E-01
+	NB-95M	235.69		25.00	-5.37E+08	4.95E+07	4.95E+07
+	ZR-95	724.18		43.70	2.43E-01	3.50E-01	5.90E-01
		756.72		55.30	-1.98E-02		3.50E-01
+	MO-99	181.06		6.20	-5.53E+07	3.57E+10	5.31E+10
		739.58		12.80	-2.02E+10		3.57E+10
		778.00		4.50	-1.91E+10		1.00E+11
+	RU-103	497.08	*	89.00	2.41E-01	3.56E-01	3.56E-01
+	RU-106	621.84		9.80	-6.52E-01	7.19E-01	7.19E-01
+	AG-108M	433.93		89.90	9.14E-03	5.71E-02	5.71E-02
		614.37		90.40	1.35E-02		7.32E-02
		722.95		90.50	-1.35E-01		8.41E-02
+	CD-109	88.03		3.72	8.79E-01	1.47E+00	1.47E+00
+	AG-110M	657.75		93.14	-3.24E-02	8.92E-02	8.92E-02
		677.61		10.53	-2.59E-03		7.88E-01
		706.67		16.46	-2.23E-02		5.82E-01
		763.93		21.98	-3.27E-01		4.32E-01
		884.67		71.63	-3.44E-03		1.21E-01
		1384.27		23.94	8.24E-02		3.59E-01
+	CD-113M	263.70		0.02	1.39E+02	2.03E+02	2.03E+02
+	SN-113	255.12		1.93	3.30E+00	1.42E-01	4.36E+00
		391.69		64.90	9.62E-02		1.42E-01
+	TE123M	159.00		84.10	6.36E-03	9.50E-02	9.50E-02

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-124	602.71	97.87	8.71E-03	2.10E-01	2.10E-01
		645.85	7.26	-3.37E-01		2.80E+00
		722.78	11.10	-1.80E-01		2.09E+00
		1691.02	49.00	0.00E+00		3.11E-01
+	I-125	35.49	6.49	-2.52E+01	6.74E+00	6.74E+00
+	SB-125	176.33	6.89	3.06E-01	1.75E-01	7.36E-01
		427.89	29.33	2.70E-03		1.75E-01
		463.38	10.35	5.85E-01		5.78E-01
		600.56	17.80	-1.10E-02		3.90E-01
		635.90	11.32	8.82E-02		6.15E-01
+	SB-126	414.70	83.30	7.86E+00	1.47E+01	1.47E+01
		666.33	99.60	3.04E+00		1.81E+01
		695.00	99.60	7.12E-01		1.71E+01
		720.50	53.80	-2.74E+00		3.27E+01
+	SN-126	87.57	37.00	7.62E-02	1.28E-01	1.28E-01
+	SB-127	473.00	25.00	3.30E+06	1.04E+07	1.16E+07
		685.20	35.70	5.16E+06		1.04E+07
		783.80	14.70	-4.04E+06		2.69E+07
+	I-129	29.78	57.00	2.13E-01	3.89E-01	3.89E-01
		33.60	13.20	8.95E+00		2.05E+00
		39.58	7.52	1.00E+00		1.24E+00
+	I-131	284.30	6.05	-1.46E+02	2.85E+02	4.11E+03
		364.48	81.20	4.07E+01		2.85E+02
		636.97	7.26	7.59E+02		4.69E+03
		722.89	1.80	-3.49E+04		2.18E+04
+	TE-132	49.72	13.10	1.86E+08	8.20E+07	5.46E+08
		228.16	88.00	3.17E+06		8.20E+07
+	BA-133	81.00	33.00	1.90E-02	8.06E-02	1.19E-01
		302.84	17.80	-2.69E-01		2.93E-01
		356.01	60.00	-1.08E-02		8.06E-02
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	8.00E+03	5.03E+04	5.03E+04
+	CS-134	563.23	8.38	3.99E-02	7.47E-02	6.68E-01
		569.32	15.43	-1.21E-01		3.44E-01
		604.70	97.60	-2.67E-03		7.47E-02
		795.84	85.40	5.75E-02		9.73E-02
		801.93	8.73	-3.64E-02		7.86E-01
+	CS-135	268.24	16.00	-2.71E-01	3.01E-01	3.01E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-1.01E+01	1.28E+01	1.17E+02
		163.89	4.61	-2.16E+01		1.86E+02
		176.55	13.56	2.70E+01		6.49E+01
		273.65	12.66	-7.97E+01		7.06E+01
		340.57	48.50	-9.10E-01		2.18E+01
		818.50	99.70	4.55E-01		1.28E+01
		1048.07	79.60	3.15E+00		2.01E+01
		1235.34	19.70	5.35E+00		1.08E+02

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-137	661.65	85.12	-2.45E-03	7.63E-02	7.63E-02
+	LA-138	788.74	34.00	1.46E-01	1.02E-01	2.19E-01
		1435.80	66.00	0.00E+00		1.02E-01
+	CE-139	165.85	80.35	1.17E-02	9.68E-02	9.68E-02
+	BA-140	162.64	6.70	7.53E+01	4.19E+01	1.51E+02
		304.84	4.50	2.70E+01		2.37E+02
		423.70	3.20	-4.88E+01		3.30E+02
		437.55	2.00	9.08E+01		5.75E+02
		537.32	25.00	2.13E+00		4.19E+01
+	LA-140	328.77	20.50	3.15E+01	1.70E+01	5.70E+01
		487.03	45.50	5.30E+00		2.38E+01
		815.85	23.50	-1.99E+01		5.99E+01
		1596.49	95.49	-4.54E+00		1.70E+01
+	CE-141	145.44	48.40	8.91E-02	7.78E-01	7.78E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	4.58E-03	4.23E-01	4.23E-01
+	PM-144	476.78	42.00	-5.22E-02	7.82E-02	1.39E-01
		618.01	98.60	3.97E-02		8.29E-02
		696.49	99.49	-3.75E-02		7.82E-02
+	PM-145	36.85	21.70	-3.54E-01	2.63E-01	5.09E-01
		37.36	39.70	-1.79E-01		2.63E-01
		42.30	15.10	-1.83E-03		4.44E-01
		72.40	2.31	-1.02E+01		1.95E+00
+	PM-146	453.90	39.94	-5.18E-04	1.27E-01	1.27E-01
		735.90	14.01	5.84E-02		4.74E-01
		747.13	13.10	-1.87E-01		5.17E-01
+	ND-147	91.11	28.90	-1.35E+02	7.68E+01	7.68E+01
		531.02	13.10	-3.47E+01		1.89E+02
+	PM-149	285.90	3.10	-9.83E+09	4.88E+13	4.88E+13
+	EU-152	121.78	20.50	-6.85E-02	1.57E-01	1.57E-01
		244.69	5.40	1.10E-01		9.30E-01
		344.27	19.13	-3.08E-02		2.31E-01
		778.89	9.20	-1.33E-01		6.97E-01
		964.01	10.40	3.58E-01		9.37E-01
		1085.78	7.22	-6.59E-02		1.11E+00
		1112.02	9.60	-1.30E-01		8.41E-01
		1407.95	14.94	2.09E-01		5.31E-01
+	GD-153	97.43	31.30	-2.07E-02	1.44E-01	1.44E-01
		103.18	22.20	-3.15E-03		1.98E-01
+	EU-154	123.07	40.50	4.51E-03	8.10E-02	8.10E-02
		723.30	19.70	-6.31E-01		3.94E-01
		873.19	11.50	2.76E-02		6.46E-01
		996.32	10.30	4.06E-02		7.02E-01
		1004.76	17.90	-8.42E-02		4.37E-01
		1274.45	35.50	5.39E-02		2.28E-01
+	EU-155	86.50	30.90	2.51E-01	1.60E-01	1.60E-01
		105.30	20.70	9.05E-03		1.67E-01

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	EU-156	811.77		10.40	-1.92E+01	5.99E+01	5.99E+01
		1153.47		7.20	-3.59E+01		1.12E+02
		1230.71		8.90	-6.42E+00		1.06E+02
+	HO-166M	184.41		72.60	1.89E-01	8.61E-02	8.61E-02
		280.45		29.60	6.94E-02		1.61E-01
		410.94		11.10	-3.20E-02		4.45E-01
		711.69		54.10	3.92E-02		1.32E-01
+	TM-171	66.72		0.14	-3.28E+00	3.41E+01	3.41E+01
+	HF-172	67.35		5.31	1.71E-01	3.35E-01	8.79E-01
		125.81		11.30	7.78E-02		3.35E-01
+	LU-172	181.53		20.60	-1.14E+03	3.59E+03	6.62E+03
		900.72		29.81	-2.51E+03		6.00E+03
		1093.66		62.50	9.61E+02		3.59E+03
+	LU-173	100.72		5.24	4.32E-01	5.96E-01	7.46E-01
		272.11	*	21.20	4.19E-01		5.96E-01
+	HF-175	343.40		84.00	-3.33E-02	1.39E-01	1.39E-01
+	LU-176	88.34		13.30	4.50E-02	5.17E-02	3.49E-01
		201.83		86.00	-2.83E-02		5.59E-02
		306.78		94.00	-8.70E-04		5.17E-02
+	HF-181	133.02		41.70	-6.12E-03	3.24E-01	4.33E-01
		345.85		17.20	6.08E-01		1.39E+00
		482.03		82.80	1.32E-01		3.24E-01
+	TA-182	67.75		41.20	3.63E-02	1.86E-01	1.86E-01
		1121.30		34.90	7.77E-01		5.98E-01
		1189.05		16.23	4.17E-02		1.05E+00
		1221.41		26.98	-4.02E-03		6.74E-01
		1231.02		11.44	-9.86E-02		1.62E+00
+	IR-192	308.46		29.68	1.35E-01	2.30E-01	4.16E-01
		468.07		48.10	4.53E-04		2.30E-01
+	HG-203	279.19		77.30	6.74E-02	2.87E-01	2.87E-01
+	TL-204	374.74		94.11	2.33E-02	5.56E-02	5.56E-02
		899.15		99.16	6.68E-03		6.96E-02
		911.74		91.10	3.93E-01		1.56E-01
+	BI-207	569.67		97.72	-1.75E-02	4.98E-02	4.98E-02
		1063.62		74.90	-3.07E-03		1.04E-01
+	TL-208	583.14	*	30.22	1.23E+00	1.06E-01	2.60E-01
		860.37	*	4.48	2.42E+00		2.40E+00
		2614.66	*	35.85	8.47E-01		1.06E-01
+	BI-210M	262.00		45.00	-3.56E-02	9.88E-02	9.88E-02
		300.00		23.00	1.67E-01		2.49E-01
+	PB-210	46.50	*	4.25	1.14E+00	2.02E+00	2.02E+00
+	PB-211	404.84		2.90	1.88E-01	1.58E+00	1.58E+00
		831.96		2.90	-1.30E+00		2.65E+00
+	BI-212	727.17	*	11.80	1.29E+00	8.61E-01	8.61E-01
		1620.62		2.75	1.45E-01		2.43E+00
+	PB-212	238.63	*	44.60	1.29E+00	2.84E-01	2.84E-01
		300.09	*	3.41	1.63E+00		2.95E+00
+	BI-214	609.31	*	46.30	8.78E-01	1.94E-01	1.94E-01

Analysis Report for 1707090-06

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	1120.29	*	15.10	1.04E+00	1.94E-01	7.42E-01
		1764.49		15.80	1.07E+00		7.67E-01
		2204.22	*	4.98	1.23E+00		9.38E-01
+	PB-214	295.21	*	19.19	1.19E+00	2.21E-01	5.18E-01
		351.92	*	37.19	9.16E-01		2.21E-01
+	RN-219	401.80		6.50	6.74E-01	8.00E-01	8.00E-01
+	RA-223	323.87		3.88	8.76E-02	1.29E+00	1.29E+00
+	RA-224	240.98	*	3.95	3.39E+00	3.26E+00	3.26E+00
+	RA-225	40.00		31.00	2.46E+01	3.03E+01	3.03E+01
+	RA-226	186.21	*	3.28	3.95E+00	2.57E+00	2.57E+00
+	TH-227	50.10		8.40	1.97E-01	5.78E-01	5.78E-01
		236.00		11.50	-6.27E+00		5.78E-01
		256.20		6.30	-4.85E-01		6.82E-01
+	AC-228	338.32	*	11.40	1.39E+00	3.84E-01	6.58E-01
		911.07	*	27.70	1.14E+00		3.84E-01
		969.11	*	16.60	9.37E-01		6.70E-01
+	TH-230	48.44		16.90	-2.71E-01	3.13E-01	3.13E-01
		62.85		4.60	1.37E+00		1.17E+00
		67.67		0.37	2.22E+00		1.14E+01
+	PA-231	283.67		1.60	-1.07E-01	2.22E+00	3.00E+00
		302.67		2.30	-2.04E+00		2.22E+00
+	TH-231	25.64		14.70	0.00E+00	1.23E-01	1.23E-01
		84.21		6.40	-6.29E-01		6.29E-01
+	PA-233	311.98		38.60	4.58E-01	1.51E+00	1.51E+00
+	PA-234	131.20		20.40	-4.95E-02	1.82E-01	1.82E-01
		733.99		8.80	2.42E-01		7.23E-01
		946.00		12.00	9.33E-02		6.52E-01
+	PA-234M	1001.03	*	0.92	4.34E+00	7.67E+00	7.67E+00
+	TH-234	63.29	*	3.80	2.19E+00	2.30E+00	2.30E+00
+	U-235	143.76		10.50	-1.55E-01	4.36E-01	4.36E-01
		163.35		4.70	-1.14E-01		9.80E-01
		205.31		4.70	1.05E-01		1.06E+00
+	NP-237	86.50		12.60	5.92E-01	3.78E-01	3.78E-01
+	NP-239	106.10		22.70	3.79E+10	7.01E+11	7.01E+11
		228.18		10.70	8.53E+10		2.20E+12
		277.60		14.10	1.42E+11		1.72E+12
+	AM-241	59.54		35.90	-5.37E-02	1.30E-01	1.30E-01
+	AM-243	74.67		66.00	-4.30E-02	9.29E-02	9.29E-02
+	CM-243	209.75		3.29	1.78E+00	3.67E-01	1.70E+00
		228.14		10.60	1.82E-02		4.71E-01
		277.60		14.00	3.03E-02		3.67E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = 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	1.69E+00	1.69E+00	-6.31E-01	7.89E-01
	NA-22	1274.54		99.94	8.52E-02	8.52E-02	2.01E-02	3.90E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	5.34E-02	5.34E-02	1.31E-02	2.24E-02
+	K-40	1460.81	*	10.67	1.12E+00	1.12E+00	2.17E+01	5.23E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	4.46E-02	4.46E-02	8.70E-03	2.16E-02
		78.34		96.00	5.59E-02		6.64E-02	2.73E-02
	SC-46	889.25		99.98	1.48E-01	1.48E-01	-6.44E-02	6.82E-02
		1120.51		99.99	2.60E-01		3.40E-01	1.23E-01
	V-48	983.52		99.98	5.19E+00	5.19E+00	-3.14E+00	2.39E+00
		1312.10		97.50	5.55E+00		-9.19E-01	2.51E+00
	CR-51	320.08		9.83	6.08E+00	6.08E+00	8.90E-01	2.90E+00
	MN-54	834.83		99.97	9.94E-02	9.94E-02	1.10E-02	4.67E-02
	CO-56	846.75		99.96	1.61E-01	1.61E-01	-2.91E-02	7.46E-02
		1037.75		14.03	1.22E+00		-2.08E-01	5.63E-01
		1238.25		67.00	4.17E-01		1.62E-01	1.97E-01
		1771.40		15.51	9.18E-01		-4.33E-02	3.93E-01
		2598.48		16.90	4.85E-01		-1.74E-01	1.72E-01
	CO-57	122.06		85.51	4.80E-02	4.80E-02	-2.09E-02	2.31E-02
		136.48		10.60	5.39E-01		8.54E-02	2.62E-01
	CO-58	810.76		99.40	1.75E-01	1.75E-01	-1.10E-01	8.13E-02
	FE-59	1099.22		56.50	6.70E-01	6.70E-01	3.45E-04	3.10E-01
		1291.56		43.20	7.32E-01		-5.04E-01	3.29E-01
	CO-60	1173.22		100.00	9.23E-02	7.99E-02	2.78E-02	4.29E-02
		1332.49		100.00	7.99E-02		3.59E-02	3.63E-02
	ZN-65	1115.52		50.75	2.23E-01	2.23E-01	1.76E-02	1.04E-01
	GA-67	93.31		35.70	1.86E+08	1.86E+08	3.69E+08	9.06E+07
		208.95		2.24	3.55E+09		2.98E+09	1.72E+09
		300.22		16.00	5.11E+08		3.44E+08	2.46E+08
	SE-75	121.11		16.70	3.54E-01	1.33E-01	9.98E-02	1.70E-01
		136.00		59.20	1.33E-01		-2.11E-02	6.47E-02
		264.65		59.80	1.33E-01		4.12E-02	6.37E-02
		279.53		25.20	3.46E-01		-3.93E-02	1.66E-01
		400.65		11.40	7.94E-01		-5.85E-02	3.76E-01

Analysis Report for 1707090-06

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RB-82	776.52		13.00	7.44E+00	7.44E+00	9.36E-01	3.46E+00
	RB-83	520.41		46.00	2.37E-01	2.37E-01	-1.04E-01	1.11E-01
		529.64		30.30	3.70E-01		5.40E-02	1.73E-01
		552.65		16.40	7.35E-01		4.33E-01	3.44E-01
	KR-85	513.99		0.43	1.42E+01	1.42E+01	-1.35E+01	6.71E+00
	SR-85	513.99		99.27	1.76E-01	1.76E-01	-1.67E-01	8.33E-02
	Y-88	898.02		93.40	1.41E-01	1.32E-01	5.17E-02	6.55E-02
		1836.01		99.38	1.32E-01		3.48E-02	5.76E-02
	MO-93	263.06		56.72	8.12E-02	5.94E-02	1.54E-02	3.88E-02
		684.67		99.68	6.53E-02		2.28E-02	3.05E-02
		1477.11		99.08	5.94E-02		-2.02E-02	2.58E-02
	NB-93M	16.57		9.43	6.90E+00	6.90E+00	0.00E+00	0.00E+00
	NB-94	702.63		100.00	6.61E-02	6.61E-02	9.20E-03	3.10E-02
		871.10		100.00	6.99E-02		4.77E-03	3.25E-02
	NB-95	765.79		99.81	5.47E-01	5.47E-01	1.95E-01	2.58E-01
	NB-95M	235.69		25.00	4.95E+07	4.95E+07	-5.37E+08	2.41E+07
	ZR-95	724.18		43.70	5.90E-01	3.50E-01	2.43E-01	2.81E-01
		756.72		55.30	3.50E-01		-1.98E-02	1.63E-01
	MO-99	181.06		6.20	5.31E+10	3.57E+10	-5.53E+07	2.56E+10
		739.58		12.80	3.57E+10		-2.02E+10	1.66E+10
		778.00		4.50	1.00E+11		-1.91E+10	4.65E+10
+	RU-103	497.08	*	89.00	3.56E-01	3.56E-01	2.41E-01	1.68E-01
	RU-106	621.84		9.80	7.19E-01	7.19E-01	-6.52E-01	3.36E-01
	AG-108M	433.93		89.90	5.71E-02	5.71E-02	9.14E-03	2.69E-02
		614.37		90.40	7.32E-02		1.35E-02	3.45E-02
		722.95		90.50	8.41E-02		-1.35E-01	3.97E-02
	CD-109	88.03		3.72	1.47E+00	1.47E+00	8.79E-01	7.17E-01
	AG-110M	657.75		93.14	8.92E-02	8.92E-02	-3.24E-02	4.18E-02
		677.61		10.53	7.88E-01		-2.59E-03	3.69E-01
		706.67		16.46	5.82E-01		-2.23E-02	2.74E-01
		763.93		21.98	4.32E-01		-3.27E-01	2.03E-01
		884.67		71.63	1.21E-01		-3.44E-03	5.61E-02
		1384.27		23.94	3.59E-01		8.24E-02	1.60E-01
	CD-113M	263.70		0.02	2.03E+02	2.03E+02	1.39E+02	9.69E+01
	SN-113	255.12		1.93	4.36E+00	1.42E-01	3.30E+00	2.09E+00
		391.69		64.90	1.42E-01		9.62E-02	6.71E-02
	TE123M	159.00		84.10	9.50E-02	9.50E-02	6.36E-03	4.60E-02
	SB-124	602.71		97.87	2.10E-01	2.10E-01	8.71E-03	9.93E-02
		645.85		7.26	2.80E+00		-3.37E-01	1.31E+00
		722.78		11.10	2.09E+00		-1.80E-01	9.85E-01
		1691.02		49.00	3.11E-01		0.00E+00	1.29E-01
	I-125	35.49		6.49	6.74E+00	6.74E+00	-2.52E+01	3.27E+00
	SB-125	176.33		6.89	7.36E-01	1.75E-01	3.06E-01	3.56E-01
		427.89		29.33	1.75E-01		2.70E-03	8.22E-02
		463.38		10.35	5.78E-01		5.85E-01	2.73E-01
		600.56		17.80	3.90E-01		-1.10E-02	1.84E-01
		635.90		11.32	6.15E-01		8.82E-02	2.90E-01
	SB-126	414.70		83.30	1.47E+01	1.47E+01	7.86E+00	6.95E+00
		666.33		99.60	1.81E+01		3.04E+00	8.53E+00
		695.00		99.60	1.71E+01		7.12E-01	8.04E+00
		720.50		53.80	3.27E+01		-2.74E+00	1.53E+01
	SN-126	87.57		37.00	1.28E-01	1.28E-01	7.62E-02	6.22E-02
	SB-127	473.00		25.00	1.16E+07	1.04E+07	3.30E+06	5.46E+06

Analysis Report for 1707090-06

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-127	685.20	35.70	1.04E+07	1.04E+07	5.16E+06	4.87E+06
	783.80	14.70	2.69E+07		-4.04E+06	1.26E+07
I-129	29.78	57.00	3.89E-01	3.89E-01	2.13E-01	1.87E-01
	33.60	13.20	2.05E+00		8.95E+00	1.01E+00
	39.58	7.52	1.24E+00		1.00E+00	5.99E-01
I-131	284.30	6.05	4.11E+03	2.85E+02	-1.46E+02	1.96E+03
	364.48	81.20	2.85E+02		4.07E+01	1.34E+02
	636.97	7.26	4.69E+03		7.59E+02	2.21E+03
	722.89	1.80	2.18E+04		-3.49E+04	1.03E+04
TE-132	49.72	13.10	5.46E+08	8.20E+07	1.86E+08	2.63E+08
	228.16	88.00	8.20E+07		3.17E+06	3.95E+07
BA-133	81.00	33.00	1.19E-01	8.06E-02	1.90E-02	5.77E-02
	302.84	17.80	2.93E-01		-2.69E-01	1.40E-01
	356.01	60.00	8.06E-02		-1.08E-02	3.82E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	5.03E+04	5.03E+04	8.00E+03	2.44E+04
CS-134	563.23	8.38	6.68E-01	7.47E-02	3.99E-02	3.11E-01
	569.32	15.43	3.44E-01		-1.21E-01	1.59E-01
	604.70	97.60	7.47E-02		-2.67E-03	3.53E-02
	795.84	85.40	9.73E-02		5.75E-02	4.57E-02
	801.93	8.73	7.86E-01		-3.64E-02	3.64E-01
CS-135	268.24	16.00	3.01E-01	3.01E-01	-2.71E-01	1.44E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.17E+02	1.28E+01	-1.01E+01	5.68E+01
	163.89	4.61	1.86E+02		-2.16E+01	8.99E+01
	176.55	13.56	6.49E+01		2.70E+01	3.14E+01
	273.65	12.66	7.06E+01		-7.97E+01	3.38E+01
	340.57	48.50	2.18E+01		-9.10E-01	1.04E+01
	818.50	99.70	1.28E+01		4.55E-01	5.94E+00
	1048.07	79.60	2.01E+01		3.15E+00	9.40E+00
	1235.34	19.70	1.08E+02		5.35E+00	5.09E+01
CS-137	661.65	85.12	7.63E-02	7.63E-02	-2.45E-03	3.58E-02
LA-138	788.74	34.00	2.19E-01	1.02E-01	1.46E-01	1.03E-01
	1435.80	66.00	1.02E-01		0.00E+00	4.52E-02
CE-139	165.85	80.35	9.68E-02	9.68E-02	1.17E-02	4.69E-02
BA-140	162.64	6.70	1.51E+02	4.19E+01	7.53E+01	7.33E+01
	304.84	4.50	2.37E+02		2.70E+01	1.13E+02
	423.70	3.20	3.30E+02		-4.88E+01	1.55E+02
	437.55	2.00	5.75E+02		9.08E+01	2.72E+02
	537.32	25.00	4.19E+01		2.13E+00	1.95E+01
LA-140	328.77	20.50	5.70E+01	1.70E+01	3.15E+01	2.73E+01
	487.03	45.50	2.38E+01		5.30E+00	1.12E+01
	815.85	23.50	5.99E+01		-1.99E+01	2.78E+01
	1596.49	95.49	1.70E+01		-4.54E+00	7.60E+00
CE-141	145.44	48.40	7.78E-01	7.78E-01	8.91E-02	3.77E-01
@ 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	4.23E-01	4.23E-01	4.58E-03	2.04E-01
PM-144	476.78	42.00	1.39E-01	7.82E-02	-5.22E-02	6.53E-02
	618.01	98.60	8.29E-02		3.97E-02	3.92E-02

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PM-144	696.49		99.49	7.82E-02	7.82E-02	-3.75E-02	3.66E-02
	PM-145	36.85		21.70	5.09E-01	2.63E-01	-3.54E-01	2.46E-01
		37.36		39.70	2.63E-01		-1.79E-01	1.27E-01
		42.30		15.10	4.44E-01		-1.83E-03	2.14E-01
		72.40		2.31	1.95E+00		-1.02E+01	9.50E-01
	PM-146	453.90		39.94	1.27E-01	1.27E-01	-5.18E-04	5.96E-02
		735.90		14.01	4.74E-01		5.84E-02	2.21E-01
		747.13		13.10	5.17E-01		-1.87E-01	2.41E-01
	ND-147	91.11		28.90	7.68E+01	7.68E+01	-1.35E+02	3.73E+01
		531.02		13.10	1.89E+02		-3.47E+01	8.80E+01
	PM-149	285.90		3.10	4.88E+13	4.88E+13	-9.83E+09	2.34E+13
	EU-152	121.78		20.50	1.57E-01	1.57E-01	-6.85E-02	7.56E-02
		244.69		5.40	9.30E-01		1.10E-01	4.47E-01
		344.27		19.13	2.31E-01		-3.08E-02	1.09E-01
		778.89		9.20	6.97E-01		-1.33E-01	3.24E-01
		964.01		10.40	9.37E-01		3.58E-01	4.42E-01
		1085.78		7.22	1.11E+00		-6.59E-02	5.12E-01
		1112.02		9.60	8.41E-01		-1.30E-01	3.89E-01
		1407.95		14.94	5.31E-01		2.09E-01	2.41E-01
	GD-153	97.43		31.30	1.44E-01	1.44E-01	-2.07E-02	6.96E-02
		103.18		22.20	1.98E-01		-3.15E-03	9.53E-02
	EU-154	123.07		40.50	8.10E-02	8.10E-02	4.51E-03	3.89E-02
		723.30		19.70	3.94E-01		-6.31E-01	1.86E-01
		873.19		11.50	6.46E-01		2.76E-02	3.01E-01
		996.32		10.30	7.02E-01		4.06E-02	3.24E-01
		1004.76		17.90	4.37E-01		-8.42E-02	2.03E-01
		1274.45		35.50	2.28E-01		5.39E-02	1.04E-01
	EU-155	86.50		30.90	1.60E-01	1.60E-01	2.51E-01	7.82E-02
		105.30		20.70	1.67E-01		9.05E-03	8.07E-02
	EU-156	811.77		10.40	5.99E+01	5.99E+01	-1.92E+01	2.79E+01
		1153.47		7.20	1.12E+02		-3.59E+01	5.19E+01
		1230.71		8.90	1.06E+02		-6.42E+00	4.94E+01
	HO-166M	184.41		72.60	8.61E-02	8.61E-02	1.89E-01	4.20E-02
		280.45		29.60	1.61E-01		6.94E-02	7.72E-02
		410.94		11.10	4.45E-01		-3.20E-02	2.10E-01
		711.69		54.10	1.32E-01		3.92E-02	6.20E-02
	TM-171	66.72		0.14	3.41E+01	3.41E+01	-3.28E+00	1.66E+01
	HF-172	67.35		5.31	8.79E-01	3.35E-01	1.71E-01	4.26E-01
		125.81		11.30	3.35E-01		7.78E-02	1.61E-01
	LU-172	181.53		20.60	6.62E+03	3.59E+03	-1.14E+03	3.20E+03
		900.72		29.81	6.00E+03		-2.51E+03	2.75E+03
		1093.66		62.50	3.59E+03		9.61E+02	1.66E+03
+	LU-173	100.72		5.24	7.46E-01	5.96E-01	4.32E-01	3.60E-01
		272.11	*	21.20	5.96E-01		4.19E-01	2.92E-01
	HF-175	343.40		84.00	1.39E-01	1.39E-01	-3.33E-02	6.56E-02
	LU-176	88.34		13.30	3.49E-01	5.17E-02	4.50E-02	1.70E-01
		201.83		86.00	5.59E-02		-2.83E-02	2.70E-02
		306.78		94.00	5.17E-02		-8.70E-04	2.47E-02
	HF-181	133.02		41.70	4.33E-01	3.24E-01	-6.12E-03	2.09E-01
		345.85		17.20	1.39E+00		6.08E-01	6.58E-01
		482.03		82.80	3.24E-01		1.32E-01	1.53E-01
	TA-182	67.75		41.20	1.86E-01	1.86E-01	3.63E-02	9.02E-02
		1121.30		34.90	5.98E-01		7.77E-01	2.83E-01

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TA-182	1189.05		16.23	1.05E+00	1.86E-01	4.17E-02	4.90E-01
		1221.41		26.98	6.74E-01		-4.02E-03	3.15E-01
		1231.02		11.44	1.62E+00		-9.86E-02	7.59E-01
	IR-192	308.46		29.68	4.16E-01	2.30E-01	1.35E-01	1.99E-01
		468.07		48.10	2.30E-01		4.53E-04	1.07E-01
	HG-203	279.19		77.30	2.87E-01	2.87E-01	6.74E-02	1.38E-01
	TL-204	374.74		94.11	5.56E-02	5.56E-02	2.33E-02	2.64E-02
		899.15		99.16	6.96E-02		6.68E-03	3.21E-02
		911.74		91.10	1.56E-01		3.93E-01	7.52E-02
	BI-207	569.67		97.72	4.98E-02	4.98E-02	-1.75E-02	2.31E-02
		1063.62		74.90	1.04E-01		-3.07E-03	4.81E-02
+	TL-208	583.14	*	30.22	2.60E-01	1.06E-01	1.23E+00	1.24E-01
		860.37	*	4.48	2.40E+00		2.42E+00	1.15E+00
		2614.66	*	35.85	1.06E-01		8.47E-01	3.92E-02
	BI-210M	262.00		45.00	9.88E-02	9.88E-02	-3.56E-02	4.72E-02
		300.00		23.00	2.49E-01		1.67E-01	1.20E-01
+	PB-210	46.50	*	4.25	2.02E+00	2.02E+00	1.14E+00	9.86E-01
	PB-211	404.84		2.90	1.58E+00	1.58E+00	1.88E-01	7.45E-01
		831.96		2.90	2.65E+00		-1.30E+00	1.24E+00
+	BI-212	727.17	*	11.80	8.61E-01	8.61E-01	1.29E+00	4.12E-01
		1620.62		2.75	2.43E+00		1.45E-01	1.07E+00
+	PB-212	238.63	*	44.60	2.84E-01	2.84E-01	1.29E+00	1.40E-01
		300.09	*	3.41	2.95E+00		1.63E+00	1.44E+00
+	BI-214	609.31	*	46.30	1.94E-01	1.94E-01	8.78E-01	9.30E-02
		1120.29	*	15.10	7.42E-01		1.04E+00	3.51E-01
		1764.49		15.80	7.67E-01		1.07E+00	3.56E-01
		2204.22	*	4.98	9.38E-01		1.23E+00	3.73E-01
+	PB-214	295.21	*	19.19	5.18E-01	2.21E-01	1.19E+00	2.53E-01
		351.92	*	37.19	2.21E-01		9.16E-01	1.07E-01
	RN-219	401.80		6.50	8.00E-01	8.00E-01	6.74E-01	3.79E-01
	RA-223	323.87		3.88	1.29E+00	1.29E+00	8.76E-02	6.16E-01
+	RA-224	240.98	*	3.95	3.26E+00	3.26E+00	3.39E+00	1.60E+00
	RA-225	40.00		31.00	3.03E+01	3.03E+01	2.46E+01	1.47E+01
+	RA-226	186.21	*	3.28	2.57E+00	2.57E+00	3.95E+00	1.26E+00
	TH-227	50.10		8.40	5.78E-01	5.78E-01	1.97E-01	2.79E-01
		236.00		11.50	5.78E-01		-6.27E+00	2.81E-01
		256.20		6.30	6.82E-01		-4.85E-01	3.25E-01
+	AC-228	338.32	*	11.40	6.58E-01	3.84E-01	1.39E+00	3.19E-01
		911.07	*	27.70	3.84E-01		1.14E+00	1.83E-01
		969.11	*	16.60	6.70E-01		9.37E-01	3.19E-01
	TH-230	48.44		16.90	3.13E-01	3.13E-01	-2.71E-01	1.51E-01
		62.85		4.60	1.17E+00		1.37E+00	5.69E-01
		67.67		0.37	1.14E+01		2.22E+00	5.51E+00
	PA-231	283.67		1.60	3.00E+00	2.22E+00	-1.07E-01	1.43E+00
		302.67		2.30	2.22E+00		-2.04E+00	1.06E+00
	TH-231	25.64		14.70	1.23E-01	1.23E-01	0.00E+00	0.00E+00
		84.21		6.40	6.29E-01		-6.29E-01	3.05E-01
	PA-233	311.98		38.60	1.51E+00	1.51E+00	4.58E-01	7.20E-01
	PA-234	131.20		20.40	1.82E-01	1.82E-01	-4.95E-02	8.78E-02
		733.99		8.80	7.23E-01		2.42E-01	3.37E-01
		946.00		12.00	6.52E-01		9.33E-02	3.04E-01
+	PA-234M	1001.03	*	0.92	7.67E+00	7.67E+00	4.34E+00	3.53E+00
+	TH-234	63.29	*	3.80	2.30E+00	2.30E+00	2.19E+00	1.13E+00

Analysis Report for 1707090-06

HTC-A06-S001-2430-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
U-235	143.76	10.50	4.36E-01	4.36E-01	-1.55E-01	2.11E-01
	163.35	4.70	9.80E-01		-1.14E-01	4.74E-01
	205.31	4.70	1.06E+00		1.05E-01	5.13E-01
NP-237	86.50	12.60	3.78E-01	3.78E-01	5.92E-01	1.85E-01
NP-239	106.10	22.70	7.01E+11	7.01E+11	3.79E+10	3.38E+11
	228.18	10.70	2.20E+12		8.53E+10	1.06E+12
	277.60	14.10	1.72E+12		1.42E+11	8.26E+11
AM-241	59.54	35.90	1.30E-01	1.30E-01	-5.37E-02	6.29E-02
AM-243	74.67	66.00	9.29E-02	9.29E-02	-4.30E-02	4.55E-02
CM-243	209.75	3.29	1.70E+00	3.67E-01	1.78E+00	8.23E-01
	228.14	10.60	4.71E-01		1.82E-02	2.27E-01
	277.60	14.00	3.67E-01		3.03E-02	1.76E-01

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

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: HTC-A06-S001-2430-01

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	0	0	0	0	0	0
25:	0	0	0	0	18	74	135	126
33:	160	638	168	99	102	87	90	117
41:	112	81	76	68	76	88	155	98
49:	66	88	83	75	100	109	97	84
57:	95	108	99	119	125	137	157	215
65:	129	134	100	124	119	117	129	113
73:	142	162	415	241	381	392	126	120
81:	114	98	97	116	137	113	180	228
89:	103	163	152	95	228	165	100	94
97:	77	99	81	87	77	92	65	81
105:	81	83	77	78	79	89	73	68
113:	86	74	83	83	64	68	68	87
121:	69	64	66	71	64	82	80	69
129:	115	102	77	78	83	73	79	73
137:	64	72	70	66	72	71	82	87
145:	66	56	83	60	60	84	62	65
153:	67	85	79	65	58	67	57	63
161:	68	59	60	79	66	54	64	66
169:	66	62	58	64	61	55	55	74
177:	58	67	53	54	49	54	71	73
185:	71	174	124	56	60	49	57	41
193:	64	44	49	56	50	46	66	50
201:	68	39	58	51	58	60	53	54
209:	82	99	55	49	47	49	44	49
217:	53	43	48	48	57	42	46	47
225:	52	47	42	49	56	45	44	54
233:	53	62	36	49	46	225	606	119
241:	108	125	67	34	34	44	37	37
249:	29	35	22	39	45	34	32	40
257:	26	18	35	31	24	34	33	34
265:	36	29	25	35	38	51	57	28
273:	37	29	39	40	43	50	27	31
281:	36	31	39	24	30	39	31	37
289:	27	32	33	24	31	40	164	149
297:	36	36	29	74	43	34	32	30
305:	30	29	34	28	28	30	29	24
313:	25	20	24	23	37	39	33	20
321:	26	30	25	32	33	26	30	54
329:	33	20	31	27	28	30	26	25
337:	40	99	92	22	29	20	14	18
345:	19	28	30	21	24	24	77	267
353:	116	25	23	25	20	20	23	25
361:	19	18	24	14	15	25	17	18

369:	24	15	27	18	15	28	25	25

Sample Title: HTC-A06-S001-2430-01

Channel								
377:	22	19	15	12	21	25	21	21
385:	17	19	16	24	20	25	18	24
393:	22	22	12	31	22	25	17	30
401:	24	18	20	21	12	15	18	25
409:	24	25	13	18	18	22	14	17
417:	20	10	22	19	17	22	22	18
425:	14	15	21	20	14	16	19	16
433:	18	21	23	19	17	22	23	18
441:	18	25	19	13	13	9	14	17
449:	18	15	16	17	20	16	14	15
457:	21	13	14	7	15	17	41	20
465:	12	9	13	14	10	15	15	14
473:	19	17	19	20	11	14	10	19
481:	17	16	22	14	14	16	17	18
489:	12	13	8	11	6	14	15	14
497:	23	19	8	13	10	13	18	13
505:	18	14	19	17	32	66	85	42
513:	28	13	10	12	14	17	18	16
521:	6	9	18	19	12	17	17	14
529:	7	12	18	10	12	11	12	17
537:	8	9	15	14	10	15	12	16
545:	21	11	12	9	15	21	12	16
553:	10	15	9	8	13	13	10	6
561:	17	11	13	10	12	17	12	7
569:	13	12	11	15	11	9	12	15
577:	14	8	13	14	20	65	147	86
585:	15	6	11	12	12	14	11	10
593:	14	13	14	11	11	16	12	17
601:	10	10	18	16	13	14	17	41
609:	167	122	20	11	8	11	14	13
617:	17	19	7	13	15	11	12	6
625:	7	15	13	10	13	10	8	13
633:	10	13	16	10	13	9	15	12
641:	12	11	10	13	15	9	9	16
649:	11	15	12	15	14	12	7	17
657:	6	8	12	14	6	18	10	11
665:	13	21	15	15	9	13	12	11
673:	14	10	16	13	9	9	7	8
681:	7	11	11	9	11	12	12	10
689:	8	8	16	17	8	9	8	8
697:	9	19	11	9	11	15	13	7
705:	9	11	17	22	12	13	14	10
713:	9	6	12	5	12	9	13	8
721:	10	16	10	14	20	18	43	34
729:	9	13	2	14	8	11	11	7
737:	11	8	9	9	9	11	15	12
745:	8	11	8	9	9	9	8	13
753:	5	8	10	7	12	8	16	9
761:	9	13	13	11	6	14	12	20
769:	17	6	8	10	13	7	7	6
777:	7	11	11	8	7	9	8	8
785:	18	11	12	9	6	10	13	5
793:	8	21	19	9	12	7	6	4

801:	8	10	11	7	6	18	10	11

Sample Title: HTC-A06-S001-2430-01

Channel								
809:	7	3	11	7	9	13	10	5
817:	7	5	13	10	12	6	7	12
825:	10	11	12	10	11	14	11	8
833:	9	14	16	16	9	10	10	8
841:	9	10	8	5	8	6	9	11
849:	9	10	7	10	7	10	7	7
857:	13	10	12	20	24	10	9	10
865:	6	3	5	10	7	7	9	6
873:	7	12	9	13	11	7	6	8
881:	5	9	7	8	7	10	4	8
889:	7	10	5	4	12	8	6	9
897:	5	10	6	10	4	4	4	8
905:	9	7	5	16	10	44	88	40
913:	14	5	5	5	8	3	9	8
921:	7	8	7	7	11	5	7	8
929:	12	10	6	9	12	15	6	3
937:	7	4	13	8	7	8	10	6
945:	11	8	12	9	10	8	7	8
953:	7	4	3	13	8	7	5	10
961:	8	10	10	22	23	13	19	32
969:	65	17	9	13	6	7	4	9
977:	6	11	10	2	9	7	6	7
985:	9	7	6	12	4	6	6	9
993:	5	8	9	8	5	4	8	6
1001:	12	12	10	3	6	4	8	9
1009:	10	6	7	6	5	4	8	7
1017:	10	9	8	11	8	9	4	4
1025:	10	2	5	8	5	9	6	11
1033:	16	6	10	4	9	6	5	5
1041:	8	8	2	10	13	17	7	6
1049:	4	9	16	5	3	4	6	10
1057:	8	8	8	10	6	7	6	3
1065:	8	11	10	4	6	11	3	11
1073:	5	6	6	3	10	6	9	10
1081:	10	5	11	6	12	7	5	5
1089:	6	6	7	7	9	8	6	7
1097:	5	7	12	10	7	5	11	5
1105:	9	6	11	6	9	5	6	11
1113:	8	5	9	6	7	12	21	27
1121:	21	10	9	7	2	9	11	5
1129:	6	5	8	7	9	7	6	8
1137:	12	6	5	13	7	4	9	8
1145:	10	8	13	7	5	10	8	9
1153:	9	6	6	9	14	11	10	4
1161:	10	7	4	10	6	6	4	7
1169:	9	10	7	4	9	12	7	6
1177:	9	7	7	12	11	12	12	12
1185:	6	6	9	14	11	8	9	7
1193:	5	5	11	4	11	9	4	20
1201:	9	13	6	4	14	11	10	6
1209:	10	8	11	9	9	6	5	9
1217:	5	7	14	6	6	10	11	15
1225:	13	12	13	7	10	12	8	7

1233:	14	8	10	11	16	25	16	8

Sample Title: HTC-A06-S001-2430-01

Channel								
1241:	11	11	8	7	8	9	10	8
1249:	8	4	3	9	6	6	8	10
1257:	8	3	3	7	8	10	7	7
1265:	6	4	4	4	5	4	4	7
1273:	2	7	5	7	7	4	5	9
1281:	11	7	7	7	7	6	7	8
1289:	3	2	6	4	1	3	6	7
1297:	7	4	6	4	1	9	5	7
1305:	7	5	8	6	1	5	1	10
1313:	6	2	3	5	3	3	3	4
1321:	5	2	5	4	6	1	4	4
1329:	5	5	1	7	3	6	7	3
1337:	1	4	5	6	2	0	0	2
1345:	4	2	4	5	1	4	4	5
1353:	4	6	7	9	3	3	4	3
1361:	4	3	6	1	2	1	1	8
1369:	0	0	2	5	1	2	3	8
1377:	4	5	1	2	0	1	5	5
1385:	5	4	1	2	4	2	6	3
1393:	0	2	3	1	2	1	3	9
1401:	3	1	1	3	5	5	7	4
1409:	3	1	3	1	4	4	1	4
1417:	2	2	3	2	1	1	4	2
1425:	4	2	3	1	0	3	2	1
1433:	1	2	1	2	2	6	5	5
1441:	3	3	0	2	4	1	1	3
1449:	0	3	2	2	2	5	12	10
1457:	13	41	123	326	280	99	8	3
1465:	2	2	1	4	4	5	2	3
1473:	1	0	1	2	3	1	1	3
1481:	1	2	3	2	2	3	0	1
1489:	0	3	1	3	3	3	5	2
1497:	2	1	2	2	2	3	0	3
1505:	0	1	7	4	2	4	2	3
1513:	3	2	2	2	1	2	3	2
1521:	1	3	3	4	1	1	2	1
1529:	1	2	2	1	3	1	1	3
1537:	2	1	3	1	2	4	0	3
1545:	2	0	0	2	1	2	2	1
1553:	2	2	0	2	2	1	0	2
1561:	1	1	0	1	2	0	5	2
1569:	0	1	0	3	1	1	0	0
1577:	0	2	2	3	2	1	1	2
1585:	2	2	7	7	4	2	6	8
1593:	0	3	1	1	1	2	2	3
1601:	1	4	0	3	1	0	3	1
1609:	1	1	2	3	2	0	1	4
1617:	0	3	1	4	3	1	1	2
1625:	3	0	1	2	4	5	6	4
1633:	0	0	0	3	1	1	1	0
1641:	1	1	0	0	0	0	1	0
1649:	1	0	1	1	0	1	2	1
1657:	0	4	1	3	3	1	1	1

1665:	2	2	2	0	3	0	1	1

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Channel								
1673:	2	2	0	1	2	1	2	1
1681:	2	3	3	0	1	0	1	0
1689:	1	1	1	2	1	1	0	1
1697:	0	2	3	1	1	2	0	1
1705:	1	0	1	1	1	1	1	2
1713:	0	0	4	0	0	0	0	0
1721:	0	0	2	0	1	0	1	2
1729:	6	2	2	2	1	0	0	1
1737:	1	0	0	0	1	0	0	1
1745:	0	0	0	0	0	1	2	1
1753:	1	2	0	0	1	0	1	0
1761:	1	2	8	22	18	6	1	2
1769:	0	1	1	0	0	1	0	0
1777:	2	0	2	0	1	1	2	0
1785:	0	1	0	2	2	2	3	1
1793:	2	0	1	0	2	0	4	1
1801:	1	1	3	0	1	2	0	2
1809:	0	0	1	0	0	1	0	1
1817:	0	2	1	0	0	5	1	2
1825:	0	2	1	0	0	2	2	2
1833:	0	2	0	1	4	3	2	0
1841:	2	3	3	1	1	3	4	4
1849:	2	5	3	1	2	3	1	1
1857:	1	0	0	2	0	1	3	0
1865:	1	1	1	0	1	2	0	1
1873:	1	0	0	2	1	1	0	1
1881:	0	1	1	0	0	1	0	0
1889:	0	0	1	0	1	0	1	3
1897:	1	4	0	1	2	0	1	0
1905:	0	1	2	0	1	1	1	5
1913:	2	1	0	1	0	0	1	1
1921:	1	3	1	1	2	1	3	2
1929:	0	2	2	1	1	0	0	0
1937:	1	2	2	0	1	1	1	0
1945:	0	1	0	0	3	0	0	0
1953:	2	0	3	2	1	2	1	0
1961:	0	1	0	0	0	0	1	1
1969:	1	1	1	1	1	0	0	1
1977:	0	1	1	0	0	0	0	0
1985:	2	0	1	0	0	0	1	1
1993:	1	1	2	0	0	0	2	1
2001:	1	0	0	2	0	1	1	0
2009:	0	0	0	0	0	0	0	0
2017:	1	0	2	0	0	0	1	2
2025:	0	0	1	0	2	0	1	0
2033:	0	2	1	0	0	1	2	1
2041:	2	0	0	1	2	1	0	2
2049:	1	0	1	0	1	1	1	2
2057:	0	1	2	1	1	2	1	2
2065:	0	0	1	1	0	0	1	0
2073:	0	0	1	2	1	0	2	1
2081:	2	0	0	0	2	0	0	0
2089:	1	0	1	0	0	1	0	0

2097:	0	1	0	0	4	4	2	3

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

2529:	0	0	1	0	0	0	2	0

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Channel								
2537:	0	0	0	0	0	0	0	1
2545:	0	0	1	0	0	0	0	2
2553:	1	1	0	1	1	0	0	1
2561:	0	1	0	0	0	0	1	0
2569:	0	1	0	0	0	0	0	0
2577:	0	0	0	0	0	1	1	0
2585:	0	1	0	0	0	1	0	0
2593:	0	0	0	1	0	0	0	1
2601:	0	0	2	0	0	0	3	0
2609:	0	1	5	11	24	22	16	6
2617:	1	1	0	0	0	0	1	0
2625:	0	0	1	0	1	0	0	0
2633:	0	0	0	0	0	0	0	0
2641:	0	0	0	0	1	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	1	0
2665:	0	0	0	0	0	0	0	1
2673:	0	0	0	0	1	0	0	0
2681:	0	1	1	0	0	1	0	0
2689:	1	0	0	0	0	1	0	0
2697:	0	0	0	0	0	0	0	0
2705:	2	0	0	0	0	0	0	1
2713:	0	0	0	0	0	0	0	0
2721:	0	1	1	0	0	0	0	0
2729:	0	0	0	1	0	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	1	0	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	0	1	0	0	0
2769:	0	0	0	1	0	0	0	0
2777:	1	0	0	0	0	0	0	1
2785:	0	0	0	0	0	1	0	1
2793:	1	0	0	0	0	0	0	1
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	0	0	1	0
2825:	0	0	0	0	0	1	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	1	0	0	0	0	0	0
2865:	0	0	0	1	0	1	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	1	0	0	0	1	0
2889:	0	1	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	1	0	0	0	0
2913:	0	0	0	1	0	0	0	0
2921:	1	1	1	0	0	0	0	0
2929:	0	0	0	1	0	2	0	0
2937:	0	0	0	1	0	0	0	0
2945:	1	0	0	1	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	1	0	0	0	0	0	1

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

3393:	0	0	0	0	1	0	0	0

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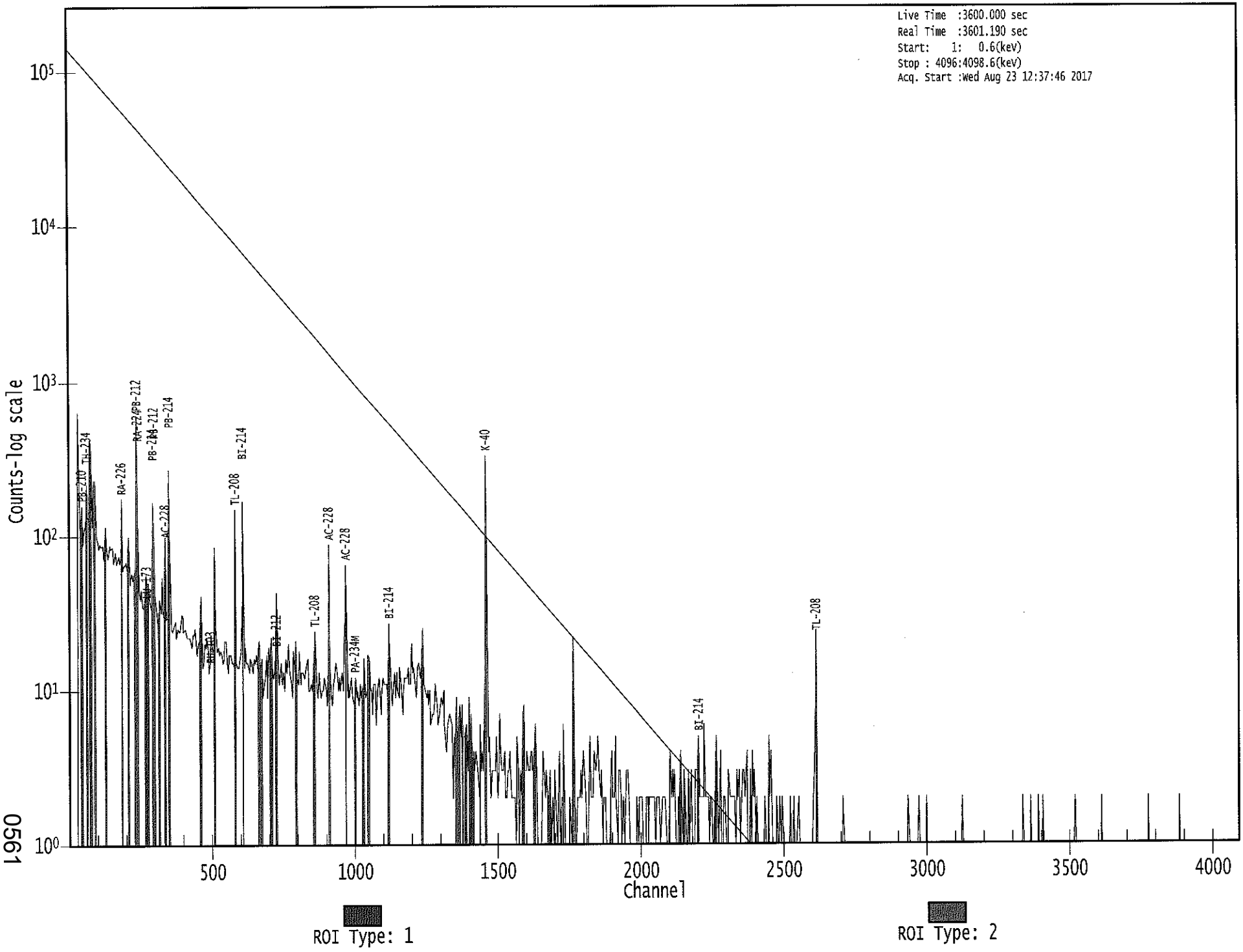
Channel								
3401:	0	0	0	0	0	2	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	1	0	0	1	0
3425:	0	0	1	0	0	0	0	0
3433:	0	0	0	0	0	0	0	1
3441:	0	0	1	0	0	0	0	0
3449:	0	0	0	0	0	1	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	0	1	0	0	1	0
3481:	0	1	0	0	0	0	0	0
3489:	0	0	0	0	1	1	0	1
3497:	0	0	0	0	0	1	0	0
3505:	0	1	0	0	0	0	0	0
3513:	0	0	0	1	0	0	2	0
3521:	0	0	1	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	1	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	1	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	1	0	0	0	1	1	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	1	0	0	0	0	0	0	0
3609:	0	0	2	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	1	0
3641:	0	0	1	0	1	0	0	0
3649:	0	0	1	0	0	0	0	0
3657:	1	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	1
3673:	1	0	0	0	0	0	0	0
3681:	0	0	1	0	0	0	1	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	1	0	0	0	0	0
3721:	0	0	1	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	1	0	0	1	0	0
3753:	0	0	0	0	0	0	0	0
3761:	1	0	0	0	0	0	0	0
3769:	0	0	0	0	0	2	0	1
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	1	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A06-S001-2430-01

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

0000055810.CNF



0561

Apex-Gamma

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-07
Sample Description	: HTC-A06-S001-3036-01
Sample Type	: SOIL
Sample Size	: 6.666E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:52:34AM
Acquisition Started	: 8/23/2017 1:39:01PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
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)	: 17 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55831

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 2:39:05PM
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	76.24	76.83	0.0000	0.00
2	92.40	92.97	0.0000	0.00
3	104.73	105.29	0.0000	0.00
4	129.25	129.79	0.0000	0.00
5	151.99	152.50	0.0000	0.00
6	154.44	154.95	0.0000	0.00
7	185.91	186.39	0.0000	0.00
8	238.59	239.02	0.0000	0.00
9	241.69	242.11	0.0000	0.00
10	269.98	270.38	0.0000	0.00
11	278.14	278.52	0.0000	0.00
12	295.16	295.53	0.0000	0.00
13	300.55	300.91	0.0000	0.00
14	327.95	328.28	0.0000	0.00
15	338.77	339.09	0.0000	0.00
16	352.04	352.35	0.0000	0.00
17	403.93	404.19	0.0000	0.00
18	452.33	452.54	0.0000	0.00
19	463.27	463.46	0.0000	0.00
20	510.80	510.95	0.0000	0.00
21	557.40	557.50	0.0000	0.00
22	583.48	583.56	0.0000	0.00
23	609.59	609.64	0.0000	0.00
24	665.23	665.22	0.0000	0.00
25	720.78	720.72	0.0000	0.00
26	727.47	727.40	0.0000	0.00
27	786.43	786.31	0.0000	0.00
28	795.39	795.26	0.0000	0.00
29	861.30	861.10	0.0000	0.00
30	911.31	911.06	0.0000	0.00
31	965.31	965.01	0.0000	0.00
32	969.27	968.96	0.0000	0.00
33	1120.73	1120.27	0.0000	0.00
34	1184.65	1184.13	0.0000	0.00
35	1238.96	1238.38	0.0000	0.00
36	1324.56	1323.90	0.0000	0.00
37	1376.37	1375.66	0.0000	0.00
38	1408.64	1407.90	0.0000	0.00
39	1421.95	1421.19	0.0000	0.00
40	1461.27	1460.47	0.0000	0.00
41	1465.50	1464.70	0.0000	0.00
42	1471.77	1470.97	0.0000	0.00

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1522.67	1521.81	0.0000	0.00
44	1549.04	1548.16	0.0000	0.00
45	1588.14	1587.22	0.0000	0.00
46	1593.93	1593.01	0.0000	0.00
47	1620.91	1619.96	0.0000	0.00
48	1663.25	1662.26	0.0000	0.00
49	1730.49	1729.43	0.0000	0.00
50	1750.82	1749.75	0.0000	0.00
51	1764.83	1763.74	0.0000	0.00
52	1779.66	1778.55	0.0000	0.00
53	1847.17	1846.00	0.0000	0.00
54	1947.63	1946.36	0.0000	0.00
55	2040.56	2039.20	0.0000	0.00
56	2080.28	2078.88	0.0000	0.00
57	2104.19	2102.77	0.0000	0.00
58	2119.01	2117.58	0.0000	0.00
59	2204.54	2203.03	0.0000	0.00
60	2309.95	2308.33	0.0000	0.00
61	2316.72	2315.10	0.0000	0.00
62	2324.42	2322.79	0.0000	0.00
63	2423.11	2421.38	0.0000	0.00
64	2466.36	2464.60	0.0000	0.00
65	2569.84	2567.98	0.0000	0.00
66	2615.15	2613.24	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 2:39:05PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.24	72 -	81	76.83	1.30E+03	160.03	2.88E+03	3.85
	2	92.40	90 -	97	92.97	4.69E+02	119.57	1.98E+03	1.81
	3	104.73	103 -	108	105.29	8.28E+01	74.80	1.05E+03	1.42
	4	129.25	127 -	133	129.79	7.31E+01	84.26	1.24E+03	1.76
M	5	151.99	151 -	159	152.50	6.41E+01	40.16	4.09E+02	1.76
m	6	154.44	151 -	159	154.95	8.37E+01	68.22	8.22E+02	2.11
	7	185.91	180 -	191	186.39	3.26E+02	115.08	1.49E+03	2.14
M	8	238.59	228 -	245	239.02	1.02E+03	79.44	5.49E+02	1.82
m	9	241.69	228 -	245	242.11	2.57E+02	81.77	5.13E+02	1.82
	10	269.98	268 -	273	270.38	9.14E+01	50.57	4.43E+02	2.34
	11	278.14	275 -	282	278.52	5.76E+01	62.19	5.95E+02	1.76
	12	295.16	292 -	299	295.53	2.83E+02	71.27	6.62E+02	1.89
	13	300.55	299 -	304	300.91	6.42E+01	46.74	3.84E+02	1.88
	14	327.95	325 -	331	328.28	6.06E+01	51.96	4.45E+02	1.82
	15	338.77	335 -	343	339.09	2.28E+02	62.79	4.52E+02	1.79
	16	352.04	348 -	357	352.35	5.72E+02	80.27	5.91E+02	1.87
	17	403.93	400 -	408	404.19	5.02E+01	55.68	4.48E+02	2.58
	18	452.33	449 -	456	452.54	5.29E+01	40.40	2.38E+02	3.70
	19	463.27	458 -	468	463.46	1.10E+02	55.46	3.50E+02	1.85
	20	510.80	505 -	518	510.95	2.42E+02	68.04	4.10E+02	2.66
	21	557.40	555 -	560	557.50	2.30E+01	28.50	1.44E+02	3.03
	22	583.48	578 -	589	583.56	3.53E+02	66.63	3.79E+02	1.93
	23	609.59	606 -	615	609.64	3.77E+02	60.75	3.04E+02	1.93
	24	665.23	661 -	669	665.22	3.10E+01	37.56	1.98E+02	1.72
M	25	720.78	716 -	731	720.72	2.67E+01	30.43	1.42E+02	2.32
m	26	727.47	716 -	731	727.40	9.31E+01	34.03	1.45E+02	2.33
	27	786.43	784 -	789	786.31	2.42E+01	24.96	1.06E+02	2.94
	28	795.39	791 -	800	795.26	7.05E+01	38.39	1.71E+02	2.18
	29	861.30	858 -	865	861.10	2.75E+01	32.74	1.61E+02	1.93
	30	911.31	905 -	914	911.06	2.28E+02	46.29	1.78E+02	1.85
M	31	965.31	960 -	972	965.01	5.62E+01	29.90	7.61E+01	2.22
m	32	969.27	960 -	972	968.96	1.40E+02	32.83	8.54E+01	2.22
	33	1120.73	1116 -	1125	1120.27	8.10E+01	38.00	1.60E+02	1.92
	34	1184.65	1181 -	1187	1184.13	2.15E+01	25.04	9.89E+01	3.40
	35	1238.96	1232 -	1246	1238.38	6.89E+01	53.97	2.78E+02	9.57
	36	1324.56	1321 -	1327	1323.90	1.70E+01	17.87	4.61E+01	3.78
	37	1376.37	1371 -	1379	1375.66	3.04E+01	18.05	3.12E+01	1.50
	38	1408.64	1404 -	1412	1407.90	2.18E+01	20.27	5.05E+01	1.62
	39	1421.95	1418 -	1425	1421.19	1.77E+01	13.86	2.07E+01	3.34
M	40	1461.27	1454 -	1475	1460.47	1.15E+03	69.36	3.23E+01	2.27

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1465.50	1454 -	1475	1464.70	4.86E+01	72.42	2.45E+01	4.26
m	42	1471.77	1454 -	1475	1470.97	1.30E+01	19.21	5.81E-01	3.88
	43	1522.67	1516 -	1529	1521.81	1.80E+01	21.21	4.20E+01	5.17
	44	1549.04	1546 -	1551	1548.16	7.75E+00	10.86	1.65E+01	2.15
M	45	1588.14	1572 -	1597	1587.22	1.95E+01	14.48	2.31E+01	2.45
m	46	1593.93	1572 -	1597	1593.01	2.30E+01	14.20	1.75E+01	2.45
	47	1620.91	1614 -	1622	1619.96	1.38E+01	14.33	2.45E+01	2.14
	48	1663.25	1655 -	1669	1662.26	3.05E+01	13.87	7.06E+00	6.76
	49	1730.49	1725 -	1733	1729.43	1.79E+01	10.01	4.25E+00	4.23
	50	1750.82	1746 -	1753	1749.75	1.03E+01	8.00	3.50E+00	2.97
	51	1764.83	1758 -	1770	1763.74	7.49E+01	21.60	2.02E+01	3.02
	52	1779.66	1774 -	1781	1778.55	8.91E+00	7.75	4.18E+00	1.09
	53	1847.17	1842 -	1849	1846.00	1.60E+01	9.38	3.94E+00	1.27
	54	1947.63	1944 -	1949	1946.36	5.56E+00	7.35	6.89E+00	1.45
	55	2040.56	2036 -	2041	2039.20	5.00E+00	4.47	0.00E+00	2.31
	56	2080.28	2075 -	2081	2078.88	5.33E+00	7.78	7.33E+00	2.06
	57	2104.19	2097 -	2109	2102.77	2.55E+01	12.58	7.00E+00	4.81
	58	2119.01	2114 -	2121	2117.58	1.33E+01	8.72	3.47E+00	4.23
	59	2204.54	2199 -	2207	2203.03	2.76E+01	15.13	1.88E+01	1.87
	60	2309.95	2305 -	2312	2308.33	1.11E+01	9.38	5.86E+00	1.30
	61	2316.72	2313 -	2317	2315.10	4.58E+00	5.50	2.83E+00	1.06
	62	2324.42	2319 -	2325	2322.79	1.02E+01	7.76	3.67E+00	2.76
	63	2423.11	2418 -	2424	2421.38	6.44E+00	6.65	3.13E+00	1.99
	64	2466.36	2462 -	2468	2464.60	9.73E+00	7.50	2.55E+00	3.55
	65	2569.84	2564 -	2570	2567.98	5.50E+00	6.34	3.00E+00	1.07
	66	2615.15	2609 -	2617	2613.24	1.18E+02	22.37	4.74E+00	2.22

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 2:39:05PM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	76.24	72 -	81	1.30E+03	160.03	2.88E+03	1.17E+02
2	92.40	90 -	97	4.69E+02	119.57	1.98E+03	9.16E+01

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	3	104.73	103 -	108	8.28E+01	74.80	1.05E+03	5.96E+01
	4	129.25	127 -	133	7.31E+01	84.26	1.24E+03	6.78E+01
M	5	151.99	151 -	159	6.41E+01	40.16	4.09E+02	3.33E+01
m	6	154.44	151 -	159	8.37E+01	68.22	8.22E+02	4.71E+01
	7	185.91	180 -	191	3.26E+02	115.08	1.49E+03	8.98E+01
M	8	238.59	228 -	245	1.02E+03	79.44	5.49E+02	3.85E+01
m	9	241.69	228 -	245	2.57E+02	81.77	5.13E+02	3.72E+01
	10	269.98	268 -	273	9.14E+01	50.57	4.43E+02	3.85E+01
	11	278.14	275 -	282	5.76E+01	62.19	5.95E+02	4.96E+01
	12	295.16	292 -	299	2.83E+02	71.27	6.62E+02	5.17E+01
	13	300.55	299 -	304	6.42E+01	46.74	3.84E+02	3.61E+01
	14	327.95	325 -	331	6.06E+01	51.96	4.45E+02	4.08E+01
	15	338.77	335 -	343	2.28E+02	62.79	4.52E+02	4.53E+01
	16	352.04	348 -	357	5.72E+02	80.27	5.91E+02	5.30E+01
	17	403.93	400 -	408	5.02E+01	55.68	4.48E+02	4.43E+01
	18	452.33	449 -	456	5.29E+01	40.40	2.38E+02	3.10E+01
	19	463.27	458 -	468	1.10E+02	55.46	3.50E+02	4.22E+01
	20	510.80	505 -	518	2.42E+02	68.04	4.10E+02	4.97E+01
	21	557.40	555 -	560	2.30E+01	28.50	1.44E+02	2.21E+01
	22	583.48	578 -	589	3.53E+02	66.63	3.79E+02	4.52E+01
	23	609.59	606 -	615	3.77E+02	60.75	3.04E+02	3.84E+01
	24	665.23	661 -	669	3.10E+01	37.56	1.98E+02	2.95E+01
M	25	720.78	716 -	731	2.67E+01	30.43	1.42E+02	1.96E+01
m	26	727.47	716 -	731	9.31E+01	34.03	1.45E+02	1.98E+01
	27	786.43	784 -	789	2.42E+01	24.96	1.06E+02	1.89E+01
	28	795.39	791 -	800	7.05E+01	38.39	1.71E+02	2.84E+01
	29	861.30	858 -	865	2.75E+01	32.74	1.61E+02	2.55E+01
	30	911.31	905 -	914	2.28E+02	46.29	1.78E+02	2.89E+01
M	31	965.31	960 -	972	5.62E+01	29.90	7.61E+01	1.43E+01
m	32	969.27	960 -	972	1.40E+02	32.83	8.54E+01	1.52E+01
	33	1120.73	1116 -	1125	8.10E+01	38.00	1.60E+02	2.75E+01
	34	1184.65	1181 -	1187	2.15E+01	25.04	9.89E+01	1.91E+01
	35	1238.96	1232 -	1246	6.89E+01	53.97	2.78E+02	4.22E+01
	36	1324.56	1321 -	1327	1.70E+01	17.87	4.61E+01	1.30E+01
	37	1376.37	1371 -	1379	3.04E+01	18.05	3.12E+01	1.17E+01
	38	1408.64	1404 -	1412	2.18E+01	20.27	5.05E+01	1.48E+01
	39	1421.95	1418 -	1425	1.77E+01	13.86	2.07E+01	9.06E+00
M	40	1461.27	1454 -	1475	1.15E+03	69.36	3.23E+01	9.34E+00
m	41	1465.50	1454 -	1475	4.86E+01	72.42	2.45E+01	8.14E+00
m	42	1471.77	1454 -	1475	1.30E+01	19.21	5.81E-01	1.25E+00
	43	1522.67	1516 -	1529	1.80E+01	21.21	4.20E+01	1.60E+01
	44	1549.04	1546 -	1551	7.75E+00	10.86	1.65E+01	7.67E+00
M	45	1588.14	1572 -	1597	1.95E+01	14.48	2.31E+01	7.90E+00
m	46	1593.93	1572 -	1597	2.30E+01	14.20	1.75E+01	6.87E+00
	47	1620.91	1614 -	1622	1.38E+01	14.33	2.45E+01	1.01E+01
	48	1663.25	1655 -	1669	3.05E+01	13.87	7.06E+00	6.90E+00
	49	1730.49	1725 -	1733	1.79E+01	10.01	4.25E+00	4.41E+00
	50	1750.82	1746 -	1753	1.03E+01	8.00	3.50E+00	3.94E+00
	51	1764.83	1758 -	1770	7.49E+01	21.60	2.02E+01	1.06E+01
	52	1779.66	1774 -	1781	8.91E+00	7.75	4.18E+00	4.06E+00
	53	1847.17	1842 -	1849	1.60E+01	9.38	3.94E+00	4.02E+00

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
54	1947.63	1944 -	1949	5.56E+00	7.35	6.89E+00	4.63E+00
55	2040.56	2036 -	2041	5.00E+00	4.47	0.00E+00	0.00E+00
56	2080.28	2075 -	2081	5.33E+00	7.78	7.33E+00	5.14E+00
57	2104.19	2097 -	2109	2.55E+01	12.58	7.00E+00	6.17E+00
58	2119.01	2114 -	2121	1.33E+01	8.72	3.47E+00	3.94E+00
59	2204.54	2199 -	2207	2.76E+01	15.13	1.88E+01	8.95E+00
60	2309.95	2305 -	2312	1.11E+01	9.38	5.86E+00	5.43E+00
61	2316.72	2313 -	2317	4.58E+00	5.50	2.83E+00	2.84E+00
62	2324.42	2319 -	2325	1.02E+01	7.76	3.67E+00	3.64E+00
63	2423.11	2418 -	2424	6.44E+00	6.65	3.13E+00	3.54E+00
64	2466.36	2462 -	2468	9.73E+00	7.50	2.55E+00	3.42E+00
65	2569.84	2564 -	2570	5.50E+00	6.34	3.00E+00	3.51E+00
66	2615.15	2609 -	2617	1.18E+02	22.37	4.74E+00	4.48E+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 : 8/23/2017 2:39:05PM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	76.24	72 -	81	76.83	1.30E+03	160.03	2.88E+03	.....
	2	92.40	90 -	97	92.97	4.69E+02	119.57	1.98E+03	GA-67
	3	104.73	103 -	108	105.29	8.28E+01	74.80	1.05E+03	EU-155
	4	129.25	127 -	133	129.79	7.31E+01	84.26	1.24E+03	.....
M	5	151.99	151 -	159	152.50	6.41E+01	40.16	4.09E+02	.....
m	6	154.44	151 -	159	154.95	8.37E+01	68.22	8.22E+02	.....
	7	185.91	180 -	191	186.39	3.26E+02	115.08	1.49E+03	RA-226
M	8	238.59	228 -	245	239.02	1.02E+03	79.44	5.49E+02	PB-212
m	9	241.69	228 -	245	242.11	2.57E+02	81.77	5.13E+02	RA-224
	10	269.98	268 -	273	270.38	9.14E+01	50.57	4.43E+02	.....
	11	278.14	275 -	282	278.52	5.76E+01	62.19	5.95E+02	CM-243
									NP-239

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	12	295.16	292 -	299	295.53	2.83E+02	71.27	6.62E+02	PB-214
	13	300.55	299 -	304	300.91	6.42E+01	46.74	3.84E+02	GA-67
									PB-212
									BI-210M
	14	327.95	325 -	331	328.28	6.06E+01	51.96	4.45E+02	LA-140
	15	338.77	335 -	343	339.09	2.28E+02	62.79	4.52E+02	AC-228
	16	352.04	348 -	357	352.35	5.72E+02	80.27	5.91E+02	PB-214
	17	403.93	400 -	408	404.19	5.02E+01	55.68	4.48E+02	PB-211
	18	452.33	449 -	456	452.54	5.29E+01	40.40	2.38E+02	.....
	19	463.27	458 -	468	463.46	1.10E+02	55.46	3.50E+02	SB-125
	20	510.80	505 -	518	510.95	2.42E+02	68.04	4.10E+02	.....
	21	557.40	555 -	560	557.50	2.30E+01	28.50	1.44E+02	.....
	22	583.48	578 -	589	583.56	3.53E+02	66.63	3.79E+02	TL-208
	23	609.59	606 -	615	609.64	3.77E+02	60.75	3.04E+02	BI-214
	24	665.23	661 -	669	665.22	3.10E+01	37.56	1.98E+02	CE-143
M	25	720.78	716 -	731	720.72	2.67E+01	30.43	1.42E+02	SB-126
m	26	727.47	716 -	731	727.40	9.31E+01	34.03	1.45E+02	BI-212
	27	786.43	784 -	789	786.31	2.42E+01	24.96	1.06E+02	.....
	28	795.39	791 -	800	795.26	7.05E+01	38.39	1.71E+02	CS-134
	29	861.30	858 -	865	861.10	2.75E+01	32.74	1.61E+02	TL-208
	30	911.31	905 -	914	911.06	2.28E+02	46.29	1.78E+02	AC-228
									TL-204
M	31	965.31	960 -	972	965.01	5.62E+01	29.90	7.61E+01	.....
m	32	969.27	960 -	972	968.96	1.40E+02	32.83	8.54E+01	AC-228
	33	1120.73	1116 -	1125	1120.27	8.10E+01	38.00	1.60E+02	SC-46
									BI-214
									TA-182
	34	1184.65	1181 -	1187	1184.13	2.15E+01	25.04	9.89E+01	.....
	35	1238.96	1232 -	1246	1238.38	6.89E+01	53.97	2.78E+02	CO-56
	36	1324.56	1321 -	1327	1323.90	1.70E+01	17.87	4.61E+01	.....
	37	1376.37	1371 -	1379	1375.66	3.04E+01	18.05	3.12E+01	.....
	38	1408.64	1404 -	1412	1407.90	2.18E+01	20.27	5.05E+01	EU-152
	39	1421.95	1418 -	1425	1421.19	1.77E+01	13.86	2.07E+01	.....
M	40	1461.27	1454 -	1475	1460.47	1.15E+03	69.36	3.23E+01	K-40
m	41	1465.50	1454 -	1475	1464.70	4.86E+01	72.42	2.45E+01	.....
m	42	1471.77	1454 -	1475	1470.97	1.30E+01	19.21	5.81E-01	.....
	43	1522.67	1516 -	1529	1521.81	1.80E+01	21.21	4.20E+01	.....
	44	1549.04	1546 -	1551	1548.16	7.75E+00	10.86	1.65E+01	.....
M	45	1588.14	1572 -	1597	1587.22	1.95E+01	14.48	2.31E+01	.....
m	46	1593.93	1572 -	1597	1593.01	2.30E+01	14.20	1.75E+01	.....
	47	1620.91	1614 -	1622	1619.96	1.38E+01	14.33	2.45E+01	BI-212
	48	1663.25	1655 -	1669	1662.26	3.05E+01	13.87	7.06E+00	.....
	49	1730.49	1725 -	1733	1729.43	1.79E+01	10.01	4.25E+00	.....
	50	1750.82	1746 -	1753	1749.75	1.03E+01	8.00	3.50E+00	.....
	51	1764.83	1758 -	1770	1763.74	7.49E+01	21.60	2.02E+01	BI-214
	52	1779.66	1774 -	1781	1778.55	8.91E+00	7.75	4.18E+00	.....
	53	1847.17	1842 -	1849	1846.00	1.60E+01	9.38	3.94E+00	.....
	54	1947.63	1944 -	1949	1946.36	5.56E+00	7.35	6.89E+00	.....
	55	2040.56	2036 -	2041	2039.20	5.00E+00	4.47	0.00E+00	.....
	56	2080.28	2075 -	2081	2078.88	5.33E+00	7.78	7.33E+00	.....
	57	2104.19	2097 -	2109	2102.77	2.55E+01	12.58	7.00E+00	.....
	58	2119.01	2114 -	2121	2117.58	1.33E+01	8.72	3.47E+00	.....
	59	2204.54	2199 -	2207	2203.03	2.76E+01	15.13	1.88E+01	BI-214
	60	2309.95	2305 -	2312	2308.33	1.11E+01	9.38	5.86E+00	.....

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
61	2316.72	2313 -	2317	2315.10	4.58E+00	5.50	2.83E+00	.....
62	2324.42	2319 -	2325	2322.79	1.02E+01	7.76	3.67E+00	.....
63	2423.11	2418 -	2424	2421.38	6.44E+00	6.65	3.13E+00	.....
64	2466.36	2462 -	2468	2464.60	9.73E+00	7.50	2.55E+00	.....
65	2569.84	2564 -	2570	2567.98	5.50E+00	6.34	3.00E+00	.....
66	2615.15	2609 -	2617	2613.24	1.18E+02	22.37	4.74E+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 : 8/23/2017 2:39:05PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.24	1.30E+03	160.03	2.75E-02	2.39E-03
	2	92.40	4.69E+02	119.57	2.73E-02	2.45E-03
	3	104.73	8.28E+01	74.80	2.68E-02	2.25E-03
	4	129.25	7.31E+01	84.26	2.53E-02	1.93E-03
M	5	151.99	6.41E+01	40.16	2.39E-02	1.81E-03
m	6	154.44	8.37E+01	68.22	2.37E-02	1.80E-03
	7	185.91	3.26E+02	115.08	2.17E-02	1.68E-03
M	8	238.59	1.02E+03	79.44	1.89E-02	1.53E-03
m	9	241.69	2.57E+02	81.77	1.87E-02	1.52E-03
	10	269.98	9.14E+01	50.57	1.74E-02	1.44E-03
	11	278.14	5.76E+01	62.19	1.71E-02	1.41E-03
	12	295.16	2.83E+02	71.27	1.64E-02	1.37E-03
	13	300.55	6.42E+01	46.74	1.62E-02	1.36E-03
	14	327.95	6.06E+01	51.96	1.53E-02	1.29E-03
	15	338.77	2.28E+02	62.79	1.49E-02	1.27E-03
	16	352.04	5.72E+02	80.27	1.45E-02	1.24E-03
	17	403.93	5.02E+01	55.68	1.32E-02	1.14E-03
	18	452.33	5.29E+01	40.40	1.21E-02	1.11E-03
	19	463.27	1.10E+02	55.46	1.19E-02	1.10E-03
	20	510.80	2.42E+02	68.04	1.10E-02	1.07E-03
	21	557.40	2.30E+01	28.50	1.03E-02	1.04E-03
	22	583.48	3.53E+02	66.63	9.96E-03	1.02E-03
	23	609.59	3.77E+02	60.75	9.63E-03	1.01E-03
	24	665.23	3.10E+01	37.56	9.01E-03	9.66E-04

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	25	720.78	2.67E+01	30.43	8.47E-03	8.78E-04
m	26	727.47	9.31E+01	34.03	8.41E-03	8.67E-04
	27	786.43	2.42E+01	24.96	7.92E-03	7.74E-04
	28	795.39	7.05E+01	38.39	7.85E-03	7.59E-04
	29	861.30	2.75E+01	32.74	7.39E-03	6.55E-04
	30	911.31	2.28E+02	46.29	7.09E-03	5.91E-04
M	31	965.31	5.62E+01	29.90	6.79E-03	5.71E-04
m	32	969.27	1.40E+02	32.83	6.76E-03	5.69E-04
	33	1120.73	8.10E+01	38.00	6.07E-03	5.11E-04
	34	1184.65	2.15E+01	25.04	5.83E-03	4.88E-04
	35	1238.96	6.89E+01	53.97	5.64E-03	4.76E-04
	36	1324.56	1.70E+01	17.87	5.37E-03	4.56E-04
	37	1376.37	3.04E+01	18.05	5.23E-03	4.44E-04
	38	1408.64	2.18E+01	20.27	5.14E-03	4.37E-04
	39	1421.95	1.77E+01	13.86	5.10E-03	4.34E-04
M	40	1461.27	1.15E+03	69.36	5.00E-03	4.25E-04
m	41	1465.50	4.86E+01	72.42	4.99E-03	4.24E-04
m	42	1471.77	1.30E+01	19.21	4.98E-03	4.22E-04
	43	1522.67	1.80E+01	21.21	4.86E-03	4.10E-04
	44	1549.04	7.75E+00	10.86	4.80E-03	4.04E-04
M	45	1588.14	1.95E+01	14.48	4.72E-03	3.95E-04
m	46	1593.93	2.30E+01	14.20	4.70E-03	3.94E-04
	47	1620.91	1.38E+01	14.33	4.65E-03	3.88E-04
	48	1663.25	3.05E+01	13.87	4.56E-03	3.78E-04
	49	1730.49	1.79E+01	10.01	4.44E-03	3.62E-04
	50	1750.82	1.03E+01	8.00	4.40E-03	3.58E-04
	51	1764.83	7.49E+01	21.60	4.37E-03	3.54E-04
	52	1779.66	8.91E+00	7.75	4.35E-03	3.51E-04
	53	1847.17	1.60E+01	9.38	4.24E-03	3.38E-04
	54	1947.63	5.56E+00	7.35	4.08E-03	3.38E-04
	55	2040.56	5.00E+00	4.47	3.95E-03	3.38E-04
	56	2080.28	5.33E+00	7.78	3.89E-03	3.38E-04
	57	2104.19	2.55E+01	12.58	3.86E-03	3.38E-04
	58	2119.01	1.33E+01	8.72	3.84E-03	3.38E-04
	59	2204.54	2.76E+01	15.13	3.74E-03	3.38E-04
	60	2309.95	1.11E+01	9.38	3.61E-03	3.38E-04
	61	2316.72	4.58E+00	5.50	3.61E-03	3.38E-04
	62	2324.42	1.02E+01	7.76	3.60E-03	3.38E-04
	63	2423.11	6.44E+00	6.65	3.49E-03	3.38E-04
	64	2466.36	9.73E+00	7.50	3.45E-03	3.38E-04
	65	2569.84	5.50E+00	6.34	3.35E-03	3.38E-04
	66	2615.15	1.18E+02	22.37	3.31E-03	3.38E-04

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

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/23/2017 2:39:05PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.24	1.30E+03	160.03			1.30E+03	1.60E+02
	2	92.40	4.69E+02	119.57	1.38E+02	1.72E+01	3.31E+02	1.21E+02
	3	104.73	8.28E+01	74.80			8.28E+01	7.48E+01
	4	129.25	7.31E+01	84.26			7.31E+01	8.43E+01
M	5	151.99	6.41E+01	40.16			6.41E+01	4.02E+01
m	6	154.44	8.37E+01	68.22			8.37E+01	6.82E+01
	7	185.91	3.26E+02	115.08	5.22E+01	7.59E+00	2.74E+02	1.15E+02
M	8	238.59	1.02E+03	79.44	2.13E+01	6.33E+00	9.94E+02	7.97E+01
m	9	241.69	2.57E+02	81.77			2.57E+02	8.18E+01
	10	269.98	9.14E+01	50.57	1.23E+00	4.98E+00	9.01E+01	5.08E+01
	11	278.14	5.76E+01	62.19			5.76E+01	6.22E+01
	12	295.16	2.83E+02	71.27			2.83E+02	7.13E+01
	13	300.55	6.42E+01	46.74			6.42E+01	4.67E+01
	14	327.95	6.06E+01	51.96			6.06E+01	5.20E+01
	15	338.77	2.28E+02	62.79			2.28E+02	6.28E+01
	16	352.04	5.72E+02	80.27	5.79E+00	4.49E+00	5.66E+02	8.04E+01
	17	403.93	5.02E+01	55.68			5.02E+01	5.57E+01
	18	452.33	5.29E+01	40.40			5.29E+01	4.04E+01
	19	463.27	1.10E+02	55.46			1.10E+02	5.55E+01
	20	510.80	2.42E+02	68.04	7.28E+01	5.30E+00	1.69E+02	6.83E+01
	21	557.40	2.30E+01	28.50			2.30E+01	2.85E+01
	22	583.48	3.53E+02	66.63	2.72E+00	3.05E+00	3.51E+02	6.67E+01
	23	609.59	3.77E+02	60.75	6.35E+00	4.02E+00	3.70E+02	6.09E+01
	24	665.23	3.10E+01	37.56			3.10E+01	3.76E+01
M	25	720.78	2.67E+01	30.43			2.67E+01	3.04E+01
m	26	727.47	9.31E+01	34.03			9.31E+01	3.40E+01
	27	786.43	2.42E+01	24.96			2.42E+01	2.50E+01
	28	795.39	7.05E+01	38.39			7.05E+01	3.84E+01
	29	861.30	2.75E+01	32.74			2.75E+01	3.27E+01
	30	911.31	2.28E+02	46.29	5.31E+00	3.00E+00	2.22E+02	4.64E+01
M	31	965.31	5.62E+01	29.90			5.62E+01	2.99E+01
m	32	969.27	1.40E+02	32.83			1.40E+02	3.28E+01
	33	1120.73	8.10E+01	38.00			8.10E+01	3.80E+01
	34	1184.65	2.15E+01	25.04			2.15E+01	2.50E+01
	35	1238.96	6.89E+01	53.97			6.89E+01	5.40E+01
	36	1324.56	1.70E+01	17.87			1.70E+01	1.79E+01
	37	1376.37	3.04E+01	18.05			3.04E+01	1.80E+01
	38	1408.64	2.18E+01	20.27			2.18E+01	2.03E+01
	39	1421.95	1.77E+01	13.86			1.77E+01	1.39E+01
M	40	1461.27	1.15E+03	69.36	8.09E+00	2.23E+00	1.14E+03	6.94E+01
m	41	1465.50	4.86E+01	72.42			4.86E+01	7.24E+01
m	42	1471.77	1.30E+01	19.21			1.30E+01	1.92E+01
	43	1522.67	1.80E+01	21.21			1.80E+01	2.12E+01
	44	1549.04	7.75E+00	10.86			7.75E+00	1.09E+01

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	45	1588.14	1.95E+01	14.48			1.95E+01	1.45E+01
m	46	1593.93	2.30E+01	14.20			2.30E+01	1.42E+01
	47	1620.91	1.38E+01	14.33			1.38E+01	1.43E+01
	48	1663.25	3.05E+01	13.87			3.05E+01	1.39E+01
	49	1730.49	1.79E+01	10.01			1.79E+01	1.00E+01
	50	1750.82	1.03E+01	8.00			1.03E+01	8.00E+00
	51	1764.83	7.49E+01	21.60			7.49E+01	2.16E+01
	52	1779.66	8.91E+00	7.75			8.91E+00	7.75E+00
	53	1847.17	1.60E+01	9.38	1.22E+00	1.50E+00	1.48E+01	9.50E+00
	54	1947.63	5.56E+00	7.35			5.56E+00	7.35E+00
	55	2040.56	5.00E+00	4.47			5.00E+00	4.47E+00
	56	2080.28	5.33E+00	7.78			5.33E+00	7.78E+00
	57	2104.19	2.55E+01	12.58			2.55E+01	1.26E+01
	58	2119.01	1.33E+01	8.72			1.33E+01	8.72E+00
	59	2204.54	2.76E+01	15.13			2.76E+01	1.51E+01
	60	2309.95	1.11E+01	9.38			1.11E+01	9.38E+00
	61	2316.72	4.58E+00	5.50			4.58E+00	5.50E+00
	62	2324.42	1.02E+01	7.76			1.02E+01	7.76E+00
	63	2423.11	6.44E+00	6.65			6.44E+00	6.65E+00
	64	2466.36	9.73E+00	7.50			9.73E+00	7.50E+00
	65	2569.84	5.50E+00	6.34			5.50E+00	6.34E+00
	66	2615.15	1.18E+02	22.37	5.63E+00	1.38E+00	1.12E+02	2.24E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 2:39:05PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.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	76.24	1.30E+03	160.03			1.30E+03	1.60E+02
	2	92.40	4.69E+02	119.57	1.38E+02	1.72E+01	3.31E+02	1.21E+02
	3	104.73	8.28E+01	74.80			8.28E+01	7.48E+01
	4	129.25	7.31E+01	84.26			7.31E+01	8.43E+01
M	5	151.99	6.41E+01	40.16			6.41E+01	4.02E+01
m	6	154.44	8.37E+01	68.22			8.37E+01	6.82E+01

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	7	185.91	3.26E+02	115.08	5.22E+01	7.59E+00	2.74E+02	1.15E+02
M	8	238.59	1.02E+03	79.44	2.13E+01	6.33E+00	9.94E+02	7.97E+01
m	9	241.69	2.57E+02	81.77			2.57E+02	8.18E+01
	10	269.98	9.14E+01	50.57	1.23E+00	4.98E+00	9.01E+01	5.08E+01
	11	278.14	5.76E+01	62.19			5.76E+01	6.22E+01
	12	295.16	2.83E+02	71.27			2.83E+02	7.13E+01
	13	300.55	6.42E+01	46.74			6.42E+01	4.67E+01
	14	327.95	6.06E+01	51.96			6.06E+01	5.20E+01
	15	338.77	2.28E+02	62.79			2.28E+02	6.28E+01
	16	352.04	5.72E+02	80.27	5.79E+00	4.49E+00	5.66E+02	8.04E+01
	17	403.93	5.02E+01	55.68			5.02E+01	5.57E+01
	18	452.33	5.29E+01	40.40			5.29E+01	4.04E+01
	19	463.27	1.10E+02	55.46			1.10E+02	5.55E+01
	20	510.80	2.42E+02	68.04	7.28E+01	5.30E+00	1.69E+02	6.83E+01
	21	557.40	2.30E+01	28.50			2.30E+01	2.85E+01
	22	583.48	3.53E+02	66.63	2.72E+00	3.05E+00	3.51E+02	6.67E+01
	23	609.59	3.77E+02	60.75	6.35E+00	4.02E+00	3.70E+02	6.09E+01
	24	665.23	3.10E+01	37.56			3.10E+01	3.76E+01
M	25	720.78	2.67E+01	30.43			2.67E+01	3.04E+01
m	26	727.47	9.31E+01	34.03			9.31E+01	3.40E+01
	27	786.43	2.42E+01	24.96			2.42E+01	2.50E+01
	28	795.39	7.05E+01	38.39			7.05E+01	3.84E+01
	29	861.30	2.75E+01	32.74			2.75E+01	3.27E+01
	30	911.31	2.28E+02	46.29	5.31E+00	3.00E+00	2.22E+02	4.64E+01
M	31	965.31	5.62E+01	29.90			5.62E+01	2.99E+01
m	32	969.27	1.40E+02	32.83			1.40E+02	3.28E+01
	33	1120.73	8.10E+01	38.00			8.10E+01	3.80E+01
	34	1184.65	2.15E+01	25.04			2.15E+01	2.50E+01
	35	1238.96	6.89E+01	53.97			6.89E+01	5.40E+01
	36	1324.56	1.70E+01	17.87			1.70E+01	1.79E+01
	37	1376.37	3.04E+01	18.05			3.04E+01	1.80E+01
	38	1408.64	2.18E+01	20.27			2.18E+01	2.03E+01
	39	1421.95	1.77E+01	13.86			1.77E+01	1.39E+01
M	40	1461.27	1.15E+03	69.36	8.09E+00	2.23E+00	1.14E+03	6.94E+01
m	41	1465.50	4.86E+01	72.42			4.86E+01	7.24E+01
m	42	1471.77	1.30E+01	19.21			1.30E+01	1.92E+01
	43	1522.67	1.80E+01	21.21			1.80E+01	2.12E+01
	44	1549.04	7.75E+00	10.86			7.75E+00	1.09E+01
M	45	1588.14	1.95E+01	14.48			1.95E+01	1.45E+01
m	46	1593.93	2.30E+01	14.20			2.30E+01	1.42E+01
	47	1620.91	1.38E+01	14.33			1.38E+01	1.43E+01
	48	1663.25	3.05E+01	13.87			3.05E+01	1.39E+01
	49	1730.49	1.79E+01	10.01			1.79E+01	1.00E+01
	50	1750.82	1.03E+01	8.00			1.03E+01	8.00E+00
	51	1764.83	7.49E+01	21.60			7.49E+01	2.16E+01
	52	1779.66	8.91E+00	7.75			8.91E+00	7.75E+00
	53	1847.17	1.60E+01	9.38	1.22E+00	1.50E+00	1.48E+01	9.50E+00
	54	1947.63	5.56E+00	7.35			5.56E+00	7.35E+00
	55	2040.56	5.00E+00	4.47			5.00E+00	4.47E+00
	56	2080.28	5.33E+00	7.78			5.33E+00	7.78E+00
	57	2104.19	2.55E+01	12.58			2.55E+01	1.26E+01
	58	2119.01	1.33E+01	8.72			1.33E+01	8.72E+00
	59	2204.54	2.76E+01	15.13			2.76E+01	1.51E+01
	60	2309.95	1.11E+01	9.38			1.11E+01	9.38E+00

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
61	2316.72	4.58E+00	5.50			4.58E+00	5.50E+00
62	2324.42	1.02E+01	7.76			1.02E+01	7.76E+00
63	2423.11	6.44E+00	6.65			6.44E+00	6.65E+00
64	2466.36	9.73E+00	7.50			9.73E+00	7.50E+00
65	2569.84	5.50E+00	6.34			5.50E+00	6.34E+00
66	2615.15	1.18E+02	22.37	5.63E+00	1.38E+00	1.12E+02	2.24E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.967	1460.81	*	10.67	2.40E+01	2.56E+00
TL-208	0.964	583.14	*	30.22	1.31E+00	2.84E-01
		860.37	*	4.48	9.34E-01	1.12E+00
		2614.66	*	35.85	1.06E+00	2.39E-01
BI-212	0.986	727.17	*	11.80	1.06E+00	4.01E-01
		1620.62	*	2.75	1.21E+00	1.27E+00
PB-212	0.997	238.63	*	44.60	1.33E+00	1.52E-01
		300.09	*	3.41	1.31E+00	9.57E-01
BI-214	0.983	609.31	*	46.30	9.36E-01	1.82E-01
		1120.29	*	15.10	9.95E-01	4.74E-01
		1764.49	*	15.80	1.22E+00	3.66E-01
		2204.22	*	4.98	1.67E+00	9.29E-01
PB-214	0.998	295.21	*	19.19	1.01E+00	2.68E-01
		351.92	*	37.19	1.18E+00	1.95E-01
RA-224	0.923	240.98	*	3.95	3.92E+00	1.29E+00
RA-226	0.985	186.21	*	3.28	4.33E+00	8.13E+00
AC-228	0.988	338.32	*	11.40	1.51E+00	4.34E-01
		911.07	*	27.70	1.28E+00	2.87E-01
		969.11	*	16.60	1.40E+00	3.50E-01

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

* = 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 : 8/23/2017 2:39:05PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.24	3.61380E-01	6.15		
	2	92.40	9.19595E-02	18.24	Tol.	GA-67
	3	104.73	2.29919E-02	45.18	Tol.	EU-155
	4	129.25	2.03116E-02	57.62		
M	5	151.99	1.78049E-02	31.32		
m	6	154.44	2.32394E-02	40.77		
	10	269.98	2.50385E-02	28.18		
	11	278.14	1.59879E-02	54.03	Tol.	NP-239
						CM-243
	14	327.95	1.68350E-02	42.87	Tol.	LA-140
	17	403.93	1.39573E-02	55.41	Tol.	PB-211
	18	452.33	1.47053E-02	38.16		
	19	463.27	3.05049E-02	25.25	Tol.	SB-125
	20	510.80	4.70267E-02	20.16		
	21	557.40	6.38889E-03	61.95		
	24	665.23	8.61111E-03	60.59	Tol.	CE-143
M	25	720.78	7.41061E-03	57.04	Tol.	SB-126
	27	786.43	6.73160E-03	51.50		
	28	795.39	1.95762E-02	27.24	Sum	
M	31	965.31	1.56068E-02	26.60	Sum	
	34	1184.65	5.98005E-03	58.16		
	35	1238.96	1.91313E-02	39.18		
	36	1324.56	4.70833E-03	52.71		
	37	1376.37	8.43901E-03	29.70		
	38	1408.64	6.04314E-03	46.58	Tol.	EU-152
	39	1421.95	4.90575E-03	39.23	Sum	
m	41	1465.50	1.35002E-02	74.50		
m	42	1471.77	3.62254E-03	73.65	Sum	
	43	1522.67	5.00000E-03	58.93		
	44	1549.04	2.15278E-03	70.08		
M	45	1588.14	5.40949E-03	37.18	Sum	
m	46	1593.93	6.39618E-03	30.84	D-Esc	
	48	1663.25	8.46405E-03	22.75		
	49	1730.49	4.96528E-03	28.01	Sum	

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
50	1750.82	2.84722E-03	39.02		
52	1779.66	2.47475E-03	43.47		
53	1847.17	4.11205E-03	32.09		
54	1947.63	1.54321E-03	66.14		
55	2040.56	1.38889E-03	44.72		
56	2080.28	1.48148E-03	72.92		
57	2104.19	7.08333E-03	24.67	S-Esc	
58	2119.01	3.68519E-03	32.86		
60	2309.95	3.07540E-03	42.37		
61	2316.72	1.27315E-03	60.00		
62	2324.42	2.82407E-03	38.17		
63	2423.11	1.78819E-03	51.67		
64	2466.36	2.70202E-03	38.55		
65	2569.84	1.52778E-03	57.68		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.96	1460.81	*	10.67	2.40E+01	2.56E+00
TL-208	0.96	583.14	*	30.22	1.31E+00	2.84E-01
		860.37	*	4.48	9.34E-01	1.12E+00
		2614.66	*	35.85	1.06E+00	2.39E-01
BI-212	0.98	727.17	*	11.80	1.06E+00	4.01E-01
		1620.62	*	2.75	1.21E+00	1.27E+00
PB-212	0.99	238.63	*	44.60	1.33E+00	1.52E-01
		300.09	*	3.41	1.31E+00	9.57E-01
BI-214	0.98	609.31	*	46.30	9.36E-01	1.82E-01
		1120.29	*	15.10	9.95E-01	4.74E-01
		1764.49	*	15.80	1.22E+00	3.66E-01
		2204.22	*	4.98	1.67E+00	9.29E-01
PB-214	0.99	295.21	*	19.19	1.01E+00	2.68E-01
		351.92	*	37.19	1.18E+00	1.95E-01

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-224	0.92	240.98	*	3.95	3.92E+00	1.29E+00
RA-226	0.98	186.21	*	3.28	4.33E+00	8.13E+00
AC-228	0.98	338.32	*	11.40	1.51E+00	4.34E-01
		911.07	*	27.70	1.28E+00	2.87E-01
		969.11	*	16.60	1.40E+00	3.50E-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	0.967	2.40E+01	2.56E+00	
TL-208	0.964	1.16E+00	1.80E-01	
BI-212	0.986	1.07E+00	3.83E-01	
PB-212	0.997	1.33E+00	1.50E-01	
BI-214	0.983	1.01E+00	1.52E-01	
PB-214	0.998	1.12E+00	1.58E-01	
RA-224	0.923	3.92E+00	1.29E+00	
RA-226	0.985	4.33E+00	8.13E+00	
AC-228	0.988	1.36E+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 1707090-07

HTC-A06-S001-3036-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 2:39:05PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.24	3.61380E-01	6.15		
	2	92.40	9.19595E-02	18.24	Tol.	GA-67
	3	104.73	2.29919E-02	45.18	Tol.	EU-155
	4	129.25	2.03116E-02	57.62		
M	5	151.99	1.78049E-02	31.32		
m	6	154.44	2.32394E-02	40.77		
	10	269.98	2.50385E-02	28.18		
	11	278.14	1.59879E-02	54.03	Tol.	NP-239
						CM-243
	14	327.95	1.68350E-02	42.87	Tol.	LA-140
	17	403.93	1.39573E-02	55.41	Tol.	PB-211
	18	452.33	1.47053E-02	38.16		
	19	463.27	3.05049E-02	25.25	Tol.	SB-125
	20	510.80	4.70267E-02	20.16		
	21	557.40	6.38889E-03	61.95		
	24	665.23	8.61111E-03	60.59	Tol.	CE-143
M	25	720.78	7.41061E-03	57.04	Tol.	SB-126
	27	786.43	6.73160E-03	51.50		
	28	795.39	1.95762E-02	27.24	Sum	
M	31	965.31	1.56068E-02	26.60	Sum	
	34	1184.65	5.98005E-03	58.16		
	35	1238.96	1.91313E-02	39.18		
	36	1324.56	4.70833E-03	52.71		
	37	1376.37	8.43901E-03	29.70		
	38	1408.64	6.04314E-03	46.58	Tol.	EU-152
	39	1421.95	4.90575E-03	39.23	Sum	
m	41	1465.50	1.35002E-02	74.50		
m	42	1471.77	3.62254E-03	73.65	Sum	
	43	1522.67	5.00000E-03	58.93		
	44	1549.04	2.15278E-03	70.08		
M	45	1588.14	5.40949E-03	37.18	Sum	
m	46	1593.93	6.39618E-03	30.84	D-Esc	
	48	1663.25	8.46405E-03	22.75		
	49	1730.49	4.96528E-03	28.01	Sum	
	50	1750.82	2.84722E-03	39.02		

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
52	1779.66	2.47475E-03	43.47		
53	1847.17	4.11205E-03	32.09		
54	1947.63	1.54321E-03	66.14		
55	2040.56	1.38889E-03	44.72		
56	2080.28	1.48148E-03	72.92		
57	2104.19	7.08333E-03	24.67	S-Esc	
58	2119.01	3.68519E-03	32.86		
60	2309.95	3.07540E-03	42.37		
61	2316.72	1.27315E-03	60.00		
62	2324.42	2.82407E-03	38.17		
63	2423.11	1.78819E-03	51.67		
64	2466.36	2.70202E-03	38.55		
65	2569.84	1.52778E-03	57.68		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-5.03E-01	1.74E+00	1.74E+00
+	NA-22	1274.54		99.94	2.64E-04	8.09E-02	8.09E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	1.54E-02	4.17E-02	4.17E-02
+	K-40	1460.81	*	10.67	2.40E+01	1.25E+00	1.25E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-5.09E-03	5.88E-02	5.88E-02
		78.34		96.00	1.84E-01		7.65E-02
+	SC-46	889.25		99.98	-3.79E-02	1.37E-01	1.37E-01
		1120.51		99.99	3.37E-01		2.40E-01
+	V-48	983.52		99.98	1.46E+00	4.60E+00	5.09E+00
		1312.10		97.50	-1.73E+00		4.60E+00
+	CR-51	320.08		9.83	-2.49E-01	6.17E+00	6.17E+00
+	MN-54	834.83		99.97	-1.44E-02	8.45E-02	8.45E-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-56	846.75	99.96	5.13E-02	1.53E-01	1.53E-01
		1037.75	14.03	-2.69E-01		1.15E+00
		1238.25	67.00	4.44E-01		3.89E-01
		1771.40	15.51	6.64E-03		5.98E-01
		2598.48	16.90	2.13E-01		7.22E-01
+	CO-57	122.06	85.51	3.19E-03	6.73E-02	6.73E-02
		136.48	10.60	-2.14E-02		5.58E-01
+	CO-58	810.76	99.40	-3.11E-02	1.61E-01	1.61E-01
+	FE-59	1099.22	56.50	-3.17E-01	5.43E-01	5.43E-01
		1291.56	43.20	-1.48E-01		7.47E-01
+	CO-60	1173.22	100.00	6.41E-04	7.17E-02	8.60E-02
		1332.49	100.00	2.04E-02		7.17E-02
+	ZN-65	1115.52	50.75	-3.39E-02	1.77E-01	1.77E-01
+	GA-67	93.31	35.70	5.55E+08	2.48E+08	2.48E+08
		208.95	2.24	2.28E+09		3.45E+09
		300.22	16.00	-1.24E+09		5.13E+08
+	SE-75	121.11	16.70	-3.77E-02	1.37E-01	4.71E-01
		136.00	59.20	-5.28E-03		1.37E-01
		264.65	59.80	-5.38E-02		1.47E-01
		279.53	25.20	9.05E-02		3.83E-01
		400.65	11.40	-5.92E-02		9.13E-01
+	RB-82	776.52	13.00	-1.76E+00	7.25E+00	7.25E+00
+	RB-83	520.41	46.00	-8.44E-03	2.75E-01	2.75E-01
		529.64	30.30	-9.75E-02		4.10E-01
		552.65	16.40	-4.93E-02		7.43E-01
+	KR-85	513.99	0.43	2.48E+01	1.89E+01	1.89E+01
+	SR-85	513.99	99.27	3.08E-01	2.35E-01	2.35E-01
+	Y-88	898.02	93.40	-4.93E-02	7.16E-02	1.24E-01
		1836.01	99.38	-5.08E-03		7.16E-02
+	MO-93	263.06	56.72	2.22E-02	4.22E-02	9.28E-02
		684.67	99.68	1.68E-02		6.08E-02
		1477.11	99.08	1.89E-03		4.22E-02
+	NB-93M	16.57	9.43	-1.40E-01	4.81E-01	4.81E-01
+	NB-94	702.63	100.00	5.42E-03	6.05E-02	6.05E-02
		871.10	100.00	-3.13E-02		6.13E-02
+	NB-95	765.79	99.81	1.52E-01	5.09E-01	5.09E-01
+	NB-95M	235.69	25.00	-3.28E+08	4.57E+07	4.57E+07
+	ZR-95	724.18	43.70	-4.00E-01	3.51E-01	5.09E-01
		756.72	55.30	8.45E-02		3.51E-01
+	MO-99	181.06	6.20	-8.89E+10	3.37E+10	5.48E+10
		739.58	12.80	-6.49E+09		3.37E+10
		778.00	4.50	3.53E+09		1.00E+11
+	RU-103	497.08	89.00	1.22E-01	3.56E-01	3.56E-01
+	RU-106	621.84	9.80	1.83E-01	7.26E-01	7.26E-01
+	AG-108M	433.93	89.90	-3.23E-02	5.65E-02	5.65E-02
		614.37	90.40	3.46E-03		7.19E-02
		722.95	90.50	-1.81E-01		7.56E-02
+	CD-109	88.03	3.72	5.35E-01	1.91E+00	1.91E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AG-110M	657.75	93.14	2.52E-03	8.17E-02	8.17E-02
		677.61	10.53	-3.31E-01		6.74E-01
		706.67	16.46	-2.38E-02		4.51E-01
		763.93	21.98	-1.53E-01		3.98E-01
		884.67	71.63	3.53E-02		1.17E-01
		1384.27	23.94	8.38E-02		3.15E-01
+	CD-113M	263.70	0.02	-8.12E+01	2.25E+02	2.25E+02
+	SN-113	255.12	1.93	9.82E-02	1.50E-01	4.38E+00
		391.69	64.90	-5.40E-02		1.50E-01
+	TE123M	159.00	84.10	-1.15E-02	9.35E-02	9.35E-02
+	SB-124	602.71	97.87	7.57E-02	2.01E-01	2.01E-01
		645.85	7.26	9.85E-02		2.27E+00
		722.78	11.10	-4.63E+00		1.93E+00
		1691.02	49.00	-1.80E-02		2.53E-01
+	I-125	35.49	6.49	-8.74E-01	2.33E+00	2.33E+00
+	SB-125	176.33	6.89	1.60E-01	1.95E-01	7.26E-01
		427.89	29.33	7.12E-02		1.95E-01
		463.38	10.35	9.78E-01		6.97E-01
		600.56	17.80	1.87E-02		3.67E-01
		635.90	11.32	4.83E-02		5.38E-01
+	SB-126	414.70	83.30	-1.26E+01	1.47E+01	1.64E+01
		666.33	99.60	8.41E+00		1.63E+01
		695.00	99.60	-4.94E+00		1.47E+01
		720.50	53.80	1.45E+01		3.21E+01
+	SN-126	87.57	37.00	2.26E-02	1.62E-01	1.62E-01
+	SB-127	473.00	25.00	9.97E+06	9.56E+06	1.27E+07
		685.20	35.70	2.64E+06		9.56E+06
		783.80	14.70	2.24E+05		2.59E+07
+	I-129	29.78	57.00	-1.68E-03	9.39E-02	9.39E-02
		33.60	13.20	3.35E-02		3.81E-01
		39.58	7.52	-2.88E-02		6.38E-01
+	I-131	284.30	6.05	-1.05E+03	3.18E+02	4.31E+03
		364.48	81.20	-2.13E+01		3.18E+02
		636.97	7.26	-5.29E+02		3.92E+03
		722.89	1.80	-4.72E+04		1.97E+04
+	TE-132	49.72	13.10	-6.36E+08	7.89E+07	5.51E+08
		228.16	88.00	-3.02E+07		7.89E+07
+	BA-133	81.00	33.00	-5.56E-02	1.31E-01	1.60E-01
		302.84	17.80	1.08E-02		3.24E-01
		356.01	60.00	7.88E-03		1.31E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-2.36E+04	6.78E+04	6.78E+04
+	CS-134	563.23	8.38	7.27E-04	7.76E-02	7.41E-01
		569.32	15.43	-7.97E-02		4.21E-01
		604.70	97.60	2.48E-02		7.76E-02
		795.84	85.40	1.25E-01		1.03E-01
		801.93	8.73	1.90E-01		8.12E-01
+	CS-135	268.24	16.00	-1.66E-02	3.63E-01	3.63E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26

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		Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	@	I-135	1260.41	28.60	1.00E+26	1.00E+26	1.00E+26
	@		1678.03	9.54	1.00E+26		1.00E+26
+		CS-136	153.22	7.46	1.37E+02	1.06E+01	1.23E+02
			163.89	4.61	3.52E+01		1.87E+02
			176.55	13.56	1.42E+01		6.42E+01
			273.65	12.66	-3.63E+01		8.57E+01
			340.57	48.50	3.43E+01		2.69E+01
			818.50	99.70	-5.02E+00		1.06E+01
			1048.07	79.60	-5.00E+00		1.47E+01
			1235.34	19.70	3.03E+01		9.48E+01
+		CS-137	661.65	85.12	3.68E-04	7.28E-02	7.28E-02
+		LA-138	788.74	34.00	-1.11E-01	9.20E-02	1.89E-01
			1435.80	66.00	-1.18E-02		9.20E-02
+		CE-139	165.85	80.35	5.75E-02	9.72E-02	9.72E-02
+		BA-140	162.64	6.70	4.14E+01	4.97E+01	1.50E+02
			304.84	4.50	-5.87E+01		2.42E+02
			423.70	3.20	-1.63E+02		3.55E+02
			437.55	2.00	2.17E+02		5.91E+02
			537.32	25.00	-5.72E+00		4.97E+01
+		LA-140	328.77	20.50	4.66E+01	1.36E+01	6.36E+01
			487.03	45.50	1.34E+01		2.69E+01
			815.85	23.50	8.75E+00		5.45E+01
			1596.49	95.49	-5.43E-01		1.36E+01
+		CE-141	145.44	48.40	2.42E-01	7.83E-01	7.83E-01
+	@	CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26	42.00	1.00E+26		1.00E+26
	@		664.55	5.20	1.00E+26		1.00E+26
+		CE-144	133.54	10.80	-9.37E-02	5.31E-01	5.31E-01
+		PM-144	476.78	42.00	1.68E-02	6.93E-02	1.50E-01
			618.01	98.60	-1.45E-02		6.93E-02
			696.49	99.49	1.28E-02		7.25E-02
+		PM-145	36.85	21.70	-1.56E-01	1.23E-01	2.21E-01
			37.36	39.70	-9.80E-04		1.23E-01
			42.30	15.10	-2.53E-01		3.08E-01
			72.40	2.31	-4.21E+00		2.84E+00
+		PM-146	453.90	39.94	5.56E-02	1.46E-01	1.46E-01
			735.90	14.01	5.40E-02		4.45E-01
			747.13	13.10	-1.93E-01		4.49E-01
+		ND-147	91.11	28.90	2.64E+02	1.19E+02	1.19E+02
			531.02	13.10	-1.48E+01		2.27E+02
+		PM-149	285.90	3.10	-3.96E+12	5.23E+13	5.23E+13
+		EU-152	121.78	20.50	-1.75E-02	2.20E-01	2.20E-01
			244.69	5.40	7.34E-02		9.96E-01
			344.27	19.13	-1.31E-02		2.86E-01
			778.89	9.20	-8.78E-02		6.60E-01
			964.01	10.40	-1.35E+00		8.64E-01
			1085.78	7.22	-4.62E-01		8.98E-01
			1112.02	9.60	-1.44E-01		7.61E-01
			1407.95	14.94	3.38E-01		4.78E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	GD-153	97.43		31.30	8.49E-02	1.95E-01	1.95E-01
		103.18		22.20	5.52E-02		2.74E-01
+	EU-154	123.07		40.50	2.82E-02	1.15E-01	1.15E-01
		723.30		19.70	-8.50E-01		3.55E-01
		873.19		11.50	1.99E-01		5.95E-01
		996.32		10.30	-1.21E-01		6.43E-01
		1004.76		17.90	2.67E-01		4.17E-01
		1274.45		35.50	7.06E-04		2.16E-01
+	EU-155	86.50		30.90	6.11E-02	2.00E-01	2.00E-01
		105.30		20.70	1.59E-01		2.29E-01
+	EU-156	811.77		10.40	6.52E+00	5.43E+01	5.43E+01
		1153.47		7.20	-2.63E+01		9.65E+01
		1230.71		8.90	-2.00E+01		9.05E+01
+	HO-166M	184.41		72.60	1.20E-01	7.95E-02	7.95E-02
		280.45		29.60	-9.24E-03		1.81E-01
		410.94		11.10	3.01E-01		5.35E-01
		711.69		54.10	7.38E-03		1.00E-01
+	TM-171	66.72		0.14	-7.58E+01	4.30E+01	4.30E+01
+	HF-172	67.35		5.31	-9.98E-02	4.49E-01	1.15E+00
		125.81		11.30	1.27E-01		4.49E-01
+	LU-172	181.53		20.60	-1.07E+04	3.51E+03	6.57E+03
		900.72		29.81	8.76E+02		6.23E+03
		1093.66		62.50	1.88E+03		3.51E+03
+	LU-173	100.72		5.24	3.11E-01	3.20E-01	9.88E-01
		272.11		21.20	4.34E-02		3.20E-01
+	HF-175	343.40		84.00	-7.82E-03	1.72E-01	1.72E-01
+	LU-176	88.34		13.30	1.29E-01	5.30E-02	4.61E-01
		201.83		86.00	-3.55E-02		5.46E-02
		306.78		94.00	-4.82E-03		5.30E-02
+	HF-181	133.02		41.70	-9.64E-02	3.20E-01	5.46E-01
		345.85		17.20	-7.28E-02		1.61E+00
		482.03		82.80	1.65E-02		3.20E-01
+	TA-182	67.75		41.20	-2.12E-02	2.45E-01	2.45E-01
		1121.30		34.90	7.76E-01		5.52E-01
		1189.05		16.23	2.61E-01		9.13E-01
		1221.41		26.98	-3.55E-01		5.89E-01
		1231.02		11.44	-3.07E-01		1.39E+00
+	IR-192	308.46		29.68	4.79E-02	3.03E-01	4.23E-01
		468.07		48.10	3.50E-02		3.03E-01
+	HG-203	279.19		77.30	7.27E-02	3.07E-01	3.07E-01
+	TL-204	374.74		94.11	4.35E-02	5.97E-02	5.97E-02
		899.15		99.16	-7.64E-03		6.66E-02
		911.74		91.10	3.91E-01		1.49E-01
+	BI-207	569.67		97.72	3.43E-02	6.30E-02	6.30E-02
		1063.62		74.90	1.54E-02		9.84E-02
+	TL-208	583.14	*	30.22	1.31E+00	1.41E-01	3.50E-01
		860.37	*	4.48	9.34E-01		1.83E+00
		2614.66	*	35.85	1.06E+00		1.41E-01
+	BI-210M	262.00		45.00	-7.65E-03	1.16E-01	1.16E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-210M	300.00		23.00	-1.08E+00	1.16E-01	2.55E-01
+	PB-210	46.50		4.25	6.06E-01	1.22E+00	1.22E+00
+	PB-211	404.84		2.90	4.71E-01	2.10E+00	2.13E+00
		831.96		2.90	-1.95E+00		2.10E+00
+	BI-212	727.17	*	11.80	1.06E+00	1.04E+00	1.04E+00
		1620.62	*	2.75	1.21E+00		2.02E+00
+	PB-212	238.63	*	44.60	1.33E+00	3.06E-01	3.06E-01
		300.09	*	3.41	1.31E+00		1.52E+00
+	BI-214	609.31	*	46.30	9.36E-01	2.03E-01	2.03E-01
		1120.29	*	15.10	9.95E-01		7.10E-01
		1764.49	*	15.80	1.22E+00		3.91E-01
		2204.22	*	4.98	1.67E+00		1.25E+00
+	PB-214	295.21	*	19.19	1.01E+00	2.28E-01	3.79E-01
		351.92	*	37.19	1.18E+00		2.28E-01
+	RN-219	401.80		6.50	-1.99E-02	9.14E-01	9.14E-01
+	RA-223	323.87		3.88	2.82E-01	1.42E+00	1.42E+00
+	RA-224	240.98	*	3.95	3.92E+00	3.47E+00	3.47E+00
+	RA-225	40.00		31.00	8.09E+00	1.64E+01	1.64E+01
+	RA-226	186.21	*	3.28	4.33E+00	2.92E+00	2.92E+00
+	TH-227	50.10		8.40	-4.28E-01	5.30E-01	5.82E-01
		236.00		11.50	-3.79E+00		5.30E-01
		256.20		6.30	7.56E-03		8.68E-01
+	AC-228	338.32	*	11.40	1.51E+00	3.51E-01	6.17E-01
		911.07	*	27.70	1.28E+00		3.51E-01
		969.11	*	16.60	1.40E+00		5.85E-01
+	TH-230	48.44		16.90	3.26E-01	3.11E-01	3.11E-01
		62.85		4.60	1.29E+00		1.27E+00
		67.67		0.37	-1.29E+00		1.50E+01
+	PA-231	283.67		1.60	-1.53E+00	2.46E+00	3.09E+00
		302.67		2.30	8.17E-02		2.46E+00
+	TH-231	25.64		14.70	-2.72E+00	4.64E-01	4.64E-01
		84.21		6.40	2.94E-01		8.87E-01
+	PA-233	311.98		38.60	-4.24E-01	1.60E+00	1.60E+00
+	PA-234	131.20		20.40	6.07E-02	2.31E-01	2.31E-01
		733.99		8.80	1.87E-01		6.83E-01
		946.00		12.00	2.45E-01		5.97E-01
+	PA-234M	1001.03		0.92	-1.01E+00	7.40E+00	7.40E+00
+	TH-234	63.29		3.80	1.03E+00	1.54E+00	1.54E+00
+	U-235	143.76		10.50	2.72E-01	4.48E-01	4.48E-01
		163.35		4.70	1.85E-01		9.86E-01
		205.31		4.70	-8.09E-01		1.09E+00
+	NP-237	86.50		12.60	1.44E-01	4.71E-01	4.71E-01
+	NP-239	106.10		22.70	4.01E+11	9.60E+11	9.60E+11
		228.18		10.70	-8.14E+11		2.13E+12
		277.60		14.10	1.49E+12		1.92E+12
+	AM-241	59.54		35.90	-1.20E-01	1.47E-01	1.47E-01
+	AM-243	74.67		66.00	-8.82E-02	1.16E-01	1.16E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CM-243	209.75	3.29	8.18E-01	4.04E-01	1.59E+00
		228.14	10.60	-1.72E-01		4.49E-01
		277.60	14.00	3.13E-01		4.04E-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	1.74E+00	1.74E+00	-5.03E-01	8.23E-01
	NA-22	1274.54		99.94	8.09E-02	8.09E-02	2.64E-04	3.75E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.17E-02	4.17E-02	1.54E-02	1.73E-02
+	K-40	1460.81	*	10.67	1.25E+00	1.25E+00	2.40E+01	5.99E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	5.88E-02	5.88E-02	-5.09E-03	2.88E-02
		78.34		96.00	7.65E-02		1.84E-01	3.77E-02
	SC-46	889.25		99.98	1.37E-01	1.37E-01	-3.79E-02	6.39E-02
		1120.51		99.99	2.40E-01		3.37E-01	1.14E-01
	V-48	983.52		99.98	5.09E+00	4.60E+00	1.46E+00	2.38E+00
		1312.10		97.50	4.60E+00		-1.73E+00	2.08E+00
	CR-51	320.08		9.83	6.17E+00	6.17E+00	-2.49E-01	2.97E+00
	MN-54	834.83		99.97	8.45E-02	8.45E-02	-1.44E-02	3.98E-02
	CO-56	846.75		99.96	1.53E-01	1.53E-01	5.13E-02	7.16E-02
		1037.75		14.03	1.15E+00		-2.69E-01	5.34E-01
		1238.25		67.00	3.89E-01		4.44E-01	1.85E-01
		1771.40		15.51	5.98E-01		6.64E-03	2.45E-01
		2598.48		16.90	7.22E-01		2.13E-01	2.96E-01

Analysis Report for 1707090-07

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-57	122.06	85.51	6.73E-02	6.73E-02	3.19E-03	3.28E-02
	136.48	10.60	5.58E-01		-2.14E-02	2.71E-01
CO-58	810.76	99.40	1.61E-01	1.61E-01	-3.11E-02	7.53E-02
FE-59	1099.22	56.50	5.43E-01	5.43E-01	-3.17E-01	2.51E-01
	1291.56	43.20	7.47E-01		-1.48E-01	3.43E-01
CO-60	1173.22	100.00	8.60E-02	7.17E-02	6.41E-04	4.03E-02
	1332.49	100.00	7.17E-02		2.04E-02	3.29E-02
ZN-65	1115.52	50.75	1.77E-01	1.77E-01	-3.39E-02	8.17E-02
GA-67	93.31	35.70	2.48E+08	2.48E+08	5.55E+08	1.22E+08
	208.95	2.24	3.45E+09		2.28E+09	1.68E+09
	300.22	16.00	5.13E+08		-1.24E+09	2.48E+08
SE-75	121.11	16.70	4.71E-01	1.37E-01	-3.77E-02	2.29E-01
	136.00	59.20	1.37E-01		-5.28E-03	6.69E-02
	264.65	59.80	1.47E-01		-5.38E-02	7.10E-02
	279.53	25.20	3.83E-01		9.05E-02	1.85E-01
	400.65	11.40	9.13E-01		-5.92E-02	4.38E-01
RB-82	776.52	13.00	7.25E+00	7.25E+00	-1.76E+00	3.41E+00
RB-83	520.41	46.00	2.75E-01	2.75E-01	-8.44E-03	1.31E-01
	529.64	30.30	4.10E-01		-9.75E-02	1.94E-01
	552.65	16.40	7.43E-01		-4.93E-02	3.52E-01
KR-85	513.99	0.43	1.89E+01	1.89E+01	2.48E+01	9.15E+00
SR-85	513.99	99.27	2.35E-01	2.35E-01	3.08E-01	1.14E-01
Y-88	898.02	93.40	1.24E-01	7.16E-02	-4.93E-02	5.78E-02
	1836.01	99.38	7.16E-02		-5.08E-03	2.89E-02
MO-93	263.06	56.72	9.28E-02	4.22E-02	2.22E-02	4.49E-02
	684.67	99.68	6.08E-02		1.68E-02	2.86E-02
	1477.11	99.08	4.22E-02		1.89E-03	1.80E-02
NB-93M	16.57	9.43	4.81E-01	4.81E-01	-1.40E-01	2.25E-01
NB-94	702.63	100.00	6.05E-02	6.05E-02	5.42E-03	2.85E-02
	871.10	100.00	6.13E-02		-3.13E-02	2.86E-02
NB-95	765.79	99.81	5.09E-01	5.09E-01	1.52E-01	2.41E-01
NB-95M	235.69	25.00	4.57E+07	4.57E+07	-3.28E+08	2.23E+07
ZR-95	724.18	43.70	5.09E-01	3.51E-01	-4.00E-01	2.43E-01
	756.72	55.30	3.51E-01		8.45E-02	1.66E-01
MO-99	181.06	6.20	5.48E+10	3.37E+10	-8.89E+10	2.66E+10
	739.58	12.80	3.37E+10		-6.49E+09	1.58E+10
	778.00	4.50	1.00E+11		3.53E+09	4.70E+10
RU-103	497.08	89.00	3.56E-01	3.56E-01	1.22E-01	1.69E-01
RU-106	621.84	9.80	7.26E-01	7.26E-01	1.83E-01	3.43E-01
AG-108M	433.93	89.90	5.65E-02	5.65E-02	-3.23E-02	2.69E-02
	614.37	90.40	7.19E-02		3.46E-03	3.42E-02
	722.95	90.50	7.56E-02		-1.81E-01	3.58E-02
CD-109	88.03	3.72	1.91E+00	1.91E+00	5.35E-01	9.37E-01
AG-110M	657.75	93.14	8.17E-02	8.17E-02	2.52E-03	3.85E-02
	677.61	10.53	6.74E-01		-3.31E-01	3.15E-01
	706.67	16.46	4.51E-01		-2.38E-02	2.11E-01
	763.93	21.98	3.98E-01		-1.53E-01	1.88E-01
	884.67	71.63	1.17E-01		3.53E-02	5.48E-02
	1384.27	23.94	3.15E-01		8.38E-02	1.41E-01
CD-113M	263.70	0.02	2.25E+02	2.25E+02	-8.12E+01	1.09E+02
SN-113	255.12	1.93	4.38E+00	1.50E-01	9.82E-02	2.11E+00
	391.69	64.90	1.50E-01		-5.40E-02	7.17E-02
TE123M	159.00	84.10	9.35E-02	9.35E-02	-1.15E-02	4.54E-02

Analysis Report for 1707090-07

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-124	602.71	97.87	2.01E-01	2.01E-01	7.57E-02	9.54E-02
	645.85	7.26	2.27E+00		9.85E-02	1.06E+00
	722.78	11.10	1.93E+00		-4.63E+00	9.14E-01
	1691.02	49.00	2.53E-01		-1.80E-02	1.05E-01
I-125	35.49	6.49	2.33E+00	2.33E+00	-8.74E-01	1.13E+00
SB-125	176.33	6.89	7.26E-01	1.95E-01	1.60E-01	3.52E-01
	427.89	29.33	1.95E-01		7.12E-02	9.29E-02
	463.38	10.35	6.97E-01		9.78E-01	3.35E-01
	600.56	17.80	3.67E-01		1.87E-02	1.74E-01
	635.90	11.32	5.38E-01		4.83E-02	2.53E-01
SB-126	414.70	83.30	1.64E+01	1.47E+01	-1.26E+01	7.85E+00
	666.33	99.60	1.63E+01		8.41E+00	7.72E+00
	695.00	99.60	1.47E+01		-4.94E+00	6.92E+00
	720.50	53.80	3.21E+01		1.45E+01	1.52E+01
SN-126	87.57	37.00	1.62E-01	1.62E-01	2.26E-02	7.97E-02
SB-127	473.00	25.00	1.27E+07	9.56E+06	9.97E+06	6.08E+06
	685.20	35.70	9.56E+06		2.64E+06	4.50E+06
	783.80	14.70	2.59E+07		2.24E+05	1.22E+07
I-129	29.78	57.00	9.39E-02	9.39E-02	-1.68E-03	4.55E-02
	33.60	13.20	3.81E-01		3.35E-02	1.85E-01
	39.58	7.52	6.38E-01		-2.88E-02	3.10E-01
I-131	284.30	6.05	4.31E+03	3.18E+02	-1.05E+03	2.08E+03
	364.48	81.20	3.18E+02		-2.13E+01	1.52E+02
	636.97	7.26	3.92E+03		-5.29E+02	1.84E+03
	722.89	1.80	1.97E+04		-4.72E+04	9.33E+03
TE-132	49.72	13.10	5.51E+08	7.89E+07	-6.36E+08	2.69E+08
	228.16	88.00	7.89E+07		-3.02E+07	3.81E+07
BA-133	81.00	33.00	1.60E-01	1.31E-01	-5.56E-02	7.82E-02
	302.84	17.80	3.24E-01		1.08E-02	1.57E-01
	356.01	60.00	1.31E-01		7.88E-03	6.36E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	6.78E+04	6.78E+04	-2.36E+04	3.32E+04
CS-134	563.23	8.38	7.41E-01	7.76E-02	7.27E-04	3.51E-01
	569.32	15.43	4.21E-01		-7.97E-02	2.00E-01
	604.70	97.60	7.76E-02		2.48E-02	3.70E-02
	795.84	85.40	1.03E-01		1.25E-01	4.90E-02
	801.93	8.73	8.12E-01		1.90E-01	3.81E-01
CS-135	268.24	16.00	3.63E-01	3.63E-01	-1.66E-02	1.76E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.23E+02	1.06E+01	1.37E+02	5.98E+01
	163.89	4.61	1.87E+02		3.52E+01	9.10E+01
	176.55	13.56	6.42E+01		1.42E+01	3.11E+01
	273.65	12.66	8.57E+01		-3.63E+01	4.15E+01
	340.57	48.50	2.69E+01		3.43E+01	1.30E+01
	818.50	99.70	1.06E+01		-5.02E+00	4.93E+00
	1048.07	79.60	1.47E+01		-5.00E+00	6.79E+00
	1235.34	19.70	9.48E+01		3.03E+01	4.49E+01
CS-137	661.65	85.12	7.28E-02	7.28E-02	3.68E-04	3.44E-02
LA-138	788.74	34.00	1.89E-01	9.20E-02	-1.11E-01	8.88E-02
	1435.80	66.00	9.20E-02		-1.18E-02	4.14E-02
CE-139	165.85	80.35	9.72E-02	9.72E-02	5.75E-02	4.72E-02

Analysis Report for 1707090-07

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-140	162.64	6.70	1.50E+02	4.97E+01	4.14E+01	7.26E+01
	304.84	4.50	2.42E+02		-5.87E+01	1.17E+02
	423.70	3.20	3.55E+02		-1.63E+02	1.69E+02
	437.55	2.00	5.91E+02		2.17E+02	2.82E+02
	537.32	25.00	4.97E+01		-5.72E+00	2.36E+01
LA-140	328.77	20.50	6.36E+01	1.36E+01	4.66E+01	3.08E+01
	487.03	45.50	2.69E+01		1.34E+01	1.28E+01
	815.85	23.50	5.45E+01		8.75E+00	2.54E+01
	1596.49	95.49	1.36E+01		-5.43E-01	6.06E+00
CE-141	145.44	48.40	7.83E-01	7.83E-01	2.42E-01	3.81E-01
@ 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	5.31E-01	5.31E-01	-9.37E-02	2.58E-01
PM-144	476.78	42.00	1.50E-01	6.93E-02	1.68E-02	7.11E-02
	618.01	98.60	6.93E-02		-1.45E-02	3.27E-02
	696.49	99.49	7.25E-02		1.28E-02	3.41E-02
PM-145	36.85	21.70	2.21E-01	1.23E-01	-1.56E-01	1.07E-01
	37.36	39.70	1.23E-01		-9.80E-04	5.98E-02
	42.30	15.10	3.08E-01		-2.53E-01	1.50E-01
	72.40	2.31	2.84E+00		-4.21E+00	1.40E+00
PM-146	453.90	39.94	1.46E-01	1.46E-01	5.56E-02	6.99E-02
	735.90	14.01	4.45E-01		5.40E-02	2.09E-01
	747.13	13.10	4.49E-01		-1.93E-01	2.10E-01
ND-147	91.11	28.90	1.19E+02	1.19E+02	2.64E+02	5.83E+01
	531.02	13.10	2.27E+02		-1.48E+01	1.08E+02
PM-149	285.90	3.10	5.23E+13	5.23E+13	-3.96E+12	2.52E+13
EU-152	121.78	20.50	2.20E-01	2.20E-01	-1.75E-02	1.07E-01
	244.69	5.40	9.96E-01		7.34E-02	4.83E-01
	344.27	19.13	2.86E-01		-1.31E-02	1.38E-01
	778.89	9.20	6.60E-01		-8.78E-02	3.09E-01
	964.01	10.40	8.64E-01		-1.35E+00	4.10E-01
	1085.78	7.22	8.98E-01		-4.62E-01	4.14E-01
	1112.02	9.60	7.61E-01		-1.44E-01	3.54E-01
	1407.95	14.94	4.78E-01		3.38E-01	2.19E-01
GD-153	97.43	31.30	1.95E-01	1.95E-01	8.49E-02	9.50E-02
	103.18	22.20	2.74E-01		5.52E-02	1.33E-01
EU-154	123.07	40.50	1.15E-01	1.15E-01	2.82E-02	5.58E-02
	723.30	19.70	3.55E-01		-8.50E-01	1.68E-01
	873.19	11.50	5.95E-01		1.99E-01	2.79E-01
	996.32	10.30	6.43E-01		-1.21E-01	2.99E-01
	1004.76	17.90	4.17E-01		2.67E-01	1.95E-01
	1274.45	35.50	2.16E-01		7.06E-04	1.00E-01
EU-155	86.50	30.90	2.00E-01	2.00E-01	6.11E-02	9.80E-02
	105.30	20.70	2.29E-01		1.59E-01	1.12E-01
EU-156	811.77	10.40	5.43E+01	5.43E+01	6.52E+00	2.54E+01
	1153.47	7.20	9.65E+01		-2.63E+01	4.50E+01
	1230.71	8.90	9.05E+01		-2.00E+01	4.24E+01
HO-166M	184.41	72.60	7.95E-02	7.95E-02	1.20E-01	3.88E-02
	280.45	29.60	1.81E-01		-9.24E-03	8.74E-02
	410.94	11.10	5.35E-01		3.01E-01	2.57E-01
	711.69	54.10	1.00E-01		7.38E-03	4.67E-02
TM-171	66.72	0.14	4.30E+01	4.30E+01	-7.58E+01	2.11E+01

Analysis Report for 1707090-07

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	HF-172	67.35		5.31	1.15E+00	4.49E-01	-9.98E-02	5.65E-01
		125.81		11.30	4.49E-01		1.27E-01	2.19E-01
	LU-172	181.53		20.60	6.57E+03	3.51E+03	-1.07E+04	3.19E+03
		900.72		29.81	6.23E+03		8.76E+02	2.91E+03
		1093.66		62.50	3.51E+03		1.88E+03	1.64E+03
	LU-173	100.72		5.24	9.88E-01	3.20E-01	3.11E-01	4.82E-01
		272.11		21.20	3.20E-01		4.34E-02	1.55E-01
	HF-175	343.40		84.00	1.72E-01	1.72E-01	-7.82E-03	8.27E-02
	LU-176	88.34		13.30	4.61E-01	5.30E-02	1.29E-01	2.26E-01
		201.83		86.00	5.46E-02		-3.55E-02	2.65E-02
		306.78		94.00	5.30E-02		-4.82E-03	2.55E-02
	HF-181	133.02		41.70	5.46E-01	3.20E-01	-9.64E-02	2.66E-01
		345.85		17.20	1.61E+00		-7.28E-02	7.74E-01
		482.03		82.80	3.20E-01		1.65E-02	1.52E-01
	TA-182	67.75		41.20	2.45E-01	2.45E-01	-2.12E-02	1.20E-01
		1121.30		34.90	5.52E-01		7.76E-01	2.63E-01
		1189.05		16.23	9.13E-01		2.61E-01	4.27E-01
		1221.41		26.98	5.89E-01		-3.55E-01	2.76E-01
		1231.02		11.44	1.39E+00		-3.07E-01	6.51E-01
	IR-192	308.46		29.68	4.23E-01	3.03E-01	4.79E-02	2.04E-01
		468.07		48.10	3.03E-01		3.50E-02	1.45E-01
	HG-203	279.19		77.30	3.07E-01	3.07E-01	7.27E-02	1.48E-01
	TL-204	374.74		94.11	5.97E-02	5.97E-02	4.35E-02	2.86E-02
		899.15		99.16	6.66E-02		-7.64E-03	3.10E-02
		911.74		91.10	1.49E-01		3.91E-01	7.19E-02
	BI-207	569.67		97.72	6.30E-02	6.30E-02	3.43E-02	3.00E-02
		1063.62		74.90	9.84E-02		1.54E-02	4.60E-02
+	TL-208	583.14	*	30.22	3.50E-01	1.41E-01	1.31E+00	1.70E-01
		860.37	*	4.48	1.83E+00		9.34E-01	8.67E-01
		2614.66	*	35.85	1.41E-01		1.06E+00	5.75E-02
	BI-210M	262.00		45.00	1.16E-01	1.16E-01	-7.65E-03	5.59E-02
		300.00		23.00	2.55E-01		-1.08E+00	1.24E-01
	PB-210	46.50		4.25	1.22E+00	1.22E+00	6.06E-01	5.93E-01
	PB-211	404.84		2.90	2.13E+00	2.10E+00	4.71E-01	1.03E+00
		831.96		2.90	2.10E+00		-1.95E+00	9.81E-01
+	BI-212	727.17	*	11.80	1.04E+00	1.04E+00	1.06E+00	5.04E-01
		1620.62	*	2.75	2.02E+00		1.21E+00	8.88E-01
+	PB-212	238.63	*	44.60	3.06E-01	3.06E-01	1.33E+00	1.51E-01
		300.09	*	3.41	1.52E+00		1.31E+00	7.35E-01
+	BI-214	609.31	*	46.30	2.03E-01	2.03E-01	9.36E-01	9.80E-02
		1120.29	*	15.10	7.10E-01		9.95E-01	3.38E-01
		1764.49	*	15.80	3.91E-01		1.22E+00	1.73E-01
		2204.22	*	4.98	1.25E+00		1.67E+00	5.42E-01
+	PB-214	295.21	*	19.19	3.79E-01	2.28E-01	1.01E+00	1.85E-01
		351.92	*	37.19	2.28E-01		1.18E+00	1.11E-01
	RN-219	401.80		6.50	9.14E-01	9.14E-01	-1.99E-02	4.39E-01
	RA-223	323.87		3.88	1.42E+00	1.42E+00	2.82E-01	6.87E-01
+	RA-224	240.98	*	3.95	3.47E+00	3.47E+00	3.92E+00	1.71E+00
	RA-225	40.00		31.00	1.64E+01	1.64E+01	8.09E+00	7.98E+00
+	RA-226	186.21	*	3.28	2.92E+00	2.92E+00	4.33E+00	1.44E+00
	TH-227	50.10		8.40	5.82E-01	5.30E-01	-4.28E-01	2.84E-01
		236.00		11.50	5.30E-01		-3.79E+00	2.58E-01
		256.20		6.30	8.68E-01		7.56E-03	4.21E-01

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	AC-228	338.32	*	11.40	6.17E-01	3.51E-01	1.51E+00	2.99E-01
		911.07	*	27.70	3.51E-01		1.28E+00	1.68E-01
		969.11	*	16.60	5.85E-01		1.40E+00	2.79E-01
	TH-230	48.44		16.90	3.11E-01	3.11E-01	3.26E-01	1.52E-01
		62.85		4.60	1.27E+00		1.29E+00	6.22E-01
		67.67		0.37	1.50E+01		-1.29E+00	7.33E+00
	PA-231	283.67		1.60	3.09E+00	2.46E+00	-1.53E+00	1.49E+00
		302.67		2.30	2.46E+00		8.17E-02	1.19E+00
	TH-231	25.64		14.70	4.64E-01	4.64E-01	-2.72E+00	2.26E-01
		84.21		6.40	8.87E-01		2.94E-01	4.35E-01
	PA-233	311.98		38.60	1.60E+00	1.60E+00	-4.24E-01	7.67E-01
	PA-234	131.20		20.40	2.31E-01	2.31E-01	6.07E-02	1.13E-01
		733.99		8.80	6.83E-01		1.87E-01	3.21E-01
		946.00		12.00	5.97E-01		2.45E-01	2.80E-01
	PA-234M	1001.03		0.92	7.40E+00	7.40E+00	-1.01E+00	3.45E+00
	TH-234	63.29		3.80	1.54E+00	1.54E+00	1.03E+00	7.55E-01
	U-235	143.76		10.50	4.48E-01	4.48E-01	2.72E-01	2.18E-01
		163.35		4.70	9.86E-01		1.85E-01	4.79E-01
		205.31		4.70	1.09E+00		-8.09E-01	5.29E-01
	NP-237	86.50		12.60	4.71E-01	4.71E-01	1.44E-01	2.31E-01
	NP-239	106.10		22.70	9.60E+11	9.60E+11	4.01E+11	4.68E+11
		228.18		10.70	2.13E+12		-8.14E+11	1.03E+12
		277.60		14.10	1.92E+12		1.49E+12	9.29E+11
	AM-241	59.54		35.90	1.47E-01	1.47E-01	-1.20E-01	7.20E-02
	AM-243	74.67		66.00	1.16E-01	1.16E-01	-8.82E-02	5.74E-02
	CM-243	209.75		3.29	1.59E+00	4.04E-01	8.18E-01	7.73E-01
		228.14		10.60	4.49E-01		-1.72E-01	2.17E-01
		277.60		14.00	4.04E-01		3.13E-01	1.96E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

Analysis Report for 1707090-07

HTC-A06-S001-3036-01

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: HTC-A06-S001-3036-01

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	0	0
17:	1	2	71	82	87	164	510	150
25:	78	85	66	72	64	66	75	75
33:	74	78	74	70	71	73	84	94
41:	82	80	92	79	73	99	163	117
49:	102	115	108	95	114	127	119	118
57:	120	124	141	137	145	145	186	245
65:	146	151	163	143	168	170	172	171
73:	172	195	405	365	439	509	202	161
81:	121	122	147	157	175	156	217	243
89:	140	196	193	169	325	238	138	110
97:	89	104	102	130	104	84	92	101
105:	110	134	86	86	89	88	91	105
113:	97	99	108	91	84	81	88	95
121:	82	92	83	101	100	95	85	94
129:	114	129	92	94	83	91	87	84
137:	99	92	87	104	82	82	86	124
145:	89	73	68	70	83	69	67	94
153:	88	98	109	85	73	75	74	64
161:	81	74	69	87	84	81	73	82
169:	81	57	73	91	79	67	82	82
177:	70	73	66	67	71	81	76	74
185:	90	165	144	82	70	78	72	44
193:	65	60	74	58	80	66	56	59
201:	57	61	80	69	110	66	81	56
209:	99	105	69	56	56	71	60	73
217:	69	61	48	57	56	44	64	60
225:	46	56	60	59	41	61	65	74
233:	70	58	46	72	77	209	638	241
241:	145	177	130	56	41	58	47	42
249:	57	50	47	51	48	51	51	44
257:	49	45	50	43	47	45	27	45
265:	35	45	34	29	55	62	82	47
273:	38	44	45	43	49	60	46	39
281:	34	39	25	39	33	33	32	42
289:	42	33	38	38	39	49	172	197
297:	52	35	32	56	63	37	36	32
305:	30	31	30	25	33	33	29	30
313:	24	31	16	37	28	25	30	23
321:	29	37	37	35	32	35	41	64
329:	49	38	24	37	35	29	38	28
337:	36	83	127	54	34	37	17	21
345:	46	30	31	32	41	25	88	314
353:	218	49	32	37	31	25	34	21
361:	26	23	15	22	26	28	29	23

369:	23	27	15	30	29	23	21	28

Sample Title: HTC-A06-S001-3036-01

Channel								
377:	20	34	15	22	25	25	27	24
385:	27	26	28	19	34	23	18	31
393:	24	22	21	31	31	27	22	25
401:	26	27	37	38	32	31	30	28
409:	24	41	27	19	31	30	19	16
417:	19	24	26	26	20	24	19	21
425:	18	15	30	21	27	21	18	18
433:	16	20	16	25	19	24	22	27
441:	19	21	17	25	23	17	20	12
449:	15	20	24	19	28	33	18	15
457:	17	17	22	16	24	33	50	30
465:	31	26	22	14	16	23	21	16
473:	19	21	24	16	14	11	17	17
481:	11	20	13	20	21	12	28	20
489:	18	19	14	16	16	19	20	10
497:	17	21	20	20	13	17	18	16
505:	10	20	24	21	33	56	88	68
513:	31	18	22	26	14	16	16	11
521:	25	22	14	22	23	20	15	18
529:	24	10	12	20	19	18	15	21
537:	23	17	13	15	12	23	13	17
545:	10	16	25	14	18	24	15	11
553:	9	16	8	23	8	27	18	11
561:	13	16	20	17	16	17	15	21
569:	10	18	17	21	25	15	8	13
577:	17	13	13	14	19	45	182	130
585:	45	28	21	14	19	14	15	18
593:	14	13	10	15	13	14	16	15
601:	16	21	14	20	26	10	21	37
609:	164	199	36	15	16	20	11	16
617:	13	12	13	12	17	14	17	13
625:	16	16	10	11	8	6	13	13
633:	18	8	17	14	12	12	10	11
641:	13	9	8	13	12	7	11	11
649:	13	8	12	12	20	9	10	13
657:	13	18	13	13	9	15	10	15
665:	26	19	9	15	12	10	12	10
673:	13	11	14	10	7	10	8	8
681:	16	10	19	10	9	11	17	13
689:	8	12	12	9	9	10	12	10
697:	14	16	16	14	10	12	16	12
705:	12	12	11	7	9	12	5	13
713:	8	11	10	10	9	9	19	18
721:	23	14	14	14	13	13	45	45
729:	21	13	7	14	10	16	13	12
737:	9	12	9	16	6	12	15	15
745:	10	12	8	9	8	8	13	11
753:	14	12	18	13	11	16	12	13
761:	11	12	16	14	10	13	18	19
769:	19	13	17	18	12	14	16	10
777:	10	15	7	10	12	9	11	6
785:	17	15	20	12	7	11	5	13
793:	13	23	32	19	15	18	11	7

801:	11	10	16	12	15	14	10	16

Sample Title: HTC-A06-S001-3036-01

Channel								
809:	5	9	7	10	10	13	17	4
817:	7	10	5	7	10	12	10	14
825:	14	13	7	10	7	13	13	9
833:	7	8	11	23	17	10	15	12
841:	12	9	15	9	16	12	9	8
849:	9	10	6	6	12	5	9	13
857:	12	7	6	21	27	16	11	13
865:	7	14	8	7	6	9	10	10
873:	13	9	12	14	14	8	10	11
881:	8	12	8	11	8	13	8	4
889:	8	13	8	6	10	11	7	7
897:	5	10	13	10	8	11	11	10
905:	11	13	9	14	17	35	122	80
913:	12	4	10	9	12	8	9	14
921:	6	5	8	8	5	6	5	11
929:	6	7	7	4	11	22	16	8
937:	9	6	12	8	6	9	13	7
945:	11	9	10	11	17	11	8	6
953:	9	2	9	11	10	7	5	5
961:	7	8	8	27	32	20	17	41
969:	69	38	9	5	8	11	10	13
977:	12	8	6	9	12	11	12	7
985:	7	9	8	9	10	5	8	10
993:	13	9	5	10	6	11	4	7
1001:	12	12	8	10	12	11	9	7
1009:	8	11	7	3	11	7	7	7
1017:	9	8	9	8	14	12	7	11
1025:	6	12	9	4	9	10	9	12
1033:	11	8	12	7	9	6	12	5
1041:	9	8	8	8	8	8	12	2
1049:	3	6	11	14	5	1	14	9
1057:	6	7	10	13	7	9	13	9
1065:	9	8	7	11	12	5	10	7
1073:	10	11	15	10	7	9	12	6
1081:	11	3	7	7	10	9	10	3
1089:	8	13	5	10	12	11	12	8
1097:	9	7	6	11	5	5	8	11
1105:	13	14	9	16	8	11	12	8
1113:	8	7	7	9	7	7	23	47
1121:	29	16	7	7	9	7	8	7
1129:	7	12	11	10	8	13	14	9
1137:	5	9	15	3	10	15	10	11
1145:	10	9	6	9	11	4	8	11
1153:	12	11	11	6	9	13	12	7
1161:	9	10	7	3	16	6	12	15
1169:	6	12	12	14	13	8	12	5
1177:	16	6	7	7	6	9	16	7
1185:	17	11	5	10	10	17	7	11
1193:	12	6	13	7	10	8	14	9
1201:	5	9	14	16	15	15	11	10
1209:	21	13	6	6	10	13	15	12
1217:	17	12	10	13	11	11	14	8
1225:	15	16	12	10	18	7	8	10

1233:	13	7	18	18	16	23	22	14

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Channel								
1241:	13	7	9	21	10	7	12	10
1249:	16	8	10	9	7	9	8	6
1257:	6	6	9	9	13	7	13	2
1265:	6	8	7	7	5	11	8	7
1273:	10	7	14	3	5	6	9	10
1281:	15	11	9	5	8	4	7	6
1289:	5	1	9	4	9	10	9	9
1297:	6	6	8	5	3	5	6	4
1305:	11	5	6	7	4	5	5	4
1313:	4	3	5	8	3	3	6	4
1321:	2	6	9	8	8	6	1	6
1329:	6	5	5	8	7	10	1	8
1337:	3	3	9	2	4	7	5	5
1345:	2	4	4	5	4	1	4	8
1353:	2	3	3	3	5	3	3	5
1361:	5	3	5	5	3	3	2	4
1369:	6	1	3	3	6	4	3	13
1377:	7	7	0	3	2	2	4	5
1385:	4	1	8	4	4	4	5	2
1393:	4	2	4	3	2	1	3	7
1401:	4	1	2	2	3	5	5	13
1409:	8	4	4	3	4	6	5	3
1417:	1	1	4	4	7	6	1	4
1425:	1	2	4	1	2	3	6	1
1433:	4	4	8	5	1	5	2	7
1441:	4	3	2	5	0	2	3	3
1449:	5	3	3	1	5	4	3	3
1457:	8	28	135	423	432	126	23	8
1465:	11	14	4	5	1	6	2	1
1473:	1	2	0	0	3	3	2	1
1481:	4	1	2	0	1	1	2	2
1489:	1	4	2	2	2	2	3	4
1497:	1	2	2	6	4	2	2	3
1505:	2	6	3	4	7	5	2	1
1513:	2	1	2	1	1	2	5	8
1521:	4	2	2	5	2	3	1	3
1529:	0	3	0	0	3	4	1	2
1537:	2	4	1	2	1	1	4	2
1545:	3	1	4	5	3	2	1	1
1553:	5	1	1	2	3	3	0	3
1561:	3	1	2	3	3	0	2	4
1569:	2	2	3	2	1	4	1	1
1577:	1	5	5	5	4	4	4	1
1585:	1	4	10	9	4	2	2	4
1593:	11	5	1	2	0	2	2	3
1601:	3	2	7	2	2	3	1	3
1609:	0	3	1	2	4	0	1	2
1617:	2	3	4	7	7	0	1	2
1625:	0	2	1	2	6	4	5	2
1633:	3	3	2	3	3	3	2	2
1641:	0	4	2	0	0	0	3	0
1649:	4	3	1	1	2	1	0	3
1657:	2	0	1	4	5	5	2	2

1665:	4	3	2	1	0	0	2	2

Sample Title: HTC-A06-S001-3036-01

Channel								
1673:	0	1	0	0	1	2	3	3
1681:	0	5	0	0	2	0	2	1
1689:	1	1	1	0	2	2	1	1
1697:	2	1	0	0	2	3	2	1
1705:	2	0	3	0	1	1	1	3
1713:	2	1	1	3	3	1	0	1
1721:	1	0	1	0	1	0	1	5
1729:	5	2	4	2	0	0	4	2
1737:	2	3	2	3	1	0	3	0
1745:	0	1	1	0	4	2	3	1
1753:	0	0	1	2	1	0	1	3
1761:	2	5	25	20	21	4	1	2
1769:	1	0	2	1	0	1	1	0
1777:	2	1	1	5	0	0	0	3
1785:	0	0	2	0	0	1	1	1
1793:	1	1	2	2	2	0	1	0
1801:	3	1	0	0	1	3	0	1
1809:	0	2	1	0	1	4	0	0
1817:	0	0	0	0	0	2	3	1
1825:	1	1	1	2	2	2	0	2
1833:	1	0	1	2	0	0	2	0
1841:	0	0	2	1	2	3	9	1
1849:	0	1	0	4	0	0	0	1
1857:	1	2	0	2	1	2	0	0
1865:	1	3	0	1	2	2	3	0
1873:	1	1	0	0	0	2	1	1
1881:	1	0	0	3	0	0	0	1
1889:	1	1	2	0	2	1	1	2
1897:	0	0	1	0	0	2	0	0
1905:	0	2	2	1	1	1	3	1
1913:	0	2	1	2	0	0	0	2
1921:	0	0	0	2	0	2	0	1
1929:	1	4	1	1	2	1	0	1
1937:	1	0	0	1	2	1	0	0
1945:	1	4	2	2	0	2	2	1
1953:	1	3	1	0	2	1	3	2
1961:	3	1	5	0	4	2	1	1
1969:	0	1	1	1	1	3	1	1
1977:	0	2	1	3	1	0	1	2
1985:	1	0	1	2	1	2	2	0
1993:	1	1	3	0	1	0	2	1
2001:	0	0	2	1	4	1	0	3
2009:	3	1	1	0	4	0	1	0
2017:	1	1	2	0	1	2	0	3
2025:	2	1	0	1	3	0	2	2
2033:	1	0	0	0	0	1	2	2
2041:	0	0	0	2	3	1	2	1
2049:	0	4	0	1	1	1	1	1
2057:	3	1	2	1	1	0	0	0
2065:	0	0	0	2	1	0	1	0
2073:	0	2	0	0	2	2	2	3
2081:	0	0	2	5	0	2	1	1
2089:	1	0	2	1	0	0	2	0

2097:	0	2	1	1	3	5	4	5

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

2529:	0	0	0	2	1	1	0	0

Sample Title: HTC-A06-S001-3036-01

Channel								
2537:	0	0	0	0	0	1	0	0
2545:	1	1	0	0	1	0	0	0
2553:	1	0	1	0	0	1	1	0
2561:	2	0	0	0	1	0	1	1
2569:	4	0	1	0	1	1	0	1
2577:	0	0	0	1	1	0	0	2
2585:	1	1	0	0	0	0	0	0
2593:	0	2	0	1	2	0	0	2
2601:	0	0	1	1	0	0	1	0
2609:	0	1	9	15	46	33	14	2
2617:	0	1	2	0	0	1	0	1
2625:	0	0	0	0	1	0	0	0
2633:	0	0	0	0	0	0	0	0
2641:	0	1	2	0	0	1	0	0
2649:	0	0	0	0	0	0	1	0
2657:	1	0	0	0	1	0	0	0
2665:	1	0	1	0	0	0	0	1
2673:	1	1	0	0	0	0	0	0
2681:	0	1	0	0	0	0	0	0
2689:	1	0	0	0	0	1	0	0
2697:	0	0	0	0	0	0	0	0
2705:	0	1	1	0	0	0	0	0
2713:	0	0	0	0	0	2	0	0
2721:	0	0	1	0	0	1	0	0
2729:	0	1	0	0	0	0	0	1
2737:	0	0	0	0	0	0	0	1
2745:	0	0	1	0	0	0	0	1
2753:	0	0	0	0	1	0	0	0
2761:	1	0	0	0	1	1	0	0
2769:	0	0	0	0	0	0	1	0
2777:	0	1	1	0	0	0	0	0
2785:	0	1	1	1	0	0	1	1
2793:	0	0	0	0	0	1	1	1
2801:	2	0	0	1	0	0	1	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	1	0	1	0	0	0	0
2833:	1	1	1	0	0	0	0	1
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	1	0	0	0
2857:	2	0	0	0	0	0	0	0
2865:	1	0	0	1	0	0	0	0
2873:	1	0	0	1	1	0	0	0
2881:	1	0	0	1	0	0	0	0
2889:	0	0	0	0	1	1	0	1
2897:	0	0	0	0	1	0	0	0
2905:	0	0	0	0	1	0	0	0
2913:	1	1	0	0	1	0	1	1
2921:	0	0	1	0	1	0	0	0
2929:	0	0	0	1	1	1	0	0
2937:	2	1	0	0	0	1	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	2	1	1	0	0	0	0

Sample Title: HTC-A06-S001-3036-01

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

3393:	0	1	0	0	0	0	0	0

Sample Title: HTC-A06-S001-3036-01

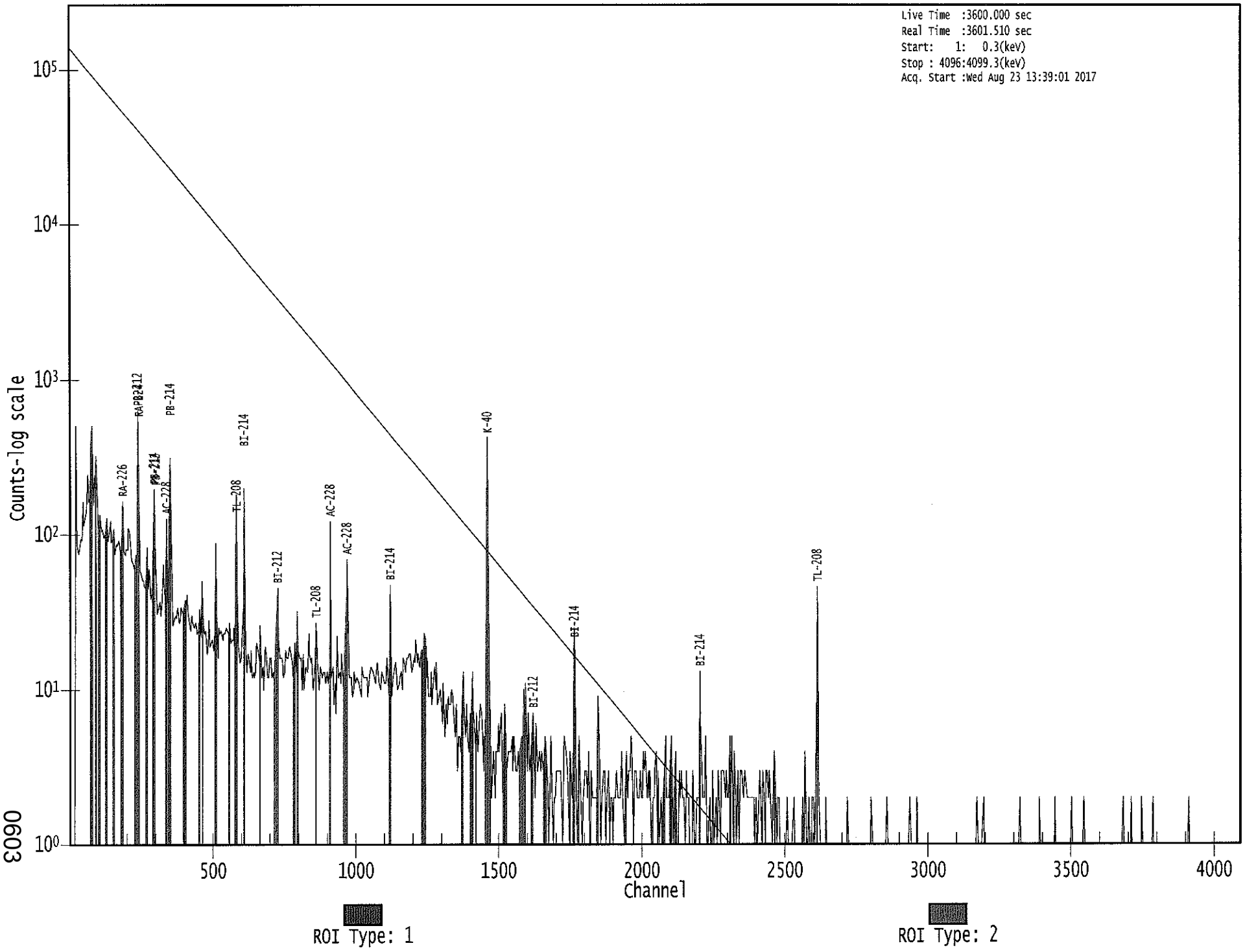
Channel								
3401:	0	0	1	0	1	0	0	0
3409:	0	0	1	0	0	0	0	0
3417:	0	0	0	0	0	1	0	0
3425:	0	0	0	1	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	1	2	0	1	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	1	0	0	1	1
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	1	0	0
3481:	0	0	1	0	0	0	0	0
3489:	0	1	0	1	0	1	0	0
3497:	0	0	1	0	0	2	0	0
3505:	1	0	0	0	0	0	1	0
3513:	0	0	0	1	0	0	0	1
3521:	0	0	0	0	1	0	0	1
3529:	0	0	1	0	0	0	0	1
3537:	0	0	0	0	0	1	0	0
3545:	2	1	0	0	0	0	0	0
3553:	0	1	0	0	0	0	0	0
3561:	0	0	0	0	0	0	1	0
3569:	0	0	0	1	0	1	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	1	0	0	0	1	0
3593:	0	0	0	0	0	0	0	1
3601:	0	0	0	0	0	0	0	0
3609:	0	0	1	0	1	0	1	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	1	1	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	1	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	1	0	0	0	0	1	0	1
3665:	0	0	1	0	0	0	1	0
3673:	0	0	0	0	0	1	0	0
3681:	0	1	2	0	0	0	0	0
3689:	0	0	0	1	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	2	1	0
3713:	0	0	0	0	0	0	0	0
3721:	1	0	0	0	1	0	0	0
3729:	0	0	1	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	2	0	0	0	0	1	0
3753:	1	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	1	1	0	0	0	0
3777:	0	0	0	0	0	0	0	1
3785:	0	2	0	0	0	0	0	0
3793:	0	0	0	0	0	1	1	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	1	0	0	0	0	0	1

3825:	0	1	0	0	0	0	0	0

Sample Title: HTC-A06-S001-3036-01

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

0000055831.CNF



0603

Apex-Gamma

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-08
Sample Description	: HTC-A06-S001-3642-01
Sample Type	: SOIL
Sample Size	: 6.189E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:53:03AM
Acquisition Started	: 8/23/2017 1:39:08PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.1 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55832

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 2:39:42PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.22	76.53	0.0000	0.00
2	88.05	88.35	0.0000	0.00
3	93.35	93.65	0.0000	0.00
4	99.64	99.93	0.0000	0.00
5	186.27	186.46	0.0000	0.00
6	209.25	209.42	0.0000	0.00
7	238.79	238.93	0.0000	0.00
8	241.85	241.98	0.0000	0.00
9	270.08	270.18	0.0000	0.00
10	277.87	277.96	0.0000	0.00
11	295.16	295.24	0.0000	0.00
12	300.03	300.10	0.0000	0.00
13	327.85	327.89	0.0000	0.00
14	338.49	338.52	0.0000	0.00
15	352.12	352.13	0.0000	0.00
16	463.41	463.31	0.0000	0.00
17	507.66	507.52	0.0000	0.00
18	511.11	510.97	0.0000	0.00
19	547.39	547.21	0.0000	0.00
20	563.39	563.19	0.0000	0.00
21	583.38	583.16	0.0000	0.00
22	609.52	609.28	0.0000	0.00
23	629.41	629.15	0.0000	0.00
24	727.51	727.15	0.0000	0.00
25	769.69	769.29	0.0000	0.00
26	794.47	794.04	0.0000	0.00
27	841.73	841.26	0.0000	0.00
28	861.87	861.38	0.0000	0.00
29	911.73	911.20	0.0000	0.00
30	937.03	936.47	0.0000	0.00
31	970.18	969.59	0.0000	0.00
32	993.72	993.10	0.0000	0.00
33	1048.88	1048.22	0.0000	0.00
34	1120.96	1120.23	0.0000	0.00
35	1124.69	1123.96	0.0000	0.00
36	1210.43	1209.63	0.0000	0.00
37	1238.40	1237.57	0.0000	0.00
38	1244.31	1243.47	0.0000	0.00
39	1351.28	1350.35	0.0000	0.00
40	1461.37	1460.35	0.0000	0.00
41	1509.78	1508.72	0.0000	0.00
42	1621.63	1620.47	0.0000	0.00

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1730.09	1728.85	0.0000	0.00
44	1765.30	1764.03	0.0000	0.00
45	1787.09	1785.80	0.0000	0.00
46	2055.58	2054.09	0.0000	0.00
47	2102.50	2100.97	0.0000	0.00
48	2323.34	2321.67	0.0000	0.00
49	2615.18	2613.31	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 2:39:42PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.22	72 -	79	76.53	9.85E+02	119.28	1.71E+03	3.80
	2	88.05	86 -	91	88.35	1.41E+02	86.12	1.37E+03	1.27
	3	93.35	91 -	97	93.65	1.97E+02	91.99	1.31E+03	1.78
	4	99.64	98 -	102	99.93	5.64E+01	55.48	6.29E+02	1.47
	5	186.27	183 -	190	186.46	1.43E+02	76.03	8.68E+02	1.61
	6	209.25	207 -	212	209.42	5.27E+01	56.34	5.91E+02	1.75
M	7	238.79	234 -	246	238.93	7.38E+02	66.51	2.96E+02	1.45
m	8	241.85	234 -	246	241.98	1.34E+02	46.52	2.59E+02	1.46
	9	270.08	266 -	275	270.18	1.16E+02	61.60	4.78E+02	2.67
	10	277.87	275 -	281	277.96	4.51E+01	46.23	3.54E+02	2.10
M	11	295.16	292 -	303	295.24	2.20E+02	45.97	2.91E+02	1.56
m	12	300.03	292 -	303	300.10	5.42E+01	38.54	2.87E+02	1.57
	13	327.85	325 -	331	327.89	6.07E+01	46.44	3.51E+02	1.34
	14	338.49	335 -	342	338.52	1.62E+02	51.88	3.41E+02	1.98
	15	352.12	347 -	359	352.13	4.51E+02	76.67	4.74E+02	1.47
	16	463.41	460 -	466	463.31	3.87E+01	35.87	2.05E+02	1.94
M	17	507.66	506 -	516	507.52	2.09E+01	13.93	5.57E+01	2.09
m	18	511.11	506 -	516	510.97	1.46E+02	41.30	1.88E+02	2.30
	19	547.39	545 -	550	547.21	2.00E+01	24.29	1.02E+02	3.03
	20	563.39	559 -	567	563.19	4.45E+01	34.24	1.53E+02	2.89
	21	583.38	579 -	588	583.16	2.50E+02	50.36	2.18E+02	1.85
	22	609.52	604 -	613	609.28	2.98E+02	51.56	2.09E+02	2.04
	23	629.41	627 -	632	629.15	1.96E+01	22.93	8.88E+01	2.94
	24	727.51	722 -	731	727.15	8.72E+01	35.13	1.18E+02	1.81
	25	769.69	765 -	773	769.29	2.60E+01	33.11	1.52E+02	1.70
	26	794.47	790 -	797	794.04	3.57E+01	28.57	1.13E+02	1.37
	27	841.73	840 -	844	841.26	1.50E+01	17.83	5.40E+01	1.08
	28	861.87	856 -	868	861.38	3.44E+01	39.73	1.71E+02	2.62
	29	911.73	907 -	917	911.20	1.91E+02	41.23	1.20E+02	2.50
	30	937.03	931 -	945	936.47	3.44E+01	38.58	1.41E+02	6.11
	31	970.18	966 -	975	969.59	8.49E+01	40.45	1.48E+02	2.27
	32	993.72	987 -	999	993.10	3.78E+01	29.42	8.23E+01	7.75
	33	1048.88	1043 -	1053	1048.22	2.94E+01	27.78	8.51E+01	6.36
M	34	1120.96	1113 -	1141	1120.23	8.79E+01	29.53	9.10E+01	2.51
m	35	1124.69	1113 -	1141	1123.96	2.23E+01	31.46	9.75E+01	2.86
	36	1210.43	1206 -	1214	1209.63	2.99E+01	31.04	1.28E+02	2.24
M	37	1238.40	1230 -	1246	1237.57	3.24E+01	26.61	9.83E+01	2.61
m	38	1244.31	1230 -	1246	1243.47	2.19E+01	24.98	7.55E+01	2.70
	39	1351.28	1348 -	1352	1350.35	8.33E+00	11.05	1.93E+01	1.05
	40	1461.37	1454 -	1464	1460.35	8.20E+02	58.37	1.89E+01	2.39

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1509.78	1504 -	1512	1508.72	1.68E+01	9.81	4.47E+00	3.64
42	1621.63	1618 -	1623	1620.47	8.00E+00	7.87	6.00E+00	1.66
43	1730.09	1723 -	1735	1728.85	2.35E+01	14.16	1.10E+01	5.09
44	1765.30	1759 -	1768	1764.03	5.64E+01	19.08	1.92E+01	2.63
45	1787.09	1781 -	1789	1785.80	1.00E+01	6.32	0.00E+00	1.33
46	2055.58	2051 -	2057	2054.09	6.50E+00	6.65	3.00E+00	3.55
47	2102.50	2098 -	2103	2100.97	6.50E+00	6.40	3.00E+00	2.49
48	2323.34	2319 -	2324	2321.67	6.00E+00	4.90	0.00E+00	1.92
49	2615.18	2607 -	2619	2613.31	1.15E+02	21.45	0.00E+00	3.61

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 : 8/23/2017 2:39:42PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	76.22	72 -	79	9.85E+02	119.28	1.71E+03	8.34E+01
	2	88.05	86 -	91	1.41E+02	86.12	1.37E+03	6.80E+01
	3	93.35	91 -	97	1.97E+02	91.99	1.31E+03	7.20E+01
	4	99.64	98 -	102	5.64E+01	55.48	6.29E+02	4.39E+01
	5	186.27	183 -	190	1.43E+02	76.03	8.68E+02	5.93E+01
	6	209.25	207 -	212	5.27E+01	56.34	5.91E+02	4.47E+01
M	7	238.79	234 -	246	7.38E+02	66.51	2.96E+02	2.83E+01
m	8	241.85	234 -	246	1.34E+02	46.52	2.59E+02	2.65E+01
	9	270.08	266 -	275	1.16E+02	61.60	4.78E+02	4.74E+01
	10	277.87	275 -	281	4.51E+01	46.23	3.54E+02	3.64E+01
M	11	295.16	292 -	303	2.20E+02	45.97	2.91E+02	2.81E+01
m	12	300.03	292 -	303	5.42E+01	38.54	2.87E+02	2.78E+01
	13	327.85	325 -	331	6.07E+01	46.44	3.51E+02	3.60E+01
	14	338.49	335 -	342	1.62E+02	51.88	3.41E+02	3.72E+01
	15	352.12	347 -	359	4.51E+02	76.67	4.74E+02	2.23E+01
	16	463.41	460 -	466	3.87E+01	35.87	2.05E+02	2.77E+01
M	17	507.66	506 -	516	2.09E+01	13.93	5.57E+01	1.23E+01
m	18	511.11	506 -	516	1.46E+02	41.30	1.88E+02	2.25E+01

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	19	547.39	545 -	550	2.00E+01	24.29	1.02E+02	1.86E+01
	20	563.39	559 -	567	4.45E+01	34.24	1.53E+02	2.59E+01
	21	583.38	579 -	588	2.50E+02	50.36	2.18E+02	3.22E+01
	22	609.52	604 -	613	2.98E+02	51.56	2.09E+02	3.15E+01
	23	629.41	627 -	632	1.96E+01	22.93	8.88E+01	1.74E+01
	24	727.51	722 -	731	8.72E+01	35.13	1.18E+02	2.45E+01
	25	769.69	765 -	773	2.60E+01	33.11	1.52E+02	2.59E+01
	26	794.47	790 -	797	3.57E+01	28.57	1.13E+02	2.13E+01
	27	841.73	840 -	844	1.50E+01	17.83	5.40E+01	1.32E+01
	28	861.87	856 -	868	3.44E+01	39.73	1.71E+02	3.12E+01
	29	911.73	907 -	917	1.91E+02	41.23	1.20E+02	2.52E+01
	30	937.03	931 -	945	3.44E+01	38.58	1.41E+02	1.35E+01
	31	970.18	966 -	975	8.49E+01	40.45	1.48E+02	2.96E+01
	32	993.72	987 -	999	3.78E+01	29.42	8.23E+01	2.20E+01
	33	1048.88	1043 -	1053	2.94E+01	27.78	8.51E+01	2.10E+01
M	34	1120.96	1113 -	1141	8.79E+01	29.53	9.10E+01	1.57E+01
m	35	1124.69	1113 -	1141	2.23E+01	31.46	9.75E+01	1.62E+01
	36	1210.43	1206 -	1214	2.99E+01	31.04	1.28E+02	2.39E+01
M	37	1238.40	1230 -	1246	3.24E+01	26.61	9.83E+01	1.63E+01
m	38	1244.31	1230 -	1246	2.19E+01	24.98	7.55E+01	1.43E+01
	39	1351.28	1348 -	1352	8.33E+00	11.05	1.93E+01	7.74E+00
	40	1461.37	1454 -	1464	8.20E+02	58.37	1.89E+01	9.32E+00
	41	1509.78	1504 -	1512	1.68E+01	9.81	4.47E+00	4.44E+00
	42	1621.63	1618 -	1623	8.00E+00	7.87	6.00E+00	4.50E+00
	43	1730.09	1723 -	1735	2.35E+01	14.16	1.10E+01	8.48E+00
	44	1765.30	1759 -	1768	5.64E+01	19.08	1.92E+01	9.67E+00
	45	1787.09	1781 -	1789	1.00E+01	6.32	0.00E+00	0.00E+00
	46	2055.58	2051 -	2057	6.50E+00	6.65	3.00E+00	3.51E+00
	47	2102.50	2098 -	2103	6.50E+00	6.40	3.00E+00	3.18E+00
	48	2323.34	2319 -	2324	6.00E+00	4.90	0.00E+00	0.00E+00
	49	2615.18	2607 -	2619	1.15E+02	21.45	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/23/2017 2:39:42PM

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

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

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	76.22	72 -	79	76.53	9.85E+02	119.28	1.71E+03	.....
	2	88.05	86 -	91	88.35	1.41E+02	86.12	1.37E+03	CD-109
									LU-176
									SN-126
	3	93.35	91 -	97	93.65	1.97E+02	91.99	1.31E+03	GA-67
	4	99.64	98 -	102	99.93	5.64E+01	55.48	6.29E+02	.....
	5	186.27	183 -	190	186.46	1.43E+02	76.03	8.68E+02	RA-226
	6	209.25	207 -	212	209.42	5.27E+01	56.34	5.91E+02	GA-67
									CM-243
M	7	238.79	234 -	246	238.93	7.38E+02	66.51	2.96E+02	PB-212
m	8	241.85	234 -	246	241.98	1.34E+02	46.52	2.59E+02	RA-224
	9	270.08	266 -	275	270.18	1.16E+02	61.60	4.78E+02	.....
	10	277.87	275 -	281	277.96	4.51E+01	46.23	3.54E+02	CM-243
									NP-239
M	11	295.16	292 -	303	295.24	2.20E+02	45.97	2.91E+02	PB-214
m	12	300.03	292 -	303	300.10	5.42E+01	38.54	2.87E+02	BI-210M
									PB-212
									GA-67
	13	327.85	325 -	331	327.89	6.07E+01	46.44	3.51E+02	LA-140
	14	338.49	335 -	342	338.52	1.62E+02	51.88	3.41E+02	AC-228
	15	352.12	347 -	359	352.13	4.51E+02	76.67	4.74E+02	PB-214
	16	463.41	460 -	466	463.31	3.87E+01	35.87	2.05E+02	SB-125
M	17	507.66	506 -	516	507.52	2.09E+01	13.93	5.57E+01	.....
m	18	511.11	506 -	516	510.97	1.46E+02	41.30	1.88E+02	.....
	19	547.39	545 -	550	547.21	2.00E+01	24.29	1.02E+02	.....
	20	563.39	559 -	567	563.19	4.45E+01	34.24	1.53E+02	CS-134
	21	583.38	579 -	588	583.16	2.50E+02	50.36	2.18E+02	TL-208
	22	609.52	604 -	613	609.28	2.98E+02	51.56	2.09E+02	BI-214
	23	629.41	627 -	632	629.15	1.96E+01	22.93	8.88E+01	.....
	24	727.51	722 -	731	727.15	8.72E+01	35.13	1.18E+02	BI-212
	25	769.69	765 -	773	769.29	2.60E+01	33.11	1.52E+02	.....
	26	794.47	790 -	797	794.04	3.57E+01	28.57	1.13E+02	.....
	27	841.73	840 -	844	841.26	1.50E+01	17.83	5.40E+01	.....
	28	861.87	856 -	868	861.38	3.44E+01	39.73	1.71E+02	.....
	29	911.73	907 -	917	911.20	1.91E+02	41.23	1.20E+02	TL-204
									AC-228
	30	937.03	931 -	945	936.47	3.44E+01	38.58	1.41E+02	.....
	31	970.18	966 -	975	969.59	8.49E+01	40.45	1.48E+02	.....
	32	993.72	987 -	999	993.10	3.78E+01	29.42	8.23E+01	.....
	33	1048.88	1043 -	1053	1048.22	2.94E+01	27.78	8.51E+01	CS-136
M	34	1120.96	1113 -	1141	1120.23	8.79E+01	29.53	9.10E+01	TA-182
									SC-46
									BI-214
m	35	1124.69	1113 -	1141	1123.96	2.23E+01	31.46	9.75E+01	.....
	36	1210.43	1206 -	1214	1209.63	2.99E+01	31.04	1.28E+02	.....
M	37	1238.40	1230 -	1246	1237.57	3.24E+01	26.61	9.83E+01	CO-56
m	38	1244.31	1230 -	1246	1243.47	2.19E+01	24.98	7.55E+01	.....
	39	1351.28	1348 -	1352	1350.35	8.33E+00	11.05	1.93E+01	.....
	40	1461.37	1454 -	1464	1460.35	8.20E+02	58.37	1.89E+01	K-40
	41	1509.78	1504 -	1512	1508.72	1.68E+01	9.81	4.47E+00	.....
	42	1621.63	1618 -	1623	1620.47	8.00E+00	7.87	6.00E+00	.....

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
43	1730.09	1723 -	1735	1728.85	2.35E+01	14.16	1.10E+01	.....
44	1765.30	1759 -	1768	1764.03	5.64E+01	19.08	1.92E+01	BI-214
45	1787.09	1781 -	1789	1785.80	1.00E+01	6.32	0.00E+00	.....
46	2055.58	2051 -	2057	2054.09	6.50E+00	6.65	3.00E+00	.....
47	2102.50	2098 -	2103	2100.97	6.50E+00	6.40	3.00E+00	.....
48	2323.34	2319 -	2324	2321.67	6.00E+00	4.90	0.00E+00	.....
49	2615.18	2607 -	2619	2613.31	1.15E+02	21.45	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/23/2017 2:39:42PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.22	9.85E+02	119.28	2.63E-02	2.11E-03
	2	88.05	1.41E+02	86.12	2.70E-02	2.42E-03
	3	93.35	1.97E+02	91.99	2.70E-02	2.32E-03
	4	99.64	5.64E+01	55.48	2.68E-02	2.20E-03
	5	186.27	1.43E+02	76.03	2.03E-02	1.53E-03
	6	209.25	5.27E+01	56.34	1.88E-02	1.43E-03
M	7	238.79	7.38E+02	66.51	1.72E-02	1.30E-03
m	8	241.85	1.34E+02	46.52	1.71E-02	1.28E-03
	9	270.08	1.16E+02	61.60	1.58E-02	1.16E-03
	10	277.87	4.51E+01	46.23	1.55E-02	1.12E-03
M	11	295.16	2.20E+02	45.97	1.48E-02	1.10E-03
m	12	300.03	5.42E+01	38.54	1.47E-02	1.09E-03
	13	327.85	6.07E+01	46.44	1.38E-02	1.05E-03
	14	338.49	1.62E+02	51.88	1.34E-02	1.04E-03
	15	352.12	4.51E+02	76.67	1.31E-02	1.02E-03
	16	463.41	3.87E+01	35.87	1.06E-02	9.06E-04
M	17	507.66	2.09E+01	13.93	9.92E-03	8.68E-04
m	18	511.11	1.46E+02	41.30	9.87E-03	8.65E-04
	19	547.39	2.00E+01	24.29	9.36E-03	8.33E-04
	20	563.39	4.45E+01	34.24	9.15E-03	8.19E-04
	21	583.38	2.50E+02	50.36	8.90E-03	8.02E-04
	22	609.52	2.98E+02	51.56	8.60E-03	7.79E-04
	23	629.41	1.96E+01	22.93	8.38E-03	7.62E-04

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	24	727.51	8.72E+01	35.13	7.46E-03	6.71E-04
	25	769.69	2.60E+01	33.11	7.13E-03	6.30E-04
	26	794.47	3.57E+01	28.57	6.95E-03	6.06E-04
	27	841.73	1.50E+01	17.83	6.63E-03	5.60E-04
	28	861.87	3.44E+01	39.73	6.50E-03	5.41E-04
	29	911.73	1.91E+02	41.23	6.21E-03	5.01E-04
	30	937.03	3.44E+01	38.58	6.07E-03	4.93E-04
	31	970.18	8.49E+01	40.45	5.90E-03	4.81E-04
	32	993.72	3.78E+01	29.42	5.78E-03	4.73E-04
	33	1048.88	2.94E+01	27.78	5.53E-03	4.54E-04
M	34	1120.96	8.79E+01	29.53	5.24E-03	4.28E-04
m	35	1124.69	2.23E+01	31.46	5.23E-03	4.27E-04
	36	1210.43	2.99E+01	31.04	4.93E-03	4.14E-04
M	37	1238.40	3.24E+01	26.61	4.84E-03	4.16E-04
m	38	1244.31	2.19E+01	24.98	4.82E-03	4.17E-04
	39	1351.28	8.33E+00	11.05	4.52E-03	4.19E-04
	40	1461.37	8.20E+02	58.37	4.26E-03	3.87E-04
	41	1509.78	1.68E+01	9.81	4.16E-03	3.73E-04
	42	1621.63	8.00E+00	7.87	3.96E-03	3.41E-04
	43	1730.09	2.35E+01	14.16	3.79E-03	3.10E-04
	44	1765.30	5.64E+01	19.08	3.75E-03	3.00E-04
	45	1787.09	1.00E+01	6.32	3.72E-03	2.93E-04
	46	2055.58	6.50E+00	6.65	3.44E-03	2.79E-04
	47	2102.50	6.50E+00	6.40	3.41E-03	2.79E-04
	48	2323.34	6.00E+00	4.90	3.28E-03	2.79E-04
	49	2615.18	1.15E+02	21.45	3.20E-03	2.79E-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 : 8/23/2017 2:39:42PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	76.22	9.85E+02	119.28			9.85E+02	1.19E+02
2	88.05	1.41E+02	86.12			1.41E+02	8.61E+01
3	93.35	1.97E+02	91.99	4.88E+01	1.30E+00	1.48E+02	9.20E+01
4	99.64	5.64E+01	55.48			5.64E+01	5.55E+01

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	5	186.27	1.43E+02	76.03	3.48E+01	7.32E+00	1.08E+02	7.64E+01
	6	209.25	5.27E+01	56.34			5.27E+01	5.63E+01
M	7	238.79	7.38E+02	66.51	7.09E+00	6.85E+00	7.31E+02	6.69E+01
m	8	241.85	1.34E+02	46.52			1.34E+02	4.65E+01
	9	270.08	1.16E+02	61.60			1.16E+02	6.16E+01
	10	277.87	4.51E+01	46.23			4.51E+01	4.62E+01
M	11	295.16	2.20E+02	45.97			2.20E+02	4.60E+01
m	12	300.03	5.42E+01	38.54			5.42E+01	3.85E+01
	13	327.85	6.07E+01	46.44			6.07E+01	4.64E+01
	14	338.49	1.62E+02	51.88			1.62E+02	5.19E+01
	15	352.12	4.51E+02	76.67	1.04E+01	5.08E+00	4.41E+02	7.68E+01
	16	463.41	3.87E+01	35.87			3.87E+01	3.59E+01
M	17	507.66	2.09E+01	13.93			2.09E+01	1.39E+01
m	18	511.11	1.46E+02	41.30	7.08E+01	4.94E+00	7.52E+01	4.16E+01
	19	547.39	2.00E+01	24.29			2.00E+01	2.43E+01
	20	563.39	4.45E+01	34.24			4.45E+01	3.42E+01
	21	583.38	2.50E+02	50.36	5.65E+00	3.57E+00	2.44E+02	5.05E+01
	22	609.52	2.98E+02	51.56	1.07E+01	3.96E+00	2.87E+02	5.17E+01
	23	629.41	1.96E+01	22.93			1.96E+01	2.29E+01
	24	727.51	8.72E+01	35.13			8.72E+01	3.51E+01
	25	769.69	2.60E+01	33.11			2.60E+01	3.31E+01
	26	794.47	3.57E+01	28.57			3.57E+01	2.86E+01
	27	841.73	1.50E+01	17.83			1.50E+01	1.78E+01
	28	861.87	3.44E+01	39.73			3.44E+01	3.97E+01
	29	911.73	1.91E+02	41.23	2.63E+00	2.49E+00	1.88E+02	4.13E+01
	30	937.03	3.44E+01	38.58	9.04E-01	2.35E+00	3.35E+01	3.87E+01
	31	970.18	8.49E+01	40.45			8.49E+01	4.04E+01
	32	993.72	3.78E+01	29.42			3.78E+01	2.94E+01
	33	1048.88	2.94E+01	27.78			2.94E+01	2.78E+01
M	34	1120.96	8.79E+01	29.53	2.45E+00	2.38E+00	8.55E+01	2.96E+01
m	35	1124.69	2.23E+01	31.46			2.23E+01	3.15E+01
	36	1210.43	2.99E+01	31.04			2.99E+01	3.10E+01
M	37	1238.40	3.24E+01	26.61			3.24E+01	2.66E+01
m	38	1244.31	2.19E+01	24.98			2.19E+01	2.50E+01
	39	1351.28	8.33E+00	11.05			8.33E+00	1.10E+01
	40	1461.37	8.20E+02	58.37	5.90E+00	2.63E+00	8.14E+02	5.84E+01
	41	1509.78	1.68E+01	9.81			1.68E+01	9.81E+00
	42	1621.63	8.00E+00	7.87			8.00E+00	7.87E+00
	43	1730.09	2.35E+01	14.16			2.35E+01	1.42E+01
	44	1765.30	5.64E+01	19.08	3.33E+00	1.73E+00	5.31E+01	1.92E+01
	45	1787.09	1.00E+01	6.32			1.00E+01	6.32E+00
	46	2055.58	6.50E+00	6.65			6.50E+00	6.65E+00
	47	2102.50	6.50E+00	6.40			6.50E+00	6.40E+00
	48	2323.34	6.00E+00	4.90			6.00E+00	4.90E+00
	49	2615.18	1.15E+02	21.45	4.77E+00	1.52E+00	1.10E+02	2.15E+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 1707090-08

HTC-A06-S001-3642-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 2:39:42PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.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	76.22	9.85E+02	119.28			9.85E+02	1.19E+02
	2	88.05	1.41E+02	86.12			1.41E+02	8.61E+01
	3	93.35	1.97E+02	91.99	4.88E+01	1.30E+00	1.48E+02	9.20E+01
	4	99.64	5.64E+01	55.48			5.64E+01	5.55E+01
	5	186.27	1.43E+02	76.03	3.48E+01	7.32E+00	1.08E+02	7.64E+01
	6	209.25	5.27E+01	56.34			5.27E+01	5.63E+01
M	7	238.79	7.38E+02	66.51	7.09E+00	6.85E+00	7.31E+02	6.69E+01
m	8	241.85	1.34E+02	46.52			1.34E+02	4.65E+01
	9	270.08	1.16E+02	61.60			1.16E+02	6.16E+01
	10	277.87	4.51E+01	46.23			4.51E+01	4.62E+01
M	11	295.16	2.20E+02	45.97			2.20E+02	4.60E+01
m	12	300.03	5.42E+01	38.54			5.42E+01	3.85E+01
	13	327.85	6.07E+01	46.44			6.07E+01	4.64E+01
	14	338.49	1.62E+02	51.88			1.62E+02	5.19E+01
	15	352.12	4.51E+02	76.67	1.04E+01	5.08E+00	4.41E+02	7.68E+01
	16	463.41	3.87E+01	35.87			3.87E+01	3.59E+01
M	17	507.66	2.09E+01	13.93			2.09E+01	1.39E+01
m	18	511.11	1.46E+02	41.30	7.08E+01	4.94E+00	7.52E+01	4.16E+01
	19	547.39	2.00E+01	24.29			2.00E+01	2.43E+01
	20	563.39	4.45E+01	34.24			4.45E+01	3.42E+01
	21	583.38	2.50E+02	50.36	5.65E+00	3.57E+00	2.44E+02	5.05E+01
	22	609.52	2.98E+02	51.56	1.07E+01	3.96E+00	2.87E+02	5.17E+01
	23	629.41	1.96E+01	22.93			1.96E+01	2.29E+01
	24	727.51	8.72E+01	35.13			8.72E+01	3.51E+01
	25	769.69	2.60E+01	33.11			2.60E+01	3.31E+01
	26	794.47	3.57E+01	28.57			3.57E+01	2.86E+01
	27	841.73	1.50E+01	17.83			1.50E+01	1.78E+01
	28	861.87	3.44E+01	39.73			3.44E+01	3.97E+01
	29	911.73	1.91E+02	41.23	2.63E+00	2.49E+00	1.88E+02	4.13E+01
	30	937.03	3.44E+01	38.58	9.04E-01	2.35E+00	3.35E+01	3.87E+01
	31	970.18	8.49E+01	40.45			8.49E+01	4.04E+01
	32	993.72	3.78E+01	29.42			3.78E+01	2.94E+01
	33	1048.88	2.94E+01	27.78			2.94E+01	2.78E+01
M	34	1120.96	8.79E+01	29.53	2.45E+00	2.38E+00	8.55E+01	2.96E+01
m	35	1124.69	2.23E+01	31.46			2.23E+01	3.15E+01
	36	1210.43	2.99E+01	31.04			2.99E+01	3.10E+01
M	37	1238.40	3.24E+01	26.61			3.24E+01	2.66E+01
m	38	1244.31	2.19E+01	24.98			2.19E+01	2.50E+01
	39	1351.28	8.33E+00	11.05			8.33E+00	1.10E+01

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
40	1461.37	8.20E+02	58.37	5.90E+00	2.63E+00	8.14E+02	5.84E+01
41	1509.78	1.68E+01	9.81			1.68E+01	9.81E+00
42	1621.63	8.00E+00	7.87			8.00E+00	7.87E+00
43	1730.09	2.35E+01	14.16			2.35E+01	1.42E+01
44	1765.30	5.64E+01	19.08	3.33E+00	1.73E+00	5.31E+01	1.92E+01
45	1787.09	1.00E+01	6.32			1.00E+01	6.32E+00
46	2055.58	6.50E+00	6.65			6.50E+00	6.65E+00
47	2102.50	6.50E+00	6.40			6.50E+00	6.40E+00
48	2323.34	6.00E+00	4.90			6.00E+00	4.90E+00
49	2615.18	1.15E+02	21.45	4.77E+00	1.52E+00	1.10E+02	2.15E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.950	1460.81	*	10.67	2.17E+01	2.55E+00
CD-109	1.000	88.03	*	3.72	1.97E+00	1.23E+00
SN-126	0.963	87.57	*	37.00	1.71E-01	1.06E-01
TL-208	0.864	583.14	*	30.22	1.10E+00	2.48E-01
		860.37		4.48		
		2614.66	*	35.85	1.17E+00	2.49E-01
BI-212	0.753	727.17	*	11.80	1.20E+00	4.96E-01
		1620.62		2.75		
PB-212	0.996	238.63	*	44.60	1.15E+00	1.37E-01
		300.09	*	3.41	1.31E+00	9.39E-01
BI-214	0.894	609.31	*	46.30	8.74E-01	1.76E-01
		1120.29	*	15.10	1.31E+00	4.67E-01
		1764.49	*	15.80	1.09E+00	4.02E-01
		2204.22		4.98		
PB-214	0.996	295.21	*	19.19	9.38E-01	2.08E-01
		351.92	*	37.19	1.10E+00	2.10E-01
RA-224	0.887	240.98	*	3.95	2.41E+00	8.56E-01
RA-226	0.999	186.21	*	3.28	1.98E+00	3.88E+00
AC-228	0.538	338.32	*	11.40	1.28E+00	4.22E-01
		911.07	*	27.70	1.33E+00	3.11E-01
		969.11		16.60		

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CM-243	0.363	209.75	*	3.29	1.04E+00	1.11E+00
		228.14		10.60		
		277.60	*	14.00	2.54E-01	2.61E-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 : 8/23/2017 2:39:42PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.22	2.73685E-01	6.05		
	3	93.35	4.11177E-02	31.08	Tol.	GA-67
	4	99.64	1.56679E-02	49.18	D-Esc	
	9	270.08	3.22261E-02	26.55		
	13	327.85	1.68585E-02	38.26	Tol.	LA-140
	16	463.41	1.07545E-02	46.33	Sum	
M	17	507.66	5.80965E-03	33.30		
m	18	511.11	2.08987E-02	27.64		
	19	547.39	5.55556E-03	60.72	Sum	
	20	563.39	1.23611E-02	38.47	Tol.	CS-134
	23	629.41	5.44271E-03	58.53	Sum	
	25	769.69	7.21678E-03	63.73	Sum	
	26	794.47	9.90942E-03	40.04		
	27	841.73	4.16667E-03	59.44		
	28	861.87	9.55093E-03	57.78	Sum	
	30	937.03	9.30829E-03	57.68	Sum	
	31	970.18	2.35954E-02	23.81	Sum	
	32	993.72	1.05116E-02	38.87		
	33	1048.88	8.17901E-03	47.18	Tol.	CS-136
m	35	1124.69	6.20800E-03	70.38		
	36	1210.43	8.29196E-03	51.99		
M	37	1238.40	8.99475E-03	41.09		
m	38	1244.31	6.07396E-03	57.12		
	39	1351.28	2.31482E-03	66.27		
	41	1509.78	4.65643E-03	29.26		
	42	1621.63	2.22222E-03	49.21		

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
43	1730.09	6.53257E-03	30.11	Sum	
45	1787.09	2.77778E-03	31.62		
46	2055.58	1.80556E-03	51.17		
47	2102.50	1.80556E-03	49.25		
48	2323.34	1.66667E-03	40.82		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.95	1460.81	*	10.67	2.17E+01	2.55E+00
CD-109	1.00	88.03	*	3.72	1.97E+00	1.23E+00
SN-126	0.96	87.57	*	37.00	1.71E-01	1.06E-01
TL-208	0.86	583.14	*	30.22	1.10E+00	2.48E-01
		860.37		4.48		
		2614.66	*	35.85	1.17E+00	2.49E-01
BI-212	0.75	727.17	*	11.80	1.20E+00	4.96E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.15E+00	1.37E-01
		300.09	*	3.41	1.31E+00	9.39E-01
BI-214	0.89	609.31	*	46.30	8.74E-01	1.76E-01
		1120.29	*	15.10	1.31E+00	4.67E-01
		1764.49	*	15.80	1.09E+00	4.02E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	9.38E-01	2.08E-01
		351.92	*	37.19	1.10E+00	2.10E-01
RA-224	0.88	240.98	*	3.95	2.41E+00	8.56E-01
RA-226	0.99	186.21	*	3.28	1.98E+00	3.88E+00
AC-228	0.53	338.32	*	11.40	1.28E+00	4.22E-01
		911.07	*	27.70	1.33E+00	3.11E-01
		969.11		16.60		
CM-243	0.36	209.75	*	3.29	1.04E+00	1.11E+00
		228.14		10.60		

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CM-243	0.36	277.60	*	14.00	2.54E-01	2.61E-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	0.950	2.17E+01	2.55E+00	
?	CD-109	1.000	1.97E+00	1.23E+00	
?	SN-126	0.963	1.71E-01	1.06E-01	
	TL-208	0.864	1.13E+00	1.76E-01	
	BI-212	0.753	1.20E+00	4.96E-01	
	PB-212	0.996	1.16E+00	1.35E-01	
	BI-214	0.894	9.52E-01	1.53E-01	
	PB-214	0.996	1.02E+00	1.48E-01	
	RA-224	0.887	2.41E+00	8.56E-01	
	RA-226	0.999	1.98E+00	3.88E+00	
	AC-228	0.538	1.31E+00	2.50E-01	
	CM-243	0.363	2.94E-01	2.54E-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 1707090-08

HTC-A06-S001-3642-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 2:39:42PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.22	2.73685E-01	6.05		
	3	93.35	4.11177E-02	31.08	Tol.	GA-67
	4	99.64	1.56679E-02	49.18	D-Esc	
	9	270.08	3.22261E-02	26.55		
	13	327.85	1.68585E-02	38.26	Tol.	LA-140
	16	463.41	1.07545E-02	46.33	Sum	
M	17	507.66	5.80965E-03	33.30		
m	18	511.11	2.08987E-02	27.64		
	19	547.39	5.55556E-03	60.72	Sum	
	20	563.39	1.23611E-02	38.47	Tol.	CS-134
	23	629.41	5.44271E-03	58.53	Sum	
	25	769.69	7.21678E-03	63.73	Sum	
	26	794.47	9.90942E-03	40.04		
	27	841.73	4.16667E-03	59.44		
	28	861.87	9.55093E-03	57.78	Sum	
	30	937.03	9.30829E-03	57.68	Sum	
	31	970.18	2.35954E-02	23.81	Sum	
	32	993.72	1.05116E-02	38.87		
	33	1048.88	8.17901E-03	47.18	Tol.	CS-136
m	35	1124.69	6.20800E-03	70.38		
	36	1210.43	8.29196E-03	51.99		
M	37	1238.40	8.99475E-03	41.09		
m	38	1244.31	6.07396E-03	57.12		
	39	1351.28	2.31482E-03	66.27		
	41	1509.78	4.65643E-03	29.26		
	42	1621.63	2.22222E-03	49.21		
	43	1730.09	6.53257E-03	30.11	Sum	
	45	1787.09	2.77778E-03	31.62		
	46	2055.58	1.80556E-03	51.17		
	47	2102.50	1.80556E-03	49.25		
	48	2323.34	1.66667E-03	40.82		

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

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	8.39E-01	1.88E+00	1.88E+00
+	NA-22	1274.54		99.94	6.79E-02	9.36E-02	9.36E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	-9.89E-04	5.74E-02	5.74E-02
+	K-40	1460.81	*	10.67	2.17E+01	6.26E-01	6.26E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-5.19E-03	4.43E-02	4.43E-02
		78.34		96.00	5.22E-02		5.41E-02
+	SC-46	889.25		99.98	-1.03E-01	1.43E-01	1.43E-01
		1120.51		99.99	3.49E-01		2.88E-01
+	V-48	983.52		99.98	-1.10E+00	4.54E+00	4.54E+00
		1312.10		97.50	1.86E+00		5.87E+00
+	CR-51	320.08		9.83	-3.35E-01	5.86E+00	5.86E+00
+	MN-54	834.83		99.97	4.56E-02	9.50E-02	9.50E-02
+	CO-56	846.75		99.96	-8.26E-03	1.38E-01	1.38E-01
		1037.75		14.03	-2.51E-01		1.14E+00
		1238.25		67.00	2.96E-01		3.83E-01
		1771.40		15.51	-3.41E-01		9.43E-01
		2598.48		16.90	-2.78E-01		4.99E-01
+	CO-57	122.06		85.51	-1.88E-02	5.04E-02	5.04E-02
		136.48		10.60	-3.28E-02		5.45E-01
+	CO-58	810.76		99.40	3.93E-02	1.84E-01	1.84E-01
+	FE-59	1099.22		56.50	1.80E-01	6.95E-01	6.95E-01
		1291.56		43.20	4.01E-01		8.47E-01
+	CO-60	1173.22		100.00	3.17E-02	5.86E-02	8.69E-02
		1332.49		100.00	6.88E-04		5.86E-02
+	ZN-65	1115.52		50.75	-5.31E-01	2.10E-01	2.10E-01
+	GA-67	93.31		35.70	3.67E+08	1.88E+08	1.88E+08
		208.95		2.24	2.71E+09		3.48E+09
		300.22		16.00	4.39E+08		4.99E+08
+	SE-75	121.11		16.70	2.53E-02	1.26E-01	3.57E-01

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	5.87E-03	1.26E-01	1.34E-01
		264.65		59.80	-2.99E-02		1.26E-01
		279.53		25.20	-1.34E-01		3.37E-01
		400.65		11.40	-1.05E-01		7.76E-01
+	RB-82	776.52		13.00	-3.46E+00	7.18E+00	7.18E+00
+	RB-83	520.41		46.00	4.02E-02	2.31E-01	2.31E-01
		529.64		30.30	6.80E-02		3.56E-01
		552.65		16.40	2.65E-01		6.96E-01
+	KR-85	513.99		0.43	-5.97E+00	1.48E+01	1.48E+01
+	SR-85	513.99		99.27	-7.41E-02	1.84E-01	1.84E-01
+	Y-88	898.02		93.40	4.98E-03	1.01E-01	1.39E-01
		1836.01		99.38	-2.47E-02		1.01E-01
+	MO-93	263.06		56.72	-1.82E-02	6.28E-02	7.42E-02
		684.67		99.68	-1.20E-03		6.49E-02
		1477.11		99.08	7.36E-03		6.28E-02
+	NB-93M	16.57		9.43	0.00E+00	7.09E+00	7.09E+00
+	NB-94	702.63		100.00	-1.15E-02	6.31E-02	6.31E-02
		871.10		100.00	-3.44E-03		6.51E-02
+	NB-95	765.79		99.81	1.86E-02	4.99E-01	4.99E-01
+	NB-95M	235.69		25.00	-5.38E+08	5.00E+07	5.00E+07
+	ZR-95	724.18		43.70	3.52E-01	3.72E-01	5.68E-01
		756.72		55.30	1.13E-01		3.72E-01
+	MO-99	181.06		6.20	-1.95E+10	3.39E+10	5.26E+10
		739.58		12.80	-2.02E+10		3.39E+10
		778.00		4.50	-4.55E+10		1.07E+11
+	RU-103	497.08		89.00	2.33E-02	3.19E-01	3.19E-01
+	RU-106	621.84		9.80	1.09E-01	7.19E-01	7.19E-01
+	AG-108M	433.93		89.90	4.59E-02	5.51E-02	5.51E-02
		614.37		90.40	-5.84E-04		6.32E-02
		722.95		90.50	1.93E-03		7.98E-02
+	CD-109	88.03	*	3.72	1.97E+00	1.95E+00	1.95E+00
+	AG-110M	657.75		93.14	-2.52E-02	8.88E-02	8.88E-02
		677.61		10.53	3.19E-01		8.30E-01
		706.67		16.46	-6.86E-02		5.36E-01
		763.93		21.98	4.17E-02		3.99E-01
		884.67		71.63	8.78E-02		1.37E-01
		1384.27		23.94	-2.98E-01		3.37E-01
+	CD-113M	263.70		0.02	1.73E+01	1.85E+02	1.85E+02
+	SN-113	255.12		1.93	-3.61E-01	1.38E-01	4.40E+00
		391.69		64.90	-2.66E-02		1.38E-01
+	TE123M	159.00		84.10	7.10E-02	1.01E-01	1.01E-01
+	SB-124	602.71		97.87	-3.84E-02	2.02E-01	2.02E-01
		645.85		7.26	-4.42E-01		2.72E+00
		722.78		11.10	3.80E-02		1.99E+00
		1691.02		49.00	3.26E-02		4.06E-01
+	I-125	35.49		6.49	-2.31E+01	7.05E+00	7.05E+00
+	SB-125	176.33		6.89	2.06E-01	1.77E-01	7.11E-01
		427.89		29.33	1.09E-01		1.77E-01

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	5.08E-01	1.77E-01	6.23E-01
		600.56		17.80	-1.12E-02		3.72E-01
		635.90		11.32	-2.76E-02		5.82E-01
+	SB-126	414.70		83.30	3.66E+00	1.48E+01	1.48E+01
		666.33		99.60	2.85E+00		1.82E+01
		695.00		99.60	6.47E+00		1.79E+01
		720.50		53.80	-4.17E+00		2.98E+01
+	SN-126	87.57	*	37.00	1.71E-01	1.69E-01	1.69E-01
+	SB-127	473.00		25.00	-7.00E+06	1.07E+07	1.09E+07
		685.20		35.70	4.72E+06		1.07E+07
		783.80		14.70	2.15E+07		3.12E+07
+	I-129	29.78		57.00	2.59E-01	3.96E-01	3.96E-01
		33.60		13.20	8.86E+00		2.08E+00
		39.58		7.52	1.24E+00		1.27E+00
+	I-131	284.30		6.05	3.42E+02	2.71E+02	4.11E+03
		364.48		81.20	-1.74E+02		2.71E+02
		636.97		7.26	-1.27E+02		4.49E+03
		722.89		1.80	5.03E+02		2.08E+04
+	TE-132	49.72		13.10	-1.98E+08	8.11E+07	5.31E+08
		228.16		88.00	-4.15E+07		8.11E+07
+	BA-133	81.00		33.00	7.00E-03	7.75E-02	1.18E-01
		302.84		17.80	6.13E-03		2.87E-01
		356.01		60.00	-2.86E-01		7.75E-02
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	2.97E+03	5.00E+04	5.00E+04
+	CS-134	563.23		8.38	6.07E-01	7.56E-02	7.82E-01
		569.32		15.43	-6.43E-02		3.59E-01
		604.70		97.60	-1.08E-02		7.56E-02
		795.84		85.40	6.98E-02		1.01E-01
		801.93		8.73	-2.62E-01		8.08E-01
+	CS-135	268.24		16.00	-3.99E-02	3.12E-01	3.12E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	1.00E+01	1.22E+01	1.19E+02
		163.89		4.61	1.16E+01		1.81E+02
		176.55		13.56	1.82E+01		6.28E+01
		273.65		12.66	-9.44E+01		6.77E+01
		340.57		48.50	2.48E+00		2.35E+01
		818.50		99.70	2.31E+00		1.22E+01
		1048.07		79.60	2.80E+00		1.84E+01
		1235.34		19.70	4.25E+01		1.01E+02
+	CS-137	661.65		85.12	-3.71E-02	7.80E-02	7.80E-02
+	LA-138	788.74		34.00	-4.79E-02	8.56E-02	2.01E-01
		1435.80		66.00	1.23E-02		8.56E-02
+	CE-139	165.85		80.35	1.49E-02	9.49E-02	9.49E-02
+	BA-140	162.64		6.70	-8.38E+01	4.05E+01	1.44E+02
		304.84		4.50	1.58E+01		2.36E+02
		423.70		3.20	-1.65E+02		3.14E+02

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	437.55	2.00	-5.20E+01	4.05E+01	5.24E+02
		537.32	25.00	-4.07E-01		4.05E+01
+	LA-140	328.77	20.50	2.69E+01	1.69E+01	6.09E+01
		487.03	45.50	5.36E+00		2.27E+01
		815.85	23.50	-1.15E+01		6.17E+01
		1596.49	95.49	-6.62E+00		1.69E+01
+	CE-141	145.44	48.40	8.77E-02	7.88E-01	7.88E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-7.36E-02	4.07E-01	4.07E-01
+	PM-144	476.78	42.00	6.94E-02	6.98E-02	1.55E-01
		618.01	98.60	1.67E-02		6.98E-02
		696.49	99.49	4.08E-02		8.50E-02
+	PM-145	36.85	21.70	-6.30E-01	2.79E-01	5.30E-01
		37.36	39.70	-8.00E-02		2.79E-01
		42.30	15.10	-7.73E-02		4.29E-01
		72.40	2.31	-7.99E+00		1.99E+00
+	PM-146	453.90	39.94	1.42E-02	1.25E-01	1.25E-01
		735.90	14.01	2.01E-01		4.69E-01
		747.13	13.10	6.58E-02		5.00E-01
+	ND-147	91.11	28.90	-1.19E+02	7.70E+01	7.70E+01
		531.02	13.10	5.33E+00		1.97E+02
+	PM-149	285.90	3.10	-1.15E+13	4.93E+13	4.93E+13
+	EU-152	121.78	20.50	-6.17E-02	1.65E-01	1.65E-01
		244.69	5.40	-1.84E+00		8.90E-01
		344.27	19.13	-1.20E-02		2.49E-01
		778.89	9.20	-3.13E-01		7.34E-01
		964.01	10.40	5.88E-01		8.79E-01
		1085.78	7.22	-6.29E-02		9.82E-01
		1112.02	9.60	-5.00E-02		8.49E-01
		1407.95	14.94	1.99E-01		5.38E-01
+	GD-153	97.43	31.30	-1.31E-01	1.36E-01	1.36E-01
		103.18	22.20	-1.65E-02		1.82E-01
+	EU-154	123.07	40.50	1.36E-03	8.65E-02	8.65E-02
		723.30	19.70	9.05E-03		3.74E-01
		873.19	11.50	-2.88E-01		5.51E-01
		996.32	10.30	9.12E-02		6.70E-01
		1004.76	17.90	5.68E-02		4.26E-01
		1274.45	35.50	1.82E-01		2.50E-01
+	EU-155	86.50	30.90	1.65E-01	1.53E-01	1.53E-01
		105.30	20.70	3.05E-03		1.73E-01
+	EU-156	811.77	10.40	-3.95E-02	6.13E+01	6.13E+01
		1153.47	7.20	7.24E+01		1.20E+02
		1230.71	8.90	6.34E+00		1.00E+02
+	HO-166M	184.41	72.60	9.01E-02	7.93E-02	7.93E-02
		280.45	29.60	1.31E-02		1.55E-01
		410.94	11.10	1.28E-01		4.75E-01
		711.69	54.10	4.02E-02		1.22E-01

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	2.47E+01	3.41E+01	3.41E+01
+	HF-172	67.35		5.31	-1.02E-01	3.37E-01	8.72E-01
		125.81		11.30	4.59E-02		3.37E-01
+	LU-172	181.53		20.60	5.82E+02	3.97E+03	6.25E+03
		900.72		29.81	-5.73E+03		6.19E+03
		1093.66		62.50	-7.63E+01		3.97E+03
+	LU-173	100.72		5.24	2.69E-01	2.90E-01	7.26E-01
		272.11		21.20	3.16E-01		2.90E-01
+	HF-175	343.40		84.00	2.79E-02	1.54E-01	1.54E-01
+	LU-176	88.34		13.30	2.08E-01	5.14E-02	3.45E-01
		201.83		86.00	-5.39E-03		6.05E-02
		306.78		94.00	6.00E-03		5.14E-02
+	HF-181	133.02		41.70	5.92E-02	2.83E-01	4.28E-01
		345.85		17.20	2.54E-02		1.42E+00
		482.03		82.80	-1.63E-02		2.83E-01
+	TA-182	67.75		41.20	-2.16E-02	1.85E-01	1.85E-01
		1121.30		34.90	1.21E+00		6.92E-01
		1189.05		16.23	-3.05E-01		9.34E-01
		1221.41		26.98	-1.17E-02		6.49E-01
		1231.02		11.44	9.73E-02		1.54E+00
+	IR-192	308.46		29.68	-1.53E-01	2.70E-01	3.79E-01
		468.07		48.10	7.86E-02		2.70E-01
+	HG-203	279.19		77.30	1.64E-01	2.83E-01	2.83E-01
+	TL-204	374.74		94.11	-1.60E-03	5.57E-02	5.57E-02
		899.15		99.16	-5.46E-02		6.66E-02
		911.74		91.10	3.81E-01		1.62E-01
+	BI-207	569.67		97.72	-9.32E-03	5.21E-02	5.21E-02
		1063.62		74.90	4.47E-02		1.06E-01
+	TL-208	583.14	*	30.22	1.10E+00	1.09E-01	3.06E-01
		860.37		4.48	1.27E+00		1.77E+00
		2614.66	*	35.85	1.17E+00		1.09E-01
+	BI-210M	262.00		45.00	1.30E-02	9.57E-02	9.57E-02
		300.00		23.00	2.12E-01		2.40E-01
+	PB-210	46.50		4.25	1.83E+00	1.47E+00	1.47E+00
+	PB-211	404.84		2.90	8.74E-01	1.79E+00	1.79E+00
		831.96		2.90	-3.38E+00		2.12E+00
+	BI-212	727.17	*	11.80	1.20E+00	7.11E-01	7.11E-01
		1620.62		2.75	2.23E-01		2.37E+00
+	PB-212	238.63	*	44.60	1.15E+00	2.19E-01	2.19E-01
		300.09	*	3.41	1.31E+00		2.81E+00
+	BI-214	609.31	*	46.30	8.74E-01	2.04E-01	2.04E-01
		1120.29	*	15.10	1.31E+00		1.79E+00
		1764.49	*	15.80	1.09E+00		4.75E-01
		2204.22		4.98	1.31E+00		1.75E+00
+	PB-214	295.21	*	19.19	9.38E-01	2.71E-01	4.95E-01
		351.92	*	37.19	1.10E+00		2.71E-01
+	RN-219	401.80		6.50	6.50E-02	7.83E-01	7.83E-01
+	RA-223	323.87		3.88	4.65E-02	1.27E+00	1.27E+00

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98	*	3.95	2.41E+00	2.47E+00	2.47E+00
+	RA-225	40.00		31.00	3.04E+01	3.12E+01	3.12E+01
+	RA-226	186.21	*	3.28	1.98E+00	2.25E+00	2.25E+00
+	TH-227	50.10		8.40	-2.08E-01	5.57E-01	5.57E-01
		236.00		11.50	-6.24E+00		5.80E-01
		256.20		6.30	-2.12E-01		7.42E-01
+	AC-228	338.32	*	11.40	1.28E+00	3.77E-01	6.10E-01
		911.07	*	27.70	1.33E+00		3.77E-01
		969.11		16.60	7.27E-01		7.27E-01
+	TH-230	48.44		16.90	-2.29E-01	3.01E-01	3.01E-01
		62.85		4.60	8.26E-01		1.04E+00
		67.67		0.37	-1.32E+00		1.13E+01
+	PA-231	283.67		1.60	2.49E-01	2.18E+00	2.99E+00
		302.67		2.30	4.66E-02		2.18E+00
+	TH-231	25.64		14.70	0.00E+00	1.26E-01	1.26E-01
		84.21		6.40	3.42E-01		6.30E-01
+	PA-233	311.98		38.60	-4.70E-02	1.44E+00	1.44E+00
+	PA-234	131.20		20.40	3.27E-03	1.78E-01	1.78E-01
		733.99		8.80	1.04E-01		6.50E-01
		946.00		12.00	-1.68E-02		5.39E-01
+	PA-234M	1001.03		0.92	8.60E-02	7.45E+00	7.45E+00
+	TH-234	63.29		3.80	7.43E-01	1.24E+00	1.24E+00
+	U-235	143.76		10.50	-2.52E-01	4.13E-01	4.13E-01
		163.35		4.70	6.13E-02		9.52E-01
		205.31		4.70	3.37E-01		1.09E+00
+	NP-237	86.50		12.60	3.89E-01	3.61E-01	3.61E-01
+	NP-239	106.10		22.70	1.29E+10	7.32E+11	7.32E+11
		228.18		10.70	-1.12E+12		2.19E+12
		277.60		14.10	1.90E+12		1.74E+12
+	AM-241	59.54		35.90	1.32E-02	1.27E-01	1.27E-01
+	AM-243	74.67		66.00	-9.26E-02	9.05E-02	9.05E-02
+	CM-243	209.75	*	3.29	1.04E+00	4.25E-01	1.82E+00
		228.14		10.60	-2.36E-01		4.62E-01
		277.60	*	14.00	2.54E-01		4.25E-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 1707090-08

HTC-A06-S001-3642-01

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	1.88E+00	1.88E+00	8.39E-01	8.85E-01
	NA-22	1274.54		99.94	9.36E-02	9.36E-02	6.79E-02	4.30E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	5.74E-02	5.74E-02	-9.89E-04	2.42E-02
+	K-40	1460.81	*	10.67	6.26E-01	6.26E-01	2.17E+01	2.77E-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	4.43E-02	4.43E-02	-5.19E-03	2.14E-02
		78.34		96.00	5.41E-02		5.22E-02	2.64E-02
	SC-46	889.25		99.98	1.43E-01	1.43E-01	-1.03E-01	6.56E-02
		1120.51		99.99	2.88E-01		3.49E-01	1.37E-01
	V-48	983.52		99.98	4.54E+00	4.54E+00	-1.10E+00	2.06E+00
		1312.10		97.50	5.87E+00		1.86E+00	2.67E+00
	CR-51	320.08		9.83	5.86E+00	5.86E+00	-3.35E-01	2.79E+00
	MN-54	834.83		99.97	9.50E-02	9.50E-02	4.56E-02	4.44E-02
	CO-56	846.75		99.96	1.38E-01	1.38E-01	-8.26E-03	6.32E-02
		1037.75		14.03	1.14E+00		-2.51E-01	5.18E-01
		1238.25		67.00	3.83E-01		2.96E-01	1.79E-01
		1771.40		15.51	9.43E-01		-3.41E-01	4.04E-01
		2598.48		16.90	4.99E-01		-2.78E-01	1.77E-01
	CO-57	122.06		85.51	5.04E-02	5.04E-02	-1.88E-02	2.42E-02
		136.48		10.60	5.45E-01		-3.28E-02	2.64E-01
	CO-58	810.76		99.40	1.84E-01	1.84E-01	3.93E-02	8.57E-02
	FE-59	1099.22		56.50	6.95E-01	6.95E-01	1.80E-01	3.22E-01
		1291.56		43.20	8.47E-01		4.01E-01	3.85E-01
	CO-60	1173.22		100.00	8.69E-02	5.86E-02	3.17E-02	4.01E-02
		1332.49		100.00	5.86E-02		6.88E-04	2.56E-02
	ZN-65	1115.52		50.75	2.10E-01	2.10E-01	-5.31E-01	9.70E-02
	GA-67	93.31		35.70	1.88E+08	1.88E+08	3.67E+08	9.13E+07
		208.95		2.24	3.48E+09		2.71E+09	1.68E+09
		300.22		16.00	4.99E+08		4.39E+08	2.39E+08
	SE-75	121.11		16.70	3.57E-01	1.26E-01	2.53E-02	1.72E-01
		136.00		59.20	1.34E-01		5.87E-03	6.48E-02
		264.65		59.80	1.26E-01		-2.99E-02	6.00E-02
		279.53		25.20	3.37E-01		-1.34E-01	1.61E-01
		400.65		11.40	7.76E-01		-1.05E-01	3.67E-01
	RB-82	776.52		13.00	7.18E+00	7.18E+00	-3.46E+00	3.33E+00
	RB-83	520.41		46.00	2.31E-01	2.31E-01	4.02E-02	1.08E-01
		529.64		30.30	3.56E-01		6.80E-02	1.65E-01
		552.65		16.40	6.96E-01		2.65E-01	3.24E-01
	KR-85	513.99		0.43	1.48E+01	1.48E+01	-5.97E+00	7.03E+00
	SR-85	513.99		99.27	1.84E-01	1.84E-01	-7.41E-02	8.72E-02

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	1.39E-01	1.01E-01	4.98E-03	6.42E-02
		1836.01		99.38	1.01E-01		-2.47E-02	4.19E-02
	MO-93	263.06		56.72	7.42E-02	6.28E-02	-1.82E-02	3.53E-02
		684.67		99.68	6.49E-02		-1.20E-03	3.03E-02
		1477.11		99.08	6.28E-02		7.36E-03	2.74E-02
	NB-93M	16.57		9.43	7.09E+00	7.09E+00	0.00E+00	0.00E+00
	NB-94	702.63		100.00	6.31E-02	6.31E-02	-1.15E-02	2.94E-02
		871.10		100.00	6.51E-02		-3.44E-03	3.00E-02
	NB-95	765.79		99.81	4.99E-01	4.99E-01	1.86E-02	2.33E-01
	NB-95M	235.69		25.00	5.00E+07	5.00E+07	-5.38E+08	2.43E+07
	ZR-95	724.18		43.70	5.68E-01	3.72E-01	3.52E-01	2.69E-01
		756.72		55.30	3.72E-01		1.13E-01	1.74E-01
	MO-99	181.06		6.20	5.26E+10	3.39E+10	-1.95E+10	2.54E+10
		739.58		12.80	3.39E+10		-2.02E+10	1.57E+10
		778.00		4.50	1.07E+11		-4.55E+10	4.95E+10
	RU-103	497.08		89.00	3.19E-01	3.19E-01	2.33E-02	1.49E-01
	RU-106	621.84		9.80	7.19E-01	7.19E-01	1.09E-01	3.36E-01
	AG-108M	433.93		89.90	5.51E-02	5.51E-02	4.59E-02	2.59E-02
		614.37		90.40	6.32E-02		-5.84E-04	2.95E-02
		722.95		90.50	7.98E-02		1.93E-03	3.75E-02
+	CD-109	88.03	*	3.72	1.95E+00	1.95E+00	1.97E+00	9.54E-01
	AG-110M	657.75		93.14	8.88E-02	8.88E-02	-2.52E-02	4.15E-02
		677.61		10.53	8.30E-01		3.19E-01	3.89E-01
		706.67		16.46	5.36E-01		-6.86E-02	2.51E-01
		763.93		21.98	3.99E-01		4.17E-02	1.86E-01
		884.67		71.63	1.37E-01		8.78E-02	6.37E-02
		1384.27		23.94	3.37E-01		-2.98E-01	1.48E-01
	CD-113M	263.70		0.02	1.85E+02	1.85E+02	1.73E+01	8.82E+01
	SN-113	255.12		1.93	4.40E+00	1.38E-01	-3.61E-01	2.11E+00
		391.69		64.90	1.38E-01		-2.66E-02	6.51E-02
	TE123M	159.00		84.10	1.01E-01	1.01E-01	7.10E-02	4.90E-02
	SB-124	602.71		97.87	2.02E-01	2.02E-01	-3.84E-02	9.49E-02
		645.85		7.26	2.72E+00		-4.42E-01	1.28E+00
		722.78		11.10	1.99E+00		3.80E-02	9.32E-01
		1691.02		49.00	4.06E-01		3.26E-02	1.75E-01
	I-125	35.49		6.49	7.05E+00	7.05E+00	-2.31E+01	3.42E+00
	SB-125	176.33		6.89	7.11E-01	1.77E-01	2.06E-01	3.43E-01
		427.89		29.33	1.77E-01		1.09E-01	8.30E-02
		463.38		10.35	6.23E-01		5.08E-01	2.95E-01
		600.56		17.80	3.72E-01		-1.12E-02	1.74E-01
		635.90		11.32	5.82E-01		-2.76E-02	2.72E-01
	SB-126	414.70		83.30	1.48E+01	1.48E+01	3.66E+00	6.96E+00
		666.33		99.60	1.82E+01		2.85E+00	8.55E+00
		695.00		99.60	1.79E+01		6.47E+00	8.39E+00
		720.50		53.80	2.98E+01		-4.17E+00	1.38E+01
+	SN-126	87.57	*	37.00	1.69E-01	1.69E-01	1.71E-01	8.27E-02
	SB-127	473.00		25.00	1.09E+07	1.07E+07	-7.00E+06	5.09E+06
		685.20		35.70	1.07E+07		4.72E+06	5.01E+06
		783.80		14.70	3.12E+07		2.15E+07	1.47E+07
	I-129	29.78		57.00	3.96E-01	3.96E-01	2.59E-01	1.91E-01
		33.60		13.20	2.08E+00		8.86E+00	1.02E+00
		39.58		7.52	1.27E+00		1.24E+00	6.16E-01
	I-131	284.30		6.05	4.11E+03	2.71E+02	3.42E+02	1.96E+03

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	364.48	81.20	2.71E+02	2.71E+02	-1.74E+02	1.27E+02
	636.97	7.26	4.49E+03		-1.27E+02	2.10E+03
	722.89	1.80	2.08E+04		5.03E+02	9.76E+03
TE-132	49.72	13.10	5.31E+08	8.11E+07	-1.98E+08	2.55E+08
	228.16	88.00	8.11E+07		-4.15E+07	3.90E+07
BA-133	81.00	33.00	1.18E-01	7.75E-02	7.00E-03	5.71E-02
	302.84	17.80	2.87E-01		6.13E-03	1.37E-01
	356.01	60.00	7.75E-02		-2.86E-01	3.66E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	5.00E+04	5.00E+04	2.97E+03	2.42E+04
CS-134	563.23	8.38	7.82E-01	7.56E-02	6.07E-01	3.67E-01
	569.32	15.43	3.59E-01		-6.43E-02	1.67E-01
	604.70	97.60	7.56E-02		-1.08E-02	3.57E-02
	795.84	85.40	1.01E-01		6.98E-02	4.72E-02
	801.93	8.73	8.08E-01		-2.62E-01	3.74E-01
CS-135	268.24	16.00	3.12E-01	3.12E-01	-3.99E-02	1.49E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.19E+02	1.22E+01	1.00E+01	5.78E+01
	163.89	4.61	1.81E+02		1.16E+01	8.74E+01
	176.55	13.56	6.28E+01		1.82E+01	3.03E+01
	273.65	12.66	6.77E+01		-9.44E+01	3.23E+01
	340.57	48.50	2.35E+01		2.48E+00	1.13E+01
	818.50	99.70	1.22E+01		2.31E+00	5.65E+00
	1048.07	79.60	1.84E+01		2.80E+00	8.51E+00
	1235.34	19.70	1.01E+02		4.25E+01	4.73E+01
CS-137	661.65	85.12	7.80E-02	7.80E-02	-3.71E-02	3.66E-02
LA-138	788.74	34.00	2.01E-01	8.56E-02	-4.79E-02	9.35E-02
	1435.80	66.00	8.56E-02		1.23E-02	3.71E-02
CE-139	165.85	80.35	9.49E-02	9.49E-02	1.49E-02	4.59E-02
BA-140	162.64	6.70	1.44E+02	4.05E+01	-8.38E+01	6.95E+01
	304.84	4.50	2.36E+02		1.58E+01	1.12E+02
	423.70	3.20	3.14E+02		-1.65E+02	1.47E+02
	437.55	2.00	5.24E+02		-5.20E+01	2.46E+02
	537.32	25.00	4.05E+01		-4.07E-01	1.87E+01
LA-140	328.77	20.50	6.09E+01	1.69E+01	2.69E+01	2.92E+01
	487.03	45.50	2.27E+01		5.36E+00	1.06E+01
	815.85	23.50	6.17E+01		-1.15E+01	2.86E+01
	1596.49	95.49	1.69E+01		-6.62E+00	7.50E+00
CE-141	145.44	48.40	7.88E-01	7.88E-01	8.77E-02	3.82E-01
@ 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	4.07E-01	4.07E-01	-7.36E-02	1.95E-01
PM-144	476.78	42.00	1.55E-01	6.98E-02	6.94E-02	7.32E-02
	618.01	98.60	6.98E-02		1.67E-02	3.25E-02
	696.49	99.49	8.50E-02		4.08E-02	3.99E-02
PM-145	36.85	21.70	5.30E-01	2.79E-01	-6.30E-01	2.56E-01
	37.36	39.70	2.79E-01		-8.00E-02	1.35E-01
	42.30	15.10	4.29E-01		-7.73E-02	2.06E-01
	72.40	2.31	1.99E+00		-7.99E+00	9.66E-01
PM-146	453.90	39.94	1.25E-01	1.25E-01	1.42E-02	5.86E-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)
PM-146	735.90	14.01	4.69E-01	1.25E-01	2.01E-01	2.18E-01
	747.13	13.10	5.00E-01		6.58E-02	2.32E-01
ND-147	91.11	28.90	7.70E+01	7.70E+01	-1.19E+02	3.74E+01
	531.02	13.10	1.97E+02		5.33E+00	9.14E+01
PM-149	285.90	3.10	4.93E+13	4.93E+13	-1.15E+13	2.36E+13
EU-152	121.78	20.50	1.65E-01	1.65E-01	-6.17E-02	7.94E-02
	244.69	5.40	8.90E-01		-1.84E+00	4.27E-01
	344.27	19.13	2.49E-01		-1.20E-02	1.18E-01
	778.89	9.20	7.34E-01		-3.13E-01	3.41E-01
	964.01	10.40	8.79E-01		5.88E-01	4.12E-01
	1085.78	7.22	9.82E-01		-6.29E-02	4.48E-01
	1112.02	9.60	8.49E-01		-5.00E-02	3.91E-01
	1407.95	14.94	5.38E-01		1.99E-01	2.43E-01
GD-153	97.43	31.30	1.36E-01	1.36E-01	-1.31E-01	6.53E-02
	103.18	22.20	1.82E-01		-1.65E-02	8.75E-02
EU-154	123.07	40.50	8.65E-02	8.65E-02	1.36E-03	4.16E-02
	723.30	19.70	3.74E-01		9.05E-03	1.76E-01
	873.19	11.50	5.51E-01		-2.88E-01	2.53E-01
	996.32	10.30	6.70E-01		9.12E-02	3.07E-01
	1004.76	17.90	4.26E-01		5.68E-02	1.97E-01
	1274.45	35.50	2.50E-01		1.82E-01	1.15E-01
EU-155	86.50	30.90	1.53E-01	1.53E-01	1.65E-01	7.43E-02
	105.30	20.70	1.73E-01		3.05E-03	8.33E-02
EU-156	811.77	10.40	6.13E+01	6.13E+01	-3.95E-02	2.85E+01
	1153.47	7.20	1.20E+02		7.24E+01	5.58E+01
	1230.71	8.90	1.00E+02		6.34E+00	4.67E+01
HO-166M	184.41	72.60	7.93E-02	7.93E-02	9.01E-02	3.85E-02
	280.45	29.60	1.55E-01		1.31E-02	7.41E-02
	410.94	11.10	4.75E-01		1.28E-01	2.25E-01
	711.69	54.10	1.22E-01		4.02E-02	5.70E-02
TM-171	66.72	0.14	3.41E+01	3.41E+01	2.47E+01	1.65E+01
HF-172	67.35	5.31	8.72E-01	3.37E-01	-1.02E-01	4.22E-01
	125.81	11.30	3.37E-01		4.59E-02	1.62E-01
LU-172	181.53	20.60	6.25E+03	3.97E+03	5.82E+02	3.01E+03
	900.72	29.81	6.19E+03		-5.73E+03	2.84E+03
	1093.66	62.50	3.97E+03		-7.63E+01	1.85E+03
LU-173	100.72	5.24	7.26E-01	2.90E-01	2.69E-01	3.50E-01
	272.11	21.20	2.90E-01		3.16E-01	1.39E-01
HF-175	343.40	84.00	1.54E-01	1.54E-01	2.79E-02	7.30E-02
LU-176	88.34	13.30	3.45E-01	5.14E-02	2.08E-01	1.68E-01
	201.83	86.00	6.05E-02		-5.39E-03	2.93E-02
	306.78	94.00	5.14E-02		6.00E-03	2.45E-02
HF-181	133.02	41.70	4.28E-01	2.83E-01	5.92E-02	2.06E-01
	345.85	17.20	1.42E+00		2.54E-02	6.73E-01
	482.03	82.80	2.83E-01		-1.63E-02	1.32E-01
TA-182	67.75	41.20	1.85E-01	1.85E-01	-2.16E-02	8.94E-02
	1121.30	34.90	6.92E-01		1.21E+00	3.29E-01
	1189.05	16.23	9.34E-01		-3.05E-01	4.30E-01
	1221.41	26.98	6.49E-01		-1.17E-02	3.02E-01
	1231.02	11.44	1.54E+00		9.73E-02	7.17E-01
IR-192	308.46	29.68	3.79E-01	2.70E-01	-1.53E-01	1.80E-01
	468.07	48.10	2.70E-01		7.86E-02	1.27E-01
HG-203	279.19	77.30	2.83E-01	2.83E-01	1.64E-01	1.36E-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)
	TL-204	374.74		94.11	5.57E-02	5.57E-02	-1.60E-03	2.64E-02
		899.15		99.16	6.66E-02		-5.46E-02	3.05E-02
		911.74		91.10	1.62E-01		3.81E-01	7.82E-02
	BI-207	569.67		97.72	5.21E-02	5.21E-02	-9.32E-03	2.42E-02
		1063.62		74.90	1.06E-01		4.47E-02	4.90E-02
+	TL-208	583.14	*	30.22	3.06E-01	1.09E-01	1.10E+00	1.47E-01
		860.37		4.48	1.77E+00		1.27E+00	8.27E-01
		2614.66	*	35.85	1.09E-01		1.17E+00	4.03E-02
	BI-210M	262.00		45.00	9.57E-02	9.57E-02	1.30E-02	4.56E-02
		300.00		23.00	2.40E-01		2.12E-01	1.15E-01
	PB-210	46.50		4.25	1.47E+00	1.47E+00	1.83E+00	7.10E-01
	PB-211	404.84		2.90	1.79E+00	1.79E+00	8.74E-01	8.47E-01
		831.96		2.90	2.12E+00		-3.38E+00	9.76E-01
+	BI-212	727.17	*	11.80	7.11E-01	7.11E-01	1.20E+00	3.37E-01
		1620.62		2.75	2.37E+00		2.23E-01	1.04E+00
+	PB-212	238.63	*	44.60	2.19E-01	2.19E-01	1.15E+00	1.07E-01
		300.09	*	3.41	2.81E+00		1.31E+00	1.37E+00
+	BI-214	609.31	*	46.30	2.04E-01	2.04E-01	8.74E-01	9.79E-02
		1120.29	*	15.10	1.79E+00		1.31E+00	8.76E-01
		1764.49	*	15.80	4.75E-01		1.09E+00	2.10E-01
		2204.22		4.98	1.75E+00		1.31E+00	7.77E-01
+	PB-214	295.21	*	19.19	4.95E-01	2.71E-01	9.38E-01	2.42E-01
		351.92	*	37.19	2.71E-01		1.10E+00	1.32E-01
	RN-219	401.80		6.50	7.83E-01	7.83E-01	6.50E-02	3.70E-01
	RA-223	323.87		3.88	1.27E+00	1.27E+00	4.65E-02	6.06E-01
+	RA-224	240.98	*	3.95	2.47E+00	2.47E+00	2.41E+00	1.21E+00
	RA-225	40.00		31.00	3.12E+01	3.12E+01	3.04E+01	1.51E+01
+	RA-226	186.21	*	3.28	2.25E+00	2.25E+00	1.98E+00	1.10E+00
	TH-227	50.10		8.40	5.57E-01	5.57E-01	-2.08E-01	2.68E-01
		236.00		11.50	5.80E-01		-6.24E+00	2.82E-01
		256.20		6.30	7.42E-01		-2.12E-01	3.55E-01
+	AC-228	338.32	*	11.40	6.10E-01	3.77E-01	1.28E+00	2.94E-01
		911.07	*	27.70	3.77E-01		1.33E+00	1.79E-01
		969.11		16.60	7.27E-01		7.27E-01	3.47E-01
	TH-230	48.44		16.90	3.01E-01	3.01E-01	-2.29E-01	1.45E-01
		62.85		4.60	1.04E+00		8.26E-01	5.03E-01
		67.67		0.37	1.13E+01		-1.32E+00	5.46E+00
	PA-231	283.67		1.60	2.99E+00	2.18E+00	2.49E-01	1.43E+00
		302.67		2.30	2.18E+00		4.66E-02	1.04E+00
	TH-231	25.64		14.70	1.26E-01	1.26E-01	0.00E+00	0.00E+00
		84.21		6.40	6.30E-01		3.42E-01	3.05E-01
	PA-233	311.98		38.60	1.44E+00	1.44E+00	-4.70E-02	6.83E-01
	PA-234	131.20		20.40	1.78E-01	1.78E-01	3.27E-03	8.59E-02
		733.99		8.80	6.50E-01		1.04E-01	3.00E-01
		946.00		12.00	5.39E-01		-1.68E-02	2.47E-01
	PA-234M	1001.03		0.92	7.45E+00	7.45E+00	8.60E-02	3.42E+00
	TH-234	63.29		3.80	1.24E+00	1.24E+00	7.43E-01	6.02E-01
	U-235	143.76		10.50	4.13E-01	4.13E-01	-2.52E-01	2.00E-01
		163.35		4.70	9.52E-01		6.13E-02	4.60E-01
		205.31		4.70	1.09E+00		3.37E-01	5.26E-01
	NP-237	86.50		12.60	3.61E-01	3.61E-01	3.89E-01	1.75E-01
	NP-239	106.10		22.70	7.32E+11	7.32E+11	1.29E+10	3.53E+11
		228.18		10.70	2.19E+12		-1.12E+12	1.05E+12

Analysis Report for 1707090-08

HTC-A06-S001-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NP-239	277.60		14.10	1.74E+12	7.32E+11	1.90E+12	8.32E+11
	AM-241	59.54		35.90	1.27E-01	1.27E-01	1.32E-02	6.12E-02
	AM-243	74.67		66.00	9.05E-02	9.05E-02	-9.26E-02	4.43E-02
+	CM-243	209.75	*	3.29	1.82E+00	4.25E-01	1.04E+00	8.83E-01
		228.14		10.60	4.62E-01		-2.36E-01	2.22E-01
		277.60	*	14.00	4.25E-01		2.54E-01	2.05E-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

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: HTC-A06-S001-3642-01

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	0	0	0	0	0	0
25:	0	0	0	0	26	75	122	112
33:	144	616	181	105	97	94	108	109
41:	102	71	72	55	56	63	140	79
49:	63	77	67	77	67	99	66	77
57:	82	103	100	97	111	98	116	162
65:	94	109	108	121	90	110	127	122
73:	133	153	343	237	380	384	89	91
81:	108	108	107	126	123	98	148	200
89:	105	152	125	110	208	174	84	81
97:	72	63	79	101	71	57	63	70
105:	74	90	79	86	70	79	82	66
113:	92	87	79	69	70	65	68	72
121:	71	68	69	81	73	78	65	63
129:	101	92	58	83	66	66	73	67
137:	80	57	69	73	63	50	68	78
145:	58	52	77	76	65	62	66	67
153:	80	58	79	73	64	73	66	74
161:	59	43	57	63	60	60	53	62
169:	57	53	45	53	58	57	47	52
177:	51	71	49	44	53	59	50	44
185:	58	150	108	61	58	48	60	54
193:	43	62	52	63	48	67	57	69
201:	58	55	50	64	63	53	49	52
209:	82	70	51	44	52	43	46	56
217:	57	38	42	45	46	39	49	41
225:	53	43	39	35	51	49	49	39
233:	45	40	52	56	50	199	589	122
241:	90	126	57	32	36	33	28	33
249:	45	31	25	32	38	35	29	32
257:	36	37	37	31	22	33	26	26
265:	19	26	35	31	36	53	54	38
273:	28	33	21	29	42	46	31	31
281:	22	26	33	29	33	32	35	22
289:	33	32	32	27	25	39	152	103
297:	28	26	32	63	45	24	25	32
305:	27	30	30	31	21	23	10	26
313:	26	24	23	21	27	25	21	19
321:	34	30	26	23	22	33	29	60
329:	38	29	25	29	30	22	19	25
337:	30	86	95	30	25	23	21	22
345:	26	18	22	27	20	29	76	282
353:	123	21	17	16	30	14	11	23
361:	25	19	14	18	15	15	20	31

369:	21	12	22	26	15	17	28	28

Sample Title: HTC-A06-S001-3642-01

Channel								
377:	21	19	17	17	19	22	19	16
385:	18	26	20	19	16	25	18	21
393:	18	17	25	22	19	18	19	20
401:	12	28	19	23	20	23	20	8
409:	24	29	20	18	15	24	13	20
417:	14	13	17	18	18	19	20	17
425:	8	13	21	18	16	15	13	16
433:	18	18	16	17	7	15	25	16
441:	18	14	16	15	9	13	14	20
449:	15	11	11	11	15	11	20	18
457:	13	20	19	13	11	21	38	30
465:	16	12	15	18	20	16	15	13
473:	9	13	18	18	21	15	16	16
481:	14	11	15	6	13	10	17	13
489:	12	15	8	10	11	15	15	18
497:	11	15	9	13	13	9	10	14
505:	14	14	21	12	29	53	79	49
513:	21	18	12	9	17	10	16	15
521:	10	8	8	10	4	12	11	12
529:	8	17	11	9	15	14	10	13
537:	9	6	15	4	12	7	12	10
545:	7	17	11	17	10	9	8	13
553:	18	14	9	10	18	9	8	10
561:	12	25	13	17	16	13	7	10
569:	18	13	9	11	22	10	13	15
577:	20	12	11	11	25	39	136	92
585:	11	15	9	10	11	6	14	18
593:	15	6	10	8	11	13	14	10
601:	11	7	14	13	14	13	23	42
609:	142	125	15	10	5	10	12	5
617:	8	11	8	8	12	10	6	8
625:	15	10	6	15	13	14	9	7
633:	7	12	10	15	9	11	8	10
641:	15	12	12	9	10	9	7	15
649:	12	7	13	11	6	14	7	13
657:	11	10	7	9	13	15	11	13
665:	20	12	9	9	15	11	9	5
673:	9	14	10	8	11	15	10	8
681:	8	11	12	6	6	12	13	15
689:	6	10	14	9	16	7	13	13
697:	14	8	10	4	9	12	7	14
705:	8	10	9	17	7	13	10	7
713:	5	10	7	7	8	4	8	6
721:	13	9	12	16	13	12	39	24
729:	10	10	1	3	10	10	9	8
737:	7	8	8	8	10	4	15	8
745:	6	9	9	9	7	10	10	2
753:	11	10	9	12	12	6	11	9
761:	11	6	10	11	7	8	9	18
769:	24	10	5	14	7	9	8	9
777:	5	9	7	10	12	13	14	15
785:	11	13	10	6	4	8	10	7
793:	9	14	26	10	8	8	7	5

801:	7	9	5	12	8	11	10	9

Sample Title: HTC-A06-S001-3642-01

Channel								
809:	5	8	10	11	8	9	3	11
817:	9	5	8	10	7	5	5	8
825:	6	9	13	5	8	7	4	10
833:	5	6	16	17	13	7	7	8
841:	18	6	7	3	6	7	7	4
849:	4	5	8	7	7	7	5	6
857:	6	7	13	14	20	9	4	9
865:	4	9	10	9	6	9	7	9
873:	2	5	4	6	9	9	6	3
881:	15	9	4	11	11	5	6	4
889:	7	6	9	5	8	8	14	3
897:	7	5	9	3	6	8	5	12
905:	12	5	9	6	15	47	78	58
913:	12	6	7	9	4	5	7	5
921:	7	8	4	7	6	10	10	4
929:	14	3	7	7	8	14	9	9
937:	3	5	11	6	4	7	7	6
945:	2	7	4	7	6	9	6	8
953:	5	4	6	8	6	3	0	4
961:	5	10	4	21	22	13	12	30
969:	44	30	6	10	8	4	2	3
977:	5	10	4	2	3	6	5	5
985:	8	4	4	5	7	14	5	4
993:	6	5	6	6	8	6	3	2
1001:	9	6	7	6	8	7	6	7
1009:	11	5	5	11	8	5	10	9
1017:	6	10	2	9	4	7	8	11
1025:	9	8	8	8	6	9	6	6
1033:	5	5	6	5	6	7	6	1
1041:	7	6	4	8	5	8	11	10
1049:	6	3	4	11	2	4	4	8
1057:	6	5	5	7	6	4	6	12
1065:	6	9	3	7	4	7	8	10
1073:	5	9	4	7	3	8	9	5
1081:	2	3	4	8	5	4	4	9
1089:	6	9	8	10	9	7	8	7
1097:	7	11	7	8	6	8	7	4
1105:	7	7	8	5	7	8	7	7
1113:	5	9	8	5	2	12	19	39
1121:	34	8	11	14	6	7	5	12
1129:	5	10	4	3	5	5	11	7
1137:	7	3	2	10	4	6	6	5
1145:	7	11	3	7	6	4	9	10
1153:	8	11	9	11	4	5	12	7
1161:	8	13	7	3	4	12	7	2
1169:	6	6	3	10	9	7	7	7
1177:	4	10	4	11	4	8	6	12
1185:	6	5	8	7	5	8	7	7
1193:	8	11	3	6	12	14	8	8
1201:	3	9	8	9	10	6	6	14
1209:	21	17	7	11	8	4	9	8
1217:	7	11	6	8	11	8	9	7
1225:	6	13	8	11	9	8	8	9

1233:	7	6	6	10	16	20	10	6

Sample Title: HTC-A06-S001-3642-01

Channel								
1241:	3	5	14	8	7	3	5	6
1249:	7	8	10	4	8	8	5	8
1257:	7	6	2	3	4	4	5	3
1265:	5	8	7	8	3	1	11	7
1273:	5	4	5	4	9	4	3	6
1281:	6	4	5	8	8	3	4	3
1289:	6	5	3	9	4	5	1	4
1297:	1	7	6	3	1	4	3	5
1305:	5	5	3	8	3	4	7	3
1313:	4	4	1	5	8	5	6	3
1321:	6	2	4	2	3	4	0	6
1329:	0	3	3	3	1	2	4	1
1337:	2	4	3	4	3	3	3	2
1345:	1	1	4	1	5	3	8	1
1353:	2	3	4	2	4	3	2	2
1361:	5	1	2	4	1	5	2	4
1369:	2	4	3	3	5	1	1	6
1377:	5	12	5	2	3	2	2	5
1385:	2	2	3	3	4	5	3	2
1393:	3	3	2	1	1	2	4	2
1401:	5	3	4	1	2	4	7	9
1409:	1	2	1	1	1	2	3	2
1417:	2	5	5	3	2	2	3	1
1425:	6	1	3	4	2	1	1	0
1433:	4	1	2	2	1	0	3	1
1441:	1	2	1	3	2	4	2	3
1449:	2	2	1	3	2	1	5	2
1457:	10	33	118	256	304	93	7	0
1465:	0	0	2	1	1	1	2	4
1473:	1	1	0	3	1	1	4	1
1481:	1	2	3	4	0	1	0	0
1489:	0	1	1	2	3	3	1	5
1497:	3	2	3	0	6	0	0	1
1505:	1	0	4	1	6	4	2	0
1513:	0	2	0	1	1	1	3	0
1521:	0	0	0	3	1	2	1	2
1529:	2	2	0	3	2	2	2	1
1537:	2	0	1	2	3	5	4	1
1545:	0	3	2	0	3	0	6	1
1553:	1	1	1	2	1	3	1	0
1561:	2	0	3	1	0	0	2	2
1569:	0	1	2	0	1	0	1	0
1577:	0	1	3	1	1	4	2	2
1585:	3	3	4	4	5	4	3	7
1593:	2	1	3	1	1	1	3	3
1601:	3	0	0	5	1	0	1	2
1609:	0	0	1	1	1	1	2	3
1617:	0	1	1	3	5	1	0	1
1625:	1	0	3	2	2	1	2	0
1633:	1	0	0	2	0	4	1	0
1641:	2	1	1	0	1	1	1	1
1649:	0	2	1	0	1	1	1	2
1657:	1	1	1	0	5	2	0	2

1665:	0	2	2	1	1	3	0	0

Sample Title: HTC-A06-S001-3642-01

Channel								
1673:	0	2	0	1	4	1	2	3
1681:	1	2	0	0	2	1	1	2
1689:	2	0	4	0	4	0	2	2
1697:	2	3	1	1	0	1	1	1
1705:	1	3	2	1	0	1	0	1
1713:	1	2	0	2	0	2	1	1
1721:	2	2	0	1	4	3	2	4
1729:	6	3	2	1	2	1	0	0
1737:	1	0	1	0	2	1	0	1
1745:	1	3	1	1	0	1	0	2
1753:	0	1	0	0	1	3	1	0
1761:	3	6	16	21	12	4	3	0
1769:	0	0	1	1	1	2	0	1
1777:	3	0	1	0	0	1	0	1
1785:	2	1	4	1	0	0	0	0
1793:	0	3	2	0	1	2	0	2
1801:	1	1	2	1	1	0	1	2
1809:	0	2	1	0	3	0	5	0
1817:	1	0	0	0	0	0	0	0
1825:	1	1	1	0	2	1	0	0
1833:	0	0	2	1	1	2	2	2
1841:	3	1	1	5	3	2	4	3
1849:	0	2	2	1	0	2	0	1
1857:	2	3	0	0	1	1	2	1
1865:	2	1	0	2	4	1	0	2
1873:	1	2	0	0	2	0	2	1
1881:	1	3	4	1	0	1	4	0
1889:	3	2	1	1	1	2	1	1
1897:	2	1	2	0	0	1	2	0
1905:	1	1	2	1	3	2	1	0
1913:	1	0	0	0	2	1	1	1
1921:	0	0	3	0	1	0	1	0
1929:	1	1	1	0	0	2	2	1
1937:	1	3	2	0	2	0	0	2
1945:	0	1	1	1	2	1	1	0
1953:	3	1	1	0	3	2	1	1
1961:	1	0	1	0	0	1	1	1
1969:	1	1	1	0	0	2	2	0
1977:	0	0	1	1	0	0	1	4
1985:	1	0	0	1	1	1	1	2
1993:	2	0	0	1	1	1	1	0
2001:	0	1	1	1	0	1	1	1
2009:	1	0	2	0	1	1	1	1
2017:	0	0	1	4	1	0	0	1
2025:	3	1	1	1	1	1	1	0
2033:	0	0	1	1	0	0	0	0
2041:	2	0	1	1	2	3	0	1
2049:	0	1	0	2	0	3	2	1
2057:	0	0	0	1	0	1	2	1
2065:	1	1	1	2	1	0	2	1
2073:	0	3	0	2	2	2	0	0
2081:	1	0	2	1	1	0	0	1
2089:	2	1	0	2	1	0	0	2

2097:	0	0	1	2	1	4	0	1

Sample Title: HTC-A06-S001-3642-01

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

2529:	0	1	0	0	1	0	1	0

Sample Title: HTC-A06-S001-3642-01

Channel								
2537:	1	1	0	0	1	0	0	1
2545:	2	1	2	2	0	1	0	1
2553:	0	0	0	0	2	0	0	1
2561:	0	0	0	0	0	1	0	0
2569:	0	0	0	0	1	1	0	1
2577:	0	1	1	0	1	0	0	0
2585:	0	0	0	0	0	1	0	1
2593:	1	0	0	0	0	0	0	0
2601:	0	0	0	1	1	0	0	2
2609:	1	4	7	18	27	29	19	6
2617:	1	1	0	0	0	0	0	0
2625:	0	0	0	0	0	0	0	0
2633:	1	0	0	1	2	0	0	0
2641:	0	0	0	0	0	0	0	1
2649:	0	0	0	1	0	0	0	0
2657:	0	0	1	0	0	0	0	2
2665:	0	1	0	0	1	0	1	1
2673:	0	0	0	0	0	0	0	0
2681:	2	0	1	0	0	0	1	0
2689:	0	0	1	0	0	0	0	0
2697:	0	0	0	1	0	1	1	0
2705:	1	1	0	1	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	1	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	0	0	1	0
2753:	0	1	0	0	0	2	0	0
2761:	0	1	0	0	0	0	0	1
2769:	1	0	1	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	0
2801:	1	0	1	0	0	0	0	0
2809:	0	1	0	0	0	0	0	0
2817:	1	1	0	0	0	0	1	0
2825:	0	1	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	1	0	0
2857:	0	0	3	0	0	1	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	1	0
2881:	0	0	0	0	1	0	0	1
2889:	0	0	0	0	1	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	1	0	0	0	0	0
2913:	1	0	0	0	0	0	0	0
2921:	0	0	0	0	0	1	0	0
2929:	0	1	1	1	2	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	1	0	0	0	1	0
2953:	1	0	0	0	1	0	1	0

2961:	1	0	0	0	0	0	0	0

Sample Title: HTC-A06-S001-3642-01

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

3393:	1	0	0	0	0	0	0	0

Sample Title: HTC-A06-S001-3642-01

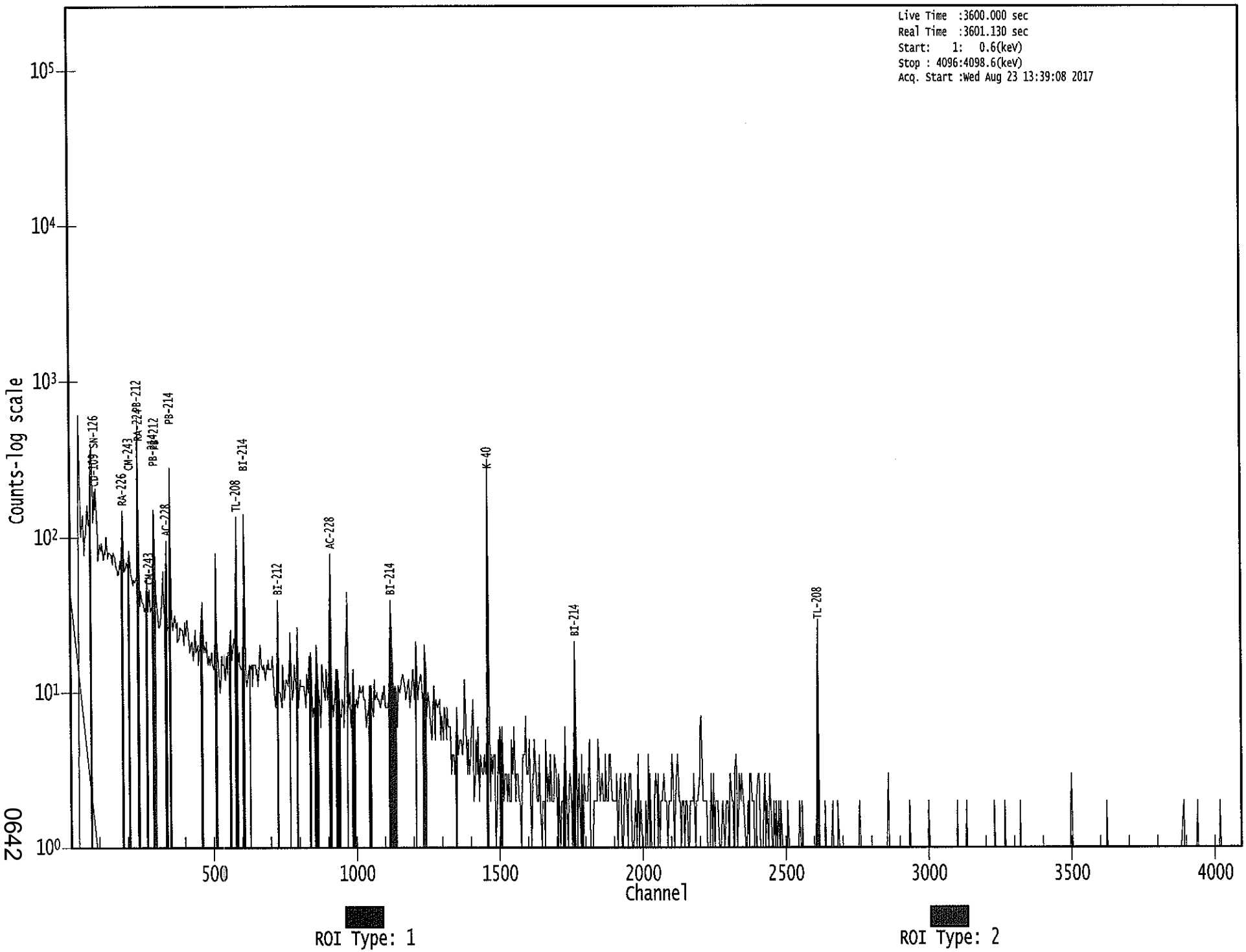
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	1	1	0
3417:	1	1	0	1	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	1	1	0	0	0	0	0	0
3441:	1	0	0	0	0	0	1	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	1	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	1
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	1	0	0
3497:	0	1	3	0	0	0	0	1
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	1	0	0	0
3529:	0	0	0	0	1	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	1	0	0	1	1	0	0
3585:	0	0	0	0	0	0	1	0
3593:	0	0	0	0	0	0	1	0
3601:	0	1	0	1	0	0	0	0
3609:	0	0	0	1	1	1	0	0
3617:	0	0	0	0	0	2	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	1	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	1	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	1	0	0	0
3681:	0	0	0	1	0	0	0	0
3689:	1	0	0	0	1	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	1	1	0	1	0	0
3729:	0	0	1	0	0	0	0	0
3737:	1	0	0	0	0	0	0	0
3745:	1	0	0	0	0	0	0	0
3753:	0	0	0	1	0	0	1	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	1
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	1	0	0	1
3793:	1	0	0	0	0	1	0	0
3801:	0	0	0	0	1	0	0	0
3809:	0	0	0	0	0	1	0	0
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A06-S001-3642-01

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

0000055832.CNF



0642

Apex-Gamma

Analysis Report for 1707090-09
HTC-A06-S001-4248-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-09
Sample Description	: HTC-A06-S001-4248-01
Sample Type	: SOIL
Sample Size	: 6.123E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:53:30AM
Acquisition Started	: 8/23/2017 1:39:17PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3617.8 seconds
Dead Time	: 0.49 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55833

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 2:40:16PM
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	47.00	46.05	0.0000	0.00
2	76.19	75.25	0.0000	0.00
3	87.57	86.63	0.0000	0.00
4	93.11	92.18	0.0000	0.00
5	144.17	143.25	0.0000	0.00
6	185.59	184.68	0.0000	0.00
7	208.35	207.45	0.0000	0.00
8	238.89	238.00	0.0000	0.00
9	242.45	241.55	0.0000	0.00
10	270.02	269.14	0.0000	0.00
11	295.33	294.45	0.0000	0.00
12	300.15	299.28	0.0000	0.00
13	338.98	338.12	0.0000	0.00
14	351.99	351.14	0.0000	0.00
15	510.40	509.60	0.0000	0.00
16	571.61	570.83	0.0000	0.00
17	583.30	582.53	0.0000	0.00
18	609.28	608.52	0.0000	0.00
19	647.79	647.04	0.0000	0.00
20	682.61	681.88	0.0000	0.00
21	727.08	726.37	0.0000	0.00
22	794.69	794.00	0.0000	0.00
23	858.29	857.63	0.0000	0.00
24	891.49	890.84	0.0000	0.00
25	903.83	903.19	0.0000	0.00
26	911.52	910.88	0.0000	0.00
27	968.95	968.34	0.0000	0.00
28	1069.42	1068.86	0.0000	0.00
29	1124.38	1123.84	0.0000	0.00
30	1237.70	1237.22	0.0000	0.00
31	1282.11	1281.65	0.0000	0.00
32	1298.10	1297.64	0.0000	0.00
33	1460.62	1460.24	0.0000	0.00
34	1587.31	1587.00	0.0000	0.00
35	1593.15	1592.84	0.0000	0.00
36	1676.48	1676.22	0.0000	0.00
37	1691.65	1691.40	0.0000	0.00
38	1700.52	1700.27	0.0000	0.00
39	1763.65	1763.43	0.0000	0.00
40	2101.87	2101.85	0.0000	0.00
41	2181.59	2181.63	0.0000	0.00
42	2614.34	2614.66	0.0000	0.00

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 2:40:16PM

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	47.00	43 -	49	46.05	1.23E+02	76.51	9.72E+02	3.41
	2	76.19	70 -	80	75.25	9.77E+02	153.54	2.59E+03	4.24
M	3	87.57	81 -	96	86.63	4.01E+02	131.58	2.07E+03	4.26
m	4	93.11	81 -	96	92.18	2.43E+02	109.93	1.58E+03	2.85
	5	144.17	139 -	147	143.25	8.20E+01	84.51	1.05E+03	3.48
	6	185.59	180 -	190	184.68	1.85E+02	91.36	1.02E+03	2.10
	7	208.35	204 -	212	207.45	6.89E+01	72.27	7.62E+02	4.03
M	8	238.89	232 -	251	238.00	7.34E+02	78.99	5.22E+02	2.52
m	9	242.45	232 -	251	241.55	1.10E+02	73.67	4.84E+02	2.56
	10	270.02	266 -	272	269.14	6.70E+01	44.97	3.20E+02	2.96
M	11	295.33	290 -	305	294.45	2.19E+02	53.96	3.51E+02	2.61
m	12	300.15	290 -	305	299.28	6.79E+01	51.77	2.98E+02	2.61
	13	338.98	332 -	344	338.12	1.70E+02	69.71	4.85E+02	2.59
	14	351.99	346 -	356	351.14	3.23E+02	65.28	3.95E+02	2.53
	15	510.40	503 -	514	509.60	9.50E+01	48.46	2.46E+02	2.24
	16	571.61	568 -	574	570.83	2.17E+01	27.06	1.15E+02	3.13
	17	583.30	578 -	587	582.53	1.63E+02	45.62	2.01E+02	2.20
	18	609.28	604 -	614	608.52	2.15E+02	50.56	2.28E+02	2.16
	19	647.79	642 -	652	647.04	3.73E+01	38.16	1.69E+02	7.00
	20	682.61	678 -	687	681.88	2.39E+01	29.50	1.12E+02	4.71
	21	727.08	723 -	730	726.37	4.07E+01	28.84	1.11E+02	2.59
	22	794.69	791 -	797	794.00	1.95E+01	23.28	8.51E+01	2.19
	23	858.29	850 -	863	857.63	4.31E+01	37.84	1.40E+02	9.91
	24	891.49	886 -	895	890.84	2.00E+01	25.87	8.20E+01	2.14
M	25	903.83	896 -	924	903.19	2.25E+01	20.69	5.05E+01	2.67
m	26	911.52	896 -	924	910.88	1.03E+02	28.35	5.66E+01	2.68
	27	968.95	964 -	972	968.34	6.67E+01	31.28	1.03E+02	2.11
	28	1069.42	1065 -	1074	1068.86	2.27E+01	25.46	7.86E+01	1.86
	29	1124.38	1115 -	1137	1123.84	6.85E+01	55.39	2.07E+02	17.06
	30	1237.70	1233 -	1241	1237.22	4.29E+01	23.48	5.81E+01	4.34
	31	1282.11	1278 -	1285	1281.65	2.46E+01	20.88	5.68E+01	3.00
	32	1298.10	1290 -	1305	1297.64	3.98E+01	30.85	7.64E+01	13.03
	33	1460.62	1453 -	1466	1460.24	3.94E+02	45.61	5.60E+01	2.79
M	34	1587.31	1584 -	1597	1587.00	1.76E+01	10.23	8.57E+00	2.90
m	35	1593.15	1584 -	1597	1592.84	1.40E+01	13.29	1.49E+01	2.91
	36	1676.48	1674 -	1679	1676.22	1.00E+01	8.12	4.00E+00	2.86
	37	1691.65	1686 -	1697	1691.40	1.50E+01	7.75	0.00E+00	7.65
	38	1700.52	1697 -	1703	1700.27	7.39E+00	6.95	3.22E+00	3.12
	39	1763.65	1759 -	1768	1763.43	2.83E+01	12.21	5.45E+00	1.95
	40	2101.87	2098 -	2105	2101.85	1.30E+01	8.72	4.07E+00	2.73

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2181.59	2179 -	2184	2181.63	8.00E+00	5.66	0.00E+00	1.66
42	2614.34	2610 -	2619	2614.66	5.80E+01	15.23	0.00E+00	2.93

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 : 8/23/2017 2:40:16PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	47.00	43 -	49	1.23E+02	76.51	9.72E+02	6.02E+01
	2	76.19	70 -	80	9.77E+02	153.54	2.59E+03	1.15E+02
M	3	87.57	81 -	96	4.01E+02	131.58	2.07E+03	7.49E+01
m	4	93.11	81 -	96	2.43E+02	109.93	1.58E+03	6.52E+01
	5	144.17	139 -	147	8.20E+01	84.51	1.05E+03	6.79E+01
	6	185.59	180 -	190	1.85E+02	91.36	1.02E+03	7.17E+01
	7	208.35	204 -	212	6.89E+01	72.27	7.62E+02	5.78E+01
M	8	238.89	232 -	251	7.34E+02	78.99	5.22E+02	3.76E+01
m	9	242.45	232 -	251	1.10E+02	73.67	4.84E+02	3.62E+01
	10	270.02	266 -	272	6.70E+01	44.97	3.20E+02	3.44E+01
M	11	295.33	290 -	305	2.19E+02	53.96	3.51E+02	3.08E+01
m	12	300.15	290 -	305	6.79E+01	51.77	2.98E+02	2.84E+01
	13	338.98	332 -	344	1.70E+02	69.71	4.85E+02	5.31E+01
	14	351.99	346 -	356	3.23E+02	65.28	3.95E+02	4.48E+01
	15	510.40	503 -	514	9.50E+01	48.46	2.46E+02	3.65E+01
	16	571.61	568 -	574	2.17E+01	27.06	1.15E+02	2.09E+01
	17	583.30	578 -	587	1.63E+02	45.62	2.01E+02	3.11E+01
	18	609.28	604 -	614	2.15E+02	50.56	2.28E+02	3.39E+01
	19	647.79	642 -	652	3.73E+01	38.16	1.69E+02	2.97E+01
	20	682.61	678 -	687	2.39E+01	29.50	1.12E+02	2.29E+01
	21	727.08	723 -	730	4.07E+01	28.84	1.11E+02	2.13E+01
	22	794.69	791 -	797	1.95E+01	23.28	8.51E+01	1.77E+01
	23	858.29	850 -	863	4.31E+01	37.84	1.40E+02	2.92E+01
	24	891.49	886 -	895	2.00E+01	25.87	8.20E+01	2.00E+01
M	25	903.83	896 -	924	2.25E+01	20.69	5.05E+01	1.17E+01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	26	911.52	896 -	924	1.03E+02	28.35	5.66E+01	1.24E+01
	27	968.95	964 -	972	6.67E+01	31.28	1.03E+02	2.19E+01
	28	1069.42	1065 -	1074	2.27E+01	25.46	7.86E+01	1.94E+01
	29	1124.38	1115 -	1137	6.85E+01	55.39	2.07E+02	4.35E+01
	30	1237.70	1233 -	1241	4.29E+01	23.48	5.81E+01	1.60E+01
	31	1282.11	1278 -	1285	2.46E+01	20.88	5.68E+01	1.51E+01
	32	1298.10	1290 -	1305	3.98E+01	30.85	7.64E+01	2.31E+01
	33	1460.62	1453 -	1466	3.94E+02	45.61	5.60E+01	1.85E+01
M	34	1587.31	1584 -	1597	1.76E+01	10.23	8.57E+00	4.81E+00
m	35	1593.15	1584 -	1597	1.40E+01	13.29	1.49E+01	6.34E+00
	36	1676.48	1674 -	1679	1.00E+01	8.12	4.00E+00	4.19E+00
	37	1691.65	1686 -	1697	1.50E+01	7.75	0.00E+00	0.00E+00
	38	1700.52	1697 -	1703	7.39E+00	6.95	3.22E+00	3.55E+00
	39	1763.65	1759 -	1768	2.83E+01	12.21	5.45E+00	4.93E+00
	40	2101.87	2098 -	2105	1.30E+01	8.72	4.07E+00	4.04E+00
	41	2181.59	2179 -	2184	8.00E+00	5.66	0.00E+00	0.00E+00
	42	2614.34	2610 -	2619	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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/23/2017 2:40:16PM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	47.00	43 -	49	46.05	1.23E+02	76.51	9.72E+02	PB-210
	2	76.19	70 -	80	75.25	9.77E+02	153.54	2.59E+03	.....
M	3	87.57	81 -	96	86.63	4.01E+02	131.58	2.07E+03	SN-126
									CD-109
									LU-176
m	4	93.11	81 -	96	92.18	2.43E+02	109.93	1.58E+03	GA-67
	5	144.17	139 -	147	143.25	8.20E+01	84.51	1.05E+03	U-235
	6	185.59	180 -	190	184.68	1.85E+02	91.36	1.02E+03	RA-226

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	7	208.35	204 -	212	207.45	6.89E+01	72.27	7.62E+02	GA-67
M	8	238.89	232 -	251	238.00	7.34E+02	78.99	5.22E+02	PB-212
m	9	242.45	232 -	251	241.55	1.10E+02	73.67	4.84E+02	.....
	10	270.02	266 -	272	269.14	6.70E+01	44.97	3.20E+02	.....
M	11	295.33	290 -	305	294.45	2.19E+02	53.96	3.51E+02	PB-214
m	12	300.15	290 -	305	299.28	6.79E+01	51.77	2.98E+02	PB-212 GA-67 BI-210M
	13	338.98	332 -	344	338.12	1.70E+02	69.71	4.85E+02	AC-228
	14	351.99	346 -	356	351.14	3.23E+02	65.28	3.95E+02	PB-214
	15	510.40	503 -	514	509.60	9.50E+01	48.46	2.46E+02	.....
	16	571.61	568 -	574	570.83	2.17E+01	27.06	1.15E+02	.....
	17	583.30	578 -	587	582.53	1.63E+02	45.62	2.01E+02	TL-208
	18	609.28	604 -	614	608.52	2.15E+02	50.56	2.28E+02	BI-214
	19	647.79	642 -	652	647.04	3.73E+01	38.16	1.69E+02	.....
	20	682.61	678 -	687	681.88	2.39E+01	29.50	1.12E+02	.....
	21	727.08	723 -	730	726.37	4.07E+01	28.84	1.11E+02	BI-212
	22	794.69	791 -	797	794.00	1.95E+01	23.28	8.51E+01	.....
	23	858.29	850 -	863	857.63	4.31E+01	37.84	1.40E+02	.....
	24	891.49	886 -	895	890.84	2.00E+01	25.87	8.20E+01	.....
M	25	903.83	896 -	924	903.19	2.25E+01	20.69	5.05E+01	.....
m	26	911.52	896 -	924	910.88	1.03E+02	28.35	5.66E+01	TL-204 AC-228
	27	968.95	964 -	972	968.34	6.67E+01	31.28	1.03E+02	AC-228
	28	1069.42	1065 -	1074	1068.86	2.27E+01	25.46	7.86E+01	.....
	29	1124.38	1115 -	1137	1123.84	6.85E+01	55.39	2.07E+02	.....
	30	1237.70	1233 -	1241	1237.22	4.29E+01	23.48	5.81E+01	CO-56
	31	1282.11	1278 -	1285	1281.65	2.46E+01	20.88	5.68E+01	.....
	32	1298.10	1290 -	1305	1297.64	3.98E+01	30.85	7.64E+01	.....
	33	1460.62	1453 -	1466	1460.24	3.94E+02	45.61	5.60E+01	K-40
M	34	1587.31	1584 -	1597	1587.00	1.76E+01	10.23	8.57E+00	.....
m	35	1593.15	1584 -	1597	1592.84	1.40E+01	13.29	1.49E+01	.....
	36	1676.48	1674 -	1679	1676.22	1.00E+01	8.12	4.00E+00	.....
	37	1691.65	1686 -	1697	1691.40	1.50E+01	7.75	0.00E+00	SB-124
	38	1700.52	1697 -	1703	1700.27	7.39E+00	6.95	3.22E+00	.....
	39	1763.65	1759 -	1768	1763.43	2.83E+01	12.21	5.45E+00	BI-214
	40	2101.87	2098 -	2105	2101.85	1.30E+01	8.72	4.07E+00	.....
	41	2181.59	2179 -	2184	2181.63	8.00E+00	5.66	0.00E+00	.....
	42	2614.34	2610 -	2619	2614.66	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

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/23/2017 2:40:16PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	47.00	1.23E+02	76.51	1.67E-02	1.56E-03
	2	76.19	9.77E+02	153.54	2.32E-02	1.91E-03
M	3	87.57	4.01E+02	131.58	2.37E-02	2.16E-03
m	4	93.11	2.43E+02	109.93	2.36E-02	2.09E-03
	5	144.17	8.20E+01	84.51	2.03E-02	1.57E-03
	6	185.59	1.85E+02	91.36	1.70E-02	1.40E-03
	7	208.35	6.89E+01	72.27	1.54E-02	1.29E-03
M	8	238.89	7.34E+02	78.99	1.36E-02	1.14E-03
m	9	242.45	1.10E+02	73.67	1.34E-02	1.12E-03
	10	270.02	6.70E+01	44.97	1.21E-02	9.91E-04
M	11	295.33	2.19E+02	53.96	1.10E-02	9.13E-04
m	12	300.15	6.79E+01	51.77	1.08E-02	9.03E-04
	13	338.98	1.70E+02	69.71	9.58E-03	8.21E-04
	14	351.99	3.23E+02	65.28	9.21E-03	7.94E-04
	15	510.40	9.50E+01	48.46	6.29E-03	6.61E-04
	16	571.61	2.17E+01	27.06	5.62E-03	6.36E-04
	17	583.30	1.63E+02	45.62	5.50E-03	6.31E-04
	18	609.28	2.15E+02	50.56	5.27E-03	6.20E-04
	19	647.79	3.73E+01	38.16	4.97E-03	6.04E-04
	20	682.61	2.39E+01	29.50	4.73E-03	5.72E-04
	21	727.08	4.07E+01	28.84	4.45E-03	5.17E-04
	22	794.69	1.95E+01	23.28	4.10E-03	4.32E-04
	23	858.29	4.31E+01	37.84	3.82E-03	3.52E-04
	24	891.49	2.00E+01	25.87	3.69E-03	3.10E-04
M	25	903.83	2.25E+01	20.69	3.65E-03	3.01E-04
m	26	911.52	1.03E+02	28.35	3.62E-03	2.99E-04
	27	968.95	6.67E+01	31.28	3.43E-03	2.85E-04
	28	1069.42	2.27E+01	25.46	3.14E-03	2.62E-04
	29	1124.38	6.85E+01	55.39	3.01E-03	2.49E-04
	30	1237.70	4.29E+01	23.48	2.76E-03	2.33E-04
	31	1282.11	2.46E+01	20.88	2.68E-03	2.30E-04
	32	1298.10	3.98E+01	30.85	2.65E-03	2.29E-04
	33	1460.62	3.94E+02	45.61	2.39E-03	2.08E-04
M	34	1587.31	1.76E+01	10.23	2.21E-03	1.89E-04
m	35	1593.15	1.40E+01	13.29	2.20E-03	1.88E-04
	36	1676.48	1.00E+01	8.12	2.10E-03	1.75E-04
	37	1691.65	1.50E+01	7.75	2.08E-03	1.73E-04
	38	1700.52	7.39E+00	6.95	2.07E-03	1.72E-04
	39	1763.65	2.83E+01	12.21	2.00E-03	1.62E-04
	40	2101.87	1.30E+01	8.72	1.67E-03	1.51E-04
	41	2181.59	8.00E+00	5.66	1.60E-03	1.51E-04
	42	2614.34	5.80E+01	15.23	1.28E-03	1.51E-04

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

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 : 8/23/2017 2:40:16PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	47.00	1.23E+02	76.51	2.81E+01	8.29E+00	9.48E+01	7.70E+01
	2	76.19	9.77E+02	153.54			9.77E+02	1.54E+02
M	3	87.57	4.01E+02	131.58			4.01E+02	1.32E+02
m	4	93.11	2.43E+02	109.93	5.99E+01	8.61E+00	1.83E+02	1.10E+02
	5	144.17	8.20E+01	84.51			8.20E+01	8.45E+01
	6	185.59	1.85E+02	91.36	2.43E+01	7.50E+00	1.61E+02	9.17E+01
	7	208.35	6.89E+01	72.27			6.89E+01	7.23E+01
M	8	238.89	7.34E+02	78.99	1.06E+01	6.01E+00	7.23E+02	7.92E+01
m	9	242.45	1.10E+02	73.67			1.10E+02	7.37E+01
	10	270.02	6.70E+01	44.97			6.70E+01	4.50E+01
M	11	295.33	2.19E+02	53.96			2.19E+02	5.40E+01
m	12	300.15	6.79E+01	51.77			6.79E+01	5.18E+01
	13	338.98	1.70E+02	69.71			1.70E+02	6.97E+01
	14	351.99	3.23E+02	65.28			3.23E+02	6.53E+01
	15	510.40	9.50E+01	48.46	4.55E+01	4.99E+00	4.95E+01	4.87E+01
	16	571.61	2.17E+01	27.06			2.17E+01	2.71E+01
	17	583.30	1.63E+02	45.62			1.63E+02	4.56E+01
	18	609.28	2.15E+02	50.56			2.15E+02	5.06E+01
	19	647.79	3.73E+01	38.16			3.73E+01	3.82E+01
	20	682.61	2.39E+01	29.50			2.39E+01	2.95E+01
	21	727.08	4.07E+01	28.84			4.07E+01	2.88E+01
	22	794.69	1.95E+01	23.28			1.95E+01	2.33E+01
	23	858.29	4.31E+01	37.84			4.31E+01	3.78E+01
	24	891.49	2.00E+01	25.87			2.00E+01	2.59E+01
M	25	903.83	2.25E+01	20.69			2.25E+01	2.07E+01
m	26	911.52	1.03E+02	28.35			1.03E+02	2.84E+01
	27	968.95	6.67E+01	31.28			6.67E+01	3.13E+01
	28	1069.42	2.27E+01	25.46			2.27E+01	2.55E+01
	29	1124.38	6.85E+01	55.39			6.85E+01	5.54E+01
	30	1237.70	4.29E+01	23.48			4.29E+01	2.35E+01
	31	1282.11	2.46E+01	20.88			2.46E+01	2.09E+01
	32	1298.10	3.98E+01	30.85			3.98E+01	3.09E+01
	33	1460.62	3.94E+02	45.61			3.94E+02	4.56E+01
M	34	1587.31	1.76E+01	10.23			1.76E+01	1.02E+01
m	35	1593.15	1.40E+01	13.29			1.40E+01	1.33E+01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	1676.48	1.00E+01	8.12			1.00E+01	8.12E+00
37	1691.65	1.50E+01	7.75			1.50E+01	7.75E+00
38	1700.52	7.39E+00	6.95			7.39E+00	6.95E+00
39	1763.65	2.83E+01	12.21			2.83E+01	1.22E+01
40	2101.87	1.30E+01	8.72			1.30E+01	8.72E+00
41	2181.59	8.00E+00	5.66			8.00E+00	5.66E+00
42	2614.34	5.80E+01	15.23			5.80E+01	1.52E+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 : 8/23/2017 2:40:16PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.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	47.00	1.23E+02	76.51	2.81E+01	8.29E+00	9.48E+01	7.70E+01
	2	76.19	9.77E+02	153.54			9.77E+02	1.54E+02
M	3	87.57	4.01E+02	131.58			4.01E+02	1.32E+02
m	4	93.11	2.43E+02	109.93	5.99E+01	8.61E+00	1.83E+02	1.10E+02
	5	144.17	8.20E+01	84.51			8.20E+01	8.45E+01
	6	185.59	1.85E+02	91.36	2.43E+01	7.50E+00	1.61E+02	9.17E+01
	7	208.35	6.89E+01	72.27			6.89E+01	7.23E+01
M	8	238.89	7.34E+02	78.99	1.06E+01	6.01E+00	7.23E+02	7.92E+01
m	9	242.45	1.10E+02	73.67			1.10E+02	7.37E+01
	10	270.02	6.70E+01	44.97			6.70E+01	4.50E+01
M	11	295.33	2.19E+02	53.96			2.19E+02	5.40E+01
m	12	300.15	6.79E+01	51.77			6.79E+01	5.18E+01
	13	338.98	1.70E+02	69.71			1.70E+02	6.97E+01
	14	351.99	3.23E+02	65.28			3.23E+02	6.53E+01
	15	510.40	9.50E+01	48.46	4.55E+01	4.99E+00	4.95E+01	4.87E+01
	16	571.61	2.17E+01	27.06			2.17E+01	2.71E+01
	17	583.30	1.63E+02	45.62			1.63E+02	4.56E+01
	18	609.28	2.15E+02	50.56			2.15E+02	5.06E+01
	19	647.79	3.73E+01	38.16			3.73E+01	3.82E+01
	20	682.61	2.39E+01	29.50			2.39E+01	2.95E+01
	21	727.08	4.07E+01	28.84			4.07E+01	2.88E+01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	22	794.69	1.95E+01	23.28			1.95E+01	2.33E+01
	23	858.29	4.31E+01	37.84			4.31E+01	3.78E+01
	24	891.49	2.00E+01	25.87			2.00E+01	2.59E+01
M	25	903.83	2.25E+01	20.69			2.25E+01	2.07E+01
m	26	911.52	1.03E+02	28.35			1.03E+02	2.84E+01
	27	968.95	6.67E+01	31.28			6.67E+01	3.13E+01
	28	1069.42	2.27E+01	25.46			2.27E+01	2.55E+01
	29	1124.38	6.85E+01	55.39			6.85E+01	5.54E+01
	30	1237.70	4.29E+01	23.48			4.29E+01	2.35E+01
	31	1282.11	2.46E+01	20.88			2.46E+01	2.09E+01
	32	1298.10	3.98E+01	30.85			3.98E+01	3.09E+01
	33	1460.62	3.94E+02	45.61			3.94E+02	4.56E+01
M	34	1587.31	1.76E+01	10.23			1.76E+01	1.02E+01
m	35	1593.15	1.40E+01	13.29			1.40E+01	1.33E+01
	36	1676.48	1.00E+01	8.12			1.00E+01	8.12E+00
	37	1691.65	1.50E+01	7.75			1.50E+01	7.75E+00
	38	1700.52	7.39E+00	6.95			7.39E+00	6.95E+00
	39	1763.65	2.83E+01	12.21			2.83E+01	1.22E+01
	40	2101.87	1.30E+01	8.72			1.30E+01	8.72E+00
	41	2181.59	8.00E+00	5.66			8.00E+00	5.66E+00
	42	2614.34	5.80E+01	15.23			5.80E+01	1.52E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.994	1460.81	*	10.67	1.90E+01	2.78E+00
CD-109	0.966	88.03	*	3.72	6.48E+00	2.24E+00
SN-126	1.000	87.57	*	37.00	5.62E-01	1.91E-01
TL-208	0.873	583.14	*	30.22	1.20E+00	3.64E-01
		860.37		4.48		
		2614.66	*	35.85	1.55E+00	4.46E-01
PB-210	0.961	46.50	*	4.25	1.66E+00	1.35E+00
BI-212	0.775	727.17	*	11.80	9.50E-01	6.82E-01
		1620.62		2.75		
PB-212	0.990	238.63	*	44.60	1.46E+00	2.02E-01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.990	300.09	*	3.41	2.25E+00	1.73E+00
BI-214	0.656	609.31	*	46.30	1.08E+00	2.84E-01
		1120.29		15.10		
		1764.49	*	15.80	1.10E+00	4.82E-01
		2204.22		4.98		
PB-214	0.999	295.21	*	19.19	1.27E+00	3.30E-01
		351.92	*	37.19	1.16E+00	2.54E-01
RA-226	0.939	186.21	*	3.28	3.55E+00	6.80E+00
AC-228	0.969	338.32	*	11.40	1.90E+00	7.99E-01
		911.07	*	27.70	1.26E+00	3.62E-01
		969.11	*	16.60	1.44E+00	6.85E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 2:40:16PM
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	76.19	2.71323E-01	7.86		
m	4	93.11	5.09278E-02	30.07	Sum	
	5	144.17	2.27769E-02	51.53	Tol.	U-235
	7	208.35	1.91287E-02	52.47		
m	9	242.45	3.06042E-02	33.44		
	10	270.02	1.86166E-02	33.55		
	15	510.40	1.37435E-02	49.23		
	16	571.61	6.03376E-03	62.30		
	19	647.79	1.03734E-02	51.09	Sum	
	20	682.61	6.64236E-03	61.67		
	22	794.69	5.40323E-03	59.84	Sum	
	23	858.29	1.19666E-02	43.92		
	24	891.49	5.54872E-03	64.74		
M	25	903.83	6.25146E-03	45.96	Sum	
	28	1069.42	6.30376E-03	56.09		
	29	1124.38	1.90278E-02	40.43		
	30	1237.70	1.19290E-02	27.34		
	31	1282.11	6.82914E-03	42.47		

Analysis Report for 1707090-09

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	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	32	1298.10	1.10541E-02	38.77		
M	34	1587.31	4.89408E-03	29.05		
m	35	1593.15	3.87812E-03	47.61	D-Esc	
	36	1676.48	2.77778E-03	40.62		
	37	1691.65	4.16667E-03	25.82	Tol.	SB-124
	38	1700.52	2.05247E-03	47.00		
	40	2101.87	3.60185E-03	33.62	Sum	
	41	2181.59	2.22222E-03	35.36		

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

NUCLIDE 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	1.90E+01	2.78E+00
CD-109	0.96	88.03	*	3.72	6.48E+00	2.24E+00
SN-126	1.00	87.57	*	37.00	5.62E-01	1.91E-01
TL-208	0.87	583.14	*	30.22	1.20E+00	3.64E-01
		860.37		4.48		
		2614.66	*	35.85	1.55E+00	4.46E-01
PB-210	0.96	46.50	*	4.25	1.66E+00	1.35E+00
BI-212	0.77	727.17	*	11.80	9.50E-01	6.82E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.46E+00	2.02E-01
		300.09	*	3.41	2.25E+00	1.73E+00
BI-214	0.65	609.31	*	46.30	1.08E+00	2.84E-01
		1120.29		15.10		
		1764.49	*	15.80	1.10E+00	4.82E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.27E+00	3.30E-01
		351.92	*	37.19	1.16E+00	2.54E-01
RA-226	0.93	186.21	*	3.28	3.55E+00	6.80E+00
AC-228	0.96	338.32	*	11.40	1.90E+00	7.99E-01
		911.07	*	27.70	1.26E+00	3.62E-01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.96	969.11	*	16.60	1.44E+00	6.85E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.994	1.90E+01	2.78E+00	
?	CD-109	0.966	6.48E+00	2.24E+00	
?	SN-126	1.000	5.62E-01	1.91E-01	
	TL-208	0.873	1.34E+00	2.82E-01	
	PB-210	0.961	1.66E+00	1.35E+00	
	BI-212	0.775	9.50E-01	6.82E-01	
	PB-212	0.990	1.47E+00	2.01E-01	
	BI-214	0.656	1.08E+00	2.45E-01	
	PB-214	0.999	1.20E+00	2.01E-01	
	RA-226	0.939	3.55E+00	6.80E+00	
	AC-228	0.969	1.38E+00	2.97E-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 1707090-09

HTC-A06-S001-4248-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 2:40:16PM
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	76.19	2.71323E-01	7.86		
m	4	93.11	5.09278E-02	30.07	Sum	
	5	144.17	2.27769E-02	51.53	Tol.	U-235
	7	208.35	1.91287E-02	52.47		
m	9	242.45	3.06042E-02	33.44		
	10	270.02	1.86166E-02	33.55		
	15	510.40	1.37435E-02	49.23		
	16	571.61	6.03376E-03	62.30		
	19	647.79	1.03734E-02	51.09	Sum	
	20	682.61	6.64236E-03	61.67		
	22	794.69	5.40323E-03	59.84	Sum	
	23	858.29	1.19666E-02	43.92		
	24	891.49	5.54872E-03	64.74		
M	25	903.83	6.25146E-03	45.96	Sum	
	28	1069.42	6.30376E-03	56.09		
	29	1124.38	1.90278E-02	40.43		
	30	1237.70	1.19290E-02	27.34		
	31	1282.11	6.82914E-03	42.47		
	32	1298.10	1.10541E-02	38.77		
M	34	1587.31	4.89408E-03	29.05		
m	35	1593.15	3.87812E-03	47.61	D-Esc	
	36	1676.48	2.77778E-03	40.62		
	37	1691.65	4.16667E-03	25.82	Tol.	SB-124
	38	1700.52	2.05247E-03	47.00		
	40	2101.87	3.60185E-03	33.62	Sum	
	41	2181.59	2.22222E-03	35.36		

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

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

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	2.82E-01	2.95E+00	2.95E+00
+	NA-22	1274.54		99.94	5.28E-04	1.54E-01	1.54E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	-3.99E-02	8.89E-02	8.89E-02
+	K-40	1460.81	*	10.67	1.90E+01	1.91E+00	1.91E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-7.32E-02	8.22E-02	8.22E-02
		78.34		96.00	3.43E-01		1.03E-01
+	SC-46	889.25		99.98	1.08E-01	2.85E-01	2.85E-01
		1120.51		99.99	3.64E-01		4.28E-01
+	V-48	983.52		99.98	3.06E-01	9.87E+00	9.93E+00
		1312.10		97.50	1.63E+00		9.87E+00
+	CR-51	320.08		9.83	3.87E+00	8.96E+00	8.96E+00
+	MN-54	834.83		99.97	-1.77E-02	1.56E-01	1.56E-01
+	CO-56	846.75		99.96	6.38E-02	2.85E-01	2.85E-01
		1037.75		14.03	-8.32E-02		2.42E+00
		1238.25		67.00	2.03E-01		6.87E-01
		1771.40		15.51	8.60E-02		1.51E+00
		2598.48		16.90	3.48E-01		1.62E+00
+	CO-57	122.06		85.51	-3.60E-02	8.59E-02	8.59E-02
		136.48		10.60	2.56E-01		7.38E-01
+	CO-58	810.76		99.40	-1.00E-01	3.28E-01	3.28E-01
+	FE-59	1099.22		56.50	5.53E-02	1.26E+00	1.26E+00
		1291.56		43.20	3.78E-02		1.79E+00
+	CO-60	1173.22		100.00	-4.98E-02	1.27E-01	1.73E-01
		1332.49		100.00	-3.72E-02		1.27E-01
+	ZN-65	1115.52		50.75	1.59E-02	4.37E-01	4.37E-01
+	GA-67	93.31		35.70	2.25E+08	3.02E+08	3.02E+08
		208.95		2.24	4.08E+09		4.78E+09
		300.22		16.00	-1.34E+09		7.70E+08
+	SE-75	121.11		16.70	-3.37E-01	1.84E-01	6.06E-01
		136.00		59.20	9.15E-02		1.84E-01
		264.65		59.80	1.71E-02		1.97E-01
		279.53		25.20	3.70E-01		5.32E-01
		400.65		11.40	6.93E-02		1.27E+00
+	RB-82	776.52		13.00	-7.68E+00	1.29E+01	1.29E+01
+	RB-83	520.41		46.00	-7.35E-02	4.18E-01	4.18E-01
		529.64		30.30	-1.51E-02		6.61E-01
		552.65		16.40	3.95E-01		1.35E+00
+	KR-85	513.99		0.43	1.60E+00	2.62E+01	2.62E+01
+	SR-85	513.99		99.27	1.99E-02	3.25E-01	3.25E-01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02		93.40	-3.18E-01	2.13E-01	2.19E-01
		1836.01		99.38	8.16E-02		2.13E-01
+	MO-93	263.06		56.72	-4.40E-02	8.46E-02	1.20E-01
		684.67		99.68	6.64E-02		1.18E-01
		1477.11		99.08	-5.89E-02		8.46E-02
+	NB-93M	16.57		9.43	1.63E+01	8.16E+00	8.16E+00
+	NB-94	702.63		100.00	-9.55E-02	1.17E-01	1.17E-01
		871.10		100.00	-7.97E-03		1.25E-01
+	NB-95	765.79		99.81	9.22E-02	9.29E-01	9.29E-01
+	NB-95M	235.69		25.00	1.67E+08	8.80E+07	8.80E+07
+	ZR-95	724.18		43.70	7.35E-02	6.75E-01	9.47E-01
		756.72		55.30	4.39E-01		6.75E-01
+	MO-99	181.06		6.20	-1.37E+10	6.78E+10	7.44E+10
		739.58		12.80	1.50E+10		6.78E+10
		778.00		4.50	1.45E+10		1.88E+11
+	RU-103	497.08		89.00	3.09E-01	5.68E-01	5.68E-01
+	RU-106	621.84		9.80	4.47E-01	1.18E+00	1.18E+00
+	AG-108M	433.93		89.90	2.16E-02	9.44E-02	9.44E-02
		614.37		90.40	-2.00E-02		1.04E-01
		722.95		90.50	2.24E-02		1.50E-01
+	CD-109	88.03	*	3.72	6.48E+00	4.47E+00	4.47E+00
+	AG-110M	657.75		93.14	-2.66E-02	1.63E-01	1.63E-01
		677.61		10.53	3.40E-01		1.39E+00
		706.67		16.46	-2.15E-01		9.73E-01
		763.93		21.98	-4.76E-01		7.38E-01
		884.67		71.63	3.58E-02		2.06E-01
		1384.27		23.94	-2.19E-01		7.24E-01
+	CD-113M	263.70		0.02	-7.82E+01	2.89E+02	2.89E+02
+	SN-113	255.12		1.93	5.21E-01	2.24E-01	6.65E+00
		391.69		64.90	-6.85E-02		2.24E-01
+	TE123M	159.00		84.10	5.88E-03	1.30E-01	1.30E-01
+	SB-124	602.71		97.87	2.58E-02	3.15E-01	3.15E-01
		645.85		7.26	2.29E+00		4.82E+00
		722.78		11.10	5.70E-01		3.83E+00
		1691.02		49.00	4.14E-01		7.58E-01
+	I-125	35.49		6.49	1.84E-01	5.61E+00	5.61E+00
+	SB-125	176.33		6.89	3.00E-01	3.03E-01	9.95E-01
		427.89		29.33	1.97E-02		3.03E-01
		463.38		10.35	2.94E-01		9.08E-01
		600.56		17.80	-2.60E-02		6.04E-01
		635.90		11.32	-1.09E-01		9.35E-01
+	SB-126	414.70		83.30	-4.09E+00	2.52E+01	2.52E+01
		666.33		99.60	-1.90E+01		2.99E+01
		695.00		99.60	-3.60E+00		3.05E+01
		720.50		53.80	6.55E+00		5.77E+01
+	SN-126	87.57	*	37.00	5.62E-01	3.87E-01	3.87E-01
+	SB-127	473.00		25.00	4.75E+06	1.85E+07	1.94E+07
		685.20		35.70	1.04E+07		1.85E+07

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-127	783.80	14.70	-2.31E+07	1.85E+07	4.66E+07
+	I-129	29.78	57.00	-1.34E-01	2.86E-01	2.86E-01
		33.60	13.20	-1.14E-01		9.60E-01
		39.58	7.52	4.84E-01		1.34E+00
+	I-131	284.30	6.05	-7.71E+02	5.28E+02	6.04E+03
		364.48	81.20	2.13E+02		5.28E+02
		636.97	7.26	-8.69E+02		7.08E+03
		722.89	1.80	5.82E+03		3.90E+04
+	TE-132	49.72	13.10	-7.87E+06	1.12E+08	9.25E+08
		228.16	88.00	-2.13E+07		1.12E+08
+	BA-133	81.00	33.00	-6.69E-01	1.67E-01	2.38E-01
		302.84	17.80	2.18E-01		4.54E-01
		356.01	60.00	-1.68E-02		1.67E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-2.84E+05	1.01E+05	1.01E+05
+	CS-134	563.23	8.38	-4.22E-01	1.28E-01	1.16E+00
		569.32	15.43	4.89E-02		7.16E-01
		604.70	97.60	3.40E-03		1.28E-01
		795.84	85.40	1.74E-02		1.71E-01
		801.93	8.73	2.10E-02		1.56E+00
+	CS-135	268.24	16.00	-2.43E-02	4.59E-01	4.59E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	8.27E+01	2.42E+01	1.54E+02
		163.89	4.61	-1.52E+02		2.41E+02
		176.55	13.56	-2.65E+01		8.61E+01
		273.65	12.66	-2.84E+01		1.05E+02
		340.57	48.50	6.00E+01		3.88E+01
		818.50	99.70	1.21E+01		2.42E+01
		1048.07	79.60	-1.04E+01		3.31E+01
		1235.34	19.70	2.68E+01		1.87E+02
+	CS-137	661.65	85.12	1.21E-01	1.44E-01	1.44E-01
+	LA-138	788.74	34.00	1.74E-02	1.44E-01	3.59E-01
		1435.80	66.00	-1.70E-01		1.44E-01
+	CE-139	165.85	80.35	-1.47E-02	1.23E-01	1.23E-01
+	BA-140	162.64	6.70	-4.89E+01	7.64E+01	1.95E+02
		304.84	4.50	-2.76E+01		3.51E+02
		423.70	3.20	-3.25E+01		5.52E+02
		437.55	2.00	-2.45E+01		8.62E+02
		537.32	25.00	-1.24E+01		7.64E+01
+	LA-140	328.77	20.50	7.03E+01	3.34E+01	8.68E+01
		487.03	45.50	4.18E-01		4.21E+01
		815.85	23.50	-1.98E+01		1.14E+02
		1596.49	95.49	2.11E+00		3.34E+01
+	CE-141	145.44	48.40	4.96E-01	1.09E+00	1.09E+00
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CE-144	133.54	10.80	-2.76E-01	7.20E-01	7.20E-01
+	PM-144	476.78	42.00	9.77E-02	1.19E-01	2.47E-01
		618.01	98.60	3.72E-02		1.19E-01
		696.49	99.49	3.89E-02		1.50E-01
+	PM-145	36.85	21.70	1.86E-02	2.71E-01	5.08E-01
		37.36	39.70	9.94E-03		2.71E-01
		42.30	15.10	4.42E-02		6.07E-01
		72.40	2.31	1.16E-01		3.91E+00
+	PM-146	453.90	39.94	9.86E-02	2.20E-01	2.20E-01
		735.90	14.01	9.29E-02		8.79E-01
		747.13	13.10	-3.68E-01		8.65E-01
+	ND-147	91.11	28.90	1.93E+02	1.46E+02	1.46E+02
		531.02	13.10	1.84E+02		3.73E+02
+	PM-149	285.90	3.10	-8.89E+12	7.23E+13	7.23E+13
+	EU-152	121.78	20.50	-1.18E-01	2.82E-01	2.82E-01
		244.69	5.40	-2.99E+00		1.46E+00
		344.27	19.13	-6.84E-01		4.05E-01
		778.89	9.20	-1.28E-03		1.28E+00
		964.01	10.40	2.76E-01		1.66E+00
		1085.78	7.22	-1.14E+00		1.81E+00
		1112.02	9.60	-1.00E-01		1.55E+00
		1407.95	14.94	2.95E-01		9.22E-01
+	GD-153	97.43	31.30	8.63E-02	2.76E-01	2.76E-01
		103.18	22.20	-1.56E-01		3.54E-01
+	EU-154	123.07	40.50	-3.97E-02	1.47E-01	1.47E-01
		723.30	19.70	5.69E-02		7.32E-01
		873.19	11.50	1.46E-01		1.09E+00
		996.32	10.30	-1.64E-01		1.34E+00
		1004.76	17.90	-1.42E-01		8.04E-01
		1274.45	35.50	1.41E-03		4.11E-01
+	EU-155	86.50	30.90	3.15E-01	2.67E-01	2.67E-01
		105.30	20.70	-1.27E-01		2.95E-01
+	EU-156	811.77	10.40	-5.40E+01	1.09E+02	1.09E+02
		1153.47	7.20	8.04E+01		2.35E+02
		1230.71	8.90	4.45E+01		1.68E+02
+	HO-166M	184.41	72.60	1.97E-01	1.07E-01	1.07E-01
		280.45	29.60	1.40E-01		2.49E-01
		410.94	11.10	6.88E-02		7.58E-01
		711.69	54.10	1.07E-01		2.33E-01
+	TM-171	66.72	0.14	-1.01E+01	6.24E+01	6.24E+01
+	HF-172	67.35	5.31	-2.65E-01	6.13E-01	1.64E+00
		125.81	11.30	4.13E-01		6.13E-01
+	LU-172	181.53	20.60	-1.93E+03	6.69E+03	9.12E+03
		900.72	29.81	2.76E+03		1.18E+04
		1093.66	62.50	1.46E+03		6.69E+03
+	LU-173	100.72	5.24	5.16E-01	4.05E-01	1.33E+00
		272.11	21.20	-1.86E-02		4.05E-01
+	HF-175	343.40	84.00	-4.10E-01	2.42E-01	2.42E-01
+	LU-176	88.34	13.30	3.96E-01	7.81E-02	6.03E-01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	201.83		86.00	2.10E-02	7.81E-02	7.84E-02
		306.78		94.00	4.28E-03		7.81E-02
+	HF-181	133.02		41.70	-3.45E-01	5.24E-01	7.47E-01
		345.85		17.20	-6.72E+00		2.19E+00
		482.03		82.80	6.90E-02		5.24E-01
+	TA-182	67.75		41.20	-3.05E-01	3.43E-01	3.43E-01
		1121.30		34.90	2.21E-01		9.37E-01
		1189.05		16.23	7.10E-01		1.91E+00
		1221.41		26.98	-5.17E-02		1.17E+00
		1231.02		11.44	8.78E-01		2.73E+00
+	IR-192	308.46		29.68	1.43E-01	4.31E-01	6.03E-01
		468.07		48.10	-1.19E-01		4.31E-01
+	HG-203	279.19		77.30	1.82E-01	4.21E-01	4.21E-01
+	TL-204	374.74		94.11	-2.14E-02	8.61E-02	8.61E-02
		899.15		99.16	1.87E-02		1.29E-01
		911.74		91.10	3.77E-01		2.36E-01
+	BI-207	569.67		97.72	7.09E-03	1.04E-01	1.04E-01
		1063.62		74.90	-5.25E-02		1.62E-01
+	TL-208	583.14	*	30.22	1.20E+00	7.23E-02	4.78E-01
		860.37		4.48	2.47E+00		3.15E+00
		2614.66	*	35.85	1.55E+00		7.23E-02
+	BI-210M	262.00		45.00	3.44E-02	1.55E-01	1.55E-01
		300.00		23.00	-6.46E-01		3.71E-01
+	PB-210	46.50	*	4.25	1.66E+00	2.19E+00	2.19E+00
+	PB-211	404.84		2.90	2.35E-01	2.97E+00	2.97E+00
		831.96		2.90	-6.47E-01		4.23E+00
+	BI-212	727.17	*	11.80	9.50E-01	1.06E+00	1.06E+00
		1620.62		2.75	9.60E-01		3.43E+00
+	PB-212	238.63	*	44.60	1.46E+00	3.99E-01	3.99E-01
		300.09	*	3.41	2.25E+00		4.28E+00
+	BI-214	609.31	*	46.30	1.08E+00	3.54E-01	3.54E-01
		1120.29		15.10	1.06E+00		1.25E+00
		1764.49	*	15.80	1.10E+00		4.88E-01
		2204.22		4.98	2.18E+00		3.41E+00
+	PB-214	295.21	*	19.19	1.27E+00	3.30E-01	7.55E-01
		351.92	*	37.19	1.16E+00		3.30E-01
+	RN-219	401.80		6.50	1.37E-02	1.27E+00	1.27E+00
+	RA-223	323.87		3.88	-1.44E+00	1.87E+00	1.87E+00
+	RA-224	240.98		3.95	1.60E+01	3.42E+00	3.42E+00
+	RA-225	40.00		31.00	1.20E+01	3.32E+01	3.32E+01
+	RA-226	186.21	*	3.28	3.55E+00	3.25E+00	3.25E+00
+	TH-227	50.10		8.40	-8.29E-03	9.76E-01	9.76E-01
		236.00		11.50	1.94E+00		1.02E+00
		256.20		6.30	5.92E-01		1.15E+00
+	AC-228	338.32	*	11.40	1.90E+00	1.00E+00	1.22E+00
		911.07	*	27.70	1.26E+00		1.15E+00
		969.11	*	16.60	1.44E+00		1.00E+00
+	TH-230	48.44		16.90	-3.71E-02	4.98E-01	4.98E-01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-230	62.85	4.60	1.78E+00	4.98E-01	1.78E+00
		67.67	0.37	-1.86E+01		2.09E+01
+	PA-231	283.67	1.60	-5.61E-01	3.45E+00	4.39E+00
		302.67	2.30	1.65E+00		3.45E+00
+	TH-231	25.64	14.70	1.18E+00	1.15E+00	1.66E+00
		84.21	6.40	-9.91E-01		1.15E+00
+	PA-233	311.98	38.60	-4.28E-01	2.32E+00	2.32E+00
+	PA-234	131.20	20.40	5.39E-02	3.09E-01	3.09E-01
		733.99	8.80	7.74E-01		1.32E+00
		946.00	12.00	-4.27E-01		1.05E+00
+	PA-234M	1001.03	0.92	8.80E-01	1.56E+01	1.56E+01
+	TH-234	63.29	3.80	2.15E+00	2.15E+00	2.15E+00
+	U-235	143.76	10.50	5.08E-01	6.11E-01	6.11E-01
		163.35	4.70	-3.23E-01		1.29E+00
		205.31	4.70	-4.19E-02		1.47E+00
+	NP-237	86.50	12.60	7.43E-01	6.30E-01	6.30E-01
+	NP-239	106.10	22.70	-1.86E+11	1.25E+12	1.25E+12
		228.18	10.70	-5.75E+11		3.01E+12
		277.60	14.10	5.19E+11		2.49E+12
+	AM-241	59.54	35.90	-1.34E-01	2.23E-01	2.23E-01
+	AM-243	74.67	66.00	7.06E-01	1.60E-01	1.60E-01
+	CM-243	209.75	3.29	9.71E-01	5.23E-01	2.25E+00
		228.14	10.60	-1.21E-01		6.35E-01
		277.60	14.00	1.09E-01		5.23E-01

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

NUCLIDE MDA REPORT

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

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	2.95E+00	2.95E+00	2.82E-01	1.39E+00
	NA-22	1274.54		99.94	1.54E-01	1.54E-01	5.28E-04	7.02E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	8.89E-02	8.89E-02	-3.99E-02	3.59E-02
+	K-40	1460.81	*	10.67	1.91E+00	1.91E+00	1.90E+01	8.90E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	8.22E-02	8.22E-02	-7.32E-02	4.03E-02
		78.34		96.00	1.03E-01		3.43E-01	5.09E-02
	SC-46	889.25		99.98	2.85E-01	2.85E-01	1.08E-01	1.32E-01
		1120.51		99.99	4.28E-01		3.64E-01	2.02E-01
	V-48	983.52		99.98	9.93E+00	9.87E+00	3.06E-01	4.60E+00
		1312.10		97.50	9.87E+00		1.63E+00	4.45E+00
	CR-51	320.08		9.83	8.96E+00	8.96E+00	3.87E+00	4.28E+00
	MN-54	834.83		99.97	1.56E-01	1.56E-01	-1.77E-02	7.26E-02
	CO-56	846.75		99.96	2.85E-01	2.85E-01	6.38E-02	1.32E-01
		1037.75		14.03	2.42E+00		-8.32E-02	1.12E+00
		1238.25		67.00	6.87E-01		2.03E-01	3.22E-01
		1771.40		15.51	1.51E+00		8.60E-02	6.26E-01
		2598.48		16.90	1.62E+00		3.48E-01	6.26E-01
	CO-57	122.06		85.51	8.59E-02	8.59E-02	-3.60E-02	4.18E-02
		136.48		10.60	7.38E-01		2.56E-01	3.60E-01
	CO-58	810.76		99.40	3.28E-01	3.28E-01	-1.00E-01	1.53E-01
	FE-59	1099.22		56.50	1.26E+00	1.26E+00	5.53E-02	5.86E-01
		1291.56		43.20	1.79E+00		3.78E-02	8.27E-01
	CO-60	1173.22		100.00	1.73E-01	1.27E-01	-4.98E-02	8.04E-02
		1332.49		100.00	1.27E-01		-3.72E-02	5.71E-02
	ZN-65	1115.52		50.75	4.37E-01	4.37E-01	1.59E-02	2.04E-01
	GA-67	93.31		35.70	3.02E+08	3.02E+08	2.25E+08	1.48E+08
		208.95		2.24	4.78E+09		4.08E+09	2.32E+09
		300.22		16.00	7.70E+08		-1.34E+09	3.71E+08
	SE-75	121.11		16.70	6.06E-01	1.84E-01	-3.37E-01	2.95E-01
		136.00		59.20	1.84E-01		9.15E-02	8.98E-02
		264.65		59.80	1.97E-01		1.71E-02	9.47E-02
		279.53		25.20	5.32E-01		3.70E-01	2.56E-01
		400.65		11.40	1.27E+00		6.93E-02	6.01E-01
	RB-82	776.52		13.00	1.29E+01	1.29E+01	-7.68E+00	5.99E+00
	RB-83	520.41		46.00	4.18E-01	4.18E-01	-7.35E-02	1.96E-01
		529.64		30.30	6.61E-01		-1.51E-02	3.11E-01
		552.65		16.40	1.35E+00		3.95E-01	6.34E-01
	KR-85	513.99		0.43	2.62E+01	2.62E+01	1.60E+00	1.25E+01
	SR-85	513.99		99.27	3.25E-01	3.25E-01	1.99E-02	1.55E-01
	Y-88	898.02		93.40	2.19E-01	2.13E-01	-3.18E-01	1.00E-01
		1836.01		99.38	2.13E-01		8.16E-02	9.00E-02
	MO-93	263.06		56.72	1.20E-01	8.46E-02	-4.40E-02	5.76E-02
		684.67		99.68	1.18E-01		6.64E-02	5.53E-02
		1477.11		99.08	8.46E-02		-5.89E-02	3.51E-02
	NB-93M	16.57		9.43	8.16E+00	8.16E+00	1.63E+01	3.96E+00
	NB-94	702.63		100.00	1.17E-01	1.17E-01	-9.55E-02	5.48E-02
		871.10		100.00	1.25E-01		-7.97E-03	5.81E-02
	NB-95	765.79		99.81	9.29E-01	9.29E-01	9.22E-02	4.37E-01
	NB-95M	235.69		25.00	8.80E+07	8.80E+07	1.67E+08	4.31E+07
	ZR-95	724.18		43.70	9.47E-01	6.75E-01	7.35E-02	4.49E-01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	ZR-95	756.72		55.30	6.75E-01	6.75E-01	4.39E-01	3.17E-01
	MO-99	181.06		6.20	7.44E+10	6.78E+10	-1.37E+10	3.61E+10
		739.58		12.80	6.78E+10		1.50E+10	3.18E+10
		778.00		4.50	1.88E+11		1.45E+10	8.75E+10
	RU-103	497.08		89.00	5.68E-01	5.68E-01	3.09E-01	2.67E-01
	RU-106	621.84		9.80	1.18E+00	1.18E+00	4.47E-01	5.51E-01
	AG-108M	433.93		89.90	9.44E-02	9.44E-02	2.16E-02	4.47E-02
		614.37		90.40	1.04E-01		-2.00E-02	4.87E-02
		722.95		90.50	1.50E-01		2.24E-02	7.09E-02
+	CD-109	88.03	*	3.72	4.47E+00	4.47E+00	6.48E+00	2.21E+00
	AG-110M	657.75		93.14	1.63E-01	1.63E-01	-2.66E-02	7.68E-02
		677.61		10.53	1.39E+00		3.40E-01	6.53E-01
		706.67		16.46	9.73E-01		-2.15E-01	4.57E-01
		763.93		21.98	7.38E-01		-4.76E-01	3.46E-01
		884.67		71.63	2.06E-01		3.58E-02	9.47E-02
		1384.27		23.94	7.24E-01		-2.19E-01	3.26E-01
	CD-113M	263.70		0.02	2.89E+02	2.89E+02	-7.82E+01	1.38E+02
	SN-113	255.12		1.93	6.65E+00	2.24E-01	5.21E-01	3.20E+00
		391.69		64.90	2.24E-01		-6.85E-02	1.06E-01
	TE123M	159.00		84.10	1.30E-01	1.30E-01	5.88E-03	6.32E-02
	SB-124	602.71		97.87	3.15E-01	3.15E-01	2.58E-02	1.47E-01
		645.85		7.26	4.82E+00		2.29E+00	2.26E+00
		722.78		11.10	3.83E+00		5.70E-01	1.81E+00
		1691.02		49.00	7.58E-01		4.14E-01	3.28E-01
	I-125	35.49		6.49	5.61E+00	5.61E+00	1.84E-01	2.73E+00
	SB-125	176.33		6.89	9.95E-01	3.03E-01	3.00E-01	4.83E-01
		427.89		29.33	3.03E-01		1.97E-02	1.44E-01
		463.38		10.35	9.08E-01		2.94E-01	4.29E-01
		600.56		17.80	6.04E-01		-2.60E-02	2.83E-01
		635.90		11.32	9.35E-01		-1.09E-01	4.36E-01
	SB-126	414.70		83.30	2.52E+01	2.52E+01	-4.09E+00	1.19E+01
		666.33		99.60	2.99E+01		-1.90E+01	1.41E+01
		695.00		99.60	3.05E+01		-3.60E+00	1.43E+01
		720.50		53.80	5.77E+01		6.55E+00	2.71E+01
+	SN-126	87.57	*	37.00	3.87E-01	3.87E-01	5.62E-01	1.92E-01
	SB-127	473.00		25.00	1.94E+07	1.85E+07	4.75E+06	9.12E+06
		685.20		35.70	1.85E+07		1.04E+07	8.69E+06
		783.80		14.70	4.66E+07		-2.31E+07	2.18E+07
	I-129	29.78		57.00	2.86E-01	2.86E-01	-1.34E-01	1.39E-01
		33.60		13.20	9.60E-01		-1.14E-01	4.68E-01
		39.58		7.52	1.34E+00		4.84E-01	6.51E-01
	I-131	284.30		6.05	6.04E+03	5.28E+02	-7.71E+02	2.90E+03
		364.48		81.20	5.28E+02		2.13E+02	2.52E+02
		636.97		7.26	7.08E+03		-8.69E+02	3.30E+03
		722.89		1.80	3.90E+04		5.82E+03	1.85E+04
	TE-132	49.72		13.10	9.25E+08	1.12E+08	-7.87E+06	4.52E+08
		228.16		88.00	1.12E+08		-2.13E+07	5.38E+07
	BA-133	81.00		33.00	2.38E-01	1.67E-01	-6.69E-01	1.17E-01
		302.84		17.80	4.54E-01		2.18E-01	2.18E-01
		356.01		60.00	1.67E-01		-1.68E-02	8.04E-02
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	1.01E+05	1.01E+05	-2.84E+05	4.95E+04
	CS-134	563.23		8.38	1.16E+00	1.28E-01	-4.22E-01	5.44E-01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	569.32	15.43	7.16E-01	1.28E-01	4.89E-02	3.37E-01
	604.70	97.60	1.28E-01		3.40E-03	6.06E-02
	795.84	85.40	1.71E-01		1.74E-02	8.05E-02
	801.93	8.73	1.56E+00		2.10E-02	7.26E-01
CS-135	268.24	16.00	4.59E-01	4.59E-01	-2.43E-02	2.21E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.54E+02	2.42E+01	8.27E+01	7.51E+01
	163.89	4.61	2.41E+02		-1.52E+02	1.17E+02
	176.55	13.56	8.61E+01		-2.65E+01	4.17E+01
	273.65	12.66	1.05E+02		-2.84E+01	5.07E+01
	340.57	48.50	3.88E+01		6.00E+01	1.88E+01
	818.50	99.70	2.42E+01		1.21E+01	1.13E+01
	1048.07	79.60	3.31E+01		-1.04E+01	1.53E+01
	1235.34	19.70	1.87E+02		2.68E+01	8.76E+01
CS-137	661.65	85.12	1.44E-01	1.44E-01	1.21E-01	6.79E-02
LA-138	788.74	34.00	3.59E-01	1.44E-01	1.74E-02	1.68E-01
	1435.80	66.00	1.44E-01		-1.70E-01	6.18E-02
CE-139	165.85	80.35	1.23E-01	1.23E-01	-1.47E-02	5.97E-02
BA-140	162.64	6.70	1.95E+02	7.64E+01	-4.89E+01	9.47E+01
	304.84	4.50	3.51E+02		-2.76E+01	1.68E+02
	423.70	3.20	5.52E+02		-3.25E+01	2.61E+02
	437.55	2.00	8.62E+02		-2.45E+01	4.07E+02
	537.32	25.00	7.64E+01		-1.24E+01	3.58E+01
LA-140	328.77	20.50	8.68E+01	3.34E+01	7.03E+01	4.16E+01
	487.03	45.50	4.21E+01		4.18E-01	1.98E+01
	815.85	23.50	1.14E+02		-1.98E+01	5.29E+01
	1596.49	95.49	3.34E+01		2.11E+00	1.50E+01
CE-141	145.44	48.40	1.09E+00	1.09E+00	4.96E-01	5.32E-01
@ 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	7.20E-01	7.20E-01	-2.76E-01	3.51E-01
PM-144	476.78	42.00	2.47E-01	1.19E-01	9.77E-02	1.16E-01
	618.01	98.60	1.19E-01		3.72E-02	5.54E-02
	696.49	99.49	1.50E-01		3.89E-02	7.05E-02
PM-145	36.85	21.70	5.08E-01	2.71E-01	1.86E-02	2.47E-01
	37.36	39.70	2.71E-01		9.94E-03	1.32E-01
	42.30	15.10	6.07E-01		4.42E-02	2.96E-01
	72.40	2.31	3.91E+00		1.16E-01	1.92E+00
PM-146	453.90	39.94	2.20E-01	2.20E-01	9.86E-02	1.04E-01
	735.90	14.01	8.79E-01		9.29E-02	4.12E-01
	747.13	13.10	8.65E-01		-3.68E-01	4.02E-01
ND-147	91.11	28.90	1.46E+02	1.46E+02	1.93E+02	7.16E+01
	531.02	13.10	3.73E+02		1.84E+02	1.75E+02
PM-149	285.90	3.10	7.23E+13	7.23E+13	-8.89E+12	3.46E+13
EU-152	121.78	20.50	2.82E-01	2.82E-01	-1.18E-01	1.37E-01
	244.69	5.40	1.46E+00		-2.99E+00	7.08E-01
	344.27	19.13	4.05E-01		-6.84E-01	1.93E-01
	778.89	9.20	1.28E+00		-1.28E-03	5.98E-01
	964.01	10.40	1.66E+00		2.76E-01	7.83E-01
	1085.78	7.22	1.81E+00		-1.14E+00	8.28E-01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	1112.02		9.60	1.55E+00	2.82E-01	-1.00E-01	7.16E-01
		1407.95		14.94	9.22E-01		2.95E-01	4.16E-01
	GD-153	97.43		31.30	2.76E-01	2.76E-01	8.63E-02	1.35E-01
		103.18		22.20	3.54E-01		-1.56E-01	1.73E-01
	EU-154	123.07		40.50	1.47E-01	1.47E-01	-3.97E-02	7.14E-02
		723.30		19.70	7.32E-01		5.69E-02	3.47E-01
		873.19		11.50	1.09E+00		1.46E-01	5.04E-01
		996.32		10.30	1.34E+00		-1.64E-01	6.22E-01
		1004.76		17.90	8.04E-01		-1.42E-01	3.74E-01
		1274.45		35.50	4.11E-01		1.41E-03	1.88E-01
	EU-155	86.50		30.90	2.67E-01	2.67E-01	3.15E-01	1.31E-01
		105.30		20.70	2.95E-01		-1.27E-01	1.44E-01
	EU-156	811.77		10.40	1.09E+02	1.09E+02	-5.40E+01	5.09E+01
		1153.47		7.20	2.35E+02		8.04E+01	1.10E+02
		1230.71		8.90	1.68E+02		4.45E+01	7.78E+01
	HO-166M	184.41		72.60	1.07E-01	1.07E-01	1.97E-01	5.20E-02
		280.45		29.60	2.49E-01		1.40E-01	1.20E-01
		410.94		11.10	7.58E-01		6.88E-02	3.60E-01
		711.69		54.10	2.33E-01		1.07E-01	1.10E-01
	TM-171	66.72		0.14	6.24E+01	6.24E+01	-1.01E+01	3.06E+01
	HF-172	67.35		5.31	1.64E+00	6.13E-01	-2.65E-01	8.05E-01
		125.81		11.30	6.13E-01		4.13E-01	2.99E-01
	LU-172	181.53		20.60	9.12E+03	6.69E+03	-1.93E+03	4.43E+03
		900.72		29.81	1.18E+04		2.76E+03	5.47E+03
		1093.66		62.50	6.69E+03		1.46E+03	3.10E+03
	LU-173	100.72		5.24	1.33E+00	4.05E-01	5.16E-01	6.52E-01
		272.11		21.20	4.05E-01		-1.86E-02	1.95E-01
	HF-175	343.40		84.00	2.42E-01	2.42E-01	-4.10E-01	1.16E-01
	LU-176	88.34		13.30	6.03E-01	7.81E-02	3.96E-01	2.96E-01
		201.83		86.00	7.84E-02		2.10E-02	3.80E-02
		306.78		94.00	7.81E-02		4.28E-03	3.74E-02
	HF-181	133.02		41.70	7.47E-01	5.24E-01	-3.45E-01	3.64E-01
		345.85		17.20	2.19E+00		-6.72E+00	1.04E+00
		482.03		82.80	5.24E-01		6.90E-02	2.47E-01
	TA-182	67.75		41.20	3.43E-01	3.43E-01	-3.05E-01	1.68E-01
		1121.30		34.90	9.37E-01		2.21E-01	4.40E-01
		1189.05		16.23	1.91E+00		7.10E-01	8.89E-01
		1221.41		26.98	1.17E+00		-5.17E-02	5.43E-01
		1231.02		11.44	2.73E+00		8.78E-01	1.27E+00
	IR-192	308.46		29.68	6.03E-01	4.31E-01	1.43E-01	2.88E-01
		468.07		48.10	4.31E-01		-1.19E-01	2.03E-01
	HG-203	279.19		77.30	4.21E-01	4.21E-01	1.82E-01	2.02E-01
	TL-204	374.74		94.11	8.61E-02	8.61E-02	-2.14E-02	4.09E-02
		899.15		99.16	1.29E-01		1.87E-02	5.95E-02
		911.74		91.10	2.36E-01		3.77E-01	1.13E-01
	BI-207	569.67		97.72	1.04E-01	1.04E-01	7.09E-03	4.89E-02
		1063.62		74.90	1.62E-01		-5.25E-02	7.38E-02
+	TL-208	583.14	*	30.22	4.78E-01	7.23E-02	1.20E+00	2.29E-01
		860.37		4.48	3.15E+00		2.47E+00	1.48E+00
		2614.66	*	35.85	7.23E-02		1.55E+00	0.00E+00
	BI-210M	262.00		45.00	1.55E-01	1.55E-01	3.44E-02	7.43E-02
		300.00		23.00	3.71E-01		-6.46E-01	1.79E-01
+	PB-210	46.50	*	4.25	2.19E+00	2.19E+00	1.66E+00	1.07E+00

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

	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	2.97E+00	2.97E+00	2.35E-01	1.41E+00
		831.96		2.90	4.23E+00		-6.47E-01	1.97E+00
+	BI-212	727.17	*	11.80	1.06E+00	1.06E+00	9.50E-01	4.97E-01
		1620.62		2.75	3.43E+00		9.60E-01	1.44E+00
+	PB-212	238.63	*	44.60	3.99E-01	3.99E-01	1.46E+00	1.97E-01
		300.09	*	3.41	4.28E+00		2.25E+00	2.10E+00
+	BI-214	609.31	*	46.30	3.54E-01	3.54E-01	1.08E+00	1.70E-01
		1120.29		15.10	1.25E+00		1.06E+00	5.88E-01
		1764.49	*	15.80	4.88E-01		1.10E+00	1.91E-01
		2204.22		4.98	3.41E+00		2.18E+00	1.49E+00
+	PB-214	295.21	*	19.19	7.55E-01	3.30E-01	1.27E+00	3.70E-01
		351.92	*	37.19	3.30E-01		1.16E+00	1.60E-01
	RN-219	401.80		6.50	1.27E+00	1.27E+00	1.37E-02	6.06E-01
	RA-223	323.87		3.88	1.87E+00	1.87E+00	-1.44E+00	8.94E-01
	RA-224	240.98		3.95	3.42E+00	3.42E+00	1.60E+01	1.68E+00
	RA-225	40.00		31.00	3.32E+01	3.32E+01	1.20E+01	1.62E+01
+	RA-226	186.21	*	3.28	3.25E+00	3.25E+00	3.55E+00	1.60E+00
	TH-227	50.10		8.40	9.76E-01	9.76E-01	-8.29E-03	4.77E-01
		236.00		11.50	1.02E+00		1.94E+00	5.00E-01
		256.20		6.30	1.15E+00		5.92E-01	5.54E-01
+	AC-228	338.32	*	11.40	1.22E+00	1.00E+00	1.90E+00	5.97E-01
		911.07	*	27.70	1.15E+00		1.26E+00	5.56E-01
		969.11	*	16.60	1.00E+00		1.44E+00	4.73E-01
	TH-230	48.44		16.90	4.98E-01	4.98E-01	-3.71E-02	2.43E-01
		62.85		4.60	1.78E+00		1.78E+00	8.74E-01
		67.67		0.37	2.09E+01		-1.86E+01	1.03E+01
	PA-231	283.67		1.60	4.39E+00	3.45E+00	-5.61E-01	2.11E+00
		302.67		2.30	3.45E+00		1.65E+00	1.66E+00
	TH-231	25.64		14.70	1.66E+00	1.15E+00	1.18E+00	8.12E-01
		84.21		6.40	1.15E+00		-9.91E-01	5.62E-01
	PA-233	311.98		38.60	2.32E+00	2.32E+00	-4.28E-01	1.11E+00
	PA-234	131.20		20.40	3.09E-01	3.09E-01	5.39E-02	1.51E-01
		733.99		8.80	1.32E+00		7.74E-01	6.19E-01
		946.00		12.00	1.05E+00		-4.27E-01	4.85E-01
	PA-234M	1001.03		0.92	1.56E+01	1.56E+01	8.80E-01	7.27E+00
	TH-234	63.29		3.80	2.15E+00	2.15E+00	2.15E+00	1.05E+00
	U-235	143.76		10.50	6.11E-01	6.11E-01	5.08E-01	2.98E-01
		163.35		4.70	1.29E+00		-3.23E-01	6.25E-01
		205.31		4.70	1.47E+00		-4.19E-02	7.14E-01
	NP-237	86.50		12.60	6.30E-01	6.30E-01	7.43E-01	3.10E-01
	NP-239	106.10		22.70	1.25E+12	1.25E+12	-1.86E+11	6.09E+11
		228.18		10.70	3.01E+12		-5.75E+11	1.45E+12
		277.60		14.10	2.49E+12		5.19E+11	1.19E+12
	AM-241	59.54		35.90	2.23E-01	2.23E-01	-1.34E-01	1.09E-01
	AM-243	74.67		66.00	1.60E-01	1.60E-01	7.06E-01	7.92E-02
	CM-243	209.75		3.29	2.25E+00	5.23E-01	9.71E-01	1.09E+00
		228.14		10.60	6.35E-01		-1.21E-01	3.06E-01
		277.60		14.00	5.23E-01		1.09E-01	2.51E-01

Analysis Report for 1707090-09

HTC-A06-S001-4248-01

+ = 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

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: HTC-A06-S001-4248-01

Elapsed Live time: 3600
Elapsed Real Time: 3618

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	17	88
17:	97	96	75	66	75	76	68	76
25:	88	69	77	78	55	66	62	67
33:	64	75	53	80	67	73	69	73
41:	69	84	60	82	109	102	108	82
49:	66	69	93	109	110	92	105	99
57:	110	108	110	129	109	145	165	138
65:	118	102	120	126	140	138	137	165
73:	238	298	299	356	299	130	114	97
81:	104	112	117	124	139	196	174	158
89:	140	138	136	176	148	93	90	74
97:	94	102	88	82	81	81	70	92
105:	62	79	78	82	86	72	74	60
113:	64	69	86	61	67	72	66	54
121:	55	62	89	64	87	70	79	94
129:	90	65	61	71	71	74	65	80
137:	64	60	57	65	66	69	78	80
145:	78	60	53	63	58	61	61	63
153:	57	67	58	48	51	67	55	67
161:	53	55	49	43	49	43	66	51
169:	43	50	65	53	52	54	53	55
177:	55	48	37	48	55	43	68	71
185:	117	94	61	51	41	46	53	48
193:	42	41	57	48	50	50	58	49
201:	47	41	47	36	48	61	56	62
209:	65	44	40	38	48	51	29	27
217:	42	51	44	40	43	40	46	40
225:	26	37	32	48	35	39	37	34
233:	38	48	49	74	204	318	203	79
241:	73	70	34	34	34	30	33	28
249:	36	33	27	30	29	32	40	31
257:	42	37	34	22	22	41	25	31
265:	19	25	26	36	44	45	32	19
273:	28	25	23	35	41	33	26	24
281:	32	29	23	26	16	34	30	22
289:	26	26	23	22	51	95	93	56
297:	26	30	48	34	26	25	23	36
305:	15	16	30	30	21	23	21	19
313:	17	19	24	22	23	20	21	28
321:	19	24	21	12	16	29	36	30
329:	30	18	28	17	25	25	28	36
337:	55	71	47	22	24	18	30	14
345:	17	20	17	20	26	93	144	106
353:	36	22	20	17	18	10	20	15
361:	27	27	23	19	16	21	18	18

369:	19	20	21	15	16	16	19	19

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Channel								
377:	17	21	18	25	15	15	12	20
385:	15	26	27	12	19	16	19	21
393:	14	20	13	15	16	19	16	18
401:	18	14	18	20	17	21	23	17
409:	21	15	12	14	19	13	17	12
417:	25	19	14	17	18	16	15	19
425:	16	5	16	14	15	23	15	14
433:	15	14	14	14	17	10	10	15
441:	14	12	16	11	12	11	10	12
449:	10	11	17	14	19	15	12	11
457:	7	15	12	16	10	26	18	11
465:	10	11	10	13	15	16	9	5
473:	15	18	12	12	10	11	13	13
481:	12	15	10	15	10	15	22	10
489:	11	10	16	12	12	16	12	14
497:	14	7	13	3	8	11	8	10
505:	13	12	17	14	30	48	32	18
513:	9	7	15	7	8	11	11	14
521:	10	9	14	15	11	6	11	15
529:	10	8	13	18	11	10	9	10
537:	10	13	17	6	12	7	12	8
545:	13	13	10	11	9	12	12	13
553:	13	16	16	14	9	15	7	10
561:	7	17	8	11	9	16	8	12
569:	9	16	12	15	9	6	8	14
577:	16	8	12	14	28	77	67	27
585:	14	8	9	8	11	16	7	7
593:	15	13	13	15	11	12	12	11
601:	9	11	12	7	12	14	36	76
609:	105	40	13	8	10	8	14	4
617:	8	12	12	10	10	4	10	8
625:	9	7	15	9	9	10	11	11
633:	3	9	6	11	9	18	11	9
641:	10	10	12	11	18	14	14	5
649:	8	9	13	8	4	15	10	8
657:	8	8	9	13	12	9	12	15
665:	10	4	3	15	8	10	14	12
673:	13	9	7	12	5	3	5	15
681:	7	11	5	12	8	8	6	8
689:	7	8	8	10	9	10	9	9
697:	14	5	11	12	11	7	9	8
705:	9	6	14	13	11	7	11	8
713:	9	10	6	8	7	10	12	9
721:	8	9	6	11	12	24	19	15
729:	6	3	10	10	11	3	6	10
737:	12	7	5	9	11	7	8	9
745:	6	6	7	10	3	4	7	8
753:	11	6	11	9	12	8	6	10
761:	6	6	8	11	7	5	15	12
769:	13	11	8	5	10	4	6	3
777:	8	10	9	5	9	9	5	8
785:	8	5	8	8	12	4	7	8
793:	8	14	12	9	4	9	10	8

801:	7	7	5	7	11	9	9	5

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Channel								
809:	11	5	6	10	3	8	8	9
817:	9	7	5	11	5	10	4	6
825:	9	5	9	8	4	10	5	4
833:	3	9	10	10	6	7	11	7
841:	9	9	7	8	7	6	5	3
849:	8	3	5	11	15	4	4	9
857:	4	6	13	15	13	9	2	7
865:	5	6	9	8	4	3	7	8
873:	6	8	6	9	5	2	4	4
881:	7	5	5	6	4	7	3	4
889:	8	8	11	6	6	3	5	1
897:	7	6	3	6	3	9	12	6
905:	6	6	2	6	15	39	44	21
913:	9	9	8	9	4	3	3	7
921:	4	8	5	3	5	4	6	6
929:	9	5	8	5	11	8	8	4
937:	6	7	4	6	5	7	10	3
945:	6	4	3	6	7	10	8	5
953:	8	7	2	5	6	8	8	6
961:	12	17	7	12	7	13	12	24
969:	31	13	5	1	5	4	4	7
977:	7	2	3	7	8	4	9	6
985:	6	6	5	8	6	9	4	2
993:	5	4	5	6	6	7	8	11
1001:	7	6	9	1	7	9	2	6
1009:	8	6	1	8	4	11	2	4
1017:	8	6	4	7	6	7	4	4
1025:	5	8	4	1	3	6	6	6
1033:	2	9	6	7	3	3	10	5
1041:	10	7	6	10	9	2	8	4
1049:	5	4	6	9	4	6	8	6
1057:	9	4	5	2	5	2	3	7
1065:	2	8	3	13	11	6	6	4
1073:	5	4	3	4	6	7	3	9
1081:	4	7	3	7	2	3	4	6
1089:	5	7	8	4	4	8	7	2
1097:	8	6	4	7	9	9	6	6
1105:	7	4	9	5	4	5	5	9
1113:	6	6	3	12	6	13	9	21
1121:	7	7	5	8	3	3	11	10
1129:	3	6	3	7	6	6	13	6
1137:	4	5	8	9	5	5	11	6
1145:	7	7	9	5	8	12	8	4
1153:	10	10	12	6	8	7	8	6
1161:	6	4	8	6	6	4	6	13
1169:	7	4	5	9	3	5	5	12
1177:	12	8	12	6	7	5	3	7
1185:	6	5	8	8	9	5	7	9
1193:	6	3	7	7	5	7	6	9
1201:	8	8	6	6	7	9	7	11
1209:	3	12	5	5	8	9	9	9
1217:	7	11	4	11	4	7	3	4
1225:	11	3	8	6	8	6	11	6

1233:	1	4	10	13	13	14	9	7

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Channel								
1241:	1	5	9	6	8	5	10	6
1249:	6	5	4	5	4	5	6	8
1257:	2	5	5	6	5	5	2	6
1265:	8	6	4	5	2	2	5	8
1273:	3	3	4	8	1	4	4	6
1281:	8	13	4	9	5	4	9	5
1289:	4	3	8	6	10	4	2	3
1297:	4	4	4	6	6	5	6	5
1305:	2	1	7	4	6	5	3	1
1313:	1	1	5	3	3	2	2	2
1321:	0	5	5	3	4	4	7	5
1329:	2	3	2	3	3	1	3	3
1337:	2	4	2	4	4	3	3	2
1345:	3	0	1	5	4	2	5	2
1353:	4	4	2	4	1	2	1	3
1361:	2	1	3	4	3	2	3	1
1369:	2	3	0	0	2	2	3	5
1377:	6	4	6	4	3	4	4	1
1385:	3	4	4	0	2	3	4	2
1393:	2	2	1	4	0	2	0	2
1401:	6	2	2	2	2	2	4	4
1409:	5	3	2	4	1	1	1	1
1417:	2	1	2	1	1	0	1	1
1425:	3	3	3	3	2	3	1	0
1433:	0	1	0	4	4	1	1	4
1441:	7	5	4	2	2	4	3	2
1449:	2	1	3	2	2	2	4	5
1457:	3	25	72	131	111	49	13	2
1465:	1	2	2	2	2	0	5	2
1473:	0	3	1	0	2	1	0	1
1481:	0	1	2	3	1	2	1	3
1489:	1	0	0	2	0	1	0	3
1497:	2	1	1	2	0	2	0	1
1505:	1	3	2	2	4	1	3	0
1513:	1	0	2	1	2	0	1	4
1521:	3	0	2	2	1	1	1	1
1529:	1	0	2	0	2	2	2	0
1537:	0	2	1	1	2	1	2	2
1545:	1	1	0	3	3	1	2	2
1553:	2	1	1	0	1	0	3	1
1561:	1	0	1	2	0	0	1	1
1569:	0	1	0	3	0	1	0	0
1577:	0	1	0	0	3	0	1	0
1585:	1	4	7	3	1	1	3	7
1593:	5	7	1	1	1	1	2	1
1601:	1	1	0	1	0	0	1	1
1609:	1	0	1	0	2	1	0	1
1617:	1	0	1	2	1	1	0	2
1625:	0	0	0	0	0	3	0	3
1633:	2	1	2	1	0	1	1	1
1641:	1	1	2	2	1	0	1	0
1649:	0	2	2	0	0	1	1	0
1657:	0	2	0	4	1	1	2	0

1665:	2	0	2	0	0	4	0	4

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

2097:	0	0	1	2	2	4	4	2

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

2529:	0	0	1	1	0	0	0	0

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Channel								
2537:	0	0	1	0	0	0	0	1
2545:	0	1	1	1	0	1	0	0
2553:	0	0	1	0	0	0	0	0
2561:	0	0	1	0	1	0	1	1
2569:	0	1	0	2	0	0	1	1
2577:	0	2	0	0	0	0	0	0
2585:	0	0	0	1	0	0	0	0
2593:	0	0	1	0	0	0	1	0
2601:	0	1	1	0	0	1	0	0
2609:	0	0	0	5	6	13	18	13
2617:	2	1	0	0	0	0	0	0
2625:	0	1	1	0	0	0	0	0
2633:	0	0	0	0	0	2	0	0
2641:	2	0	0	0	0	0	1	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	1	0	0	0	0	0
2665:	0	0	1	0	0	0	0	0
2673:	0	0	1	0	0	0	0	0
2681:	0	1	0	1	0	0	1	1
2689:	0	0	1	0	2	0	0	0
2697:	0	1	0	0	0	0	0	0
2705:	1	0	0	0	1	1	0	0
2713:	0	1	0	1	0	0	0	0
2721:	0	0	1	0	0	0	0	0
2729:	0	0	0	0	0	0	0	1
2737:	1	1	0	1	0	0	0	1
2745:	0	1	0	0	0	0	0	0
2753:	0	0	0	0	0	1	0	0
2761:	1	0	0	0	0	0	0	1
2769:	0	0	0	0	0	0	0	0
2777:	0	1	1	0	1	0	0	0
2785:	0	0	1	0	0	1	0	0
2793:	0	0	0	0	0	0	0	2
2801:	0	0	0	0	0	1	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	1	0	1	0
2825:	1	1	0	0	1	1	1	1
2833:	0	0	0	0	0	0	0	1
2841:	0	0	0	0	0	1	1	0
2849:	0	0	0	0	0	0	0	1
2857:	1	0	0	0	0	0	1	0
2865:	0	1	0	0	0	0	0	0
2873:	0	1	0	0	1	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	1	0	0	0	0
2905:	0	0	0	1	0	2	0	0
2913:	0	0	0	0	1	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	1	0	0	0	0	0	0	0
2945:	1	0	0	1	0	0	0	0
2953:	0	1	0	0	0	0	1	0

2961:	0	0	0	0	0	0	0	0

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

3393:	0	0	0	0	1	0	1	0

Sample Title: HTC-A06-S001-4248-01

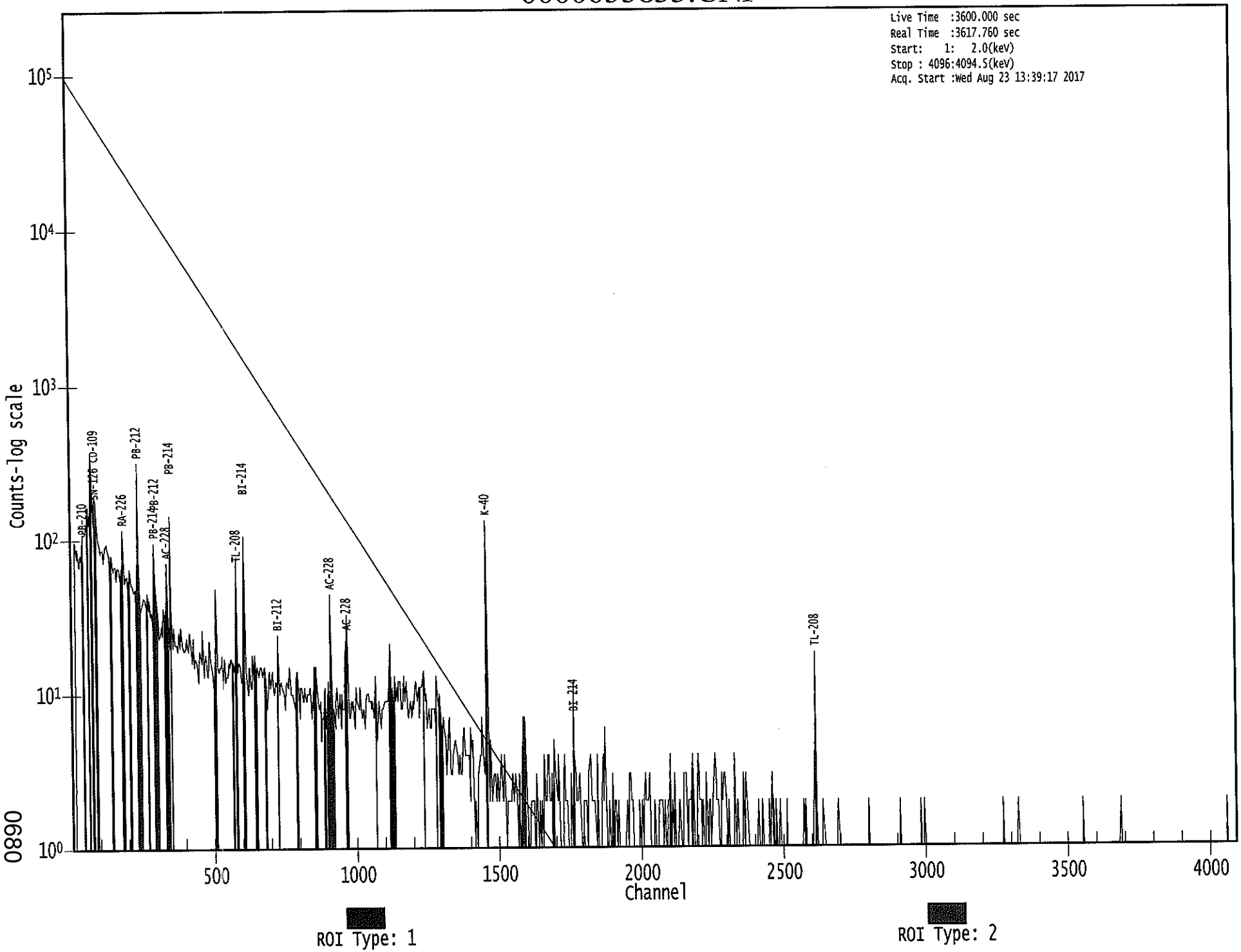
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	1	0	1	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	1	0	0	0	1	0
3433:	0	0	0	0	0	0	0	0
3441:	0	1	0	1	0	0	1	0
3449:	1	1	0	0	0	0	1	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	1	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	1	0	0	0	0	0	0
3513:	0	0	0	1	0	0	0	0
3521:	0	0	1	0	0	0	0	0
3529:	0	0	1	1	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	1	0	0	0	0
3553:	2	0	0	0	0	0	0	0
3561:	0	0	0	1	0	0	0	0
3569:	0	0	0	0	1	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	1	0	0	1	0
3593:	0	0	0	1	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	1	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	1	0	0	0	0	1	0
3665:	0	0	0	0	0	0	0	0
3673:	1	0	0	0	0	0	0	0
3681:	1	0	0	0	0	0	2	0
3689:	0	0	0	0	0	1	0	0
3697:	0	0	1	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	1	0	0	0
3721:	0	1	0	0	0	0	0	0
3729:	1	0	1	0	1	0	1	0
3737:	0	0	0	0	0	0	1	0
3745:	0	0	0	0	0	0	0	0
3753:	1	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	1	0	0	0	0	0
3777:	0	0	1	0	0	0	0	0
3785:	0	1	0	0	0	0	0	1
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	1	0	1	0	0	0	0
3817:	1	0	0	1	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A06-S001-4248-01

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

0000055833.CNF



0890

Apex-Gamma

Analysis Report for 1707090-10
HTC-A07-S001-0006-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-10
Sample Description	: HTC-A07-S001-0006-01
Sample Type	: SOIL
Sample Size	: 7.770E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:53:57AM
Acquisition Started	: 8/23/2017 1:39:38PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3626.6 seconds
Dead Time	: 0.73 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55834

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 2:40:48PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	27.51	27.83	0.0000	0.00
2	46.66	46.98	0.0000	0.00
3	53.46	53.77	0.0000	0.00
4	63.45	63.76	0.0000	0.00
5	76.45	76.76	0.0000	0.00
6	87.51	87.81	0.0000	0.00
7	93.22	93.52	0.0000	0.00
8	113.33	113.62	0.0000	0.00
9	144.28	144.56	0.0000	0.00
10	154.64	154.92	0.0000	0.00
11	186.30	186.56	0.0000	0.00
12	206.20	206.46	0.0000	0.00
13	237.78	238.03	0.0000	0.00
14	242.24	242.49	0.0000	0.00
15	258.24	258.48	0.0000	0.00
16	271.13	271.37	0.0000	0.00
17	295.44	295.67	0.0000	0.00
18	352.16	352.37	0.0000	0.00
19	387.87	388.07	0.0000	0.00
20	426.92	427.10	0.0000	0.00
21	454.77	454.94	0.0000	0.00
22	462.60	462.77	0.0000	0.00
23	480.04	480.21	0.0000	0.00
24	488.13	488.29	0.0000	0.00
25	511.17	511.33	0.0000	0.00
26	533.76	533.91	0.0000	0.00
27	582.19	582.32	0.0000	0.00
28	609.45	609.57	0.0000	0.00
29	665.07	665.17	0.0000	0.00
30	742.80	742.88	0.0000	0.00
31	768.09	768.16	0.0000	0.00
32	785.86	785.93	0.0000	0.00
33	806.72	806.78	0.0000	0.00
34	839.21	839.26	0.0000	0.00
35	911.09	911.11	0.0000	0.00
36	921.23	921.24	0.0000	0.00
37	934.02	934.03	0.0000	0.00
38	963.07	963.08	0.0000	0.00
39	1001.23	1001.22	0.0000	0.00
40	1120.21	1120.16	0.0000	0.00
41	1141.43	1141.37	0.0000	0.00
42	1155.32	1155.25	0.0000	0.00

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1237.99	1237.90	0.0000	0.00
44	1253.22	1253.12	0.0000	0.00
45	1280.67	1280.57	0.0000	0.00
46	1359.78	1359.65	0.0000	0.00
47	1377.54	1377.40	0.0000	0.00
48	1385.14	1385.00	0.0000	0.00
49	1401.91	1401.77	0.0000	0.00
50	1407.92	1407.77	0.0000	0.00
51	1460.39	1460.22	0.0000	0.00
52	1509.13	1508.95	0.0000	0.00
53	1540.15	1539.96	0.0000	0.00
54	1560.15	1559.95	0.0000	0.00
55	1583.13	1582.93	0.0000	0.00
56	1599.94	1599.73	0.0000	0.00
57	1661.56	1661.33	0.0000	0.00
58	1729.38	1729.12	0.0000	0.00
59	1764.27	1764.00	0.0000	0.00
60	1838.77	1838.48	0.0000	0.00
61	1847.23	1846.94	0.0000	0.00
62	1856.21	1855.91	0.0000	0.00
63	1869.78	1869.48	0.0000	0.00
64	1873.33	1873.03	0.0000	0.00
65	1900.82	1900.50	0.0000	0.00
66	1909.86	1909.55	0.0000	0.00
67	2118.05	2117.66	0.0000	0.00
68	2178.95	2178.54	0.0000	0.00
69	2203.68	2203.26	0.0000	0.00
70	2292.63	2292.19	0.0000	0.00
71	2447.41	2446.91	0.0000	0.00
72	2614.23	2613.68	0.0000	0.00
73	2695.03	2694.45	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 2:40:48PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	27.51	26 -	31	27.83	1.88E+02	218.04	9.36E+03	4.39
	2	46.66	44 -	49	46.98	1.47E+03	251.06	1.15E+04	1.71
	3	53.46	51 -	56	53.77	3.83E+02	265.92	1.39E+04	1.66
	4	63.45	61 -	67	63.76	2.41E+03	367.47	2.30E+04	2.07
	5	76.45	71 -	83	76.76	1.46E+04	684.50	4.84E+04	3.77
	6	87.51	86 -	91	87.81	1.14E+03	351.62	2.39E+04	1.61
	7	93.22	91 -	97	93.52	3.97E+03	367.25	2.07E+04	2.05
	8	113.33	112 -	116	113.62	2.51E+02	229.37	1.14E+04	1.59
	9	144.28	142 -	147	144.56	6.60E+02	262.50	1.33E+04	2.03
	10	154.64	153 -	158	154.92	3.26E+02	261.61	1.34E+04	1.82
	11	186.30	182 -	191	186.56	5.13E+03	379.40	1.75E+04	2.17
	12	206.20	205 -	209	206.46	2.26E+02	183.02	7.20E+03	1.26
M	13	237.78	233 -	246	238.03	9.17E+02	335.77	1.25E+04	3.62
m	14	242.24	233 -	246	242.49	4.75E+03	229.19	6.46E+03	1.95
	15	258.24	254 -	263	258.48	6.78E+02	257.66	9.05E+03	2.49
	16	271.13	266 -	276	271.37	5.55E+02	279.34	1.01E+04	2.57
	17	295.44	290 -	299	295.67	1.02E+04	310.67	7.98E+03	2.09
	18	352.16	349 -	357	352.37	1.71E+04	318.19	4.99E+03	2.18
	19	387.87	384 -	391	388.07	3.86E+02	152.47	3.62E+03	3.92
	20	426.92	425 -	430	427.10	1.03E+02	116.39	2.61E+03	2.43
	21	454.77	452 -	458	454.94	1.02E+02	114.92	2.34E+03	3.23
	22	462.60	460 -	466	462.77	1.36E+02	115.51	2.33E+03	4.02
	23	480.04	477 -	483	480.21	1.33E+02	109.70	2.09E+03	1.57
	24	488.13	485 -	492	488.29	1.99E+02	120.45	2.28E+03	2.18
	25	511.17	508 -	515	511.33	2.46E+02	116.62	2.11E+03	3.10
	26	533.76	531 -	536	533.91	1.30E+02	84.15	1.31E+03	2.83
	27	582.19	575 -	586	582.32	1.36E+02	149.68	2.72E+03	4.28
	28	609.45	604 -	614	609.57	1.18E+04	254.07	2.31E+03	2.27
	29	665.07	659 -	670	665.17	4.34E+02	130.35	1.90E+03	2.15
	30	742.80	738 -	747	742.88	1.25E+02	103.86	1.47E+03	2.46
	31	768.09	762 -	773	768.16	1.16E+03	133.76	1.66E+03	2.63
	32	785.86	781 -	790	785.93	2.54E+02	103.15	1.37E+03	2.69
	33	806.72	801 -	814	806.78	3.38E+02	132.63	1.80E+03	2.28
	34	839.21	836 -	842	839.26	1.19E+02	76.51	9.73E+02	1.44
	35	911.09	907 -	915	911.11	1.14E+02	90.30	1.19E+03	1.93
	36	921.23	919 -	925	921.24	5.60E+01	69.60	8.40E+02	1.56
	37	934.02	930 -	939	934.03	5.73E+02	104.61	1.24E+03	2.34
	38	963.07	960 -	967	963.08	7.79E+01	77.95	9.62E+02	4.18
	39	1001.23	997 -	1006	1001.22	1.87E+02	91.98	1.09E+03	2.48
	40	1120.21	1115 -	1126	1120.16	2.40E+03	134.94	1.07E+03	2.37

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1141.43	1137	1144	1141.37	5.52E+01	62.10	5.94E+02	1.16
	42	1155.32	1150	1161	1155.25	3.15E+02	91.89	8.93E+02	3.08
	43	1237.99	1233	1244	1237.90	8.17E+02	101.74	8.78E+02	2.35
	44	1253.22	1249	1257	1253.12	9.56E+01	62.88	5.51E+02	4.89
	45	1280.67	1276	1285	1280.57	2.73E+02	69.86	5.44E+02	2.33
	46	1359.78	1356	1363	1359.65	6.96E+01	46.95	3.23E+02	5.26
M	47	1377.54	1371	1389	1377.40	6.95E+02	76.33	4.70E+02	2.93
m	48	1385.14	1371	1389	1385.00	1.36E+02	64.68	4.82E+02	3.30
M	49	1401.91	1394	1413	1401.77	1.73E+02	60.83	4.99E+02	2.55
m	50	1407.92	1394	1413	1407.77	3.19E+02	60.56	4.39E+02	2.49
	51	1460.39	1455	1464	1460.22	1.67E+02	70.80	6.21E+02	2.54
	52	1509.13	1505	1514	1508.95	2.78E+02	79.04	7.30E+02	2.20
	53	1540.15	1535	1545	1539.96	1.09E+02	71.16	6.20E+02	6.83
	54	1560.15	1556	1563	1559.95	4.52E+01	44.99	3.06E+02	1.67
	55	1583.13	1578	1589	1582.93	1.11E+02	68.03	5.27E+02	2.33
	56	1599.94	1597	1603	1599.73	4.12E+01	41.62	2.82E+02	3.08
	57	1661.56	1657	1668	1661.33	1.37E+02	58.17	3.39E+02	2.76
	58	1729.38	1724	1736	1729.12	4.05E+02	61.04	2.49E+02	3.20
	59	1764.27	1758	1769	1764.00	1.85E+03	94.81	1.96E+02	2.71
M	60	1838.77	1833	1852	1838.48	2.53E+01	30.64	1.73E+02	2.99
m	61	1847.23	1833	1852	1846.94	2.44E+02	41.70	9.31E+01	2.88
	62	1856.21	1853	1859	1855.91	3.08E+01	20.39	5.45E+01	3.80
M	63	1869.78	1866	1876	1869.48	2.30E+01	23.62	9.35E+01	3.00
m	64	1873.33	1866	1876	1873.03	2.63E+01	26.08	7.84E+01	3.29
	65	1900.82	1894	1906	1900.50	5.75E+01	37.70	1.31E+02	9.31
	66	1909.86	1907	1915	1909.55	3.74E+01	24.49	7.32E+01	3.86
	67	2118.05	2112	2121	2117.66	1.20E+02	30.55	6.32E+01	1.95
	68	2178.95	2173	2184	2178.54	3.50E+01	15.36	1.20E+01	6.90
	69	2203.68	2197	2208	2203.26	4.61E+02	49.68	7.78E+01	2.67
	70	2292.63	2285	2296	2292.19	2.27E+01	19.49	3.66E+01	4.57
	71	2447.41	2442	2453	2446.91	1.22E+02	23.07	4.88E+00	2.55
	72	2614.23	2609	2618	2613.68	3.84E+01	13.75	5.24E+00	2.72
	73	2695.03	2691	2696	2694.45	4.33E+00	5.74	3.33E+00	1.66

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 2:40:48PM

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

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	27.51	26 -	31	1.88E+02	218.04	9.36E+03	1.78E+02
	2	46.66	44 -	49	1.47E+03	251.06	1.15E+04	1.97E+02
	3	53.46	51 -	56	3.83E+02	265.92	1.39E+04	2.16E+02
	4	63.45	61 -	67	2.41E+03	367.47	2.30E+04	2.91E+02
	5	76.45	71 -	83	1.46E+04	684.50	4.84E+04	5.26E+02
	6	87.51	86 -	91	1.14E+03	351.62	2.39E+04	2.84E+02
	7	93.22	91 -	97	3.97E+03	367.25	2.07E+04	2.84E+02
	8	113.33	112 -	116	2.51E+02	229.37	1.14E+04	1.87E+02
	9	144.28	142 -	147	6.60E+02	262.50	1.33E+04	2.12E+02
	10	154.64	153 -	158	3.26E+02	261.61	1.34E+04	2.13E+02
	11	186.30	182 -	191	5.13E+03	379.40	1.75E+04	2.89E+02
	12	206.20	205 -	209	2.26E+02	183.02	7.20E+03	1.48E+02
M	13	237.78	233 -	246	9.17E+02	335.77	1.25E+04	1.84E+02
m	14	242.24	233 -	246	4.75E+03	229.19	6.46E+03	1.32E+02
	15	258.24	254 -	263	6.78E+02	257.66	9.05E+03	2.07E+02
	16	271.13	266 -	276	5.55E+02	279.34	1.01E+04	2.26E+02
	17	295.44	290 -	299	1.02E+04	310.67	7.98E+03	1.94E+02
	18	352.16	349 -	357	1.71E+04	318.19	4.99E+03	1.49E+02
	19	387.87	384 -	391	3.86E+02	152.47	3.62E+03	1.21E+02
	20	426.92	425 -	430	1.03E+02	116.39	2.61E+03	9.42E+01
	21	454.77	452 -	458	1.02E+02	114.92	2.34E+03	9.30E+01
	22	462.60	460 -	466	1.36E+02	115.51	2.33E+03	9.30E+01
	23	480.04	477 -	483	1.33E+02	109.70	2.09E+03	4.94E+01
	24	488.13	485 -	492	1.99E+02	120.45	2.28E+03	9.63E+01
	25	511.17	508 -	515	2.46E+02	116.62	2.11E+03	9.23E+01
	26	533.76	531 -	536	1.30E+02	84.15	1.31E+03	6.66E+01
	27	582.19	575 -	586	1.36E+02	149.68	2.72E+03	1.22E+02
	28	609.45	604 -	614	1.18E+04	254.07	2.31E+03	1.08E+02
	29	665.07	659 -	670	4.34E+02	130.35	1.90E+03	1.02E+02
	30	742.80	738 -	747	1.25E+02	103.86	1.47E+03	8.34E+01
	31	768.09	762 -	773	1.16E+03	133.76	1.66E+03	9.46E+01
	32	785.86	781 -	790	2.54E+02	103.15	1.37E+03	8.06E+01
	33	806.72	801 -	814	3.38E+02	132.63	1.80E+03	3.79E+01
	34	839.21	836 -	842	1.19E+02	76.51	9.73E+02	6.03E+01
	35	911.09	907 -	915	1.14E+02	90.30	1.19E+03	7.21E+01
	36	921.23	919 -	925	5.60E+01	69.60	8.40E+02	5.59E+01
	37	934.02	930 -	939	5.73E+02	104.61	1.24E+03	7.64E+01
	38	963.07	960 -	967	7.79E+01	77.95	9.62E+02	6.24E+01
	39	1001.23	997 -	1006	1.87E+02	91.98	1.09E+03	7.22E+01
	40	1120.21	1115 -	1126	2.40E+03	134.94	1.07E+03	7.62E+01
	41	1141.43	1137 -	1144	5.52E+01	62.10	5.94E+02	4.96E+01
	42	1155.32	1150 -	1161	3.15E+02	91.89	8.93E+02	6.97E+01
	43	1237.99	1233 -	1244	8.17E+02	101.74	8.78E+02	6.92E+01
	44	1253.22	1249 -	1257	9.56E+01	62.88	5.51E+02	4.91E+01
	45	1280.67	1276 -	1285	2.73E+02	69.86	5.44E+02	5.06E+01
	46	1359.78	1356 -	1363	6.96E+01	46.95	3.23E+02	3.61E+01
M	47	1377.54	1371 -	1389	6.95E+02	76.33	4.70E+02	3.56E+01
m	48	1385.14	1371 -	1389	1.36E+02	64.68	4.82E+02	3.61E+01
M	49	1401.91	1394 -	1413	1.73E+02	60.83	4.99E+02	3.67E+01
m	50	1407.92	1394 -	1413	3.19E+02	60.56	4.39E+02	3.44E+01
	51	1460.39	1455 -	1464	1.67E+02	70.80	6.21E+02	5.42E+01

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	52	1509.13	1505 -	1514	2.78E+02	79.04	7.30E+02	5.89E+01
	53	1540.15	1535 -	1545	1.09E+02	71.16	6.20E+02	5.59E+01
	54	1560.15	1556 -	1563	4.52E+01	44.99	3.06E+02	3.53E+01
	55	1583.13	1578 -	1589	1.11E+02	68.03	5.27E+02	5.32E+01
	56	1599.94	1597 -	1603	4.12E+01	41.62	2.82E+02	3.25E+01
	57	1661.56	1657 -	1668	1.37E+02	58.17	3.39E+02	4.38E+01
	58	1729.38	1724 -	1736	4.05E+02	61.04	2.49E+02	3.77E+01
	59	1764.27	1758 -	1769	1.85E+03	94.81	1.96E+02	3.27E+01
M	60	1838.77	1833 -	1852	2.53E+01	30.64	1.73E+02	2.16E+01
m	61	1847.23	1833 -	1852	2.44E+02	41.70	9.31E+01	1.59E+01
	62	1856.21	1853 -	1859	3.08E+01	20.39	5.45E+01	1.41E+01
M	63	1869.78	1866 -	1876	2.30E+01	23.62	9.35E+01	1.59E+01
m	64	1873.33	1866 -	1876	2.63E+01	26.08	7.84E+01	1.46E+01
	65	1900.82	1894 -	1906	5.75E+01	37.70	1.31E+02	2.84E+01
	66	1909.86	1907 -	1915	3.74E+01	24.49	7.32E+01	1.74E+01
	67	2118.05	2112 -	2121	1.20E+02	30.55	6.32E+01	1.75E+01
	68	2178.95	2173 -	2184	3.50E+01	15.36	1.20E+01	8.05E+00
	69	2203.68	2197 -	2208	4.61E+02	49.68	7.78E+01	2.05E+01
	70	2292.63	2285 -	2296	2.27E+01	19.49	3.66E+01	1.40E+01
	71	2447.41	2442 -	2453	1.22E+02	23.07	4.88E+00	5.56E+00
	72	2614.23	2609 -	2618	3.84E+01	13.75	5.24E+00	4.90E+00
	73	2695.03	2691 -	2696	4.33E+00	5.74	3.33E+00	3.25E+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 : 8/23/2017 2:40:48PM

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

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	27.51	26 -	31	27.83	1.88E+02	218.04	9.36E+03	.....
2	46.66	44 -	49	46.98	1.47E+03	251.06	1.15E+04	PB-210
3	53.46	51 -	56	53.77	3.83E+02	265.92	1.39E+04	.....

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	4	63.45	61 -	67	63.76	2.41E+03	367.47	2.30E+04	TH-234 TH-230
	5	76.45	71 -	83	76.76	1.46E+04	684.50	4.84E+04	.....
	6	87.51	86 -	91	87.81	1.14E+03	351.62	2.39E+04	SN-126 CD-109 LU-176
	7	93.22	91 -	97	93.52	3.97E+03	367.25	2.07E+04	GA-67
	8	113.33	112 -	116	113.62	2.51E+02	229.37	1.14E+04	.....
	9	144.28	142 -	147	144.56	6.60E+02	262.50	1.33E+04	U-235
	10	154.64	153 -	158	154.92	3.26E+02	261.61	1.34E+04	.....
	11	186.30	182 -	191	186.56	5.13E+03	379.40	1.75E+04	RA-226
	12	206.20	205 -	209	206.46	2.26E+02	183.02	7.20E+03	U-235
M	13	237.78	233 -	246	238.03	9.17E+02	335.77	1.25E+04	PB-212
m	14	242.24	233 -	246	242.49	4.75E+03	229.19	6.46E+03	.....
	15	258.24	254 -	263	258.48	6.78E+02	257.66	9.05E+03	.....
	16	271.13	266 -	276	271.37	5.55E+02	279.34	1.01E+04	LU-173
	17	295.44	290 -	299	295.67	1.02E+04	310.67	7.98E+03	PB-214
	18	352.16	349 -	357	352.37	1.71E+04	318.19	4.99E+03	PB-214
	19	387.87	384 -	391	388.07	3.86E+02	152.47	3.62E+03	.....
	20	426.92	425 -	430	427.10	1.03E+02	116.39	2.61E+03	SB-125
	21	454.77	452 -	458	454.94	1.02E+02	114.92	2.34E+03	PM-146
	22	462.60	460 -	466	462.77	1.36E+02	115.51	2.33E+03	SB-125
	23	480.04	477 -	483	480.21	1.33E+02	109.70	2.09E+03	.....
	24	488.13	485 -	492	488.29	1.99E+02	120.45	2.28E+03	.....
	25	511.17	508 -	515	511.33	2.46E+02	116.62	2.11E+03	.....
	26	533.76	531 -	536	533.91	1.30E+02	84.15	1.31E+03	.....
	27	582.19	575 -	586	582.32	1.36E+02	149.68	2.72E+03	TL-208
	28	609.45	604 -	614	609.57	1.18E+04	254.07	2.31E+03	BI-214
	29	665.07	659 -	670	665.17	4.34E+02	130.35	1.90E+03	CE-143
	30	742.80	738 -	747	742.88	1.25E+02	103.86	1.47E+03	.....
	31	768.09	762 -	773	768.16	1.16E+03	133.76	1.66E+03	.....
	32	785.86	781 -	790	785.93	2.54E+02	103.15	1.37E+03	.....
	33	806.72	801 -	814	806.78	3.38E+02	132.63	1.80E+03	.....
	34	839.21	836 -	842	839.26	1.19E+02	76.51	9.73E+02	.....
	35	911.09	907 -	915	911.11	1.14E+02	90.30	1.19E+03	AC-228 TL-204
	36	921.23	919 -	925	921.24	5.60E+01	69.60	8.40E+02	.....
	37	934.02	930 -	939	934.03	5.73E+02	104.61	1.24E+03	.....
	38	963.07	960 -	967	963.08	7.79E+01	77.95	9.62E+02	EU-152
	39	1001.23	997 -	1006	1001.22	1.87E+02	91.98	1.09E+03	PA-234M
	40	1120.21	1115 -	1126	1120.16	2.40E+03	134.94	1.07E+03	BI-214 SC-46
	41	1141.43	1137 -	1144	1141.37	5.52E+01	62.10	5.94E+02	.....
	42	1155.32	1150 -	1161	1155.25	3.15E+02	91.89	8.93E+02	.....
	43	1237.99	1233 -	1244	1237.90	8.17E+02	101.74	8.78E+02	CO-56
	44	1253.22	1249 -	1257	1253.12	9.56E+01	62.88	5.51E+02	.....
	45	1280.67	1276 -	1285	1280.57	2.73E+02	69.86	5.44E+02	.....
	46	1359.78	1356 -	1363	1359.65	6.96E+01	46.95	3.23E+02	.....
M	47	1377.54	1371 -	1389	1377.40	6.95E+02	76.33	4.70E+02	.....
m	48	1385.14	1371 -	1389	1385.00	1.36E+02	64.68	4.82E+02	AG-110M
M	49	1401.91	1394 -	1413	1401.77	1.73E+02	60.83	4.99E+02	.....
m	50	1407.92	1394 -	1413	1407.77	3.19E+02	60.56	4.39E+02	EU-152
	51	1460.39	1455 -	1464	1460.22	1.67E+02	70.80	6.21E+02	K-40
	52	1509.13	1505 -	1514	1508.95	2.78E+02	79.04	7.30E+02	.....

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	53	1540.15	1535 -	1545	1539.96	1.09E+02	71.16	6.20E+02	.....
	54	1560.15	1556 -	1563	1559.95	4.52E+01	44.99	3.06E+02	.....
	55	1583.13	1578 -	1589	1582.93	1.11E+02	68.03	5.27E+02	.....
	56	1599.94	1597 -	1603	1599.73	4.12E+01	41.62	2.82E+02	.....
	57	1661.56	1657 -	1668	1661.33	1.37E+02	58.17	3.39E+02	.....
	58	1729.38	1724 -	1736	1729.12	4.05E+02	61.04	2.49E+02	.....
	59	1764.27	1758 -	1769	1764.00	1.85E+03	94.81	1.96E+02	BI-214
M	60	1838.77	1833 -	1852	1838.48	2.53E+01	30.64	1.73E+02	.....
m	61	1847.23	1833 -	1852	1846.94	2.44E+02	41.70	9.31E+01	.....
	62	1856.21	1853 -	1859	1855.91	3.08E+01	20.39	5.45E+01	.....
M	63	1869.78	1866 -	1876	1869.48	2.30E+01	23.62	9.35E+01	.....
m	64	1873.33	1866 -	1876	1873.03	2.63E+01	26.08	7.84E+01	.....
	65	1900.82	1894 -	1906	1900.50	5.75E+01	37.70	1.31E+02	.....
	66	1909.86	1907 -	1915	1909.55	3.74E+01	24.49	7.32E+01	.....
	67	2118.05	2112 -	2121	2117.66	1.20E+02	30.55	6.32E+01	.....
	68	2178.95	2173 -	2184	2178.54	3.50E+01	15.36	1.20E+01	.....
	69	2203.68	2197 -	2208	2203.26	4.61E+02	49.68	7.78E+01	BI-214
	70	2292.63	2285 -	2296	2292.19	2.27E+01	19.49	3.66E+01	.....
	71	2447.41	2442 -	2453	2446.91	1.22E+02	23.07	4.88E+00	.....
	72	2614.23	2609 -	2618	2613.68	3.84E+01	13.75	5.24E+00	TL-208
	73	2695.03	2691 -	2696	2694.45	4.33E+00	5.74	3.33E+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 : 8/23/2017 2:40:48PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	27.51	1.88E+02	218.04	4.03E-03	1.73E-03
2	46.66	1.47E+03	251.06	1.73E-02	1.73E-03
3	53.46	3.83E+02	265.92	2.09E-02	1.73E-03
4	63.45	2.41E+03	367.47	2.45E-02	1.80E-03
5	76.45	1.46E+04	684.50	2.67E-02	2.04E-03
6	87.51	1.14E+03	351.62	2.72E-02	2.25E-03
7	93.22	3.97E+03	367.25	2.71E-02	2.24E-03
8	113.33	2.51E+02	229.37	2.59E-02	2.16E-03
9	144.28	6.60E+02	262.50	2.32E-02	1.87E-03

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	10	154.64	3.26E+02	261.61	2.22E-02	1.75E-03
	11	186.30	5.13E+03	379.40	1.96E-02	1.55E-03
	12	206.20	2.26E+02	183.02	1.81E-02	1.47E-03
M	13	237.78	9.17E+02	335.77	1.62E-02	1.34E-03
m	14	242.24	4.75E+03	229.19	1.59E-02	1.33E-03
	15	258.24	6.78E+02	257.66	1.51E-02	1.26E-03
	16	271.13	5.55E+02	279.34	1.45E-02	1.21E-03
	17	295.44	1.02E+04	310.67	1.35E-02	1.15E-03
	18	352.16	1.71E+04	318.19	1.15E-02	1.03E-03
	19	387.87	3.86E+02	152.47	1.06E-02	9.60E-04
	20	426.92	1.03E+02	116.39	9.71E-03	9.06E-04
	21	454.77	1.02E+02	114.92	9.17E-03	8.69E-04
	22	462.60	1.36E+02	115.51	9.03E-03	8.58E-04
	23	480.04	1.33E+02	109.70	8.73E-03	8.35E-04
	24	488.13	1.99E+02	120.45	8.60E-03	8.25E-04
	25	511.17	2.46E+02	116.62	8.25E-03	7.94E-04
	26	533.76	1.30E+02	84.15	7.94E-03	7.64E-04
	27	582.19	1.36E+02	149.68	7.34E-03	7.00E-04
	28	609.45	1.18E+04	254.07	7.04E-03	6.64E-04
	29	665.07	4.34E+02	130.35	6.51E-03	5.92E-04
	30	742.80	1.25E+02	103.86	5.90E-03	5.23E-04
	31	768.09	1.16E+03	133.76	5.72E-03	5.01E-04
	32	785.86	2.54E+02	103.15	5.61E-03	4.85E-04
	33	806.72	3.38E+02	132.63	5.48E-03	4.67E-04
	34	839.21	1.19E+02	76.51	5.29E-03	4.38E-04
	35	911.09	1.14E+02	90.30	4.92E-03	3.84E-04
	36	921.23	5.60E+01	69.60	4.87E-03	3.82E-04
	37	934.02	5.73E+02	104.61	4.82E-03	3.80E-04
	38	963.07	7.79E+01	77.95	4.69E-03	3.75E-04
	39	1001.23	1.87E+02	91.98	4.53E-03	3.69E-04
	40	1120.21	2.40E+03	134.94	4.12E-03	3.50E-04
	41	1141.43	5.52E+01	62.10	4.05E-03	3.46E-04
	42	1155.32	3.15E+02	91.89	4.01E-03	3.44E-04
	43	1237.99	8.17E+02	101.74	3.79E-03	3.22E-04
	44	1253.22	9.56E+01	62.88	3.75E-03	3.18E-04
	45	1280.67	2.73E+02	69.86	3.68E-03	3.10E-04
	46	1359.78	6.96E+01	46.95	3.51E-03	2.91E-04
M	47	1377.54	6.95E+02	76.33	3.47E-03	2.88E-04
m	48	1385.14	1.36E+02	64.68	3.45E-03	2.87E-04
M	49	1401.91	1.73E+02	60.83	3.42E-03	2.84E-04
m	50	1407.92	3.19E+02	60.56	3.41E-03	2.84E-04
	51	1460.39	1.67E+02	70.80	3.31E-03	2.75E-04
	52	1509.13	2.78E+02	79.04	3.23E-03	2.67E-04
	53	1540.15	1.09E+02	71.16	3.17E-03	2.62E-04
	54	1560.15	4.52E+01	44.99	3.14E-03	2.59E-04
	55	1583.13	1.11E+02	68.03	3.11E-03	2.55E-04
	56	1599.94	4.12E+01	41.62	3.08E-03	2.53E-04
	57	1661.56	1.37E+02	58.17	3.00E-03	2.43E-04
	58	1729.38	4.05E+02	61.04	2.91E-03	2.32E-04
	59	1764.27	1.85E+03	94.81	2.87E-03	2.26E-04
M	60	1838.77	2.53E+01	30.64	2.78E-03	2.15E-04
m	61	1847.23	2.44E+02	41.70	2.77E-03	2.15E-04
	62	1856.21	3.08E+01	20.39	2.76E-03	2.15E-04

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	63	1869.78	2.30E+01	23.62	2.75E-03	2.15E-04
m	64	1873.33	2.63E+01	26.08	2.74E-03	2.15E-04
	65	1900.82	5.75E+01	37.70	2.72E-03	2.15E-04
	66	1909.86	3.74E+01	24.49	2.71E-03	2.15E-04
	67	2118.05	1.20E+02	30.55	2.53E-03	2.15E-04
	68	2178.95	3.50E+01	15.36	2.48E-03	2.15E-04
	69	2203.68	4.61E+02	49.68	2.46E-03	2.15E-04
	70	2292.63	2.27E+01	19.49	2.41E-03	2.15E-04
	71	2447.41	1.22E+02	23.07	2.32E-03	2.15E-04
	72	2614.23	3.84E+01	13.75	2.24E-03	2.15E-04
	73	2695.03	4.33E+00	5.74	2.21E-03	2.15E-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 : 8/23/2017 2:40:48PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	27.51	1.88E+02	218.04			1.88E+02	2.18E+02
	2	46.66	1.47E+03	251.06	4.47E+01	1.09E+01	1.42E+03	2.51E+02
	3	53.46	3.83E+02	265.92			3.83E+02	2.66E+02
	4	63.45	2.41E+03	367.47	4.12E+01	5.67E+00	2.36E+03	3.68E+02
	5	76.45	1.46E+04	684.50			1.46E+04	6.85E+02
	6	87.51	1.14E+03	351.62			1.14E+03	3.52E+02
	7	93.22	3.97E+03	367.25	7.98E+01	7.31E+00	3.89E+03	3.67E+02
	8	113.33	2.51E+02	229.37			2.51E+02	2.29E+02
	9	144.28	6.60E+02	262.50			6.60E+02	2.62E+02
	10	154.64	3.26E+02	261.61			3.26E+02	2.62E+02
	11	186.30	5.13E+03	379.40	3.06E+01	5.82E+00	5.10E+03	3.79E+02
	12	206.20	2.26E+02	183.02			2.26E+02	1.83E+02
M	13	237.78	9.17E+02	335.77			9.17E+02	3.36E+02
m	14	242.24	4.75E+03	229.19			4.75E+03	2.29E+02
	15	258.24	6.78E+02	257.66			6.78E+02	2.58E+02
	16	271.13	5.55E+02	279.34			5.55E+02	2.79E+02
	17	295.44	1.02E+04	310.67			1.02E+04	3.11E+02
	18	352.16	1.71E+04	318.19	6.53E+00	4.43E+00	1.71E+04	3.18E+02
	19	387.87	3.86E+02	152.47			3.86E+02	1.52E+02

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	20	426.92	1.03E+02	116.39			1.03E+02	1.16E+02
	21	454.77	1.02E+02	114.92			1.02E+02	1.15E+02
	22	462.60	1.36E+02	115.51			1.36E+02	1.16E+02
	23	480.04	1.33E+02	109.70			1.33E+02	1.10E+02
	24	488.13	1.99E+02	120.45			1.99E+02	1.20E+02
	25	511.17	2.46E+02	116.62	5.21E+01	4.74E+00	1.94E+02	1.17E+02
	26	533.76	1.30E+02	84.15			1.30E+02	8.42E+01
	27	582.19	1.36E+02	149.68			1.36E+02	1.50E+02
	28	609.45	1.18E+04	254.07	3.25E+00	2.97E+00	1.18E+04	2.54E+02
	29	665.07	4.34E+02	130.35			4.34E+02	1.30E+02
	30	742.80	1.25E+02	103.86			1.25E+02	1.04E+02
	31	768.09	1.16E+03	133.76	6.96E-01	2.84E+00	1.16E+03	1.34E+02
	32	785.86	2.54E+02	103.15			2.54E+02	1.03E+02
	33	806.72	3.38E+02	132.63			3.38E+02	1.33E+02
	34	839.21	1.19E+02	76.51			1.19E+02	7.65E+01
	35	911.09	1.14E+02	90.30	2.85E+00	2.76E+00	1.11E+02	9.03E+01
	36	921.23	5.60E+01	69.60			5.60E+01	6.96E+01
	37	934.02	5.73E+02	104.61			5.73E+02	1.05E+02
	38	963.07	7.79E+01	77.95			7.79E+01	7.79E+01
	39	1001.23	1.87E+02	91.98			1.87E+02	9.20E+01
	40	1120.21	2.40E+03	134.94			2.40E+03	1.35E+02
	41	1141.43	5.52E+01	62.10			5.52E+01	6.21E+01
	42	1155.32	3.15E+02	91.89			3.15E+02	9.19E+01
	43	1237.99	8.17E+02	101.74			8.17E+02	1.02E+02
	44	1253.22	9.56E+01	62.88			9.56E+01	6.29E+01
	45	1280.67	2.73E+02	69.86			2.73E+02	6.99E+01
	46	1359.78	6.96E+01	46.95			6.96E+01	4.69E+01
M	47	1377.54	6.95E+02	76.33			6.95E+02	7.63E+01
m	48	1385.14	1.36E+02	64.68			1.36E+02	6.47E+01
M	49	1401.91	1.73E+02	60.83			1.73E+02	6.08E+01
m	50	1407.92	3.19E+02	60.56			3.19E+02	6.06E+01
	51	1460.39	1.67E+02	70.80	1.00E+00	1.77E+00	1.66E+02	7.08E+01
	52	1509.13	2.78E+02	79.04			2.78E+02	7.90E+01
	53	1540.15	1.09E+02	71.16			1.09E+02	7.12E+01
	54	1560.15	4.52E+01	44.99			4.52E+01	4.50E+01
	55	1583.13	1.11E+02	68.03			1.11E+02	6.80E+01
	56	1599.94	4.12E+01	41.62			4.12E+01	4.16E+01
	57	1661.56	1.37E+02	58.17			1.37E+02	5.82E+01
	58	1729.38	4.05E+02	61.04			4.05E+02	6.10E+01
	59	1764.27	1.85E+03	94.81			1.85E+03	9.48E+01
M	60	1838.77	2.53E+01	30.64			2.53E+01	3.06E+01
m	61	1847.23	2.44E+02	41.70			2.44E+02	4.17E+01
	62	1856.21	3.08E+01	20.39			3.08E+01	2.04E+01
M	63	1869.78	2.30E+01	23.62			2.30E+01	2.36E+01
m	64	1873.33	2.63E+01	26.08			2.63E+01	2.61E+01
	65	1900.82	5.75E+01	37.70			5.75E+01	3.77E+01
	66	1909.86	3.74E+01	24.49			3.74E+01	2.45E+01
	67	2118.05	1.20E+02	30.55			1.20E+02	3.05E+01
	68	2178.95	3.50E+01	15.36			3.50E+01	1.54E+01
	69	2203.68	4.61E+02	49.68			4.61E+02	4.97E+01
	70	2292.63	2.27E+01	19.49			2.27E+01	1.95E+01
	71	2447.41	1.22E+02	23.07			1.22E+02	2.31E+01
	72	2614.23	3.84E+01	13.75	1.86E+00	1.12E+00	3.65E+01	1.38E+01
	73	2695.03	4.33E+00	5.74			4.33E+00	5.74E+00

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

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 : 8/23/2017 2:40:48PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.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	27.51	1.88E+02	218.04			1.88E+02	2.18E+02
	2	46.66	1.47E+03	251.06	4.47E+01	1.09E+01	1.42E+03	2.51E+02
	3	53.46	3.83E+02	265.92			3.83E+02	2.66E+02
	4	63.45	2.41E+03	367.47	4.12E+01	5.67E+00	2.36E+03	3.68E+02
	5	76.45	1.46E+04	684.50			1.46E+04	6.85E+02
	6	87.51	1.14E+03	351.62			1.14E+03	3.52E+02
	7	93.22	3.97E+03	367.25	7.98E+01	7.31E+00	3.89E+03	3.67E+02
	8	113.33	2.51E+02	229.37			2.51E+02	2.29E+02
	9	144.28	6.60E+02	262.50			6.60E+02	2.62E+02
	10	154.64	3.26E+02	261.61			3.26E+02	2.62E+02
	11	186.30	5.13E+03	379.40	3.06E+01	5.82E+00	5.10E+03	3.79E+02
	12	206.20	2.26E+02	183.02			2.26E+02	1.83E+02
M	13	237.78	9.17E+02	335.77			9.17E+02	3.36E+02
m	14	242.24	4.75E+03	229.19			4.75E+03	2.29E+02
	15	258.24	6.78E+02	257.66			6.78E+02	2.58E+02
	16	271.13	5.55E+02	279.34			5.55E+02	2.79E+02
	17	295.44	1.02E+04	310.67			1.02E+04	3.11E+02
	18	352.16	1.71E+04	318.19	6.53E+00	4.43E+00	1.71E+04	3.18E+02
	19	387.87	3.86E+02	152.47			3.86E+02	1.52E+02
	20	426.92	1.03E+02	116.39			1.03E+02	1.16E+02
	21	454.77	1.02E+02	114.92			1.02E+02	1.15E+02
	22	462.60	1.36E+02	115.51			1.36E+02	1.16E+02
	23	480.04	1.33E+02	109.70			1.33E+02	1.10E+02
	24	488.13	1.99E+02	120.45			1.99E+02	1.20E+02
	25	511.17	2.46E+02	116.62	5.21E+01	4.74E+00	1.94E+02	1.17E+02
	26	533.76	1.30E+02	84.15			1.30E+02	8.42E+01
	27	582.19	1.36E+02	149.68			1.36E+02	1.50E+02
	28	609.45	1.18E+04	254.07	3.25E+00	2.97E+00	1.18E+04	2.54E+02
	29	665.07	4.34E+02	130.35			4.34E+02	1.30E+02
	30	742.80	1.25E+02	103.86			1.25E+02	1.04E+02
	31	768.09	1.16E+03	133.76	6.96E-01	2.84E+00	1.16E+03	1.34E+02
	32	785.86	2.54E+02	103.15			2.54E+02	1.03E+02

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	33	806.72	3.38E+02	132.63			3.38E+02	1.33E+02
	34	839.21	1.19E+02	76.51			1.19E+02	7.65E+01
	35	911.09	1.14E+02	90.30	2.85E+00	2.76E+00	1.11E+02	9.03E+01
	36	921.23	5.60E+01	69.60			5.60E+01	6.96E+01
	37	934.02	5.73E+02	104.61			5.73E+02	1.05E+02
	38	963.07	7.79E+01	77.95			7.79E+01	7.79E+01
	39	1001.23	1.87E+02	91.98			1.87E+02	9.20E+01
	40	1120.21	2.40E+03	134.94			2.40E+03	1.35E+02
	41	1141.43	5.52E+01	62.10			5.52E+01	6.21E+01
	42	1155.32	3.15E+02	91.89			3.15E+02	9.19E+01
	43	1237.99	8.17E+02	101.74			8.17E+02	1.02E+02
	44	1253.22	9.56E+01	62.88			9.56E+01	6.29E+01
	45	1280.67	2.73E+02	69.86			2.73E+02	6.99E+01
	46	1359.78	6.96E+01	46.95			6.96E+01	4.69E+01
M	47	1377.54	6.95E+02	76.33			6.95E+02	7.63E+01
m	48	1385.14	1.36E+02	64.68			1.36E+02	6.47E+01
M	49	1401.91	1.73E+02	60.83			1.73E+02	6.08E+01
m	50	1407.92	3.19E+02	60.56			3.19E+02	6.06E+01
	51	1460.39	1.67E+02	70.80	1.00E+00	1.77E+00	1.66E+02	7.08E+01
	52	1509.13	2.78E+02	79.04			2.78E+02	7.90E+01
	53	1540.15	1.09E+02	71.16			1.09E+02	7.12E+01
	54	1560.15	4.52E+01	44.99			4.52E+01	4.50E+01
	55	1583.13	1.11E+02	68.03			1.11E+02	6.80E+01
	56	1599.94	4.12E+01	41.62			4.12E+01	4.16E+01
	57	1661.56	1.37E+02	58.17			1.37E+02	5.82E+01
	58	1729.38	4.05E+02	61.04			4.05E+02	6.10E+01
	59	1764.27	1.85E+03	94.81			1.85E+03	9.48E+01
M	60	1838.77	2.53E+01	30.64			2.53E+01	3.06E+01
m	61	1847.23	2.44E+02	41.70			2.44E+02	4.17E+01
	62	1856.21	3.08E+01	20.39			3.08E+01	2.04E+01
M	63	1869.78	2.30E+01	23.62			2.30E+01	2.36E+01
m	64	1873.33	2.63E+01	26.08			2.63E+01	2.61E+01
	65	1900.82	5.75E+01	37.70			5.75E+01	3.77E+01
	66	1909.86	3.74E+01	24.49			3.74E+01	2.45E+01
	67	2118.05	1.20E+02	30.55			1.20E+02	3.05E+01
	68	2178.95	3.50E+01	15.36			3.50E+01	1.54E+01
	69	2203.68	4.61E+02	49.68			4.61E+02	4.97E+01
	70	2292.63	2.27E+01	19.49			2.27E+01	1.95E+01
	71	2447.41	1.22E+02	23.07			1.22E+02	2.31E+01
	72	2614.23	3.84E+01	13.75	1.86E+00	1.12E+00	3.65E+01	1.38E+01
	73	2695.03	4.33E+00	5.74			4.33E+00	5.74E+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 1707090-10

HTC-A07-S001-0006-01

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	0.972	1460.81	*	10.67	4.55E+00	1.98E+00
CD-109	0.957	88.03	*	3.72	1.27E+01	4.11E+00
SN-126	0.999	87.57	*	37.00	1.10E+00	3.50E-01
PM-146	0.367	453.90	*	39.94	2.79E-01	3.15E-01
		735.90		14.01		
		747.13		13.10		
LU-173	0.482	100.72		5.24		
		272.11	*	21.20	2.00E+00	1.02E+00
TL-208	0.814	583.14	*	30.22	5.91E-01	6.55E-01
		860.37		4.48		
		2614.66	*	35.85	4.40E-01	1.71E-01
PB-210	0.996	46.50	*	4.25	1.88E+01	3.81E+00
PB-212	0.794	238.63	*	44.60	1.23E+00	4.61E-01
		300.09		3.41		
BI-214	0.994	609.31	*	46.30	3.50E+01	3.38E+00
		1120.29	*	15.10	3.74E+01	3.80E+00
		1764.49	*	15.80	3.95E+01	3.72E+00
		2204.22	*	4.98	3.63E+01	5.03E+00
PB-214	0.991	295.21	*	19.19	3.80E+01	3.44E+00
		351.92	*	37.19	3.85E+01	3.51E+00
RA-226	0.999	186.21	*	3.28	7.68E+01	1.41E+02
PA-234M	0.994	1001.03	*	0.92	4.34E+01	2.16E+01
TH-234	0.996	63.29	*	3.80	2.46E+01	4.23E+00
U-235	0.572	143.76	*	10.50	2.62E+00	1.14E+00
		163.35		4.70		
		205.31	*	4.70	2.57E+00	2.13E+00

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

Analysis Report for 1707090-10

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 2:40:48PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	27.51	5.22698E-02	57.94		
	3	53.46	1.06304E-01	34.74		
	5	76.45	4.06524E+00	2.34		
	7	93.22	1.08008E+00	4.72	Sum	
	8	113.33	6.97822E-02	45.65		
	10	154.64	9.06253E-02	40.09		
m	14	242.24	1.31895E+00	2.41		
	15	258.24	1.88342E-01	19.00		
	19	387.87	1.07251E-01	19.75		
	20	426.92	2.85637E-02	56.59	Tol.	SB-125
	22	462.60	3.76420E-02	42.62	Tol.	SB-125
	23	480.04	3.68093E-02	41.39		
	24	488.13	5.52180E-02	30.30		
	25	511.17	5.39516E-02	30.05		
	26	533.76	3.60821E-02	32.39	Sum	
	29	665.07	1.20538E-01	15.02	Tol.	CE-143
	30	742.80	3.47025E-02	41.57	D-Esc	
	31	768.09	3.22251E-01	5.77	Sum	
	32	785.86	7.06580E-02	20.27		
	33	806.72	9.37849E-02	19.64	Sum	
	34	839.21	3.31271E-02	32.08		
	35	911.09	3.08750E-02	40.64	Tol.	TL-204 AC-228
	36	921.23	1.55556E-02	62.14		
	37	934.02	1.59279E-01	9.12	Sum	
	38	963.07	2.16473E-02	50.01		
	41	1141.43	1.53464E-02	56.20		
	42	1155.32	8.73653E-02	14.61		
	43	1237.99	2.26883E-01	6.23		
	44	1253.22	2.65682E-02	32.87	S-Esc	
	45	1280.67	7.58512E-02	12.79		
	46	1359.78	1.93230E-02	33.74		
M	47	1377.54	1.93126E-01	5.49		
m	48	1385.14	3.77418E-02	23.80	Tol.	AG-110M
M	49	1401.91	4.80978E-02	17.56		
m	50	1407.92	8.86925E-02	9.48		
	52	1509.13	7.72566E-02	14.21		
	53	1540.15	3.02416E-02	32.68		
	54	1560.15	1.25589E-02	49.75		
	55	1583.13	3.07475E-02	30.73	Sum	
	56	1599.94	1.14515E-02	50.48		
	57	1661.56	3.79630E-02	21.28		
	58	1729.38	1.12596E-01	7.53	Sum	
M	60	1838.77	7.01762E-03	60.64		
m	61	1847.23	6.77983E-02	8.54		

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	62	1856.21	8.54406E-03	33.15		
M	63	1869.78	6.38017E-03	51.42		
m	64	1873.33	7.30714E-03	49.56		
	65	1900.82	1.59790E-02	32.77		
	66	1909.86	1.03923E-02	32.73		
	67	2118.05	3.34412E-02	12.69		
	68	2178.95	9.72222E-03	21.95		
	70	2292.63	6.30081E-03	42.97		
	71	2447.41	3.37668E-02	9.49		
	73	2695.03	1.20370E-03	66.28		

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	4.55E+00	1.98E+00
CD-109	0.95	88.03	*	3.72	1.27E+01	4.11E+00
SN-126	0.99	87.57	*	37.00	1.10E+00	3.50E-01
PM-146	0.36	453.90	*	39.94	2.79E-01	3.15E-01
		735.90		14.01		
		747.13		13.10		
LU-173	0.48	100.72		5.24		
		272.11	*	21.20	2.00E+00	1.02E+00
TL-208	0.81	583.14	*	30.22	5.91E-01	6.55E-01
		860.37		4.48		
		2614.66	*	35.85	4.40E-01	1.71E-01
PB-210	0.99	46.50	*	4.25	1.88E+01	3.81E+00
PB-212	0.79	238.63	*	44.60	1.23E+00	4.61E-01
		300.09		3.41		
BI-214	0.99	609.31	*	46.30	3.50E+01	3.38E+00
		1120.29	*	15.10	3.74E+01	3.80E+00
		1764.49	*	15.80	3.95E+01	3.72E+00
		2204.22	*	4.98	3.63E+01	5.03E+00

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.99	295.21	*	19.19	3.80E+01	3.44E+00
		351.92	*	37.19	3.85E+01	3.51E+00
RA-226	0.99	186.21	*	3.28	7.68E+01	1.41E+02
PA-234M	0.99	1001.03	*	0.92	4.34E+01	2.16E+01
TH-234	0.99	63.29	*	3.80	2.46E+01	4.23E+00
U-235	0.57	143.76	*	10.50	2.62E+00	1.14E+00
		163.35		4.70		
		205.31	*	4.70	2.57E+00	2.13E+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	0.972	4.55E+00	1.98E+00	
?	CD-109	0.957	1.27E+01	4.11E+00	
?	SN-126	0.999	1.10E+00	3.50E-01	
	PM-146	0.367	2.79E-01	3.15E-01	
	LU-173	0.482	2.00E+00	1.02E+00	
	TL-208	0.814	4.49E-01	1.66E-01	
	PB-210	0.996	1.88E+01	3.81E+00	
	PB-212	0.794	1.23E+00	4.61E-01	
	BI-214	0.994	3.70E+01	1.93E+00	
	PB-214	0.991	3.82E+01	2.46E+00	
	RA-226	0.999	7.68E+01	1.41E+02	
	PA-234M	0.994	4.34E+01	2.16E+01	
	TH-234	0.996	2.46E+01	4.23E+00	
	U-235	0.572	2.61E+00	1.00E+00	

Analysis Report for 1707090-10

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? = 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 1707090-10

HTC-A07-S001-0006-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 2:40:48PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	27.51	5.22698E-02	57.94		
	3	53.46	1.06304E-01	34.74		
	5	76.45	4.06524E+00	2.34		
	7	93.22	1.08008E+00	4.72	Sum	
	8	113.33	6.97822E-02	45.65		
	10	154.64	9.06253E-02	40.09		
m	14	242.24	1.31895E+00	2.41		
	15	258.24	1.88342E-01	19.00		
	19	387.87	1.07251E-01	19.75		
	20	426.92	2.85637E-02	56.59	Tol.	SB-125
	22	462.60	3.76420E-02	42.62	Tol.	SB-125
	23	480.04	3.68093E-02	41.39		
	24	488.13	5.52180E-02	30.30		
	25	511.17	5.39516E-02	30.05		
	26	533.76	3.60821E-02	32.39	Sum	
	29	665.07	1.20538E-01	15.02	Tol.	CE-143
	30	742.80	3.47025E-02	41.57	D-Esc	
	31	768.09	3.22251E-01	5.77	Sum	
	32	785.86	7.06580E-02	20.27		
	33	806.72	9.37849E-02	19.64	Sum	
	34	839.21	3.31271E-02	32.08		
	35	911.09	3.08750E-02	40.64	Tol.	TL-204 AC-228
	36	921.23	1.55556E-02	62.14		
	37	934.02	1.59279E-01	9.12	Sum	
	38	963.07	2.16473E-02	50.01		
	41	1141.43	1.53464E-02	56.20		
	42	1155.32	8.73653E-02	14.61		
	43	1237.99	2.26883E-01	6.23		
	44	1253.22	2.65682E-02	32.87	S-Esc	
	45	1280.67	7.58512E-02	12.79		
	46	1359.78	1.93230E-02	33.74		
M	47	1377.54	1.93126E-01	5.49		
m	48	1385.14	3.77418E-02	23.80	Tol.	AG-110M
M	49	1401.91	4.80978E-02	17.56		

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	50	1407.92	8.86925E-02	9.48		
	52	1509.13	7.72566E-02	14.21		
	53	1540.15	3.02416E-02	32.68		
	54	1560.15	1.25589E-02	49.75		
	55	1583.13	3.07475E-02	30.73	Sum	
	56	1599.94	1.14515E-02	50.48		
	57	1661.56	3.79630E-02	21.28		
	58	1729.38	1.12596E-01	7.53	Sum	
M	60	1838.77	7.01762E-03	60.64		
m	61	1847.23	6.77983E-02	8.54		
	62	1856.21	8.54406E-03	33.15		
M	63	1869.78	6.38017E-03	51.42		
m	64	1873.33	7.30714E-03	49.56		
	65	1900.82	1.59790E-02	32.77		
	66	1909.86	1.03923E-02	32.73		
	67	2118.05	3.34412E-02	12.69		
	68	2178.95	9.72222E-03	21.95		
	70	2292.63	6.30081E-03	42.97		
	71	2447.41	3.37668E-02	9.49		
	73	2695.03	1.20370E-03	66.28		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-2.20E-01	6.27E+00	6.27E+00
+	NA-22	1274.54		99.94	5.33E-02	2.01E-01	2.01E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	8.18E-02	1.47E-01	1.47E-01
+	K-40	1460.81	*	10.67	4.55E+00	3.04E+00	3.04E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TI-44	67.88	94.40	7.69E-02	1.77E-01	1.77E-01
		78.34	96.00	2.30E+00		2.39E-01
+	SC-46	889.25	99.98	4.41E-02	4.81E-01	4.81E-01
		1120.51	99.99	1.28E+01		1.31E+00
+	V-48	983.52	99.98	-3.07E+00	1.44E+01	1.47E+01
		1312.10	97.50	-2.62E+00		1.44E+01
+	CR-51	320.08	9.83	-2.21E+01	2.08E+01	2.08E+01
+	MN-54	834.83	99.97	6.23E-02	2.54E-01	2.54E-01
+	CO-56	846.75	99.96	4.94E-02	4.64E-01	4.64E-01
		1037.75	14.03	-2.91E-01		3.31E+00
		1238.25	67.00	7.77E+00		1.42E+00
		1771.40	15.51	4.74E-01		2.35E+00
		2598.48	16.90	2.88E-01		8.60E-01
+	CO-57	122.06	85.51	-3.75E-02	2.00E-01	2.00E-01
		136.48	10.60	-4.07E-01		1.72E+00
+	CO-58	810.76	99.40	-1.11E+00	5.07E-01	5.07E-01
+	FE-59	1099.22	56.50	-7.43E-01	1.60E+00	1.60E+00
		1291.56	43.20	-7.68E-01		1.98E+00
+	CO-60	1173.22	100.00	3.90E-02	2.04E-01	2.04E-01
		1332.49	100.00	5.58E-02		2.06E-01
+	ZN-65	1115.52	50.75	-2.96E-02	6.01E-01	6.01E-01
+	GA-67	93.31	35.70	5.68E+09	7.14E+08	7.14E+08
		208.95	2.24	1.99E+09		1.17E+10
		300.22	16.00	1.16E+06		2.02E+09
+	SE-75	121.11	16.70	-4.16E-01	4.21E-01	1.41E+00
		136.00	59.20	-2.83E-01		4.21E-01
		264.65	59.80	6.80E-02		5.07E-01
		279.53	25.20	-6.94E-01		1.25E+00
		400.65	11.40	-1.57E+00		2.99E+00
+	RB-82	776.52	13.00	2.33E+00	2.07E+01	2.07E+01
+	RB-83	520.41	46.00	2.02E-02	8.20E-01	8.20E-01
		529.64	30.30	4.15E-01		1.26E+00
		552.65	16.40	-1.79E-01		2.29E+00
+	KR-85	513.99	0.43	-1.01E+00	4.34E+01	4.34E+01
+	SR-85	513.99	99.27	-1.25E-02	5.38E-01	5.38E-01
+	Y-88	898.02	93.40	2.07E-02	3.37E-01	4.25E-01
		1836.01	99.38	3.16E-01		3.37E-01
+	MO-93	263.06	56.72	4.08E-02	1.74E-01	3.14E-01
		684.67	99.68	-4.92E-02		1.74E-01
		1477.11	99.08	1.85E-02		2.51E-01
+	NB-93M	16.57	9.43	-6.08E+00	1.69E+02	1.69E+02
+	NB-94	702.63	100.00	9.33E-02	1.91E-01	1.91E-01
		871.10	100.00	7.67E-02		2.00E-01
+	NB-95	765.79	99.81	1.00E+01	2.20E+00	2.20E+00
+	NB-95M	235.69	25.00	-2.53E+08	1.43E+08	1.43E+08
+	ZR-95	724.18	43.70	-1.70E-02	9.40E-01	1.22E+00
		756.72	55.30	-1.36E-01		9.40E-01

Analysis Report for 1707090-10

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	MO-99	181.06		6.20	3.10E+10	1.08E+11	1.81E+11
		739.58		12.80	5.03E+10		1.08E+11
		778.00		4.50	5.40E+10		2.89E+11
+	RU-103	497.08		89.00	2.85E-01	1.11E+00	1.11E+00
+	RU-106	621.84		9.80	4.17E-02	1.97E+00	1.97E+00
+	AG-108M	433.93		89.90	-6.34E-03	1.99E-01	1.99E-01
		614.37		90.40	7.67E-02		3.46E-01
		722.95		90.50	-3.35E-02		2.02E-01
+	CD-109	88.03	*	3.72	1.27E+01	6.33E+00	6.33E+00
+	AG-110M	657.75		93.14	6.76E-02	2.39E-01	2.39E-01
		677.61		10.53	1.26E+00		2.14E+00
		706.67		16.46	2.94E-03		1.52E+00
		763.93		21.98	-8.85E+00		1.32E+00
		884.67		71.63	8.95E-02		3.85E-01
		1384.27		23.94	-9.09E-01		1.27E+00
+	CD-113M	263.70		0.02	1.01E+02	7.57E+02	7.57E+02
+	SN-113	255.12		1.93	-3.74E+00	5.24E-01	1.67E+01
		391.69		64.90	-5.48E-02		5.24E-01
+	TE123M	159.00		84.10	1.93E-02	3.23E-01	3.23E-01
+	SB-124	602.71		97.87	-5.10E-02	5.81E-01	5.81E-01
		645.85		7.26	-5.10E+00		6.80E+00
		722.78		11.10	-8.54E-01		5.16E+00
		1691.02		49.00	7.92E-01		1.17E+00
+	I-125	35.49		6.49	9.56E-01	1.43E+01	1.43E+01
+	SB-125	176.33		6.89	1.59E-01	6.89E-01	2.36E+00
		427.89		29.33	2.68E-01		6.89E-01
		463.38		10.35	1.24E+00		1.89E+00
		600.56		17.80	-4.24E-01		1.07E+00
		635.90		11.32	4.80E-01		1.58E+00
+	SB-126	414.70		83.30	3.51E+01	4.37E+01	5.96E+01
		666.33		99.60	1.29E+02		5.60E+01
		695.00		99.60	-6.30E+00		4.37E+01
		720.50		53.80	9.81E+00		8.75E+01
+	SN-126	87.57	*	37.00	1.10E+00	5.49E-01	5.49E-01
+	SB-127	473.00		25.00	3.52E+06	2.74E+07	4.07E+07
		685.20		35.70	-7.74E+06		2.74E+07
		783.80		14.70	1.28E+08		8.55E+07
+	I-129	29.78		57.00	-1.65E-01	9.15E-01	9.15E-01
		33.60		13.20	3.37E-01		2.61E+00
		39.58		7.52	-1.32E+00		3.05E+00
+	I-131	284.30		6.05	8.08E+03	1.08E+03	1.53E+04
		364.48		81.20	1.46E+02		1.08E+03
		636.97		7.26	-2.06E+02		1.19E+04
		722.89		1.80	-8.72E+03		5.26E+04
+	TE-132	49.72		13.10	-1.06E+10	2.97E+08	2.00E+09
		228.16		88.00	8.78E+07		2.97E+08
+	BA-133	81.00		33.00	-7.14E+00	5.27E-01	5.27E-01
		302.84		17.80	-1.90E-01		1.02E+00
		356.01		60.00	2.94E-02		6.46E-01

Analysis Report for 1707090-10

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		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+		XE-133	81.00		38.00	-3.03E+06	2.24E+05	2.24E+05
+		CS-134	563.23		8.38	4.18E-02	2.36E-01	2.31E+00
			569.32		15.43	-7.79E-01		1.25E+00
			604.70		97.60	4.68E-05		3.26E-01
			795.84		85.40	2.88E-02		2.36E-01
			801.93		8.73	1.84E-01		2.42E+00
+		CS-135	268.24		16.00	8.74E-01	1.16E+00	1.16E+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	-1.01E+02	3.66E+01	3.88E+02
			163.89		4.61	2.29E+02		6.17E+02
			176.55		13.56	1.41E+01		2.08E+02
			273.65		12.66	2.17E+02		2.79E+02
			340.57		48.50	6.38E+01		7.21E+01
			818.50		99.70	2.25E+01		3.66E+01
			1048.07		79.60	1.31E+00		4.81E+01
			1235.34		19.70	9.02E+02		3.40E+02
+		CS-137	661.65		85.12	-2.02E-01	2.33E-01	2.33E-01
+		LA-138	788.74		34.00	2.62E-03	3.06E-01	6.19E-01
			1435.80		66.00	3.41E-02		3.06E-01
+		CE-139	165.85		80.35	9.02E-02	3.13E-01	3.13E-01
+		BA-140	162.64		6.70	9.16E+01	1.54E+02	4.93E+02
			304.84		4.50	3.27E+01		8.43E+02
			423.70		3.20	9.90E+01		1.31E+03
			437.55		2.00	2.14E+02		1.92E+03
			537.32		25.00	8.30E+01		1.54E+02
+		LA-140	328.77		20.50	-8.18E+01	5.44E+01	1.91E+02
			487.03		45.50	6.49E+01		8.69E+01
			815.85		23.50	4.30E+01		1.75E+02
			1596.49		95.49	6.23E+00		5.44E+01
+		CE-141	145.44		48.40	2.70E+00	2.63E+00	2.63E+00
+	@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26		42.00	1.00E+26		1.00E+26
	@		664.55		5.20	1.00E+26		1.00E+26
+		CE-144	133.54		10.80	1.38E-02	1.64E+00	1.64E+00
+		PM-144	476.78		42.00	-3.32E-02	2.02E-01	5.06E-01
			618.01		98.60	1.38E-02		2.02E-01
			696.49		99.49	-5.46E-02		2.09E-01
+		PM-145	36.85		21.70	-5.04E-01	6.60E-01	1.24E+00
			37.36		39.70	-2.30E-01		6.60E-01
			42.30		15.10	1.85E-04		1.38E+00
			72.40		2.31	-7.43E+01		8.39E+00
+		PM-146	453.90	*	39.94	2.79E-01	5.15E-01	5.15E-01
			735.90		14.01	5.50E-02		1.34E+00
			747.13		13.10	-4.29E-01		1.45E+00
+		ND-147	91.11		28.90	-1.91E+02	3.26E+02	3.26E+02
			531.02		13.10	1.60E+02		6.98E+02

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-149	285.90		3.10	1.42E+13	1.84E+14	1.84E+14
+	EU-152	121.78		20.50	-1.23E-01	6.56E-01	6.56E-01
		244.69		5.40	-9.28E-02		4.79E+00
		344.27		19.13	-4.69E-01		9.68E-01
		778.89		9.20	5.27E-01		2.01E+00
		964.01		10.40	1.42E+00		2.16E+00
		1085.78		7.22	-5.90E-01		2.73E+00
		1112.02		9.60	4.15E-01		2.13E+00
		1407.95		14.94	5.59E+00		2.11E+00
+	GD-153	97.43		31.30	3.27E-01	5.66E-01	5.66E-01
		103.18		22.20	-4.24E-01		7.63E-01
+	EU-154	123.07		40.50	1.78E-02	3.37E-01	3.37E-01
		723.30		19.70	-1.57E-01		9.48E-01
		873.19		11.50	-8.03E-01		1.76E+00
		996.32		10.30	2.31E-01		2.09E+00
		1004.76		17.90	-3.03E-01		1.20E+00
		1274.45		35.50	1.42E-01		5.37E-01
+	EU-155	86.50		30.90	1.61E+00	5.92E-01	5.92E-01
		105.30		20.70	-6.78E-01		6.36E-01
+	EU-156	811.77		10.40	-2.90E+02	1.66E+02	1.66E+02
		1153.47		7.20	4.87E+02		3.38E+02
		1230.71		8.90	3.72E+01		2.09E+02
+	HO-166M	184.41		72.60	2.57E+00	3.00E-01	3.00E-01
		280.45		29.60	-3.66E-01		5.98E-01
		410.94		11.10	-8.93E-01		1.71E+00
		711.69		54.10	-4.62E-02		3.35E-01
+	TM-171	66.72		0.14	7.12E+01	1.36E+02	1.36E+02
+	HF-172	67.35		5.31	1.51E+00	1.32E+00	3.49E+00
		125.81		11.30	3.19E-01		1.32E+00
+	LU-172	181.53		20.60	-8.75E+00	9.03E+03	2.16E+04
		900.72		29.81	-2.51E+03		2.02E+04
		1093.66		62.50	-1.79E+03		9.03E+03
+	LU-173	100.72		5.24	2.42E+00	1.64E+00	2.86E+00
		272.11	*	21.20	2.00E+00		1.64E+00
+	HF-175	343.40		84.00	-2.81E-01	5.80E-01	5.80E-01
+	LU-176	88.34		13.30	3.72E+00	1.81E-01	1.33E+00
		201.83		86.00	-5.50E-02		1.81E-01
		306.78		94.00	-4.95E-02		1.84E-01
+	HF-181	133.02		41.70	1.58E-01	1.09E+00	1.68E+00
		345.85		17.20	-7.80E+00		5.38E+00
		482.03		82.80	-4.05E-01		1.09E+00
+	TA-182	67.75		41.20	3.21E-01	7.40E-01	7.40E-01
		1121.30		34.90	2.94E+01		3.01E+00
		1189.05		16.23	3.63E-01		2.24E+00
		1221.41		26.98	-3.43E-01		1.33E+00
		1231.02		11.44	5.70E-01		3.20E+00
+	IR-192	308.46		29.68	-2.81E-01	9.44E-01	1.47E+00
		468.07		48.10	2.95E-01		9.44E-01
+	HG-203	279.19		77.30	-5.65E-01	1.01E+00	1.01E+00

Analysis Report for 1707090-10

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TL-204	374.74		94.11	3.11E-02	1.94E-01	1.94E-01
		899.15		99.16	4.92E-02		2.22E-01
		911.74		91.10	1.78E-01		2.57E-01
+	BI-207	569.67		97.72	-2.85E-02	1.83E-01	1.83E-01
		1063.62		74.90	-5.84E-02		2.59E-01
+	TL-208	583.14	*	30.22	5.91E-01	1.64E-01	1.07E+00
		860.37		4.48	-2.27E+00		4.32E+00
		2614.66	*	35.85	4.40E-01		1.64E-01
+	BI-210M	262.00		45.00	5.04E-02	4.00E-01	4.00E-01
		300.00		23.00	5.59E-04		9.74E-01
+	PB-210	46.50	*	4.25	1.88E+01	5.25E+00	5.25E+00
+	PB-211	404.84		2.90	6.13E+00	6.83E+00	6.83E+00
		831.96		2.90	5.49E-01		6.93E+00
+	BI-212	727.17		11.80	9.52E-01	1.56E+00	1.56E+00
		1620.62		2.75	1.46E+00		7.67E+00
+	PB-212	238.63	*	44.60	1.23E+00	8.10E-01	8.10E-01
		300.09		3.41	3.77E-03		6.57E+00
+	BI-214	609.31	*	46.30	3.50E+01	6.50E-01	6.50E-01
		1120.29	*	15.10	3.74E+01		2.41E+00
		1764.49	*	15.80	3.95E+01		1.45E+00
		2204.22	*	4.98	3.63E+01		3.45E+00
+	PB-214	295.21	*	19.19	3.80E+01	6.79E-01	1.47E+00
		351.92	*	37.19	3.85E+01		6.79E-01
+	RN-219	401.80		6.50	5.50E-01	3.00E+00	3.00E+00
+	RA-223	323.87		3.88	1.56E+00	4.58E+00	4.58E+00
+	RA-224	240.98		3.95	7.03E+01	6.81E+00	6.81E+00
+	RA-225	40.00		31.00	-3.26E+01	7.53E+01	7.53E+01
+	RA-226	186.21	*	3.28	7.68E+01	8.74E+00	8.74E+00
+	TH-227	50.10		8.40	-1.12E+01	1.66E+00	2.10E+00
		236.00		11.50	-2.94E+00		1.66E+00
		256.20		6.30	-3.93E-01		2.88E+00
+	AC-228	338.32		11.40	2.42E-01	8.21E-01	1.64E+00
		911.07		27.70	9.18E-01		8.21E-01
		969.11		16.60	6.84E-01		1.23E+00
+	TH-230	48.44		16.90	1.58E+00	1.16E+00	1.16E+00
		62.85		4.60	2.09E+01		4.15E+00
		67.67		0.37	1.96E+01		4.52E+01
+	PA-231	283.67		1.60	8.36E+00	7.73E+00	1.12E+01
		302.67		2.30	-1.44E+00		7.73E+00
+	TH-231	25.64		14.70	-3.02E+00	2.61E+00	6.55E+00
		84.21		6.40	1.11E+00		2.61E+00
+	PA-233	311.98		38.60	2.36E+00	5.73E+00	5.73E+00
+	PA-234	131.20		20.40	-3.31E-03	6.72E-01	6.72E-01
		733.99		8.80	-2.54E-01		2.06E+00
		946.00		12.00	-1.28E+00		1.62E+00
+	PA-234M	1001.03	*	0.92	4.34E+01	3.41E+01	3.41E+01
+	TH-234	63.29	*	3.80	2.46E+01	6.09E+00	6.09E+00

Analysis Report for 1707090-10

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	U-235	143.76	*	10.50	2.62E+00	1.69E+00	1.69E+00
		163.35		4.70	1.21E+00		3.24E+00
		205.31	*	4.70	2.57E+00		3.40E+00
+	NP-237	86.50		12.60	3.81E+00	1.40E+00	1.40E+00
+	NP-239	106.10		22.70	-2.87E+12	2.70E+12	2.70E+12
		228.18		10.70	2.37E+12		8.03E+12
		277.60		14.10	-2.81E+12		6.15E+12
+	AM-241	59.54		35.90	2.24E-02	4.63E-01	4.63E-01
+	AM-243	74.67		66.00	1.33E+00	3.52E-01	3.52E-01
+	CM-243	209.75		3.29	1.06E+00	1.29E+00	5.50E+00
		228.14		10.60	5.00E-01		1.69E+00
		277.60		14.00	-5.92E-01		1.29E+00

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	6.27E+00	6.27E+00	-2.20E-01	3.08E+00
	NA-22	1274.54		99.94	2.01E-01	2.01E-01	5.33E-02	9.66E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	1.47E-01	1.47E-01	8.18E-02	6.89E-02
+	K-40	1460.81	*	10.67	3.04E+00	3.04E+00	4.55E+00	1.48E+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	1.77E-01	1.77E-01	7.69E-02	8.82E-02
		78.34		96.00	2.39E-01		2.30E+00	1.19E-01
	SC-46	889.25		99.98	4.81E-01	4.81E-01	4.41E-02	2.35E-01

Analysis Report for 1707090-10

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	SC-46	1120.51		99.99	1.31E+00	4.81E-01	1.28E+01	6.47E-01
	V-48	983.52		99.98	1.47E+01	1.44E+01	-3.07E+00	7.16E+00
		1312.10		97.50	1.44E+01		-2.62E+00	6.92E+00
	CR-51	320.08		9.83	2.08E+01	2.08E+01	-2.21E+01	1.03E+01
	MN-54	834.83		99.97	2.54E-01	2.54E-01	6.23E-02	1.24E-01
	CO-56	846.75		99.96	4.64E-01	4.64E-01	4.94E-02	2.26E-01
		1037.75		14.03	3.31E+00		-2.91E-01	1.60E+00
		1238.25		67.00	1.42E+00		7.77E+00	6.99E-01
		1771.40		15.51	2.35E+00		4.74E-01	1.11E+00
		2598.48		16.90	8.60E-01		2.88E-01	3.47E-01
	CO-57	122.06		85.51	2.00E-01	2.00E-01	-3.75E-02	9.93E-02
		136.48		10.60	1.72E+00		-4.07E-01	8.53E-01
	CO-58	810.76		99.40	5.07E-01	5.07E-01	-1.11E+00	2.47E-01
	FE-59	1099.22		56.50	1.60E+00	1.60E+00	-7.43E-01	7.75E-01
		1291.56		43.20	1.98E+00		-7.68E-01	9.49E-01
	CO-60	1173.22		100.00	2.04E-01	2.04E-01	3.90E-02	9.84E-02
		1332.49		100.00	2.06E-01		5.58E-02	9.94E-02
	ZN-65	1115.52		50.75	6.01E-01	6.01E-01	-2.96E-02	2.92E-01
	GA-67	93.31		35.70	7.14E+08	7.14E+08	5.68E+09	3.55E+08
		208.95		2.24	1.17E+10		1.99E+09	5.82E+09
		300.22		16.00	2.02E+09		1.16E+06	1.00E+09
	SE-75	121.11		16.70	1.41E+00	4.21E-01	-4.16E-01	6.98E-01
		136.00		59.20	4.21E-01		-2.83E-01	2.09E-01
		264.65		59.80	5.07E-01		6.80E-02	2.51E-01
		279.53		25.20	1.25E+00		-6.94E-01	6.18E-01
		400.65		11.40	2.99E+00		-1.57E+00	1.47E+00
	RB-82	776.52		13.00	2.07E+01	2.07E+01	2.33E+00	1.01E+01
	RB-83	520.41		46.00	8.20E-01	8.20E-01	2.02E-02	4.02E-01
		529.64		30.30	1.26E+00		4.15E-01	6.19E-01
		552.65		16.40	2.29E+00		-1.79E-01	1.12E+00
	KR-85	513.99		0.43	4.34E+01	4.34E+01	-1.01E+00	2.13E+01
	SR-85	513.99		99.27	5.38E-01	5.38E-01	-1.25E-02	2.64E-01
	Y-88	898.02		93.40	4.25E-01	3.37E-01	2.07E-02	2.07E-01
		1836.01		99.38	3.37E-01		3.16E-01	1.59E-01
	MO-93	263.06		56.72	3.14E-01	1.74E-01	4.08E-02	1.56E-01
		684.67		99.68	1.74E-01		-4.92E-02	8.48E-02
		1477.11		99.08	2.51E-01		1.85E-02	1.21E-01
	NB-93M	16.57		9.43	1.69E+02	1.69E+02	-6.08E+00	8.39E+01
	NB-94	702.63		100.00	1.91E-01	1.91E-01	9.33E-02	9.35E-02
		871.10		100.00	2.00E-01		7.67E-02	9.75E-02
	NB-95	765.79		99.81	2.20E+00	2.20E+00	1.00E+01	1.08E+00
	NB-95M	235.69		25.00	1.43E+08	1.43E+08	-2.53E+08	7.11E+07
	ZR-95	724.18		43.70	1.22E+00	9.40E-01	-1.70E-02	5.95E-01
		756.72		55.30	9.40E-01		-1.36E-01	4.58E-01
	MO-99	181.06		6.20	1.81E+11	1.08E+11	3.10E+10	8.97E+10
		739.58		12.80	1.08E+11		5.03E+10	5.25E+10
		778.00		4.50	2.89E+11		5.40E+10	1.41E+11
	RU-103	497.08		89.00	1.11E+00	1.11E+00	2.85E-01	5.43E-01
	RU-106	621.84		9.80	1.97E+00	1.97E+00	4.17E-02	9.60E-01
	AG-108M	433.93		89.90	1.99E-01	1.99E-01	-6.34E-03	9.82E-02
		614.37		90.40	3.46E-01		7.67E-02	1.71E-01
		722.95		90.50	2.02E-01		-3.35E-02	9.87E-02
+	CD-109	88.03	*	3.72	6.33E+00	6.33E+00	1.27E+01	3.15E+00

Analysis Report for 1707090-10

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AG-110M	657.75		93.14	2.39E-01	2.39E-01	6.76E-02	1.17E-01
		677.61		10.53	2.14E+00		1.26E+00	1.05E+00
		706.67		16.46	1.52E+00		2.94E-03	7.45E-01
		763.93		21.98	1.32E+00		-8.85E+00	6.48E-01
		884.67		71.63	3.85E-01		8.95E-02	1.88E-01
		1384.27		23.94	1.27E+00		-9.09E-01	6.16E-01
	CD-113M	263.70		0.02	7.57E+02	7.57E+02	1.01E+02	3.75E+02
	SN-113	255.12		1.93	1.67E+01	5.24E-01	-3.74E+00	8.29E+00
		391.69		64.90	5.24E-01		-5.48E-02	2.58E-01
	TE123M	159.00		84.10	3.23E-01	3.23E-01	1.93E-02	1.60E-01
	SB-124	602.71		97.87	5.81E-01	5.81E-01	-5.10E-02	2.85E-01
		645.85		7.26	6.80E+00		-5.10E+00	3.32E+00
		722.78		11.10	5.16E+00		-8.54E-01	2.52E+00
		1691.02		49.00	1.17E+00		7.92E-01	5.54E-01
	I-125	35.49		6.49	1.43E+01	1.43E+01	9.56E-01	7.07E+00
	SB-125	176.33		6.89	2.36E+00	6.89E-01	1.59E-01	1.17E+00
		427.89		29.33	6.89E-01		2.68E-01	3.40E-01
		463.38		10.35	1.89E+00		1.24E+00	9.30E-01
		600.56		17.80	1.07E+00		-4.24E-01	5.23E-01
		635.90		11.32	1.58E+00		4.80E-01	7.72E-01
	SB-126	414.70		83.30	5.96E+01	4.37E+01	3.51E+01	2.94E+01
		666.33		99.60	5.60E+01		1.29E+02	2.75E+01
		695.00		99.60	4.37E+01		-6.30E+00	2.13E+01
		720.50		53.80	8.75E+01		9.81E+00	4.27E+01
+	SN-126	87.57	*	37.00	5.49E-01	5.49E-01	1.10E+00	2.73E-01
	SB-127	473.00		25.00	4.07E+07	2.74E+07	3.52E+06	2.00E+07
		685.20		35.70	2.74E+07		-7.74E+06	1.33E+07
		783.80		14.70	8.55E+07		1.28E+08	4.18E+07
	I-129	29.78		57.00	9.15E-01	9.15E-01	-1.65E-01	4.53E-01
		33.60		13.20	2.61E+00		3.37E-01	1.30E+00
		39.58		7.52	3.05E+00		-1.32E+00	1.51E+00
	I-131	284.30		6.05	1.53E+04	1.08E+03	8.08E+03	7.58E+03
		364.48		81.20	1.08E+03		1.46E+02	5.34E+02
		636.97		7.26	1.19E+04		-2.06E+02	5.83E+03
		722.89		1.80	5.26E+04		-8.72E+03	2.57E+04
	TE-132	49.72		13.10	2.00E+09	2.97E+08	-1.06E+10	9.90E+08
		228.16		88.00	2.97E+08		8.78E+07	1.47E+08
	BA-133	81.00		33.00	5.27E-01	5.27E-01	-7.14E+00	2.62E-01
		302.84		17.80	1.02E+00		-1.90E-01	5.03E-01
		356.01		60.00	6.46E-01		2.94E-02	3.21E-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	2.24E+05	2.24E+05	-3.03E+06	1.11E+05
	CS-134	563.23		8.38	2.31E+00	2.36E-01	4.18E-02	1.13E+00
		569.32		15.43	1.25E+00		-7.79E-01	6.12E-01
		604.70		97.60	3.26E-01		4.68E-05	1.61E-01
		795.84		85.40	2.36E-01		2.88E-02	1.15E-01
		801.93		8.73	2.42E+00		1.84E-01	1.18E+00
	CS-135	268.24		16.00	1.16E+00	1.16E+00	8.74E-01	5.72E-01
@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22		7.46	3.88E+02	3.66E+01	-1.01E+02	1.93E+02
		163.89		4.61	6.17E+02		2.29E+02	3.06E+02

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CS-136	176.55		13.56	2.08E+02	3.66E+01	1.41E+01	1.03E+02
		273.65		12.66	2.79E+02		2.17E+02	1.38E+02
		340.57		48.50	7.21E+01		6.38E+01	3.56E+01
		818.50		99.70	3.66E+01		2.25E+01	1.79E+01
		1048.07		79.60	4.81E+01		1.31E+00	2.34E+01
		1235.34		19.70	3.40E+02		9.02E+02	1.67E+02
	CS-137	661.65		85.12	2.33E-01	2.33E-01	-2.02E-01	1.14E-01
	LA-138	788.74		34.00	6.19E-01	3.06E-01	2.62E-03	3.03E-01
		1435.80		66.00	3.06E-01		3.41E-02	1.47E-01
	CE-139	165.85		80.35	3.13E-01	3.13E-01	9.02E-02	1.55E-01
	BA-140	162.64		6.70	4.93E+02	1.54E+02	9.16E+01	2.45E+02
		304.84		4.50	8.43E+02		3.27E+01	4.16E+02
		423.70		3.20	1.31E+03		9.90E+01	6.44E+02
		437.55		2.00	1.92E+03		2.14E+02	9.43E+02
		537.32		25.00	1.54E+02		8.30E+01	7.56E+01
	LA-140	328.77		20.50	1.91E+02	5.44E+01	-8.18E+01	9.42E+01
		487.03		45.50	8.69E+01		6.49E+01	4.27E+01
		815.85		23.50	1.75E+02		4.30E+01	8.54E+01
		1596.49		95.49	5.44E+01		6.23E+00	2.62E+01
	CE-141	145.44		48.40	2.63E+00	2.63E+00	2.70E+00	1.31E+00
@	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	1.64E+00	1.64E+00	1.38E-02	8.13E-01
	PM-144	476.78		42.00	5.06E-01	2.02E-01	-3.32E-02	2.49E-01
		618.01		98.60	2.02E-01		1.38E-02	9.85E-02
		696.49		99.49	2.09E-01		-5.46E-02	1.02E-01
	PM-145	36.85		21.70	1.24E+00	6.60E-01	-5.04E-01	6.16E-01
		37.36		39.70	6.60E-01		-2.30E-01	3.27E-01
		42.30		15.10	1.38E+00		1.85E-04	6.85E-01
		72.40		2.31	8.39E+00		-7.43E+01	4.17E+00
+	PM-146	453.90	*	39.94	5.15E-01	5.15E-01	2.79E-01	2.54E-01
		735.90		14.01	1.34E+00		5.50E-02	6.54E-01
		747.13		13.10	1.45E+00		-4.29E-01	7.05E-01
	ND-147	91.11		28.90	3.26E+02	3.26E+02	-1.91E+02	1.62E+02
		531.02		13.10	6.98E+02		1.60E+02	3.42E+02
	PM-149	285.90		3.10	1.84E+14	1.84E+14	1.42E+13	9.10E+13
	EU-152	121.78		20.50	6.56E-01	6.56E-01	-1.23E-01	3.25E-01
		244.69		5.40	4.79E+00		-9.28E-02	2.38E+00
		344.27		19.13	9.68E-01		-4.69E-01	4.78E-01
		778.89		9.20	2.01E+00		5.27E-01	9.79E-01
		964.01		10.40	2.16E+00		1.42E+00	1.06E+00
		1085.78		7.22	2.73E+00		-5.90E-01	1.32E+00
		1112.02		9.60	2.13E+00		4.15E-01	1.03E+00
		1407.95		14.94	2.11E+00		5.59E+00	1.03E+00
	GD-153	97.43		31.30	5.66E-01	5.66E-01	3.27E-01	2.81E-01
		103.18		22.20	7.63E-01		-4.24E-01	3.79E-01
	EU-154	123.07		40.50	3.37E-01	3.37E-01	1.78E-02	1.67E-01
		723.30		19.70	9.48E-01		-1.57E-01	4.63E-01
		873.19		11.50	1.76E+00		-8.03E-01	8.57E-01
		996.32		10.30	2.09E+00		2.31E-01	1.02E+00
		1004.76		17.90	1.20E+00		-3.03E-01	5.85E-01
		1274.45		35.50	5.37E-01		1.42E-01	2.58E-01

Analysis Report for 1707090-10

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-155	86.50		30.90	5.92E-01	5.92E-01	1.61E+00	2.94E-01
		105.30		20.70	6.36E-01		-6.78E-01	3.16E-01
	EU-156	811.77		10.40	1.66E+02	1.66E+02	-2.90E+02	8.08E+01
		1153.47		7.20	3.38E+02		4.87E+02	1.65E+02
		1230.71		8.90	2.09E+02		3.72E+01	1.01E+02
	HO-166M	184.41		72.60	3.00E-01	3.00E-01	2.57E+00	1.49E-01
		280.45		29.60	5.98E-01		-3.66E-01	2.96E-01
		410.94		11.10	1.71E+00		-8.93E-01	8.44E-01
		711.69		54.10	3.35E-01		-4.62E-02	1.64E-01
	TM-171	66.72		0.14	1.36E+02	1.36E+02	7.12E+01	6.74E+01
	HF-172	67.35		5.31	3.49E+00	1.32E+00	1.51E+00	1.74E+00
		125.81		11.30	1.32E+00		3.19E-01	6.54E-01
	LU-172	181.53		20.60	2.16E+04	9.03E+03	-8.75E+00	1.07E+04
		900.72		29.81	2.02E+04		-2.51E+03	9.86E+03
		1093.66		62.50	9.03E+03		-1.79E+03	4.37E+03
+	LU-173	100.72		5.24	2.86E+00	1.64E+00	2.42E+00	1.42E+00
		272.11	*	21.20	1.64E+00		2.00E+00	8.17E-01
	HF-175	343.40		84.00	5.80E-01	5.80E-01	-2.81E-01	2.86E-01
	LU-176	88.34		13.30	1.33E+00	1.81E-01	3.72E+00	6.63E-01
		201.83		86.00	1.81E-01		-5.50E-02	8.99E-02
		306.78		94.00	1.84E-01		-4.95E-02	9.09E-02
	HF-181	133.02		41.70	1.68E+00	1.09E+00	1.58E-01	8.35E-01
		345.85		17.20	5.38E+00		-7.80E+00	2.66E+00
		482.03		82.80	1.09E+00		-4.05E-01	5.34E-01
	TA-182	67.75		41.20	7.40E-01	7.40E-01	3.21E-01	3.68E-01
		1121.30		34.90	3.01E+00		2.94E+01	1.49E+00
		1189.05		16.23	2.24E+00		3.63E-01	1.08E+00
		1221.41		26.98	1.33E+00		-3.43E-01	6.44E-01
		1231.02		11.44	3.20E+00		5.70E-01	1.55E+00
	IR-192	308.46		29.68	1.47E+00	9.44E-01	-2.81E-01	7.26E-01
		468.07		48.10	9.44E-01		2.95E-01	4.64E-01
	HG-203	279.19		77.30	1.01E+00	1.01E+00	-5.65E-01	5.00E-01
	TL-204	374.74		94.11	1.94E-01	1.94E-01	3.11E-02	9.55E-02
		899.15		99.16	2.22E-01		4.92E-02	1.08E-01
		911.74		91.10	2.57E-01		1.78E-01	1.25E-01
	BI-207	569.67		97.72	1.83E-01	1.83E-01	-2.85E-02	8.97E-02
		1063.62		74.90	2.59E-01		-5.84E-02	1.25E-01
+	TL-208	583.14	*	30.22	1.07E+00	1.64E-01	5.91E-01	5.30E-01
		860.37		4.48	4.32E+00		-2.27E+00	2.11E+00
		2614.66	*	35.85	1.64E-01		4.40E-01	6.58E-02
	BI-210M	262.00		45.00	4.00E-01	4.00E-01	5.04E-02	1.98E-01
		300.00		23.00	9.74E-01		5.59E-04	4.83E-01
+	PB-210	46.50	*	4.25	5.25E+00	5.25E+00	1.88E+01	2.61E+00
	PB-211	404.84		2.90	6.83E+00	6.83E+00	6.13E+00	3.37E+00
		831.96		2.90	6.93E+00		5.49E-01	3.38E+00
	BI-212	727.17		11.80	1.56E+00	1.56E+00	9.52E-01	7.61E-01
		1620.62		2.75	7.67E+00		1.46E+00	3.68E+00
+	PB-212	238.63	*	44.60	8.10E-01	8.10E-01	1.23E+00	4.03E-01
		300.09		3.41	6.57E+00		3.77E-03	3.26E+00
+	BI-214	609.31	*	46.30	6.50E-01	6.50E-01	3.50E+01	3.21E-01
		1120.29	*	15.10	2.41E+00		3.74E+01	1.18E+00
		1764.49	*	15.80	1.45E+00		3.95E+01	6.98E-01
		2204.22	*	4.98	3.45E+00		3.63E+01	1.62E+00

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	PB-214	295.21	*	19.19	1.47E+00	6.79E-01	3.80E+01	7.28E-01
		351.92	*	37.19	6.79E-01		3.85E+01	3.37E-01
	RN-219	401.80		6.50	3.00E+00	3.00E+00	5.50E-01	1.48E+00
	RA-223	323.87		3.88	4.58E+00	4.58E+00	1.56E+00	2.26E+00
	RA-224	240.98		3.95	6.81E+00	6.81E+00	7.03E+01	3.38E+00
	RA-225	40.00		31.00	7.53E+01	7.53E+01	-3.26E+01	3.73E+01
+	RA-226	186.21	*	3.28	8.74E+00	8.74E+00	7.68E+01	4.35E+00
	TH-227	50.10		8.40	2.10E+00	1.66E+00	-1.12E+01	1.04E+00
		236.00		11.50	1.66E+00		-2.94E+00	8.24E-01
		256.20		6.30	2.88E+00		-3.93E-01	1.43E+00
	AC-228	338.32		11.40	1.64E+00	8.21E-01	2.42E-01	8.08E-01
		911.07		27.70	8.21E-01		9.18E-01	4.01E-01
		969.11		16.60	1.23E+00		6.84E-01	5.99E-01
	TH-230	48.44		16.90	1.16E+00	1.16E+00	1.58E+00	5.76E-01
		62.85		4.60	4.15E+00		2.09E+01	2.06E+00
		67.67		0.37	4.52E+01		1.96E+01	2.25E+01
	PA-231	283.67		1.60	1.12E+01	7.73E+00	8.36E+00	5.55E+00
		302.67		2.30	7.73E+00		-1.44E+00	3.82E+00
	TH-231	25.64		14.70	6.55E+00	2.61E+00	-3.02E+00	3.24E+00
		84.21		6.40	2.61E+00		1.11E+00	1.30E+00
	PA-233	311.98		38.60	5.73E+00	5.73E+00	2.36E+00	2.83E+00
	PA-234	131.20		20.40	6.72E-01	6.72E-01	-3.31E-03	3.33E-01
		733.99		8.80	2.06E+00		-2.54E-01	1.00E+00
		946.00		12.00	1.62E+00		-1.28E+00	7.86E-01
+	PA-234M	1001.03	*	0.92	3.41E+01	3.41E+01	4.34E+01	1.67E+01
+	TH-234	63.29	*	3.80	6.09E+00	6.09E+00	2.46E+01	3.03E+00
+	U-235	143.76	*	10.50	1.69E+00	1.69E+00	2.62E+00	8.41E-01
		163.35		4.70	3.24E+00		1.21E+00	1.61E+00
		205.31	*	4.70	3.40E+00		2.57E+00	1.68E+00
	NP-237	86.50		12.60	1.40E+00	1.40E+00	3.81E+00	6.95E-01
	NP-239	106.10		22.70	2.70E+12	2.70E+12	-2.87E+12	1.34E+12
		228.18		10.70	8.03E+12		2.37E+12	3.98E+12
		277.60		14.10	6.15E+12		-2.81E+12	3.04E+12
	AM-241	59.54		35.90	4.63E-01	4.63E-01	2.24E-02	2.30E-01
	AM-243	74.67		66.00	3.52E-01	3.52E-01	1.33E+00	1.75E-01
	CM-243	209.75		3.29	5.50E+00	1.29E+00	1.06E+00	2.73E+00
		228.14		10.60	1.69E+00		5.00E-01	8.39E-01
		277.60		14.00	1.29E+00		-5.92E-01	6.41E-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.

Analysis Report for 1707090-10

HTC-A07-S001-0006-01

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: HTC-A07-S001-0006-01

Elapsed Live time: 3600
Elapsed Real Time: 3627

Channel								
1:	0	0	0	0	0	0	0	0
9:	50	1017	1003	1003	1021	984	964	1037
17:	995	912	915	956	881	830	811	762
25:	737	820	833	812	845	765	793	769
33:	791	774	777	787	758	813	769	825
41:	834	830	896	868	948	1275	1814	1360
49:	947	1087	1124	1106	1300	1448	1234	1114
57:	1276	1303	1382	1504	1451	1676	2394	2859
65:	2140	1715	1658	1874	1833	1761	1808	1834
73:	1916	2598	4220	4411	5461	6156	3109	1935
81:	1824	1807	1736	2110	2076	1745	2388	2820
89:	2146	2039	1954	2144	3284	2655	1724	1414
97:	1149	1191	1361	1170	1103	1124	1190	1075
105:	1129	1060	1130	1110	1197	1177	1170	1208
113:	1217	1267	1156	1114	1110	1094	1097	1107
121:	1057	1051	1136	1102	1129	1089	1079	1074
129:	1056	1079	1100	1113	1085	1117	1071	1102
137:	1110	1094	1180	1173	1120	1092	1163	1404
145:	1332	1165	1130	1076	1145	1170	1104	1149
153:	1128	1230	1289	1156	1120	1105	1099	1060
161:	1051	1034	1044	1093	1035	1003	1020	962
169:	973	988	1010	917	933	892	910	961
177:	936	867	967	920	943	932	941	924
185:	1364	2793	2980	1389	920	833	828	830
193:	864	871	841	854	850	826	842	848
201:	788	811	826	749	771	859	748	749
209:	700	690	717	742	687	679	669	653
217:	692	644	632	610	640	651	638	593
225:	626	615	635	657	592	606	596	623
233:	572	568	636	716	782	674	766	708
241:	1046	2451	2447	954	522	501	528	520
249:	508	559	528	502	463	502	507	536
257:	533	524	628	588	508	447	431	427
265:	475	418	445	445	512	625	629	540
273:	497	507	507	491	453	429	432	412
281:	446	428	436	421	421	452	435	399
289:	391	394	419	415	445	1053	3723	4951
297:	1861	486	394	419	387	385	376	374
305:	354	361	355	340	333	333	348	339
313:	349	332	354	324	301	347	303	317
321:	307	317	335	351	372	332	340	332
329:	342	383	321	320	324	368	329	346
337:	305	376	392	342	319	321	331	330
345:	294	322	315	323	297	523	2517	7502
353:	6246	1647	323	261	254	260	259	245
361:	248	230	260	261	245	236	241	259

369:	246	237	237	259	253	257	255	232

Sample Title: HTC-A07-S001-0006-01

Channel								
377:	213	256	246	245	245	248	227	220
385:	224	270	339	300	320	291	232	225
393:	252	257	275	250	260	256	255	243
401:	257	312	270	280	312	298	262	224
409:	257	253	245	235	275	262	256	250
417:	254	265	224	242	244	270	230	227
425:	234	251	256	234	216	218	200	220
433:	206	190	202	200	190	193	189	186
441:	195	184	187	183	188	191	183	186
449:	172	167	167	143	183	188	201	188
457:	183	185	168	165	199	188	204	200
465:	177	166	166	159	185	192	184	160
473:	167	159	167	154	149	178	156	180
481:	213	161	140	155	138	162	193	214
489:	168	157	164	143	136	147	156	147
497:	147	129	135	142	144	129	145	154
505:	135	155	133	122	144	190	197	207
513:	153	147	140	130	127	114	138	135
521:	120	133	132	133	129	129	132	133
529:	128	123	100	121	164	149	168	83
537:	132	131	140	135	108	109	125	143
545:	119	113	114	123	128	117	107	122
553:	109	117	124	108	112	107	128	127
561:	120	104	129	122	138	109	121	126
569:	120	122	129	96	127	132	114	114
577:	112	99	126	140	153	115	162	137
585:	129	96	114	103	113	108	119	94
593:	103	97	114	118	108	96	110	103
601:	105	114	115	118	118	118	203	1255
609:	4371	4773	1608	228	91	79	108	100
617:	93	84	82	72	79	74	103	81
625:	86	101	53	86	80	88	81	75
633:	88	87	94	93	75	88	81	85
641:	83	97	73	79	81	60	84	81
649:	64	88	79	89	73	73	73	81
657:	92	87	78	75	98	112	95	119
665:	214	234	111	94	85	71	82	77
673:	76	75	80	86	85	74	78	94
681:	70	59	78	83	83	75	79	93
689:	79	89	63	74	72	82	70	82
697:	72	80	94	66	81	97	127	111
705:	87	96	96	76	100	87	85	75
713:	85	65	85	79	91	93	77	91
721:	115	70	60	79	81	78	85	84
729:	75	94	69	87	97	73	92	62
737:	69	80	75	75	89	107	108	83
745:	76	88	78	67	75	76	85	83
753:	80	77	58	71	65	82	67	78
761:	78	56	80	73	107	122	249	440
769:	433	197	85	74	73	69	67	79
777:	66	66	72	82	58	76	84	70
785:	136	160	137	73	76	71	64	74
793:	76	58	68	63	74	84	65	75

801:	59	63	87	78	104	175	161	89

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Channel								
809:	63	80	66	78	73	61	63	65
817:	83	84	72	62	76	89	74	65
825:	63	84	76	78	73	64	80	80
833:	81	81	81	66	84	79	130	94
841:	87	66	67	78	62	73	90	67
849:	53	62	72	65	65	87	84	67
857:	57	70	63	74	59	66	83	62
865:	88	63	58	82	65	65	77	75
873:	81	48	71	64	76	78	80	70
881:	60	78	62	77	85	74	68	82
889:	70	83	70	87	81	59	65	77
897:	70	67	69	87	72	68	78	72
905:	85	68	61	81	69	85	110	89
913:	71	86	55	79	58	66	54	77
921:	96	67	74	53	55	65	64	61
929:	65	57	64	90	193	304	211	94
937:	63	55	61	64	57	70	54	61
945:	58	58	52	59	57	69	73	57
953:	70	57	55	68	74	54	68	50
961:	76	78	77	88	76	56	58	64
969:	66	60	57	64	58	37	71	66
977:	55	52	51	64	63	51	66	51
985:	61	47	52	64	55	68	49	64
993:	51	59	73	60	59	59	71	96
1001:	122	97	57	66	55	52	50	48
1009:	65	63	50	50	59	54	55	56
1017:	54	46	42	60	48	66	51	48
1025:	50	50	37	48	46	49	45	54
1033:	61	50	44	46	49	49	49	40
1041:	61	46	43	45	57	54	48	50
1049:	56	50	61	65	56	52	38	55
1057:	47	49	44	48	40	45	48	43
1065:	41	48	55	54	47	55	43	67
1073:	57	36	45	49	55	43	42	46
1081:	51	50	46	54	39	38	45	40
1089:	51	45	45	41	48	64	36	47
1097:	36	51	44	45	44	38	52	45
1105:	57	50	44	39	37	49	55	48
1113:	44	45	45	45	57	140	527	1003
1121:	700	228	65	47	41	43	46	45
1129:	45	48	44	44	47	57	40	41
1137:	51	47	38	38	46	43	61	28
1145:	33	36	53	48	42	38	47	46
1153:	54	112	129	98	72	50	37	46
1161:	32	38	45	36	44	47	41	38
1169:	40	44	44	54	33	35	33	37
1177:	40	34	40	49	36	47	42	42
1185:	38	43	38	45	38	42	27	48
1193:	40	34	37	28	38	53	29	29
1201:	54	32	33	41	34	42	56	58
1209:	43	37	39	44	31	33	35	39
1217:	29	34	43	39	38	45	37	27
1225:	46	44	33	32	41	38	41	46

1233:	33	38	41	96	264	371	204	80

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Channel								
1241:	30	32	32	35	34	37	40	30
1249:	29	32	50	44	47	54	47	37
1257:	31	32	39	39	30	39	26	40
1265:	30	36	41	29	38	34	27	42
1273:	37	33	28	21	30	43	55	98
1281:	129	71	38	36	24	35	39	35
1289:	27	28	23	29	31	31	24	36
1297:	23	40	36	19	35	36	41	38
1305:	21	33	35	25	27	23	31	38
1313:	43	31	20	31	37	37	35	29
1321:	32	35	32	32	34	36	26	28
1329:	40	31	27	29	38	33	33	28
1337:	37	36	30	38	23	27	29	37
1345:	30	32	29	31	30	30	35	37
1353:	30	27	16	20	24	36	30	37
1361:	23	35	26	18	32	33	27	31
1369:	25	28	28	23	37	38	55	139
1377:	252	225	99	64	26	28	28	57
1385:	64	51	42	24	18	29	37	29
1393:	29	33	31	34	36	34	33	56
1401:	93	90	38	40	41	56	125	159
1409:	72	41	34	31	30	33	32	36
1417:	43	36	34	30	27	29	31	35
1425:	41	44	31	39	36	29	33	27
1433:	25	29	27	34	36	34	25	28
1441:	28	25	31	33	29	45	31	31
1449:	27	26	31	34	31	29	31	31
1457:	30	43	61	89	84	41	42	26
1465:	38	42	32	32	42	29	34	29
1473:	38	30	26	24	40	35	40	33
1481:	31	42	24	31	39	38	35	32
1489:	24	43	26	42	34	32	36	37
1497:	42	36	24	34	31	45	27	47
1505:	30	37	58	108	159	98	48	35
1513:	33	37	33	36	38	34	37	32
1521:	28	39	32	28	26	29	29	36
1529:	42	22	38	31	29	26	25	29
1537:	42	46	43	50	35	41	42	40
1545:	26	35	36	33	20	18	22	25
1553:	28	24	20	21	20	28	24	36
1561:	27	25	17	19	18	24	27	23
1569:	21	25	25	21	27	21	24	15
1577:	23	15	17	30	31	48	63	42
1585:	22	27	25	31	23	26	29	32
1593:	21	35	26	23	22	27	33	34
1601:	29	20	17	20	27	17	30	15
1609:	20	26	20	22	24	22	20	21
1617:	20	23	19	22	27	18	21	18
1625:	10	27	12	21	19	20	15	21
1633:	19	15	21	21	9	20	20	20
1641:	24	13	23	10	13	7	17	16
1649:	13	12	10	14	17	17	22	21
1657:	17	17	27	54	58	38	26	14

1665:	14	14	16	11	11	12	15	11

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Channel								
1673:	17	12	15	10	18	15	10	13
1681:	10	17	16	14	12	10	12	8
1689:	14	15	13	17	18	18	15	8
1697:	11	15	16	13	12	8	15	12
1705:	11	14	12	11	11	16	18	8
1713:	4	9	12	12	6	11	6	6
1721:	4	13	9	9	8	12	41	113
1729:	132	111	45	11	14	11	15	8
1737:	12	12	13	11	6	9	7	11
1745:	8	13	12	5	10	10	9	12
1753:	13	10	5	13	14	12	10	12
1761:	34	148	456	670	445	127	26	9
1769:	1	6	6	10	6	6	13	9
1777:	6	6	12	12	11	7	9	16
1785:	8	8	5	8	6	4	8	8
1793:	10	8	4	10	8	12	12	7
1801:	8	4	6	10	7	6	14	8
1809:	7	9	8	5	6	6	11	10
1817:	3	7	15	7	12	6	9	5
1825:	6	5	9	5	12	6	6	10
1833:	12	6	4	14	16	18	19	7
1841:	7	7	11	12	28	69	86	52
1849:	25	6	9	2	3	9	8	14
1857:	11	9	4	6	13	6	6	8
1865:	8	9	7	7	9	15	7	12
1873:	10	15	5	1	6	5	6	4
1881:	8	7	7	6	9	6	17	11
1889:	14	6	10	14	9	8	10	13
1897:	15	6	7	11	12	13	9	10
1905:	7	2	3	13	13	14	11	7
1913:	5	5	3	7	4	9	9	4
1921:	9	7	1	7	8	8	7	12
1929:	4	3	9	10	4	10	14	11
1937:	9	9	5	14	9	11	8	8
1945:	8	7	8	6	4	5	10	8
1953:	11	6	5	10	10	7	7	6
1961:	7	8	7	3	12	13	8	8
1969:	13	4	17	13	7	5	9	5
1977:	4	7	3	5	5	6	5	4
1985:	10	9	5	3	3	6	7	5
1993:	11	5	7	4	6	7	3	3
2001:	6	6	5	7	2	3	2	5
2009:	11	9	5	11	3	8	3	7
2017:	7	10	4	8	6	10	3	2
2025:	6	0	4	6	10	7	5	7
2033:	4	5	3	5	7	9	6	8
2041:	5	5	5	4	3	6	7	8
2049:	4	5	5	4	7	2	8	5
2057:	2	3	2	2	4	9	6	2
2065:	6	5	5	5	7	4	6	3
2073:	4	3	5	6	1	9	5	3
2081:	5	4	3	6	1	6	3	2
2089:	1	3	10	4	3	6	7	4

2097:	3	2	3	7	5	5	4	4

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Channel								
2105:	4	3	4	3	7	4	5	0
2113:	5	2	6	14	32	57	25	9
2121:	2	6	3	6	3	3	5	4
2129:	3	4	5	5	2	4	3	4
2137:	1	1	1	2	2	2	3	2
2145:	2	2	2	3	6	2	0	4
2153:	6	2	3	3	4	3	2	4
2161:	2	4	4	2	4	3	3	2
2169:	5	0	2	1	0	5	2	2
2177:	4	7	4	8	3	3	3	0
2185:	1	3	1	3	4	2	1	6
2193:	5	2	2	4	2	5	6	6
2201:	30	75	155	143	63	9	4	2
2209:	5	4	4	5	4	1	2	2
2217:	1	1	1	2	4	1	3	2
2225:	1	0	4	1	2	1	8	1
2233:	2	3	1	2	0	1	0	2
2241:	1	1	3	3	2	3	4	2
2249:	1	0	2	2	2	1	3	2
2257:	1	4	1	0	1	1	1	0
2265:	1	1	1	2	2	1	4	1
2273:	2	0	3	5	2	2	4	3
2281:	2	3	1	3	1	4	2	1
2289:	1	3	6	6	8	3	6	0
2297:	2	4	2	3	1	2	2	3
2305:	1	0	4	3	1	3	1	0
2313:	5	0	2	1	0	1	0	2
2321:	2	2	2	0	0	3	1	1
2329:	1	1	3	2	0	0	1	0
2337:	2	0	2	0	1	1	0	3
2345:	2	0	0	1	0	0	0	0
2353:	2	0	2	3	0	1	1	2
2361:	0	2	0	1	1	1	0	1
2369:	1	1	0	1	1	1	1	1
2377:	2	1	0	1	0	0	1	0
2385:	1	2	2	0	2	1	0	1
2393:	0	2	0	2	0	0	1	2
2401:	1	0	1	0	1	0	1	0
2409:	1	1	0	4	0	0	2	2
2417:	0	1	1	0	0	1	1	0
2425:	0	0	0	0	0	0	2	0
2433:	1	1	0	1	2	1	1	0
2441:	1	0	1	5	17	23	41	23
2449:	9	1	3	1	0	0	0	0
2457:	0	1	0	1	1	1	1	2
2465:	1	0	1	0	0	1	0	0
2473:	1	2	0	0	0	0	0	1
2481:	0	0	1	0	0	0	1	2
2489:	1	0	0	0	0	0	1	0
2497:	1	0	0	0	1	1	1	0
2505:	0	1	1	0	1	0	0	2
2513:	1	0	0	0	0	0	0	0
2521:	0	1	0	0	0	0	0	0

2529:	3	0	0	0	0	2	0	0

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Channel								
2537:	0	0	0	1	1	0	0	2
2545:	0	1	0	1	1	0	2	0
2553:	0	0	1	0	0	2	1	0
2561:	0	0	0	1	1	0	0	0
2569:	0	0	0	1	1	0	0	0
2577:	1	0	0	0	0	1	1	0
2585:	1	0	0	1	0	0	0	0
2593:	0	0	0	0	1	2	1	0
2601:	1	1	0	0	1	0	0	0
2609:	0	0	0	6	13	12	6	3
2617:	1	0	1	1	0	0	0	0
2625:	0	2	0	0	0	0	0	0
2633:	0	0	0	0	0	0	0	0
2641:	0	0	0	0	0	0	0	0
2649:	0	0	0	0	0	1	0	0
2657:	0	0	2	0	1	0	0	0
2665:	0	0	0	0	1	0	0	0
2673:	1	0	0	1	0	0	0	0
2681:	0	1	0	0	0	1	3	1
2689:	0	1	0	0	1	2	3	0
2697:	0	0	0	1	0	2	0	1
2705:	1	0	0	0	0	0	0	0
2713:	0	2	1	0	0	0	0	0
2721:	0	0	2	0	0	0	0	1
2729:	0	0	0	0	0	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	0	0	2	1
2753:	0	0	0	1	0	1	0	0
2761:	0	0	0	0	0	0	1	1
2769:	0	0	0	0	0	0	0	0
2777:	0	0	2	0	0	1	0	1
2785:	0	0	0	0	0	2	0	0
2793:	0	0	0	0	0	0	0	0
2801:	0	1	0	0	0	1	1	0
2809:	0	0	0	0	0	0	0	0
2817:	1	1	0	0	2	0	0	0
2825:	0	0	1	0	0	0	1	1
2833:	0	0	2	0	0	0	1	0
2841:	0	0	0	0	0	1	0	0
2849:	1	0	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	1	0	0	0	0	0	0	0
2873:	1	0	0	0	0	2	0	0
2881:	1	2	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	1	0	0	0	1	0	0
2905:	0	0	0	0	1	0	0	0
2913:	0	0	0	0	0	0	1	1
2921:	1	0	0	0	0	0	0	1
2929:	0	0	0	0	0	0	0	0
2937:	0	0	1	0	0	0	0	0
2945:	0	0	1	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	1	0	0	1	0	2	0

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

3393:	0	0	0	0	0	0	0	0

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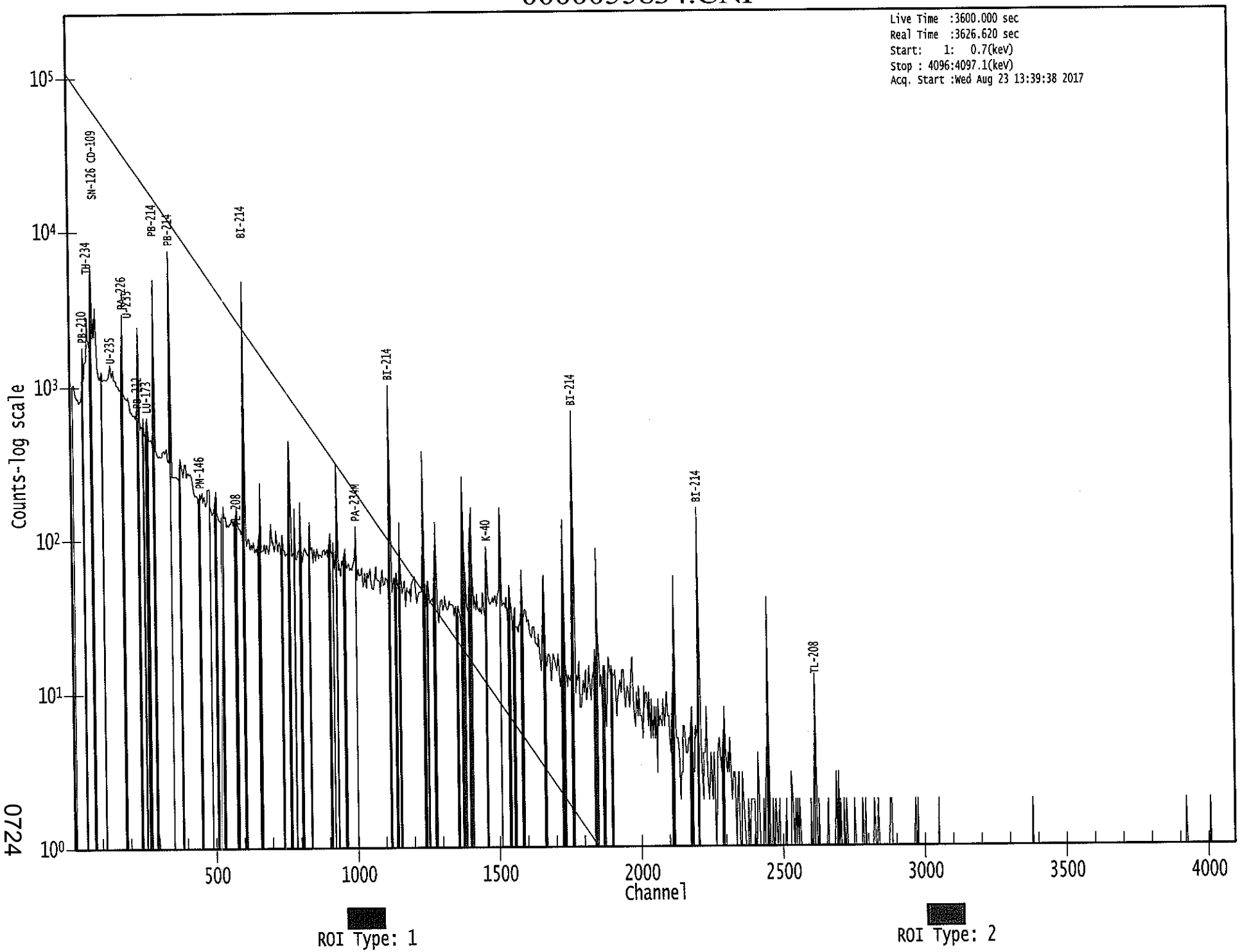
Channel								
3401:	0	0	1	0	0	0	0	1
3409:	0	0	0	0	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	1	0	0	1	0
3433:	0	1	0	0	0	0	0	1
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	1	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0
3481:	0	0	1	0	0	0	0	0
3489:	1	0	0	0	0	1	0	0
3497:	0	0	1	0	0	0	0	0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

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A07-S001-0006-01

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

0000055834.CNF



0724

VB 8/23/17

Apex-Gamma

Analysis Report for 1707090-11
HTC-A07-S001-0612-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-11
Sample Description	: HTC-A07-S001-0612-01
Sample Type	: SOIL
Sample Size	: 7.489E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:54:23AM
Acquisition Started	: 8/23/2017 2:40:34PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3616.1 seconds
Dead Time	: 0.44 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 18 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55835

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 3:40:53PM
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	46.34	46.97	0.0000	0.00
2	53.05	53.67	0.0000	0.00
3	63.13	63.74	0.0000	0.00
4	74.72	75.31	0.0000	0.00
5	77.13	77.72	0.0000	0.00
6	87.57	88.15	0.0000	0.00
7	92.46	93.03	0.0000	0.00
8	112.55	113.10	0.0000	0.00
9	143.94	144.46	0.0000	0.00
10	154.26	154.77	0.0000	0.00
11	163.52	164.02	0.0000	0.00
12	185.90	186.38	0.0000	0.00
13	204.94	205.40	0.0000	0.00
14	237.63	238.06	0.0000	0.00
15	241.95	242.37	0.0000	0.00
16	257.64	258.05	0.0000	0.00
17	270.51	270.91	0.0000	0.00
18	274.77	275.16	0.0000	0.00
19	285.10	285.48	0.0000	0.00
20	295.19	295.56	0.0000	0.00
21	299.69	300.05	0.0000	0.00
22	348.94	349.25	0.0000	0.00
23	351.93	352.24	0.0000	0.00
24	356.12	356.43	0.0000	0.00
25	387.51	387.78	0.0000	0.00
26	405.87	406.13	0.0000	0.00
27	427.42	427.66	0.0000	0.00
28	454.83	455.03	0.0000	0.00
29	480.25	480.43	0.0000	0.00
30	486.54	486.72	0.0000	0.00
31	510.84	510.99	0.0000	0.00
32	534.09	534.22	0.0000	0.00
33	581.42	581.50	0.0000	0.00
34	609.43	609.49	0.0000	0.00
35	613.55	613.59	0.0000	0.00
36	632.53	632.56	0.0000	0.00
37	664.91	664.91	0.0000	0.00
38	671.95	671.94	0.0000	0.00
39	703.31	703.26	0.0000	0.00
40	719.80	719.74	0.0000	0.00
41	727.78	727.71	0.0000	0.00
42	742.17	742.09	0.0000	0.00

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	752.95	752.86	0.0000	0.00
44	768.50	768.39	0.0000	0.00
45	786.11	785.98	0.0000	0.00
46	806.40	806.25	0.0000	0.00
47	839.11	838.93	0.0000	0.00
48	934.37	934.09	0.0000	0.00
49	964.33	964.03	0.0000	0.00
50	969.48	969.17	0.0000	0.00
51	997.76	997.43	0.0000	0.00
52	1001.37	1001.03	0.0000	0.00
53	1032.53	1032.16	0.0000	0.00
54	1040.12	1039.74	0.0000	0.00
55	1052.39	1052.00	0.0000	0.00
56	1070.04	1069.64	0.0000	0.00
57	1103.78	1103.33	0.0000	0.00
58	1120.69	1120.23	0.0000	0.00
59	1133.22	1132.75	0.0000	0.00
60	1155.83	1155.33	0.0000	0.00
61	1208.11	1207.57	0.0000	0.00
62	1220.40	1219.84	0.0000	0.00
63	1238.60	1238.02	0.0000	0.00
64	1254.34	1253.75	0.0000	0.00
65	1281.35	1280.73	0.0000	0.00
66	1378.16	1377.44	0.0000	0.00
67	1385.46	1384.74	0.0000	0.00
68	1401.88	1401.14	0.0000	0.00
69	1408.58	1407.84	0.0000	0.00
70	1461.20	1460.40	0.0000	0.00
71	1509.53	1508.68	0.0000	0.00
72	1536.89	1536.02	0.0000	0.00
73	1544.15	1543.27	0.0000	0.00
74	1583.70	1582.78	0.0000	0.00
75	1596.44	1595.51	0.0000	0.00
76	1621.49	1620.54	0.0000	0.00
77	1661.94	1660.95	0.0000	0.00
78	1695.46	1694.44	0.0000	0.00
79	1730.22	1729.16	0.0000	0.00
80	1734.67	1733.61	0.0000	0.00
81	1765.12	1764.03	0.0000	0.00
82	1769.65	1768.55	0.0000	0.00
83	1819.56	1818.41	0.0000	0.00
84	1838.64	1837.48	0.0000	0.00
85	1848.04	1846.86	0.0000	0.00
86	1874.19	1872.99	0.0000	0.00
87	1894.49	1893.27	0.0000	0.00
88	1973.79	1972.49	0.0000	0.00
89	2010.74	2009.41	0.0000	0.00
90	2119.05	2117.61	0.0000	0.00
91	2204.87	2203.35	0.0000	0.00
92	2258.57	2257.01	0.0000	0.00
93	2293.85	2292.25	0.0000	0.00
94	2393.88	2392.18	0.0000	0.00
95	2448.29	2446.54	0.0000	0.00
96	2504.95	2503.15	0.0000	0.00
97	2524.13	2522.31	0.0000	0.00

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
98	2615.37	2613.46	0.0000	0.00
99	2893.05	2890.88	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 3:40:53PM

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	46.34	44 -	49	46.97	1.64E+03	259.88	1.23E+04	1.35
	2	53.05	51 -	56	53.67	5.17E+02	278.03	1.51E+04	1.40
	3	63.13	61 -	67	63.74	2.67E+03	393.19	2.64E+04	1.33
M	4	74.72	71 -	83	75.31	6.33E+03	371.32	2.12E+04	1.81
m	5	77.13	71 -	83	77.72	1.08E+04	398.84	2.14E+04	1.82
M	6	87.57	83 -	97	88.15	3.06E+03	306.61	1.78E+04	1.67
m	7	92.46	83 -	97	93.03	4.97E+03	311.94	1.52E+04	1.67
	8	112.55	111 -	116	113.10	3.77E+02	281.44	1.55E+04	1.72
	9	143.94	142 -	147	144.46	7.34E+02	283.34	1.54E+04	1.62
	10	154.26	153 -	157	154.77	3.42E+02	243.86	1.29E+04	2.03
	11	163.52	162 -	166	164.02	2.68E+02	231.31	1.16E+04	1.17
	12	185.90	182 -	189	186.38	6.23E+03	356.49	1.70E+04	1.96
	13	204.94	204 -	208	205.40	1.79E+02	200.45	8.74E+03	1.93
M	14	237.63	233 -	245	238.06	1.19E+03	375.03	1.52E+04	3.55
m	15	241.95	233 -	245	242.37	6.00E+03	235.04	6.74E+03	1.55
	16	257.64	254 -	262	258.05	6.26E+02	261.99	1.01E+04	1.47
M	17	270.51	267 -	278	270.91	1.04E+03	235.21	8.53E+03	2.78
m	18	274.77	267 -	278	275.16	4.80E+02	209.55	7.38E+03	2.37
	19	285.10	283 -	288	285.48	2.88E+02	174.69	5.87E+03	3.88
M	20	295.19	290 -	303	295.56	1.39E+04	277.54	4.79E+03	1.67
m	21	299.69	290 -	303	300.05	4.69E+02	204.61	6.47E+03	2.25
M	22	348.94	346 -	360	349.25	4.04E+02	184.61	4.50E+03	1.90
m	23	351.93	346 -	360	352.24	2.39E+04	333.64	3.30E+03	1.67
m	24	356.12	346 -	360	356.43	7.23E+02	244.34	4.07E+03	2.31
	25	387.51	383 -	391	387.78	4.60E+02	188.69	5.20E+03	4.17
	26	405.87	404 -	409	406.13	1.76E+02	139.13	3.72E+03	1.97
	27	427.42	424 -	431	427.66	3.31E+02	160.02	4.01E+03	5.45
	28	454.83	452 -	458	455.03	1.37E+02	131.92	3.06E+03	1.26
	29	480.25	478 -	484	480.43	1.55E+02	121.00	2.55E+03	1.85
	30	486.54	484 -	490	486.72	1.82E+02	120.56	2.52E+03	1.34
	31	510.84	507 -	515	510.99	4.11E+02	145.85	3.02E+03	2.30
	32	534.09	531 -	536	534.22	8.47E+01	99.66	1.92E+03	2.38
	33	581.42	578 -	585	581.50	2.81E+02	118.63	2.16E+03	5.14
M	34	609.43	603 -	622	609.49	1.81E+04	278.78	1.17E+03	1.82
m	35	613.55	603 -	622	613.59	5.75E+02	216.73	1.34E+03	2.49
	36	632.53	630 -	635	632.56	7.58E+01	75.98	1.09E+03	1.57
	37	664.91	659 -	669	664.91	6.06E+02	136.37	2.16E+03	2.22
	38	671.95	670 -	675	671.94	7.59E+01	75.33	1.05E+03	4.45
	39	703.31	700 -	706	703.26	1.83E+02	90.56	1.36E+03	2.12
	40	719.80	716 -	723	719.74	1.16E+02	98.22	1.54E+03	1.73

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	727.78	724 -	731	727.71	1.18E+02	96.93	1.48E+03	3.59
	42	742.17	737 -	747	742.09	2.19E+02	121.23	1.84E+03	2.10
	43	752.95	749 -	756	752.86	1.06E+02	89.20	1.25E+03	4.38
	44	768.50	763 -	774	768.39	1.90E+03	154.38	2.03E+03	2.26
	45	786.11	781 -	790	785.98	5.02E+02	117.71	1.69E+03	1.87
	46	806.40	802 -	810	806.25	4.05E+02	105.80	1.48E+03	2.21
	47	839.11	836 -	841	838.93	2.15E+02	76.90	1.01E+03	2.07
	48	934.37	928 -	939	934.09	9.83E+02	137.84	1.88E+03	2.17
M	49	964.33	959 -	972	964.03	1.51E+02	77.53	9.55E+02	2.45
m	50	969.48	959 -	972	969.17	7.78E+01	76.73	1.06E+03	2.38
M	51	997.76	995 -	1005	997.43	5.45E+01	56.80	6.44E+02	2.31
m	52	1001.37	995 -	1005	1001.03	2.48E+02	72.09	8.33E+02	2.07
	53	1032.53	1029 -	1035	1032.16	6.29E+01	67.17	7.64E+02	2.14
	54	1040.12	1036 -	1043	1039.74	9.41E+01	71.97	8.02E+02	5.01
	55	1052.39	1048 -	1055	1052.00	1.01E+02	78.46	9.57E+02	1.44
	56	1070.04	1065 -	1074	1069.64	1.24E+02	88.51	1.04E+03	3.99
	57	1103.78	1100 -	1106	1103.33	5.30E+01	64.65	7.28E+02	1.80
	58	1120.69	1115 -	1125	1120.23	3.95E+03	163.27	1.46E+03	2.03
	59	1133.22	1129 -	1137	1132.75	8.20E+01	80.98	9.58E+02	1.46
	60	1155.83	1150 -	1160	1155.33	4.88E+02	106.06	1.23E+03	2.00
	61	1208.11	1204 -	1211	1207.57	1.46E+02	67.26	6.58E+02	2.01
	62	1220.40	1217 -	1224	1219.84	5.92E+01	64.87	6.66E+02	3.18
	63	1238.60	1232 -	1243	1238.02	1.43E+03	120.40	1.10E+03	2.12
	64	1254.34	1249 -	1258	1253.75	1.37E+02	79.92	8.32E+02	3.80
	65	1281.35	1276 -	1285	1280.73	3.54E+02	84.20	8.11E+02	2.12
M	66	1378.16	1372 -	1388	1377.44	9.88E+02	83.37	5.60E+02	2.28
m	67	1385.46	1372 -	1388	1384.74	2.02E+02	66.78	5.62E+02	2.62
M	68	1401.88	1397 -	1413	1401.14	3.03E+02	64.30	5.50E+02	2.17
m	69	1408.58	1397 -	1413	1407.84	5.52E+02	71.57	5.33E+02	2.29
	70	1461.20	1456 -	1465	1460.40	3.05E+02	84.11	8.39E+02	2.55
	71	1509.53	1504 -	1513	1508.68	5.15E+02	89.36	8.50E+02	2.36
M	72	1536.89	1534 -	1548	1536.02	9.76E+01	35.83	2.75E+02	3.23
m	73	1544.15	1534 -	1548	1543.27	1.75E+02	75.65	6.41E+02	3.24
	74	1583.70	1578 -	1588	1582.78	1.70E+02	72.22	6.04E+02	2.36
	75	1596.44	1589 -	1601	1595.51	1.06E+02	82.03	7.43E+02	6.71
	76	1621.49	1617 -	1625	1620.54	6.04E+01	48.39	3.21E+02	2.03
	77	1661.94	1656 -	1666	1660.95	2.37E+02	63.01	3.91E+02	2.10
	78	1695.46	1688 -	1702	1694.44	1.14E+02	63.88	3.78E+02	5.14
M	79	1730.22	1723 -	1739	1729.16	7.24E+02	61.11	1.47E+02	2.29
m	80	1734.67	1723 -	1739	1733.61	4.54E+01	62.31	1.87E+02	3.32
M	81	1765.12	1757 -	1787	1764.03	3.10E+03	115.08	1.56E+02	2.39
m	82	1769.65	1757 -	1787	1768.55	7.24E+01	100.50	1.24E+02	2.75
	83	1819.56	1815 -	1822	1818.41	2.38E+01	28.84	1.20E+02	2.93
M	84	1838.64	1835 -	1852	1837.48	4.22E+01	25.87	1.32E+02	2.48
m	85	1848.04	1835 -	1852	1846.86	4.71E+02	52.68	1.54E+02	2.39
	86	1874.19	1870 -	1876	1872.99	4.08E+01	30.03	1.30E+02	1.26
	87	1894.49	1885 -	1899	1893.27	6.14E+01	50.95	2.47E+02	7.77
	88	1973.79	1970 -	1976	1972.49	1.88E+01	21.66	6.85E+01	2.89
	89	2010.74	2005 -	2013	2009.41	2.22E+01	27.08	9.96E+01	6.58
	90	2119.05	2113 -	2121	2117.61	1.84E+02	36.35	8.91E+01	2.27
	91	2204.87	2197 -	2210	2203.35	8.84E+02	67.47	1.15E+02	2.84
	92	2258.57	2252 -	2262	2257.01	1.30E+01	13.22	1.60E+01	2.78
	93	2293.85	2287 -	2296	2292.25	5.76E+01	18.30	1.48E+01	2.54

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
94	2393.88	2388 -	2395	2392.18	1.10E+01	6.63	0.00E+00	3.20
95	2448.29	2440 -	2453	2446.54	2.57E+02	34.91	2.20E+01	2.58
96	2504.95	2499 -	2505	2503.15	9.54E+00	8.75	6.92E+00	2.10
97	2524.13	2518 -	2524	2522.31	4.67E+00	6.02	2.67E+00	2.48
98	2615.37	2609 -	2618	2613.46	7.98E+01	18.79	4.41E+00	2.52
99	2893.05	2887 -	2893	2890.88	8.00E+00	5.66	0.00E+00	2.83

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 3:40:53PM

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	46.34	44 -	49	1.64E+03	259.88	1.23E+04	2.03E+02
	2	53.05	51 -	56	5.17E+02	278.03	1.51E+04	2.25E+02
	3	63.13	61 -	67	2.67E+03	393.19	2.64E+04	3.12E+02
M	4	74.72	71 -	83	6.33E+03	371.32	2.12E+04	2.39E+02
m	5	77.13	71 -	83	1.08E+04	398.84	2.14E+04	2.41E+02
M	6	87.57	83 -	97	3.06E+03	306.61	1.78E+04	2.19E+02
m	7	92.46	83 -	97	4.97E+03	311.94	1.52E+04	2.03E+02
	8	112.55	111 -	116	3.77E+02	281.44	1.55E+04	2.29E+02
	9	143.94	142 -	147	7.34E+02	283.34	1.54E+04	2.29E+02
	10	154.26	153 -	157	3.42E+02	243.86	1.29E+04	1.98E+02
	11	163.52	162 -	166	2.68E+02	231.31	1.16E+04	1.88E+02
	12	185.90	182 -	189	6.23E+03	356.49	1.70E+04	2.63E+02
	13	204.94	204 -	208	1.79E+02	200.45	8.74E+03	1.63E+02
M	14	237.63	233 -	245	1.19E+03	375.03	1.52E+04	2.02E+02
m	15	241.95	233 -	245	6.00E+03	235.04	6.74E+03	1.35E+02
	16	257.64	254 -	262	6.26E+02	261.99	1.01E+04	2.11E+02
M	17	270.51	267 -	278	1.04E+03	235.21	8.53E+03	1.52E+02
m	18	274.77	267 -	278	4.80E+02	209.55	7.38E+03	1.41E+02
	19	285.10	283 -	288	2.88E+02	174.69	5.87E+03	1.41E+02
M	20	295.19	290 -	303	1.39E+04	277.54	4.79E+03	1.14E+02
m	21	299.69	290 -	303	4.69E+02	204.61	6.47E+03	1.32E+02

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	22	348.94	346 -	360	4.04E+02	184.61	4.50E+03	1.10E+02
m	23	351.93	346 -	360	2.39E+04	333.64	3.30E+03	9.44E+01
m	24	356.12	346 -	360	7.23E+02	244.34	4.07E+03	1.05E+02
	25	387.51	383 -	391	4.60E+02	188.69	5.20E+03	1.51E+02
	26	405.87	404 -	409	1.76E+02	139.13	3.72E+03	1.12E+02
	27	427.42	424 -	431	3.31E+02	160.02	4.01E+03	1.28E+02
	28	454.83	452 -	458	1.37E+02	131.92	3.06E+03	1.07E+02
	29	480.25	478 -	484	1.55E+02	121.00	2.55E+03	9.73E+01
	30	486.54	484 -	490	1.82E+02	120.56	2.52E+03	9.66E+01
	31	510.84	507 -	515	4.11E+02	145.85	3.02E+03	1.15E+02
	32	534.09	531 -	536	8.47E+01	99.66	1.92E+03	8.05E+01
	33	581.42	578 -	585	2.81E+02	118.63	2.16E+03	9.35E+01
M	34	609.43	603 -	622	1.81E+04	278.78	1.17E+03	5.62E+01
m	35	613.55	603 -	622	5.75E+02	216.73	1.34E+03	6.02E+01
	36	632.53	630 -	635	7.58E+01	75.98	1.09E+03	6.08E+01
	37	664.91	659 -	669	6.06E+02	136.37	2.16E+03	1.05E+02
	38	671.95	670 -	675	7.59E+01	75.33	1.05E+03	6.02E+01
	39	703.31	700 -	706	1.83E+02	90.56	1.36E+03	7.10E+01
	40	719.80	716 -	723	1.16E+02	98.22	1.54E+03	7.88E+01
	41	727.78	724 -	731	1.18E+02	96.93	1.48E+03	7.77E+01
	42	742.17	737 -	747	2.19E+02	121.23	1.84E+03	9.66E+01
	43	752.95	749 -	756	1.06E+02	89.20	1.25E+03	7.13E+01
	44	768.50	763 -	774	1.90E+03	154.38	2.03E+03	1.05E+02
	45	786.11	781 -	790	5.02E+02	117.71	1.69E+03	8.95E+01
	46	806.40	802 -	810	4.05E+02	105.80	1.48E+03	8.04E+01
	47	839.11	836 -	841	2.15E+02	76.90	1.01E+03	5.84E+01
	48	934.37	928 -	939	9.83E+02	137.84	1.88E+03	1.01E+02
M	49	964.33	959 -	972	1.51E+02	77.53	9.55E+02	5.08E+01
m	50	969.48	959 -	972	7.78E+01	76.73	1.06E+03	5.35E+01
M	51	997.76	995 -	1005	5.45E+01	56.80	6.44E+02	4.17E+01
m	52	1001.37	995 -	1005	2.48E+02	72.09	8.33E+02	4.75E+01
	53	1032.53	1029 -	1035	6.29E+01	67.17	7.64E+02	5.37E+01
	54	1040.12	1036 -	1043	9.41E+01	71.97	8.02E+02	5.70E+01
	55	1052.39	1048 -	1055	1.01E+02	78.46	9.57E+02	6.23E+01
	56	1070.04	1065 -	1074	1.24E+02	88.51	1.04E+03	7.04E+01
	57	1103.78	1100 -	1106	5.30E+01	64.65	7.28E+02	5.18E+01
	58	1120.69	1115 -	1125	3.95E+03	163.27	1.46E+03	8.57E+01
	59	1133.22	1129 -	1137	8.20E+01	80.98	9.58E+02	6.49E+01
	60	1155.83	1150 -	1160	4.88E+02	106.06	1.23E+03	7.93E+01
	61	1208.11	1204 -	1211	1.46E+02	67.26	6.58E+02	5.16E+01
	62	1220.40	1217 -	1224	5.92E+01	64.87	6.66E+02	5.18E+01
	63	1238.60	1232 -	1243	1.43E+03	120.40	1.10E+03	7.70E+01
	64	1254.34	1249 -	1258	1.37E+02	79.92	8.32E+02	6.28E+01
	65	1281.35	1276 -	1285	3.54E+02	84.20	8.11E+02	6.19E+01
M	66	1378.16	1372 -	1388	9.88E+02	83.37	5.60E+02	3.89E+01
m	67	1385.46	1372 -	1388	2.02E+02	66.78	5.62E+02	3.90E+01
M	68	1401.88	1397 -	1413	3.03E+02	64.30	5.50E+02	3.86E+01
m	69	1408.58	1397 -	1413	5.52E+02	71.57	5.33E+02	3.80E+01
	70	1461.20	1456 -	1465	3.05E+02	84.11	8.39E+02	6.29E+01
	71	1509.53	1504 -	1513	5.15E+02	89.36	8.50E+02	6.33E+01
M	72	1536.89	1534 -	1548	9.76E+01	35.83	2.75E+02	2.73E+01

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	73	1544.15	1534 -	1548	1.75E+02	75.65	6.41E+02	4.16E+01
	74	1583.70	1578 -	1588	1.70E+02	72.22	6.04E+02	5.54E+01
	75	1596.44	1589 -	1601	1.06E+02	82.03	7.43E+02	6.53E+01
	76	1621.49	1617 -	1625	6.04E+01	48.39	3.21E+02	3.77E+01
	77	1661.94	1656 -	1666	2.37E+02	63.01	3.91E+02	4.52E+01
	78	1695.46	1688 -	1702	1.14E+02	63.88	3.78E+02	4.95E+01
M	79	1730.22	1723 -	1739	7.24E+02	61.11	1.47E+02	1.99E+01
m	80	1734.67	1723 -	1739	4.54E+01	62.31	1.87E+02	2.25E+01
M	81	1765.12	1757 -	1787	3.10E+03	115.08	1.56E+02	2.06E+01
m	82	1769.65	1757 -	1787	7.24E+01	100.50	1.24E+02	1.83E+01
	83	1819.56	1815 -	1822	2.38E+01	28.84	1.20E+02	2.23E+01
M	84	1838.64	1835 -	1852	4.22E+01	25.87	1.32E+02	1.89E+01
m	85	1848.04	1835 -	1852	4.71E+02	52.68	1.54E+02	2.04E+01
	86	1874.19	1870 -	1876	4.08E+01	30.03	1.30E+02	2.23E+01
	87	1894.49	1885 -	1899	6.14E+01	50.95	2.47E+02	3.99E+01
	88	1973.79	1970 -	1976	1.88E+01	21.66	6.85E+01	1.63E+01
	89	2010.74	2005 -	2013	2.22E+01	27.08	9.96E+01	2.09E+01
	90	2119.05	2113 -	2121	1.84E+02	36.35	8.91E+01	1.99E+01
	91	2204.87	2197 -	2210	8.84E+02	67.47	1.15E+02	2.62E+01
	92	2258.57	2252 -	2262	1.30E+01	13.22	1.60E+01	9.11E+00
	93	2293.85	2287 -	2296	5.76E+01	18.30	1.48E+01	8.40E+00
	94	2393.88	2388 -	2395	1.10E+01	6.63	0.00E+00	0.00E+00
	95	2448.29	2440 -	2453	2.57E+02	34.91	2.20E+01	1.14E+01
	96	2504.95	2499 -	2505	9.54E+00	8.75	6.92E+00	5.09E+00
	97	2524.13	2518 -	2524	4.67E+00	6.02	2.67E+00	3.45E+00
	98	2615.37	2609 -	2618	7.98E+01	18.79	4.41E+00	4.78E+00
	99	2893.05	2887 -	2893	8.00E+00	5.66	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/23/2017 3:40:53PM

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

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.34	44 -	49	46.97	1.64E+03	259.88	1.23E+04	PB-210
	2	53.05	51 -	56	53.67	5.17E+02	278.03	1.51E+04	.....
	3	63.13	61 -	67	63.74	2.67E+03	393.19	2.64E+04	TH-234
									TH-230
M	4	74.72	71 -	83	75.31	6.33E+03	371.32	2.12E+04	AM-243
m	5	77.13	71 -	83	77.72	1.08E+04	398.84	2.14E+04	.....
M	6	87.57	83 -	97	88.15	3.06E+03	306.61	1.78E+04	SN-126
									CD-109
									LU-176
m	7	92.46	83 -	97	93.03	4.97E+03	311.94	1.52E+04	GA-67
	8	112.55	111 -	116	113.10	3.77E+02	281.44	1.55E+04	.....
	9	143.94	142 -	147	144.46	7.34E+02	283.34	1.54E+04	U-235
	10	154.26	153 -	157	154.77	3.42E+02	243.86	1.29E+04	.....
	11	163.52	162 -	166	164.02	2.68E+02	231.31	1.16E+04	U-235
									CS-136
									BA-140
	12	185.90	182 -	189	186.38	6.23E+03	356.49	1.70E+04	RA-226
	13	204.94	204 -	208	205.40	1.79E+02	200.45	8.74E+03	U-235
M	14	237.63	233 -	245	238.06	1.19E+03	375.03	1.52E+04	.....
m	15	241.95	233 -	245	242.37	6.00E+03	235.04	6.74E+03	RA-224
	16	257.64	254 -	262	258.05	6.26E+02	261.99	1.01E+04	.....
M	17	270.51	267 -	278	270.91	1.04E+03	235.21	8.53E+03	.....
m	18	274.77	267 -	278	275.16	4.80E+02	209.55	7.38E+03	.....
	19	285.10	283 -	288	285.48	2.88E+02	174.69	5.87E+03	PM-149
									I-131
M	20	295.19	290 -	303	295.56	1.39E+04	277.54	4.79E+03	PB-214
m	21	299.69	290 -	303	300.05	4.69E+02	204.61	6.47E+03	BI-210M
									PB-212
									GA-67
M	22	348.94	346 -	360	349.25	4.04E+02	184.61	4.50E+03	.....
m	23	351.93	346 -	360	352.24	2.39E+04	333.64	3.30E+03	PB-214
m	24	356.12	346 -	360	356.43	7.23E+02	244.34	4.07E+03	BA-133
	25	387.51	383 -	391	387.78	4.60E+02	188.69	5.20E+03	.....
	26	405.87	404 -	409	406.13	1.76E+02	139.13	3.72E+03	.....
	27	427.42	424 -	431	427.66	3.31E+02	160.02	4.01E+03	SB-125
	28	454.83	452 -	458	455.03	1.37E+02	131.92	3.06E+03	PM-146
	29	480.25	478 -	484	480.43	1.55E+02	121.00	2.55E+03	.....
	30	486.54	484 -	490	486.72	1.82E+02	120.56	2.52E+03	LA-140
	31	510.84	507 -	515	510.99	4.11E+02	145.85	3.02E+03	.....
	32	534.09	531 -	536	534.22	8.47E+01	99.66	1.92E+03	.....
	33	581.42	578 -	585	581.50	2.81E+02	118.63	2.16E+03	.....
M	34	609.43	603 -	622	609.49	1.81E+04	278.78	1.17E+03	BI-214
m	35	613.55	603 -	622	613.59	5.75E+02	216.73	1.34E+03	AG-108M
	36	632.53	630 -	635	632.56	7.58E+01	75.98	1.09E+03	.....
	37	664.91	659 -	669	664.91	6.06E+02	136.37	2.16E+03	CE-143
	38	671.95	670 -	675	671.94	7.59E+01	75.33	1.05E+03	.....
	39	703.31	700 -	706	703.26	1.83E+02	90.56	1.36E+03	NB-94
	40	719.80	716 -	723	719.74	1.16E+02	98.22	1.54E+03	SB-126
	41	727.78	724 -	731	727.71	1.18E+02	96.93	1.48E+03	BI-212
	42	742.17	737 -	747	742.09	2.19E+02	121.23	1.84E+03	.....
	43	752.95	749 -	756	752.86	1.06E+02	89.20	1.25E+03	.....
	44	768.50	763 -	774	768.39	1.90E+03	154.38	2.03E+03	.....
	45	786.11	781 -	790	785.98	5.02E+02	117.71	1.69E+03	.....
	46	806.40	802 -	810	806.25	4.05E+02	105.80	1.48E+03	.....

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	47	839.11	836 -	841	838.93	2.15E+02	76.90	1.01E+03	.....
	48	934.37	928 -	939	934.09	9.83E+02	137.84	1.88E+03	.....
M	49	964.33	959 -	972	964.03	1.51E+02	77.53	9.55E+02	EU-152
m	50	969.48	959 -	972	969.17	7.78E+01	76.73	1.06E+03	AC-228
M	51	997.76	995 -	1005	997.43	5.45E+01	56.80	6.44E+02	.....
m	52	1001.37	995 -	1005	1001.03	2.48E+02	72.09	8.33E+02	PA-234M
	53	1032.53	1029 -	1035	1032.16	6.29E+01	67.17	7.64E+02	.....
	54	1040.12	1036 -	1043	1039.74	9.41E+01	71.97	8.02E+02	.....
	55	1052.39	1048 -	1055	1052.00	1.01E+02	78.46	9.57E+02	.....
	56	1070.04	1065 -	1074	1069.64	1.24E+02	88.51	1.04E+03	.....
	57	1103.78	1100 -	1106	1103.33	5.30E+01	64.65	7.28E+02	.....
	58	1120.69	1115 -	1125	1120.23	3.95E+03	163.27	1.46E+03	SC-46 BI-214 TA-182
	59	1133.22	1129 -	1137	1132.75	8.20E+01	80.98	9.58E+02	.....
	60	1155.83	1150 -	1160	1155.33	4.88E+02	106.06	1.23E+03	.....
	61	1208.11	1204 -	1211	1207.57	1.46E+02	67.26	6.58E+02	.....
	62	1220.40	1217 -	1224	1219.84	5.92E+01	64.87	6.66E+02	.....
	63	1238.60	1232 -	1243	1238.02	1.43E+03	120.40	1.10E+03	CO-56
	64	1254.34	1249 -	1258	1253.75	1.37E+02	79.92	8.32E+02	.....
	65	1281.35	1276 -	1285	1280.73	3.54E+02	84.20	8.11E+02	.....
M	66	1378.16	1372 -	1388	1377.44	9.88E+02	83.37	5.60E+02	.....
m	67	1385.46	1372 -	1388	1384.74	2.02E+02	66.78	5.62E+02	.....
M	68	1401.88	1397 -	1413	1401.14	3.03E+02	64.30	5.50E+02	.....
m	69	1408.58	1397 -	1413	1407.84	5.52E+02	71.57	5.33E+02	EU-152
	70	1461.20	1456 -	1465	1460.40	3.05E+02	84.11	8.39E+02	K-40
	71	1509.53	1504 -	1513	1508.68	5.15E+02	89.36	8.50E+02	.....
M	72	1536.89	1534 -	1548	1536.02	9.76E+01	35.83	2.75E+02	.....
m	73	1544.15	1534 -	1548	1543.27	1.75E+02	75.65	6.41E+02	.....
	74	1583.70	1578 -	1588	1582.78	1.70E+02	72.22	6.04E+02	.....
	75	1596.44	1589 -	1601	1595.51	1.06E+02	82.03	7.43E+02	LA-140
	76	1621.49	1617 -	1625	1620.54	6.04E+01	48.39	3.21E+02	BI-212
	77	1661.94	1656 -	1666	1660.95	2.37E+02	63.01	3.91E+02	.....
	78	1695.46	1688 -	1702	1694.44	1.14E+02	63.88	3.78E+02	.....
M	79	1730.22	1723 -	1739	1729.16	7.24E+02	61.11	1.47E+02	.....
m	80	1734.67	1723 -	1739	1733.61	4.54E+01	62.31	1.87E+02	.....
M	81	1765.12	1757 -	1787	1764.03	3.10E+03	115.08	1.56E+02	BI-214
m	82	1769.65	1757 -	1787	1768.55	7.24E+01	100.50	1.24E+02	.....
	83	1819.56	1815 -	1822	1818.41	2.38E+01	28.84	1.20E+02	.....
M	84	1838.64	1835 -	1852	1837.48	4.22E+01	25.87	1.32E+02	.....
m	85	1848.04	1835 -	1852	1846.86	4.71E+02	52.68	1.54E+02	.....
	86	1874.19	1870 -	1876	1872.99	4.08E+01	30.03	1.30E+02	.....
	87	1894.49	1885 -	1899	1893.27	6.14E+01	50.95	2.47E+02	.....
	88	1973.79	1970 -	1976	1972.49	1.88E+01	21.66	6.85E+01	.....
	89	2010.74	2005 -	2013	2009.41	2.22E+01	27.08	9.96E+01	.....
	90	2119.05	2113 -	2121	2117.61	1.84E+02	36.35	8.91E+01	.....
	91	2204.87	2197 -	2210	2203.35	8.84E+02	67.47	1.15E+02	BI-214
	92	2258.57	2252 -	2262	2257.01	1.30E+01	13.22	1.60E+01	.....
	93	2293.85	2287 -	2296	2292.25	5.76E+01	18.30	1.48E+01	.....
	94	2393.88	2388 -	2395	2392.18	1.10E+01	6.63	0.00E+00	.....
	95	2448.29	2440 -	2453	2446.54	2.57E+02	34.91	2.20E+01	.....
	96	2504.95	2499 -	2505	2503.15	9.54E+00	8.75	6.92E+00	.....
	97	2524.13	2518 -	2524	2522.31	4.67E+00	6.02	2.67E+00	.....
	98	2615.37	2609 -	2618	2613.46	7.98E+01	18.79	4.41E+00	TL-208

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
99	2893.05	2887 -	2893	2890.88	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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/23/2017 3:40:53PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.34	1.64E+03	259.88	2.46E-02	2.22E-03
	2	53.05	5.17E+02	278.03	2.59E-02	2.22E-03
	3	63.13	2.67E+03	393.19	2.70E-02	2.26E-03
M	4	74.72	6.33E+03	371.32	2.75E-02	2.38E-03
m	5	77.13	1.08E+04	398.84	2.75E-02	2.40E-03
M	6	87.57	3.06E+03	306.61	2.74E-02	2.52E-03
m	7	92.46	4.97E+03	311.94	2.73E-02	2.45E-03
	8	112.55	3.77E+02	281.44	2.63E-02	2.13E-03
	9	143.94	7.34E+02	283.34	2.44E-02	1.86E-03
	10	154.26	3.42E+02	243.86	2.37E-02	1.80E-03
	11	163.52	2.68E+02	231.31	2.31E-02	1.75E-03
	12	185.90	6.23E+03	356.49	2.17E-02	1.68E-03
	13	204.94	1.79E+02	200.45	2.06E-02	1.62E-03
M	14	237.63	1.19E+03	375.03	1.89E-02	1.53E-03
m	15	241.95	6.00E+03	235.04	1.87E-02	1.52E-03
	16	257.64	6.26E+02	261.99	1.80E-02	1.47E-03
M	17	270.51	1.04E+03	235.21	1.74E-02	1.43E-03
m	18	274.77	4.80E+02	209.55	1.72E-02	1.42E-03
	19	285.10	2.88E+02	174.69	1.68E-02	1.39E-03
M	20	295.19	1.39E+04	277.54	1.64E-02	1.37E-03
m	21	299.69	4.69E+02	204.61	1.63E-02	1.36E-03
M	22	348.94	4.04E+02	184.61	1.46E-02	1.24E-03
m	23	351.93	2.39E+04	333.64	1.45E-02	1.24E-03
m	24	356.12	7.23E+02	244.34	1.44E-02	1.23E-03
	25	387.51	4.60E+02	188.69	1.36E-02	1.15E-03
	26	405.87	1.76E+02	139.13	1.31E-02	1.14E-03
	27	427.42	3.31E+02	160.02	1.26E-02	1.12E-03
	28	454.83	1.37E+02	131.92	1.20E-02	1.10E-03
	29	480.25	1.55E+02	121.00	1.16E-02	1.09E-03

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	30	486.54	1.82E+02	120.56	1.14E-02	1.08E-03
	31	510.84	4.11E+02	145.85	1.10E-02	1.07E-03
	32	534.09	8.47E+01	99.66	1.07E-02	1.05E-03
	33	581.42	2.81E+02	118.63	9.99E-03	1.02E-03
M	34	609.43	1.81E+04	278.78	9.63E-03	1.01E-03
m	35	613.55	5.75E+02	216.73	9.58E-03	1.00E-03
	36	632.53	7.58E+01	75.98	9.36E-03	9.91E-04
	37	664.91	6.06E+02	136.37	9.01E-03	9.67E-04
	38	671.95	7.59E+01	75.33	8.94E-03	9.56E-04
	39	703.31	1.83E+02	90.56	8.63E-03	9.06E-04
	40	719.80	1.16E+02	98.22	8.48E-03	8.80E-04
	41	727.78	1.18E+02	96.93	8.41E-03	8.67E-04
	42	742.17	2.19E+02	121.23	8.28E-03	8.44E-04
	43	752.95	1.06E+02	89.20	8.19E-03	8.27E-04
	44	768.50	1.90E+03	154.38	8.06E-03	8.02E-04
	45	786.11	5.02E+02	117.71	7.93E-03	7.74E-04
	46	806.40	4.05E+02	105.80	7.77E-03	7.42E-04
	47	839.11	2.15E+02	76.90	7.54E-03	6.90E-04
	48	934.37	9.83E+02	137.84	6.95E-03	5.83E-04
M	49	964.33	1.51E+02	77.53	6.79E-03	5.71E-04
m	50	969.48	7.78E+01	76.73	6.76E-03	5.69E-04
M	51	997.76	5.45E+01	56.80	6.62E-03	5.58E-04
m	52	1001.37	2.48E+02	72.09	6.60E-03	5.57E-04
	53	1032.53	6.29E+01	67.17	6.45E-03	5.45E-04
	54	1040.12	9.41E+01	71.97	6.42E-03	5.42E-04
	55	1052.39	1.01E+02	78.46	6.36E-03	5.37E-04
	56	1070.04	1.24E+02	88.51	6.28E-03	5.31E-04
	57	1103.78	5.30E+01	64.65	6.14E-03	5.18E-04
	58	1120.69	3.95E+03	163.27	6.07E-03	5.11E-04
	59	1133.22	8.20E+01	80.98	6.02E-03	5.06E-04
	60	1155.83	4.88E+02	106.06	5.94E-03	4.98E-04
	61	1208.11	1.46E+02	67.26	5.75E-03	4.83E-04
	62	1220.40	5.92E+01	64.87	5.70E-03	4.80E-04
	63	1238.60	1.43E+03	120.40	5.64E-03	4.76E-04
	64	1254.34	1.37E+02	79.92	5.59E-03	4.72E-04
	65	1281.35	3.54E+02	84.20	5.50E-03	4.66E-04
M	66	1378.16	9.88E+02	83.37	5.22E-03	4.44E-04
m	67	1385.46	2.02E+02	66.78	5.20E-03	4.42E-04
M	68	1401.88	3.03E+02	64.30	5.16E-03	4.38E-04
m	69	1408.58	5.52E+02	71.57	5.14E-03	4.37E-04
	70	1461.20	3.05E+02	84.11	5.01E-03	4.25E-04
	71	1509.53	5.15E+02	89.36	4.89E-03	4.13E-04
M	72	1536.89	9.76E+01	35.83	4.83E-03	4.07E-04
m	73	1544.15	1.75E+02	75.65	4.81E-03	4.05E-04
	74	1583.70	1.70E+02	72.22	4.72E-03	3.96E-04
	75	1596.44	1.06E+02	82.03	4.70E-03	3.93E-04
	76	1621.49	6.04E+01	48.39	4.65E-03	3.88E-04
	77	1661.94	2.37E+02	63.01	4.57E-03	3.78E-04
	78	1695.46	1.14E+02	63.88	4.50E-03	3.70E-04
M	79	1730.22	7.24E+02	61.11	4.44E-03	3.62E-04
m	80	1734.67	4.54E+01	62.31	4.43E-03	3.61E-04
M	81	1765.12	3.10E+03	115.08	4.37E-03	3.54E-04
m	82	1769.65	7.24E+01	100.50	4.37E-03	3.53E-04

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	83	1819.56	2.38E+01	28.84	4.28E-03	3.42E-04
M	84	1838.64	4.22E+01	25.87	4.25E-03	3.38E-04
m	85	1848.04	4.71E+02	52.68	4.23E-03	3.38E-04
	86	1874.19	4.08E+01	30.03	4.19E-03	3.38E-04
	87	1894.49	6.14E+01	50.95	4.16E-03	3.38E-04
	88	1973.79	1.88E+01	21.66	4.04E-03	3.38E-04
	89	2010.74	2.22E+01	27.08	3.99E-03	3.38E-04
	90	2119.05	1.84E+02	36.35	3.84E-03	3.38E-04
	91	2204.87	8.84E+02	67.47	3.74E-03	3.38E-04
	92	2258.57	1.30E+01	13.22	3.67E-03	3.38E-04
	93	2293.85	5.76E+01	18.30	3.63E-03	3.38E-04
	94	2393.88	1.10E+01	6.63	3.52E-03	3.38E-04
	95	2448.29	2.57E+02	34.91	3.47E-03	3.38E-04
	96	2504.95	9.54E+00	8.75	3.41E-03	3.38E-04
	97	2524.13	4.67E+00	6.02	3.39E-03	3.38E-04
	98	2615.37	7.98E+01	18.79	3.31E-03	3.38E-04
	99	2893.05	8.00E+00	5.66	3.07E-03	3.38E-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 : 8/23/2017 3:40:53PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.34	1.64E+03	259.88	3.67E+01	8.40E+00	1.60E+03	2.60E+02
	2	53.05	5.17E+02	278.03			5.17E+02	2.78E+02
	3	63.13	2.67E+03	393.19	8.94E+01	1.41E+01	2.58E+03	3.93E+02
M	4	74.72	6.33E+03	371.32			6.33E+03	3.71E+02
m	5	77.13	1.08E+04	398.84	7.20E+00	1.47E+00	1.08E+04	3.99E+02
M	6	87.57	3.06E+03	306.61			3.06E+03	3.07E+02
m	7	92.46	4.97E+03	311.94	1.38E+02	1.72E+01	4.83E+03	3.12E+02
	8	112.55	3.77E+02	281.44	1.12E+01	7.09E+00	3.65E+02	2.82E+02
	9	143.94	7.34E+02	283.34	1.21E+01	4.29E+01	7.22E+02	2.87E+02
	10	154.26	3.42E+02	243.86			3.42E+02	2.44E+02
	11	163.52	2.68E+02	231.31	6.72E+00	7.09E+00	2.61E+02	2.31E+02
	12	185.90	6.23E+03	356.49	5.22E+01	7.59E+00	6.18E+03	3.57E+02
	13	204.94	1.79E+02	200.45	3.85E+00	4.29E+00	1.76E+02	2.00E+02

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	14	237.63	1.19E+03	375.03	2.13E+01	6.33E+00	1.17E+03	3.75E+02
m	15	241.95	6.00E+03	235.04			6.00E+03	2.35E+02
	16	257.64	6.26E+02	261.99			6.26E+02	2.62E+02
M	17	270.51	1.04E+03	235.21	1.23E+00	4.98E+00	1.04E+03	2.35E+02
m	18	274.77	4.80E+02	209.55			4.80E+02	2.10E+02
	19	285.10	2.88E+02	174.69			2.88E+02	1.75E+02
M	20	295.19	1.39E+04	277.54			1.39E+04	2.78E+02
m	21	299.69	4.69E+02	204.61			4.69E+02	2.05E+02
M	22	348.94	4.04E+02	184.61			4.04E+02	1.85E+02
m	23	351.93	2.39E+04	333.64	5.79E+00	4.49E+00	2.39E+04	3.34E+02
m	24	356.12	7.23E+02	244.34			7.23E+02	2.44E+02
	25	387.51	4.60E+02	188.69			4.60E+02	1.89E+02
	26	405.87	1.76E+02	139.13			1.76E+02	1.39E+02
	27	427.42	3.31E+02	160.02			3.31E+02	1.60E+02
	28	454.83	1.37E+02	131.92			1.37E+02	1.32E+02
	29	480.25	1.55E+02	121.00			1.55E+02	1.21E+02
	30	486.54	1.82E+02	120.56			1.82E+02	1.21E+02
	31	510.84	4.11E+02	145.85	7.28E+01	5.30E+00	3.38E+02	1.46E+02
	32	534.09	8.47E+01	99.66			8.47E+01	9.97E+01
	33	581.42	2.81E+02	118.63			2.81E+02	1.19E+02
M	34	609.43	1.81E+04	278.78	6.35E+00	4.02E+00	1.81E+04	2.79E+02
m	35	613.55	5.75E+02	216.73			5.75E+02	2.17E+02
	36	632.53	7.58E+01	75.98			7.58E+01	7.60E+01
	37	664.91	6.06E+02	136.37			6.06E+02	1.36E+02
	38	671.95	7.59E+01	75.33			7.59E+01	7.53E+01
	39	703.31	1.83E+02	90.56			1.83E+02	9.06E+01
	40	719.80	1.16E+02	98.22			1.16E+02	9.82E+01
	41	727.78	1.18E+02	96.93			1.18E+02	9.69E+01
	42	742.17	2.19E+02	121.23			2.19E+02	1.21E+02
	43	752.95	1.06E+02	89.20			1.06E+02	8.92E+01
	44	768.50	1.90E+03	154.38			1.90E+03	1.54E+02
	45	786.11	5.02E+02	117.71			5.02E+02	1.18E+02
	46	806.40	4.05E+02	105.80			4.05E+02	1.06E+02
	47	839.11	2.15E+02	76.90			2.15E+02	7.69E+01
	48	934.37	9.83E+02	137.84			9.83E+02	1.38E+02
M	49	964.33	1.51E+02	77.53			1.51E+02	7.75E+01
m	50	969.48	7.78E+01	76.73			7.78E+01	7.67E+01
M	51	997.76	5.45E+01	56.80			5.45E+01	5.68E+01
m	52	1001.37	2.48E+02	72.09	4.92E+00	2.75E+00	2.43E+02	7.21E+01
	53	1032.53	6.29E+01	67.17			6.29E+01	6.72E+01
	54	1040.12	9.41E+01	71.97			9.41E+01	7.20E+01
	55	1052.39	1.01E+02	78.46			1.01E+02	7.85E+01
	56	1070.04	1.24E+02	88.51			1.24E+02	8.85E+01
	57	1103.78	5.30E+01	64.65			5.30E+01	6.46E+01
	58	1120.69	3.95E+03	163.27			3.95E+03	1.63E+02
	59	1133.22	8.20E+01	80.98			8.20E+01	8.10E+01
	60	1155.83	4.88E+02	106.06			4.88E+02	1.06E+02
	61	1208.11	1.46E+02	67.26			1.46E+02	6.73E+01
	62	1220.40	5.92E+01	64.87			5.92E+01	6.49E+01
	63	1238.60	1.43E+03	120.40			1.43E+03	1.20E+02
	64	1254.34	1.37E+02	79.92			1.37E+02	7.99E+01
	65	1281.35	3.54E+02	84.20			3.54E+02	8.42E+01
M	66	1378.16	9.88E+02	83.37			9.88E+02	8.34E+01
m	67	1385.46	2.02E+02	66.78			2.02E+02	6.68E+01

Analysis Report for 1707090-11

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	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	68	1401.88	3.03E+02	64.30			3.03E+02	6.43E+01
m	69	1408.58	5.52E+02	71.57			5.52E+02	7.16E+01
	70	1461.20	3.05E+02	84.11	8.09E+00	2.23E+00	2.97E+02	8.41E+01
	71	1509.53	5.15E+02	89.36			5.15E+02	8.94E+01
M	72	1536.89	9.76E+01	35.83			9.76E+01	3.58E+01
m	73	1544.15	1.75E+02	75.65			1.75E+02	7.57E+01
	74	1583.70	1.70E+02	72.22			1.70E+02	7.22E+01
	75	1596.44	1.06E+02	82.03			1.06E+02	8.20E+01
	76	1621.49	6.04E+01	48.39			6.04E+01	4.84E+01
	77	1661.94	2.37E+02	63.01			2.37E+02	6.30E+01
	78	1695.46	1.14E+02	63.88			1.14E+02	6.39E+01
M	79	1730.22	7.24E+02	61.11			7.24E+02	6.11E+01
m	80	1734.67	4.54E+01	62.31			4.54E+01	6.23E+01
M	81	1765.12	3.10E+03	115.08			3.10E+03	1.15E+02
m	82	1769.65	7.24E+01	100.50			7.24E+01	1.00E+02
	83	1819.56	2.38E+01	28.84			2.38E+01	2.88E+01
M	84	1838.64	4.22E+01	25.87			4.22E+01	2.59E+01
m	85	1848.04	4.71E+02	52.68			4.71E+02	5.27E+01
	86	1874.19	4.08E+01	30.03			4.08E+01	3.00E+01
	87	1894.49	6.14E+01	50.95			6.14E+01	5.10E+01
	88	1973.79	1.88E+01	21.66			1.88E+01	2.17E+01
	89	2010.74	2.22E+01	27.08			2.22E+01	2.71E+01
	90	2119.05	1.84E+02	36.35			1.84E+02	3.63E+01
	91	2204.87	8.84E+02	67.47			8.84E+02	6.75E+01
	92	2258.57	1.30E+01	13.22	1.04E+00	1.04E+00	1.19E+01	1.33E+01
	93	2293.85	5.76E+01	18.30			5.76E+01	1.83E+01
	94	2393.88	1.10E+01	6.63			1.10E+01	6.63E+00
	95	2448.29	2.57E+02	34.91			2.57E+02	3.49E+01
	96	2504.95	9.54E+00	8.75			9.54E+00	8.75E+00
	97	2524.13	4.67E+00	6.02			4.67E+00	6.02E+00
	98	2615.37	7.98E+01	18.79	5.63E+00	1.38E+00	7.42E+01	1.88E+01
	99	2893.05	8.00E+00	5.66			8.00E+00	5.66E+00

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 3:40:53PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.34	1.64E+03	259.88	3.67E+01	8.40E+00	1.60E+03	2.60E+02
	2	53.05	5.17E+02	278.03			5.17E+02	2.78E+02
	3	63.13	2.67E+03	393.19	8.94E+01	1.41E+01	2.58E+03	3.93E+02
M	4	74.72	6.33E+03	371.32			6.33E+03	3.71E+02
m	5	77.13	1.08E+04	398.84	7.20E+00	1.47E+00	1.08E+04	3.99E+02
M	6	87.57	3.06E+03	306.61			3.06E+03	3.07E+02
m	7	92.46	4.97E+03	311.94	1.38E+02	1.72E+01	4.83E+03	3.12E+02
	8	112.55	3.77E+02	281.44	1.12E+01	7.09E+00	3.65E+02	2.82E+02
	9	143.94	7.34E+02	283.34	1.21E+01	4.29E+01	7.22E+02	2.87E+02
	10	154.26	3.42E+02	243.86			3.42E+02	2.44E+02
	11	163.52	2.68E+02	231.31	6.72E+00	7.09E+00	2.61E+02	2.31E+02
	12	185.90	6.23E+03	356.49	5.22E+01	7.59E+00	6.18E+03	3.57E+02
	13	204.94	1.79E+02	200.45	3.85E+00	4.29E+00	1.76E+02	2.00E+02
M	14	237.63	1.19E+03	375.03	2.13E+01	6.33E+00	1.17E+03	3.75E+02
m	15	241.95	6.00E+03	235.04			6.00E+03	2.35E+02
	16	257.64	6.26E+02	261.99			6.26E+02	2.62E+02
M	17	270.51	1.04E+03	235.21	1.23E+00	4.98E+00	1.04E+03	2.35E+02
m	18	274.77	4.80E+02	209.55			4.80E+02	2.10E+02
	19	285.10	2.88E+02	174.69			2.88E+02	1.75E+02
M	20	295.19	1.39E+04	277.54			1.39E+04	2.78E+02
m	21	299.69	4.69E+02	204.61			4.69E+02	2.05E+02
M	22	348.94	4.04E+02	184.61			4.04E+02	1.85E+02
m	23	351.93	2.39E+04	333.64	5.79E+00	4.49E+00	2.39E+04	3.34E+02
m	24	356.12	7.23E+02	244.34			7.23E+02	2.44E+02
	25	387.51	4.60E+02	188.69			4.60E+02	1.89E+02
	26	405.87	1.76E+02	139.13			1.76E+02	1.39E+02
	27	427.42	3.31E+02	160.02			3.31E+02	1.60E+02
	28	454.83	1.37E+02	131.92			1.37E+02	1.32E+02
	29	480.25	1.55E+02	121.00			1.55E+02	1.21E+02
	30	486.54	1.82E+02	120.56			1.82E+02	1.21E+02
	31	510.84	4.11E+02	145.85	7.28E+01	5.30E+00	3.38E+02	1.46E+02
	32	534.09	8.47E+01	99.66			8.47E+01	9.97E+01
	33	581.42	2.81E+02	118.63			2.81E+02	1.19E+02
M	34	609.43	1.81E+04	278.78	6.35E+00	4.02E+00	1.81E+04	2.79E+02
m	35	613.55	5.75E+02	216.73			5.75E+02	2.17E+02
	36	632.53	7.58E+01	75.98			7.58E+01	7.60E+01
	37	664.91	6.06E+02	136.37			6.06E+02	1.36E+02
	38	671.95	7.59E+01	75.33			7.59E+01	7.53E+01
	39	703.31	1.83E+02	90.56			1.83E+02	9.06E+01
	40	719.80	1.16E+02	98.22			1.16E+02	9.82E+01
	41	727.78	1.18E+02	96.93			1.18E+02	9.69E+01
	42	742.17	2.19E+02	121.23			2.19E+02	1.21E+02
	43	752.95	1.06E+02	89.20			1.06E+02	8.92E+01
	44	768.50	1.90E+03	154.38			1.90E+03	1.54E+02
	45	786.11	5.02E+02	117.71			5.02E+02	1.18E+02
	46	806.40	4.05E+02	105.80			4.05E+02	1.06E+02
	47	839.11	2.15E+02	76.90			2.15E+02	7.69E+01
	48	934.37	9.83E+02	137.84			9.83E+02	1.38E+02
M	49	964.33	1.51E+02	77.53			1.51E+02	7.75E+01
m	50	969.48	7.78E+01	76.73			7.78E+01	7.67E+01
M	51	997.76	5.45E+01	56.80			5.45E+01	5.68E+01
m	52	1001.37	2.48E+02	72.09	4.92E+00	2.75E+00	2.43E+02	7.21E+01
	53	1032.53	6.29E+01	67.17			6.29E+01	6.72E+01
	54	1040.12	9.41E+01	71.97			9.41E+01	7.20E+01

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	55	1052.39	1.01E+02	78.46			1.01E+02	7.85E+01
	56	1070.04	1.24E+02	88.51			1.24E+02	8.85E+01
	57	1103.78	5.30E+01	64.65			5.30E+01	6.46E+01
	58	1120.69	3.95E+03	163.27			3.95E+03	1.63E+02
	59	1133.22	8.20E+01	80.98			8.20E+01	8.10E+01
	60	1155.83	4.88E+02	106.06			4.88E+02	1.06E+02
	61	1208.11	1.46E+02	67.26			1.46E+02	6.73E+01
	62	1220.40	5.92E+01	64.87			5.92E+01	6.49E+01
	63	1238.60	1.43E+03	120.40			1.43E+03	1.20E+02
	64	1254.34	1.37E+02	79.92			1.37E+02	7.99E+01
	65	1281.35	3.54E+02	84.20			3.54E+02	8.42E+01
M	66	1378.16	9.88E+02	83.37			9.88E+02	8.34E+01
m	67	1385.46	2.02E+02	66.78			2.02E+02	6.68E+01
M	68	1401.88	3.03E+02	64.30			3.03E+02	6.43E+01
m	69	1408.58	5.52E+02	71.57			5.52E+02	7.16E+01
	70	1461.20	3.05E+02	84.11	8.09E+00	2.23E+00	2.97E+02	8.41E+01
	71	1509.53	5.15E+02	89.36			5.15E+02	8.94E+01
M	72	1536.89	9.76E+01	35.83			9.76E+01	3.58E+01
m	73	1544.15	1.75E+02	75.65			1.75E+02	7.57E+01
	74	1583.70	1.70E+02	72.22			1.70E+02	7.22E+01
	75	1596.44	1.06E+02	82.03			1.06E+02	8.20E+01
	76	1621.49	6.04E+01	48.39			6.04E+01	4.84E+01
	77	1661.94	2.37E+02	63.01			2.37E+02	6.30E+01
	78	1695.46	1.14E+02	63.88			1.14E+02	6.39E+01
M	79	1730.22	7.24E+02	61.11			7.24E+02	6.11E+01
m	80	1734.67	4.54E+01	62.31			4.54E+01	6.23E+01
M	81	1765.12	3.10E+03	115.08			3.10E+03	1.15E+02
m	82	1769.65	7.24E+01	100.50			7.24E+01	1.00E+02
	83	1819.56	2.38E+01	28.84			2.38E+01	2.88E+01
M	84	1838.64	4.22E+01	25.87			4.22E+01	2.59E+01
m	85	1848.04	4.71E+02	52.68			4.71E+02	5.27E+01
	86	1874.19	4.08E+01	30.03			4.08E+01	3.00E+01
	87	1894.49	6.14E+01	50.95			6.14E+01	5.10E+01
	88	1973.79	1.88E+01	21.66			1.88E+01	2.17E+01
	89	2010.74	2.22E+01	27.08			2.22E+01	2.71E+01
	90	2119.05	1.84E+02	36.35			1.84E+02	3.63E+01
	91	2204.87	8.84E+02	67.47			8.84E+02	6.75E+01
	92	2258.57	1.30E+01	13.22	1.04E+00	1.04E+00	1.19E+01	1.33E+01
	93	2293.85	5.76E+01	18.30			5.76E+01	1.83E+01
	94	2393.88	1.10E+01	6.63			1.10E+01	6.63E+00
	95	2448.29	2.57E+02	34.91			2.57E+02	3.49E+01
	96	2504.95	9.54E+00	8.75			9.54E+00	8.75E+00
	97	2524.13	4.67E+00	6.02			4.67E+00	6.02E+00
	98	2615.37	7.98E+01	18.79	5.63E+00	1.38E+00	7.42E+01	1.88E+01
	99	2893.05	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 1707090-11

HTC-A07-S001-0612-01

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.976	1460.81	*	10.67	5.58E+00	1.65E+00
CD-109	0.966	88.03	*	3.72	3.49E+01	5.17E+00
SN-126	1.000	87.57	*	37.00	3.03E+00	4.11E-01
LA-140	0.393	328.77		20.50		
		487.03	*	45.50	7.60E+01	5.09E+01
		815.85		23.50		
		1596.49	*	95.49	5.15E+01	4.00E+01
PM-146	0.345	453.90	*	39.94	2.95E-01	2.86E-01
		735.90		14.01		
		747.13		13.10		
PB-210	0.996	46.50	*	4.25	1.55E+01	2.87E+00
BI-212	0.931	727.17	*	11.80	1.19E+00	9.87E-01
		1620.62	*	2.75	4.74E+00	3.82E+00
BI-214	0.978	609.31	*	46.30	4.06E+01	4.29E+00
		1120.29	*	15.10	4.32E+01	4.05E+00
		1764.49	*	15.80	4.50E+01	4.01E+00
		2204.22	*	4.98	4.77E+01	5.64E+00
PB-214	1.000	295.21	*	19.19	4.41E+01	3.78E+00
		351.92	*	37.19	4.43E+01	3.82E+00
RA-224	0.861	240.98	*	3.95	8.15E+01	7.34E+00
RA-226	0.984	186.21	*	3.28	8.70E+01	1.59E+02
PA-234M	0.982	1001.03	*	0.92	4.02E+01	1.24E+01
TH-234	0.996	63.29	*	3.80	2.53E+01	4.39E+00
U-235	0.991	143.76	*	10.50	2.83E+00	1.22E+00
		163.35	*	4.70	2.41E+00	2.18E+00
		205.31	*	4.70	1.82E+00	2.10E+00
AM-243	1.000	74.67	*	66.00	3.50E+00	3.66E-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 1707090-11

HTC-A07-S001-0612-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 3:40:53PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	53.05	1.43726E-01	26.87		
m	5	77.13	2.98666E+00	1.85		
m	7	92.46	1.34111E+00	3.24	Sum	
	8	112.55	1.01502E-01	38.52		
	10	154.26	9.50868E-02	35.62		
M	14	237.63	3.24500E-01	16.05	Sum	
	16	257.64	1.73945E-01	20.92		
M	17	270.51	2.88272E-01	11.33		
m	18	274.77	1.33381E-01	21.82		
	19	285.10	7.98619E-02	30.38	Tol.	I-131 PM-149
m	21	299.69	1.30181E-01	21.83	Tol.	GA-67 BI-210M PB-212
M	22	348.94	1.12263E-01	22.84	Sum	
m	24	356.12	2.00701E-01	16.91	Tol.	BA-133
	25	387.51	1.27669E-01	20.53		
	26	405.87	4.89568E-02	39.47	Sum	
	27	427.42	9.20678E-02	24.14	Sum	
	29	480.25	4.29461E-02	39.13	Sum	
	31	510.84	9.39582E-02	21.57		
	32	534.09	2.35392E-02	58.80		
	33	581.42	7.81822E-02	21.07		
m	35	613.55	1.59794E-01	18.84		
	36	632.53	2.10472E-02	50.14		
	37	664.91	1.68296E-01	11.25	Tol.	CE-143
	38	671.95	2.10957E-02	49.60	Sum	
	39	703.31	5.07539E-02	24.78	Sum	
	40	719.80	3.23479E-02	42.17	Tol.	SB-126
	42	742.17	6.07364E-02	27.72	D-Esc	
	43	752.95	2.95657E-02	41.90	Sum	
	44	768.50	5.28178E-01	4.06		
	45	786.11	1.39479E-01	11.72		
	46	806.40	1.12516E-01	13.06	Sum	
	47	839.11	5.98553E-02	17.84	Sum	
	48	934.37	2.73170E-01	7.01		
M	49	964.33	4.19245E-02	25.68	Tol.	EU-152
m	50	969.48	2.16212E-02	49.29	Sum	
M	51	997.76	1.51334E-02	52.13		
	53	1032.53	1.74625E-02	53.42		
	54	1040.12	2.61498E-02	38.23		
	55	1052.39	2.79740E-02	38.95		
	56	1070.04	3.45141E-02	35.62		
	57	1103.78	1.47132E-02	61.03		
	59	1133.22	2.27832E-02	49.36		

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	60	1155.83	1.35511E-01	10.87		
	61	1208.11	4.04877E-02	23.07	Sum	
	62	1220.40	1.64466E-02	54.78		
	63	1238.60	3.96546E-01	4.22		
	64	1254.34	3.81083E-02	29.13	S-Esc	
	65	1281.35	9.84145E-02	11.88		
M	66	1378.16	2.74409E-01	4.22		
m	67	1385.46	5.60612E-02	16.55		
M	68	1401.88	8.40716E-02	10.62		
m	69	1408.58	1.53253E-01	6.49	Tol.	EU-152
	71	1509.53	1.42986E-01	8.68		
M	72	1536.89	2.71149E-02	18.35	Sum	
m	73	1544.15	4.85913E-02	21.62		
	74	1583.70	4.72540E-02	21.23		
	77	1661.94	6.59215E-02	13.28		
	78	1695.46	3.16318E-02	28.05	Sum	
M	79	1730.22	2.01017E-01	4.22	Sum	
m	80	1734.67	1.25997E-02	68.68		
m	82	1769.65	2.00988E-02	69.45		
	83	1819.56	6.60714E-03	60.63		
M	84	1838.64	1.17200E-02	30.66	Sum	
m	85	1848.04	1.30926E-01	5.59	Sum	
	86	1874.19	1.13234E-02	36.83		
	87	1894.49	1.70495E-02	41.51		
	88	1973.79	5.21488E-03	57.69	Sum	
	89	2010.74	6.16127E-03	61.05		
	90	2119.05	5.12330E-02	9.85		
	92	2258.57	3.31590E-03	55.54		
	93	2293.85	1.60043E-02	15.88		
	94	2393.88	3.05556E-03	30.15		
	95	2448.29	7.13832E-02	6.79		
	96	2504.95	2.64957E-03	45.85		
	97	2524.13	1.29630E-03	64.51		
	98	2615.37	2.06021E-02	12.70	Tol.	TL-208
	99	2893.05	2.22222E-03	35.36		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.97	1460.81	*	10.67	5.58E+00	1.65E+00
CD-109	0.96	88.03	*	3.72	3.49E+01	5.17E+00
SN-126	1.00	87.57	*	37.00	3.03E+00	4.11E-01
LA-140	0.39	328.77		20.50		
		487.03	*	45.50	7.60E+01	5.09E+01
		815.85		23.50		
		1596.49	*	95.49	5.15E+01	4.00E+01
PM-146	0.34	453.90	*	39.94	2.95E-01	2.86E-01
		735.90		14.01		
		747.13		13.10		
PB-210	0.99	46.50	*	4.25	1.55E+01	2.87E+00
BI-212	0.93	727.17	*	11.80	1.19E+00	9.87E-01
		1620.62	*	2.75	4.74E+00	3.82E+00
BI-214	0.97	609.31	*	46.30	4.06E+01	4.29E+00
		1120.29	*	15.10	4.32E+01	4.05E+00
		1764.49	*	15.80	4.50E+01	4.01E+00
		2204.22	*	4.98	4.77E+01	5.64E+00
PB-214	1.00	295.21	*	19.19	4.41E+01	3.78E+00
		351.92	*	37.19	4.43E+01	3.82E+00
RA-224	0.86	240.98	*	3.95	8.15E+01	7.34E+00
RA-226	0.98	186.21	*	3.28	8.70E+01	1.59E+02
PA-234M	0.98	1001.03	*	0.92	4.02E+01	1.24E+01
TH-234	0.99	63.29	*	3.80	2.53E+01	4.39E+00
U-235	0.99	143.76	*	10.50	2.83E+00	1.22E+00
		163.35	*	4.70	2.41E+00	2.18E+00
		205.31	*	4.70	1.82E+00	2.10E+00
AM-243	1.00	74.67	*	66.00	3.50E+00	3.66E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1707090-11

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	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.976	5.58E+00	1.65E+00	
?	CD-109	0.966	3.49E+01	5.17E+00	
?	SN-126	1.000	3.03E+00	4.11E-01	
	LA-140	0.393	6.09E+01	3.14E+01	
	PM-146	0.345	2.95E-01	2.86E-01	
	PB-210	0.996	1.55E+01	2.87E+00	
	BI-212	0.931	1.41E+00	9.56E-01	
	BI-214	0.978	4.37E+01	2.19E+00	
	PB-214	1.000	4.42E+01	2.69E+00	
	RA-224	0.861	8.15E+01	7.34E+00	
	RA-226	0.984	8.70E+01	1.59E+02	
	PA-234M	0.982	4.02E+01	1.24E+01	
	TH-234	0.996	2.53E+01	4.39E+00	
	U-235	0.991	2.54E+00	9.50E-01	
	AM-243	1.000	3.50E+00	3.66E-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 1707090-11

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 3:40:53PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	53.05	1.43726E-01	26.87		
m	5	77.13	2.98666E+00	1.85		
m	7	92.46	1.34111E+00	3.24	Sum	
	8	112.55	1.01502E-01	38.52		
	10	154.26	9.50868E-02	35.62		
M	14	237.63	3.24500E-01	16.05	Sum	
	16	257.64	1.73945E-01	20.92		
M	17	270.51	2.88272E-01	11.33		
m	18	274.77	1.33381E-01	21.82		
	19	285.10	7.98619E-02	30.38	Tol.	I-131
						PM-149
m	21	299.69	1.30181E-01	21.83	Tol.	GA-67
						BI-210M
						PB-212
M	22	348.94	1.12263E-01	22.84	Sum	
m	24	356.12	2.00701E-01	16.91	Tol.	BA-133
	25	387.51	1.27669E-01	20.53		
	26	405.87	4.89568E-02	39.47	Sum	
	27	427.42	9.20678E-02	24.14	Sum	
	29	480.25	4.29461E-02	39.13	Sum	
	31	510.84	9.39582E-02	21.57		
	32	534.09	2.35392E-02	58.80		
	33	581.42	7.81822E-02	21.07		
m	35	613.55	1.59794E-01	18.84		
	36	632.53	2.10472E-02	50.14		
	37	664.91	1.68296E-01	11.25	Tol.	CE-143
	38	671.95	2.10957E-02	49.60	Sum	
	39	703.31	5.07539E-02	24.78	Sum	
	40	719.80	3.23479E-02	42.17	Tol.	SB-126
	42	742.17	6.07364E-02	27.72	D-Esc	
	43	752.95	2.95657E-02	41.90	Sum	
	44	768.50	5.28178E-01	4.06		
	45	786.11	1.39479E-01	11.72		
	46	806.40	1.12516E-01	13.06	Sum	
	47	839.11	5.98553E-02	17.84	Sum	

Analysis Report for 1707090-11

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	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	48	934.37	2.73170E-01	7.01		
M	49	964.33	4.19245E-02	25.68	Tol.	EU-152
m	50	969.48	2.16212E-02	49.29	Sum	
M	51	997.76	1.51334E-02	52.13		
	53	1032.53	1.74625E-02	53.42		
	54	1040.12	2.61498E-02	38.23		
	55	1052.39	2.79740E-02	38.95		
	56	1070.04	3.45141E-02	35.62		
	57	1103.78	1.47132E-02	61.03		
	59	1133.22	2.27832E-02	49.36		
	60	1155.83	1.35511E-01	10.87		
	61	1208.11	4.04877E-02	23.07	Sum	
	62	1220.40	1.64466E-02	54.78		
	63	1238.60	3.96546E-01	4.22		
	64	1254.34	3.81083E-02	29.13	S-Esc	
	65	1281.35	9.84145E-02	11.88		
M	66	1378.16	2.74409E-01	4.22		
m	67	1385.46	5.60612E-02	16.55		
M	68	1401.88	8.40716E-02	10.62		
m	69	1408.58	1.53253E-01	6.49	Tol.	EU-152
	71	1509.53	1.42986E-01	8.68		
M	72	1536.89	2.71149E-02	18.35	Sum	
m	73	1544.15	4.85913E-02	21.62		
	74	1583.70	4.72540E-02	21.23		
	77	1661.94	6.59215E-02	13.28		
	78	1695.46	3.16318E-02	28.05	Sum	
M	79	1730.22	2.01017E-01	4.22	Sum	
m	80	1734.67	1.25997E-02	68.68		
m	82	1769.65	2.00988E-02	69.45		
	83	1819.56	6.60714E-03	60.63		
M	84	1838.64	1.17200E-02	30.66	Sum	
m	85	1848.04	1.30926E-01	5.59	Sum	
	86	1874.19	1.13234E-02	36.83		
	87	1894.49	1.70495E-02	41.51		
	88	1973.79	5.21488E-03	57.69	Sum	
	89	2010.74	6.16127E-03	61.05		
	90	2119.05	5.12330E-02	9.85		
	92	2258.57	3.31590E-03	55.54		
	93	2293.85	1.60043E-02	15.88		
	94	2393.88	3.05556E-03	30.15		
	95	2448.29	7.13832E-02	6.79		
	96	2504.95	2.64957E-03	45.85		
	97	2524.13	1.29630E-03	64.51		
	98	2615.37	2.06021E-02	12.70	Tol.	TL-208
	99	2893.05	2.22222E-03	35.36		

Analysis Report for 1707090-11

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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	9.31E-01	5.47E+00	5.47E+00
+		NA-22	1274.54		99.94	2.62E-02	1.69E-01	1.69E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	-8.13E-04	9.67E-02	9.67E-02
+		K-40	1460.81	*	10.67	5.58E+00	2.42E+00	2.42E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	9.91E-02	1.85E-01	1.85E-01
			78.34		96.00	2.48E+00		2.57E-01
+		SC-46	889.25		99.98	1.20E-04	3.85E-01	3.85E-01
			1120.51		99.99	1.46E+01		1.17E+00
+		V-48	983.52		99.98	2.20E+00	1.18E+01	1.19E+01
			1312.10		97.50	-5.94E-01		1.18E+01
+		CR-51	320.08		9.83	-2.44E+01	1.96E+01	1.96E+01
+		MN-54	834.83		99.97	6.10E-02	2.09E-01	2.09E-01
+		CO-56	846.75		99.96	-7.70E-02	3.81E-01	3.81E-01
			1037.75		14.03	-1.84E+00		2.61E+00
			1238.25		67.00	8.46E+00		1.24E+00
			1771.40		15.51	-2.91E+01		2.15E+00
			2598.48		16.90	1.28E-01		5.61E-01
+		CO-57	122.06		85.51	1.57E-03	2.17E-01	2.17E-01
			136.48		10.60	-1.39E+00		1.80E+00
+		CO-58	810.76		99.40	-5.27E-02	4.04E-01	4.04E-01
+		FE-59	1099.22		56.50	3.53E-01	1.24E+00	1.24E+00
			1291.56		43.20	-8.68E-01		1.50E+00
+		CO-60	1173.22		100.00	8.22E-02	1.60E-01	1.62E-01
			1332.49		100.00	-6.58E-02		1.60E-01
+		ZN-65	1115.52		50.75	3.79E-02	4.45E-01	4.45E-01
+		GA-67	93.31		35.70	7.26E+09	8.05E+08	8.05E+08
			208.95		2.24	4.30E+09		9.81E+09
			300.22		16.00	-5.64E+10		1.61E+09
+		SE-75	121.11		16.70	3.91E-01	4.44E-01	1.54E+00

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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	-3.43E-01	4.44E-01	4.44E-01
		264.65		59.80	6.28E-02		4.87E-01
		279.53		25.20	-6.12E-01		1.16E+00
		400.65		11.40	-4.87E-01		2.65E+00
+	RB-82	776.52		13.00	7.68E-01	1.72E+01	1.72E+01
+	RB-83	520.41		46.00	7.89E-02	7.07E-01	7.07E-01
		529.64		30.30	3.90E-01		1.11E+00
		552.65		16.40	-4.30E-01		2.01E+00
+	KR-85	513.99		0.43	-1.39E+00	3.85E+01	3.85E+01
+	SR-85	513.99		99.27	-1.72E-02	4.78E-01	4.78E-01
+	Y-88	898.02		93.40	-1.24E-01	2.53E-01	3.37E-01
		1836.01		99.38	8.57E-02		2.53E-01
+	MO-93	263.06		56.72	3.78E-02	1.50E-01	2.99E-01
		684.67		99.68	1.47E-01		1.50E-01
		1477.11		99.08	-1.70E-02		1.68E-01
+	NB-93M	16.57		9.43	-1.43E+00	1.29E+00	1.29E+00
+	NB-94	702.63		100.00	1.92E-01	1.62E-01	1.62E-01
		871.10		100.00	1.12E-02		1.62E-01
+	NB-95	765.79		99.81	1.21E+01	1.98E+00	1.98E+00
+	NB-95M	235.69		25.00	-2.68E+07	1.20E+08	1.20E+08
+	ZR-95	724.18		43.70	-1.21E+00	7.68E-01	1.03E+00
		756.72		55.30	-1.12E-01		7.68E-01
+	MO-99	181.06		6.20	1.62E+10	9.02E+10	1.86E+11
		739.58		12.80	6.06E+10		9.02E+10
		778.00		4.50	-1.60E+10		2.45E+11
+	RU-103	497.08		89.00	2.75E-01	9.43E-01	9.43E-01
+	RU-106	621.84		9.80	-1.78E-01	1.62E+00	1.62E+00
+	AG-108M	433.93		89.90	-3.16E-02	1.74E-01	1.75E-01
		614.37		90.40	-1.05E+01		2.86E-01
		722.95		90.50	-6.30E-02		1.74E-01
+	CD-109	88.03	*	3.72	3.49E+01	1.22E+01	1.22E+01
+	AG-110M	657.75		93.14	-4.62E-02	1.96E-01	1.96E-01
		677.61		10.53	-7.16E-01		1.66E+00
		706.67		16.46	3.10E-01		1.26E+00
		763.93		21.98	7.25E-02		1.08E+00
		884.67		71.63	3.79E-02		3.07E-01
		1384.27		23.94	8.98E-02		1.09E+00
+	CD-113M	263.70		0.02	9.30E+01	7.24E+02	7.24E+02
+	SN-113	255.12		1.93	-8.82E+00	4.64E-01	1.38E+01
		391.69		64.90	-1.69E-01		4.64E-01
+	TE123M	159.00		84.10	1.09E-01	3.36E-01	3.36E-01
+	SB-124	602.71		97.87	-7.46E-02	5.18E-01	5.18E-01
		645.85		7.26	9.20E-01		5.92E+00
		722.78		11.10	-1.61E+00		4.44E+00
		1691.02		49.00	-2.76E-01		8.36E-01
+	I-125	35.49		6.49	-2.14E+00	6.69E+00	6.69E+00
+	SB-125	176.33		6.89	-4.89E-01	6.21E-01	2.40E+00
		427.89		29.33	9.43E-01		6.21E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	8.77E-01	6.21E-01	1.62E+00
		600.56		17.80	-2.73E-02		9.46E-01
		635.90		11.32	1.29E-01		1.29E+00
+	SB-126	414.70		83.30	2.92E+00	3.59E+01	5.18E+01
		666.33		99.60	1.19E+02		4.79E+01
		695.00		99.60	3.57E+00		3.59E+01
		720.50		53.80	5.25E+01		7.56E+01
+	SN-126	87.57	*	37.00	3.03E+00	1.05E+00	1.05E+00
+	SB-127	473.00		25.00	7.52E+06	2.38E+07	3.47E+07
		685.20		35.70	2.34E+07		2.38E+07
		783.80		14.70	2.02E+08		7.66E+07
+	I-129	29.78		57.00	-9.38E-02	2.73E-01	2.73E-01
		33.60		13.20	-2.89E-01		1.08E+00
		39.58		7.52	-1.15E+00		1.76E+00
+	I-131	284.30		6.05	1.11E+04	9.46E+02	1.46E+04
		364.48		81.20	-5.02E+02		9.46E+02
		636.97		7.26	1.74E+03		9.56E+03
		722.89		1.80	-1.65E+04		4.55E+04
+	TE-132	49.72		13.10	-1.12E+10	2.46E+08	1.63E+09
		228.16		88.00	3.26E+07		2.46E+08
+	BA-133	81.00		33.00	-5.79E+00	5.58E-01	5.58E-01
		302.84		17.80	7.04E-02		9.92E-01
		356.01		60.00	2.20E+00		5.75E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-2.47E+06	2.38E+05	2.38E+05
+	CS-134	563.23		8.38	-2.94E-01	1.92E-01	1.94E+00
		569.32		15.43	-5.40E-01		1.06E+00
		604.70		97.60	-1.82E+01		2.79E-01
		795.84		85.40	4.72E-03		1.92E-01
		801.93		8.73	6.77E-01		1.97E+00
+	CS-135	268.24		16.00	2.13E+00	1.15E+00	1.15E+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	5.00E+02	2.96E+01	4.10E+02
		163.89		4.61	3.40E+02		6.41E+02
		176.55		13.56	-4.33E+01		2.13E+02
		273.65		12.66	3.51E+02		2.75E+02
		340.57		48.50	6.68E+01		6.63E+01
		818.50		99.70	3.03E-01		2.96E+01
		1048.07		79.60	4.85E+00		3.73E+01
		1235.34		19.70	1.12E+03		2.90E+02
+	CS-137	661.65		85.12	-1.74E-01	1.97E-01	1.97E-01
+	LA-138	788.74		34.00	-1.44E-02	2.36E-01	5.40E-01
		1435.80		66.00	5.56E-02		2.36E-01
+	CE-139	165.85		80.35	-1.02E-02	3.22E-01	3.22E-01
+	BA-140	162.64		6.70	4.29E+02	1.34E+02	5.16E+02
		304.84		4.50	-1.21E+02		7.90E+02
		423.70		3.20	2.74E+02		1.17E+03

Analysis Report for 1707090-11

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		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		BA-140	437.55		2.00	6.81E+02	1.34E+02	1.70E+03
			537.32		25.00	-1.12E+01		1.34E+02
+		LA-140	328.77		20.50	-2.01E+02	6.46E+01	1.73E+02
			487.03	*	45.50	7.60E+01		8.19E+01
			815.85		23.50	-1.58E+01		1.43E+02
			1596.49	*	95.49	5.15E+01		6.46E+01
+		CE-141	145.44		48.40	4.44E+00	2.81E+00	2.81E+00
+	@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26		42.00	1.00E+26		1.00E+26
	@		664.55		5.20	1.00E+26		1.00E+26
+		CE-144	133.54		10.80	9.51E-01	1.75E+00	1.75E+00
+		PM-144	476.78		42.00	7.54E-02	1.69E-01	4.40E-01
			618.01		98.60	-3.47E-01		1.81E-01
			696.49		99.49	-2.78E-02		1.69E-01
+		PM-145	36.85		21.70	7.74E-02	3.47E-01	6.37E-01
			37.36		39.70	-9.60E-02		3.47E-01
			42.30		15.10	-4.37E-01		9.00E-01
			72.40		2.31	-3.70E+01		9.05E+00
+		PM-146	453.90	*	39.94	2.95E-01	4.67E-01	4.67E-01
			735.90		14.01	2.41E-01		1.08E+00
			747.13		13.10	-1.93E+00		1.14E+00
+		ND-147	91.11		28.90	2.10E+03	3.74E+02	3.74E+02
			531.02		13.10	-1.28E+01		6.09E+02
+		PM-149	285.90		3.10	1.17E+14	1.78E+14	1.78E+14
+		EU-152	121.78		20.50	1.82E-01	7.15E-01	7.15E-01
			244.69		5.40	1.22E+00		3.63E+00
			344.27		19.13	2.78E-01		8.93E-01
			778.89		9.20	2.18E-01		1.68E+00
			964.01		10.40	9.20E-01		1.73E+00
			1085.78		7.22	2.01E+00		2.29E+00
			1112.02		9.60	4.99E-01		1.66E+00
			1407.95		14.94	4.52E+00		1.79E+00
+		GD-153	97.43		31.30	5.39E-01	6.24E-01	6.24E-01
			103.18		22.20	-4.14E-01		8.33E-01
+		EU-154	123.07		40.50	-8.83E-02	3.63E-01	3.63E-01
			723.30		19.70	-2.95E-01		8.15E-01
			873.19		11.50	-4.06E-01		1.44E+00
			996.32		10.30	-2.34E-03		1.61E+00
			1004.76		17.90	1.68E-02		1.07E+00
			1274.45		35.50	7.01E-02		4.51E-01
+		EU-155	86.50		30.90	1.90E+00	6.48E-01	6.48E-01
			105.30		20.70	-2.66E-01		7.02E-01
+		EU-156	811.77		10.40	-1.62E+01	1.33E+02	1.33E+02
			1153.47		7.20	8.29E+02		2.99E+02
			1230.71		8.90	-8.53E+00		1.54E+02
+		HO-166M	184.41		72.60	3.61E+00	2.70E-01	3.15E-01
			280.45		29.60	-2.94E-01		5.63E-01
			410.94		11.10	-4.50E-01		1.52E+00
			711.69		54.10	-1.98E-02		2.70E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	5.88E+01	1.38E+02	1.38E+02
+	HF-172	67.35		5.31	1.94E+00	1.42E+00	3.64E+00
		125.81		11.30	4.01E-01		1.42E+00
+	LU-172	181.53		20.60	1.93E+03	7.09E+03	2.22E+04
		900.72		29.81	5.28E+03		1.65E+04
		1093.66		62.50	-2.50E+03		7.09E+03
+	LU-173	100.72		5.24	1.57E+00	1.04E+00	3.13E+00
		272.11		21.20	3.51E+00		1.04E+00
+	HF-175	343.40		84.00	-4.26E-03	5.35E-01	5.35E-01
+	LU-176	88.34		13.30	-4.67E+00	1.72E-01	1.47E+00
		201.83		86.00	-4.02E-02		1.79E-01
		306.78		94.00	-3.55E-02		1.72E-01
+	HF-181	133.02		41.70	9.79E-01	9.55E-01	1.80E+00
		345.85		17.20	3.45E-01		5.08E+00
		482.03		82.80	-6.46E-01		9.55E-01
+	TA-182	67.75		41.20	4.13E-01	7.73E-01	7.73E-01
		1121.30		34.90	3.40E+01		2.69E+00
		1189.05		16.23	3.89E-01		1.73E+00
		1221.41		26.98	8.44E-01		1.07E+00
		1231.02		11.44	-1.31E-01		2.36E+00
+	IR-192	308.46		29.68	-4.17E-01	7.98E-01	1.37E+00
		468.07		48.10	-8.12E-02		7.98E-01
+	HG-203	279.19		77.30	-4.91E-01	9.33E-01	9.33E-01
+	TL-204	374.74		94.11	-4.08E-02	1.75E-01	1.75E-01
		899.15		99.16	4.47E-02		1.78E-01
		911.74		91.10	1.36E-01		2.07E-01
+	BI-207	569.67		97.72	8.95E-02	1.57E-01	1.57E-01
		1063.62		74.90	4.27E-02		2.03E-01
+	TL-208	583.14		30.22	6.56E-01	3.79E-01	5.51E-01
		860.37		4.48	1.14E+00		3.60E+00
		2614.66		35.85	6.75E-01		3.79E-01
+	BI-210M	262.00		45.00	-6.18E-03	3.80E-01	3.80E-01
		300.00		23.00	-3.62E+01		8.54E-01
+	PB-210	46.50	*	4.25	1.55E+01	3.96E+00	3.96E+00
+	PB-211	404.84		2.90	7.56E-01	5.68E+00	6.10E+00
		831.96		2.90	7.37E-01		5.68E+00
+	BI-212	727.17	*	11.80	1.19E+00	1.60E+00	1.60E+00
		1620.62	*	2.75	4.74E+00		6.13E+00
+	PB-212	238.63		44.60	-8.24E+00	3.82E-01	3.82E-01
		300.09		3.41	-2.44E+02		5.76E+00
+	BI-214	609.31	*	46.30	4.06E+01	8.23E-01	8.23E-01
		1120.29	*	15.10	4.32E+01		1.90E+00
		1764.49	*	15.80	4.50E+01		2.47E+00
		2204.22	*	4.98	4.77E+01		2.97E+00
+	PB-214	295.21	*	19.19	4.41E+01	8.77E-01	1.69E+00
		351.92	*	37.19	4.43E+01		8.77E-01
+	RN-219	401.80		6.50	-1.90E-02	2.65E+00	2.65E+00
+	RA-223	323.87		3.88	3.28E+00	4.27E+00	4.27E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98	*	3.95	8.15E+01	8.05E+00	8.05E+00
+	RA-225	40.00		31.00	-1.66E+01	4.51E+01	4.51E+01
+	RA-226	186.21	*	3.28	8.70E+01	7.45E+00	7.45E+00
+	TH-227	50.10		8.40	-7.49E+00	1.38E+00	1.72E+00
		236.00		11.50	-3.08E-01		1.38E+00
		256.20		6.30	4.89E+00		2.80E+00
+	AC-228	338.32		11.40	-7.17E-02	6.49E-01	1.50E+00
		911.07		27.70	4.26E-01		6.49E-01
		969.11		16.60	-7.37E-01		1.04E+00
+	TH-230	48.44		16.90	1.38E+00	9.22E-01	9.22E-01
		62.85		4.60	2.32E+01		4.14E+00
		67.67		0.37	2.52E+01		4.72E+01
+	PA-231	283.67		1.60	-3.15E+00	7.54E+00	1.06E+01
		302.67		2.30	5.35E-01		7.54E+00
+	TH-231	25.64		14.70	-3.43E+00	1.22E+00	1.22E+00
		84.21		6.40	-9.72E+00		2.84E+00
+	PA-233	311.98		38.60	3.13E-01	5.35E+00	5.35E+00
+	PA-234	131.20		20.40	-1.55E-01	7.19E-01	7.19E-01
		733.99		8.80	5.94E-02		1.64E+00
		946.00		12.00	-8.64E-02		1.31E+00
+	PA-234M	1001.03	*	0.92	4.02E+01	2.75E+01	2.75E+01
+	TH-234	63.29	*	3.80	2.53E+01	6.14E+00	6.14E+00
+	U-235	143.76	*	10.50	2.83E+00	1.82E+00	1.82E+00
		163.35	*	4.70	2.41E+00		3.50E+00
		205.31	*	4.70	1.82E+00		3.41E+00
+	NP-237	86.50		12.60	4.48E+00	1.53E+00	1.53E+00
+	NP-239	106.10		22.70	-1.84E+12	3.01E+12	3.01E+12
		228.18		10.70	8.82E+11		6.67E+12
		277.60		14.10	1.22E+11		5.99E+12
+	AM-241	59.54		35.90	-1.63E-01	4.43E-01	4.43E-01
+	AM-243	74.67	*	66.00	3.50E+00	5.79E-01	5.79E-01
+	CM-243	209.75		3.29	2.33E+00	1.24E+00	4.60E+00
		228.14		10.60	1.84E-01		1.39E+00
		277.60		14.00	2.53E-02		1.24E+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

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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	5.47E+00	5.47E+00	9.31E-01	2.69E+00
	NA-22	1274.54		99.94	1.69E-01	1.69E-01	2.62E-02	8.17E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	9.67E-02	9.67E-02	-8.13E-04	4.52E-02
+	K-40	1460.81	*	10.67	2.42E+00	2.42E+00	5.58E+00	1.18E+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	1.85E-01	1.85E-01	9.91E-02	9.21E-02
		78.34		96.00	2.57E-01		2.48E+00	1.28E-01
	SC-46	889.25		99.98	3.85E-01	3.85E-01	1.20E-04	1.88E-01
		1120.51		99.99	1.17E+00		1.46E+01	5.78E-01
	V-48	983.52		99.98	1.19E+01	1.18E+01	2.20E+00	5.79E+00
		1312.10		97.50	1.18E+01		-5.94E-01	5.69E+00
	CR-51	320.08		9.83	1.96E+01	1.96E+01	-2.44E+01	9.67E+00
	MN-54	834.83		99.97	2.09E-01	2.09E-01	6.10E-02	1.02E-01
	CO-56	846.75		99.96	3.81E-01	3.81E-01	-7.70E-02	1.86E-01
		1037.75		14.03	2.61E+00		-1.84E+00	1.27E+00
		1238.25		67.00	1.24E+00		8.46E+00	6.12E-01
		1771.40		15.51	2.15E+00		-2.91E+01	1.03E+00
		2598.48		16.90	5.61E-01		1.28E-01	2.23E-01
	CO-57	122.06		85.51	2.17E-01	2.17E-01	1.57E-03	1.08E-01
		136.48		10.60	1.80E+00		-1.39E+00	8.94E-01
	CO-58	810.76		99.40	4.04E-01	4.04E-01	-5.27E-02	1.97E-01
	FE-59	1099.22		56.50	1.24E+00	1.24E+00	3.53E-01	6.02E-01
		1291.56		43.20	1.50E+00		-8.68E-01	7.23E-01
	CO-60	1173.22		100.00	1.62E-01	1.60E-01	8.22E-02	7.87E-02
		1332.49		100.00	1.60E-01		-6.58E-02	7.76E-02
	ZN-65	1115.52		50.75	4.45E-01	4.45E-01	3.79E-02	2.17E-01
	GA-67	93.31		35.70	8.05E+08	8.05E+08	7.26E+09	4.01E+08
		208.95		2.24	9.81E+09		4.30E+09	4.86E+09
		300.22		16.00	1.61E+09		-5.64E+10	7.97E+08
	SE-75	121.11		16.70	1.54E+00	4.44E-01	3.91E-01	7.62E-01
		136.00		59.20	4.44E-01		-3.43E-01	2.20E-01
		264.65		59.80	4.87E-01		6.28E-02	2.41E-01
		279.53		25.20	1.16E+00		-6.12E-01	5.75E-01
		400.65		11.40	2.65E+00		-4.87E-01	1.31E+00
	RB-82	776.52		13.00	1.72E+01	1.72E+01	7.68E-01	8.40E+00
	RB-83	520.41		46.00	7.07E-01	7.07E-01	7.89E-02	3.48E-01
		529.64		30.30	1.11E+00		3.90E-01	5.46E-01
		552.65		16.40	2.01E+00		-4.30E-01	9.85E-01
	KR-85	513.99		0.43	3.85E+01	3.85E+01	-1.39E+00	1.90E+01
	SR-85	513.99		99.27	4.78E-01	4.78E-01	-1.72E-02	2.36E-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)
	Y-88	898.02		93.40	3.37E-01	2.53E-01	-1.24E-01	1.65E-01
		1836.01		99.38	2.53E-01		8.57E-02	1.20E-01
	MO-93	263.06		56.72	2.99E-01	1.50E-01	3.78E-02	1.48E-01
		684.67		99.68	1.50E-01		1.47E-01	7.36E-02
		1477.11		99.08	1.68E-01		-1.70E-02	8.11E-02
	NB-93M	16.57		9.43	1.29E+00	1.29E+00	-1.43E+00	6.34E-01
	NB-94	702.63		100.00	1.62E-01	1.62E-01	1.92E-01	7.94E-02
		871.10		100.00	1.62E-01		1.12E-02	7.90E-02
	NB-95	765.79		99.81	1.98E+00	1.98E+00	1.21E+01	9.77E-01
	NB-95M	235.69		25.00	1.20E+08	1.20E+08	-2.68E+07	5.93E+07
	ZR-95	724.18		43.70	1.03E+00	7.68E-01	-1.21E+00	5.04E-01
		756.72		55.30	7.68E-01		-1.12E-01	3.75E-01
	MO-99	181.06		6.20	1.86E+11	9.02E+10	1.62E+10	9.25E+10
		739.58		12.80	9.02E+10		6.06E+10	4.42E+10
		778.00		4.50	2.45E+11		-1.60E+10	1.20E+11
	RU-103	497.08		89.00	9.43E-01	9.43E-01	2.75E-01	4.64E-01
	RU-106	621.84		9.80	1.62E+00	1.62E+00	-1.78E-01	7.90E-01
	AG-108M	433.93		89.90	1.75E-01	1.74E-01	-3.16E-02	8.62E-02
		614.37		90.40	2.86E-01		-1.05E+01	1.42E-01
		722.95		90.50	1.74E-01		-6.30E-02	8.52E-02
+	CD-109	88.03	*	3.72	1.22E+01	1.22E+01	3.49E+01	6.07E+00
	AG-110M	657.75		93.14	1.96E-01	1.96E-01	-4.62E-02	9.57E-02
		677.61		10.53	1.66E+00		-7.16E-01	8.11E-01
		706.67		16.46	1.26E+00		3.10E-01	6.18E-01
		763.93		21.98	1.08E+00		7.25E-02	5.29E-01
		884.67		71.63	3.07E-01		3.79E-02	1.50E-01
		1384.27		23.94	1.09E+00		8.98E-02	5.29E-01
	CD-113M	263.70		0.02	7.24E+02	7.24E+02	9.30E+01	3.59E+02
	SN-113	255.12		1.93	1.38E+01	4.64E-01	-8.82E+00	6.83E+00
		391.69		64.90	4.64E-01		-1.69E-01	2.29E-01
	TE123M	159.00		84.10	3.36E-01	3.36E-01	1.09E-01	1.67E-01
	SB-124	602.71		97.87	5.18E-01	5.18E-01	-7.46E-02	2.54E-01
		645.85		7.26	5.92E+00		9.20E-01	2.89E+00
		722.78		11.10	4.44E+00		-1.61E+00	2.17E+00
		1691.02		49.00	8.36E-01		-2.76E-01	3.99E-01
	I-125	35.49		6.49	6.69E+00	6.69E+00	-2.14E+00	3.32E+00
	SB-125	176.33		6.89	2.40E+00	6.21E-01	-4.89E-01	1.19E+00
		427.89		29.33	6.21E-01		9.43E-01	3.07E-01
		463.38		10.35	1.62E+00		8.77E-01	8.00E-01
		600.56		17.80	9.46E-01		-2.73E-02	4.65E-01
		635.90		11.32	1.29E+00		1.29E-01	6.30E-01
	SB-126	414.70		83.30	5.18E+01	3.59E+01	2.92E+00	2.56E+01
		666.33		99.60	4.79E+01		1.19E+02	2.36E+01
		695.00		99.60	3.59E+01		3.57E+00	1.76E+01
		720.50		53.80	7.56E+01		5.25E+01	3.70E+01
+	SN-126	87.57	*	37.00	1.05E+00	1.05E+00	3.03E+00	5.26E-01
	SB-127	473.00		25.00	3.47E+07	2.38E+07	7.52E+06	1.71E+07
		685.20		35.70	2.38E+07		2.34E+07	1.17E+07
		783.80		14.70	7.66E+07		2.02E+08	3.76E+07
	I-129	29.78		57.00	2.73E-01	2.73E-01	-9.38E-02	1.35E-01
		33.60		13.20	1.08E+00		-2.89E-01	5.37E-01
		39.58		7.52	1.76E+00		-1.15E+00	8.73E-01
	I-131	284.30		6.05	1.46E+04	9.46E+02	1.11E+04	7.25E+03

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	I-131	364.48		81.20	9.46E+02	9.46E+02	-5.02E+02	4.67E+02
		636.97		7.26	9.56E+03		1.74E+03	4.68E+03
		722.89		1.80	4.55E+04		-1.65E+04	2.23E+04
	TE-132	49.72		13.10	1.63E+09	2.46E+08	-1.12E+10	8.08E+08
		228.16		88.00	2.46E+08		3.26E+07	1.22E+08
	BA-133	81.00		33.00	5.58E-01	5.58E-01	-5.79E+00	2.78E-01
		302.84		17.80	9.92E-01		7.04E-02	4.91E-01
		356.01		60.00	5.75E-01		2.20E+00	2.86E-01
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	2.38E+05	2.38E+05	-2.47E+06	1.18E+05
	CS-134	563.23		8.38	1.94E+00	1.92E-01	-2.94E-01	9.52E-01
		569.32		15.43	1.06E+00		-5.40E-01	5.22E-01
		604.70		97.60	2.79E-01		-1.82E+01	1.38E-01
		795.84		85.40	1.92E-01		4.72E-03	9.40E-02
		801.93		8.73	1.97E+00		6.77E-01	9.63E-01
	CS-135	268.24		16.00	1.15E+00	1.15E+00	2.13E+00	5.68E-01
@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22		7.46	4.10E+02	2.96E+01	5.00E+02	2.04E+02
		163.89		4.61	6.41E+02		3.40E+02	3.18E+02
		176.55		13.56	2.13E+02		-4.33E+01	1.06E+02
		273.65		12.66	2.75E+02		3.51E+02	1.36E+02
		340.57		48.50	6.63E+01		6.68E+01	3.28E+01
		818.50		99.70	2.96E+01		3.03E-01	1.45E+01
		1048.07		79.60	3.73E+01		4.85E+00	1.81E+01
		1235.34		19.70	2.90E+02		1.12E+03	1.43E+02
	CS-137	661.65		85.12	1.97E-01	1.97E-01	-1.74E-01	9.68E-02
	LA-138	788.74		34.00	5.40E-01	2.36E-01	-1.44E-02	2.65E-01
		1435.80		66.00	2.36E-01		5.56E-02	1.14E-01
	CE-139	165.85		80.35	3.22E-01	3.22E-01	-1.02E-02	1.60E-01
	BA-140	162.64		6.70	5.16E+02	1.34E+02	4.29E+02	2.56E+02
		304.84		4.50	7.90E+02		-1.21E+02	3.91E+02
		423.70		3.20	1.17E+03		2.74E+02	5.76E+02
		437.55		2.00	1.70E+03		6.81E+02	8.38E+02
		537.32		25.00	1.34E+02		-1.12E+01	6.59E+01
+	LA-140	328.77		20.50	1.73E+02	6.46E+01	-2.01E+02	8.56E+01
		487.03	*	45.50	8.19E+01		7.60E+01	4.04E+01
		815.85		23.50	1.43E+02		-1.58E+01	7.01E+01
		1596.49	*	95.49	6.46E+01		5.15E+01	3.17E+01
	CE-141	145.44		48.40	2.81E+00	2.81E+00	4.44E+00	1.40E+00
@	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	1.75E+00	1.75E+00	9.51E-01	8.66E-01
	PM-144	476.78		42.00	4.40E-01	1.69E-01	7.54E-02	2.16E-01
		618.01		98.60	1.81E-01		-3.47E-01	8.85E-02
		696.49		99.49	1.69E-01		-2.78E-02	8.28E-02
	PM-145	36.85		21.70	6.37E-01	3.47E-01	7.74E-02	3.15E-01
		37.36		39.70	3.47E-01		-9.60E-02	1.72E-01
		42.30		15.10	9.00E-01		-4.37E-01	4.46E-01
		72.40		2.31	9.05E+00		-3.70E+01	4.50E+00
+	PM-146	453.90	*	39.94	4.67E-01	4.67E-01	2.95E-01	2.30E-01

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	735.90	14.01	1.08E+00	4.67E-01	2.41E-01	5.30E-01
	747.13	13.10	1.14E+00		-1.93E+00	5.56E-01
ND-147	91.11	28.90	3.74E+02	3.74E+02	2.10E+03	1.86E+02
	531.02	13.10	6.09E+02		-1.28E+01	2.99E+02
PM-149	285.90	3.10	1.78E+14	1.78E+14	1.17E+14	8.83E+13
EU-152	121.78	20.50	7.15E-01	7.15E-01	1.82E-01	3.55E-01
	244.69	5.40	3.63E+00		1.22E+00	1.80E+00
	344.27	19.13	8.93E-01		2.78E-01	4.42E-01
	778.89	9.20	1.68E+00		2.18E-01	8.23E-01
	964.01	10.40	1.73E+00		9.20E-01	8.46E-01
	1085.78	7.22	2.29E+00		2.01E+00	1.12E+00
	1112.02	9.60	1.66E+00		4.99E-01	8.06E-01
	1407.95	14.94	1.79E+00		4.52E+00	8.76E-01
GD-153	97.43	31.30	6.24E-01	6.24E-01	5.39E-01	3.10E-01
	103.18	22.20	8.33E-01		-4.14E-01	4.13E-01
EU-154	123.07	40.50	3.63E-01	3.63E-01	-8.83E-02	1.80E-01
	723.30	19.70	8.15E-01		-2.95E-01	3.99E-01
	873.19	11.50	1.44E+00		-4.06E-01	7.03E-01
	996.32	10.30	1.61E+00		-2.34E-03	7.87E-01
	1004.76	17.90	1.07E+00		1.68E-02	5.22E-01
	1274.45	35.50	4.51E-01		7.01E-02	2.19E-01
EU-155	86.50	30.90	6.48E-01	6.48E-01	1.90E+00	3.22E-01
	105.30	20.70	7.02E-01		-2.66E-01	3.49E-01
EU-156	811.77	10.40	1.33E+02	1.33E+02	-1.62E+01	6.48E+01
	1153.47	7.20	2.99E+02		8.29E+02	1.46E+02
	1230.71	8.90	1.54E+02		-8.53E+00	7.45E+01
HO-166M	184.41	72.60	3.15E-01	2.70E-01	3.61E+00	1.57E-01
	280.45	29.60	5.63E-01		-2.94E-01	2.79E-01
	410.94	11.10	1.52E+00		-4.50E-01	7.53E-01
	711.69	54.10	2.70E-01		-1.98E-02	1.32E-01
TM-171	66.72	0.14	1.38E+02	1.38E+02	5.88E+01	6.86E+01
HF-172	67.35	5.31	3.64E+00	1.42E+00	1.94E+00	1.81E+00
	125.81	11.30	1.42E+00		4.01E-01	7.06E-01
LU-172	181.53	20.60	2.22E+04	7.09E+03	1.93E+03	1.10E+04
	900.72	29.81	1.65E+04		5.28E+03	8.06E+03
	1093.66	62.50	7.09E+03		-2.50E+03	3.44E+03
LU-173	100.72	5.24	3.13E+00	1.04E+00	1.57E+00	1.55E+00
	272.11	21.20	1.04E+00		3.51E+00	5.15E-01
HF-175	343.40	84.00	5.35E-01	5.35E-01	-4.26E-03	2.64E-01
LU-176	88.34	13.30	1.47E+00	1.72E-01	-4.67E+00	7.33E-01
	201.83	86.00	1.79E-01		-4.02E-02	8.88E-02
	306.78	94.00	1.72E-01		-3.55E-02	8.51E-02
HF-181	133.02	41.70	1.80E+00	9.55E-01	9.79E-01	8.92E-01
	345.85	17.20	5.08E+00		3.45E-01	2.51E+00
	482.03	82.80	9.55E-01		-6.46E-01	4.71E-01
TA-182	67.75	41.20	7.73E-01	7.73E-01	4.13E-01	3.84E-01
	1121.30	34.90	2.69E+00		3.40E+01	1.34E+00
	1189.05	16.23	1.73E+00		3.89E-01	8.36E-01
	1221.41	26.98	1.07E+00		8.44E-01	5.21E-01
	1231.02	11.44	2.36E+00		-1.31E-01	1.14E+00
IR-192	308.46	29.68	1.37E+00	7.98E-01	-4.17E-01	6.78E-01
	468.07	48.10	7.98E-01		-8.12E-02	3.93E-01
HG-203	279.19	77.30	9.33E-01	9.33E-01	-4.91E-01	4.62E-01

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	1.75E-01	1.75E-01	-4.08E-02	8.65E-02
		899.15		99.16	1.78E-01		4.47E-02	8.72E-02
		911.74		91.10	2.07E-01		1.36E-01	1.02E-01
	BI-207	569.67		97.72	1.57E-01	1.57E-01	8.95E-02	7.73E-02
		1063.62		74.90	2.03E-01		4.27E-02	9.86E-02
	TL-208	583.14		30.22	5.51E-01	3.79E-01	6.56E-01	2.71E-01
		860.37		4.48	3.60E+00		1.14E+00	1.76E+00
		2614.66		35.85	3.79E-01		6.75E-01	1.78E-01
	BI-210M	262.00		45.00	3.80E-01	3.80E-01	-6.18E-03	1.88E-01
		300.00		23.00	8.54E-01		-3.62E+01	4.23E-01
+	PB-210	46.50	*	4.25	3.96E+00	3.96E+00	1.55E+01	1.97E+00
	PB-211	404.84		2.90	6.10E+00	5.68E+00	7.56E-01	3.02E+00
		831.96		2.90	5.68E+00		7.37E-01	2.78E+00
+	BI-212	727.17	*	11.80	1.60E+00	1.60E+00	1.19E+00	7.85E-01
		1620.62	*	2.75	6.13E+00		4.74E+00	2.96E+00
	PB-212	238.63		44.60	3.82E-01	3.82E-01	-8.24E+00	1.89E-01
		300.09		3.41	5.76E+00		-2.44E+02	2.86E+00
+	BI-214	609.31	*	46.30	8.23E-01	8.23E-01	4.06E+01	4.08E-01
		1120.29	*	15.10	1.90E+00		4.32E+01	9.38E-01
		1764.49	*	15.80	2.47E+00		4.50E+01	1.22E+00
		2204.22	*	4.98	2.97E+00		4.77E+01	1.41E+00
+	PB-214	295.21	*	19.19	1.69E+00	8.77E-01	4.41E+01	8.40E-01
		351.92	*	37.19	8.77E-01		4.43E+01	4.36E-01
	RN-219	401.80		6.50	2.65E+00	2.65E+00	-1.90E-02	1.31E+00
	RA-223	323.87		3.88	4.27E+00	4.27E+00	3.28E+00	2.11E+00
+	RA-224	240.98	*	3.95	8.05E+00	8.05E+00	8.15E+01	4.01E+00
	RA-225	40.00		31.00	4.51E+01	4.51E+01	-1.66E+01	2.24E+01
+	RA-226	186.21	*	3.28	7.45E+00	7.45E+00	8.70E+01	3.70E+00
	TH-227	50.10		8.40	1.72E+00	1.38E+00	-7.49E+00	8.51E-01
		236.00		11.50	1.38E+00		-3.08E-01	6.82E-01
		256.20		6.30	2.80E+00		4.89E+00	1.39E+00
	AC-228	338.32		11.40	1.50E+00	6.49E-01	-7.17E-02	7.43E-01
		911.07		27.70	6.49E-01		4.26E-01	3.17E-01
		969.11		16.60	1.04E+00		-7.37E-01	5.10E-01
	TH-230	48.44		16.90	9.22E-01	9.22E-01	1.38E+00	4.58E-01
		62.85		4.60	4.14E+00		2.32E+01	2.06E+00
		67.67		0.37	4.72E+01		2.52E+01	2.34E+01
	PA-231	283.67		1.60	1.06E+01	7.54E+00	-3.15E+00	5.26E+00
		302.67		2.30	7.54E+00		5.35E-01	3.73E+00
	TH-231	25.64		14.70	1.22E+00	1.22E+00	-3.43E+00	6.03E-01
		84.21		6.40	2.84E+00		-9.72E+00	1.41E+00
	PA-233	311.98		38.60	5.35E+00	5.35E+00	3.13E-01	2.65E+00
	PA-234	131.20		20.40	7.19E-01	7.19E-01	-1.55E-01	3.57E-01
		733.99		8.80	1.64E+00		5.94E-02	8.00E-01
		946.00		12.00	1.31E+00		-8.64E-02	6.40E-01
+	PA-234M	1001.03	*	0.92	2.75E+01	2.75E+01	4.02E+01	1.35E+01
+	TH-234	63.29	*	3.80	6.14E+00	6.14E+00	2.53E+01	3.06E+00
+	U-235	143.76	*	10.50	1.82E+00	1.82E+00	2.83E+00	9.07E-01
		163.35	*	4.70	3.50E+00		2.41E+00	1.74E+00
		205.31	*	4.70	3.41E+00		1.82E+00	1.69E+00
	NP-237	86.50		12.60	1.53E+00	1.53E+00	4.48E+00	7.61E-01
	NP-239	106.10		22.70	3.01E+12	3.01E+12	-1.84E+12	1.49E+12
		228.18		10.70	6.67E+12		8.82E+11	3.30E+12

Analysis Report for 1707090-11

HTC-A07-S001-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NP-239	277.60		14.10	5.99E+12	3.01E+12	1.22E+11	2.97E+12
	AM-241	59.54		35.90	4.43E-01	4.43E-01	-1.63E-01	2.20E-01
+	AM-243	74.67	*	66.00	5.79E-01	5.79E-01	3.50E+00	2.89E-01
	CM-243	209.75		3.29	4.60E+00	1.24E+00	2.33E+00	2.28E+00
		228.14		10.60	1.39E+00		1.84E-01	6.88E-01
		277.60		14.00	1.24E+00		2.53E-02	6.17E-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

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: HTC-A07-S001-0612-01

Elapsed Live time: 3600
Elapsed Real Time: 3616

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	3	738	880	769	880	1282	907
25:	775	789	807	773	786	787	802	759
33:	798	734	803	855	808	761	820	847
41:	856	843	904	956	1001	1278	2154	1371
49:	1012	1178	1197	1260	1408	1649	1323	1238
57:	1387	1412	1532	1642	1685	1871	2495	3790
65:	2130	1966	1933	2178	2115	2082	2093	2159
73:	2230	2717	5445	4696	6047	7546	2700	2410
81:	2237	2255	1838	2521	2314	1830	2828	3588
89:	2155	2455	2092	2359	4570	2815	1843	1589
97:	1266	1455	1552	1325	1284	1282	1268	1294
105:	1243	1220	1328	1261	1284	1341	1328	1390
113:	1492	1368	1269	1276	1246	1275	1230	1290
121:	1282	1226	1228	1283	1225	1248	1233	1252
129:	1263	1192	1277	1265	1196	1263	1231	1274
137:	1189	1183	1272	1314	1335	1280	1296	1752
145:	1550	1324	1256	1290	1299	1343	1336	1341
153:	1340	1424	1469	1332	1205	1296	1245	1269
161:	1235	1212	1206	1350	1168	1126	1108	1138
169:	1155	1090	1122	1078	1080	1080	1102	1071
177:	1053	1060	1101	1115	1083	1100	1070	1149
185:	1533	4056	3509	1317	1006	1069	1092	1030
193:	979	992	945	1013	975	936	995	957
201:	940	942	897	903	985	970	864	829
209:	887	873	826	803	803	771	749	803
217:	774	803	766	750	827	738	781	704
225:	745	731	759	698	714	735	719	694
233:	714	719	765	890	938	766	1008	826
241:	1121	3785	2984	829	641	681	713	619
249:	587	602	624	583	615	559	624	660
257:	682	634	793	632	566	548	542	552
265:	536	558	520	532	648	844	765	794
273:	621	607	736	647	532	533	514	508
281:	496	487	493	590	517	564	565	495
289:	483	511	511	512	604	1127	6131	7086
297:	1322	512	575	681	569	473	479	439
305:	454	443	420	420	410	434	406	418
313:	419	426	428	430	403	400	380	366
321:	424	408	417	484	427	397	385	394
329:	419	432	390	387	409	454	457	412
337:	376	430	499	400	404	433	411	388
345:	391	372	383	407	551	590	3216	13360
353:	7624	954	481	551	560	380	290	287
361:	284	299	286	286	271	287	254	278

369:	284	323	286	314	295	316	297	299

Sample Title: HTC-A07-S001-0612-01

Channel								
377:	295	315	322	312	280	292	277	295
385:	302	357	409	378	406	352	283	302
393:	280	302	300	320	311	305	293	299
401:	344	394	312	321	366	382	325	326
409:	318	294	320	275	321	310	295	332
417:	285	283	284	300	317	325	277	275
425:	301	333	307	289	291	293	249	215
433:	243	235	265	239	266	227	240	224
441:	226	227	220	224	228	229	227	245
449:	229	215	238	213	243	229	297	239
457:	231	213	213	205	225	255	236	219
465:	205	199	210	210	201	211	183	201
473:	177	191	198	214	172	188	181	260
481:	272	184	177	169	199	211	295	206
489:	183	178	192	169	148	175	157	187
497:	164	168	156	196	167	173	149	166
505:	183	175	160	182	198	265	317	240
513:	210	182	167	169	166	188	151	157
521:	158	160	155	156	149	154	193	166
529:	155	163	161	153	181	190	200	158
537:	158	181	134	173	159	154	153	154
545:	145	171	156	178	166	125	165	129
553:	163	156	157	153	128	153	149	158
561:	139	132	146	160	154	131	156	139
569:	144	136	158	160	175	140	136	132
577:	145	119	166	206	193	176	185	187
585:	130	145	136	162	131	117	156	139
593:	129	130	119	134	142	149	150	146
601:	149	140	139	169	155	196	256	1547
609:	7791	7680	1431	251	293	299	235	133
617:	108	105	103	90	97	89	96	107
625:	101	113	112	101	98	87	108	109
633:	132	102	84	96	107	92	96	101
641:	90	99	103	84	92	120	111	105
649:	86	99	100	75	101	93	91	83
657:	96	97	87	114	127	115	124	149
665:	292	313	160	109	95	113	120	93
673:	109	81	86	69	92	88	94	80
681:	100	96	114	105	107	110	110	99
689:	84	88	94	91	100	106	87	75
697:	96	92	90	91	103	116	176	174
705:	110	95	111	103	110	108	102	94
713:	96	85	93	90	99	98	127	163
721:	121	91	95	104	109	95	126	117
729:	111	108	87	87	94	99	104	87
737:	78	103	92	105	95	146	145	96
745:	99	92	90	80	80	82	101	94
753:	107	102	92	75	79	85	95	86
761:	104	86	82	98	107	151	313	782
769:	725	235	136	104	95	88	82	79
777:	102	101	96	88	93	94	96	122
785:	174	297	190	107	86	86	72	94
793:	84	85	94	101	74	80	90	91

801:	87	71	78	94	148	265	227	114

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Channel								
809:	69	77	92	94	78	82	90	110
817:	92	82	96	82	100	108	97	74
825:	118	101	99	109	96	92	97	135
833:	102	94	73	98	83	127	185	149
841:	78	88	89	83	85	89	90	91
849:	85	98	97	93	80	86	88	92
857:	98	95	85	86	72	102	87	87
865:	72	104	91	82	75	96	89	104
873:	80	90	91	66	105	100	81	89
881:	90	85	103	100	82	100	84	96
889:	91	95	99	92	93	99	71	77
897:	92	109	79	105	82	93	92	84
905:	111	80	95	97	90	99	141	113
913:	89	85	96	88	86	71	77	80
921:	78	92	89	71	93	81	80	83
929:	89	77	102	104	288	487	311	112
937:	96	98	77	74	86	72	77	80
945:	79	79	64	62	74	68	75	75
953:	79	83	73	66	75	73	53	76
961:	66	75	96	133	104	83	81	74
969:	118	94	80	72	86	79	63	76
977:	70	64	69	55	80	79	62	81
985:	65	77	58	82	87	68	75	70
993:	68	60	63	60	89	86	82	123
1001:	187	136	71	57	65	85	67	75
1009:	83	68	66	52	68	68	71	70
1017:	62	63	63	57	61	75	79	73
1025:	54	64	65	58	67	62	58	79
1033:	69	61	49	49	53	75	72	61
1041:	58	75	52	50	62	55	66	58
1049:	61	68	79	115	74	63	61	55
1057:	69	54	51	52	62	59	62	52
1065:	59	49	62	81	64	89	79	62
1073:	54	47	52	61	61	61	63	51
1081:	56	65	73	61	53	67	63	67
1089:	47	53	63	58	61	51	51	55
1097:	70	57	43	43	55	47	74	86
1105:	61	51	68	50	63	59	60	52
1113:	53	64	48	52	64	138	712	1882
1121:	1236	269	91	93	90	61	63	52
1129:	55	66	50	71	71	89	53	52
1137:	54	52	55	44	49	47	53	62
1145:	57	57	65	59	62	65	56	52
1153:	70	162	271	164	71	73	61	58
1161:	41	54	55	55	58	49	55	48
1169:	39	53	52	60	47	45	49	59
1177:	45	49	52	58	62	71	58	43
1185:	49	50	44	42	60	40	54	54
1193:	46	47	51	56	48	48	50	53
1201:	54	37	43	36	50	57	83	100
1209:	49	55	45	40	48	61	41	40
1217:	37	51	60	53	52	49	44	46
1225:	42	42	48	32	53	43	37	48

1233:	41	53	44	101	382	665	362	91

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Channel								
1241:	69	67	54	44	43	46	41	42
1249:	45	41	50	65	65	79	74	49
1257:	45	40	40	40	44	58	35	36
1265:	42	43	41	49	44	44	54	52
1273:	42	47	40	39	50	38	52	153
1281:	196	99	45	44	44	39	51	40
1289:	43	29	38	33	36	27	34	44
1297:	40	47	49	45	47	41	52	44
1305:	37	41	43	42	49	50	35	41
1313:	41	42	36	53	40	39	35	38
1321:	45	41	42	41	40	44	38	46
1329:	37	43	39	41	48	36	51	55
1337:	47	35	34	40	41	42	54	41
1345:	44	33	42	45	33	41	32	35
1353:	30	33	39	34	41	48	32	43
1361:	35	32	34	38	42	41	49	44
1369:	38	46	46	42	39	39	52	164
1377:	409	395	140	61	48	42	61	81
1385:	114	70	44	31	37	33	49	45
1393:	49	34	55	42	38	37	44	93
1401:	175	123	54	36	47	68	192	273
1409:	138	55	40	49	30	44	41	33
1417:	53	43	36	43	39	29	51	39
1425:	40	57	50	36	42	42	27	38
1433:	36	32	48	38	39	37	34	39
1441:	43	31	37	39	39	49	36	37
1449:	28	55	31	39	44	38	36	43
1457:	39	47	88	148	147	80	42	43
1465:	48	40	49	39	42	53	47	40
1473:	34	34	45	35	48	37	50	41
1481:	39	41	53	44	39	50	45	40
1489:	36	36	37	42	39	42	41	48
1497:	46	41	48	34	52	38	35	41
1505:	47	45	86	179	248	145	60	46
1513:	43	50	45	56	44	42	40	45
1521:	39	48	48	31	51	37	42	45
1529:	46	46	48	42	36	34	54	41
1537:	61	80	76	48	37	70	92	75
1545:	39	41	54	31	30	33	45	32
1553:	31	32	26	24	22	35	28	32
1561:	31	23	24	42	20	40	34	28
1569:	22	24	38	24	30	42	29	33
1577:	29	27	34	32	41	78	83	49
1585:	38	37	28	25	29	31	26	28
1593:	46	54	48	35	41	37	48	35
1601:	20	40	25	25	38	36	41	31
1609:	25	25	21	25	25	31	23	20
1617:	18	23	33	39	23	23	26	21
1625:	15	19	16	22	22	24	26	16
1633:	30	15	15	24	24	20	19	15
1641:	17	16	19	21	14	20	23	19
1649:	18	28	18	19	23	17	27	20
1657:	25	24	47	70	111	60	27	13

1665:	19	17	10	16	14	12	21	24

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Channel								
1673:	15	12	15	11	13	15	18	7
1681:	13	21	29	29	23	13	16	12
1689:	14	19	33	26	25	31	27	17
1697:	20	17	12	19	20	11	12	22
1705:	9	14	8	15	12	15	13	17
1713:	13	13	15	6	17	15	14	18
1721:	12	10	14	11	16	18	30	154
1729:	312	212	57	22	19	27	17	14
1737:	11	17	9	9	12	9	13	10
1745:	12	14	10	14	17	8	12	11
1753:	12	12	9	15	13	11	14	23
1761:	35	174	729	1280	734	207	37	32
1769:	38	20	9	10	9	9	7	10
1777:	8	13	10	9	10	13	12	6
1785:	11	10	2	12	11	14	6	16
1793:	13	10	15	8	6	11	8	7
1801:	10	14	11	11	7	10	11	9
1809:	11	10	11	12	6	9	9	12
1817:	9	15	13	13	7	6	7	12
1825:	9	10	9	14	10	11	13	17
1833:	16	18	9	11	33	27	17	13
1841:	7	11	19	15	46	143	195	105
1849:	33	7	16	10	8	14	10	10
1857:	14	13	15	8	7	7	11	10
1865:	13	9	12	8	15	9	16	15
1873:	34	14	12	6	9	11	11	8
1881:	13	9	8	7	9	4	4	11
1889:	17	18	11	10	8	13	26	19
1897:	17	10	8	9	8	16	12	11
1905:	12	8	8	10	15	11	9	10
1913:	6	9	9	8	12	5	9	5
1921:	10	5	8	8	12	11	10	13
1929:	5	11	11	11	8	13	9	17
1937:	10	16	10	14	10	5	6	8
1945:	9	15	18	6	10	12	11	8
1953:	15	20	6	13	9	14	10	13
1961:	6	9	10	14	7	6	8	7
1969:	6	7	11	9	12	5	7	2
1977:	6	6	10	3	13	13	7	10
1985:	8	4	10	10	10	6	6	12
1993:	10	9	9	8	9	8	5	5
2001:	3	6	8	4	6	9	7	5
2009:	8	11	11	10	5	7	6	10
2017:	11	9	7	2	9	10	5	4
2025:	11	4	4	4	4	8	8	6
2033:	9	5	7	4	10	7	2	4
2041:	5	6	4	7	10	5	5	10
2049:	7	5	5	9	13	6	7	9
2057:	9	9	6	6	4	7	3	5
2065:	1	4	1	8	6	6	4	4
2073:	2	5	6	4	4	3	3	5
2081:	7	6	6	6	3	7	6	2
2089:	6	6	8	4	6	6	4	2

2097:	5	1	3	3	6	13	6	9

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Channel								
2105:	6	8	6	8	8	10	10	5
2113:	2	2	12	25	55	79	35	14
2121:	5	8	4	7	5	3	4	5
2129:	2	2	3	5	4	4	3	2
2137:	2	2	3	1	9	2	0	7
2145:	3	5	6	6	5	1	5	5
2153:	4	6	6	5	1	6	3	4
2161:	2	6	1	3	2	4	4	5
2169:	2	3	0	4	6	4	9	3
2177:	5	10	3	2	6	3	2	3
2185:	6	4	6	5	4	1	8	8
2193:	5	2	2	4	1	5	7	4
2201:	34	168	289	276	102	22	10	10
2209:	6	8	3	0	4	2	2	4
2217:	2	3	2	2	5	5	3	1
2225:	4	0	0	2	3	4	0	3
2233:	2	4	3	0	1	0	4	4
2241:	2	2	0	7	1	2	1	3
2249:	1	0	2	0	3	0	0	6
2257:	3	4	2	1	2	0	1	6
2265:	1	4	2	2	0	2	0	2
2273:	2	1	4	4	2	2	2	1
2281:	2	2	3	2	3	1	0	2
2289:	2	5	8	16	20	9	3	0
2297:	2	0	2	0	3	2	0	0
2305:	1	3	1	6	2	2	4	5
2313:	2	2	0	1	0	1	1	2
2321:	1	1	1	4	1	2	2	3
2329:	1	3	3	1	1	0	3	0
2337:	1	0	1	0	0	5	1	0
2345:	2	1	1	3	0	1	2	1
2353:	1	4	1	2	0	1	0	1
2361:	1	1	3	0	1	1	0	0
2369:	0	0	2	3	0	1	1	0
2377:	0	1	0	2	1	2	3	0
2385:	1	0	0	0	1	1	1	3
2393:	2	3	0	0	2	0	0	0
2401:	0	0	2	1	2	0	1	1
2409:	2	2	1	0	1	1	1	0
2417:	1	0	0	1	0	3	1	2
2425:	0	1	0	2	0	0	0	1
2433:	3	2	0	0	0	1	0	0
2441:	1	1	3	7	30	82	86	40
2449:	10	3	2	2	1	2	0	0
2457:	1	1	0	0	0	0	0	0
2465:	3	1	0	0	1	1	0	1
2473:	0	0	1	1	1	2	1	2
2481:	0	1	0	2	1	1	0	4
2489:	0	0	1	0	0	0	1	1
2497:	1	1	1	1	1	2	4	4
2505:	0	0	0	0	0	3	1	0
2513:	1	0	1	0	0	0	0	0
2521:	2	0	4	0	1	0	1	0

2529:	0	2	0	0	1	0	1	1

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Channel								
2537:	0	1	1	0	0	0	0	1
2545:	0	0	1	1	1	1	2	1
2553:	2	1	0	0	2	0	1	2
2561:	0	1	0	0	0	0	0	1
2569:	0	0	1	0	0	1	0	0
2577:	1	0	0	1	0	1	1	0
2585:	0	0	0	1	0	0	1	0
2593:	0	1	1	0	1	0	1	1
2601:	0	0	0	1	0	0	0	1
2609:	0	1	2	14	26	28	7	3
2617:	1	0	0	0	0	1	1	2
2625:	0	0	1	0	0	0	0	0
2633:	0	2	0	0	0	0	2	0
2641:	3	1	0	0	0	0	0	0
2649:	1	0	0	0	1	1	0	0
2657:	0	2	0	1	0	1	0	1
2665:	1	0	0	1	0	0	0	0
2673:	0	0	0	1	0	0	0	0
2681:	1	0	2	1	0	0	2	0
2689:	0	0	0	2	1	2	2	0
2697:	0	0	0	0	0	1	0	0
2705:	0	0	0	0	0	0	1	0
2713:	0	0	0	1	1	1	0	0
2721:	0	1	0	0	0	2	1	0
2729:	0	0	0	0	0	2	0	0
2737:	0	0	1	0	0	0	0	0
2745:	0	1	0	0	1	1	0	0
2753:	0	1	1	0	1	1	0	0
2761:	0	0	1	0	0	0	0	1
2769:	2	1	1	0	0	0	0	1
2777:	0	0	1	1	0	2	0	1
2785:	1	2	0	0	0	0	0	1
2793:	1	2	0	0	0	0	1	1
2801:	1	0	0	0	1	0	1	0
2809:	0	0	0	0	1	0	1	0
2817:	0	0	0	0	0	0	1	0
2825:	0	0	1	0	0	0	0	0
2833:	0	1	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	1	0	1	0	0	0	0	0
2857:	0	1	0	0	1	1	0	0
2865:	0	0	1	0	0	0	1	2
2873:	0	0	1	0	0	0	1	0
2881:	0	0	2	0	0	0	0	0
2889:	0	4	1	3	0	0	0	0
2897:	0	0	0	0	1	0	1	0
2905:	0	1	1	0	1	0	0	0
2913:	0	0	1	0	0	0	1	1
2921:	2	0	2	0	0	0	1	0
2929:	0	0	0	0	0	0	0	0
2937:	1	0	0	0	0	0	0	2
2945:	0	0	0	0	1	0	1	0
2953:	0	0	0	2	0	0	0	0

2961:	0	0	0	0	0	0	0	0

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

3393:	0	0	0	0	0	0	0	0

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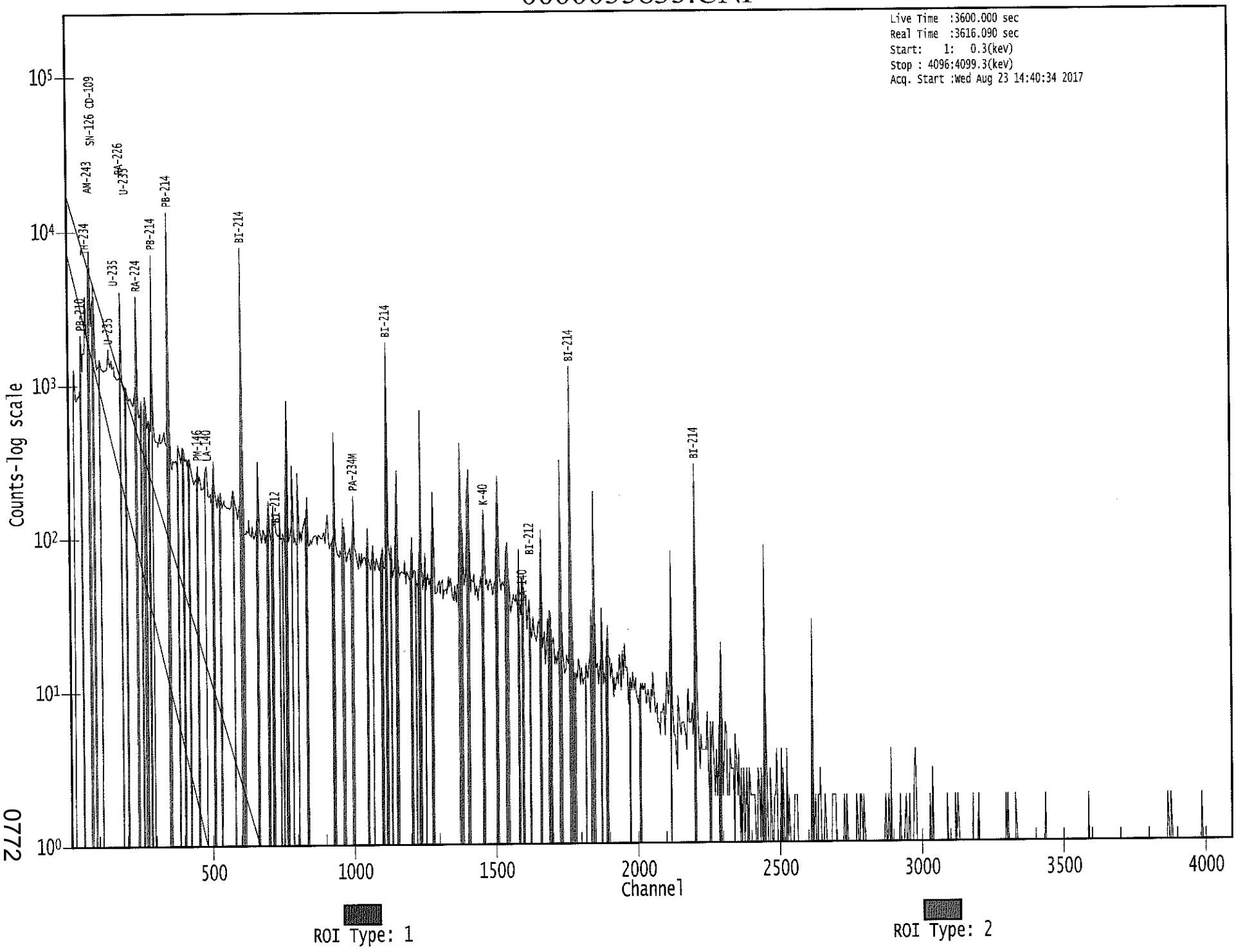
Channel								
3401:	0	0	1	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	0	0	0	0	0
3425:	0	0	0	0	0	0	0	1
3433:	0	2	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	1	0	0	1	1	0	0
3473:	1	0	0	0	0	0	0	0
3481:	0	0	1	0	1	0	0	0
3489:	1	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	1
3513:	0	1	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	1	0	1	0	1
3537:	0	0	0	0	0	0	1	0
3545:	1	1	1	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	1	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	1	0	0	0	0
3585:	0	2	0	0	0	0	0	0
3593:	0	1	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	1	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	1	0	0	0	0
3633:	1	0	1	0	0	0	0	0
3641:	1	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	1	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	1	0	0	0	0	0	0
3689:	0	0	0	0	0	1	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	1	0	1	0	0	1
3713:	1	1	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	1	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	1	0	0	0	0	1	0	0
3769:	0	0	0	0	0	0	1	1
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	1
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	1	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A07-S001-0612-01

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

0000055835.CNF



0772

 KB 8/23/17

Apex-Gamma

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-12
Sample Description	: HTC-A07-S001-0612-02
Sample Type	: SOIL
Sample Size	: 7.355E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:54:52AM
Acquisition Started	: 8/23/2017 2:40:40PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3612.5 seconds
Dead Time	: 0.34 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55836

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 3:41:37PM
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	46.63	46.98	0.0000	0.00
2	53.38	53.72	0.0000	0.00
3	63.32	63.65	0.0000	0.00
4	76.32	76.63	0.0000	0.00
5	87.80	88.10	0.0000	0.00
6	92.68	92.98	0.0000	0.00
7	113.19	113.46	0.0000	0.00
8	144.08	144.32	0.0000	0.00
9	163.42	163.64	0.0000	0.00
10	186.10	186.30	0.0000	0.00
11	205.16	205.33	0.0000	0.00
12	233.78	233.92	0.0000	0.00
13	235.96	236.10	0.0000	0.00
14	238.95	239.09	0.0000	0.00
15	242.06	242.20	0.0000	0.00
16	257.86	257.97	0.0000	0.00
17	270.18	270.28	0.0000	0.00
18	295.30	295.38	0.0000	0.00
19	314.55	314.61	0.0000	0.00
20	352.02	352.04	0.0000	0.00
21	367.50	367.50	0.0000	0.00
22	388.17	388.15	0.0000	0.00
23	405.53	405.50	0.0000	0.00
24	426.25	426.19	0.0000	0.00
25	454.95	454.86	0.0000	0.00
26	462.51	462.41	0.0000	0.00
27	480.57	480.45	0.0000	0.00
28	487.43	487.31	0.0000	0.00
29	511.10	510.95	0.0000	0.00
30	580.65	580.43	0.0000	0.00
31	583.54	583.32	0.0000	0.00
32	609.54	609.29	0.0000	0.00
33	639.28	639.00	0.0000	0.00
34	655.78	655.48	0.0000	0.00
35	665.72	665.42	0.0000	0.00
36	703.70	703.36	0.0000	0.00
37	720.09	719.73	0.0000	0.00
38	742.58	742.21	0.0000	0.00
39	768.45	768.05	0.0000	0.00
40	786.39	785.97	0.0000	0.00
41	806.52	806.08	0.0000	0.00
42	833.49	833.03	0.0000	0.00

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	839.47	839.00	0.0000	0.00
44	906.24	905.71	0.0000	0.00
45	911.98	911.44	0.0000	0.00
46	934.46	933.90	0.0000	0.00
47	964.39	963.80	0.0000	0.00
48	1001.43	1000.81	0.0000	0.00
49	1024.31	1023.67	0.0000	0.00
50	1052.16	1051.49	0.0000	0.00
51	1070.88	1070.20	0.0000	0.00
52	1105.34	1104.62	0.0000	0.00
53	1120.74	1120.01	0.0000	0.00
54	1132.92	1132.18	0.0000	0.00
55	1155.79	1155.03	0.0000	0.00
56	1208.36	1207.55	0.0000	0.00
57	1238.68	1237.84	0.0000	0.00
58	1254.50	1253.65	0.0000	0.00
59	1281.43	1280.55	0.0000	0.00
60	1303.42	1302.53	0.0000	0.00
61	1378.21	1377.25	0.0000	0.00
62	1385.82	1384.85	0.0000	0.00
63	1402.11	1401.13	0.0000	0.00
64	1408.67	1407.69	0.0000	0.00
65	1422.43	1421.44	0.0000	0.00
66	1461.46	1460.43	0.0000	0.00
67	1509.67	1508.60	0.0000	0.00
68	1541.45	1540.36	0.0000	0.00
69	1579.37	1578.25	0.0000	0.00
70	1584.29	1583.16	0.0000	0.00
71	1595.82	1594.68	0.0000	0.00
72	1600.62	1599.48	0.0000	0.00
73	1661.64	1660.45	0.0000	0.00
74	1683.32	1682.12	0.0000	0.00
75	1692.94	1691.73	0.0000	0.00
76	1730.12	1728.87	0.0000	0.00
77	1765.09	1763.82	0.0000	0.00
78	1839.07	1837.74	0.0000	0.00
79	1848.23	1846.89	0.0000	0.00
80	1890.41	1889.05	0.0000	0.00
81	1898.03	1896.66	0.0000	0.00
82	1936.67	1935.27	0.0000	0.00
83	2112.11	2110.58	0.0000	0.00
84	2119.15	2117.62	0.0000	0.00
85	2181.05	2179.47	0.0000	0.00
86	2204.68	2203.09	0.0000	0.00
87	2294.51	2292.86	0.0000	0.00
88	2448.38	2446.62	0.0000	0.00
89	2480.16	2478.38	0.0000	0.00
90	2615.19	2613.32	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 3:41:37PM

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	46.63	44 -	49	46.98	1.22E+03	236.45	1.04E+04	1.10
	2	53.38	52 -	57	53.72	2.24E+02	255.09	1.29E+04	1.22
	3	63.32	61 -	66	63.65	2.60E+03	315.42	1.80E+04	1.41
	4	76.32	72 -	83	76.63	1.26E+04	624.63	4.26E+04	3.81
M	5	87.80	83 -	97	88.10	1.98E+03	197.99	8.26E+03	1.10
m	6	92.68	83 -	97	92.98	3.19E+03	206.05	7.46E+03	1.10
	7	113.19	112 -	116	113.46	3.42E+02	219.37	1.04E+04	1.87
	8	144.08	142 -	147	144.32	5.71E+02	254.71	1.25E+04	1.38
	9	163.42	162 -	166	163.64	2.91E+02	211.58	9.65E+03	2.65
	10	186.10	182 -	190	186.30	5.63E+03	347.97	1.51E+04	1.69
	11	205.16	204 -	207	205.33	2.92E+02	154.54	5.64E+03	1.74
M	12	233.78	232 -	244	233.92	1.73E+02	134.83	4.49E+03	2.11
m	13	235.96	232 -	244	236.10	5.86E+02	188.50	6.66E+03	2.12
m	14	238.95	232 -	244	239.09	4.25E+02	140.60	4.37E+03	1.43
m	15	242.06	232 -	244	242.20	5.60E+03	198.28	4.21E+03	1.49
	16	257.86	254 -	262	257.97	7.17E+02	237.45	8.23E+03	2.88
	17	270.18	267 -	273	270.28	5.62E+02	193.10	6.39E+03	2.30
	18	295.30	291 -	299	295.38	1.15E+04	303.68	7.10E+03	1.86
	19	314.55	313 -	317	314.61	1.13E+02	124.79	3.36E+03	4.04
	20	352.02	348 -	355	352.04	2.04E+04	328.61	4.41E+03	1.40
	21	367.50	366 -	370	367.50	9.51E+01	104.76	2.35E+03	1.68
	22	388.17	384 -	392	388.15	3.74E+02	175.10	4.50E+03	3.12
	23	405.53	404 -	408	405.50	1.00E+02	109.97	2.59E+03	1.41
	24	426.25	423 -	429	426.19	2.15E+02	134.06	3.09E+03	4.06
	25	454.95	452 -	458	454.86	1.41E+02	121.21	2.57E+03	1.82
	26	462.51	460 -	465	462.41	8.85E+01	103.76	2.08E+03	1.82
	27	480.57	478 -	483	480.45	1.16E+02	98.45	1.84E+03	1.75
	28	487.43	484 -	490	487.31	1.83E+02	111.30	2.12E+03	1.56
	29	511.10	507 -	515	510.95	3.56E+02	127.78	2.30E+03	2.11
M	30	580.65	575 -	586	580.43	1.53E+02	108.39	1.80E+03	2.66
m	31	583.54	575 -	586	583.32	1.37E+02	75.95	1.11E+03	1.78
	32	609.54	604 -	614	609.29	1.51E+04	279.41	2.33E+03	1.94
	33	639.28	636 -	642	639.00	7.93E+01	76.42	9.97E+02	2.83
	34	655.78	653 -	659	655.48	6.78E+01	76.84	1.03E+03	4.75
m	35	665.72	659 -	669	665.42	4.40E+02	72.27	7.78E+02	1.82
	36	703.70	699 -	708	703.36	1.61E+02	109.19	1.61E+03	2.74
	37	720.09	717 -	722	719.73	8.67E+01	71.18	9.43E+02	1.50
	38	742.58	739 -	745	742.21	1.18E+02	76.86	9.85E+02	2.24
	39	768.45	762 -	772	768.05	1.54E+03	133.08	1.54E+03	2.12
	40	786.39	781 -	791	785.97	3.91E+02	115.75	1.58E+03	2.17

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	806.52	802 -	809	806.08	3.07E+02	89.22	1.12E+03	1.85
	42	833.49	830 -	836	833.03	9.81E+01	74.83	9.50E+02	3.63
	43	839.47	836 -	843	839.00	1.28E+02	90.97	1.30E+03	2.73
	44	906.24	903 -	908	905.71	6.07E+01	66.22	8.25E+02	1.75
	45	911.98	909 -	915	911.44	7.18E+01	75.46	9.88E+02	1.76
	46	934.46	930 -	938	933.90	7.38E+02	105.06	1.24E+03	1.85
	47	964.39	960 -	967	963.80	1.05E+02	80.40	1.01E+03	2.84
	48	1001.43	997 -	1005	1000.81	1.95E+02	86.19	1.02E+03	1.71
	49	1024.31	1021 -	1027	1023.67	5.55E+01	62.22	6.67E+02	2.82
	50	1052.16	1048 -	1054	1051.49	7.78E+01	61.52	6.28E+02	1.59
	51	1070.88	1066 -	1074	1070.20	1.03E+02	74.89	7.96E+02	2.94
	52	1105.34	1102 -	1108	1104.62	5.67E+01	60.94	6.29E+02	3.65
	53	1120.74	1114 -	1125	1120.01	3.20E+03	149.12	1.18E+03	1.97
	54	1132.92	1127 -	1139	1132.18	9.28E+01	101.25	1.16E+03	3.90
	55	1155.79	1150 -	1161	1155.03	4.10E+02	96.85	9.71E+02	2.38
	56	1208.36	1203 -	1212	1207.55	1.07E+02	75.52	7.51E+02	1.93
	57	1238.68	1232 -	1243	1237.84	1.16E+03	110.11	9.38E+02	2.12
	58	1254.50	1249 -	1259	1253.65	1.76E+02	71.56	5.89E+02	4.39
	59	1281.43	1274 -	1285	1280.55	2.91E+02	92.24	9.18E+02	2.26
	60	1303.42	1299 -	1305	1302.53	4.21E+01	50.39	4.26E+02	2.82
	61	1378.21	1373 -	1382	1377.25	8.13E+02	90.68	7.10E+02	2.39
	62	1385.82	1382 -	1388	1384.85	1.37E+02	53.76	4.29E+02	3.10
M	63	1402.11	1394 -	1416	1401.13	3.05E+02	69.69	4.85E+02	3.43
m	64	1408.67	1394 -	1416	1407.69	4.84E+02	66.30	4.08E+02	2.59
	65	1422.43	1418 -	1426	1421.44	6.51E+01	57.71	4.72E+02	5.94
	66	1461.46	1456 -	1464	1460.43	1.72E+02	70.00	6.48E+02	2.36
	67	1509.67	1502 -	1513	1508.60	4.32E+02	88.97	7.71E+02	2.83
	68	1541.45	1533 -	1549	1540.36	2.00E+02	105.06	9.65E+02	8.58
M	69	1579.37	1577 -	1587	1578.25	4.43E+01	17.41	7.86E+01	2.71
m	70	1584.29	1577 -	1587	1583.16	1.37E+02	48.77	3.33E+02	2.22
M	71	1595.82	1591 -	1603	1594.68	5.81E+01	48.12	3.52E+02	2.70
m	72	1600.62	1591 -	1603	1599.48	7.51E+01	53.00	3.54E+02	3.00
	73	1661.64	1655 -	1665	1660.45	2.14E+02	54.39	2.81E+02	2.86
	74	1683.32	1676 -	1687	1682.12	9.10E+01	43.54	1.90E+02	3.02
	75	1692.94	1688 -	1696	1691.73	6.33E+01	36.29	1.67E+02	4.65
	76	1730.12	1723 -	1734	1728.87	5.68E+02	65.48	2.53E+02	2.59
	77	1765.09	1756 -	1771	1763.82	2.56E+03	111.30	2.14E+02	2.75
M	78	1839.07	1831 -	1853	1837.74	5.22E+01	32.35	1.38E+02	2.89
m	79	1848.23	1831 -	1853	1846.89	3.46E+02	46.16	1.14E+02	2.90
	80	1890.41	1884 -	1893	1889.05	4.44E+01	34.54	1.45E+02	3.18
	81	1898.03	1894 -	1900	1896.66	2.48E+01	24.79	9.24E+01	2.08
	82	1936.67	1932 -	1938	1935.27	3.28E+01	26.06	9.64E+01	1.61
M	83	2112.11	2097 -	2123	2110.58	2.76E+01	20.27	4.86E+01	3.37
m	84	2119.15	2097 -	2123	2117.62	1.80E+02	30.75	2.53E+01	3.15
	85	2181.05	2176 -	2184	2179.47	1.55E+01	15.41	2.70E+01	1.20
	86	2204.68	2195 -	2208	2203.09	6.75E+02	57.81	7.55E+01	2.91
	87	2294.51	2287 -	2297	2292.86	4.13E+01	18.14	2.15E+01	2.91
	88	2448.38	2441 -	2451	2446.62	2.16E+02	29.39	0.00E+00	2.76
	89	2480.16	2475 -	2481	2478.38	8.00E+00	5.66	0.00E+00	3.48
	90	2615.19	2609 -	2618	2613.32	4.48E+01	15.68	8.41E+00	3.41

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

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 : 8/23/2017 3:41:37PM

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	46.63	44 -	49	1.22E+03	236.45	1.04E+04	2.09E+02
	2	53.38	52 -	57	2.24E+02	255.09	1.29E+04	2.08E+02
	3	63.32	61 -	66	2.60E+03	315.42	1.80E+04	2.76E+02
	4	76.32	72 -	83	1.26E+04	624.63	4.26E+04	4.79E+02
M	5	87.80	83 -	97	1.98E+03	197.99	8.26E+03	1.49E+02
m	6	92.68	83 -	97	3.19E+03	206.05	7.46E+03	1.42E+02
	7	113.19	112 -	116	3.42E+02	219.37	1.04E+04	1.78E+02
	8	144.08	142 -	147	5.71E+02	254.71	1.25E+04	2.06E+02
	9	163.42	162 -	166	2.91E+02	211.58	9.65E+03	1.72E+02
	10	186.10	182 -	190	5.63E+03	347.97	1.51E+04	2.58E+02
	11	205.16	204 -	207	2.92E+02	154.54	5.64E+03	1.24E+02
M	12	233.78	232 -	244	1.73E+02	134.83	4.49E+03	1.10E+02
m	13	235.96	232 -	244	5.86E+02	188.50	6.66E+03	1.34E+02
m	14	238.95	232 -	244	4.25E+02	140.60	4.37E+03	1.09E+02
m	15	242.06	232 -	244	5.60E+03	198.28	4.21E+03	1.07E+02
	16	257.86	254 -	262	7.17E+02	237.45	8.23E+03	1.90E+02
	17	270.18	267 -	273	5.62E+02	193.10	6.39E+03	1.54E+02
	18	295.30	291 -	299	1.15E+04	303.68	7.10E+03	1.77E+02
	19	314.55	313 -	317	1.13E+02	124.79	3.36E+03	1.01E+02
	20	352.02	348 -	355	2.04E+04	328.61	4.41E+03	1.34E+02
	21	367.50	366 -	370	9.51E+01	104.76	2.35E+03	8.46E+01
	22	388.17	384 -	392	3.74E+02	175.10	4.50E+03	1.40E+02
	23	405.53	404 -	408	1.00E+02	109.97	2.59E+03	8.89E+01
	24	426.25	423 -	429	2.15E+02	134.06	3.09E+03	1.08E+02
	25	454.95	452 -	458	1.41E+02	121.21	2.57E+03	9.77E+01
	26	462.51	460 -	465	8.85E+01	103.76	2.08E+03	8.39E+01
	27	480.57	478 -	483	1.16E+02	98.45	1.84E+03	7.90E+01
	28	487.43	484 -	490	1.83E+02	111.30	2.12E+03	8.87E+01
	29	511.10	507 -	515	3.56E+02	127.78	2.30E+03	1.00E+02
M	30	580.65	575 -	586	1.53E+02	108.39	1.80E+03	6.98E+01
m	31	583.54	575 -	586	1.37E+02	75.95	1.11E+03	5.48E+01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	32	609.54	604 -	614	1.51E+04	279.41	2.33E+03	1.09E+02
	33	639.28	636 -	642	7.93E+01	76.42	9.97E+02	6.11E+01
	34	655.78	653 -	659	6.78E+01	76.84	1.03E+03	6.17E+01
m	35	665.72	659 -	669	4.40E+02	72.27	7.78E+02	4.59E+01
	36	703.70	699 -	708	1.61E+02	109.19	1.61E+03	8.73E+01
	37	720.09	717 -	722	8.67E+01	71.18	9.43E+02	5.65E+01
	38	742.58	739 -	745	1.18E+02	76.86	9.85E+02	6.06E+01
	39	768.45	762 -	772	1.54E+03	133.08	1.54E+03	8.83E+01
	40	786.39	781 -	791	3.91E+02	115.75	1.58E+03	8.94E+01
	41	806.52	802 -	809	3.07E+02	89.22	1.12E+03	6.74E+01
	42	833.49	830 -	836	9.81E+01	74.83	9.50E+02	5.93E+01
	43	839.47	836 -	843	1.28E+02	90.97	1.30E+03	7.24E+01
	44	906.24	903 -	908	6.07E+01	66.22	8.25E+02	5.29E+01
	45	911.98	909 -	915	7.18E+01	75.46	9.88E+02	6.04E+01
	46	934.46	930 -	938	7.38E+02	105.06	1.24E+03	7.39E+01
	47	964.39	960 -	967	1.05E+02	80.40	1.01E+03	6.39E+01
	48	1001.43	997 -	1005	1.95E+02	86.19	1.02E+03	6.70E+01
	49	1024.31	1021 -	1027	5.55E+01	62.22	6.67E+02	4.97E+01
	50	1052.16	1048 -	1054	7.78E+01	61.52	6.28E+02	4.84E+01
	51	1070.88	1066 -	1074	1.03E+02	74.89	7.96E+02	5.93E+01
	52	1105.34	1102 -	1108	5.67E+01	60.94	6.29E+02	4.85E+01
	53	1120.74	1114 -	1125	3.20E+03	149.12	1.18E+03	7.99E+01
	54	1132.92	1127 -	1139	9.28E+01	101.25	1.16E+03	8.17E+01
	55	1155.79	1150 -	1161	4.10E+02	96.85	9.71E+02	7.23E+01
	56	1208.36	1203 -	1212	1.07E+02	75.52	7.51E+02	5.97E+01
	57	1238.68	1232 -	1243	1.16E+03	110.11	9.38E+02	7.12E+01
	58	1254.50	1249 -	1259	1.76E+02	71.56	5.89E+02	5.46E+01
	59	1281.43	1274 -	1285	2.91E+02	92.24	9.18E+02	7.04E+01
	60	1303.42	1299 -	1305	4.21E+01	50.39	4.26E+02	4.00E+01
	61	1378.21	1373 -	1382	8.13E+02	90.68	7.10E+02	5.80E+01
	62	1385.82	1382 -	1388	1.37E+02	53.76	4.29E+02	3.98E+01
M	63	1402.11	1394 -	1416	3.05E+02	69.69	4.85E+02	3.62E+01
m	64	1408.67	1394 -	1416	4.84E+02	66.30	4.08E+02	3.32E+01
	65	1422.43	1418 -	1426	6.51E+01	57.71	4.72E+02	4.55E+01
	66	1461.46	1456 -	1464	1.72E+02	70.00	6.48E+02	5.33E+01
	67	1509.67	1502 -	1513	4.32E+02	88.97	7.71E+02	6.47E+01
	68	1541.45	1533 -	1549	2.00E+02	105.06	9.65E+02	8.32E+01
M	69	1579.37	1577 -	1587	4.43E+01	17.41	7.86E+01	1.46E+01
m	70	1584.29	1577 -	1587	1.37E+02	48.77	3.33E+02	3.00E+01
M	71	1595.82	1591 -	1603	5.81E+01	48.12	3.52E+02	3.08E+01
m	72	1600.62	1591 -	1603	7.51E+01	53.00	3.54E+02	3.09E+01
	73	1661.64	1655 -	1665	2.14E+02	54.39	2.81E+02	3.77E+01
	74	1683.32	1676 -	1687	9.10E+01	43.54	1.90E+02	3.22E+01
	75	1692.94	1688 -	1696	6.33E+01	36.29	1.67E+02	2.68E+01
	76	1730.12	1723 -	1734	5.68E+02	65.48	2.53E+02	3.69E+01
	77	1765.09	1756 -	1771	2.56E+03	111.30	2.14E+02	3.82E+01
M	78	1839.07	1831 -	1853	5.22E+01	32.35	1.38E+02	1.93E+01
m	79	1848.23	1831 -	1853	3.46E+02	46.16	1.14E+02	1.76E+01
	80	1890.41	1884 -	1893	4.44E+01	34.54	1.45E+02	2.62E+01
	81	1898.03	1894 -	1900	2.48E+01	24.79	9.24E+01	1.87E+01
	82	1936.67	1932 -	1938	3.28E+01	26.06	9.64E+01	1.92E+01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	83	2112.11	2097 -	2123	2.76E+01	20.27	4.86E+01	1.15E+01
m	84	2119.15	2097 -	2123	1.80E+02	30.75	2.53E+01	8.28E+00
	85	2181.05	2176 -	2184	1.55E+01	15.41	2.70E+01	1.09E+01
	86	2204.68	2195 -	2208	6.75E+02	57.81	7.55E+01	2.08E+01
	87	2294.51	2287 -	2297	4.13E+01	18.14	2.15E+01	1.05E+01
	88	2448.38	2441 -	2451	2.16E+02	29.39	0.00E+00	0.00E+00
	89	2480.16	2475 -	2481	8.00E+00	5.66	0.00E+00	0.00E+00
	90	2615.19	2609 -	2618	4.48E+01	15.68	8.41E+00	6.72E+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 : 8/23/2017 3:41:37PM

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	46.63	44 -	49	46.98	1.22E+03	236.45	1.04E+04	PB-210
	2	53.38	52 -	57	53.72	2.24E+02	255.09	1.29E+04	.....
	3	63.32	61 -	66	63.65	2.60E+03	315.42	1.80E+04	TH-234
									TH-230
	4	76.32	72 -	83	76.63	1.26E+04	624.63	4.26E+04	.....
M	5	87.80	83 -	97	88.10	1.98E+03	197.99	8.26E+03	SN-126
									CD-109
									LU-176
m	6	92.68	83 -	97	92.98	3.19E+03	206.05	7.46E+03	GA-67
	7	113.19	112 -	116	113.46	3.42E+02	219.37	1.04E+04	.....
	8	144.08	142 -	147	144.32	5.71E+02	254.71	1.25E+04	U-235
	9	163.42	162 -	166	163.64	2.91E+02	211.58	9.65E+03	U-235
									CS-136
									BA-140
	10	186.10	182 -	190	186.30	5.63E+03	347.97	1.51E+04	RA-226
	11	205.16	204 -	207	205.33	2.92E+02	154.54	5.64E+03	U-235
M	12	233.78	232 -	244	233.92	1.73E+02	134.83	4.49E+03	.....
m	13	235.96	232 -	244	236.10	5.86E+02	188.50	6.66E+03	TH-227

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									NB-95M
m	14	238.95	232 -	244	239.09	4.25E+02	140.60	4.37E+03	PB-212
m	15	242.06	232 -	244	242.20	5.60E+03	198.28	4.21E+03	.....
	16	257.86	254 -	262	257.97	7.17E+02	237.45	8.23E+03	.....
	17	270.18	267 -	273	270.28	5.62E+02	193.10	6.39E+03	.....
	18	295.30	291 -	299	295.38	1.15E+04	303.68	7.10E+03	PB-214
	19	314.55	313 -	317	314.61	1.13E+02	124.79	3.36E+03	.....
	20	352.02	348 -	355	352.04	2.04E+04	328.61	4.41E+03	PB-214
	21	367.50	366 -	370	367.50	9.51E+01	104.76	2.35E+03	.....
	22	388.17	384 -	392	388.15	3.74E+02	175.10	4.50E+03	.....
	23	405.53	404 -	408	405.50	1.00E+02	109.97	2.59E+03	PB-211
	24	426.25	423 -	429	426.19	2.15E+02	134.06	3.09E+03	.....
	25	454.95	452 -	458	454.86	1.41E+02	121.21	2.57E+03	.....
	26	462.51	460 -	465	462.41	8.85E+01	103.76	2.08E+03	SB-125
	27	480.57	478 -	483	480.45	1.16E+02	98.45	1.84E+03	.....
	28	487.43	484 -	490	487.31	1.83E+02	111.30	2.12E+03	LA-140
	29	511.10	507 -	515	510.95	3.56E+02	127.78	2.30E+03	.....
M	30	580.65	575 -	586	580.43	1.53E+02	108.39	1.80E+03	.....
m	31	583.54	575 -	586	583.32	1.37E+02	75.95	1.11E+03	TL-208
	32	609.54	604 -	614	609.29	1.51E+04	279.41	2.33E+03	BI-214
	33	639.28	636 -	642	639.00	7.93E+01	76.42	9.97E+02	.....
	34	655.78	653 -	659	655.48	6.78E+01	76.84	1.03E+03	.....
m	35	665.72	659 -	669	665.42	4.40E+02	72.27	7.78E+02	SB-126
	36	703.70	699 -	708	703.36	1.61E+02	109.19	1.61E+03	.....
	37	720.09	717 -	722	719.73	8.67E+01	71.18	9.43E+02	SB-126
	38	742.58	739 -	745	742.21	1.18E+02	76.86	9.85E+02	.....
	39	768.45	762 -	772	768.05	1.54E+03	133.08	1.54E+03	.....
	40	786.39	781 -	791	785.97	3.91E+02	115.75	1.58E+03	.....
	41	806.52	802 -	809	806.08	3.07E+02	89.22	1.12E+03	.....
	42	833.49	830 -	836	833.03	9.81E+01	74.83	9.50E+02	.....
	43	839.47	836 -	843	839.00	1.28E+02	90.97	1.30E+03	.....
	44	906.24	903 -	908	905.71	6.07E+01	66.22	8.25E+02	.....
	45	911.98	909 -	915	911.44	7.18E+01	75.46	9.88E+02	TL-204
									AC-228
	46	934.46	930 -	938	933.90	7.38E+02	105.06	1.24E+03	.....
	47	964.39	960 -	967	963.80	1.05E+02	80.40	1.01E+03	EU-152
	48	1001.43	997 -	1005	1000.81	1.95E+02	86.19	1.02E+03	PA-234M
	49	1024.31	1021 -	1027	1023.67	5.55E+01	62.22	6.67E+02	.....
	50	1052.16	1048 -	1054	1051.49	7.78E+01	61.52	6.28E+02	.....
	51	1070.88	1066 -	1074	1070.20	1.03E+02	74.89	7.96E+02	.....
	52	1105.34	1102 -	1108	1104.62	5.67E+01	60.94	6.29E+02	.....
	53	1120.74	1114 -	1125	1120.01	3.20E+03	149.12	1.18E+03	SC-46
									BI-214
									TA-182
	54	1132.92	1127 -	1139	1132.18	9.28E+01	101.25	1.16E+03	.....
	55	1155.79	1150 -	1161	1155.03	4.10E+02	96.85	9.71E+02	.....
	56	1208.36	1203 -	1212	1207.55	1.07E+02	75.52	7.51E+02	.....
	57	1238.68	1232 -	1243	1237.84	1.16E+03	110.11	9.38E+02	CO-56
	58	1254.50	1249 -	1259	1253.65	1.76E+02	71.56	5.89E+02	.....
	59	1281.43	1274 -	1285	1280.55	2.91E+02	92.24	9.18E+02	.....
	60	1303.42	1299 -	1305	1302.53	4.21E+01	50.39	4.26E+02	.....
	61	1378.21	1373 -	1382	1377.25	8.13E+02	90.68	7.10E+02	.....
	62	1385.82	1382 -	1388	1384.85	1.37E+02	53.76	4.29E+02	.....
M	63	1402.11	1394 -	1416	1401.13	3.05E+02	69.69	4.85E+02	.....

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	64	1408.67	1394 -	1416	1407.69	4.84E+02	66.30	4.08E+02	EU-152
	65	1422.43	1418 -	1426	1421.44	6.51E+01	57.71	4.72E+02	.....
	66	1461.46	1456 -	1464	1460.43	1.72E+02	70.00	6.48E+02	K-40
	67	1509.67	1502 -	1513	1508.60	4.32E+02	88.97	7.71E+02	.....
	68	1541.45	1533 -	1549	1540.36	2.00E+02	105.06	9.65E+02	.....
M	69	1579.37	1577 -	1587	1578.25	4.43E+01	17.41	7.86E+01	.....
m	70	1584.29	1577 -	1587	1583.16	1.37E+02	48.77	3.33E+02	.....
M	71	1595.82	1591 -	1603	1594.68	5.81E+01	48.12	3.52E+02	LA-140
m	72	1600.62	1591 -	1603	1599.48	7.51E+01	53.00	3.54E+02	.....
	73	1661.64	1655 -	1665	1660.45	2.14E+02	54.39	2.81E+02	.....
	74	1683.32	1676 -	1687	1682.12	9.10E+01	43.54	1.90E+02	.....
	75	1692.94	1688 -	1696	1691.73	6.33E+01	36.29	1.67E+02	.....
	76	1730.12	1723 -	1734	1728.87	5.68E+02	65.48	2.53E+02	.....
	77	1765.09	1756 -	1771	1763.82	2.56E+03	111.30	2.14E+02	BI-214
M	78	1839.07	1831 -	1853	1837.74	5.22E+01	32.35	1.38E+02	.....
m	79	1848.23	1831 -	1853	1846.89	3.46E+02	46.16	1.14E+02	.....
	80	1890.41	1884 -	1893	1889.05	4.44E+01	34.54	1.45E+02	.....
	81	1898.03	1894 -	1900	1896.66	2.48E+01	24.79	9.24E+01	.....
	82	1936.67	1932 -	1938	1935.27	3.28E+01	26.06	9.64E+01	.....
M	83	2112.11	2097 -	2123	2110.58	2.76E+01	20.27	4.86E+01	.....
m	84	2119.15	2097 -	2123	2117.62	1.80E+02	30.75	2.53E+01	.....
	85	2181.05	2176 -	2184	2179.47	1.55E+01	15.41	2.70E+01	.....
	86	2204.68	2195 -	2208	2203.09	6.75E+02	57.81	7.55E+01	BI-214
	87	2294.51	2287 -	2297	2292.86	4.13E+01	18.14	2.15E+01	.....
	88	2448.38	2441 -	2451	2446.62	2.16E+02	29.39	0.00E+00	.....
	89	2480.16	2475 -	2481	2478.38	8.00E+00	5.66	0.00E+00	.....
	90	2615.19	2609 -	2618	2613.32	4.48E+01	15.68	8.41E+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 : 8/23/2017 3:41:37PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	46.63	1.22E+03	236.45	1.59E-02	1.67E-03
2	53.38	2.24E+02	255.09	1.98E-02	1.67E-03
3	63.32	2.60E+03	315.42	2.38E-02	1.77E-03

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	4	76.32	1.26E+04	624.63	2.63E-02	2.12E-03
M	5	87.80	1.98E+03	197.99	2.70E-02	2.42E-03
m	6	92.68	3.19E+03	206.05	2.70E-02	2.34E-03
	7	113.19	3.42E+02	219.37	2.60E-02	1.94E-03
	8	144.08	5.71E+02	254.71	2.35E-02	1.70E-03
	9	163.42	2.91E+02	211.58	2.20E-02	1.63E-03
	10	186.10	5.63E+03	347.97	2.03E-02	1.53E-03
	11	205.16	2.92E+02	154.54	1.91E-02	1.45E-03
M	12	233.78	1.73E+02	134.83	1.75E-02	1.32E-03
m	13	235.96	5.86E+02	188.50	1.74E-02	1.31E-03
m	14	238.95	4.25E+02	140.60	1.72E-02	1.30E-03
m	15	242.06	5.60E+03	198.28	1.71E-02	1.28E-03
	16	257.86	7.17E+02	237.45	1.63E-02	1.21E-03
	17	270.18	5.62E+02	193.10	1.58E-02	1.16E-03
	18	295.30	1.15E+04	303.68	1.48E-02	1.10E-03
	19	314.55	1.13E+02	124.79	1.42E-02	1.07E-03
	20	352.02	2.04E+04	328.61	1.31E-02	1.02E-03
	21	367.50	9.51E+01	104.76	1.27E-02	1.00E-03
	22	388.17	3.74E+02	175.10	1.22E-02	9.73E-04
	23	405.53	1.00E+02	109.97	1.18E-02	9.57E-04
	24	426.25	2.15E+02	134.06	1.13E-02	9.39E-04
	25	454.95	1.41E+02	121.21	1.08E-02	9.14E-04
	26	462.51	8.85E+01	103.76	1.07E-02	9.07E-04
	27	480.57	1.16E+02	98.45	1.03E-02	8.91E-04
	28	487.43	1.83E+02	111.30	1.02E-02	8.85E-04
	29	511.10	3.56E+02	127.78	9.87E-03	8.65E-04
M	30	580.65	1.53E+02	108.39	8.94E-03	8.04E-04
m	31	583.54	1.37E+02	75.95	8.90E-03	8.02E-04
	32	609.54	1.51E+04	279.41	8.60E-03	7.79E-04
	33	639.28	7.93E+01	76.42	8.28E-03	7.54E-04
	34	655.78	6.78E+01	76.84	8.11E-03	7.39E-04
m	35	665.72	4.40E+02	72.27	8.02E-03	7.30E-04
	36	703.70	1.61E+02	109.19	7.67E-03	6.94E-04
	37	720.09	8.67E+01	71.18	7.53E-03	6.78E-04
	38	742.58	1.18E+02	76.86	7.34E-03	6.56E-04
	39	768.45	1.54E+03	133.08	7.14E-03	6.31E-04
	40	786.39	3.91E+02	115.75	7.01E-03	6.14E-04
	41	806.52	3.07E+02	89.22	6.86E-03	5.94E-04
	42	833.49	9.81E+01	74.83	6.68E-03	5.68E-04
	43	839.47	1.28E+02	90.97	6.64E-03	5.63E-04
	44	906.24	6.07E+01	66.22	6.24E-03	5.03E-04
	45	911.98	7.18E+01	75.46	6.21E-03	5.01E-04
	46	934.46	7.38E+02	105.06	6.08E-03	4.93E-04
	47	964.39	1.05E+02	80.40	5.93E-03	4.83E-04
	48	1001.43	1.95E+02	86.19	5.75E-03	4.70E-04
	49	1024.31	5.55E+01	62.22	5.64E-03	4.62E-04
	50	1052.16	7.78E+01	61.52	5.52E-03	4.52E-04
	51	1070.88	1.03E+02	74.89	5.44E-03	4.46E-04
	52	1105.34	5.67E+01	60.94	5.30E-03	4.34E-04
	53	1120.74	3.20E+03	149.12	5.24E-03	4.28E-04
	54	1132.92	9.28E+01	101.25	5.20E-03	4.24E-04
	55	1155.79	4.10E+02	96.85	5.11E-03	4.16E-04
	56	1208.36	1.07E+02	75.52	4.93E-03	4.13E-04

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	57	1238.68	1.16E+03	110.11	4.84E-03	4.16E-04
	58	1254.50	1.76E+02	71.56	4.79E-03	4.18E-04
	59	1281.43	2.91E+02	92.24	4.71E-03	4.20E-04
	60	1303.42	4.21E+01	50.39	4.65E-03	4.22E-04
	61	1378.21	8.13E+02	90.68	4.45E-03	4.11E-04
	62	1385.82	1.37E+02	53.76	4.43E-03	4.09E-04
M	63	1402.11	3.05E+02	69.69	4.40E-03	4.05E-04
m	64	1408.67	4.84E+02	66.30	4.38E-03	4.03E-04
	65	1422.43	6.51E+01	57.71	4.35E-03	3.99E-04
	66	1461.46	1.72E+02	70.00	4.26E-03	3.87E-04
	67	1509.67	4.32E+02	88.97	4.16E-03	3.73E-04
	68	1541.45	2.00E+02	105.06	4.10E-03	3.64E-04
M	69	1579.37	4.43E+01	17.41	4.03E-03	3.53E-04
m	70	1584.29	1.37E+02	48.77	4.02E-03	3.52E-04
M	71	1595.82	5.81E+01	48.12	4.00E-03	3.49E-04
m	72	1600.62	7.51E+01	53.00	3.99E-03	3.47E-04
	73	1661.64	2.14E+02	54.39	3.89E-03	3.30E-04
	74	1683.32	9.10E+01	43.54	3.86E-03	3.23E-04
	75	1692.94	6.33E+01	36.29	3.85E-03	3.21E-04
	76	1730.12	5.68E+02	65.48	3.79E-03	3.10E-04
	77	1765.09	2.56E+03	111.30	3.75E-03	3.00E-04
M	78	1839.07	5.22E+01	32.35	3.65E-03	2.79E-04
m	79	1848.23	3.46E+02	46.16	3.64E-03	2.79E-04
	80	1890.41	4.44E+01	34.54	3.60E-03	2.79E-04
	81	1898.03	2.48E+01	24.79	3.59E-03	2.79E-04
	82	1936.67	3.28E+01	26.06	3.55E-03	2.79E-04
M	83	2112.11	2.76E+01	20.27	3.40E-03	2.79E-04
m	84	2119.15	1.80E+02	30.75	3.40E-03	2.79E-04
	85	2181.05	1.55E+01	15.41	3.35E-03	2.79E-04
	86	2204.68	6.75E+02	57.81	3.34E-03	2.79E-04
	87	2294.51	4.13E+01	18.14	3.29E-03	2.79E-04
	88	2448.38	2.16E+02	29.39	3.23E-03	2.79E-04
	89	2480.16	8.00E+00	5.66	3.22E-03	2.79E-04
	90	2615.19	4.48E+01	15.68	3.20E-03	2.79E-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 : 8/23/2017 3:41:37PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.63	1.22E+03	236.45	3.74E+01	5.77E+00	1.18E+03	2.37E+02
	2	53.38	2.24E+02	255.09			2.24E+02	2.55E+02
	3	63.32	2.60E+03	315.42	6.29E+01	1.34E+01	2.54E+03	3.16E+02
	4	76.32	1.26E+04	624.63			1.26E+04	6.25E+02
M	5	87.80	1.98E+03	197.99			1.98E+03	1.98E+02
m	6	92.68	3.19E+03	206.05	4.88E+01	1.30E+00	3.14E+03	2.06E+02
	7	113.19	3.42E+02	219.37			3.42E+02	2.19E+02
	8	144.08	5.71E+02	254.71	1.06E+01	1.02E+01	5.60E+02	2.55E+02
	9	163.42	2.91E+02	211.58			2.91E+02	2.12E+02
	10	186.10	5.63E+03	347.97	3.48E+01	7.32E+00	5.60E+03	3.48E+02
	11	205.16	2.92E+02	154.54			2.92E+02	1.55E+02
M	12	233.78	1.73E+02	134.83			1.73E+02	1.35E+02
m	13	235.96	5.86E+02	188.50			5.86E+02	1.88E+02
m	14	238.95	4.25E+02	140.60	7.09E+00	6.85E+00	4.18E+02	1.41E+02
m	15	242.06	5.60E+03	198.28			5.60E+03	1.98E+02
	16	257.86	7.17E+02	237.45			7.17E+02	2.37E+02
	17	270.18	5.62E+02	193.10			5.62E+02	1.93E+02
	18	295.30	1.15E+04	303.68			1.15E+04	3.04E+02
	19	314.55	1.13E+02	124.79			1.13E+02	1.25E+02
	20	352.02	2.04E+04	328.61	1.04E+01	5.08E+00	2.04E+04	3.29E+02
	21	367.50	9.51E+01	104.76			9.51E+01	1.05E+02
	22	388.17	3.74E+02	175.10			3.74E+02	1.75E+02
	23	405.53	1.00E+02	109.97			1.00E+02	1.10E+02
	24	426.25	2.15E+02	134.06			2.15E+02	1.34E+02
	25	454.95	1.41E+02	121.21			1.41E+02	1.21E+02
	26	462.51	8.85E+01	103.76			8.85E+01	1.04E+02
	27	480.57	1.16E+02	98.45			1.16E+02	9.85E+01
	28	487.43	1.83E+02	111.30			1.83E+02	1.11E+02
	29	511.10	3.56E+02	127.78	7.08E+01	4.94E+00	2.85E+02	1.28E+02
M	30	580.65	1.53E+02	108.39			1.53E+02	1.08E+02
m	31	583.54	1.37E+02	75.95	5.65E+00	3.57E+00	1.32E+02	7.60E+01
	32	609.54	1.51E+04	279.41	1.07E+01	3.96E+00	1.51E+04	2.79E+02
	33	639.28	7.93E+01	76.42			7.93E+01	7.64E+01
	34	655.78	6.78E+01	76.84			6.78E+01	7.68E+01
m	35	665.72	4.40E+02	72.27			4.40E+02	7.23E+01
	36	703.70	1.61E+02	109.19			1.61E+02	1.09E+02
	37	720.09	8.67E+01	71.18			8.67E+01	7.12E+01
	38	742.58	1.18E+02	76.86			1.18E+02	7.69E+01
	39	768.45	1.54E+03	133.08			1.54E+03	1.33E+02
	40	786.39	3.91E+02	115.75			3.91E+02	1.16E+02
	41	806.52	3.07E+02	89.22			3.07E+02	8.92E+01
	42	833.49	9.81E+01	74.83			9.81E+01	7.48E+01
	43	839.47	1.28E+02	90.97			1.28E+02	9.10E+01
	44	906.24	6.07E+01	66.22			6.07E+01	6.62E+01
	45	911.98	7.18E+01	75.46	2.63E+00	2.49E+00	6.92E+01	7.55E+01
	46	934.46	7.38E+02	105.06			7.38E+02	1.05E+02
	47	964.39	1.05E+02	80.40			1.05E+02	8.04E+01
	48	1001.43	1.95E+02	86.19	4.07E+00	2.59E+00	1.91E+02	8.62E+01
	49	1024.31	5.55E+01	62.22			5.55E+01	6.22E+01
	50	1052.16	7.78E+01	61.52			7.78E+01	6.15E+01
	51	1070.88	1.03E+02	74.89			1.03E+02	7.49E+01
	52	1105.34	5.67E+01	60.94			5.67E+01	6.09E+01
	53	1120.74	3.20E+03	149.12	2.45E+00	2.38E+00	3.19E+03	1.49E+02
	54	1132.92	9.28E+01	101.25			9.28E+01	1.01E+02

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	55	1155.79	4.10E+02	96.85			4.10E+02	9.69E+01
	56	1208.36	1.07E+02	75.52			1.07E+02	7.55E+01
	57	1238.68	1.16E+03	110.11			1.16E+03	1.10E+02
	58	1254.50	1.76E+02	71.56			1.76E+02	7.16E+01
	59	1281.43	2.91E+02	92.24			2.91E+02	9.22E+01
	60	1303.42	4.21E+01	50.39			4.21E+01	5.04E+01
	61	1378.21	8.13E+02	90.68			8.13E+02	9.07E+01
	62	1385.82	1.37E+02	53.76			1.37E+02	5.38E+01
M	63	1402.11	3.05E+02	69.69			3.05E+02	6.97E+01
m	64	1408.67	4.84E+02	66.30			4.84E+02	6.63E+01
	65	1422.43	6.51E+01	57.71			6.51E+01	5.77E+01
	66	1461.46	1.72E+02	70.00	5.90E+00	2.63E+00	1.66E+02	7.00E+01
	67	1509.67	4.32E+02	88.97			4.32E+02	8.90E+01
	68	1541.45	2.00E+02	105.06			2.00E+02	1.05E+02
M	69	1579.37	4.43E+01	17.41			4.43E+01	1.74E+01
m	70	1584.29	1.37E+02	48.77			1.37E+02	4.88E+01
M	71	1595.82	5.81E+01	48.12			5.81E+01	4.81E+01
m	72	1600.62	7.51E+01	53.00			7.51E+01	5.30E+01
	73	1661.64	2.14E+02	54.39			2.14E+02	5.44E+01
	74	1683.32	9.10E+01	43.54			9.10E+01	4.35E+01
	75	1692.94	6.33E+01	36.29			6.33E+01	3.63E+01
	76	1730.12	5.68E+02	65.48			5.68E+02	6.55E+01
	77	1765.09	2.56E+03	111.30	3.33E+00	1.73E+00	2.55E+03	1.11E+02
M	78	1839.07	5.22E+01	32.35			5.22E+01	3.24E+01
m	79	1848.23	3.46E+02	46.16			3.46E+02	4.62E+01
	80	1890.41	4.44E+01	34.54			4.44E+01	3.45E+01
	81	1898.03	2.48E+01	24.79			2.48E+01	2.48E+01
	82	1936.67	3.28E+01	26.06			3.28E+01	2.61E+01
M	83	2112.11	2.76E+01	20.27			2.76E+01	2.03E+01
m	84	2119.15	1.80E+02	30.75			1.80E+02	3.08E+01
	85	2181.05	1.55E+01	15.41			1.55E+01	1.54E+01
	86	2204.68	6.75E+02	57.81			6.75E+02	5.78E+01
	87	2294.51	4.13E+01	18.14			4.13E+01	1.81E+01
	88	2448.38	2.16E+02	29.39			2.16E+02	2.94E+01
	89	2480.16	8.00E+00	5.66			8.00E+00	5.66E+00
	90	2615.19	4.48E+01	15.68	4.77E+00	1.52E+00	4.00E+01	1.58E+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 1707090-12

HTC-A07-S001-0612-02

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 3:41:37PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.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	46.63	1.22E+03	236.45	3.74E+01	5.77E+00	1.18E+03	2.37E+02
	2	53.38	2.24E+02	255.09			2.24E+02	2.55E+02
	3	63.32	2.60E+03	315.42	6.29E+01	1.34E+01	2.54E+03	3.16E+02
	4	76.32	1.26E+04	624.63			1.26E+04	6.25E+02
M	5	87.80	1.98E+03	197.99			1.98E+03	1.98E+02
m	6	92.68	3.19E+03	206.05	4.88E+01	1.30E+00	3.14E+03	2.06E+02
	7	113.19	3.42E+02	219.37			3.42E+02	2.19E+02
	8	144.08	5.71E+02	254.71	1.06E+01	1.02E+01	5.60E+02	2.55E+02
	9	163.42	2.91E+02	211.58			2.91E+02	2.12E+02
	10	186.10	5.63E+03	347.97	3.48E+01	7.32E+00	5.60E+03	3.48E+02
	11	205.16	2.92E+02	154.54			2.92E+02	1.55E+02
M	12	233.78	1.73E+02	134.83			1.73E+02	1.35E+02
m	13	235.96	5.86E+02	188.50			5.86E+02	1.88E+02
m	14	238.95	4.25E+02	140.60	7.09E+00	6.85E+00	4.18E+02	1.41E+02
m	15	242.06	5.60E+03	198.28			5.60E+03	1.98E+02
	16	257.86	7.17E+02	237.45			7.17E+02	2.37E+02
	17	270.18	5.62E+02	193.10			5.62E+02	1.93E+02
	18	295.30	1.15E+04	303.68			1.15E+04	3.04E+02
	19	314.55	1.13E+02	124.79			1.13E+02	1.25E+02
	20	352.02	2.04E+04	328.61	1.04E+01	5.08E+00	2.04E+04	3.29E+02
	21	367.50	9.51E+01	104.76			9.51E+01	1.05E+02
	22	388.17	3.74E+02	175.10			3.74E+02	1.75E+02
	23	405.53	1.00E+02	109.97			1.00E+02	1.10E+02
	24	426.25	2.15E+02	134.06			2.15E+02	1.34E+02
	25	454.95	1.41E+02	121.21			1.41E+02	1.21E+02
	26	462.51	8.85E+01	103.76			8.85E+01	1.04E+02
	27	480.57	1.16E+02	98.45			1.16E+02	9.85E+01
	28	487.43	1.83E+02	111.30			1.83E+02	1.11E+02
	29	511.10	3.56E+02	127.78	7.08E+01	4.94E+00	2.85E+02	1.28E+02
M	30	580.65	1.53E+02	108.39			1.53E+02	1.08E+02
m	31	583.54	1.37E+02	75.95	5.65E+00	3.57E+00	1.32E+02	7.60E+01
	32	609.54	1.51E+04	279.41	1.07E+01	3.96E+00	1.51E+04	2.79E+02
	33	639.28	7.93E+01	76.42			7.93E+01	7.64E+01
	34	655.78	6.78E+01	76.84			6.78E+01	7.68E+01
m	35	665.72	4.40E+02	72.27			4.40E+02	7.23E+01
	36	703.70	1.61E+02	109.19			1.61E+02	1.09E+02
	37	720.09	8.67E+01	71.18			8.67E+01	7.12E+01
	38	742.58	1.18E+02	76.86			1.18E+02	7.69E+01
	39	768.45	1.54E+03	133.08			1.54E+03	1.33E+02
	40	786.39	3.91E+02	115.75			3.91E+02	1.16E+02
	41	806.52	3.07E+02	89.22			3.07E+02	8.92E+01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	42	833.49	9.81E+01	74.83			9.81E+01	7.48E+01
	43	839.47	1.28E+02	90.97			1.28E+02	9.10E+01
	44	906.24	6.07E+01	66.22			6.07E+01	6.62E+01
	45	911.98	7.18E+01	75.46	2.63E+00	2.49E+00	6.92E+01	7.55E+01
	46	934.46	7.38E+02	105.06			7.38E+02	1.05E+02
	47	964.39	1.05E+02	80.40			1.05E+02	8.04E+01
	48	1001.43	1.95E+02	86.19	4.07E+00	2.59E+00	1.91E+02	8.62E+01
	49	1024.31	5.55E+01	62.22			5.55E+01	6.22E+01
	50	1052.16	7.78E+01	61.52			7.78E+01	6.15E+01
	51	1070.88	1.03E+02	74.89			1.03E+02	7.49E+01
	52	1105.34	5.67E+01	60.94			5.67E+01	6.09E+01
	53	1120.74	3.20E+03	149.12	2.45E+00	2.38E+00	3.19E+03	1.49E+02
	54	1132.92	9.28E+01	101.25			9.28E+01	1.01E+02
	55	1155.79	4.10E+02	96.85			4.10E+02	9.69E+01
	56	1208.36	1.07E+02	75.52			1.07E+02	7.55E+01
	57	1238.68	1.16E+03	110.11			1.16E+03	1.10E+02
	58	1254.50	1.76E+02	71.56			1.76E+02	7.16E+01
	59	1281.43	2.91E+02	92.24			2.91E+02	9.22E+01
	60	1303.42	4.21E+01	50.39			4.21E+01	5.04E+01
	61	1378.21	8.13E+02	90.68			8.13E+02	9.07E+01
	62	1385.82	1.37E+02	53.76			1.37E+02	5.38E+01
M	63	1402.11	3.05E+02	69.69			3.05E+02	6.97E+01
m	64	1408.67	4.84E+02	66.30			4.84E+02	6.63E+01
	65	1422.43	6.51E+01	57.71			6.51E+01	5.77E+01
	66	1461.46	1.72E+02	70.00	5.90E+00	2.63E+00	1.66E+02	7.00E+01
	67	1509.67	4.32E+02	88.97			4.32E+02	8.90E+01
	68	1541.45	2.00E+02	105.06			2.00E+02	1.05E+02
M	69	1579.37	4.43E+01	17.41			4.43E+01	1.74E+01
m	70	1584.29	1.37E+02	48.77			1.37E+02	4.88E+01
M	71	1595.82	5.81E+01	48.12			5.81E+01	4.81E+01
m	72	1600.62	7.51E+01	53.00			7.51E+01	5.30E+01
	73	1661.64	2.14E+02	54.39			2.14E+02	5.44E+01
	74	1683.32	9.10E+01	43.54			9.10E+01	4.35E+01
	75	1692.94	6.33E+01	36.29			6.33E+01	3.63E+01
	76	1730.12	5.68E+02	65.48			5.68E+02	6.55E+01
	77	1765.09	2.56E+03	111.30	3.33E+00	1.73E+00	2.55E+03	1.11E+02
M	78	1839.07	5.22E+01	32.35			5.22E+01	3.24E+01
m	79	1848.23	3.46E+02	46.16			3.46E+02	4.62E+01
	80	1890.41	4.44E+01	34.54			4.44E+01	3.45E+01
	81	1898.03	2.48E+01	24.79			2.48E+01	2.48E+01
	82	1936.67	3.28E+01	26.06			3.28E+01	2.61E+01
M	83	2112.11	2.76E+01	20.27			2.76E+01	2.03E+01
m	84	2119.15	1.80E+02	30.75			1.80E+02	3.08E+01
	85	2181.05	1.55E+01	15.41			1.55E+01	1.54E+01
	86	2204.68	6.75E+02	57.81			6.75E+02	5.78E+01
	87	2294.51	4.13E+01	18.14			4.13E+01	1.81E+01
	88	2448.38	2.16E+02	29.39			2.16E+02	2.94E+01
	89	2480.16	8.00E+00	5.66			8.00E+00	5.66E+00
	90	2615.19	4.48E+01	15.68	4.77E+00	1.52E+00	4.00E+01	1.58E+01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

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	0.935	1460.81	*	10.67	3.73E+00	1.61E+00
CD-109	0.991	88.03	*	3.72	2.33E+01	3.42E+00
SN-126	0.992	87.57	*	37.00	2.02E+00	2.72E-01
LA-140	0.366	328.77		20.50		
		487.03	*	45.50	8.69E+01	5.34E+01
		815.85		23.50		
		1596.49	*	95.49	3.36E+01	2.80E+01
TL-208	0.857	583.14	*	30.22	4.99E-01	2.92E-01
		860.37		4.48		
		2614.66	*	35.85	3.57E-01	1.44E-01
PB-210	0.997	46.50	*	4.25	1.79E+01	4.06E+00
PB-212	0.879	238.63	*	44.60	5.55E-01	1.92E-01
		300.09		3.41		
BI-214	0.977	609.31	*	46.30	3.87E+01	3.58E+00
		1120.29	*	15.10	4.12E+01	3.88E+00
		1764.49	*	15.80	4.41E+01	4.01E+00
		2204.22	*	4.98	4.14E+01	4.96E+00
PB-214	0.998	295.21	*	19.19	4.13E+01	3.24E+00
		351.92	*	37.19	4.28E+01	3.42E+00
RA-226	0.998	186.21	*	3.28	8.58E+01	1.57E+02
PA-234M	0.975	1001.03	*	0.92	3.68E+01	1.69E+01
TH-234	1.000	63.29	*	3.80	2.87E+01	4.15E+00
U-235	0.990	143.76	*	10.50	2.32E+00	1.12E+00
		163.35	*	4.70	2.88E+00	2.16E+00
		205.31	*	4.70	3.33E+00	1.87E+00

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

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 3:41:37PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	53.38	6.21580E-02	57.00		
	4	76.32	3.49094E+00	2.49		
m	6	92.68	8.72035E-01	3.28	Sum	
	7	113.19	9.49512E-02	32.09		
M	12	233.78	4.79904E-02	39.02		
m	13	235.96	1.62694E-01	16.09	Tol.	NB-95M TH-227
m	15	242.06	1.55542E+00	1.77		
	16	257.86	1.99212E-01	16.55		
	17	270.18	1.56212E-01	17.17		
	19	314.55	3.13889E-02	55.22		
	21	367.50	2.64068E-02	55.10		
	22	388.17	1.04022E-01	23.38		
	23	405.53	2.77821E-02	54.98		
	24	426.25	5.97492E-02	31.16		
	25	454.95	3.90278E-02	43.13		
	26	462.51	2.45708E-02	58.65	Tol.	SB-125
	27	480.57	3.21204E-02	42.57	Sum	
	29	511.10	7.90942E-02	22.45		
M	30	580.65	4.25669E-02	35.37		
	33	639.28	2.20391E-02	48.16		
	34	655.78	1.88350E-02	56.66	Sum	
m	35	665.72	1.22301E-01	8.21	Tol.	SB-126
	36	703.70	4.46637E-02	33.95	Sum	
	37	720.09	2.40761E-02	41.06	Tol.	SB-126
	38	742.58	3.27065E-02	32.64	D-Esc	
	39	768.45	4.27682E-01	4.32		
	40	786.39	1.08475E-01	14.82		
	41	806.52	8.52433E-02	14.54		
	42	833.49	2.72416E-02	38.15		
	43	839.47	3.54664E-02	35.63	Sum	
	44	906.24	1.68655E-02	54.53		
	45	911.98	1.92224E-02	54.55	Tol.	TL-204 AC-228
	46	934.46	2.05128E-01	7.11		
	47	964.39	2.90711E-02	38.41	Tol.	EU-152
	49	1024.31	1.54245E-02	56.02		
	50	1052.16	2.16199E-02	39.52		
	51	1070.88	2.86527E-02	36.30	Sum	
	52	1105.34	1.57600E-02	53.70		
	54	1132.92	2.57798E-02	54.55		
	55	1155.79	1.13959E-01	11.80		

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	56	1208.36	2.95905E-02	35.45	Sum	
	57	1238.68	3.21663E-01	4.75	Tol.	CO-56
	58	1254.50	4.90186E-02	20.28	S-Esc	
	59	1281.43	8.08406E-02	15.85		
	60	1303.42	1.17015E-02	59.81		
	61	1378.21	2.25833E-01	5.58		
	62	1385.82	3.81274E-02	19.58		
M	63	1402.11	8.45857E-02	11.44		
m	64	1408.67	1.34328E-01	6.86	Tol.	EU-152
	65	1422.43	1.80846E-02	44.32		
	67	1509.67	1.20086E-01	10.29		
	68	1541.45	5.54279E-02	26.32		
M	69	1579.37	1.23151E-02	19.63		
m	70	1584.29	3.79740E-02	17.84	Sum	
m	72	1600.62	2.08551E-02	35.30		
	73	1661.64	5.93079E-02	12.74		
	74	1683.32	2.52912E-02	23.91	Sum	
	75	1692.94	1.75822E-02	28.67	S-Esc	
	76	1730.12	1.57691E-01	5.77	Sum	
M	78	1839.07	1.45003E-02	30.99		
m	79	1848.23	9.59951E-02	6.68		
	80	1890.41	1.23386E-02	38.88	Sum	
	81	1898.03	6.89358E-03	49.95		
	82	1936.67	9.10494E-03	39.76		
M	83	2112.11	7.67719E-03	36.68		
m	84	2119.15	4.98997E-02	8.56		
	85	2181.05	4.30556E-03	49.71		
	87	2294.51	1.14637E-02	21.98		
	88	2448.38	6.00000E-02	6.80		
	89	2480.16	2.22222E-03	35.36		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.93	1460.81	*	10.67	3.73E+00	1.61E+00
CD-109	0.99	88.03	*	3.72	2.33E+01	3.42E+00
SN-126	0.99	87.57	*	37.00	2.02E+00	2.72E-01
LA-140	0.36	328.77		20.50		
		487.03	*	45.50	8.69E+01	5.34E+01
		815.85		23.50		
		1596.49	*	95.49	3.36E+01	2.80E+01
TL-208	0.85	583.14	*	30.22	4.99E-01	2.92E-01
		860.37		4.48		
		2614.66	*	35.85	3.57E-01	1.44E-01
PB-210	0.99	46.50	*	4.25	1.79E+01	4.06E+00
PB-212	0.87	238.63	*	44.60	5.55E-01	1.92E-01
		300.09		3.41		
BI-214	0.97	609.31	*	46.30	3.87E+01	3.58E+00
		1120.29	*	15.10	4.12E+01	3.88E+00
		1764.49	*	15.80	4.41E+01	4.01E+00
		2204.22	*	4.98	4.14E+01	4.96E+00
PB-214	0.99	295.21	*	19.19	4.13E+01	3.24E+00
		351.92	*	37.19	4.28E+01	3.42E+00
RA-226	0.99	186.21	*	3.28	8.58E+01	1.57E+02
PA-234M	0.97	1001.03	*	0.92	3.68E+01	1.69E+01
TH-234	1.00	63.29	*	3.80	2.87E+01	4.15E+00
U-235	0.99	143.76	*	10.50	2.32E+00	1.12E+00
		163.35	*	4.70	2.88E+00	2.16E+00
		205.31	*	4.70	3.33E+00	1.87E+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	0.935	3.73E+00	1.61E+00	
?	CD-109	0.991	2.33E+01	3.42E+00	

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
?	SN-126	0.992	2.02E+00	2.72E-01	
	LA-140	0.366	4.51E+01	2.48E+01	
	TL-208	0.857	3.84E-01	1.29E-01	
	PB-210	0.997	1.79E+01	4.06E+00	
	PB-212	0.879	5.55E-01	1.92E-01	
	BI-214	0.977	4.12E+01	2.01E+00	
	PB-214	0.998	4.20E+01	2.35E+00	
	RA-226	0.998	8.58E+01	1.57E+02	
	PA-234M	0.975	3.68E+01	1.69E+01	
	TH-234	1.000	2.87E+01	4.15E+00	
	U-235	0.990	2.63E+00	8.79E-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 1707090-12

HTC-A07-S001-0612-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 3:41:37PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	53.38	6.21580E-02	57.00		
	4	76.32	3.49094E+00	2.49		
m	6	92.68	8.72035E-01	3.28	Sum	
	7	113.19	9.49512E-02	32.09		
M	12	233.78	4.79904E-02	39.02		
m	13	235.96	1.62694E-01	16.09	Tol.	NB-95M TH-227
m	15	242.06	1.55542E+00	1.77		
	16	257.86	1.99212E-01	16.55		
	17	270.18	1.56212E-01	17.17		
	19	314.55	3.13889E-02	55.22		
	21	367.50	2.64068E-02	55.10		
	22	388.17	1.04022E-01	23.38		
	23	405.53	2.77821E-02	54.98		
	24	426.25	5.97492E-02	31.16		
	25	454.95	3.90278E-02	43.13		
	26	462.51	2.45708E-02	58.65	Tol.	SB-125
	27	480.57	3.21204E-02	42.57	Sum	
	29	511.10	7.90942E-02	22.45		
M	30	580.65	4.25669E-02	35.37		
	33	639.28	2.20391E-02	48.16		
	34	655.78	1.88350E-02	56.66	Sum	
m	35	665.72	1.22301E-01	8.21	Tol.	SB-126
	36	703.70	4.46637E-02	33.95	Sum	
	37	720.09	2.40761E-02	41.06	Tol.	SB-126
	38	742.58	3.27065E-02	32.64	D-Esc	
	39	768.45	4.27682E-01	4.32		
	40	786.39	1.08475E-01	14.82		
	41	806.52	8.52433E-02	14.54		
	42	833.49	2.72416E-02	38.15		
	43	839.47	3.54664E-02	35.63	Sum	
	44	906.24	1.68655E-02	54.53		
	45	911.98	1.92224E-02	54.55	Tol.	TL-204 AC-228
	46	934.46	2.05128E-01	7.11		

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	47	964.39	2.90711E-02	38.41	Tol.	EU-152
	49	1024.31	1.54245E-02	56.02		
	50	1052.16	2.16199E-02	39.52		
	51	1070.88	2.86527E-02	36.30	Sum	
	52	1105.34	1.57600E-02	53.70		
	54	1132.92	2.57798E-02	54.55		
	55	1155.79	1.13959E-01	11.80		
	56	1208.36	2.95905E-02	35.45	Sum	
	57	1238.68	3.21663E-01	4.75	Tol.	CO-56
	58	1254.50	4.90186E-02	20.28	S-Esc	
	59	1281.43	8.08406E-02	15.85		
	60	1303.42	1.17015E-02	59.81		
	61	1378.21	2.25833E-01	5.58		
	62	1385.82	3.81274E-02	19.58		
M	63	1402.11	8.45857E-02	11.44		
m	64	1408.67	1.34328E-01	6.86	Tol.	EU-152
	65	1422.43	1.80846E-02	44.32		
	67	1509.67	1.20086E-01	10.29		
	68	1541.45	5.54279E-02	26.32		
M	69	1579.37	1.23151E-02	19.63		
m	70	1584.29	3.79740E-02	17.84	Sum	
m	72	1600.62	2.08551E-02	35.30		
	73	1661.64	5.93079E-02	12.74		
	74	1683.32	2.52912E-02	23.91	Sum	
	75	1692.94	1.75822E-02	28.67	S-Esc	
	76	1730.12	1.57691E-01	5.77	Sum	
M	78	1839.07	1.45003E-02	30.99		
m	79	1848.23	9.59951E-02	6.68		
	80	1890.41	1.23386E-02	38.88	Sum	
	81	1898.03	6.89358E-03	49.95		
	82	1936.67	9.10494E-03	39.76		
M	83	2112.11	7.67719E-03	36.68		
m	84	2119.15	4.98997E-02	8.56		
	85	2181.05	4.30556E-03	49.71		
	87	2294.51	1.14637E-02	21.98		
	88	2448.38	6.00000E-02	6.80		
	89	2480.16	2.22222E-03	35.36		

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

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

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	1.69E+00	4.63E+00	4.63E+00
+	NA-22	1274.54		99.94	-1.74E-03	1.88E-01	1.88E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	-3.08E-02	1.12E-01	1.12E-01
+	K-40	1460.81	*	10.67	3.73E+00	2.47E+00	2.47E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.22E-01	1.44E-01	1.44E-01
		78.34		96.00	7.69E-01		1.83E-01
+	SC-46	889.25		99.98	8.83E-03	4.13E-01	4.13E-01
		1120.51		99.99	1.43E+01		1.24E+00
+	V-48	983.52		99.98	-1.57E+00	1.23E+01	1.31E+01
		1312.10		97.50	-1.75E+00		1.23E+01
+	CR-51	320.08		9.83	-2.37E+00	1.73E+01	1.73E+01
+	MN-54	834.83		99.97	-2.72E-01	2.22E-01	2.22E-01
+	CO-56	846.75		99.96	2.18E-01	4.30E-01	4.30E-01
		1037.75		14.03	-6.44E-01		2.74E+00
		1238.25		67.00	8.71E+00		1.35E+00
		1771.40		15.51	-2.67E-01		3.03E+00
		2598.48		16.90	1.51E-02		5.43E-01
+	CO-57	122.06		85.51	5.69E-02	1.62E-01	1.62E-01
		136.48		10.60	9.00E-01		1.74E+00
+	CO-58	810.76		99.40	-5.21E-02	4.58E-01	4.58E-01
+	FE-59	1099.22		56.50	-2.35E-01	1.42E+00	1.42E+00
		1291.56		43.20	5.30E-02		1.83E+00
+	CO-60	1173.22		100.00	-1.90E-02	1.76E-01	1.79E-01
		1332.49		100.00	-2.51E-03		1.76E-01
+	ZN-65	1115.52		50.75	5.77E-02	5.60E-01	5.60E-01
+	GA-67	93.31		35.70	5.56E+09	6.25E+08	6.25E+08
		208.95		2.24	8.17E+09		9.75E+09
		300.22		16.00	5.43E+08		1.33E+09
+	SE-75	121.11		16.70	-2.54E-01	4.19E-01	1.12E+00
		136.00		59.20	1.23E-01		4.29E-01
		264.65		59.80	3.06E-02		4.19E-01
		279.53		25.20	2.83E-01		1.02E+00
		400.65		11.40	2.61E+00		2.42E+00
+	RB-82	776.52		13.00	4.27E+00	1.81E+01	1.81E+01
+	RB-83	520.41		46.00	-9.86E-02	6.27E-01	6.27E-01
		529.64		30.30	-4.14E-01		9.48E-01
		552.65		16.40	-9.47E-01		1.73E+00

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99		0.43	-1.30E+01	3.22E+01	3.22E+01
+	SR-85	513.99		99.27	-1.62E-01	4.00E-01	4.00E-01
+	Y-88	898.02		93.40	1.02E-01	2.95E-01	3.76E-01
		1836.01		99.38	3.11E-01		2.95E-01
+	MO-93	263.06		56.72	1.84E-02	1.49E-01	2.55E-01
		684.67		99.68	2.24E-02		1.49E-01
		1477.11		99.08	3.88E-02		2.11E-01
+	NB-93M	16.57		9.43	0.00E+00	5.97E+00	5.97E+00
+	NB-94	702.63		100.00	1.72E-01	1.70E-01	1.70E-01
		871.10		100.00	-1.01E-02		1.75E-01
+	NB-95	765.79		99.81	3.65E+00	1.85E+00	1.85E+00
+	NB-95M	235.69		25.00	-1.19E+08	1.22E+08	1.22E+08
+	ZR-95	724.18		43.70	1.91E-01	8.61E-01	1.05E+00
		756.72		55.30	1.97E-01		8.61E-01
+	MO-99	181.06		6.20	5.52E+10	9.21E+10	1.82E+11
		739.58		12.80	7.76E+09		9.21E+10
		778.00		4.50	2.47E+10		2.55E+11
+	RU-103	497.08		89.00	-2.37E-01	8.11E-01	8.11E-01
+	RU-106	621.84		9.80	-1.79E-01	1.72E+00	1.72E+00
+	AG-108M	433.93		89.90	-2.65E-02	1.57E-01	1.57E-01
		614.37		90.40	-3.40E-03		2.05E-01
		722.95		90.50	-1.63E-03		1.79E-01
+	CD-109	88.03	*	3.72	2.33E+01	1.09E+01	1.09E+01
+	AG-110M	657.75		93.14	-1.98E-02	2.09E-01	2.09E-01
		677.61		10.53	-3.38E-01		1.76E+00
		706.67		16.46	8.92E-01		1.34E+00
		763.93		21.98	-1.13E+01		1.17E+00
		884.67		71.63	-2.35E-02		3.36E-01
		1384.27		23.94	-7.39E+00		1.12E+00
+	CD-113M	263.70		0.02	4.53E+01	6.20E+02	6.20E+02
+	SN-113	255.12		1.93	-4.99E-01	4.08E-01	1.40E+01
		391.69		64.90	2.98E-02		4.08E-01
+	TE123M	159.00		84.10	-8.98E-02	3.25E-01	3.25E-01
+	SB-124	602.71		97.87	-1.42E-01	5.09E-01	5.09E-01
		645.85		7.26	3.40E+00		6.16E+00
		722.78		11.10	-3.58E-01		4.64E+00
		1691.02		49.00	-2.52E-02		1.01E+00
+	I-125	35.49		6.49	-1.52E+01	1.43E+01	1.43E+01
+	SB-125	176.33		6.89	-4.52E-01	5.39E-01	2.34E+00
		427.89		29.33	-2.51E-01		5.39E-01
		463.38		10.35	9.80E-01		1.46E+00
		600.56		17.80	4.57E-02		9.55E-01
		635.90		11.32	7.05E-02		1.35E+00
+	SB-126	414.70		83.30	-1.17E+00	3.87E+01	4.65E+01
		666.33		99.60	1.20E+02		4.84E+01
		695.00		99.60	-4.71E+00		3.87E+01
		720.50		53.80	3.99E+01		7.83E+01
+	SN-126	87.57	*	37.00	2.02E+00	9.42E-01	9.42E-01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-127	473.00		25.00	-9.64E+06	2.39E+07	3.04E+07
		685.20		35.70	3.04E+06		2.39E+07
		783.80		14.70	7.08E+07		7.65E+07
+	I-129	29.78		57.00	2.09E+00	9.13E-01	9.13E-01
		33.60		13.20	7.06E+00		2.98E+00
		39.58		7.52	1.69E+00		2.77E+00
+	I-131	284.30		6.05	-1.77E+03	8.61E+02	1.25E+04
		364.48		81.20	8.68E+01		8.61E+02
		636.97		7.26	3.33E+02		1.04E+04
		722.89		1.80	-4.25E+02		4.68E+04
+	TE-132	49.72		13.10	1.49E+09	2.53E+08	1.64E+09
		228.16		88.00	1.85E+07		2.53E+08
+	BA-133	81.00		33.00	9.11E-01	2.27E-01	3.96E-01
		302.84		17.80	-9.58E-02		8.33E-01
		356.01		60.00	-2.84E-02		2.27E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	3.89E+05	1.69E+05	1.69E+05
+	CS-134	563.23		8.38	8.22E-01	2.00E-01	1.75E+00
		569.32		15.43	-2.81E-01		9.17E-01
		604.70		97.60	5.95E-03		2.00E-01
		795.84		85.40	5.58E-02		2.05E-01
		801.93		8.73	-4.14E-02		1.97E+00
+	CS-135	268.24		16.00	-1.57E-02	9.64E-01	9.64E-01
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	3.60E+02	3.28E+01	3.95E+02
		163.89		4.61	6.58E+02		6.32E+02
		176.55		13.56	-4.00E+01		2.08E+02
		273.65		12.66	2.06E+02		2.26E+02
		340.57		48.50	-2.17E+01		5.66E+01
		818.50		99.70	2.58E+01		3.28E+01
		1048.07		79.60	4.90E-01		3.90E+01
		1235.34		19.70	1.02E+03		3.17E+02
+	CS-137	661.65		85.12	-9.09E-01	1.83E-01	1.83E-01
+	LA-138	788.74		34.00	1.36E+00	2.93E-01	5.99E-01
		1435.80		66.00	-3.85E-02		2.93E-01
+	CE-139	165.85		80.35	-3.20E-03	3.15E-01	3.15E-01
+	BA-140	162.64		6.70	4.75E+02	1.13E+02	5.05E+02
		304.84		4.50	1.61E+02		6.94E+02
		423.70		3.20	-2.30E+02		1.02E+03
		437.55		2.00	-6.02E+02		1.51E+03
		537.32		25.00	-5.23E+01		1.13E+02
+	LA-140	328.77		20.50	1.20E+02	6.37E+01	1.55E+02
		487.03	*	45.50	8.69E+01		8.57E+01
		815.85		23.50	6.91E+01		1.58E+02
		1596.49	*	95.49	3.36E+01		6.37E+01
+	CE-141	145.44		48.40	3.68E+00	2.67E+00	2.67E+00
+	@ CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	CE-143	293.26	42.00	1.00E+26	1.00E+26	1.00E+26
@		664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	3.41E-01	1.29E+00	1.29E+00
+	PM-144	476.78	42.00	1.39E-01	1.68E-01	3.83E-01
		618.01	98.60	-1.02E-01		1.68E-01
		696.49	99.49	-4.58E-02		1.80E-01
+	PM-145	36.85	21.70	-5.42E-01	6.22E-01	1.18E+00
		37.36	39.70	-9.49E-02		6.22E-01
		42.30	15.10	5.24E-02		1.18E+00
		72.40	2.31	-1.10E+02		5.99E+00
+	PM-146	453.90	39.94	3.21E-01	3.77E-01	3.77E-01
		735.90	14.01	5.40E-02		1.14E+00
		747.13	13.10	-5.73E-01		1.18E+00
+	ND-147	91.11	28.90	-3.05E+03	2.41E+02	2.41E+02
		531.02	13.10	-1.41E+02		5.29E+02
+	PM-149	285.90	3.10	1.91E+13	1.53E+14	1.53E+14
+	EU-152	121.78	20.50	1.86E-01	5.31E-01	5.31E-01
		244.69	5.40	7.69E-01		3.41E+00
		344.27	19.13	-1.08E-02		7.72E-01
		778.89	9.20	1.68E-01		1.74E+00
		964.01	10.40	2.19E+00		1.88E+00
		1085.78	7.22	-1.02E+00		2.32E+00
		1112.02	9.60	4.54E-01		1.78E+00
		1407.95	14.94	1.70E+00		2.05E+00
+	GD-153	97.43	31.30	7.00E-01	4.52E-01	4.52E-01
		103.18	22.20	1.36E-01		6.04E-01
+	EU-154	123.07	40.50	3.15E-02	2.71E-01	2.71E-01
		723.30	19.70	-7.62E-03		8.40E-01
		873.19	11.50	6.35E-01		1.57E+00
		996.32	10.30	4.21E-01		1.79E+00
		1004.76	17.90	1.42E-01		1.11E+00
		1274.45	35.50	-4.64E-03		5.02E-01
+	EU-155	86.50	30.90	2.54E+00	4.93E-01	4.93E-01
		105.30	20.70	6.60E-02		5.11E-01
+	EU-156	811.77	10.40	-3.17E+01	1.44E+02	1.44E+02
		1153.47	7.20	6.31E+02		3.05E+02
		1230.71	8.90	3.65E+01		1.80E+02
+	HO-166M	184.41	72.60	3.69E+00	2.79E-01	3.18E-01
		280.45	29.60	2.71E-02		4.86E-01
		410.94	11.10	1.96E-01		1.33E+00
		711.69	54.10	-3.29E-02		2.79E-01
+	TM-171	66.72	0.14	7.96E+01	1.07E+02	1.07E+02
+	HF-172	67.35	5.31	2.41E+00	1.05E+00	2.84E+00
		125.81	11.30	-3.27E-01		1.05E+00
+	LU-172	181.53	20.60	1.55E+03	8.03E+03	2.18E+04
		900.72	29.81	-3.31E+03		1.72E+04
		1093.66	62.50	-2.35E+02		8.03E+03
+	LU-173	100.72	5.24	-1.87E+00	8.75E-01	2.19E+00
		272.11	21.20	-2.76E-01		8.75E-01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HF-175	343.40		84.00	4.49E-01	4.69E-01	4.69E-01
+	LU-176	88.34		13.30	2.70E+00	1.51E-01	1.08E+00
		201.83		86.00	-8.12E-02		1.79E-01
		306.78		94.00	-1.81E-02		1.51E-01
+	HF-181	133.02		41.70	-4.88E-01	8.53E-01	1.31E+00
		345.85		17.20	-1.36E+00		4.28E+00
		482.03		82.80	5.91E-01		8.53E-01
+	TA-182	67.75		41.20	5.10E-01	6.03E-01	6.03E-01
		1121.30		34.90	3.16E+01		2.83E+00
		1189.05		16.23	-3.23E-01		1.86E+00
		1221.41		26.98	-4.54E-01		1.13E+00
		1231.02		11.44	5.59E-01		2.76E+00
+	IR-192	308.46		29.68	5.41E-01	7.01E-01	1.19E+00
		468.07		48.10	2.37E-01		7.01E-01
+	HG-203	279.19		77.30	4.29E-01	8.21E-01	8.21E-01
+	TL-204	374.74		94.11	2.68E-02	1.52E-01	1.52E-01
		899.15		99.16	3.38E-03		1.92E-01
		911.74		91.10	-8.03E-03		2.13E-01
+	BI-207	569.67		97.72	-4.08E-02	1.33E-01	1.33E-01
		1063.62		74.90	-1.76E-02		2.27E-01
+	TL-208	583.14	*	30.22	4.99E-01	1.62E-01	8.58E-01
		860.37		4.48	4.88E-01		3.86E+00
		2614.66	*	35.85	3.57E-01		1.62E-01
+	BI-210M	262.00		45.00	8.59E-02	3.23E-01	3.23E-01
		300.00		23.00	2.59E-01		6.34E-01
+	PB-210	46.50	*	4.25	1.79E+01	6.41E+00	6.41E+00
+	PB-211	404.84		2.90	-2.05E-01	5.33E+00	5.33E+00
		831.96		2.90	-2.60E-01		5.92E+00
+	BI-212	727.17		11.80	2.96E-01	1.33E+00	1.33E+00
		1620.62		2.75	-2.57E-01		6.15E+00
+	PB-212	238.63	*	44.60	5.55E-01	6.94E-01	6.94E-01
		300.09		3.41	1.75E+00		4.28E+00
+	BI-214	609.31	*	46.30	3.87E+01	5.67E-01	5.67E-01
		1120.29	*	15.10	4.12E+01		2.10E+00
		1764.49	*	15.80	4.41E+01		1.37E+00
		2204.22	*	4.98	4.14E+01		2.72E+00
+	PB-214	295.21	*	19.19	4.13E+01	5.69E-01	1.28E+00
		351.92	*	37.19	4.28E+01		5.69E-01
+	RN-219	401.80		6.50	1.95E+00	2.38E+00	2.38E+00
+	RA-223	323.87		3.88	1.63E+00	3.71E+00	3.71E+00
+	RA-224	240.98		3.95	8.54E+01	6.51E+00	6.51E+00
+	RA-225	40.00		31.00	4.15E+01	6.82E+01	6.82E+01
+	RA-226	186.21	*	3.28	8.58E+01	7.96E+00	7.96E+00
+	TH-227	50.10		8.40	1.55E+00	1.40E+00	1.71E+00
		236.00		11.50	-1.37E+00		1.40E+00
		256.20		6.30	-3.15E+00		2.40E+00
+	AC-228	338.32		11.40	-2.71E-02	6.68E-01	1.30E+00
		911.07		27.70	-2.51E-02		6.68E-01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11		16.60	5.25E-01	6.68E-01	1.11E+00
+	TH-230	48.44		16.90	-4.69E+00	8.88E-01	8.88E-01
		62.85		4.60	2.25E+01		3.69E+00
		67.67		0.37	3.12E+01		3.68E+01
+	PA-231	283.67		1.60	-1.28E+00	6.33E+00	9.06E+00
		302.67		2.30	-7.28E-01		6.33E+00
+	TH-231	25.64		14.70	0.00E+00	1.06E-01	1.06E-01
		84.21		6.40	-6.21E+00		2.06E+00
+	PA-233	311.98		38.60	-1.97E+00	4.61E+00	4.61E+00
+	PA-234	131.20		20.40	-1.91E-01	5.29E-01	5.29E-01
		733.99		8.80	2.40E-01		1.77E+00
		946.00		12.00	-2.92E-02		1.45E+00
+	PA-234M	1001.03	*	0.92	3.68E+01	2.65E+01	2.65E+01
+	TH-234	63.29	*	3.80	2.87E+01	6.27E+00	6.27E+00
+	U-235	143.76	*	10.50	2.32E+00	1.71E+00	1.71E+00
		163.35	*	4.70	2.88E+00		3.42E+00
		205.31	*	4.70	3.33E+00		2.85E+00
+	NP-237	86.50		12.60	5.99E+00	1.16E+00	1.16E+00
+	NP-239	106.10		22.70	2.83E+11	2.19E+12	2.19E+12
		228.18		10.70	5.01E+11		6.84E+12
		277.60		14.10	-9.85E+12		4.94E+12
+	AM-241	59.54		35.90	-1.91E-01	3.79E-01	3.79E-01
+	AM-243	74.67		66.00	-1.73E+00	2.81E-01	2.81E-01
+	CM-243	209.75		3.29	2.05E+00	1.03E+00	4.60E+00
		228.14		10.60	1.04E-01		1.43E+00
		277.60		14.00	-2.05E+00		1.03E+00

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

NUCLIDE MDA REPORT

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

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	4.63E+00	4.63E+00	1.69E+00	2.27E+00
	NA-22	1274.54		99.94	1.88E-01	1.88E-01	-1.74E-03	9.07E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	1.12E-01	1.12E-01	-3.08E-02	5.24E-02
+	K-40	1460.81	*	10.67	2.47E+00	2.47E+00	3.73E+00	1.20E+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	1.44E-01	1.44E-01	1.22E-01	7.16E-02
		78.34		96.00	1.83E-01		7.69E-01	9.08E-02
	SC-46	889.25		99.98	4.13E-01	4.13E-01	8.83E-03	2.02E-01
		1120.51		99.99	1.24E+00		1.43E+01	6.13E-01
	V-48	983.52		99.98	1.31E+01	1.23E+01	-1.57E+00	6.38E+00
		1312.10		97.50	1.23E+01		-1.75E+00	5.92E+00
	CR-51	320.08		9.83	1.73E+01	1.73E+01	-2.37E+00	8.51E+00
	MN-54	834.83		99.97	2.22E-01	2.22E-01	-2.72E-01	1.08E-01
	CO-56	846.75		99.96	4.30E-01	4.30E-01	2.18E-01	2.10E-01
		1037.75		14.03	2.74E+00		-6.44E-01	1.33E+00
		1238.25		67.00	1.35E+00		8.71E+00	6.62E-01
		1771.40		15.51	3.03E+00		-2.67E-01	1.46E+00
		2598.48		16.90	5.43E-01		1.51E-02	2.10E-01
	CO-57	122.06		85.51	1.62E-01	1.62E-01	5.69E-02	8.01E-02
		136.48		10.60	1.74E+00		9.00E-01	8.65E-01
	CO-58	810.76		99.40	4.58E-01	4.58E-01	-5.21E-02	2.23E-01
	FE-59	1099.22		56.50	1.42E+00	1.42E+00	-2.35E-01	6.90E-01
		1291.56		43.20	1.83E+00		5.30E-02	8.83E-01
	CO-60	1173.22		100.00	1.79E-01	1.76E-01	-1.90E-02	8.67E-02
		1332.49		100.00	1.76E-01		-2.51E-03	8.48E-02
	ZN-65	1115.52		50.75	5.60E-01	5.60E-01	5.77E-02	2.73E-01
	GA-67	93.31		35.70	6.25E+08	6.25E+08	5.56E+09	3.10E+08
		208.95		2.24	9.75E+09		8.17E+09	4.83E+09
		300.22		16.00	1.33E+09		5.43E+08	6.55E+08
	SE-75	121.11		16.70	1.12E+00	4.19E-01	-2.54E-01	5.56E-01
		136.00		59.20	4.29E-01		1.23E-01	2.13E-01
		264.65		59.80	4.19E-01		3.06E-02	2.07E-01
		279.53		25.20	1.02E+00		2.83E-01	5.02E-01
		400.65		11.40	2.42E+00		2.61E+00	1.19E+00
	RB-82	776.52		13.00	1.81E+01	1.81E+01	4.27E+00	8.84E+00
	RB-83	520.41		46.00	6.27E-01	6.27E-01	-9.86E-02	3.07E-01
		529.64		30.30	9.48E-01		-4.14E-01	4.63E-01
		552.65		16.40	1.73E+00		-9.47E-01	8.43E-01
	KR-85	513.99		0.43	3.22E+01	3.22E+01	-1.30E+01	1.58E+01
	SR-85	513.99		99.27	4.00E-01	4.00E-01	-1.62E-01	1.96E-01
	Y-88	898.02		93.40	3.76E-01	2.95E-01	1.02E-01	1.84E-01
		1836.01		99.38	2.95E-01		3.11E-01	1.40E-01
	MO-93	263.06		56.72	2.55E-01	1.49E-01	1.84E-02	1.26E-01
		684.67		99.68	1.49E-01		2.24E-02	7.29E-02
		1477.11		99.08	2.11E-01		3.88E-02	1.02E-01
	NB-93M	16.57		9.43	5.97E+00	5.97E+00	0.00E+00	0.00E+00
	NB-94	702.63		100.00	1.70E-01	1.70E-01	1.72E-01	8.31E-02
		871.10		100.00	1.75E-01		-1.01E-02	8.53E-02
	NB-95	765.79		99.81	1.85E+00	1.85E+00	3.65E+00	9.13E-01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NB-95M	235.69		25.00	1.22E+08	1.22E+08	-1.19E+08	6.05E+07
	ZR-95	724.18		43.70	1.05E+00	8.61E-01	1.91E-01	5.13E-01
		756.72		55.30	8.61E-01		1.97E-01	4.20E-01
	MO-99	181.06		6.20	1.82E+11	9.21E+10	5.52E+10	9.01E+10
		739.58		12.80	9.21E+10		7.76E+09	4.50E+10
		778.00		4.50	2.55E+11		2.47E+10	1.24E+11
	RU-103	497.08		89.00	8.11E-01	8.11E-01	-2.37E-01	3.97E-01
	RU-106	621.84		9.80	1.72E+00	1.72E+00	-1.79E-01	8.40E-01
	AG-108M	433.93		89.90	1.57E-01	1.57E-01	-2.65E-02	7.71E-02
		614.37		90.40	2.05E-01		-3.40E-03	1.01E-01
		722.95		90.50	1.79E-01		-1.63E-03	8.76E-02
+	CD-109	88.03	*	3.72	1.09E+01	1.09E+01	2.33E+01	5.42E+00
	AG-110M	657.75		93.14	2.09E-01	2.09E-01	-1.98E-02	1.02E-01
		677.61		10.53	1.76E+00		-3.38E-01	8.59E-01
		706.67		16.46	1.34E+00		8.92E-01	6.58E-01
		763.93		21.98	1.17E+00		-1.13E+01	5.75E-01
		884.67		71.63	3.36E-01		-2.35E-02	1.64E-01
		1384.27		23.94	1.12E+00		-7.39E+00	5.45E-01
	CD-113M	263.70		0.02	6.20E+02	6.20E+02	4.53E+01	3.06E+02
	SN-113	255.12		1.93	1.40E+01	4.08E-01	-4.99E-01	6.90E+00
		391.69		64.90	4.08E-01		2.98E-02	2.01E-01
	TE123M	159.00		84.10	3.25E-01	3.25E-01	-8.98E-02	1.61E-01
	SB-124	602.71		97.87	5.09E-01	5.09E-01	-1.42E-01	2.50E-01
		645.85		7.26	6.16E+00		3.40E+00	3.01E+00
		722.78		11.10	4.64E+00		-3.58E-01	2.27E+00
		1691.02		49.00	1.01E+00		-2.52E-02	4.82E-01
	I-125	35.49		6.49	1.43E+01	1.43E+01	-1.52E+01	7.07E+00
	SB-125	176.33		6.89	2.34E+00	5.39E-01	-4.52E-01	1.16E+00
		427.89		29.33	5.39E-01		-2.51E-01	2.65E-01
		463.38		10.35	1.46E+00		9.80E-01	7.14E-01
		600.56		17.80	9.55E-01		4.57E-02	4.68E-01
		635.90		11.32	1.35E+00		7.05E-02	6.61E-01
	SB-126	414.70		83.30	4.65E+01	3.87E+01	-1.17E+00	2.29E+01
		666.33		99.60	4.84E+01		1.20E+02	2.38E+01
		695.00		99.60	3.87E+01		-4.71E+00	1.89E+01
		720.50		53.80	7.83E+01		3.99E+01	3.83E+01
+	SN-126	87.57	*	37.00	9.42E-01	9.42E-01	2.02E+00	4.70E-01
	SB-127	473.00		25.00	3.04E+07	2.39E+07	-9.64E+06	1.49E+07
		685.20		35.70	2.39E+07		3.04E+06	1.17E+07
		783.80		14.70	7.65E+07		7.08E+07	3.75E+07
	I-129	29.78		57.00	9.13E-01	9.13E-01	2.09E+00	4.50E-01
		33.60		13.20	2.98E+00		7.06E+00	1.47E+00
		39.58		7.52	2.77E+00		1.69E+00	1.37E+00
	I-131	284.30		6.05	1.25E+04	8.61E+02	-1.77E+03	6.17E+03
		364.48		81.20	8.61E+02		8.68E+01	4.23E+02
		636.97		7.26	1.04E+04		3.33E+02	5.07E+03
		722.89		1.80	4.68E+04		-4.25E+02	2.29E+04
	TE-132	49.72		13.10	1.64E+09	2.53E+08	1.49E+09	8.11E+08
		228.16		88.00	2.53E+08		1.85E+07	1.25E+08
	BA-133	81.00		33.00	3.96E-01	2.27E-01	9.11E-01	1.97E-01
		302.84		17.80	8.33E-01		-9.58E-02	4.11E-01
		356.01		60.00	2.27E-01		-2.84E-02	1.12E-01
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for 1707090-12

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	XE-133	81.00		38.00	1.69E+05	1.69E+05	3.89E+05	8.39E+04
	CS-134	563.23		8.38	1.75E+00	2.00E-01	8.22E-01	8.54E-01
		569.32		15.43	9.17E-01		-2.81E-01	4.48E-01
		604.70		97.60	2.00E-01		5.95E-03	9.80E-02
		795.84		85.40	2.05E-01		5.58E-02	1.00E-01
		801.93		8.73	1.97E+00		-4.14E-02	9.62E-01
	CS-135	268.24		16.00	9.64E-01	9.64E-01	-1.57E-02	4.77E-01
@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22		7.46	3.95E+02	3.28E+01	3.60E+02	1.96E+02
		163.89		4.61	6.32E+02		6.58E+02	3.13E+02
		176.55		13.56	2.08E+02		-4.00E+01	1.03E+02
		273.65		12.66	2.26E+02		2.06E+02	1.12E+02
		340.57		48.50	5.66E+01		-2.17E+01	2.79E+01
		818.50		99.70	3.28E+01		2.58E+01	1.60E+01
		1048.07		79.60	3.90E+01		4.90E-01	1.89E+01
		1235.34		19.70	3.17E+02		1.02E+03	1.56E+02
	CS-137	661.65		85.12	1.83E-01	1.83E-01	-9.09E-01	8.94E-02
	LA-138	788.74		34.00	5.99E-01	2.93E-01	1.36E+00	2.94E-01
		1435.80		66.00	2.93E-01		-3.85E-02	1.42E-01
	CE-139	165.85		80.35	3.15E-01	3.15E-01	-3.20E-03	1.56E-01
	BA-140	162.64		6.70	5.05E+02	1.13E+02	4.75E+02	2.51E+02
		304.84		4.50	6.94E+02		1.61E+02	3.42E+02
		423.70		3.20	1.02E+03		-2.30E+02	5.03E+02
		437.55		2.00	1.51E+03		-6.02E+02	7.39E+02
		537.32		25.00	1.13E+02		-5.23E+01	5.50E+01
+	LA-140	328.77		20.50	1.55E+02	6.37E+01	1.20E+02	7.62E+01
		487.03	*	45.50	8.57E+01		8.69E+01	4.22E+01
		815.85		23.50	1.58E+02		6.91E+01	7.72E+01
		1596.49	*	95.49	6.37E+01		3.36E+01	3.11E+01
	CE-141	145.44		48.40	2.67E+00	2.67E+00	3.68E+00	1.33E+00
@	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	1.29E+00	1.29E+00	3.41E-01	6.37E-01
	PM-144	476.78		42.00	3.83E-01	1.68E-01	1.39E-01	1.88E-01
		618.01		98.60	1.68E-01		-1.02E-01	8.22E-02
		696.49		99.49	1.80E-01		-4.58E-02	8.81E-02
	PM-145	36.85		21.70	1.18E+00	6.22E-01	-5.42E-01	5.84E-01
		37.36		39.70	6.22E-01		-9.49E-02	3.07E-01
		42.30		15.10	1.18E+00		5.24E-02	5.82E-01
		72.40		2.31	5.99E+00		-1.10E+02	2.97E+00
	PM-146	453.90		39.94	3.77E-01	3.77E-01	3.21E-01	1.85E-01
		735.90		14.01	1.14E+00		5.40E-02	5.57E-01
		747.13		13.10	1.18E+00		-5.73E-01	5.74E-01
	ND-147	91.11		28.90	2.41E+02	2.41E+02	-3.05E+03	1.20E+02
		531.02		13.10	5.29E+02		-1.41E+02	2.59E+02
	PM-149	285.90		3.10	1.53E+14	1.53E+14	1.91E+13	7.57E+13
	EU-152	121.78		20.50	5.31E-01	5.31E-01	1.86E-01	2.63E-01
		244.69		5.40	3.41E+00		7.69E-01	1.69E+00
		344.27		19.13	7.72E-01		-1.08E-02	3.81E-01
		778.89		9.20	1.74E+00		1.68E-01	8.49E-01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	964.01		10.40	1.88E+00	5.31E-01	2.19E+00	9.18E-01
		1085.78		7.22	2.32E+00		-1.02E+00	1.12E+00
		1112.02		9.60	1.78E+00		4.54E-01	8.61E-01
		1407.95		14.94	2.05E+00		1.70E+00	1.01E+00
	GD-153	97.43		31.30	4.52E-01	4.52E-01	7.00E-01	2.24E-01
		103.18		22.20	6.04E-01		1.36E-01	2.99E-01
	EU-154	123.07		40.50	2.71E-01	2.71E-01	3.15E-02	1.34E-01
		723.30		19.70	8.40E-01		-7.62E-03	4.11E-01
		873.19		11.50	1.57E+00		6.35E-01	7.67E-01
		996.32		10.30	1.79E+00		4.21E-01	8.72E-01
		1004.76		17.90	1.11E+00		1.42E-01	5.43E-01
		1274.45		35.50	5.02E-01		-4.64E-03	2.43E-01
	EU-155	86.50		30.90	4.93E-01	4.93E-01	2.54E+00	2.45E-01
		105.30		20.70	5.11E-01		6.60E-02	2.53E-01
	EU-156	811.77		10.40	1.44E+02	1.44E+02	-3.17E+01	7.00E+01
		1153.47		7.20	3.05E+02		6.31E+02	1.49E+02
		1230.71		8.90	1.80E+02		3.65E+01	8.72E+01
	HO-166M	184.41		72.60	3.18E-01	2.79E-01	3.69E+00	1.58E-01
		280.45		29.60	4.86E-01		2.71E-02	2.40E-01
		410.94		11.10	1.33E+00		1.96E-01	6.54E-01
		711.69		54.10	2.79E-01		-3.29E-02	1.36E-01
	TM-171	66.72		0.14	1.07E+02	1.07E+02	7.96E+01	5.29E+01
	HF-172	67.35		5.31	2.84E+00	1.05E+00	2.41E+00	1.41E+00
		125.81		11.30	1.05E+00		-3.27E-01	5.18E-01
	LU-172	181.53		20.60	2.18E+04	8.03E+03	1.55E+03	1.08E+04
		900.72		29.81	1.72E+04		-3.31E+03	8.40E+03
		1093.66		62.50	8.03E+03		-2.35E+02	3.90E+03
	LU-173	100.72		5.24	2.19E+00	8.75E-01	-1.87E+00	1.08E+00
		272.11		21.20	8.75E-01		-2.76E-01	4.33E-01
	HF-175	343.40		84.00	4.69E-01	4.69E-01	4.49E-01	2.31E-01
	LU-176	88.34		13.30	1.08E+00	1.51E-01	2.70E+00	5.38E-01
		201.83		86.00	1.79E-01		-8.12E-02	8.87E-02
		306.78		94.00	1.51E-01		-1.81E-02	7.45E-02
	HF-181	133.02		41.70	1.31E+00	8.53E-01	-4.88E-01	6.49E-01
		345.85		17.20	4.28E+00		-1.36E+00	2.11E+00
		482.03		82.80	8.53E-01		5.91E-01	4.18E-01
	TA-182	67.75		41.20	6.03E-01	6.03E-01	5.10E-01	2.99E-01
		1121.30		34.90	2.83E+00		3.16E+01	1.40E+00
		1189.05		16.23	1.86E+00		-3.23E-01	9.00E-01
		1221.41		26.98	1.13E+00		-4.54E-01	5.45E-01
		1231.02		11.44	2.76E+00		5.59E-01	1.34E+00
	IR-192	308.46		29.68	1.19E+00	7.01E-01	5.41E-01	5.89E-01
		468.07		48.10	7.01E-01		2.37E-01	3.44E-01
	HG-203	279.19		77.30	8.21E-01	8.21E-01	4.29E-01	4.05E-01
	TL-204	374.74		94.11	1.52E-01	1.52E-01	2.68E-02	7.49E-02
		899.15		99.16	1.92E-01		3.38E-03	9.38E-02
		911.74		91.10	2.13E-01		-8.03E-03	1.04E-01
	BI-207	569.67		97.72	1.33E-01	1.33E-01	-4.08E-02	6.49E-02
		1063.62		74.90	2.27E-01		-1.76E-02	1.10E-01
+	TL-208	583.14	*	30.22	8.58E-01	1.62E-01	4.99E-01	4.24E-01
		860.37		4.48	3.86E+00		4.88E-01	1.89E+00
		2614.66	*	35.85	1.62E-01		3.57E-01	6.88E-02
	BI-210M	262.00		45.00	3.23E-01	3.23E-01	8.59E-02	1.60E-01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-210M	300.00		23.00	6.34E-01	3.23E-01	2.59E-01	3.13E-01
+	PB-210	46.50	*	4.25	6.41E+00	6.41E+00	1.79E+01	3.18E+00
	PB-211	404.84		2.90	5.33E+00	5.33E+00	-2.05E-01	2.63E+00
		831.96		2.90	5.92E+00		-2.60E-01	2.89E+00
	BI-212	727.17		11.80	1.33E+00	1.33E+00	2.96E-01	6.47E-01
		1620.62		2.75	6.15E+00		-2.57E-01	2.95E+00
+	PB-212	238.63	*	44.60	6.94E-01	6.94E-01	5.55E-01	3.45E-01
		300.09		3.41	4.28E+00		1.75E+00	2.11E+00
+	BI-214	609.31	*	46.30	5.67E-01	5.67E-01	3.87E+01	2.80E-01
		1120.29	*	15.10	2.10E+00		4.12E+01	1.03E+00
		1764.49	*	15.80	1.37E+00		4.41E+01	6.61E-01
		2204.22	*	4.98	2.72E+00		4.14E+01	1.28E+00
+	PB-214	295.21	*	19.19	1.28E+00	5.69E-01	4.13E+01	6.33E-01
		351.92	*	37.19	5.69E-01		4.28E+01	2.81E-01
	RN-219	401.80		6.50	2.38E+00	2.38E+00	1.95E+00	1.17E+00
	RA-223	323.87		3.88	3.71E+00	3.71E+00	1.63E+00	1.83E+00
	RA-224	240.98		3.95	6.51E+00	6.51E+00	8.54E+01	3.24E+00
	RA-225	40.00		31.00	6.82E+01	6.82E+01	4.15E+01	3.37E+01
+	RA-226	186.21	*	3.28	7.96E+00	7.96E+00	8.58E+01	3.96E+00
	TH-227	50.10		8.40	1.71E+00	1.40E+00	1.55E+00	8.44E-01
		236.00		11.50	1.40E+00		-1.37E+00	6.95E-01
		256.20		6.30	2.40E+00		-3.15E+00	1.18E+00
	AC-228	338.32		11.40	1.30E+00	6.68E-01	-2.71E-02	6.41E-01
		911.07		27.70	6.68E-01		-2.51E-02	3.26E-01
		969.11		16.60	1.11E+00		5.25E-01	5.40E-01
	TH-230	48.44		16.90	8.88E-01	8.88E-01	-4.69E+00	4.39E-01
		62.85		4.60	3.69E+00		2.25E+01	1.83E+00
		67.67		0.37	3.68E+01		3.12E+01	1.83E+01
	PA-231	283.67		1.60	9.06E+00	6.33E+00	-1.28E+00	4.47E+00
		302.67		2.30	6.33E+00		-7.28E-01	3.12E+00
	TH-231	25.64		14.70	1.06E-01	1.06E-01	0.00E+00	0.00E+00
		84.21		6.40	2.06E+00		-6.21E+00	1.02E+00
	PA-233	311.98		38.60	4.61E+00	4.61E+00	-1.97E+00	2.27E+00
	PA-234	131.20		20.40	5.29E-01	5.29E-01	-1.91E-01	2.62E-01
		733.99		8.80	1.77E+00		2.40E-01	8.64E-01
		946.00		12.00	1.45E+00		-2.92E-02	7.06E-01
+	PA-234M	1001.03	*	0.92	2.65E+01	2.65E+01	3.68E+01	1.30E+01
+	TH-234	63.29	*	3.80	6.27E+00	6.27E+00	2.87E+01	3.12E+00
+	U-235	143.76	*	10.50	1.71E+00	1.71E+00	2.32E+00	8.52E-01
		163.35	*	4.70	3.42E+00		2.88E+00	1.70E+00
		205.31	*	4.70	2.85E+00		3.33E+00	1.41E+00
	NP-237	86.50		12.60	1.16E+00	1.16E+00	5.99E+00	5.78E-01
	NP-239	106.10		22.70	2.19E+12	2.19E+12	2.83E+11	1.09E+12
		228.18		10.70	6.84E+12		5.01E+11	3.39E+12
		277.60		14.10	4.94E+12		-9.85E+12	2.44E+12
	AM-241	59.54		35.90	3.79E-01	3.79E-01	-1.91E-01	1.88E-01
	AM-243	74.67		66.00	2.81E-01	2.81E-01	-1.73E+00	1.40E-01
	CM-243	209.75		3.29	4.60E+00	1.03E+00	2.05E+00	2.28E+00
		228.14		10.60	1.43E+00		1.04E-01	7.05E-01
		277.60		14.00	1.03E+00		-2.05E+00	5.07E-01

Analysis Report for 1707090-12

HTC-A07-S001-0612-02

+ = 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: HTC-A07-S001-0612-02

Elapsed Live time: 3600
Elapsed Real Time: 3612

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	314	717	722	736
33:	755	1194	809	718	775	678	732	750
41:	745	707	787	741	802	954	2041	1015
49:	862	971	1074	923	1170	1401	1030	1041
57:	1115	1149	1246	1381	1475	1525	2259	3255
65:	1600	1475	1573	1835	1621	1637	1716	1714
73:	1754	1990	5149	3162	5977	5958	1689	1788
81:	1714	1643	1346	2297	1814	1349	2482	3013
89:	1477	2116	1644	1820	4194	1770	1505	1144
97:	1062	1204	1293	1021	991	1085	1011	1033
105:	1039	1069	1061	1051	1105	1113	1026	1091
113:	1210	1129	1084	1012	1034	1091	1050	986
121:	1085	1059	1070	1067	1040	1076	991	1061
129:	1084	1049	1040	970	1035	1009	1035	1020
137:	1075	1086	1019	1014	1094	1008	1063	1448
145:	1213	1060	1034	1039	1059	1075	1150	1082
153:	1109	1165	1133	1056	1093	1019	1029	1006
161:	973	1034	1055	1077	1011	940	941	907
169:	921	906	911	907	917	884	812	909
177:	850	878	923	888	898	868	873	952
185:	1319	3970	2606	877	864	861	747	828
193:	817	808	800	855	812	809	807	771
201:	798	771	708	788	812	857	656	706
209:	687	680	751	643	677	685	641	630
217:	648	660	623	619	614	601	613	623
225:	604	650	570	625	595	650	621	515
233:	623	622	634	846	688	630	815	658
241:	953	3988	2079	494	521	536	497	496
249:	460	500	515	494	450	472	511	562
257:	581	534	699	545	484	443	465	449
265:	421	438	437	462	565	702	604	556
273:	431	511	583	418	433	429	388	456
281:	463	406	405	416	427	466	407	432
289:	437	392	380	383	420	969	6491	5176
297:	512	375	366	439	422	374	391	381
305:	378	365	366	362	343	359	316	310
313:	362	355	384	361	331	341	346	354
321:	331	323	353	418	311	321	326	363
329:	312	402	334	314	359	356	340	326
337:	330	388	376	291	345	327	333	324
345:	331	298	309	329	358	463	3371	13095
353:	4388	334	246	219	238	250	241	234
361:	258	250	261	271	229	243	291	265

369:	251	222	248	250	235	271	253	252

Sample Title: HTC-A07-S001-0612-02

Channel								
377:	229	237	247	236	233	273	236	245
385:	242	270	353	320	395	295	247	256
393:	259	273	261	262	278	246	267	278
401:	287	354	271	257	334	295	270	241
409:	272	226	278	239	254	254	258	268
417:	275	279	261	255	248	243	231	251
425:	293	246	269	263	208	210	231	223
433:	203	205	213	219	209	193	183	222
441:	180	203	179	221	193	189	174	178
449:	166	193	185	182	191	219	255	212
457:	182	184	183	170	189	218	225	152
465:	174	168	170	166	166	172	151	162
473:	167	160	171	170	174	146	156	233
481:	217	135	148	149	155	165	253	203
489:	158	161	147	151	147	143	148	146
497:	137	125	125	142	143	147	126	132
505:	125	136	109	141	163	192	264	202
513:	169	139	126	138	125	137	125	135
521:	136	145	146	144	125	140	128	145
529:	123	117	140	142	152	169	121	131
537:	138	121	131	123	128	119	133	129
545:	131	118	132	132	119	109	125	109
553:	131	118	120	150	126	125	100	128
561:	137	122	132	129	114	109	124	107
569:	119	113	118	125	137	111	119	115
577:	127	105	146	173	160	127	184	153
585:	115	107	113	95	130	109	123	99
593:	98	95	118	99	126	119	105	111
601:	112	115	126	116	125	142	277	1698
609:	7531	5590	541	84	95	89	96	83
617:	80	98	72	78	70	88	97	86
625:	101	87	81	79	93	103	97	97
633:	90	87	77	76	76	99	95	102
641:	67	63	72	102	75	82	79	79
649:	91	94	67	59	72	94	96	79
657:	81	98	65	95	99	111	71	119
665:	276	249	100	77	75	76	71	74
673:	71	65	77	76	75	79	70	80
681:	75	88	85	78	70	82	78	86
689:	71	89	83	93	76	68	92	79
697:	85	77	80	83	85	113	137	124
705:	99	97	78	72	93	76	87	64
713:	91	74	87	90	70	91	100	135
721:	94	68	87	85	74	82	92	74
729:	84	85	81	78	83	74	78	93
737:	76	73	74	82	86	117	115	78
745:	58	78	75	68	74	68	88	97
753:	101	83	81	90	79	84	66	79
761:	63	79	80	75	98	146	300	711
769:	546	127	87	61	77	82	77	74
777:	74	77	77	79	66	76	81	93
785:	175	227	138	101	69	83	70	72
793:	76	74	81	66	76	74	69	61

801:	74	75	64	78	133	228	149	78

Sample Title: HTC-A07-S001-0612-02

Channel								
809:	61	71	76	72	78	73	92	78
817:	84	97	73	79	95	83	57	79
825:	68	76	94	68	71	59	76	121
833:	72	90	97	58	82	125	142	134
841:	79	77	80	88	85	91	83	90
849:	75	77	70	73	61	76	72	76
857:	84	72	75	74	92	70	69	83
865:	67	80	84	88	49	81	79	86
873:	77	76	77	71	75	73	85	85
881:	77	76	95	89	79	71	84	80
889:	82	73	81	90	74	79	85	89
897:	83	81	77	72	68	77	68	82
905:	80	96	80	67	65	76	109	93
913:	78	69	76	72	76	75	66	71
921:	68	59	75	96	65	70	56	79
929:	79	67	85	89	247	450	240	59
937:	64	56	75	69	51	73	74	69
945:	53	61	65	66	73	68	65	72
953:	72	51	58	59	66	46	52	58
961:	54	73	90	107	100	71	59	82
969:	91	60	56	77	65	59	46	74
977:	64	60	67	46	64	62	68	71
985:	76	57	69	64	57	60	55	59
993:	65	79	58	59	62	59	75	102
1001:	154	91	60	50	50	57	65	59
1009:	52	55	73	51	56	57	56	57
1017:	52	54	49	44	45	56	68	59
1025:	59	48	54	46	54	70	52	56
1033:	61	58	47	45	41	45	48	50
1041:	40	50	55	41	55	51	52	44
1049:	51	60	61	83	56	37	48	55
1057:	44	55	53	55	52	51	58	46
1065:	46	48	55	54	52	75	64	64
1073:	46	43	41	49	52	49	34	62
1081:	47	29	38	37	49	54	59	63
1089:	53	48	55	48	49	52	57	53
1097:	47	48	50	54	55	43	63	55
1105:	65	61	42	42	42	57	39	48
1113:	55	45	45	61	88	196	653	1518
1121:	871	176	49	39	45	52	41	49
1129:	55	59	69	60	61	52	45	52
1137:	47	47	35	51	32	56	53	45
1145:	46	35	42	47	44	32	52	53
1153:	72	118	179	117	80	49	49	52
1161:	43	42	50	44	39	43	53	44
1169:	44	37	48	41	48	39	60	40
1177:	50	42	48	57	54	58	48	43
1185:	47	41	45	35	36	33	47	38
1193:	43	43	45	44	29	41	45	46
1201:	43	43	36	42	55	41	62	81
1209:	54	39	42	30	42	35	42	33
1217:	39	52	43	31	40	31	39	40
1225:	43	56	43	43	41	50	46	26

1233:	45	42	57	105	319	538	283	82

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Channel								
1241:	38	47	45	39	43	27	38	32
1249:	21	42	38	59	60	58	48	41
1257:	40	36	28	26	42	28	31	34
1265:	30	30	44	55	34	51	38	33
1273:	42	35	36	44	54	43	56	113
1281:	153	93	41	41	41	35	44	43
1289:	31	36	30	38	41	40	35	34
1297:	31	35	35	30	37	46	43	37
1305:	27	27	35	33	42	24	33	33
1313:	34	30	29	44	54	34	34	29
1321:	43	28	34	37	25	41	33	31
1329:	24	42	38	31	38	34	41	34
1337:	43	25	29	28	41	24	28	36
1345:	24	29	37	22	31	35	28	32
1353:	42	22	30	40	27	38	25	37
1361:	40	33	36	32	37	44	28	27
1369:	28	42	35	36	35	51	64	161
1377:	331	331	107	34	28	26	45	65
1385:	76	69	35	36	31	36	29	35
1393:	27	20	27	33	40	32	51	75
1401:	114	115	48	38	43	68	172	201
1409:	108	39	30	35	29	34	35	30
1417:	23	30	34	42	44	31	33	28
1425:	38	21	31	39	33	35	39	36
1433:	38	28	36	23	32	22	36	31
1441:	35	33	28	31	25	25	33	39
1449:	31	38	42	24	39	34	45	27
1457:	37	43	56	108	103	63	26	33
1465:	39	45	30	36	28	29	36	31
1473:	38	29	27	39	36	37	43	33
1481:	35	32	37	31	32	32	38	32
1489:	32	27	36	40	42	33	45	32
1497:	35	46	33	29	25	32	37	35
1505:	48	39	63	126	169	140	49	51
1513:	29	43	44	45	40	34	36	32
1521:	36	27	30	27	43	39	45	36
1529:	40	45	25	31	33	30	31	53
1537:	60	55	53	39	33	47	52	62
1545:	21	25	32	30	26	25	27	25
1553:	27	32	27	23	18	26	19	29
1561:	37	14	25	32	16	23	21	25
1569:	18	29	31	20	21	28	32	19
1577:	19	34	26	30	43	48	81	67
1585:	25	22	23	30	18	27	21	25
1593:	29	38	43	29	29	29	44	43
1601:	21	24	15	21	24	27	21	21
1609:	17	16	20	24	14	25	19	29
1617:	20	18	20	19	13	26	19	13
1625:	30	18	20	17	16	18	17	21
1633:	15	17	20	19	18	19	21	25
1641:	15	17	13	17	17	10	13	9
1649:	16	11	14	19	12	13	11	22
1657:	16	22	38	55	80	62	17	17

1665:	14	13	24	16	15	11	10	13

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Channel								
1673:	9	7	12	7	12	16	18	16
1681:	16	18	24	25	13	15	6	7
1689:	13	22	18	26	23	19	14	5
1697:	18	10	9	10	12	14	11	8
1705:	12	9	9	11	14	10	9	9
1713:	12	9	16	10	13	10	11	10
1721:	15	11	8	13	18	27	60	115
1729:	206	163	51	13	11	9	14	17
1737:	10	12	16	8	9	10	10	9
1745:	9	9	9	8	10	8	10	7
1753:	9	13	4	13	14	21	24	25
1761:	82	239	531	863	647	152	28	8
1769:	9	4	5	5	5	5	6	8
1777:	9	11	7	9	10	7	8	7
1785:	11	8	6	5	7	9	6	12
1793:	7	5	8	9	2	7	4	8
1801:	5	5	3	15	9	6	10	3
1809:	7	10	3	9	14	8	12	8
1817:	13	10	6	14	6	6	8	4
1825:	10	8	8	7	7	9	7	10
1833:	4	5	14	13	25	26	23	8
1841:	7	8	8	21	22	89	127	82
1849:	28	11	8	11	6	5	10	8
1857:	6	12	11	7	10	6	12	7
1865:	10	8	8	8	11	8	11	9
1873:	19	9	10	7	9	12	6	8
1881:	5	7	9	5	9	13	6	18
1889:	13	21	13	12	7	8	8	16
1897:	17	9	7	6	6	8	8	7
1905:	5	8	5	9	8	7	10	9
1913:	7	9	7	8	7	5	9	10
1921:	14	6	11	8	7	6	5	15
1929:	4	10	12	7	11	12	22	13
1937:	11	5	5	10	10	8	12	11
1945:	13	12	8	6	3	9	9	5
1953:	4	14	9	11	11	6	8	8
1961:	5	12	6	4	9	9	6	8
1969:	8	10	6	9	8	2	11	6
1977:	6	5	7	11	8	8	7	2
1985:	7	6	2	3	11	4	6	8
1993:	7	8	7	6	8	5	5	10
2001:	7	10	2	5	12	6	12	8
2009:	9	8	11	10	7	8	9	11
2017:	7	5	7	5	3	5	6	2
2025:	4	4	9	4	3	5	4	10
2033:	3	3	6	7	3	9	7	5
2041:	5	7	3	5	2	5	5	4
2049:	7	6	7	5	11	7	10	8
2057:	4	6	6	3	5	6	6	1
2065:	6	7	1	4	4	2	4	6
2073:	6	2	1	6	5	3	1	1
2081:	5	9	1	3	6	6	7	2
2089:	7	3	3	6	2	1	4	3

2097:	3	3	2	3	8	3	7	3

Sample Title: HTC-A07-S001-0612-02

Channel								
2105:	4	1	3	2	7	12	6	4
2113:	5	8	11	26	47	50	42	11
2121:	1	1	0	1	2	1	2	3
2129:	3	2	5	3	0	0	0	2
2137:	3	2	3	4	3	1	0	3
2145:	2	7	3	1	2	4	2	1
2153:	4	2	2	6	2	3	1	2
2161:	3	4	0	4	6	3	1	5
2169:	1	1	3	3	2	4	1	2
2177:	3	3	4	11	2	2	2	0
2185:	3	0	3	2	3	3	6	5
2193:	8	3	5	8	3	8	13	27
2201:	55	110	180	195	81	26	2	0
2209:	2	2	0	4	2	3	1	3
2217:	3	2	1	1	3	3	1	2
2225:	0	1	0	2	0	1	0	4
2233:	2	2	3	2	1	4	2	2
2241:	3	2	1	0	2	1	2	4
2249:	2	3	3	3	4	1	1	1
2257:	3	3	3	2	2	0	2	4
2265:	4	3	1	2	0	4	2	3
2273:	0	0	3	1	0	0	6	0
2281:	1	0	1	1	1	3	1	1
2289:	3	2	6	16	8	9	3	3
2297:	0	0	0	2	0	5	2	2
2305:	4	3	3	0	4	5	1	1
2313:	1	0	1	2	2	0	2	1
2321:	1	0	0	0	0	3	0	1
2329:	2	3	0	1	0	0	1	2
2337:	2	1	2	0	1	2	2	0
2345:	3	1	2	0	0	2	2	1
2353:	0	0	1	1	0	0	1	0
2361:	2	1	1	0	0	0	0	2
2369:	1	1	2	0	0	1	1	3
2377:	0	0	1	3	0	1	1	0
2385:	1	0	1	0	1	0	1	1
2393:	1	1	1	0	0	1	3	1
2401:	0	1	1	1	4	1	2	1
2409:	0	1	1	0	0	0	1	0
2417:	0	0	0	0	0	1	0	1
2425:	0	1	1	2	1	1	3	1
2433:	0	0	1	2	2	0	3	0
2441:	0	4	8	8	25	39	68	48
2449:	14	2	0	0	0	2	1	1
2457:	1	0	0	1	0	0	0	0
2465:	0	0	0	2	1	0	0	1
2473:	0	0	0	0	2	3	1	2
2481:	0	0	1	0	2	0	0	0
2489:	1	1	0	1	0	1	1	0
2497:	0	1	1	1	0	0	1	0
2505:	1	1	2	0	1	1	0	0
2513:	0	2	0	1	0	1	1	1
2521:	0	0	0	0	2	0	0	0

2529:	0	0	0	2	0	0	0	0

Sample Title: HTC-A07-S001-0612-02

Channel								
2537:	0	0	0	1	0	3	0	0
2545:	0	0	0	0	0	0	0	0
2553:	0	2	0	0	0	0	0	0
2561:	0	0	0	0	2	0	0	1
2569:	0	2	0	0	0	0	1	1
2577:	0	0	0	0	0	2	0	0
2585:	0	0	0	0	1	0	0	0
2593:	0	0	0	1	0	0	1	0
2601:	2	0	0	1	0	0	0	2
2609:	0	4	3	9	10	13	7	2
2617:	1	0	0	1	0	1	0	0
2625:	1	0	0	1	0	1	0	1
2633:	1	0	0	1	0	0	0	0
2641:	1	0	1	0	1	0	0	0
2649:	0	2	0	0	0	0	0	0
2657:	1	0	2	0	1	0	1	0
2665:	0	0	0	1	0	0	0	0
2673:	1	0	1	1	0	0	0	0
2681:	0	0	1	1	0	0	1	0
2689:	1	0	1	2	1	3	2	0
2697:	0	0	0	2	0	1	0	0
2705:	0	0	0	0	1	0	0	0
2713:	0	1	1	0	1	0	0	1
2721:	0	0	0	1	0	0	0	0
2729:	3	0	0	0	0	0	1	0
2737:	1	0	0	0	0	0	0	0
2745:	0	0	0	0	0	0	0	0
2753:	0	1	0	1	0	0	0	1
2761:	0	1	0	1	0	0	3	1
2769:	0	0	1	0	1	0	0	0
2777:	0	0	0	1	0	1	0	0
2785:	0	1	0	1	0	2	1	0
2793:	0	0	0	0	0	0	0	3
2801:	0	0	0	0	0	1	1	1
2809:	3	0	1	0	0	1	0	0
2817:	0	1	1	0	0	0	0	2
2825:	0	0	1	0	0	0	0	0
2833:	0	0	0	1	0	0	0	0
2841:	0	0	0	0	0	0	0	1
2849:	0	1	0	0	0	2	0	0
2857:	1	0	0	0	2	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	1	0	0	0	0	0	2	0
2881:	0	0	0	1	0	0	0	0
2889:	0	0	0	0	0	0	1	1
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	1	1	0	0	1	2
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	1	0	0
2937:	0	0	0	1	1	0	0	0
2945:	0	0	0	1	0	0	0	0
2953:	1	0	0	0	0	0	0	0

2961:	2	1	0	0	1	0	0	0

Sample Title: HTC-A07-S001-0612-02

Channel								
2969:	0	0	1	0	1	0	0	0
2977:	0	0	0	0	1	0	0	1
2985:	0	0	0	0	1	0	0	0
2993:	0	0	2	0	0	2	0	0
3001:	0	0	0	1	0	0	0	0
3009:	0	0	1	0	0	0	0	0
3017:	1	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	1	0	1	1	0	0	2
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	2	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	1	1	1	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	0	0
3113:	0	0	1	0	0	0	0	0
3121:	0	1	0	1	0	0	0	0
3129:	0	0	0	1	1	0	1	1
3137:	0	0	0	0	0	0	1	0
3145:	0	0	0	0	0	1	0	1
3153:	0	0	1	0	0	0	0	0
3161:	0	0	1	0	0	1	0	0
3169:	0	0	0	0	0	0	0	1
3177:	0	1	1	0	0	1	0	0
3185:	1	0	0	0	0	0	0	0
3193:	0	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	1	0	1	0
3225:	0	0	0	0	0	0	0	0
3233:	0	1	0	1	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	1	0	0	1	0
3257:	1	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	1
3281:	0	1	0	0	0	0	0	0
3289:	1	1	0	0	0	1	0	0
3297:	0	0	0	0	1	0	0	0
3305:	0	0	0	0	0	0	3	1
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	1	0	0
3329:	1	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	2	1	0	1	0	1	0
3369:	0	1	0	0	0	0	0	0
3377:	1	1	0	0	1	0	1	0
3385:	0	0	0	0	0	0	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: HTC-A07-S001-0612-02

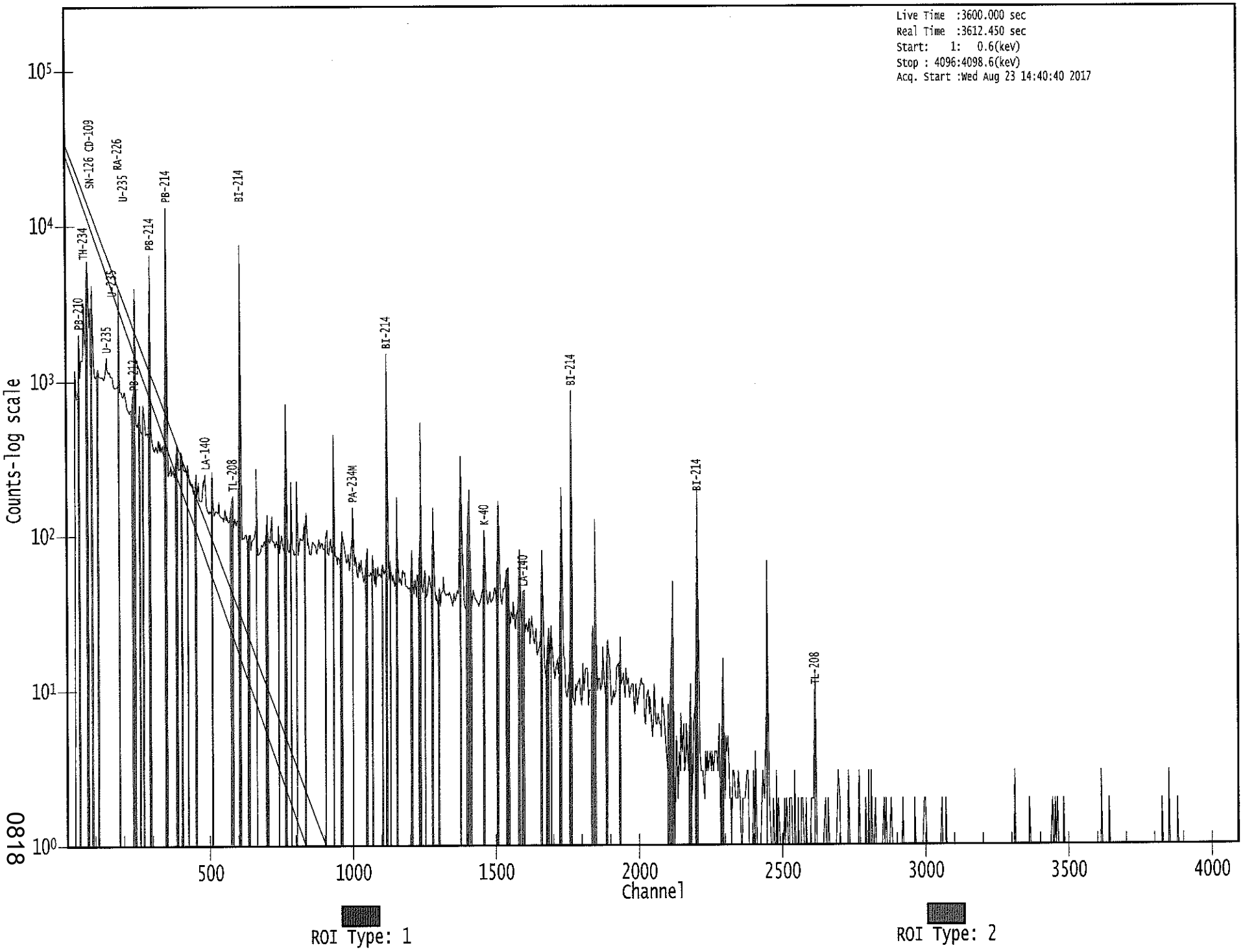
Channel								
3401:	0	0	0	0	0	1	0	0
3409:	1	0	0	0	1	0	0	0
3417:	0	0	0	1	0	0	0	0
3425:	0	0	0	0	1	0	0	0
3433:	0	0	0	0	1	0	0	0
3441:	0	0	2	0	0	0	0	0
3449:	0	0	0	2	0	0	0	1
3457:	0	0	0	2	1	0	0	1
3465:	0	0	0	0	0	0	0	0
3473:	0	0	1	0	0	0	0	0
3481:	0	2	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	1	0	1	1	0	0
3505:	0	0	0	0	0	1	0	0
3513:	1	0	1	1	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	1	0	0	0	0
3545:	0	0	0	0	1	0	0	0
3553:	1	0	1	0	0	0	0	0
3561:	0	0	0	0	1	0	0	0
3569:	0	1	0	0	0	0	0	0
3577:	1	0	0	0	1	0	0	0
3585:	0	1	0	0	0	1	1	0
3593:	0	0	0	0	1	0	0	1
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	3	0	0	1
3617:	0	0	0	0	0	0	0	0
3625:	0	0	1	0	0	0	0	0
3633:	0	0	0	0	0	0	0	1
3641:	2	0	0	0	0	0	0	0
3649:	0	0	0	1	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	1	0	0
3689:	1	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	1
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	1	0
3729:	0	0	0	0	1	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	1	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	1	0	0	1	0
3777:	0	0	0	0	0	1	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	1	0	1
3809:	0	0	0	0	1	0	1	0
3817:	0	0	0	0	0	0	0	0

3825:	0	2	0	0	0	0	0	0

Sample Title: HTC-A07-S001-0612-02

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

0000055836.CNF



0818

 KB 8/23/17

Apex-Gamma

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-13
Sample Description	: HTC-A07-S001-1218-01
Sample Type	: SOIL
Sample Size	: 7.140E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:55:20AM
Acquisition Started	: 8/23/2017 2:40:48PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3621.0 seconds
Dead Time	: 0.58 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55837

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 3:42:19PM
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	15.94	16.26	0.0000	0.00
2	46.68	46.99	0.0000	0.00
3	53.26	53.57	0.0000	0.00
4	63.41	63.72	0.0000	0.00
5	75.20	75.50	0.0000	0.00
6	77.44	77.74	0.0000	0.00
7	87.59	87.88	0.0000	0.00
8	92.87	93.16	0.0000	0.00
9	113.96	114.25	0.0000	0.00
10	144.02	144.30	0.0000	0.00
11	155.05	155.33	0.0000	0.00
12	163.77	164.04	0.0000	0.00
13	186.26	186.52	0.0000	0.00
14	239.11	239.36	0.0000	0.00
15	242.32	242.57	0.0000	0.00
16	258.81	259.05	0.0000	0.00
17	270.13	270.37	0.0000	0.00
18	274.41	274.65	0.0000	0.00
19	295.48	295.71	0.0000	0.00
20	312.79	313.01	0.0000	0.00
21	338.59	338.81	0.0000	0.00
22	352.18	352.39	0.0000	0.00
23	388.54	388.73	0.0000	0.00
24	427.02	427.20	0.0000	0.00
25	455.35	455.53	0.0000	0.00
26	480.61	480.78	0.0000	0.00
27	487.06	487.22	0.0000	0.00
28	510.71	510.87	0.0000	0.00
29	527.58	527.73	0.0000	0.00
30	581.79	581.92	0.0000	0.00
31	609.47	609.59	0.0000	0.00
32	665.50	665.60	0.0000	0.00
33	703.21	703.30	0.0000	0.00
34	720.50	720.58	0.0000	0.00
35	727.54	727.62	0.0000	0.00
36	768.35	768.42	0.0000	0.00
37	786.10	786.17	0.0000	0.00
38	806.23	806.29	0.0000	0.00
39	839.05	839.10	0.0000	0.00
40	905.58	905.60	0.0000	0.00
41	911.76	911.78	0.0000	0.00
42	934.12	934.14	0.0000	0.00

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1001.69	1001.68	0.0000	0.00
44	1051.62	1051.59	0.0000	0.00
45	1120.27	1120.22	0.0000	0.00
46	1134.28	1134.22	0.0000	0.00
47	1148.14	1148.08	0.0000	0.00
48	1155.21	1155.15	0.0000	0.00
49	1181.94	1181.87	0.0000	0.00
50	1206.23	1206.15	0.0000	0.00
51	1238.20	1238.11	0.0000	0.00
52	1252.31	1252.22	0.0000	0.00
53	1261.94	1261.84	0.0000	0.00
54	1281.16	1281.06	0.0000	0.00
55	1377.62	1377.48	0.0000	0.00
56	1384.90	1384.76	0.0000	0.00
57	1401.04	1400.89	0.0000	0.00
58	1407.91	1407.76	0.0000	0.00
59	1437.67	1437.51	0.0000	0.00
60	1461.01	1460.85	0.0000	0.00
61	1509.01	1508.83	0.0000	0.00
62	1582.26	1582.06	0.0000	0.00
63	1600.42	1600.21	0.0000	0.00
64	1661.37	1661.13	0.0000	0.00
65	1729.40	1729.14	0.0000	0.00
66	1764.38	1764.12	0.0000	0.00
67	1838.07	1837.78	0.0000	0.00
68	1847.03	1846.74	0.0000	0.00
69	1856.45	1856.15	0.0000	0.00
70	1863.71	1863.41	0.0000	0.00
71	1873.23	1872.92	0.0000	0.00
72	2017.15	2016.79	0.0000	0.00
73	2053.31	2052.95	0.0000	0.00
74	2079.11	2078.74	0.0000	0.00
75	2118.27	2117.89	0.0000	0.00
76	2130.16	2129.77	0.0000	0.00
77	2178.84	2178.43	0.0000	0.00
78	2203.75	2203.34	0.0000	0.00
79	2223.33	2222.91	0.0000	0.00
80	2276.89	2276.45	0.0000	0.00
81	2292.70	2292.25	0.0000	0.00
82	2380.59	2380.11	0.0000	0.00
83	2404.65	2404.16	0.0000	0.00
84	2446.98	2446.48	0.0000	0.00
85	2614.27	2613.71	0.0000	0.00
86	2769.27	2768.67	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 3:42:19PM

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	15.94	14 -	19	16.26	1.92E+02	203.98	8.09E+03	2.63
	2	46.68	44 -	49	46.99	1.13E+03	219.10	8.73E+03	1.64
	3	53.26	51 -	56	53.57	4.08E+02	231.90	1.05E+04	1.87
	4	63.41	61 -	66	63.72	2.20E+03	283.86	1.44E+04	1.98
M	5	75.20	71 -	82	75.50	4.31E+03	329.77	1.62E+04	2.01
m	6	77.44	71 -	82	77.74	7.06E+03	351.72	1.58E+04	2.02
M	7	87.59	83 -	97	87.88	2.35E+03	309.77	1.59E+04	2.46
m	8	92.87	83 -	97	93.16	3.80E+03	313.51	1.37E+04	2.48
	9	113.96	112 -	117	114.25	2.06E+02	221.00	9.56E+03	2.77
	10	144.02	141 -	147	144.30	4.92E+02	248.86	1.09E+04	2.62
	11	155.05	153 -	158	155.33	2.58E+02	219.23	9.39E+03	3.02
	12	163.77	162 -	167	164.04	3.35E+02	207.13	8.28E+03	1.97
	13	186.26	182 -	191	186.52	3.67E+03	325.26	1.30E+04	2.19
M	14	239.11	238 -	247	239.36	2.76E+02	79.84	2.06E+03	1.95
m	15	242.32	238 -	247	242.57	3.32E+03	199.51	5.16E+03	1.95
	16	258.81	255 -	263	259.05	4.59E+02	202.44	6.00E+03	1.83
M	17	270.13	265 -	277	270.37	4.83E+02	179.11	4.96E+03	2.53
m	18	274.41	265 -	277	274.65	2.17E+02	141.27	3.77E+03	2.54
	19	295.48	291 -	300	295.71	7.15E+03	264.46	5.91E+03	2.09
	20	312.79	310 -	316	313.01	1.34E+02	136.18	3.28E+03	3.40
	21	338.59	337 -	341	338.81	1.16E+02	102.97	2.26E+03	2.61
	22	352.18	347 -	357	352.39	1.22E+04	282.93	4.13E+03	2.20
	23	388.54	385 -	393	388.73	2.15E+02	145.50	3.13E+03	3.45
	24	427.02	423 -	431	427.20	1.47E+02	137.73	2.80E+03	4.27
	25	455.35	452 -	459	455.53	1.24E+02	107.46	1.85E+03	1.84
	26	480.61	478 -	484	480.78	1.14E+02	91.07	1.42E+03	2.53
	27	487.06	485 -	490	487.22	1.23E+02	81.70	1.24E+03	2.68
	28	510.71	507 -	515	510.87	2.73E+02	108.40	1.64E+03	2.71
	29	527.58	525 -	530	527.73	9.15E+01	73.12	9.87E+02	5.49
	30	581.79	577 -	587	581.92	2.01E+02	117.89	1.75E+03	5.04
	31	609.47	603 -	614	609.59	8.28E+03	217.01	1.76E+03	2.24
	32	665.50	660 -	670	665.60	2.91E+02	99.76	1.17E+03	2.24
	33	703.21	700 -	706	703.30	6.22E+01	68.18	8.04E+02	2.04
	34	720.50	717 -	724	720.58	7.97E+01	72.36	8.19E+02	3.90
	35	727.54	725 -	730	727.62	5.98E+01	58.15	6.30E+02	2.77
	36	768.35	763 -	774	768.42	8.45E+02	111.62	1.14E+03	2.33
	37	786.10	781 -	790	786.17	2.03E+02	88.13	9.89E+02	2.59
	38	806.23	802 -	809	806.29	1.77E+02	76.24	8.48E+02	2.22
	39	839.05	836 -	843	839.10	1.61E+02	72.47	7.68E+02	1.94
	40	905.58	902 -	908	905.60	6.98E+01	64.52	7.04E+02	3.70

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	911.76	909 -	916	911.78	1.05E+02	71.41	7.79E+02	1.85
	42	934.12	930 -	940	934.14	3.68E+02	93.51	9.74E+02	2.40
	43	1001.69	998 -	1006	1001.68	1.00E+02	69.84	6.89E+02	3.24
	44	1051.62	1047 -	1056	1051.59	1.12E+02	65.22	5.40E+02	2.12
M	45	1120.27	1113 -	1137	1120.22	1.65E+03	94.23	3.82E+02	2.43
m	46	1134.28	1113 -	1137	1134.22	4.35E+01	48.08	4.23E+02	2.43
M	47	1148.14	1145 -	1159	1148.08	3.65E+01	38.17	3.11E+02	3.12
m	48	1155.21	1145 -	1159	1155.15	1.89E+02	65.99	5.64E+02	3.00
	49	1181.94	1179 -	1185	1181.87	4.31E+01	46.63	3.58E+02	2.95
	50	1206.23	1202 -	1212	1206.15	5.62E+01	68.43	5.96E+02	5.99
	51	1238.20	1232 -	1243	1238.11	6.36E+02	88.99	6.71E+02	2.17
	52	1252.31	1246 -	1257	1252.22	8.58E+01	68.50	5.36E+02	3.77
	53	1261.94	1258 -	1267	1261.84	7.06E+01	53.23	3.63E+02	7.57
	54	1281.16	1276 -	1284	1281.06	1.36E+02	60.35	4.76E+02	1.68
M	55	1377.62	1372 -	1389	1377.48	4.37E+02	61.68	3.47E+02	2.70
m	56	1384.90	1372 -	1389	1384.76	8.11E+01	53.72	3.95E+02	3.02
M	57	1401.04	1395 -	1412	1400.89	1.33E+02	50.08	3.24E+02	2.80
m	58	1407.91	1395 -	1412	1407.76	2.46E+02	54.04	3.32E+02	2.71
	59	1437.67	1434 -	1442	1437.51	4.81E+01	48.65	3.38E+02	4.93
	60	1461.01	1456 -	1466	1460.85	3.28E+02	67.79	4.32E+02	2.50
	61	1509.01	1504 -	1514	1508.83	2.08E+02	66.25	4.78E+02	2.67
	62	1582.26	1578 -	1586	1582.06	5.25E+01	46.05	2.97E+02	3.06
	63	1600.42	1597 -	1603	1600.21	3.97E+01	32.99	1.65E+02	3.45
	64	1661.37	1655 -	1666	1661.13	8.92E+01	45.65	2.16E+02	2.14
	65	1729.40	1724 -	1733	1729.14	2.97E+02	46.91	1.45E+02	2.67
	66	1764.38	1758 -	1770	1764.12	1.35E+03	77.39	7.11E+01	2.74
M	67	1838.07	1832 -	1859	1837.78	3.35E+01	29.21	1.16E+02	3.29
m	68	1847.03	1832 -	1859	1846.74	1.78E+02	37.96	1.03E+02	3.29
m	69	1856.45	1832 -	1859	1856.15	1.40E+01	20.13	6.40E+01	3.00
	70	1863.71	1861 -	1866	1863.41	2.05E+01	15.03	2.69E+01	3.56
	71	1873.23	1867 -	1880	1872.92	5.22E+01	31.11	8.56E+01	2.64
	72	2017.15	2014 -	2020	2016.79	1.34E+01	16.94	4.32E+01	2.72
	73	2053.31	2048 -	2057	2052.95	2.54E+01	18.41	3.12E+01	1.10
	74	2079.11	2075 -	2085	2078.74	2.66E+01	17.76	2.89E+01	5.14
	75	2118.27	2114 -	2122	2117.89	9.60E+01	24.86	3.60E+01	2.97
	76	2130.16	2127 -	2132	2129.77	1.24E+01	10.20	9.18E+00	1.81
	77	2178.84	2175 -	2181	2178.43	1.05E+01	12.55	2.10E+01	2.87
	78	2203.75	2198 -	2211	2203.34	3.36E+02	39.18	2.26E+01	3.17
	79	2223.33	2219 -	2227	2222.91	7.33E+00	9.41	9.33E+00	2.47
	80	2276.89	2271 -	2281	2276.45	1.38E+01	13.37	1.64E+01	5.89
	81	2292.70	2287 -	2296	2292.25	2.14E+01	12.41	9.23E+00	4.80
	82	2380.59	2376 -	2383	2380.11	4.08E+00	6.32	3.83E+00	1.16
	83	2404.65	2401 -	2408	2404.16	7.70E+00	7.48	4.60E+00	2.47
	84	2446.98	2439 -	2451	2446.48	1.12E+02	21.17	0.00E+00	3.27
	85	2614.27	2608 -	2618	2613.71	4.05E+01	15.64	1.10E+01	3.01
	86	2769.27	2764 -	2771	2768.67	6.00E+00	4.90	0.00E+00	1.47

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

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 : 8/23/2017 3:42:19PM

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	15.94	14 -	19	1.92E+02	203.98	8.09E+03	1.66E+02
	2	46.68	44 -	49	1.13E+03	219.10	8.73E+03	1.71E+02
	3	53.26	51 -	56	4.08E+02	231.90	1.05E+04	1.88E+02
	4	63.41	61 -	66	2.20E+03	283.86	1.44E+04	2.20E+02
M	5	75.20	71 -	82	4.31E+03	329.77	1.62E+04	2.09E+02
m	6	77.44	71 -	82	7.06E+03	351.72	1.58E+04	2.07E+02
M	7	87.59	83 -	97	2.35E+03	309.77	1.59E+04	2.07E+02
m	8	92.87	83 -	97	3.80E+03	313.51	1.37E+04	1.93E+02
	9	113.96	112 -	117	2.06E+02	221.00	9.56E+03	1.80E+02
	10	144.02	141 -	147	4.92E+02	248.86	1.09E+04	2.01E+02
	11	155.05	153 -	158	2.58E+02	219.23	9.39E+03	1.78E+02
	12	163.77	162 -	167	3.35E+02	207.13	8.28E+03	1.68E+02
	13	186.26	182 -	191	3.67E+03	325.26	1.30E+04	2.48E+02
M	14	239.11	238 -	247	2.76E+02	79.84	2.06E+03	7.45E+01
m	15	242.32	238 -	247	3.32E+03	199.51	5.16E+03	1.18E+02
	16	258.81	255 -	263	4.59E+02	202.44	6.00E+03	1.63E+02
M	17	270.13	265 -	277	4.83E+02	179.11	4.96E+03	1.16E+02
m	18	274.41	265 -	277	2.17E+02	141.27	3.77E+03	1.01E+02
	19	295.48	291 -	300	7.15E+03	264.46	5.91E+03	1.67E+02
	20	312.79	310 -	316	1.34E+02	136.18	3.28E+03	1.10E+02
	21	338.59	337 -	341	1.16E+02	102.97	2.26E+03	8.28E+01
	22	352.18	347 -	357	1.22E+04	282.93	4.13E+03	1.45E+02
	23	388.54	385 -	393	2.15E+02	145.50	3.13E+03	1.17E+02
	24	427.02	423 -	431	1.47E+02	137.73	2.80E+03	1.11E+02
	25	455.35	452 -	459	1.24E+02	107.46	1.85E+03	8.64E+01
	26	480.61	478 -	484	1.14E+02	91.07	1.42E+03	7.28E+01
	27	487.06	485 -	490	1.23E+02	81.70	1.24E+03	6.46E+01
	28	510.71	507 -	515	2.73E+02	108.40	1.64E+03	8.49E+01
	29	527.58	525 -	530	9.15E+01	73.12	9.87E+02	5.80E+01
	30	581.79	577 -	587	2.01E+02	117.89	1.75E+03	9.41E+01
	31	609.47	603 -	614	8.28E+03	217.01	1.76E+03	9.72E+01

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	32	665.50	660 -	670	2.91E+02	99.76	1.17E+03	7.71E+01
	33	703.21	700 -	706	6.22E+01	68.18	8.04E+02	5.45E+01
	34	720.50	717 -	724	7.97E+01	72.36	8.19E+02	5.76E+01
	35	727.54	725 -	730	5.98E+01	58.15	6.30E+02	4.61E+01
	36	768.35	763 -	774	8.45E+02	111.62	1.14E+03	4.23E+01
	37	786.10	781 -	790	2.03E+02	88.13	9.89E+02	6.85E+01
	38	806.23	802 -	809	1.77E+02	76.24	8.48E+02	5.87E+01
	39	839.05	836 -	843	1.61E+02	72.47	7.68E+02	5.58E+01
	40	905.58	902 -	908	6.98E+01	64.52	7.04E+02	5.12E+01
	41	911.76	909 -	916	1.05E+02	71.41	7.79E+02	5.62E+01
	42	934.12	930 -	940	3.68E+02	93.51	9.74E+02	7.01E+01
	43	1001.69	998 -	1006	1.00E+02	69.84	6.89E+02	5.50E+01
	44	1051.62	1047 -	1056	1.12E+02	65.22	5.40E+02	5.07E+01
M	45	1120.27	1113 -	1137	1.65E+03	94.23	3.82E+02	3.21E+01
m	46	1134.28	1113 -	1137	4.35E+01	48.08	4.23E+02	3.38E+01
M	47	1148.14	1145 -	1159	3.65E+01	38.17	3.11E+02	2.90E+01
m	48	1155.21	1145 -	1159	1.89E+02	65.99	5.64E+02	3.91E+01
	49	1181.94	1179 -	1185	4.31E+01	46.63	3.58E+02	3.68E+01
	50	1206.23	1202 -	1212	5.62E+01	68.43	5.96E+02	5.49E+01
	51	1238.20	1232 -	1243	6.36E+02	88.99	6.71E+02	6.03E+01
	52	1252.31	1246 -	1257	8.58E+01	68.50	5.36E+02	5.42E+01
	53	1261.94	1258 -	1267	7.06E+01	53.23	3.63E+02	4.15E+01
	54	1281.16	1276 -	1284	1.36E+02	60.35	4.76E+02	4.58E+01
M	55	1377.62	1372 -	1389	4.37E+02	61.68	3.47E+02	3.06E+01
m	56	1384.90	1372 -	1389	8.11E+01	53.72	3.95E+02	3.27E+01
M	57	1401.04	1395 -	1412	1.33E+02	50.08	3.24E+02	2.96E+01
m	58	1407.91	1395 -	1412	2.46E+02	54.04	3.32E+02	2.99E+01
	59	1437.67	1434 -	1442	4.81E+01	48.65	3.38E+02	3.83E+01
	60	1461.01	1456 -	1466	3.28E+02	67.79	4.32E+02	4.71E+01
	61	1509.01	1504 -	1514	2.08E+02	66.25	4.78E+02	4.90E+01
	62	1582.26	1578 -	1586	5.25E+01	46.05	2.97E+02	3.59E+01
	63	1600.42	1597 -	1603	3.97E+01	32.99	1.65E+02	2.51E+01
	64	1661.37	1655 -	1666	8.92E+01	45.65	2.16E+02	3.42E+01
	65	1729.40	1724 -	1733	2.97E+02	46.91	1.45E+02	2.62E+01
	66	1764.38	1758 -	1770	1.35E+03	77.39	7.11E+01	2.03E+01
M	67	1838.07	1832 -	1859	3.35E+01	29.21	1.16E+02	1.77E+01
m	68	1847.03	1832 -	1859	1.78E+02	37.96	1.03E+02	1.67E+01
m	69	1856.45	1832 -	1859	1.40E+01	20.13	6.40E+01	1.32E+01
	70	1863.71	1861 -	1866	2.05E+01	15.03	2.69E+01	9.86E+00
	71	1873.23	1867 -	1880	5.22E+01	31.11	8.56E+01	2.26E+01
	72	2017.15	2014 -	2020	1.34E+01	16.94	4.32E+01	1.26E+01
	73	2053.31	2048 -	2057	2.54E+01	18.41	3.12E+01	1.27E+01
	74	2079.11	2075 -	2085	2.66E+01	17.76	2.89E+01	1.19E+01
	75	2118.27	2114 -	2122	9.60E+01	24.86	3.60E+01	1.26E+01
	76	2130.16	2127 -	2132	1.24E+01	10.20	9.18E+00	6.06E+00
	77	2178.84	2175 -	2181	1.05E+01	12.55	2.10E+01	8.83E+00
	78	2203.75	2198 -	2211	3.36E+02	39.18	2.26E+01	1.14E+01
	79	2223.33	2219 -	2227	7.33E+00	9.41	9.33E+00	6.32E+00
	80	2276.89	2271 -	2281	1.38E+01	13.37	1.64E+01	9.14E+00
	81	2292.70	2287 -	2296	2.14E+01	12.41	9.23E+00	6.80E+00
	82	2380.59	2376 -	2383	4.08E+00	6.32	3.83E+00	4.00E+00

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
83	2404.65	2401 -	2408	7.70E+00	7.48	4.60E+00	4.13E+00
84	2446.98	2439 -	2451	1.12E+02	21.17	0.00E+00	0.00E+00
85	2614.27	2608 -	2618	4.05E+01	15.64	1.10E+01	7.47E+00
86	2769.27	2764 -	2771	6.00E+00	4.90	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/23/2017 3:42:19PM

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	15.94	14 -	19	16.26	1.92E+02	203.98	8.09E+03	NB-93M
	2	46.68	44 -	49	46.99	1.13E+03	219.10	8.73E+03	PB-210
	3	53.26	51 -	56	53.57	4.08E+02	231.90	1.05E+04	.....
	4	63.41	61 -	66	63.72	2.20E+03	283.86	1.44E+04	TH-234
									TH-230
M	5	75.20	71 -	82	75.50	4.31E+03	329.77	1.62E+04	AM-243
m	6	77.44	71 -	82	77.74	7.06E+03	351.72	1.58E+04	TI-44
M	7	87.59	83 -	97	87.88	2.35E+03	309.77	1.59E+04	SN-126
									CD-109
									LU-176
m	8	92.87	83 -	97	93.16	3.80E+03	313.51	1.37E+04	GA-67
	9	113.96	112 -	117	114.25	2.06E+02	221.00	9.56E+03	.....
	10	144.02	141 -	147	144.30	4.92E+02	248.86	1.09E+04	U-235
	11	155.05	153 -	158	155.33	2.58E+02	219.23	9.39E+03	.....
	12	163.77	162 -	167	164.04	3.35E+02	207.13	8.28E+03	CS-136
									U-235
	13	186.26	182 -	191	186.52	3.67E+03	325.26	1.30E+04	RA-226
M	14	239.11	238 -	247	239.36	2.76E+02	79.84	2.06E+03	PB-212
m	15	242.32	238 -	247	242.57	3.32E+03	199.51	5.16E+03	.....
	16	258.81	255 -	263	259.05	4.59E+02	202.44	6.00E+03	.....
M	17	270.13	265 -	277	270.37	4.83E+02	179.11	4.96E+03	.....
m	18	274.41	265 -	277	274.65	2.17E+02	141.27	3.77E+03	CS-136

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	19	295.48	291 -	300	295.71	7.15E+03	264.46	5.91E+03	PB-214
	20	312.79	310 -	316	313.01	1.34E+02	136.18	3.28E+03	PA-233
	21	338.59	337 -	341	338.81	1.16E+02	102.97	2.26E+03	AC-228
	22	352.18	347 -	357	352.39	1.22E+04	282.93	4.13E+03	PB-214
	23	388.54	385 -	393	388.73	2.15E+02	145.50	3.13E+03	.....
	24	427.02	423 -	431	427.20	1.47E+02	137.73	2.80E+03	SB-125
	25	455.35	452 -	459	455.53	1.24E+02	107.46	1.85E+03	.....
	26	480.61	478 -	484	480.78	1.14E+02	91.07	1.42E+03	.....
	27	487.06	485 -	490	487.22	1.23E+02	81.70	1.24E+03	LA-140
	28	510.71	507 -	515	510.87	2.73E+02	108.40	1.64E+03	.....
	29	527.58	525 -	530	527.73	9.15E+01	73.12	9.87E+02	.....
	30	581.79	577 -	587	581.92	2.01E+02	117.89	1.75E+03	.....
	31	609.47	603 -	614	609.59	8.28E+03	217.01	1.76E+03	BI-214
	32	665.50	660 -	670	665.60	2.91E+02	99.76	1.17E+03	SB-126 CE-143
	33	703.21	700 -	706	703.30	6.22E+01	68.18	8.04E+02	NB-94
	34	720.50	717 -	724	720.58	7.97E+01	72.36	8.19E+02	SB-126
	35	727.54	725 -	730	727.62	5.98E+01	58.15	6.30E+02	BI-212
	36	768.35	763 -	774	768.42	8.45E+02	111.62	1.14E+03	.....
	37	786.10	781 -	790	786.17	2.03E+02	88.13	9.89E+02	.....
	38	806.23	802 -	809	806.29	1.77E+02	76.24	8.48E+02	.....
	39	839.05	836 -	843	839.10	1.61E+02	72.47	7.68E+02	.....
	40	905.58	902 -	908	905.60	6.98E+01	64.52	7.04E+02	.....
	41	911.76	909 -	916	911.78	1.05E+02	71.41	7.79E+02	TL-204 AC-228
	42	934.12	930 -	940	934.14	3.68E+02	93.51	9.74E+02	.....
	43	1001.69	998 -	1006	1001.68	1.00E+02	69.84	6.89E+02	PA-234M
	44	1051.62	1047 -	1056	1051.59	1.12E+02	65.22	5.40E+02	.....
M	45	1120.27	1113 -	1137	1120.22	1.65E+03	94.23	3.82E+02	BI-214 SC-46
m	46	1134.28	1113 -	1137	1134.22	4.35E+01	48.08	4.23E+02	.....
M	47	1148.14	1145 -	1159	1148.08	3.65E+01	38.17	3.11E+02	.....
m	48	1155.21	1145 -	1159	1155.15	1.89E+02	65.99	5.64E+02	.....
	49	1181.94	1179 -	1185	1181.87	4.31E+01	46.63	3.58E+02	.....
	50	1206.23	1202 -	1212	1206.15	5.62E+01	68.43	5.96E+02	.....
	51	1238.20	1232 -	1243	1238.11	6.36E+02	88.99	6.71E+02	CO-56
	52	1252.31	1246 -	1257	1252.22	8.58E+01	68.50	5.36E+02	.....
	53	1261.94	1258 -	1267	1261.84	7.06E+01	53.23	3.63E+02	.....
	54	1281.16	1276 -	1284	1281.06	1.36E+02	60.35	4.76E+02	.....
M	55	1377.62	1372 -	1389	1377.48	4.37E+02	61.68	3.47E+02	.....
m	56	1384.90	1372 -	1389	1384.76	8.11E+01	53.72	3.95E+02	AG-110M
M	57	1401.04	1395 -	1412	1400.89	1.33E+02	50.08	3.24E+02	.....
m	58	1407.91	1395 -	1412	1407.76	2.46E+02	54.04	3.32E+02	EU-152
	59	1437.67	1434 -	1442	1437.51	4.81E+01	48.65	3.38E+02	.....
	60	1461.01	1456 -	1466	1460.85	3.28E+02	67.79	4.32E+02	K-40
	61	1509.01	1504 -	1514	1508.83	2.08E+02	66.25	4.78E+02	.....
	62	1582.26	1578 -	1586	1582.06	5.25E+01	46.05	2.97E+02	.....
	63	1600.42	1597 -	1603	1600.21	3.97E+01	32.99	1.65E+02	.....
	64	1661.37	1655 -	1666	1661.13	8.92E+01	45.65	2.16E+02	.....
	65	1729.40	1724 -	1733	1729.14	2.97E+02	46.91	1.45E+02	.....
	66	1764.38	1758 -	1770	1764.12	1.35E+03	77.39	7.11E+01	BI-214
M	67	1838.07	1832 -	1859	1837.78	3.35E+01	29.21	1.16E+02	.....
m	68	1847.03	1832 -	1859	1846.74	1.78E+02	37.96	1.03E+02	.....
m	69	1856.45	1832 -	1859	1856.15	1.40E+01	20.13	6.40E+01	.....

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
70	1863.71	1861 -	1866	1863.41	2.05E+01	15.03	2.69E+01	.....
71	1873.23	1867 -	1880	1872.92	5.22E+01	31.11	8.56E+01	.....
72	2017.15	2014 -	2020	2016.79	1.34E+01	16.94	4.32E+01	.....
73	2053.31	2048 -	2057	2052.95	2.54E+01	18.41	3.12E+01	.....
74	2079.11	2075 -	2085	2078.74	2.66E+01	17.76	2.89E+01	.....
75	2118.27	2114 -	2122	2117.89	9.60E+01	24.86	3.60E+01	.....
76	2130.16	2127 -	2132	2129.77	1.24E+01	10.20	9.18E+00	.....
77	2178.84	2175 -	2181	2178.43	1.05E+01	12.55	2.10E+01	.....
78	2203.75	2198 -	2211	2203.34	3.36E+02	39.18	2.26E+01	BI-214
79	2223.33	2219 -	2227	2222.91	7.33E+00	9.41	9.33E+00	.....
80	2276.89	2271 -	2281	2276.45	1.38E+01	13.37	1.64E+01	.....
81	2292.70	2287 -	2296	2292.25	2.14E+01	12.41	9.23E+00	.....
82	2380.59	2376 -	2383	2380.11	4.08E+00	6.32	3.83E+00	.....
83	2404.65	2401 -	2408	2404.16	7.70E+00	7.48	4.60E+00	.....
84	2446.98	2439 -	2451	2446.48	1.12E+02	21.17	0.00E+00	.....
85	2614.27	2608 -	2618	2613.71	4.05E+01	15.64	1.10E+01	TL-208
86	2769.27	2764 -	2771	2768.67	6.00E+00	4.90	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/23/2017 3:42:19PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	15.94	1.92E+02	203.98	1.45E-04	1.73E-03
	2	46.68	1.13E+03	219.10	1.73E-02	1.73E-03
	3	53.26	4.08E+02	231.90	2.08E-02	1.73E-03
	4	63.41	2.20E+03	283.86	2.45E-02	1.80E-03
M	5	75.20	4.31E+03	329.77	2.65E-02	2.02E-03
m	6	77.44	7.06E+03	351.72	2.68E-02	2.06E-03
M	7	87.59	2.35E+03	309.77	2.72E-02	2.25E-03
m	8	92.87	3.80E+03	313.51	2.71E-02	2.24E-03
	9	113.96	2.06E+02	221.00	2.59E-02	2.15E-03
	10	144.02	4.92E+02	248.86	2.32E-02	1.87E-03
	11	155.05	2.58E+02	219.23	2.22E-02	1.75E-03
	12	163.77	3.35E+02	207.13	2.14E-02	1.65E-03
	13	186.26	3.67E+03	325.26	1.96E-02	1.55E-03

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	14	239.11	2.76E+02	79.84	1.61E-02	1.34E-03
m	15	242.32	3.32E+03	199.51	1.59E-02	1.33E-03
	16	258.81	4.59E+02	202.44	1.51E-02	1.26E-03
M	17	270.13	4.83E+02	179.11	1.45E-02	1.21E-03
m	18	274.41	2.17E+02	141.27	1.43E-02	1.20E-03
	19	295.48	7.15E+03	264.46	1.35E-02	1.15E-03
	20	312.79	1.34E+02	136.18	1.28E-02	1.11E-03
	21	338.59	1.16E+02	102.97	1.19E-02	1.06E-03
	22	352.18	1.22E+04	282.93	1.15E-02	1.03E-03
	23	388.54	2.15E+02	145.50	1.06E-02	9.59E-04
	24	427.02	1.47E+02	137.73	9.71E-03	9.06E-04
	25	455.35	1.24E+02	107.46	9.16E-03	8.68E-04
	26	480.61	1.14E+02	91.07	8.72E-03	8.35E-04
	27	487.06	1.23E+02	81.70	8.62E-03	8.26E-04
	28	510.71	2.73E+02	108.40	8.26E-03	7.95E-04
	29	527.58	9.15E+01	73.12	8.02E-03	7.72E-04
	30	581.79	2.01E+02	117.89	7.34E-03	7.00E-04
	31	609.47	8.28E+03	217.01	7.04E-03	6.64E-04
	32	665.50	2.91E+02	99.76	6.51E-03	5.91E-04
	33	703.21	6.22E+01	68.18	6.19E-03	5.58E-04
	34	720.50	7.97E+01	72.36	6.06E-03	5.43E-04
	35	727.54	5.98E+01	58.15	6.01E-03	5.36E-04
	36	768.35	8.45E+02	111.62	5.72E-03	5.00E-04
	37	786.10	2.03E+02	88.13	5.61E-03	4.85E-04
	38	806.23	1.77E+02	76.24	5.48E-03	4.67E-04
	39	839.05	1.61E+02	72.47	5.29E-03	4.38E-04
	40	905.58	6.98E+01	64.52	4.95E-03	3.85E-04
	41	911.76	1.05E+02	71.41	4.92E-03	3.84E-04
	42	934.12	3.68E+02	93.51	4.82E-03	3.80E-04
	43	1001.69	1.00E+02	69.84	4.53E-03	3.69E-04
	44	1051.62	1.12E+02	65.22	4.35E-03	3.61E-04
M	45	1120.27	1.65E+03	94.23	4.12E-03	3.50E-04
m	46	1134.28	4.35E+01	48.08	4.07E-03	3.47E-04
M	47	1148.14	3.65E+01	38.17	4.03E-03	3.45E-04
m	48	1155.21	1.89E+02	65.99	4.01E-03	3.44E-04
	49	1181.94	4.31E+01	46.63	3.94E-03	3.38E-04
	50	1206.23	5.62E+01	68.43	3.87E-03	3.32E-04
	51	1238.20	6.36E+02	88.99	3.79E-03	3.22E-04
	52	1252.31	8.58E+01	68.50	3.75E-03	3.18E-04
	53	1261.94	7.06E+01	53.23	3.73E-03	3.16E-04
	54	1281.16	1.36E+02	60.35	3.68E-03	3.10E-04
M	55	1377.62	4.37E+02	61.68	3.47E-03	2.88E-04
m	56	1384.90	8.11E+01	53.72	3.45E-03	2.87E-04
M	57	1401.04	1.33E+02	50.08	3.42E-03	2.85E-04
m	58	1407.91	2.46E+02	54.04	3.41E-03	2.84E-04
	59	1437.67	4.81E+01	48.65	3.35E-03	2.79E-04
	60	1461.01	3.28E+02	67.79	3.31E-03	2.75E-04
	61	1509.01	2.08E+02	66.25	3.23E-03	2.67E-04
	62	1582.26	5.25E+01	46.05	3.11E-03	2.56E-04
	63	1600.42	3.97E+01	32.99	3.08E-03	2.53E-04
	64	1661.37	8.92E+01	45.65	3.00E-03	2.43E-04
	65	1729.40	2.97E+02	46.91	2.91E-03	2.32E-04
	66	1764.38	1.35E+03	77.39	2.87E-03	2.26E-04

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	67	1838.07	3.35E+01	29.21	2.78E-03	2.15E-04
m	68	1847.03	1.78E+02	37.96	2.77E-03	2.15E-04
m	69	1856.45	1.40E+01	20.13	2.76E-03	2.15E-04
	70	1863.71	2.05E+01	15.03	2.75E-03	2.15E-04
	71	1873.23	5.22E+01	31.11	2.75E-03	2.15E-04
	72	2017.15	1.34E+01	16.94	2.61E-03	2.15E-04
	73	2053.31	2.54E+01	18.41	2.58E-03	2.15E-04
	74	2079.11	2.66E+01	17.76	2.56E-03	2.15E-04
	75	2118.27	9.60E+01	24.86	2.53E-03	2.15E-04
	76	2130.16	1.24E+01	10.20	2.52E-03	2.15E-04
	77	2178.84	1.05E+01	12.55	2.48E-03	2.15E-04
	78	2203.75	3.36E+02	39.18	2.46E-03	2.15E-04
	79	2223.33	7.33E+00	9.41	2.45E-03	2.15E-04
	80	2276.89	1.38E+01	13.37	2.42E-03	2.15E-04
	81	2292.70	2.14E+01	12.41	2.41E-03	2.15E-04
	82	2380.59	4.08E+00	6.32	2.35E-03	2.15E-04
	83	2404.65	7.70E+00	7.48	2.34E-03	2.15E-04
	84	2446.98	1.12E+02	21.17	2.32E-03	2.15E-04
	85	2614.27	4.05E+01	15.64	2.24E-03	2.15E-04
	86	2769.27	6.00E+00	4.90	2.18E-03	2.15E-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 : 8/23/2017 3:42:19PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	15.94	1.92E+02	203.98			1.92E+02	2.04E+02
	2	46.68	1.13E+03	219.10	4.47E+01	1.09E+01	1.09E+03	2.19E+02
	3	53.26	4.08E+02	231.90			4.08E+02	2.32E+02
	4	63.41	2.20E+03	283.86	4.12E+01	5.67E+00	2.16E+03	2.84E+02
M	5	75.20	4.31E+03	329.77			4.31E+03	3.30E+02
m	6	77.44	7.06E+03	351.72			7.06E+03	3.52E+02
M	7	87.59	2.35E+03	309.77			2.35E+03	3.10E+02
m	8	92.87	3.80E+03	313.51	7.98E+01	7.31E+00	3.72E+03	3.14E+02
	9	113.96	2.06E+02	221.00			2.06E+02	2.21E+02
	10	144.02	4.92E+02	248.86			4.92E+02	2.49E+02

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	11	155.05	2.58E+02	219.23			2.58E+02	2.19E+02
	12	163.77	3.35E+02	207.13			3.35E+02	2.07E+02
	13	186.26	3.67E+03	325.26	3.06E+01	5.82E+00	3.64E+03	3.25E+02
M	14	239.11	2.76E+02	79.84	1.40E+01	2.71E+00	2.63E+02	7.99E+01
m	15	242.32	3.32E+03	199.51			3.32E+03	2.00E+02
	16	258.81	4.59E+02	202.44			4.59E+02	2.02E+02
M	17	270.13	4.83E+02	179.11			4.83E+02	1.79E+02
m	18	274.41	2.17E+02	141.27			2.17E+02	1.41E+02
	19	295.48	7.15E+03	264.46			7.15E+03	2.64E+02
	20	312.79	1.34E+02	136.18			1.34E+02	1.36E+02
	21	338.59	1.16E+02	102.97			1.16E+02	1.03E+02
	22	352.18	1.22E+04	282.93	6.53E+00	4.43E+00	1.22E+04	2.83E+02
	23	388.54	2.15E+02	145.50			2.15E+02	1.45E+02
	24	427.02	1.47E+02	137.73			1.47E+02	1.38E+02
	25	455.35	1.24E+02	107.46			1.24E+02	1.07E+02
	26	480.61	1.14E+02	91.07			1.14E+02	9.11E+01
	27	487.06	1.23E+02	81.70			1.23E+02	8.17E+01
	28	510.71	2.73E+02	108.40	5.21E+01	4.74E+00	2.21E+02	1.09E+02
	29	527.58	9.15E+01	73.12			9.15E+01	7.31E+01
	30	581.79	2.01E+02	117.89			2.01E+02	1.18E+02
	31	609.47	8.28E+03	217.01	3.25E+00	2.97E+00	8.27E+03	2.17E+02
	32	665.50	2.91E+02	99.76			2.91E+02	9.98E+01
	33	703.21	6.22E+01	68.18			6.22E+01	6.82E+01
	34	720.50	7.97E+01	72.36			7.97E+01	7.24E+01
	35	727.54	5.98E+01	58.15			5.98E+01	5.81E+01
	36	768.35	8.45E+02	111.62			8.45E+02	1.12E+02
	37	786.10	2.03E+02	88.13			2.03E+02	8.81E+01
	38	806.23	1.77E+02	76.24			1.77E+02	7.62E+01
	39	839.05	1.61E+02	72.47			1.61E+02	7.25E+01
	40	905.58	6.98E+01	64.52			6.98E+01	6.45E+01
	41	911.76	1.05E+02	71.41	2.85E+00	2.76E+00	1.02E+02	7.15E+01
	42	934.12	3.68E+02	93.51			3.68E+02	9.35E+01
	43	1001.69	1.00E+02	69.84			1.00E+02	6.98E+01
	44	1051.62	1.12E+02	65.22			1.12E+02	6.52E+01
M	45	1120.27	1.65E+03	94.23			1.65E+03	9.42E+01
m	46	1134.28	4.35E+01	48.08			4.35E+01	4.81E+01
M	47	1148.14	3.65E+01	38.17			3.65E+01	3.82E+01
m	48	1155.21	1.89E+02	65.99			1.89E+02	6.60E+01
	49	1181.94	4.31E+01	46.63			4.31E+01	4.66E+01
	50	1206.23	5.62E+01	68.43			5.62E+01	6.84E+01
	51	1238.20	6.36E+02	88.99			6.36E+02	8.90E+01
	52	1252.31	8.58E+01	68.50			8.58E+01	6.85E+01
	53	1261.94	7.06E+01	53.23			7.06E+01	5.32E+01
	54	1281.16	1.36E+02	60.35			1.36E+02	6.04E+01
M	55	1377.62	4.37E+02	61.68			4.37E+02	6.17E+01
m	56	1384.90	8.11E+01	53.72			8.11E+01	5.37E+01
M	57	1401.04	1.33E+02	50.08			1.33E+02	5.01E+01
m	58	1407.91	2.46E+02	54.04			2.46E+02	5.40E+01
	59	1437.67	4.81E+01	48.65			4.81E+01	4.86E+01
	60	1461.01	3.28E+02	67.79	1.00E+00	1.77E+00	3.27E+02	6.78E+01
	61	1509.01	2.08E+02	66.25			2.08E+02	6.63E+01
	62	1582.26	5.25E+01	46.05			5.25E+01	4.60E+01
	63	1600.42	3.97E+01	32.99			3.97E+01	3.30E+01
	64	1661.37	8.92E+01	45.65			8.92E+01	4.57E+01

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	65	1729.40	2.97E+02	46.91			2.97E+02	4.69E+01
	66	1764.38	1.35E+03	77.39			1.35E+03	7.74E+01
M	67	1838.07	3.35E+01	29.21			3.35E+01	2.92E+01
m	68	1847.03	1.78E+02	37.96			1.78E+02	3.80E+01
m	69	1856.45	1.40E+01	20.13			1.40E+01	2.01E+01
	70	1863.71	2.05E+01	15.03			2.05E+01	1.50E+01
	71	1873.23	5.22E+01	31.11			5.22E+01	3.11E+01
	72	2017.15	1.34E+01	16.94			1.34E+01	1.69E+01
	73	2053.31	2.54E+01	18.41			2.54E+01	1.84E+01
	74	2079.11	2.66E+01	17.76			2.66E+01	1.78E+01
	75	2118.27	9.60E+01	24.86			9.60E+01	2.49E+01
	76	2130.16	1.24E+01	10.20			1.24E+01	1.02E+01
	77	2178.84	1.05E+01	12.55			1.05E+01	1.25E+01
	78	2203.75	3.36E+02	39.18			3.36E+02	3.92E+01
	79	2223.33	7.33E+00	9.41			7.33E+00	9.41E+00
	80	2276.89	1.38E+01	13.37			1.38E+01	1.34E+01
	81	2292.70	2.14E+01	12.41			2.14E+01	1.24E+01
	82	2380.59	4.08E+00	6.32			4.08E+00	6.32E+00
	83	2404.65	7.70E+00	7.48			7.70E+00	7.48E+00
	84	2446.98	1.12E+02	21.17			1.12E+02	2.12E+01
	85	2614.27	4.05E+01	15.64	1.86E+00	1.12E+00	3.86E+01	1.57E+01
	86	2769.27	6.00E+00	4.90			6.00E+00	4.90E+00

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 3:42:19PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.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	15.94	1.92E+02	203.98			1.92E+02	2.04E+02
	2	46.68	1.13E+03	219.10	4.47E+01	1.09E+01	1.09E+03	2.19E+02
	3	53.26	4.08E+02	231.90			4.08E+02	2.32E+02
	4	63.41	2.20E+03	283.86	4.12E+01	5.67E+00	2.16E+03	2.84E+02
M	5	75.20	4.31E+03	329.77			4.31E+03	3.30E+02
m	6	77.44	7.06E+03	351.72			7.06E+03	3.52E+02

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	7	87.59	2.35E+03	309.77			2.35E+03	3.10E+02
m	8	92.87	3.80E+03	313.51	7.98E+01	7.31E+00	3.72E+03	3.14E+02
	9	113.96	2.06E+02	221.00			2.06E+02	2.21E+02
	10	144.02	4.92E+02	248.86			4.92E+02	2.49E+02
	11	155.05	2.58E+02	219.23			2.58E+02	2.19E+02
	12	163.77	3.35E+02	207.13			3.35E+02	2.07E+02
	13	186.26	3.67E+03	325.26	3.06E+01	5.82E+00	3.64E+03	3.25E+02
M	14	239.11	2.76E+02	79.84	1.40E+01	2.71E+00	2.63E+02	7.99E+01
m	15	242.32	3.32E+03	199.51			3.32E+03	2.00E+02
	16	258.81	4.59E+02	202.44			4.59E+02	2.02E+02
M	17	270.13	4.83E+02	179.11			4.83E+02	1.79E+02
m	18	274.41	2.17E+02	141.27			2.17E+02	1.41E+02
	19	295.48	7.15E+03	264.46			7.15E+03	2.64E+02
	20	312.79	1.34E+02	136.18			1.34E+02	1.36E+02
	21	338.59	1.16E+02	102.97			1.16E+02	1.03E+02
	22	352.18	1.22E+04	282.93	6.53E+00	4.43E+00	1.22E+04	2.83E+02
	23	388.54	2.15E+02	145.50			2.15E+02	1.45E+02
	24	427.02	1.47E+02	137.73			1.47E+02	1.38E+02
	25	455.35	1.24E+02	107.46			1.24E+02	1.07E+02
	26	480.61	1.14E+02	91.07			1.14E+02	9.11E+01
	27	487.06	1.23E+02	81.70			1.23E+02	8.17E+01
	28	510.71	2.73E+02	108.40	5.21E+01	4.74E+00	2.21E+02	1.09E+02
	29	527.58	9.15E+01	73.12			9.15E+01	7.31E+01
	30	581.79	2.01E+02	117.89			2.01E+02	1.18E+02
	31	609.47	8.28E+03	217.01	3.25E+00	2.97E+00	8.27E+03	2.17E+02
	32	665.50	2.91E+02	99.76			2.91E+02	9.98E+01
	33	703.21	6.22E+01	68.18			6.22E+01	6.82E+01
	34	720.50	7.97E+01	72.36			7.97E+01	7.24E+01
	35	727.54	5.98E+01	58.15			5.98E+01	5.81E+01
	36	768.35	8.45E+02	111.62			8.45E+02	1.12E+02
	37	786.10	2.03E+02	88.13			2.03E+02	8.81E+01
	38	806.23	1.77E+02	76.24			1.77E+02	7.62E+01
	39	839.05	1.61E+02	72.47			1.61E+02	7.25E+01
	40	905.58	6.98E+01	64.52			6.98E+01	6.45E+01
	41	911.76	1.05E+02	71.41	2.85E+00	2.76E+00	1.02E+02	7.15E+01
	42	934.12	3.68E+02	93.51			3.68E+02	9.35E+01
	43	1001.69	1.00E+02	69.84			1.00E+02	6.98E+01
	44	1051.62	1.12E+02	65.22			1.12E+02	6.52E+01
M	45	1120.27	1.65E+03	94.23			1.65E+03	9.42E+01
m	46	1134.28	4.35E+01	48.08			4.35E+01	4.81E+01
M	47	1148.14	3.65E+01	38.17			3.65E+01	3.82E+01
m	48	1155.21	1.89E+02	65.99			1.89E+02	6.60E+01
	49	1181.94	4.31E+01	46.63			4.31E+01	4.66E+01
	50	1206.23	5.62E+01	68.43			5.62E+01	6.84E+01
	51	1238.20	6.36E+02	88.99			6.36E+02	8.90E+01
	52	1252.31	8.58E+01	68.50			8.58E+01	6.85E+01
	53	1261.94	7.06E+01	53.23			7.06E+01	5.32E+01
	54	1281.16	1.36E+02	60.35			1.36E+02	6.04E+01
M	55	1377.62	4.37E+02	61.68			4.37E+02	6.17E+01
m	56	1384.90	8.11E+01	53.72			8.11E+01	5.37E+01
M	57	1401.04	1.33E+02	50.08			1.33E+02	5.01E+01
m	58	1407.91	2.46E+02	54.04			2.46E+02	5.40E+01
	59	1437.67	4.81E+01	48.65			4.81E+01	4.86E+01
	60	1461.01	3.28E+02	67.79	1.00E+00	1.77E+00	3.27E+02	6.78E+01

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	61	1509.01	2.08E+02	66.25			2.08E+02	6.63E+01
	62	1582.26	5.25E+01	46.05			5.25E+01	4.60E+01
	63	1600.42	3.97E+01	32.99			3.97E+01	3.30E+01
	64	1661.37	8.92E+01	45.65			8.92E+01	4.57E+01
	65	1729.40	2.97E+02	46.91			2.97E+02	4.69E+01
	66	1764.38	1.35E+03	77.39			1.35E+03	7.74E+01
M	67	1838.07	3.35E+01	29.21			3.35E+01	2.92E+01
m	68	1847.03	1.78E+02	37.96			1.78E+02	3.80E+01
m	69	1856.45	1.40E+01	20.13			1.40E+01	2.01E+01
	70	1863.71	2.05E+01	15.03			2.05E+01	1.50E+01
	71	1873.23	5.22E+01	31.11			5.22E+01	3.11E+01
	72	2017.15	1.34E+01	16.94			1.34E+01	1.69E+01
	73	2053.31	2.54E+01	18.41			2.54E+01	1.84E+01
	74	2079.11	2.66E+01	17.76			2.66E+01	1.78E+01
	75	2118.27	9.60E+01	24.86			9.60E+01	2.49E+01
	76	2130.16	1.24E+01	10.20			1.24E+01	1.02E+01
	77	2178.84	1.05E+01	12.55			1.05E+01	1.25E+01
	78	2203.75	3.36E+02	39.18			3.36E+02	3.92E+01
	79	2223.33	7.33E+00	9.41			7.33E+00	9.41E+00
	80	2276.89	1.38E+01	13.37			1.38E+01	1.34E+01
	81	2292.70	2.14E+01	12.41			2.14E+01	1.24E+01
	82	2380.59	4.08E+00	6.32			4.08E+00	6.32E+00
	83	2404.65	7.70E+00	7.48			7.70E+00	7.48E+00
	84	2446.98	1.12E+02	21.17			1.12E+02	2.12E+01
	85	2614.27	4.05E+01	15.64	1.86E+00	1.12E+00	3.86E+01	1.57E+01
	86	2769.27	6.00E+00	4.90			6.00E+00	4.90E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.993	1460.81	*	10.67	9.75E+00	2.19E+00
NB-93M	0.938	16.57	*	9.43	1.49E+02	1.78E+03
CD-109	0.968	88.03	*	3.72	2.84E+01	4.73E+00
SN-126	1.000	87.57	*	37.00	2.46E+00	3.83E-01
PB-210	0.995	46.50	*	4.25	1.56E+01	3.52E+00

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.755	727.17	*	11.80	8.87E-01	8.66E-01
		1620.62		2.75		
PB-212	0.863	238.63	*	44.60	3.84E-01	1.21E-01
		300.09		3.41		
BI-214	0.995	609.31	*	46.30	2.67E+01	2.61E+00
		1120.29	*	15.10	2.79E+01	2.85E+00
		1764.49	*	15.80	3.13E+01	3.06E+00
		2204.22	*	4.98	2.88E+01	4.19E+00
PB-214	0.989	295.21	*	19.19	2.91E+01	2.70E+00
		351.92	*	37.19	2.99E+01	2.77E+00
RA-226	1.000	186.21	*	3.28	5.96E+01	1.09E+02
AC-228	0.541	338.32	*	11.40	8.95E-01	7.99E-01
		911.07	*	27.70	7.91E-01	5.55E-01
		969.11		16.60		
PA-233	0.842	311.98	*	38.60	3.64E+00	3.79E+00
PA-234M	0.933	1001.03	*	0.92	2.53E+01	1.77E+01
TH-234	0.998	63.29	*	3.80	2.44E+01	3.68E+00
U-235	0.640	143.76	*	10.50	2.13E+00	1.14E+00
		163.35	*	4.70	3.50E+00	2.26E+00
		205.31		4.70		
AM-243	0.957	74.67	*	66.00	2.59E+00	2.79E-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 : 8/23/2017 3:42:19PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	53.26	1.13197E-01	28.45		
m	6	77.44	1.95996E+00	2.49		
m	8	92.87	1.03366E+00	4.21	Sum	
	9	113.96	5.72985E-02	53.57		
	11	155.05	7.17827E-02	42.42		
m	15	242.32	9.22377E-01	3.00		
	16	258.81	1.27551E-01	22.04		
M	17	270.13	1.34174E-01	18.54		

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	18	274.41	6.02599E-02	32.56	Sum	
	23	388.54	5.98480E-02	33.77	Sum	
	24	427.02	4.08298E-02	46.85	Sum	
	25	455.35	3.43333E-02	43.47		
	26	480.61	3.16576E-02	39.96		
	27	487.06	3.41409E-02	33.24		
	28	510.71	6.13364E-02	24.57		
	29	527.58	2.54074E-02	39.97		
	30	581.79	5.57581E-02	29.36		
	32	665.50	8.07108E-02	17.17	Sum	
	33	703.21	1.72761E-02	54.82	Tol.	NB-94
	34	720.50	2.21396E-02	45.39		
	36	768.35	2.34618E-01	6.61		
	37	786.10	5.65212E-02	21.66		
	38	806.23	4.92360E-02	21.51		
	39	839.05	4.47222E-02	22.51		
	40	905.58	1.94010E-02	46.19	Sum	
	42	934.12	1.02162E-01	12.71		
	44	1051.62	3.11267E-02	29.10		
m	46	1134.28	1.20823E-02	55.27		
M	47	1148.14	1.01438E-02	52.27		
m	48	1155.21	5.23856E-02	17.50		
	49	1181.94	1.19764E-02	54.08	D-Esc	
	50	1206.23	1.56246E-02	60.83		
	51	1238.20	1.76740E-01	6.99		
	52	1252.31	2.38418E-02	39.90		
	53	1261.94	1.96247E-02	37.67		
	54	1281.16	3.77221E-02	22.22		
M	55	1377.62	1.21442E-01	7.05		
m	56	1384.90	2.25395E-02	33.10	Tol.	AG-110M
M	57	1401.04	3.68816E-02	18.86		
m	58	1407.91	6.83895E-02	10.97	Tol.	EU-152
	59	1437.67	1.33589E-02	50.58		
	61	1509.01	5.78244E-02	15.91		
	62	1582.26	1.45916E-02	43.83		
	63	1600.42	1.10212E-02	41.57		
	64	1661.37	2.47829E-02	25.58		
	65	1729.40	8.23803E-02	7.91	Sum	
M	67	1838.07	9.29987E-03	43.62		
m	68	1847.03	4.95680E-02	10.64	Sum	
m	69	1856.45	3.88381E-03	71.99		
	70	1863.71	5.70261E-03	36.61		
	71	1873.23	1.45029E-02	29.80		
	72	2017.15	3.72619E-03	63.15		
	73	2053.31	7.05285E-03	36.26		
	74	2079.11	7.37805E-03	33.42		
	75	2118.27	2.66667E-02	12.95		
	76	2130.16	3.44771E-03	41.08		
	77	2178.84	2.91667E-03	59.76		
	79	2223.33	2.03704E-03	64.14		
	80	2276.89	3.83207E-03	48.46		
	81	2292.70	5.94017E-03	29.02		
	82	2380.59	1.13426E-03	77.44		

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
83	2404.65	2.13889E-03	48.59		
84	2446.98	3.11111E-02	9.45		
85	2614.27	1.07339E-02	20.28	Tol.	TL-208
86	2769.27	1.66667E-03	40.82		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	9.75E+00	2.19E+00
NB-93M	0.93	16.57	*	9.43	1.49E+02	1.78E+03
CD-109	0.96	88.03	*	3.72	2.84E+01	4.73E+00
SN-126	1.00	87.57	*	37.00	2.46E+00	3.83E-01
PB-210	0.99	46.50	*	4.25	1.56E+01	3.52E+00
BI-212	0.75	727.17	*	11.80	8.87E-01	8.66E-01
		1620.62		2.75		
PB-212	0.86	238.63	*	44.60	3.84E-01	1.21E-01
		300.09		3.41		
BI-214	0.99	609.31	*	46.30	2.67E+01	2.61E+00
		1120.29	*	15.10	2.79E+01	2.85E+00
		1764.49	*	15.80	3.13E+01	3.06E+00
		2204.22	*	4.98	2.88E+01	4.19E+00
PB-214	0.98	295.21	*	19.19	2.91E+01	2.70E+00
		351.92	*	37.19	2.99E+01	2.77E+00
RA-226	1.00	186.21	*	3.28	5.96E+01	1.09E+02
AC-228	0.54	338.32	*	11.40	8.95E-01	7.99E-01
		911.07	*	27.70	7.91E-01	5.55E-01
		969.11		16.60		
PA-233	0.84	311.98	*	38.60	3.64E+00	3.79E+00
PA-234M	0.93	1001.03	*	0.92	2.53E+01	1.77E+01
TH-234	0.99	63.29	*	3.80	2.44E+01	3.68E+00
U-235	0.64	143.76	*	10.50	2.13E+00	1.14E+00
		163.35	*	4.70	3.50E+00	2.26E+00

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
U-235	0.64	205.31		4.70		
AM-243	0.95	74.67	*	66.00	2.59E+00	2.79E-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	0.993	9.75E+00	2.19E+00	
	NB-93M	0.938	1.49E+02	1.78E+03	
?	CD-109	0.968	2.84E+01	4.73E+00	
?	SN-126	1.000	2.46E+00	3.83E-01	
	PB-210	0.995	1.56E+01	3.52E+00	
	BI-212	0.755	8.87E-01	8.66E-01	
	PB-212	0.863	3.84E-01	1.21E-01	
	BI-214	0.995	2.84E+01	1.52E+00	
	PB-214	0.989	2.95E+01	1.93E+00	
	RA-226	1.000	5.96E+01	1.09E+02	
	AC-228	0.541	8.25E-01	4.56E-01	
	PA-233	0.842	3.64E+00	3.79E+00	
	PA-234M	0.933	2.53E+01	1.77E+01	
	TH-234	0.998	2.44E+01	3.68E+00	
	U-235	0.640	2.40E+00	1.01E+00	
	AM-243	0.957	2.59E+00	2.79E-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 1707090-13

HTC-A07-S001-1218-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 3:42:19PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	53.26	1.13197E-01	28.45		
m	6	77.44	1.95996E+00	2.49		
m	8	92.87	1.03366E+00	4.21	Sum	
	9	113.96	5.72985E-02	53.57		
	11	155.05	7.17827E-02	42.42		
m	15	242.32	9.22377E-01	3.00		
	16	258.81	1.27551E-01	22.04		
M	17	270.13	1.34174E-01	18.54		
m	18	274.41	6.02599E-02	32.56	Sum	
	23	388.54	5.98480E-02	33.77	Sum	
	24	427.02	4.08298E-02	46.85	Sum	
	25	455.35	3.43333E-02	43.47		
	26	480.61	3.16576E-02	39.96		
	27	487.06	3.41409E-02	33.24		
	28	510.71	6.13364E-02	24.57		
	29	527.58	2.54074E-02	39.97		
	30	581.79	5.57581E-02	29.36		
	32	665.50	8.07108E-02	17.17	Sum	
	33	703.21	1.72761E-02	54.82	Tol.	NB-94
	34	720.50	2.21396E-02	45.39		
	36	768.35	2.34618E-01	6.61		
	37	786.10	5.65212E-02	21.66		
	38	806.23	4.92360E-02	21.51		
	39	839.05	4.47222E-02	22.51		
	40	905.58	1.94010E-02	46.19	Sum	
	42	934.12	1.02162E-01	12.71		
	44	1051.62	3.11267E-02	29.10		
m	46	1134.28	1.20823E-02	55.27		
M	47	1148.14	1.01438E-02	52.27		
m	48	1155.21	5.23856E-02	17.50		
	49	1181.94	1.19764E-02	54.08	D-Esc	
	50	1206.23	1.56246E-02	60.83		
	51	1238.20	1.76740E-01	6.99		
	52	1252.31	2.38418E-02	39.90		

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	53	1261.94	1.96247E-02	37.67		
	54	1281.16	3.77221E-02	22.22		
M	55	1377.62	1.21442E-01	7.05		
m	56	1384.90	2.25395E-02	33.10	Tol.	AG-110M
M	57	1401.04	3.68816E-02	18.86		
m	58	1407.91	6.83895E-02	10.97	Tol.	EU-152
	59	1437.67	1.33589E-02	50.58		
	61	1509.01	5.78244E-02	15.91		
	62	1582.26	1.45916E-02	43.83		
	63	1600.42	1.10212E-02	41.57		
	64	1661.37	2.47829E-02	25.58		
	65	1729.40	8.23803E-02	7.91	Sum	
M	67	1838.07	9.29987E-03	43.62		
m	68	1847.03	4.95680E-02	10.64	Sum	
m	69	1856.45	3.88381E-03	71.99		
	70	1863.71	5.70261E-03	36.61		
	71	1873.23	1.45029E-02	29.80		
	72	2017.15	3.72619E-03	63.15		
	73	2053.31	7.05285E-03	36.26		
	74	2079.11	7.37805E-03	33.42		
	75	2118.27	2.66667E-02	12.95		
	76	2130.16	3.44771E-03	41.08		
	77	2178.84	2.91667E-03	59.76		
	79	2223.33	2.03704E-03	64.14		
	80	2276.89	3.83207E-03	48.46		
	81	2292.70	5.94017E-03	29.02		
	82	2380.59	1.13426E-03	77.44		
	83	2404.65	2.13889E-03	48.59		
	84	2446.98	3.11111E-02	9.45		
	85	2614.27	1.07339E-02	20.28	Tol.	TL-208
	86	2769.27	1.66667E-03	40.82		

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

NUCLIDE MDA REPORT

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

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		BE-7	477.59		10.42	2.68E-01	5.75E+00	5.75E+00
+		NA-22	1274.54		99.94	-5.87E-02	1.96E-01	1.96E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	8.04E-02	1.43E-01	1.43E-01
+		K-40	1460.81	*	10.67	9.75E+00	2.89E+00	2.89E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	8.55E-02	1.67E-01	1.67E-01
			78.34		96.00	1.87E+00		2.24E-01
+		SC-46	889.25		99.98	-3.65E-01	4.15E-01	4.15E-01
			1120.51		99.99	9.41E+00		1.19E+00
+		V-48	983.52		99.98	5.18E+00	1.41E+01	1.41E+01
			1312.10		97.50	5.75E+00		1.43E+01
+		CR-51	320.08		9.83	-2.83E+01	1.90E+01	1.90E+01
+		MN-54	834.83		99.97	1.02E-01	2.46E-01	2.46E-01
+		CO-56	846.75		99.96	2.88E-01	4.65E-01	4.65E-01
			1037.75		14.03	2.66E+00		3.21E+00
			1238.25		67.00	6.35E+00		1.36E+00
			1771.40		15.51	-3.41E-01		2.33E+00
			2598.48		16.90	1.25E-01		7.15E-01
+		CO-57	122.06		85.51	-1.21E-02	1.84E-01	1.84E-01
			136.48		10.60	4.37E-01		1.59E+00
+		CO-58	810.76		99.40	8.25E-02	4.81E-01	4.81E-01
+		FE-59	1099.22		56.50	-9.62E-01	1.57E+00	1.57E+00
			1291.56		43.20	-1.36E+00		1.83E+00
+		CO-60	1173.22		100.00	-1.16E-02	1.84E-01	1.94E-01
			1332.49		100.00	2.30E-02		1.84E-01
+		ZN-65	1115.52		50.75	-9.22E+00	5.41E-01	5.41E-01
+		GA-67	93.31		35.70	4.99E+09	6.75E+08	6.75E+08
			208.95		2.24	-1.05E+09		1.08E+10
			300.22		16.00	1.49E+08		1.91E+09
+		SE-75	121.11		16.70	-3.21E-02	3.92E-01	1.29E+00
			136.00		59.20	7.45E-02		3.92E-01
			264.65		59.80	-1.27E+00		4.74E-01
			279.53		25.20	-6.42E-01		1.14E+00
			400.65		11.40	-2.10E+00		2.76E+00
+		RB-82	776.52		13.00	1.43E-01	1.89E+01	1.89E+01
+		RB-83	520.41		46.00	-1.84E-01	7.71E-01	7.71E-01
			529.64		30.30	-5.80E-01		1.17E+00
			552.65		16.40	-1.36E-01		2.17E+00
+		KR-85	513.99		0.43	5.61E+00	4.13E+01	4.13E+01
+		SR-85	513.99		99.27	6.96E-02	5.13E-01	5.13E-01
+		Y-88	898.02		93.40	-7.09E-02	3.12E-01	4.06E-01
			1836.01		99.38	1.87E-01		3.12E-01
+		MO-93	263.06		56.72	-2.35E-01	1.59E-01	2.92E-01
			684.67		99.68	2.47E-02		1.59E-01
			1477.11		99.08	2.24E-02		2.36E-01

Analysis Report for 1707090-13

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-93M	16.57	*	9.43	1.49E+02	2.60E+02	2.60E+02
+	NB-94	702.63		100.00	5.26E-02	1.75E-01	1.75E-01
		871.10		100.00	-9.15E-02		1.85E-01
+	NB-95	765.79		99.81	7.96E+00	2.01E+00	2.01E+00
+	NB-95M	235.69		25.00	-1.16E+08	1.35E+08	1.35E+08
+	ZR-95	724.18		43.70	-6.25E-01	9.10E-01	1.16E+00
		756.72		55.30	2.81E-01		9.10E-01
+	MO-99	181.06		6.20	-6.25E+10	9.65E+10	1.68E+11
		739.58		12.80	2.16E+10		9.65E+10
		778.00		4.50	2.04E+09		2.74E+11
+	RU-103	497.08		89.00	-3.06E-01	1.01E+00	1.01E+00
+	RU-106	621.84		9.80	-1.64E-01	1.88E+00	1.88E+00
+	AG-108M	433.93		89.90	-1.22E-02	1.84E-01	1.84E-01
		614.37		90.40	1.58E-02		3.20E-01
		722.95		90.50	-1.15E-01		1.91E-01
+	CD-109	88.03	*	3.72	2.84E+01	1.04E+01	1.04E+01
+	AG-110M	657.75		93.14	6.53E-03	2.20E-01	2.20E-01
		677.61		10.53	-1.24E+00		1.89E+00
		706.67		16.46	1.27E-01		1.38E+00
		763.93		21.98	-1.00E-01		1.13E+00
		884.67		71.63	1.46E-01		3.53E-01
		1384.27		23.94	-7.86E-01		1.20E+00
+	CD-113M	263.70		0.02	-1.35E+03	7.05E+02	7.05E+02
+	SN-113	255.12		1.93	-7.52E-01	4.94E-01	1.55E+01
		391.69		64.90	1.39E-02		4.94E-01
+	TE123M	159.00		84.10	-1.04E-01	2.96E-01	2.96E-01
+	SB-124	602.71		97.87	-9.21E-02	5.49E-01	5.49E-01
		645.85		7.26	1.64E+00		6.64E+00
		722.78		11.10	-2.92E+00		4.87E+00
		1691.02		49.00	1.97E-01		1.02E+00
+	I-125	35.49		6.49	-3.32E-01	1.34E+01	1.34E+01
+	SB-125	176.33		6.89	-9.95E-02	6.53E-01	2.15E+00
		427.89		29.33	6.24E-01		6.53E-01
		463.38		10.35	8.63E-01		1.70E+00
		600.56		17.80	2.28E-01		1.05E+00
		635.90		11.32	-3.27E-02		1.46E+00
+	SB-126	414.70		83.30	-1.28E+01	4.17E+01	5.44E+01
		666.33		99.60	8.87E+01		5.03E+01
		695.00		99.60	9.66E+00		4.17E+01
		720.50		53.80	5.62E+01		8.33E+01
+	SN-126	87.57	*	37.00	2.46E+00	8.99E-01	8.99E-01
+	SB-127	473.00		25.00	2.25E+07	2.52E+07	3.78E+07
		685.20		35.70	3.92E+06		2.52E+07
		783.80		14.70	1.25E+08		8.09E+07
+	I-129	29.78		57.00	-2.00E-01	8.49E-01	8.49E-01
		33.60		13.20	3.20E-01		2.47E+00
		39.58		7.52	-2.63E+00		2.86E+00
+	I-131	284.30		6.05	-2.68E+03	9.87E+02	1.40E+04

Analysis Report for 1707090-13

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-131	364.48	81.20	1.03E+02	9.87E+02	9.87E+02
		636.97	7.26	-1.84E+02		1.10E+04
		722.89	1.80	-2.99E+04		4.98E+04
+	TE-132	49.72	13.10	-1.03E+10	2.77E+08	1.90E+09
		228.16	88.00	1.05E+08		2.77E+08
+	BA-133	81.00	33.00	-5.34E+00	4.95E-01	4.95E-01
		302.84	17.80	-5.18E-02		9.32E-01
		356.01	60.00	-3.06E-02		5.97E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-2.28E+06	2.11E+05	2.11E+05
+	CS-134	563.23	8.38	-1.94E-01	2.27E-01	2.15E+00
		569.32	15.43	2.38E-02		1.20E+00
		604.70	97.60	-1.05E+01		2.93E-01
		795.84	85.40	2.16E-02		2.27E-01
		801.93	8.73	-2.07E-01		2.32E+00
+	CS-135	268.24	16.00	7.22E-01	1.08E+00	1.08E+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	-1.06E+02	3.41E+01	3.53E+02
		163.89	4.61	5.73E+02		5.75E+02
		176.55	13.56	-8.82E+00		1.90E+02
		273.65	12.66	8.61E+01		2.60E+02
		340.57	48.50	-2.33E+00		6.65E+01
		818.50	99.70	-3.46E+00		3.41E+01
		1048.07	79.60	-3.29E+00		4.34E+01
		1235.34	19.70	6.63E+02		3.15E+02
+	CS-137	661.65	85.12	-3.44E-01	2.00E-01	2.00E-01
+	LA-138	788.74	34.00	-9.13E-02	3.03E-01	5.76E-01
		1435.80	66.00	1.43E-01		3.03E-01
+	CE-139	165.85	80.35	6.30E-02	2.86E-01	2.86E-01
+	BA-140	162.64	6.70	2.84E+02	1.42E+02	4.58E+02
		304.84	4.50	-1.39E+02		7.67E+02
		423.70	3.20	1.21E+01		1.21E+03
		437.55	2.00	1.06E+03		1.80E+03
		537.32	25.00	6.31E+01		1.42E+02
+	LA-140	328.77	20.50	-1.31E+02	5.08E+01	1.75E+02
		487.03	45.50	1.93E+01		7.98E+01
		815.85	23.50	2.19E+01		1.69E+02
		1596.49	95.49	1.08E+01		5.08E+01
+	CE-141	145.44	48.40	1.39E+00	2.40E+00	2.40E+00
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-5.97E-01	1.51E+00	1.51E+00
+	PM-144	476.78	42.00	5.45E-02	1.92E-01	4.67E-01
		618.01	98.60	1.00E-01		1.92E-01
		696.49	99.49	-3.84E-02		1.92E-01
+	PM-145	36.85	21.70	-3.37E-02	6.17E-01	1.17E+00

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-145	37.36	39.70	-6.85E-01	6.17E-01	6.17E-01
		42.30	15.10	1.36E-01		1.32E+00
		72.40	2.31	-6.62E+01		7.86E+00
+	PM-146	453.90	39.94	9.02E-02	4.26E-01	4.26E-01
		735.90	14.01	3.11E-03		1.24E+00
		747.13	13.10	-5.28E-01		1.31E+00
+	ND-147	91.11	28.90	-3.25E+02	3.02E+02	3.02E+02
		531.02	13.10	1.11E+02		6.55E+02
+	PM-149	285.90	3.10	1.08E+13	1.71E+14	1.71E+14
+	EU-152	121.78	20.50	-3.96E-02	6.04E-01	6.04E-01
		244.69	5.40	3.32E+01		4.43E+00
		344.27	19.13	4.17E-02		8.94E-01
		778.89	9.20	-1.70E-01		1.86E+00
		964.01	10.40	1.33E-01		2.04E+00
		1085.78	7.22	-1.07E+00		2.57E+00
		1112.02	9.60	-1.01E-01		1.89E+00
		1407.95	14.94	4.69E+00		1.97E+00
+	GD-153	97.43	31.30	4.00E-01	5.25E-01	5.25E-01
		103.18	22.20	-1.11E+00		6.97E-01
+	EU-154	123.07	40.50	3.93E-02	3.10E-01	3.10E-01
		723.30	19.70	-5.37E-01		8.94E-01
		873.19	11.50	1.71E-01		1.69E+00
		996.32	10.30	-1.22E-01		1.78E+00
		1004.76	17.90	-9.16E-02		1.14E+00
		1274.45	35.50	-1.57E-01		5.23E-01
+	EU-155	86.50	30.90	1.61E+00	5.49E-01	5.49E-01
		105.30	20.70	1.72E-01		6.00E-01
+	EU-156	811.77	10.40	2.20E+01	1.59E+02	1.59E+02
		1153.47	7.20	4.26E+02		3.18E+02
		1230.71	8.90	8.48E+00		1.90E+02
+	HO-166M	184.41	72.60	1.98E+00	2.78E-01	2.78E-01
		280.45	29.60	-3.25E-01		5.49E-01
		410.94	11.10	-7.78E-01		1.61E+00
		711.69	54.10	-1.19E-01		2.95E-01
+	TM-171	66.72	0.14	-2.18E+01	1.27E+02	1.27E+02
+	HF-172	67.35	5.31	1.68E+00	1.21E+00	3.29E+00
		125.81	11.30	-2.94E-01		1.21E+00
+	LU-172	181.53	20.60	-5.78E+03	8.87E+03	2.03E+04
		900.72	29.81	6.53E+03		1.97E+04
		1093.66	62.50	1.21E+02		8.87E+03
+	LU-173	100.72	5.24	5.42E-01	9.84E-01	2.61E+00
		272.11	21.20	1.91E+00		9.84E-01
+	HF-175	343.40	84.00	2.50E-02	5.36E-01	5.36E-01
+	LU-176	88.34	13.30	-2.48E+00	1.65E-01	1.23E+00
		201.83	86.00	-7.87E-02		1.65E-01
		306.78	94.00	1.45E-02		1.67E-01
+	HF-181	133.02	41.70	-1.93E-01	1.01E+00	1.56E+00
		345.85	17.20	3.91E-01		5.00E+00
		482.03	82.80	-2.91E-01		1.01E+00

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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	3.57E-01	6.98E-01	6.98E-01
		1121.30		34.90	2.17E+01		2.74E+00
		1189.05		16.23	7.51E-01		2.10E+00
		1221.41		26.98	4.69E-01		1.30E+00
		1231.02		11.44	1.30E-01		2.92E+00
+	IR-192	308.46		29.68	8.00E-02	8.54E-01	1.35E+00
		468.07		48.10	-7.18E-02		8.54E-01
+	HG-203	279.19		77.30	-1.94E-01	9.37E-01	9.37E-01
+	TL-204	374.74		94.11	1.04E-01	1.81E-01	1.81E-01
		899.15		99.16	-2.85E-02		2.08E-01
		911.74		91.10	1.87E-01		2.50E-01
+	BI-207	569.67		97.72	2.96E-02	1.75E-01	1.75E-01
		1063.62		74.90	-1.12E-01		2.47E-01
+	TL-208	583.14		30.22	8.30E-01	4.44E-01	6.22E-01
		860.37		4.48	-2.06E-01		4.11E+00
		2614.66		35.85	5.58E-01		4.44E-01
+	BI-210M	262.00		45.00	1.16E-01	3.71E-01	3.71E-01
		300.00		23.00	7.11E-02		9.12E-01
+	PB-210	46.50	*	4.25	1.56E+01	4.99E+00	4.99E+00
+	PB-211	404.84		2.90	1.89E+00	6.39E+00	6.39E+00
		831.96		2.90	2.52E+00		6.54E+00
+	BI-212	727.17	*	11.80	8.87E-01	1.41E+00	1.41E+00
		1620.62		2.75	-8.15E-01		6.48E+00
+	PB-212	238.63	*	44.60	3.84E-01	5.36E-01	5.36E-01
		300.09		3.41	4.80E-01		6.15E+00
+	BI-214	609.31	*	46.30	2.67E+01	6.37E-01	6.37E-01
		1120.29	*	15.10	2.79E+01		3.77E+00
		1764.49	*	15.80	3.13E+01		1.00E+00
		2204.22	*	4.98	2.88E+01		2.19E+00
+	PB-214	295.21	*	19.19	2.91E+01	7.19E-01	1.37E+00
		351.92	*	37.19	2.99E+01		7.19E-01
+	RN-219	401.80		6.50	1.06E+00	2.80E+00	2.80E+00
+	RA-223	323.87		3.88	-5.47E-01	4.18E+00	4.18E+00
+	RA-224	240.98		3.95	5.79E+01	6.36E+00	6.36E+00
+	RA-225	40.00		31.00	-6.51E+01	7.07E+01	7.07E+01
+	RA-226	186.21	*	3.28	5.96E+01	8.18E+00	8.18E+00
+	TH-227	50.10		8.40	-1.08E+01	1.55E+00	1.98E+00
		236.00		11.50	-1.33E+00		1.55E+00
		256.20		6.30	-7.28E-02		2.69E+00
+	AC-228	338.32	*	11.40	8.95E-01	8.91E-01	1.30E+00
		911.07	*	27.70	7.91E-01		8.91E-01
		969.11		16.60	-1.05E-01		1.26E+00
+	TH-230	48.44		16.90	1.42E+00	1.10E+00	1.10E+00
		62.85		4.60	2.13E+01		3.98E+00
		67.67		0.37	2.18E+01		4.26E+01
+	PA-231	283.67		1.60	2.32E+00	7.08E+00	1.02E+01
		302.67		2.30	-3.94E-01		7.08E+00
+	TH-231	25.64		14.70	-4.95E-02	2.40E+00	6.12E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-231	84.21		6.40	-5.63E+00	2.40E+00	2.40E+00
+	PA-233	311.98	*	38.60	3.64E+00	6.08E+00	6.08E+00
+	PA-234	131.20		20.40	1.49E-01	6.25E-01	6.25E-01
		733.99		8.80	1.47E-01		1.90E+00
		946.00		12.00	3.50E-01		1.55E+00
+	PA-234M	1001.03	*	0.92	2.53E+01	2.84E+01	2.84E+01
+	TH-234	63.29	*	3.80	2.44E+01	5.03E+00	5.03E+00
+	U-235	143.76	*	10.50	2.13E+00	1.75E+00	1.75E+00
		163.35	*	4.70	3.50E+00		3.53E+00
		205.31		4.70	7.89E-01		3.56E+00
+	NP-237	86.50		12.60	3.81E+00	1.30E+00	1.30E+00
+	NP-239	106.10		22.70	7.38E+11	2.57E+12	2.57E+12
		228.18		10.70	2.84E+12		7.52E+12
		277.60		14.10	2.77E+11		5.82E+12
+	AM-241	59.54		35.90	-8.80E-02	4.43E-01	4.43E-01
+	AM-243	74.67	*	66.00	2.59E+00	4.69E-01	4.69E-01
+	CM-243	209.75		3.29	-3.38E+00	1.21E+00	5.03E+00
		228.14		10.60	5.91E-01		1.57E+00
		277.60		14.00	5.76E-02		1.21E+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	5.75E+00	5.75E+00	2.68E-01	2.82E+00
	NA-22	1274.54	99.94	1.96E-01	1.96E-01	-5.87E-02	9.37E-02
@	NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@	NA-24	2754.09		99.86	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	AL-26	1808.65		99.76	1.43E-01	1.43E-01	8.04E-02	6.64E-02
+	K-40	1460.81	*	10.67	2.89E+00	2.89E+00	9.75E+00	1.41E+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	1.67E-01	1.67E-01	8.55E-02	8.31E-02
		78.34		96.00	2.24E-01		1.87E+00	1.12E-01
	SC-46	889.25		99.98	4.15E-01	4.15E-01	-3.65E-01	2.01E-01
		1120.51		99.99	1.19E+00		9.41E+00	5.86E-01
	V-48	983.52		99.98	1.41E+01	1.41E+01	5.18E+00	6.82E+00
		1312.10		97.50	1.43E+01		5.75E+00	6.85E+00
	CR-51	320.08		9.83	1.90E+01	1.90E+01	-2.83E+01	9.35E+00
	MN-54	834.83		99.97	2.46E-01	2.46E-01	1.02E-01	1.20E-01
	CO-56	846.75		99.96	4.65E-01	4.65E-01	2.88E-01	2.26E-01
		1037.75		14.03	3.21E+00		2.66E+00	1.55E+00
		1238.25		67.00	1.36E+00		6.35E+00	6.68E-01
		1771.40		15.51	2.33E+00		-3.41E-01	1.09E+00
		2598.48		16.90	7.15E-01		1.25E-01	2.67E-01
	CO-57	122.06		85.51	1.84E-01	1.84E-01	-1.21E-02	9.14E-02
		136.48		10.60	1.59E+00		4.37E-01	7.89E-01
	CO-58	810.76		99.40	4.81E-01	4.81E-01	8.25E-02	2.33E-01
	FE-59	1099.22		56.50	1.57E+00	1.57E+00	-9.62E-01	7.55E-01
		1291.56		43.20	1.83E+00		-1.36E+00	8.74E-01
	CO-60	1173.22		100.00	1.94E-01	1.84E-01	-1.16E-02	9.32E-02
		1332.49		100.00	1.84E-01		2.30E-02	8.80E-02
	ZN-65	1115.52		50.75	5.41E-01	5.41E-01	-9.22E+00	2.61E-01
	GA-67	93.31		35.70	6.75E+08	6.75E+08	4.99E+09	3.36E+08
		208.95		2.24	1.08E+10		-1.05E+09	5.35E+09
		300.22		16.00	1.91E+09		1.49E+08	9.45E+08
	SE-75	121.11		16.70	1.29E+00	3.92E-01	-3.21E-02	6.40E-01
		136.00		59.20	3.92E-01		7.45E-02	1.94E-01
		264.65		59.80	4.74E-01		-1.27E+00	2.34E-01
		279.53		25.20	1.14E+00		-6.42E-01	5.65E-01
		400.65		11.40	2.76E+00		-2.10E+00	1.36E+00
	RB-82	776.52		13.00	1.89E+01	1.89E+01	1.43E-01	9.18E+00
	RB-83	520.41		46.00	7.71E-01	7.71E-01	-1.84E-01	3.77E-01
		529.64		30.30	1.17E+00		-5.80E-01	5.70E-01
		552.65		16.40	2.17E+00		-1.36E-01	1.06E+00
	KR-85	513.99		0.43	4.13E+01	4.13E+01	5.61E+00	2.02E+01
	SR-85	513.99		99.27	5.13E-01	5.13E-01	6.96E-02	2.51E-01
	Y-88	898.02		93.40	4.06E-01	3.12E-01	-7.09E-02	1.97E-01
		1836.01		99.38	3.12E-01		1.87E-01	1.46E-01
	MO-93	263.06		56.72	2.92E-01	1.59E-01	-2.35E-01	1.44E-01
		684.67		99.68	1.59E-01		2.47E-02	7.72E-02
		1477.11		99.08	2.36E-01		2.24E-02	1.14E-01
+	NB-93M	16.57	*	9.43	2.60E+02	2.60E+02	1.49E+02	1.29E+02
	NB-94	702.63		100.00	1.75E-01	1.75E-01	5.26E-02	8.50E-02
		871.10		100.00	1.85E-01		-9.15E-02	8.96E-02
	NB-95	765.79		99.81	2.01E+00	2.01E+00	7.96E+00	9.88E-01
	NB-95M	235.69		25.00	1.35E+08	1.35E+08	-1.16E+08	6.68E+07
	ZR-95	724.18		43.70	1.16E+00	9.10E-01	-6.25E-01	5.64E-01
		756.72		55.30	9.10E-01		2.81E-01	4.42E-01
	MO-99	181.06		6.20	1.68E+11	9.65E+10	-6.25E+10	8.32E+10
		739.58		12.80	9.65E+10		2.16E+10	4.69E+10

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	MO-99	778.00		4.50	2.74E+11	9.65E+10	2.04E+09	1.33E+11
	RU-103	497.08		89.00	1.01E+00	1.01E+00	-3.06E-01	4.92E-01
	RU-106	621.84		9.80	1.88E+00	1.88E+00	-1.64E-01	9.16E-01
	AG-108M	433.93		89.90	1.84E-01	1.84E-01	-1.22E-02	9.02E-02
		614.37		90.40	3.20E-01		1.58E-02	1.58E-01
		722.95		90.50	1.91E-01		-1.15E-01	9.27E-02
+	CD-109	88.03	*	3.72	1.04E+01	1.04E+01	2.84E+01	5.17E+00
	AG-110M	657.75		93.14	2.20E-01	2.20E-01	6.53E-03	1.07E-01
		677.61		10.53	1.89E+00		-1.24E+00	9.19E-01
		706.67		16.46	1.38E+00		1.27E-01	6.73E-01
		763.93		21.98	1.13E+00		-1.00E-01	5.51E-01
		884.67		71.63	3.53E-01		1.46E-01	1.72E-01
		1384.27		23.94	1.20E+00		-7.86E-01	5.79E-01
	CD-113M	263.70		0.02	7.05E+02	7.05E+02	-1.35E+03	3.48E+02
	SN-113	255.12		1.93	1.55E+01	4.94E-01	-7.52E-01	7.67E+00
		391.69		64.90	4.94E-01		1.39E-02	2.43E-01
	TE123M	159.00		84.10	2.96E-01	2.96E-01	-1.04E-01	1.47E-01
	SB-124	602.71		97.87	5.49E-01	5.49E-01	-9.21E-02	2.68E-01
		645.85		7.26	6.64E+00		1.64E+00	3.23E+00
		722.78		11.10	4.87E+00		-2.92E+00	2.37E+00
		1691.02		49.00	1.02E+00		1.97E-01	4.79E-01
	I-125	35.49		6.49	1.34E+01	1.34E+01	-3.32E-01	6.62E+00
	SB-125	176.33		6.89	2.15E+00	6.53E-01	-9.95E-02	1.06E+00
		427.89		29.33	6.53E-01		6.24E-01	3.21E-01
		463.38		10.35	1.70E+00		8.63E-01	8.33E-01
		600.56		17.80	1.05E+00		2.28E-01	5.12E-01
		635.90		11.32	1.46E+00		-3.27E-02	7.11E-01
	SB-126	414.70		83.30	5.44E+01	4.17E+01	-1.28E+01	2.67E+01
		666.33		99.60	5.03E+01		8.87E+01	2.46E+01
		695.00		99.60	4.17E+01		9.66E+00	2.03E+01
		720.50		53.80	8.33E+01		5.62E+01	4.05E+01
+	SN-126	87.57	*	37.00	8.99E-01	8.99E-01	2.46E+00	4.48E-01
	SB-127	473.00		25.00	3.78E+07	2.52E+07	2.25E+07	1.85E+07
		685.20		35.70	2.52E+07		3.92E+06	1.22E+07
		783.80		14.70	8.09E+07		1.25E+08	3.95E+07
	I-129	29.78		57.00	8.49E-01	8.49E-01	-2.00E-01	4.20E-01
		33.60		13.20	2.47E+00		3.20E-01	1.22E+00
		39.58		7.52	2.86E+00		-2.63E+00	1.41E+00
	I-131	284.30		6.05	1.40E+04	9.87E+02	-2.68E+03	6.92E+03
		364.48		81.20	9.87E+02		1.03E+02	4.85E+02
		636.97		7.26	1.10E+04		-1.84E+02	5.35E+03
		722.89		1.80	4.98E+04		-2.99E+04	2.42E+04
	TE-132	49.72		13.10	1.90E+09	2.77E+08	-1.03E+10	9.42E+08
		228.16		88.00	2.77E+08		1.05E+08	1.37E+08
	BA-133	81.00		33.00	4.95E-01	4.95E-01	-5.34E+00	2.46E-01
		302.84		17.80	9.32E-01		-5.18E-02	4.60E-01
		356.01		60.00	5.97E-01		-3.06E-02	2.96E-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	2.11E+05	2.11E+05	-2.28E+06	1.05E+05
	CS-134	563.23		8.38	2.15E+00	2.27E-01	-1.94E-01	1.05E+00
		569.32		15.43	1.20E+00		2.38E-02	5.86E-01
		604.70		97.60	2.93E-01		-1.05E+01	1.44E-01
		795.84		85.40	2.27E-01		2.16E-02	1.10E-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	801.93	8.73	2.32E+00	2.27E-01	-2.07E-01	1.13E+00
CS-135	268.24	16.00	1.08E+00	1.08E+00	7.22E-01	5.33E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.53E+02	3.41E+01	-1.06E+02	1.75E+02
	163.89	4.61	5.75E+02		5.73E+02	2.85E+02
	176.55	13.56	1.90E+02		-8.82E+00	9.42E+01
	273.65	12.66	2.60E+02		8.61E+01	1.29E+02
	340.57	48.50	6.65E+01		-2.33E+00	3.28E+01
	818.50	99.70	3.41E+01		-3.46E+00	1.66E+01
	1048.07	79.60	4.34E+01		-3.29E+00	2.10E+01
	1235.34	19.70	3.15E+02		6.63E+02	1.54E+02
CS-137	661.65	85.12	2.00E-01	2.00E-01	-3.44E-01	9.72E-02
LA-138	788.74	34.00	5.76E-01	3.03E-01	-9.13E-02	2.81E-01
	1435.80	66.00	3.03E-01		1.43E-01	1.45E-01
CE-139	165.85	80.35	2.86E-01	2.86E-01	6.30E-02	1.42E-01
BA-140	162.64	6.70	4.58E+02	1.42E+02	2.84E+02	2.27E+02
	304.84	4.50	7.67E+02		-1.39E+02	3.78E+02
	423.70	3.20	1.21E+03		1.21E+01	5.96E+02
	437.55	2.00	1.80E+03		1.06E+03	8.83E+02
	537.32	25.00	1.42E+02		6.31E+01	6.94E+01
LA-140	328.77	20.50	1.75E+02	5.08E+01	-1.31E+02	8.61E+01
	487.03	45.50	7.98E+01		1.93E+01	3.91E+01
	815.85	23.50	1.69E+02		2.19E+01	8.19E+01
	1596.49	95.49	5.08E+01		1.08E+01	2.43E+01
CE-141	145.44	48.40	2.40E+00	2.40E+00	1.39E+00	1.19E+00
@ 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	1.51E+00	1.51E+00	-5.97E-01	7.50E-01
PM-144	476.78	42.00	4.67E-01	1.92E-01	5.45E-02	2.29E-01
	618.01	98.60	1.92E-01		1.00E-01	9.35E-02
	696.49	99.49	1.92E-01		-3.84E-02	9.33E-02
PM-145	36.85	21.70	1.17E+00	6.17E-01	-3.37E-02	5.78E-01
	37.36	39.70	6.17E-01		-6.85E-01	3.05E-01
	42.30	15.10	1.32E+00		1.36E-01	6.55E-01
	72.40	2.31	7.86E+00		-6.62E+01	3.91E+00
PM-146	453.90	39.94	4.26E-01	4.26E-01	9.02E-02	2.09E-01
	735.90	14.01	1.24E+00		3.11E-03	6.00E-01
	747.13	13.10	1.31E+00		-5.28E-01	6.36E-01
ND-147	91.11	28.90	3.02E+02	3.02E+02	-3.25E+02	1.50E+02
	531.02	13.10	6.55E+02		1.11E+02	3.20E+02
PM-149	285.90	3.10	1.71E+14	1.71E+14	1.08E+13	8.44E+13
EU-152	121.78	20.50	6.04E-01	6.04E-01	-3.96E-02	2.99E-01
	244.69	5.40	4.43E+00		3.32E+01	2.20E+00
	344.27	19.13	8.94E-01		4.17E-02	4.41E-01
	778.89	9.20	1.86E+00		-1.70E-01	9.03E-01
	964.01	10.40	2.04E+00		1.33E-01	9.91E-01
	1085.78	7.22	2.57E+00		-1.07E+00	1.24E+00
	1112.02	9.60	1.89E+00		-1.01E-01	9.10E-01
	1407.95	14.94	1.97E+00		4.69E+00	9.56E-01
GD-153	97.43	31.30	5.25E-01	5.25E-01	4.00E-01	2.60E-01

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	GD-153	103.18		22.20	6.97E-01	5.25E-01	-1.11E+00	3.46E-01
	EU-154	123.07		40.50	3.10E-01	3.10E-01	3.93E-02	1.54E-01
		723.30		19.70	8.94E-01		-5.37E-01	4.35E-01
		873.19		11.50	1.69E+00		1.71E-01	8.20E-01
		996.32		10.30	1.78E+00		-1.22E-01	8.61E-01
		1004.76		17.90	1.14E+00		-9.16E-02	5.53E-01
		1274.45		35.50	5.23E-01		-1.57E-01	2.51E-01
	EU-155	86.50		30.90	5.49E-01	5.49E-01	1.61E+00	2.73E-01
		105.30		20.70	6.00E-01		1.72E-01	2.97E-01
	EU-156	811.77		10.40	1.59E+02	1.59E+02	2.20E+01	7.70E+01
		1153.47		7.20	3.18E+02		4.26E+02	1.55E+02
		1230.71		8.90	1.90E+02		8.48E+00	9.13E+01
	HO-166M	184.41		72.60	2.78E-01	2.78E-01	1.98E+00	1.38E-01
		280.45		29.60	5.49E-01		-3.25E-01	2.71E-01
		410.94		11.10	1.61E+00		-7.78E-01	7.90E-01
		711.69		54.10	2.95E-01		-1.19E-01	1.43E-01
	TM-171	66.72		0.14	1.27E+02	1.27E+02	-2.18E+01	6.30E+01
	HF-172	67.35		5.31	3.29E+00	1.21E+00	1.68E+00	1.63E+00
		125.81		11.30	1.21E+00		-2.94E-01	6.01E-01
	LU-172	181.53		20.60	2.03E+04	8.87E+03	-5.78E+03	1.00E+04
		900.72		29.81	1.97E+04		6.53E+03	9.58E+03
		1093.66		62.50	8.87E+03		1.21E+02	4.28E+03
	LU-173	100.72		5.24	2.61E+00	9.84E-01	5.42E-01	1.29E+00
		272.11		21.20	9.84E-01		1.91E+00	4.87E-01
	HF-175	343.40		84.00	5.36E-01	5.36E-01	2.50E-02	2.64E-01
	LU-176	88.34		13.30	1.23E+00	1.65E-01	-2.48E+00	6.11E-01
		201.83		86.00	1.65E-01		-7.87E-02	8.17E-02
		306.78		94.00	1.67E-01		1.45E-02	8.23E-02
	HF-181	133.02		41.70	1.56E+00	1.01E+00	-1.93E-01	7.72E-01
		345.85		17.20	5.00E+00		3.91E-01	2.46E+00
		482.03		82.80	1.01E+00		-2.91E-01	4.97E-01
	TA-182	67.75		41.20	6.98E-01	6.98E-01	3.57E-01	3.46E-01
		1121.30		34.90	2.74E+00		2.17E+01	1.35E+00
		1189.05		16.23	2.10E+00		7.51E-01	1.01E+00
		1221.41		26.98	1.30E+00		4.69E-01	6.26E-01
		1231.02		11.44	2.92E+00		1.30E-01	1.40E+00
	IR-192	308.46		29.68	1.35E+00	8.54E-01	8.00E-02	6.67E-01
		468.07		48.10	8.54E-01		-7.18E-02	4.18E-01
	HG-203	279.19		77.30	9.37E-01	9.37E-01	-1.94E-01	4.63E-01
	TL-204	374.74		94.11	1.81E-01	1.81E-01	1.04E-01	8.91E-02
		899.15		99.16	2.08E-01		-2.85E-02	1.01E-01
		911.74		91.10	2.50E-01		1.87E-01	1.22E-01
	BI-207	569.67		97.72	1.75E-01	1.75E-01	2.96E-02	8.53E-02
		1063.62		74.90	2.47E-01		-1.12E-01	1.19E-01
	TL-208	583.14		30.22	6.22E-01	4.44E-01	8.30E-01	3.05E-01
		860.37		4.48	4.11E+00		-2.06E-01	2.00E+00
		2614.66		35.85	4.44E-01		5.58E-01	2.04E-01
	BI-210M	262.00		45.00	3.71E-01	3.71E-01	1.16E-01	1.84E-01
		300.00		23.00	9.12E-01		7.11E-02	4.51E-01
+	PB-210	46.50	*	4.25	4.99E+00	4.99E+00	1.56E+01	2.48E+00
	PB-211	404.84		2.90	6.39E+00	6.39E+00	1.89E+00	3.14E+00
		831.96		2.90	6.54E+00		2.52E+00	3.18E+00
+	BI-212	727.17	*	11.80	1.41E+00	1.41E+00	8.87E-01	6.84E-01

Analysis Report for 1707090-13

HTC-A07-S001-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-212	1620.62		2.75	6.48E+00	1.41E+00	-8.15E-01	3.07E+00
+	PB-212	238.63	*	44.60	5.36E-01	5.36E-01	3.84E-01	2.66E-01
		300.09		3.41	6.15E+00		4.80E-01	3.05E+00
+	BI-214	609.31	*	46.30	6.37E-01	6.37E-01	2.67E+01	3.14E-01
		1120.29	*	15.10	3.77E+00		2.79E+01	1.86E+00
		1764.49	*	15.80	1.00E+00		3.13E+01	4.71E-01
		2204.22	*	4.98	2.19E+00		2.88E+01	9.77E-01
+	PB-214	295.21	*	19.19	1.37E+00	7.19E-01	2.91E+01	6.81E-01
		351.92	*	37.19	7.19E-01		2.99E+01	3.56E-01
	RN-219	401.80		6.50	2.80E+00	2.80E+00	1.06E+00	1.38E+00
	RA-223	323.87		3.88	4.18E+00	4.18E+00	-5.47E-01	2.06E+00
	RA-224	240.98		3.95	6.36E+00	6.36E+00	5.79E+01	3.16E+00
	RA-225	40.00		31.00	7.07E+01	7.07E+01	-6.51E+01	3.50E+01
+	RA-226	186.21	*	3.28	8.18E+00	8.18E+00	5.96E+01	4.07E+00
	TH-227	50.10		8.40	1.98E+00	1.55E+00	-1.08E+01	9.82E-01
		236.00		11.50	1.55E+00		-1.33E+00	7.69E-01
		256.20		6.30	2.69E+00		-7.28E-02	1.33E+00
+	AC-228	338.32	*	11.40	1.30E+00	8.91E-01	8.95E-01	6.40E-01
		911.07	*	27.70	8.91E-01		7.91E-01	4.35E-01
		969.11		16.60	1.26E+00		-1.05E-01	6.11E-01
	TH-230	48.44		16.90	1.10E+00	1.10E+00	1.42E+00	5.45E-01
		62.85		4.60	3.98E+00		2.13E+01	1.98E+00
		67.67		0.37	4.26E+01		2.18E+01	2.12E+01
	PA-231	283.67		1.60	1.02E+01	7.08E+00	2.32E+00	5.06E+00
		302.67		2.30	7.08E+00		-3.94E-01	3.50E+00
	TH-231	25.64		14.70	6.12E+00	2.40E+00	-4.95E-02	3.03E+00
		84.21		6.40	2.40E+00		-5.63E+00	1.19E+00
+	PA-233	311.98	*	38.60	6.08E+00	6.08E+00	3.64E+00	3.00E+00
	PA-234	131.20		20.40	6.25E-01	6.25E-01	1.49E-01	3.10E-01
		733.99		8.80	1.90E+00		1.47E-01	9.25E-01
		946.00		12.00	1.55E+00		3.50E-01	7.51E-01
+	PA-234M	1001.03	*	0.92	2.84E+01	2.84E+01	2.53E+01	1.39E+01
+	TH-234	63.29	*	3.80	5.03E+00	5.03E+00	2.44E+01	2.50E+00
+	U-235	143.76	*	10.50	1.75E+00	1.75E+00	2.13E+00	8.70E-01
		163.35	*	4.70	3.53E+00		3.50E+00	1.75E+00
		205.31		4.70	3.56E+00		7.89E-01	1.76E+00
	NP-237	86.50		12.60	1.30E+00	1.30E+00	3.81E+00	6.43E-01
	NP-239	106.10		22.70	2.57E+12	2.57E+12	7.38E+11	1.27E+12
		228.18		10.70	7.52E+12		2.84E+12	3.72E+12
		277.60		14.10	5.82E+12		2.77E+11	2.88E+12
	AM-241	59.54		35.90	4.43E-01	4.43E-01	-8.80E-02	2.20E-01
+	AM-243	74.67	*	66.00	4.69E-01	4.69E-01	2.59E+00	2.34E-01
	CM-243	209.75		3.29	5.03E+00	1.21E+00	-3.38E+00	2.49E+00
		228.14		10.60	1.57E+00		5.91E-01	7.75E-01
		277.60		14.00	1.21E+00		5.76E-02	5.98E-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 1707090-13

HTC-A07-S001-1218-01

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: HTC-A07-S001-1218-01

Elapsed Live time: 3600
Elapsed Real Time: 3621

Channel								
1:	0	0	0	0	0	0	0	0
9:	19	740	740	746	770	716	759	733
17:	760	651	616	639	601	624	603	590
25:	570	602	555	600	571	549	581	583
33:	611	547	595	605	582	561	558	604
41:	667	619	697	676	725	959	1393	1019
49:	722	797	857	829	1038	1099	930	891
57:	922	945	1069	1134	1155	1344	1823	2267
65:	1591	1221	1265	1343	1377	1418	1353	1392
73:	1475	1804	3121	3440	3973	4581	2391	1439
81:	1342	1355	1199	1509	1491	1235	1733	2153
89:	1481	1368	1398	1605	2487	2015	1200	997
97:	847	850	928	932	776	766	787	852
105:	770	864	841	794	817	837	866	801
113:	877	865	877	791	777	766	737	785
121:	766	791	795	762	797	813	755	767
129:	793	793	793	804	778	786	793	784
137:	819	831	787	796	783	799	873	945
145:	949	821	767	771	795	810	783	779
153:	810	858	851	826	804	806	743	772
161:	723	714	822	829	709	719	682	659
169:	660	680	669	668	633	683	645	666
177:	652	630	650	613	680	699	705	722
185:	949	2025	2135	1056	654	605	599	630
193:	630	564	573	574	623	526	567	581
201:	594	555	555	517	581	635	486	488
209:	540	514	495	491	534	483	471	492
217:	447	484	450	430	492	456	441	428
225:	483	462	462	433	431	437	408	444
233:	413	387	459	517	536	529	618	531
241:	735	1728	1802	720	417	340	358	363
249:	396	356	328	349	334	371	335	389
257:	399	402	483	400	346	361	342	293
265:	314	335	308	325	382	497	437	389
273:	362	356	398	366	326	308	318	297
281:	321	292	279	315	299	312	310	287
289:	291	313	267	269	342	732	2595	3539
297:	1382	388	292	298	303	245	271	254
305:	251	254	228	261	232	218	250	271
313:	259	283	244	251	233	212	242	210
321:	241	211	200	269	272	226	229	233
329:	265	253	261	196	262	236	260	213
337:	224	269	273	257	223	239	231	226
345:	239	224	219	228	238	394	1718	5179
353:	4572	1148	248	188	156	158	176	182
361:	175	179	161	172	164	175	156	192

369:	170	153	186	176	188	183	181	184

Sample Title: HTC-A07-S001-1218-01

Channel								
377:	176	179	163	168	165	170	175	172
385:	171	168	229	203	252	222	172	186
393:	176	175	200	189	184	157	190	200
401:	196	218	213	172	224	237	181	196
409:	193	204	190	167	195	153	197	181
417:	178	177	172	176	165	175	171	164
425:	178	194	188	186	179	147	141	144
433:	135	134	155	156	137	136	156	126
441:	133	139	115	133	153	137	131	141
449:	140	119	117	105	130	109	169	155
457:	131	123	125	113	133	136	134	125
465:	123	101	130	110	117	131	130	121
473:	111	122	111	118	115	96	125	129
481:	150	127	106	91	106	126	149	145
489:	119	99	115	111	89	100	105	95
497:	95	110	84	105	98	118	86	108
505:	111	85	91	114	113	136	173	163
513:	109	106	90	98	101	88	87	85
521:	102	107	109	93	88	113	95	107
529:	91	91	62	108	91	125	108	75
537:	96	80	89	92	81	77	90	97
545:	101	84	101	94	71	86	76	80
553:	94	84	82	105	91	93	94	93
561:	78	92	85	82	92	92	81	91
569:	91	93	93	96	98	89	84	72
577:	77	74	92	110	127	112	117	118
585:	97	79	74	94	79	79	79	86
593:	78	84	81	88	78	101	97	84
601:	91	74	84	86	84	88	126	841
609:	2955	3443	1157	159	70	61	72	72
617:	62	60	71	72	61	66	44	68
625:	61	69	65	50	56	62	61	66
633:	61	80	64	59	52	58	60	53
641:	70	49	57	54	63	57	58	71
649:	57	51	56	62	62	47	61	59
657:	52	65	55	49	71	68	57	59
665:	124	157	103	66	74	49	60	54
673:	61	70	57	47	70	36	53	54
681:	53	59	58	57	60	50	50	51
689:	58	47	65	77	50	58	49	56
697:	57	57	50	57	50	65	83	91
705:	63	55	66	71	53	50	56	58
713:	57	51	51	57	47	62	61	74
721:	69	62	63	51	50	59	77	73
729:	68	48	60	49	58	65	63	46
737:	52	54	52	59	54	72	54	57
745:	49	61	58	51	48	49	55	56
753:	64	52	52	52	62	53	56	64
761:	49	41	49	44	59	87	138	335
769:	344	142	52	68	54	42	57	42
777:	55	57	42	55	52	55	56	57
785:	100	120	94	54	57	53	39	58
793:	54	61	53	52	59	54	46	53

801:	59	54	56	58	82	130	112	65

Sample Title: HTC-A07-S001-1218-01

Channel								
809:	44	56	49	47	61	61	52	47
817:	54	64	48	64	51	56	54	58
825:	51	73	51	53	45	52	54	65
833:	62	75	50	46	59	77	119	86
841:	61	49	48	48	54	54	67	51
849:	72	63	56	46	57	61	63	53
857:	39	48	63	59	50	53	46	52
865:	42	41	69	48	48	45	45	55
873:	48	63	58	58	56	54	60	50
881:	58	62	53	58	40	52	57	49
889:	44	42	43	44	72	57	64	47
897:	44	70	47	63	52	52	53	68
905:	63	66	74	46	52	64	70	91
913:	66	56	50	46	51	40	45	41
921:	50	53	52	48	33	47	55	58
929:	50	34	43	64	120	193	150	68
937:	47	47	41	48	44	42	48	44
945:	43	36	47	42	48	39	41	44
953:	44	31	38	42	44	40	37	41
961:	52	57	41	64	65	53	47	65
969:	63	53	53	40	48	47	38	43
977:	49	40	41	36	46	39	39	49
985:	48	42	35	36	40	51	40	41
993:	35	29	50	30	43	33	41	59
1001:	70	62	54	53	34	39	38	40
1009:	47	42	42	47	38	29	34	47
1017:	43	43	44	44	38	47	36	38
1025:	35	35	34	41	40	39	48	39
1033:	31	36	33	41	41	41	36	28
1041:	46	23	27	40	40	26	33	40
1049:	38	26	51	57	38	38	33	28
1057:	22	34	43	35	39	35	30	35
1065:	44	29	31	34	46	47	53	33
1073:	51	43	35	32	41	34	21	35
1081:	41	32	36	32	33	32	28	40
1089:	32	38	39	40	27	35	36	37
1097:	40	36	38	33	30	30	44	47
1105:	50	32	28	40	35	38	25	22
1113:	27	32	34	37	42	92	332	656
1121:	541	180	40	44	34	37	38	30
1129:	36	25	29	28	34	49	38	39
1137:	24	37	43	45	31	32	35	41
1145:	21	27	45	40	36	36	30	32
1153:	50	75	83	83	39	35	29	34
1161:	24	29	36	27	26	35	31	23
1169:	41	22	31	33	32	30	37	27
1177:	27	33	27	34	37	41	35	26
1185:	22	23	36	30	32	32	30	24
1193:	27	28	26	29	33	27	21	30
1201:	29	24	37	32	36	38	42	42
1209:	33	23	27	20	35	32	34	18
1217:	32	31	25	27	30	33	34	30
1225:	24	31	25	28	28	22	32	27

1233:	25	24	42	45	178	297	168	63

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Channel								
1241:	42	33	28	25	27	26	32	26
1249:	22	30	40	39	41	31	27	26
1257:	14	24	26	29	32	29	27	20
1265:	20	29	16	19	34	23	20	28
1273:	19	23	29	26	28	25	33	54
1281:	95	54	37	22	29	26	27	29
1289:	21	22	18	25	17	14	30	25
1297:	22	33	22	20	34	25	23	27
1305:	24	21	17	27	29	20	18	25
1313:	27	35	22	26	16	22	20	17
1321:	29	22	20	21	23	23	21	20
1329:	25	18	18	24	23	21	24	24
1337:	18	30	32	21	20	17	17	22
1345:	27	29	27	12	25	15	23	19
1353:	22	17	41	18	24	22	19	18
1361:	21	25	26	23	25	16	15	27
1369:	29	24	21	22	22	28	37	65
1377:	174	161	74	42	22	20	20	43
1385:	47	47	22	18	22	22	26	21
1393:	19	19	21	23	14	30	33	46
1401:	67	57	35	17	25	49	90	99
1409:	75	31	16	19	23	23	22	21
1417:	19	20	21	25	16	17	18	19
1425:	27	26	23	31	28	24	19	19
1433:	18	14	27	26	26	25	36	26
1441:	17	20	22	22	29	26	17	20
1449:	19	25	27	22	25	22	25	21
1457:	21	22	62	116	139	71	23	25
1465:	26	18	16	24	25	20	26	27
1473:	20	21	20	24	21	22	33	29
1481:	30	17	25	21	22	20	28	17
1489:	22	17	27	19	34	23	21	21
1497:	23	22	22	26	21	23	21	17
1505:	21	27	39	76	95	65	32	30
1513:	25	20	28	26	22	26	25	24
1521:	24	23	16	20	25	19	17	25
1529:	27	30	24	21	31	22	19	30
1537:	22	37	39	25	28	33	38	28
1545:	19	19	16	15	22	15	27	25
1553:	16	18	13	18	23	19	17	14
1561:	18	20	19	11	12	17	16	18
1569:	12	15	12	11	13	22	17	19
1577:	11	11	15	22	22	36	27	33
1585:	20	15	28	22	16	22	24	26
1593:	20	28	20	14	16	17	19	23
1601:	19	17	11	8	16	16	11	11
1609:	17	16	5	12	14	12	13	17
1617:	10	8	14	12	14	11	9	16
1625:	13	14	13	19	14	9	7	16
1633:	12	12	11	11	18	10	3	13
1641:	8	7	11	6	13	12	14	15
1649:	11	7	6	9	10	10	9	10
1657:	10	6	19	27	44	28	10	10

1665:	14	10	7	9	9	6	4	7

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Channel								
1673:	15	8	9	13	8	9	11	6
1681:	9	13	22	15	8	6	13	6
1689:	9	9	8	12	10	9	6	6
1697:	12	7	14	9	7	5	7	11
1705:	8	9	8	4	10	4	6	2
1713:	8	6	8	3	5	9	2	8
1721:	6	8	8	8	9	8	24	71
1729:	114	91	26	13	5	8	10	7
1737:	12	5	7	4	4	3	13	7
1745:	6	5	4	7	6	12	5	9
1753:	6	7	6	6	2	4	6	2
1761:	23	85	291	467	341	118	26	6
1769:	9	3	2	7	6	4	5	4
1777:	8	6	4	7	4	3	5	6
1785:	2	6	11	6	5	10	8	3
1793:	5	2	3	8	6	7	4	1
1801:	6	4	7	8	3	9	8	3
1809:	11	6	7	3	4	2	7	5
1817:	7	3	6	8	6	4	9	8
1825:	6	4	11	7	6	3	7	5
1833:	6	5	3	5	19	15	9	8
1841:	5	7	9	12	22	55	54	40
1849:	14	10	6	8	3	4	5	10
1857:	4	6	5	4	3	8	9	7
1865:	6	1	2	6	4	3	7	15
1873:	13	9	6	6	8	5	7	4
1881:	5	2	6	4	3	4	6	7
1889:	6	7	5	5	4	6	7	6
1897:	10	9	5	8	3	4	7	9
1905:	3	5	7	7	6	4	7	14
1913:	5	7	5	6	6	9	7	4
1921:	4	6	2	2	7	12	6	7
1929:	4	9	4	6	7	5	9	10
1937:	8	6	6	5	6	3	10	3
1945:	5	5	8	9	9	5	7	3
1953:	6	5	5	1	9	4	6	7
1961:	5	6	6	2	5	7	8	7
1969:	12	7	4	2	5	6	7	4
1977:	7	5	4	3	4	1	3	2
1985:	6	4	6	5	4	7	3	4
1993:	3	4	4	2	4	5	4	1
2001:	7	2	5	1	6	3	7	7
2009:	7	4	8	1	2	3	4	8
2017:	7	6	5	2	5	6	6	6
2025:	7	3	1	3	2	5	1	4
2033:	6	5	5	6	5	8	5	3
2041:	2	3	2	2	1	5	4	2
2049:	4	4	6	6	3	11	1	4
2057:	0	1	3	3	5	5	5	5
2065:	2	3	1	3	3	6	1	2
2073:	3	2	0	6	5	10	3	4
2081:	6	2	4	1	0	3	5	3
2089:	6	3	3	2	2	2	3	2

2097:	3	2	1	1	4	3	5	5

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Channel								
2105:	2	2	3	3	3	7	3	4
2113:	2	2	3	10	30	33	23	8
2121:	3	2	2	3	3	2	2	3
2129:	3	6	3	0	0	0	0	3
2137:	2	3	2	0	4	2	1	3
2145:	1	1	6	5	2	2	0	0
2153:	4	1	0	0	2	0	0	2
2161:	0	3	3	4	1	4	0	4
2169:	1	2	0	0	3	2	1	3
2177:	2	6	3	5	1	2	3	1
2185:	1	4	4	3	1	1	3	0
2193:	2	4	4	1	1	0	3	3
2201:	20	68	88	102	45	8	3	1
2209:	3	2	1	1	2	3	1	0
2217:	0	0	0	1	1	1	3	3
2225:	2	1	0	2	0	1	3	1
2233:	0	2	0	0	1	0	1	1
2241:	0	1	0	2	0	2	3	1
2249:	1	2	2	1	1	2	2	1
2257:	3	1	1	2	0	1	1	3
2265:	1	1	3	2	3	1	0	0
2273:	1	4	2	5	2	2	4	2
2281:	0	2	0	1	0	0	0	1
2289:	1	2	5	3	6	4	4	0
2297:	2	2	1	1	1	1	1	2
2305:	1	0	2	4	2	1	1	2
2313:	1	1	1	2	1	3	0	0
2321:	0	0	1	0	1	0	0	1
2329:	0	1	2	2	1	2	0	1
2337:	2	0	2	0	1	3	1	1
2345:	0	2	0	1	0	0	2	4
2353:	0	1	2	0	1	1	0	1
2361:	0	1	0	1	1	1	1	1
2369:	0	1	1	1	1	1	0	1
2377:	0	0	0	3	1	1	0	0
2385:	0	1	1	0	0	0	1	3
2393:	0	2	0	2	1	1	1	0
2401:	0	0	3	3	2	1	1	0
2409:	1	0	1	1	0	0	3	0
2417:	2	0	0	0	1	2	1	1
2425:	0	0	0	1	0	0	1	0
2433:	0	2	1	0	1	0	0	1
2441:	1	1	3	6	15	22	32	21
2449:	9	1	0	0	0	0	0	0
2457:	0	2	0	1	2	0	0	2
2465:	0	0	0	1	1	0	0	0
2473:	0	0	0	0	0	0	0	1
2481:	1	0	0	0	0	0	2	0
2489:	1	1	0	1	0	0	0	0
2497:	0	0	0	3	1	1	1	0
2505:	1	0	0	0	1	0	1	1
2513:	0	1	0	0	2	0	0	0
2521:	0	1	0	1	0	0	0	1

2529:	1	1	0	0	0	1	1	0

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Channel								
2537:	0	1	0	0	1	0	0	1
2545:	0	1	1	0	1	0	0	0
2553:	1	0	0	1	0	1	1	0
2561:	0	0	0	0	0	0	0	0
2569:	1	0	1	1	1	1	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	1	0	0	1	0	0
2593:	0	0	1	0	0	0	0	0
2601:	0	2	0	1	0	0	1	1
2609:	0	0	1	8	11	15	8	1
2617:	1	0	0	0	0	0	0	0
2625:	0	0	0	0	1	1	1	0
2633:	0	2	0	1	1	0	0	0
2641:	1	0	0	0	0	1	1	1
2649:	0	0	0	0	0	1	0	0
2657:	1	1	0	0	2	0	0	0
2665:	0	0	0	0	1	1	0	0
2673:	0	0	0	0	1	0	0	0
2681:	0	0	0	1	0	0	0	0
2689:	0	1	2	0	0	1	0	0
2697:	0	0	0	1	0	0	0	0
2705:	0	0	0	1	1	0	0	0
2713:	0	1	1	0	1	0	0	0
2721:	0	1	0	0	0	1	0	0
2729:	0	0	0	1	1	0	2	0
2737:	1	2	0	0	0	0	0	0
2745:	0	0	0	0	0	0	0	0
2753:	0	0	0	0	1	0	0	1
2761:	0	1	0	0	0	0	0	2
2769:	4	0	0	0	0	0	1	0
2777:	0	0	0	0	0	0	0	1
2785:	0	1	0	1	0	0	0	1
2793:	0	1	0	0	0	0	0	0
2801:	0	1	0	0	0	1	0	1
2809:	0	0	3	0	1	0	0	1
2817:	0	0	0	0	0	0	0	0
2825:	1	0	0	1	1	1	0	0
2833:	0	0	0	0	1	0	0	0
2841:	1	1	0	0	0	0	0	0
2849:	0	0	0	1	0	1	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	1	0	0	0
2881:	0	0	0	1	0	0	0	0
2889:	0	1	0	1	0	1	0	0
2897:	0	0	0	0	1	0	0	0
2905:	0	0	0	0	0	1	0	1
2913:	0	1	0	0	0	0	0	0
2921:	0	1	0	0	0	1	0	0
2929:	1	0	0	1	1	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	1	0
2953:	0	0	0	1	0	0	0	0

2961:	0	0	0	0	0	0	0	2

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

3393:	0	0	0	0	1	1	0	0

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Channel								
3401:	0	0	0	0	1	0	0	0
3409:	0	0	1	0	0	0	0	0
3417:	0	1	0	1	0	0	0	1
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	1	0
3441:	0	0	0	1	0	1	0	0
3449:	0	1	0	0	1	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	1	0	0	0	0
3481:	0	1	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	1	0	1
3505:	1	0	0	0	0	0	0	1
3513:	0	1	0	0	0	1	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	1	0	0	1	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	1	0	0	0
3553:	0	0	1	0	0	0	0	1
3561:	1	0	1	0	0	0	0	0
3569:	1	0	0	0	0	0	1	0
3577:	0	0	0	0	0	0	0	1
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	1	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	1	0	0	0	0	0	0	0
3625:	1	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	1	1
3641:	0	0	0	1	0	0	1	0
3649:	0	0	0	0	0	0	0	3
3657:	0	0	0	0	0	0	0	1
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:	1	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	1	0	0	0	0	0	0	1
3729:	0	0	0	0	0	0	1	0
3737:	0	1	0	0	1	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	1	0	0	0	0
3793:	0	0	0	0	1	0	0	0
3801:	0	0	0	0	0	1	0	0
3809:	1	1	0	1	0	0	0	0
3817:	0	0	0	0	0	0	1	0

3825:	0	0	0	1	1	0	0	0

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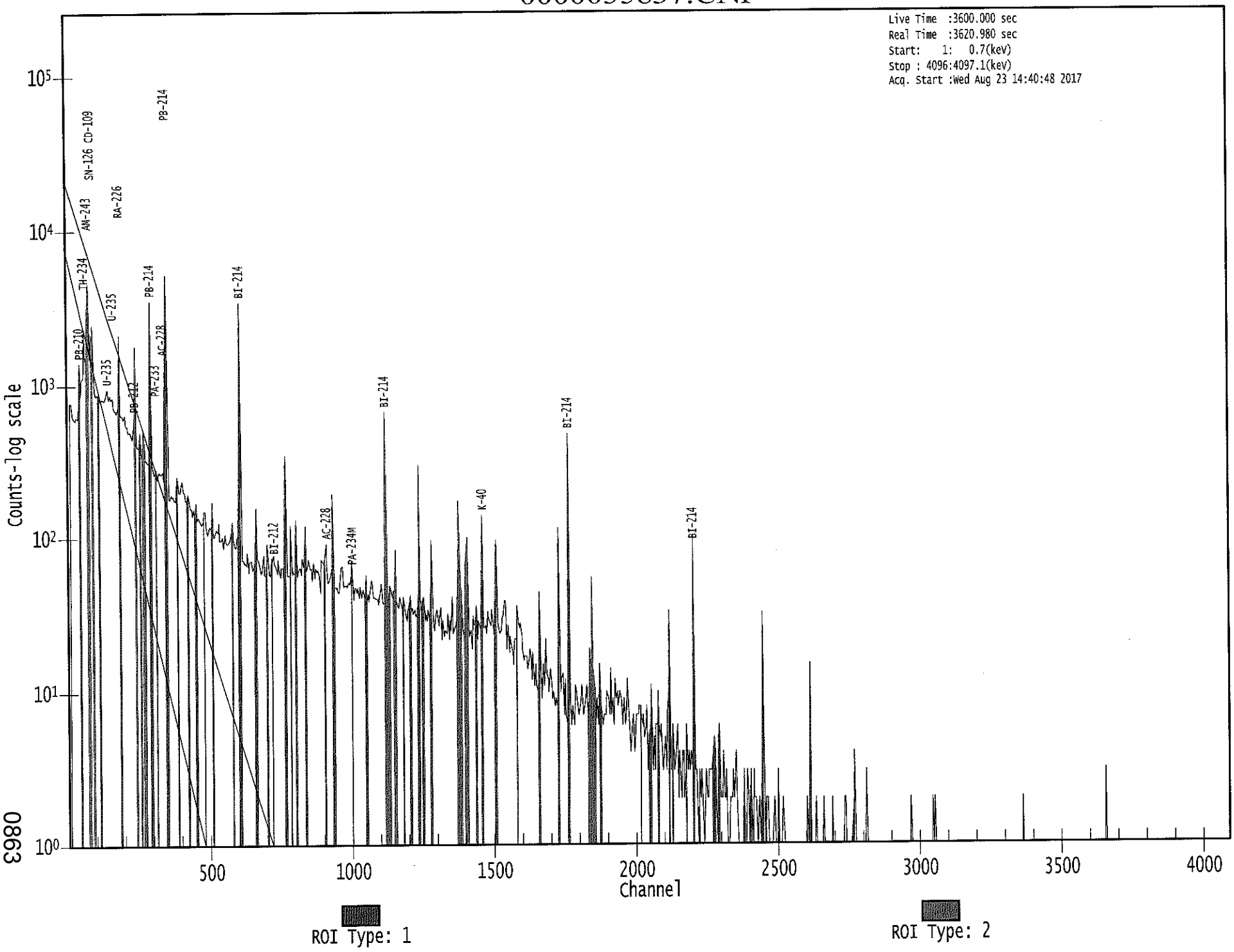
Channel								
3833:	0	1	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	1	0	0	0	0	0
3857:	0	0	0	1	1	1	0	0
3865:	0	0	0	0	1	0	1	0
3873:	1	0	0	0	0	0	0	0
3881:	0	1	0	0	0	0	0	0
3889:	0	0	0	0	0	1	1	0
3897:	0	0	0	0	1	0	0	0
3905:	0	0	0	0	0	0	0	1
3913:	0	1	0	0	0	1	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0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

0000055837.CNF



0863

Apex-Gamma

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-14
Sample Description	: HTC-A07-S001-1824-01
Sample Type	: SOIL
Sample Size	: 6.561E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:55:46AM
Acquisition Started	: 8/23/2017 2:41:02PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3625.4 seconds
Dead Time	: 0.70 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55838

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 3:43:00PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.17	75.22	0.0000	0.00
2	85.12	84.18	0.0000	0.00
3	88.26	87.32	0.0000	0.00
4	93.15	92.21	0.0000	0.00
5	186.12	185.21	0.0000	0.00
6	210.34	209.44	0.0000	0.00
7	217.25	216.35	0.0000	0.00
8	238.79	237.90	0.0000	0.00
9	241.81	240.92	0.0000	0.00
10	270.34	269.46	0.0000	0.00
11	294.96	294.09	0.0000	0.00
12	338.10	337.24	0.0000	0.00
13	352.07	351.22	0.0000	0.00
14	430.64	429.82	0.0000	0.00
15	506.07	505.27	0.0000	0.00
16	510.79	510.00	0.0000	0.00
17	583.11	582.34	0.0000	0.00
18	609.47	608.71	0.0000	0.00
19	767.78	767.08	0.0000	0.00
20	794.81	794.12	0.0000	0.00
21	859.67	859.01	0.0000	0.00
22	911.19	910.55	0.0000	0.00
23	969.55	968.94	0.0000	0.00
24	1119.89	1119.34	0.0000	0.00
25	1304.48	1304.03	0.0000	0.00
26	1337.43	1336.99	0.0000	0.00
27	1452.34	1451.96	0.0000	0.00
28	1460.56	1460.18	0.0000	0.00
29	1472.48	1472.11	0.0000	0.00
30	1570.09	1569.77	0.0000	0.00
31	1588.33	1588.02	0.0000	0.00
32	1593.31	1593.00	0.0000	0.00
33	1676.03	1675.76	0.0000	0.00
34	1730.04	1729.80	0.0000	0.00
35	1764.82	1764.60	0.0000	0.00
36	1888.86	1888.71	0.0000	0.00
37	2167.98	2168.00	0.0000	0.00
38	2203.35	2203.40	0.0000	0.00
39	2244.48	2244.55	0.0000	0.00
40	2404.76	2404.93	0.0000	0.00
41	2448.30	2448.50	0.0000	0.00
42	2614.07	2614.39	0.0000	0.00

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 3:43:00PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.17	69 -	80	75.22	1.17E+03	173.18	3.15E+03	3.80
M	2	85.12	82 -	96	84.18	1.46E+02	75.86	1.15E+03	2.85
m	3	88.26	82 -	96	87.32	2.99E+02	133.54	2.19E+03	3.20
m	4	93.15	82 -	96	92.21	3.51E+02	131.24	2.06E+03	3.21
	5	186.12	179 -	190	185.21	1.82E+02	110.65	1.44E+03	2.38
	6	210.34	207 -	213	209.44	7.34E+01	63.79	6.87E+02	3.18
	7	217.25	213 -	219	216.35	6.62E+01	61.69	6.38E+02	1.84
M	8	238.79	234 -	245	237.90	6.73E+02	79.39	6.31E+02	2.33
m	9	241.81	234 -	245	240.92	1.74E+02	81.02	5.76E+02	2.33
	10	270.34	267 -	273	269.46	6.56E+01	50.77	4.23E+02	2.41
	11	294.96	290 -	297	294.09	2.48E+02	61.68	4.70E+02	2.35
	12	338.10	332 -	341	337.24	1.60E+02	62.36	4.63E+02	2.43
	13	352.07	347 -	356	351.22	4.12E+02	67.25	4.13E+02	2.30
	14	430.64	428 -	432	429.82	3.36E+01	27.08	1.31E+02	3.02
M	15	506.07	503 -	515	505.27	1.82E+01	22.00	1.01E+02	2.54
m	16	510.79	503 -	515	510.00	1.18E+02	41.52	2.09E+02	2.70
	17	583.11	579 -	587	582.34	1.86E+02	42.68	1.63E+02	2.36
	18	609.47	603 -	615	608.71	2.94E+02	62.52	3.10E+02	2.20
	19	767.78	760 -	772	767.08	3.92E+01	45.72	2.28E+02	4.27
	20	794.81	791 -	798	794.12	2.58E+01	25.69	9.45E+01	1.43
	21	859.67	857 -	861	859.01	1.61E+01	17.59	5.38E+01	2.76
	22	911.19	907 -	915	910.55	9.48E+01	30.94	8.65E+01	2.24
	23	969.55	966 -	972	968.94	3.81E+01	29.42	1.18E+02	1.93
	24	1119.89	1115 -	1122	1119.34	4.75E+01	28.43	1.01E+02	2.22
	25	1304.48	1297 -	1309	1304.03	2.73E+01	28.66	8.13E+01	7.51
	26	1337.43	1334 -	1341	1336.99	1.27E+01	16.37	3.66E+01	1.05
M	27	1452.34	1448 -	1465	1451.96	8.23E+00	11.69	1.78E+01	2.86
m	28	1460.56	1448 -	1465	1460.18	5.17E+02	46.53	1.30E+01	2.87
	29	1472.48	1470 -	1475	1472.11	1.00E+01	9.11	8.00E+00	1.32
	30	1570.09	1565 -	1574	1569.77	1.30E+01	7.21	0.00E+00	7.75
M	31	1588.33	1583 -	1604	1588.02	1.04E+01	16.05	3.40E+01	2.90
m	32	1593.31	1583 -	1604	1593.00	7.94E+00	14.56	2.07E+01	2.64
	33	1676.03	1672 -	1681	1675.76	1.06E+01	10.68	1.08E+01	2.97
	34	1730.04	1727 -	1733	1729.80	9.64E+00	7.50	2.73E+00	3.40
	35	1764.82	1760 -	1769	1764.60	3.86E+01	14.90	8.84E+00	4.00
	36	1888.86	1885 -	1891	1888.71	7.00E+00	5.29	0.00E+00	3.31
	37	2167.98	2163 -	2172	2168.00	7.00E+00	9.90	1.00E+01	3.23
	38	2203.35	2199 -	2206	2203.40	1.40E+01	10.20	8.00E+00	3.87
	39	2244.48	2241 -	2247	2244.55	7.10E+00	8.03	5.80E+00	2.19
	40	2404.76	2400 -	2409	2404.93	1.05E+01	8.77	4.92E+00	7.10

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2448.30	2443 -	2451	2448.50	6.00E+00	4.90	0.00E+00	1.24
42	2614.07	2609 -	2618	2614.39	4.60E+01	15.94	1.00E+01	3.72

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 : 8/23/2017 3:43:00PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	76.17	69 -	80	1.17E+03	173.18	3.15E+03	1.31E+02
M	2	85.12	82 -	96	1.46E+02	75.86	1.15E+03	5.59E+01
m	3	88.26	82 -	96	2.99E+02	133.54	2.19E+03	7.70E+01
m	4	93.15	82 -	96	3.51E+02	131.24	2.06E+03	7.46E+01
	5	186.12	179 -	190	1.82E+02	110.65	1.44E+03	8.82E+01
	6	210.34	207 -	213	7.34E+01	63.79	6.87E+02	5.05E+01
	7	217.25	213 -	219	6.62E+01	61.69	6.38E+02	4.89E+01
M	8	238.79	234 -	245	6.73E+02	79.39	6.31E+02	4.13E+01
m	9	241.81	234 -	245	1.74E+02	81.02	5.76E+02	3.95E+01
	10	270.34	267 -	273	6.56E+01	50.77	4.23E+02	3.96E+01
	11	294.96	290 -	297	2.48E+02	61.68	4.70E+02	4.36E+01
	12	338.10	332 -	341	1.60E+02	62.36	4.63E+02	4.69E+01
	13	352.07	347 -	356	4.12E+02	67.25	4.13E+02	4.41E+01
	14	430.64	428 -	432	3.36E+01	27.08	1.31E+02	2.01E+01
M	15	506.07	503 -	515	1.82E+01	22.00	1.01E+02	1.65E+01
m	16	510.79	503 -	515	1.18E+02	41.52	2.09E+02	2.38E+01
	17	583.11	579 -	587	1.86E+02	42.68	1.63E+02	2.70E+01
	18	609.47	603 -	615	2.94E+02	62.52	3.10E+02	4.30E+01
	19	767.78	760 -	772	3.92E+01	45.72	2.28E+02	3.61E+01
	20	794.81	791 -	798	2.58E+01	25.69	9.45E+01	1.94E+01
	21	859.67	857 -	861	1.61E+01	17.59	5.38E+01	1.29E+01
	22	911.19	907 -	915	9.48E+01	30.94	8.65E+01	1.98E+01
	23	969.55	966 -	972	3.81E+01	29.42	1.18E+02	2.20E+01
	24	1119.89	1115 -	1122	4.75E+01	28.43	1.01E+02	2.04E+01
	25	1304.48	1297 -	1309	2.73E+01	28.66	8.13E+01	2.19E+01

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	26	1337.43	1334 -	1341	1.27E+01	16.37	3.66E+01	1.21E+01
M	27	1452.34	1448 -	1465	8.23E+00	11.69	1.78E+01	6.94E+00
m	28	1460.56	1448 -	1465	5.17E+02	46.53	1.30E+01	5.94E+00
	29	1472.48	1470 -	1475	1.00E+01	9.11	8.00E+00	5.39E+00
	30	1570.09	1565 -	1574	1.30E+01	7.21	0.00E+00	0.00E+00
M	31	1588.33	1583 -	1604	1.04E+01	16.05	3.40E+01	9.59E+00
m	32	1593.31	1583 -	1604	7.94E+00	14.56	2.07E+01	7.47E+00
	33	1676.03	1672 -	1681	1.06E+01	10.68	1.08E+01	6.95E+00
	34	1730.04	1727 -	1733	9.64E+00	7.50	2.73E+00	3.46E+00
	35	1764.82	1760 -	1769	3.86E+01	14.90	8.84E+00	6.76E+00
	36	1888.86	1885 -	1891	7.00E+00	5.29	0.00E+00	0.00E+00
	37	2167.98	2163 -	2172	7.00E+00	9.90	1.00E+01	6.88E+00
	38	2203.35	2199 -	2206	1.40E+01	10.20	8.00E+00	5.70E+00
	39	2244.48	2241 -	2247	7.10E+00	8.03	5.80E+00	4.94E+00
	40	2404.76	2400 -	2409	1.05E+01	8.77	4.92E+00	4.85E+00
	41	2448.30	2443 -	2451	6.00E+00	4.90	0.00E+00	0.00E+00
	42	2614.07	2609 -	2618	4.60E+01	15.94	1.00E+01	6.88E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/23/2017 3:43:00PM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	76.17	69 -	80	75.22	1.17E+03	173.18	3.15E+03	.....
M	2	85.12	82 -	96	84.18	1.46E+02	75.86	1.15E+03	TH-231
m	3	88.26	82 -	96	87.32	2.99E+02	133.54	2.19E+03	LU-176
									CD-109
									SN-126
m	4	93.15	82 -	96	92.21	3.51E+02	131.24	2.06E+03	GA-67
	5	186.12	179 -	190	185.21	1.82E+02	110.65	1.44E+03	RA-226
	6	210.34	207 -	213	209.44	7.34E+01	63.79	6.87E+02	CM-243

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	7	217.25	213 -	219	216.35	6.62E+01	61.69	6.38E+02	.....
M	8	238.79	234 -	245	237.90	6.73E+02	79.39	6.31E+02	PB-212
m	9	241.81	234 -	245	240.92	1.74E+02	81.02	5.76E+02	RA-224
	10	270.34	267 -	273	269.46	6.56E+01	50.77	4.23E+02	.....
	11	294.96	290 -	297	294.09	2.48E+02	61.68	4.70E+02	PB-214
	12	338.10	332 -	341	337.24	1.60E+02	62.36	4.63E+02	AC-228
	13	352.07	347 -	356	351.22	4.12E+02	67.25	4.13E+02	PB-214
	14	430.64	428 -	432	429.82	3.36E+01	27.08	1.31E+02	.....
M	15	506.07	503 -	515	505.27	1.82E+01	22.00	1.01E+02	.....
m	16	510.79	503 -	515	510.00	1.18E+02	41.52	2.09E+02	.....
	17	583.11	579 -	587	582.34	1.86E+02	42.68	1.63E+02	TL-208
	18	609.47	603 -	615	608.71	2.94E+02	62.52	3.10E+02	BI-214
	19	767.78	760 -	772	767.08	3.92E+01	45.72	2.28E+02	.....
	20	794.81	791 -	798	794.12	2.58E+01	25.69	9.45E+01	.....
	21	859.67	857 -	861	859.01	1.61E+01	17.59	5.38E+01	TL-208
	22	911.19	907 -	915	910.55	9.48E+01	30.94	8.65E+01	AC-228 TL-204
	23	969.55	966 -	972	968.94	3.81E+01	29.42	1.18E+02	AC-228
	24	1119.89	1115 -	1122	1119.34	4.75E+01	28.43	1.01E+02	BI-214 SC-46
	25	1304.48	1297 -	1309	1304.03	2.73E+01	28.66	8.13E+01	.....
	26	1337.43	1334 -	1341	1336.99	1.27E+01	16.37	3.66E+01	.....
M	27	1452.34	1448 -	1465	1451.96	8.23E+00	11.69	1.78E+01	.....
m	28	1460.56	1448 -	1465	1460.18	5.17E+02	46.53	1.30E+01	K-40
	29	1472.48	1470 -	1475	1472.11	1.00E+01	9.11	8.00E+00	.....
	30	1570.09	1565 -	1574	1569.77	1.30E+01	7.21	0.00E+00	.....
M	31	1588.33	1583 -	1604	1588.02	1.04E+01	16.05	3.40E+01	.....
m	32	1593.31	1583 -	1604	1593.00	7.94E+00	14.56	2.07E+01	.....
	33	1676.03	1672 -	1681	1675.76	1.06E+01	10.68	1.08E+01	.....
	34	1730.04	1727 -	1733	1729.80	9.64E+00	7.50	2.73E+00	.....
	35	1764.82	1760 -	1769	1764.60	3.86E+01	14.90	8.84E+00	BI-214
	36	1888.86	1885 -	1891	1888.71	7.00E+00	5.29	0.00E+00	.....
	37	2167.98	2163 -	2172	2168.00	7.00E+00	9.90	1.00E+01	.....
	38	2203.35	2199 -	2206	2203.40	1.40E+01	10.20	8.00E+00	BI-214
	39	2244.48	2241 -	2247	2244.55	7.10E+00	8.03	5.80E+00	.....
	40	2404.76	2400 -	2409	2404.93	1.05E+01	8.77	4.92E+00	.....
	41	2448.30	2443 -	2451	2448.50	6.00E+00	4.90	0.00E+00	.....
	42	2614.07	2609 -	2618	2614.39	4.60E+01	15.94	1.00E+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 1707090-14

HTC-A07-S001-1824-01

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/23/2017 3:43:00PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.17	1.17E+03	173.18	2.32E-02	1.91E-03
M	2	85.12	1.46E+02	75.86	2.36E-02	2.10E-03
m	3	88.26	2.99E+02	133.54	2.37E-02	2.16E-03
m	4	93.15	3.51E+02	131.24	2.36E-02	2.09E-03
	5	186.12	1.82E+02	110.65	1.69E-02	1.40E-03
	6	210.34	7.34E+01	63.79	1.53E-02	1.28E-03
	7	217.25	6.62E+01	61.69	1.48E-02	1.25E-03
M	8	238.79	6.73E+02	79.39	1.36E-02	1.14E-03
m	9	241.81	1.74E+02	81.02	1.34E-02	1.13E-03
	10	270.34	6.56E+01	50.77	1.20E-02	9.90E-04
	11	294.96	2.48E+02	61.68	1.10E-02	9.14E-04
	12	338.10	1.60E+02	62.36	9.61E-03	8.23E-04
	13	352.07	4.12E+02	67.25	9.21E-03	7.94E-04
	14	430.64	3.36E+01	27.08	7.48E-03	6.94E-04
M	15	506.07	1.82E+01	22.00	6.34E-03	6.63E-04
m	16	510.79	1.18E+02	41.52	6.28E-03	6.61E-04
	17	583.11	1.86E+02	42.68	5.51E-03	6.31E-04
	18	609.47	2.94E+02	62.52	5.27E-03	6.20E-04
	19	767.78	3.92E+01	45.72	4.23E-03	4.65E-04
	20	794.81	2.58E+01	25.69	4.10E-03	4.32E-04
	21	859.67	1.61E+01	17.59	3.81E-03	3.50E-04
	22	911.19	9.48E+01	30.94	3.62E-03	2.99E-04
	23	969.55	3.81E+01	29.42	3.42E-03	2.85E-04
	24	1119.89	4.75E+01	28.43	3.02E-03	2.50E-04
	25	1304.48	2.73E+01	28.66	2.64E-03	2.29E-04
	26	1337.43	1.27E+01	16.37	2.58E-03	2.26E-04
M	27	1452.34	8.23E+00	11.69	2.40E-03	2.09E-04
m	28	1460.56	5.17E+02	46.53	2.39E-03	2.08E-04
	29	1472.48	1.00E+01	9.11	2.37E-03	2.06E-04
	30	1570.09	1.30E+01	7.21	2.23E-03	1.91E-04
M	31	1588.33	1.04E+01	16.05	2.21E-03	1.89E-04
m	32	1593.31	7.94E+00	14.56	2.20E-03	1.88E-04
	33	1676.03	1.06E+01	10.68	2.10E-03	1.75E-04
	34	1730.04	9.64E+00	7.50	2.04E-03	1.67E-04
	35	1764.82	3.86E+01	14.90	2.00E-03	1.62E-04
	36	1888.86	7.00E+00	5.29	1.87E-03	1.51E-04
	37	2167.98	7.00E+00	9.90	1.61E-03	1.51E-04
	38	2203.35	1.40E+01	10.20	1.58E-03	1.51E-04
	39	2244.48	7.10E+00	8.03	1.55E-03	1.51E-04
	40	2404.76	1.05E+01	8.77	1.43E-03	1.51E-04
	41	2448.30	6.00E+00	4.90	1.39E-03	1.51E-04
	42	2614.07	4.60E+01	15.94	1.28E-03	1.51E-04

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

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 : 8/23/2017 3:43:00PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.17	1.17E+03	173.18			1.17E+03	1.73E+02
M	2	85.12	1.46E+02	75.86			1.46E+02	7.59E+01
m	3	88.26	2.99E+02	133.54			2.99E+02	1.34E+02
m	4	93.15	3.51E+02	131.24	5.99E+01	8.61E+00	2.91E+02	1.32E+02
	5	186.12	1.82E+02	110.65	2.43E+01	7.50E+00	1.58E+02	1.11E+02
	6	210.34	7.34E+01	63.79			7.34E+01	6.38E+01
	7	217.25	6.62E+01	61.69			6.62E+01	6.17E+01
M	8	238.79	6.73E+02	79.39	1.06E+01	6.01E+00	6.62E+02	7.96E+01
m	9	241.81	1.74E+02	81.02			1.74E+02	8.10E+01
	10	270.34	6.56E+01	50.77			6.56E+01	5.08E+01
	11	294.96	2.48E+02	61.68			2.48E+02	6.17E+01
	12	338.10	1.60E+02	62.36			1.60E+02	6.24E+01
	13	352.07	4.12E+02	67.25			4.12E+02	6.72E+01
	14	430.64	3.36E+01	27.08			3.36E+01	2.71E+01
M	15	506.07	1.82E+01	22.00			1.82E+01	2.20E+01
m	16	510.79	1.18E+02	41.52	4.55E+01	4.99E+00	7.29E+01	4.18E+01
	17	583.11	1.86E+02	42.68			1.86E+02	4.27E+01
	18	609.47	2.94E+02	62.52			2.94E+02	6.25E+01
	19	767.78	3.92E+01	45.72			3.92E+01	4.57E+01
	20	794.81	2.58E+01	25.69			2.58E+01	2.57E+01
	21	859.67	1.61E+01	17.59			1.61E+01	1.76E+01
	22	911.19	9.48E+01	30.94			9.48E+01	3.09E+01
	23	969.55	3.81E+01	29.42			3.81E+01	2.94E+01
	24	1119.89	4.75E+01	28.43			4.75E+01	2.84E+01
	25	1304.48	2.73E+01	28.66			2.73E+01	2.87E+01
	26	1337.43	1.27E+01	16.37			1.27E+01	1.64E+01
M	27	1452.34	8.23E+00	11.69			8.23E+00	1.17E+01
m	28	1460.56	5.17E+02	46.53			5.17E+02	4.65E+01
	29	1472.48	1.00E+01	9.11			1.00E+01	9.11E+00
	30	1570.09	1.30E+01	7.21			1.30E+01	7.21E+00
M	31	1588.33	1.04E+01	16.05			1.04E+01	1.60E+01
m	32	1593.31	7.94E+00	14.56			7.94E+00	1.46E+01
	33	1676.03	1.06E+01	10.68			1.06E+01	1.07E+01
	34	1730.04	9.64E+00	7.50			9.64E+00	7.50E+00
	35	1764.82	3.86E+01	14.90			3.86E+01	1.49E+01

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	1888.86	7.00E+00	5.29			7.00E+00	5.29E+00
37	2167.98	7.00E+00	9.90			7.00E+00	9.90E+00
38	2203.35	1.40E+01	10.20			1.40E+01	1.02E+01
39	2244.48	7.10E+00	8.03			7.10E+00	8.03E+00
40	2404.76	1.05E+01	8.77			1.05E+01	8.77E+00
41	2448.30	6.00E+00	4.90			6.00E+00	4.90E+00
42	2614.07	4.60E+01	15.94			4.60E+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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 3:43:00PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.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	76.17	1.17E+03	173.18			1.17E+03	1.73E+02
M	2	85.12	1.46E+02	75.86			1.46E+02	7.59E+01
m	3	88.26	2.99E+02	133.54			2.99E+02	1.34E+02
m	4	93.15	3.51E+02	131.24	5.99E+01	8.61E+00	2.91E+02	1.32E+02
	5	186.12	1.82E+02	110.65	2.43E+01	7.50E+00	1.58E+02	1.11E+02
	6	210.34	7.34E+01	63.79			7.34E+01	6.38E+01
	7	217.25	6.62E+01	61.69			6.62E+01	6.17E+01
M	8	238.79	6.73E+02	79.39	1.06E+01	6.01E+00	6.62E+02	7.96E+01
m	9	241.81	1.74E+02	81.02			1.74E+02	8.10E+01
	10	270.34	6.56E+01	50.77			6.56E+01	5.08E+01
	11	294.96	2.48E+02	61.68			2.48E+02	6.17E+01
	12	338.10	1.60E+02	62.36			1.60E+02	6.24E+01
	13	352.07	4.12E+02	67.25			4.12E+02	6.72E+01
	14	430.64	3.36E+01	27.08			3.36E+01	2.71E+01
M	15	506.07	1.82E+01	22.00			1.82E+01	2.20E+01
m	16	510.79	1.18E+02	41.52	4.55E+01	4.99E+00	7.29E+01	4.18E+01
	17	583.11	1.86E+02	42.68			1.86E+02	4.27E+01
	18	609.47	2.94E+02	62.52			2.94E+02	6.25E+01
	19	767.78	3.92E+01	45.72			3.92E+01	4.57E+01
	20	794.81	2.58E+01	25.69			2.58E+01	2.57E+01
	21	859.67	1.61E+01	17.59			1.61E+01	1.76E+01

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	22	911.19	9.48E+01	30.94			9.48E+01	3.09E+01
	23	969.55	3.81E+01	29.42			3.81E+01	2.94E+01
	24	1119.89	4.75E+01	28.43			4.75E+01	2.84E+01
	25	1304.48	2.73E+01	28.66			2.73E+01	2.87E+01
	26	1337.43	1.27E+01	16.37			1.27E+01	1.64E+01
M	27	1452.34	8.23E+00	11.69			8.23E+00	1.17E+01
m	28	1460.56	5.17E+02	46.53			5.17E+02	4.65E+01
	29	1472.48	1.00E+01	9.11			1.00E+01	9.11E+00
	30	1570.09	1.30E+01	7.21			1.30E+01	7.21E+00
M	31	1588.33	1.04E+01	16.05			1.04E+01	1.60E+01
m	32	1593.31	7.94E+00	14.56			7.94E+00	1.46E+01
	33	1676.03	1.06E+01	10.68			1.06E+01	1.07E+01
	34	1730.04	9.64E+00	7.50			9.64E+00	7.50E+00
	35	1764.82	3.86E+01	14.90			3.86E+01	1.49E+01
	36	1888.86	7.00E+00	5.29			7.00E+00	5.29E+00
	37	2167.98	7.00E+00	9.90			7.00E+00	9.90E+00
	38	2203.35	1.40E+01	10.20			1.40E+01	1.02E+01
	39	2244.48	7.10E+00	8.03			7.10E+00	8.03E+00
	40	2404.76	1.05E+01	8.77			1.05E+01	8.77E+00
	41	2448.30	6.00E+00	4.90			6.00E+00	4.90E+00
	42	2614.07	4.60E+01	15.94			4.60E+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	0.990	1460.81	*	10.67	2.32E+01	2.95E+00
CD-109	0.991	88.03	*	3.72	4.50E+00	2.07E+00
SN-126	0.926	87.57	*	37.00	3.90E-01	1.78E-01
TL-208	0.968	583.14	*	30.22	1.28E+00	3.28E-01
		860.37	*	4.48	1.08E+00	1.18E+00
		2614.66	*	35.85	1.15E+00	4.20E-01
PB-212	0.894	238.63	*	44.60	1.25E+00	1.84E-01
		300.09		3.41		
BI-214	0.983	609.31	*	46.30	1.38E+00	3.35E-01
		1120.29	*	15.10	1.19E+00	7.21E-01

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.983	1764.49	*	15.80	1.40E+00	5.52E-01
		2204.22	*	4.98	2.03E+00	1.49E+00
PB-214	0.994	295.21	*	19.19	1.34E+00	3.51E-01
		351.92	*	37.19	1.37E+00	2.54E-01
RA-224	0.895	240.98	*	3.95	3.76E+00	1.78E+00
RA-226	0.999	186.21	*	3.28	3.25E+00	6.37E+00
AC-228	0.988	338.32	*	11.40	1.67E+00	6.67E-01
		911.07	*	27.70	1.08E+00	3.64E-01
		969.11	*	16.60	7.67E-01	5.96E-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 : 8/23/2017 3:43:00PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.17	3.24701E-01	7.41		
M	2	85.12	4.05925E-02	25.95	Tol.	TH-231
m	4	93.15	8.08950E-02	22.58		
	6	210.34	2.03907E-02	43.45	Tol.	CM-243
	7	217.25	1.83813E-02	46.62		
	10	270.34	1.82351E-02	38.67		
	14	430.64	9.32660E-03	40.33		
M	15	506.07	5.04175E-03	60.61		
m	16	510.79	2.02419E-02	28.69		
	19	767.78	1.08960E-02	58.28		
	20	794.81	7.15373E-03	49.88	Sum	
	25	1304.48	7.59191E-03	52.43		
	26	1337.43	3.53047E-03	64.40		
M	27	1452.34	2.28543E-03	71.07		
	29	1472.48	2.77778E-03	45.55	Sum	
	30	1570.09	3.61111E-03	27.74		
M	31	1588.33	2.89199E-03	77.07		
m	32	1593.31	2.20452E-03	91.73		
	33	1676.03	2.95139E-03	50.25		
	34	1730.04	2.67677E-03	38.92	Sum	

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
36	1888.86	1.94444E-03	37.80		
37	2167.98	1.94444E-03	70.71		
39	2244.48	1.97222E-03	56.56		
40	2404.76	2.92735E-03	41.63		
41	2448.30	1.66667E-03	40.82		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	2.32E+01	2.95E+00
CD-109	0.99	88.03	*	3.72	4.50E+00	2.07E+00
SN-126	0.92	87.57	*	37.00	3.90E-01	1.78E-01
TL-208	0.96	583.14	*	30.22	1.28E+00	3.28E-01
		860.37	*	4.48	1.08E+00	1.18E+00
		2614.66	*	35.85	1.15E+00	4.20E-01
PB-212	0.89	238.63	*	44.60	1.25E+00	1.84E-01
		300.09		3.41		
BI-214	0.98	609.31	*	46.30	1.38E+00	3.35E-01
		1120.29	*	15.10	1.19E+00	7.21E-01
		1764.49	*	15.80	1.40E+00	5.52E-01
		2204.22	*	4.98	2.03E+00	1.49E+00
PB-214	0.99	295.21	*	19.19	1.34E+00	3.51E-01
		351.92	*	37.19	1.37E+00	2.54E-01
RA-224	0.89	240.98	*	3.95	3.76E+00	1.78E+00
RA-226	0.99	186.21	*	3.28	3.25E+00	6.37E+00
AC-228	0.98	338.32	*	11.40	1.67E+00	6.67E-01
		911.07	*	27.70	1.08E+00	3.64E-01
		969.11	*	16.60	7.67E-01	5.96E-01

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

* = 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	0.990	2.32E+01	2.95E+00	
?	CD-109	0.991	4.50E+00	2.07E+00	
?	SN-126	0.926	3.90E-01	1.78E-01	
	TL-208	0.968	1.22E+00	2.53E-01	
	PB-212	0.894	1.25E+00	1.84E-01	
	BI-214	0.983	1.38E+00	2.62E-01	
	PB-214	0.994	1.36E+00	2.06E-01	
	RA-224	0.895	3.76E+00	1.78E+00	
	RA-226	0.999	3.25E+00	6.37E+00	
	AC-228	0.988	1.12E+00	2.82E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 3:43:00PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.17	3.24701E-01	7.41		
M	2	85.12	4.05925E-02	25.95	Tol.	TH-231
m	4	93.15	8.08950E-02	22.58		
	6	210.34	2.03907E-02	43.45	Tol.	CM-243
	7	217.25	1.83813E-02	46.62		
	10	270.34	1.82351E-02	38.67		
	14	430.64	9.32660E-03	40.33		
M	15	506.07	5.04175E-03	60.61		
m	16	510.79	2.02419E-02	28.69		
	19	767.78	1.08960E-02	58.28		
	20	794.81	7.15373E-03	49.88	Sum	
	25	1304.48	7.59191E-03	52.43		
	26	1337.43	3.53047E-03	64.40		
M	27	1452.34	2.28543E-03	71.07		
	29	1472.48	2.77778E-03	45.55	Sum	
	30	1570.09	3.61111E-03	27.74		
M	31	1588.33	2.89199E-03	77.07		
m	32	1593.31	2.20452E-03	91.73		
	33	1676.03	2.95139E-03	50.25		
	34	1730.04	2.67677E-03	38.92	Sum	
	36	1888.86	1.94444E-03	37.80		
	37	2167.98	1.94444E-03	70.71		
	39	2244.48	1.97222E-03	56.56		
	40	2404.76	2.92735E-03	41.63		
	41	2448.30	1.66667E-03	40.82		

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

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

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	7.55E-01	3.27E+00	3.27E+00
+		NA-22	1274.54		99.94	-2.77E-02	1.69E-01	1.69E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	-1.48E-02	9.80E-02	9.80E-02
+		K-40	1460.81	*	10.67	2.32E+01	1.33E+00	1.33E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-5.66E-02	8.16E-02	8.16E-02
			78.34		96.00	4.24E-01		1.04E-01
+		SC-46	889.25		99.98	-3.57E-02	2.93E-01	2.93E-01
			1120.51		99.99	-1.96E-02		4.38E-01
+		V-48	983.52		99.98	4.99E+00	9.75E+00	9.75E+00
			1312.10		97.50	1.99E+00		1.14E+01
+		CR-51	320.08		9.83	-3.22E-01	9.01E+00	9.01E+00
+		MN-54	834.83		99.97	1.29E-01	1.76E-01	1.76E-01
+		CO-56	846.75		99.96	7.76E-02	2.70E-01	2.70E-01
			1037.75		14.03	-2.04E-01		2.35E+00
			1238.25		67.00	2.61E-01		7.05E-01
			1771.40		15.51	0.00E+00		9.55E-01
			2598.48		16.90	-2.51E-01		9.25E-01
+		CO-57	122.06		85.51	-1.39E-02	8.66E-02	8.66E-02
			136.48		10.60	-5.16E-01		7.07E-01
+		CO-58	810.76		99.40	2.80E-02	3.21E-01	3.21E-01
+		FE-59	1099.22		56.50	8.15E-03	1.13E+00	1.13E+00
			1291.56		43.20	4.29E-01		1.61E+00
+		CO-60	1173.22		100.00	6.72E-02	1.54E-01	1.72E-01
			1332.49		100.00	1.26E-02		1.54E-01
+		ZN-65	1115.52		50.75	-4.28E-02	4.74E-01	4.74E-01
+		GA-67	93.31		35.70	3.69E+08	3.13E+08	3.13E+08
			208.95		2.24	-1.19E+09		4.71E+09
			300.22		16.00	1.98E+08		7.36E+08
+		SE-75	121.11		16.70	-5.16E-01	1.76E-01	6.05E-01
			136.00		59.20	-9.67E-02		1.76E-01
			264.65		59.80	-5.25E-02		2.02E-01
			279.53		25.20	3.48E-01		5.45E-01
			400.65		11.40	5.54E-01		1.32E+00
+		RB-82	776.52		13.00	2.43E+00	1.42E+01	1.42E+01
+		RB-83	520.41		46.00	3.14E-02	4.37E-01	4.37E-01
			529.64		30.30	-3.96E-01		5.95E-01
			552.65		16.40	3.55E-01		1.31E+00
+		KR-85	513.99		0.43	2.39E+01	2.72E+01	2.72E+01
+		SR-85	513.99		99.27	2.97E-01	3.38E-01	3.38E-01

Analysis Report for 1707090-14

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02		93.40	-9.44E-02	1.72E-01	2.62E-01
		1836.01		99.38	5.49E-02		1.72E-01
+	MO-93	263.06		56.72	1.52E-02	1.00E-01	1.25E-01
		684.67		99.68	-2.03E-02		1.14E-01
		1477.11		99.08	5.31E-03		1.00E-01
+	NB-93M	16.57		9.43	1.57E+01	7.99E+00	7.99E+00
+	NB-94	702.63		100.00	2.38E-02	1.20E-01	1.20E-01
		871.10		100.00	-2.02E-02		1.26E-01
+	NB-95	765.79		99.81	5.05E-01	1.00E+00	1.00E+00
+	NB-95M	235.69		25.00	1.55E+07	8.73E+07	8.73E+07
+	ZR-95	724.18		43.70	5.10E-02	6.26E-01	8.95E-01
		756.72		55.30	1.80E-01		6.26E-01
+	MO-99	181.06		6.20	-4.36E+09	6.55E+10	7.73E+10
		739.58		12.80	4.49E+09		6.55E+10
		778.00		4.50	1.58E+10		2.02E+11
+	RU-103	497.08		89.00	-2.51E-01	5.16E-01	5.16E-01
+	RU-106	621.84		9.80	1.44E-01	1.16E+00	1.16E+00
+	AG-108M	433.93		89.90	1.40E-02	9.57E-02	9.57E-02
		614.37		90.40	3.23E-03		1.04E-01
		722.95		90.50	-5.12E-02		1.43E-01
+	CD-109	88.03	*	3.72	4.50E+00	4.24E+00	4.24E+00
+	AG-110M	657.75		93.14	2.22E-02	1.63E-01	1.63E-01
		677.61		10.53	-3.09E-02		1.45E+00
		706.67		16.46	5.52E-01		9.76E-01
		763.93		21.98	-2.79E-01		7.75E-01
		884.67		71.63	-5.08E-02		2.18E-01
		1384.27		23.94	8.13E-02		6.65E-01
+	CD-113M	263.70		0.02	-1.18E+02	3.00E+02	3.00E+02
+	SN-113	255.12		1.93	-4.52E-01	2.26E-01	6.52E+00
		391.69		64.90	3.26E-02		2.26E-01
+	TE123M	159.00		84.10	9.74E-03	1.31E-01	1.31E-01
+	SB-124	602.71		97.87	1.35E-02	3.34E-01	3.34E-01
		645.85		7.26	4.76E-01		4.16E+00
		722.78		11.10	-1.31E+00		3.64E+00
		1691.02		49.00	-5.21E-02		5.86E-01
+	I-125	35.49		6.49	2.08E+00	5.60E+00	5.60E+00
+	SB-125	176.33		6.89	-2.07E-01	3.21E-01	9.95E-01
		427.89		29.33	-2.66E-03		3.21E-01
		463.38		10.35	2.70E-01		9.33E-01
		600.56		17.80	-1.14E-01		6.12E-01
		635.90		11.32	2.35E-01		9.91E-01
+	SB-126	414.70		83.30	-5.94E+00	2.45E+01	2.45E+01
		666.33		99.60	-5.70E+00		3.12E+01
		695.00		99.60	1.34E+01		3.13E+01
		720.50		53.80	-5.03E+01		5.76E+01
+	SN-126	87.57	*	37.00	3.90E-01	3.68E-01	3.68E-01
+	SB-127	473.00		25.00	-5.41E+05	1.81E+07	2.02E+07
		685.20		35.70	-3.21E+06		1.81E+07

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-127	783.80	14.70	9.20E+06	1.81E+07	4.91E+07
+	I-129	29.78	57.00	-2.04E-01	2.79E-01	2.79E-01
		33.60	13.20	-3.79E-01		9.43E-01
		39.58	7.52	-2.25E-01		1.31E+00
+	I-131	284.30	6.05	-4.87E+02	5.20E+02	6.01E+03
		364.48	81.20	1.34E+02		5.20E+02
		636.97	7.26	6.63E+02		7.37E+03
		722.89	1.80	-1.34E+04		3.73E+04
+	TE-132	49.72	13.10	-3.14E+08	1.20E+08	9.21E+08
		228.16	88.00	-4.95E+07		1.20E+08
+	BA-133	81.00	33.00	-7.63E-01	1.81E-01	2.41E-01
		302.84	17.80	9.64E-02		4.28E-01
		356.01	60.00	2.03E-02		1.81E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-3.26E+05	1.03E+05	1.03E+05
+	CS-134	563.23	8.38	-4.92E-02	1.35E-01	1.27E+00
		569.32	15.43	-7.08E-02		6.50E-01
		604.70	97.60	1.95E-03		1.35E-01
		795.84	85.40	1.52E-01		1.58E-01
		801.93	8.73	-8.07E-01		1.40E+00
+	CS-135	268.24	16.00	4.50E-02	4.82E-01	4.82E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	-2.97E+01	2.16E+01	1.55E+02
		163.89	4.61	3.74E+01		2.49E+02
		176.55	13.56	-1.02E+01		8.77E+01
		273.65	12.66	2.28E+01		1.12E+02
		340.57	48.50	-9.87E-01		3.76E+01
		818.50	99.70	-4.95E+00		2.16E+01
		1048.07	79.60	-4.68E+00		3.27E+01
		1235.34	19.70	9.62E+01		1.85E+02
+	CS-137	661.65	85.12	-6.66E-02	1.36E-01	1.36E-01
+	LA-138	788.74	34.00	8.13E-02	1.68E-01	3.44E-01
		1435.80	66.00	3.63E-02		1.68E-01
+	CE-139	165.85	80.35	-8.86E-02	1.24E-01	1.24E-01
+	BA-140	162.64	6.70	1.31E+01	7.41E+01	2.00E+02
		304.84	4.50	-2.00E+02		3.39E+02
		423.70	3.20	1.70E+02		5.64E+02
		437.55	2.00	6.92E+02		9.23E+02
		537.32	25.00	-1.02E+00		7.41E+01
+	LA-140	328.77	20.50	3.92E+01	3.01E+01	8.82E+01
		487.03	45.50	-1.67E+01		3.79E+01
		815.85	23.50	2.72E+01		1.08E+02
		1596.49	95.49	-7.22E-01		3.01E+01
+	CE-141	145.44	48.40	5.87E-01	1.10E+00	1.10E+00
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CE-144	133.54	10.80	-2.82E-01	7.06E-01	7.06E-01
+	PM-144	476.78	42.00	-8.50E-02	1.08E-01	2.58E-01
		618.01	98.60	-1.84E-02		1.08E-01
		696.49	99.49	9.11E-03		1.48E-01
+	PM-145	36.85	21.70	-3.22E-02	2.70E-01	5.05E-01
		37.36	39.70	-1.72E-02		2.70E-01
		42.30	15.10	-8.27E-01		5.99E-01
		72.40	2.31	-1.08E+01		3.81E+00
+	PM-146	453.90	39.94	3.80E-02	2.27E-01	2.27E-01
		735.90	14.01	1.41E-01		8.56E-01
		747.13	13.10	3.65E-01		9.12E-01
+	ND-147	91.11	28.90	3.07E+02	1.50E+02	1.50E+02
		531.02	13.10	1.90E+01		3.53E+02
+	PM-149	285.90	3.10	-5.92E+12	7.17E+13	7.17E+13
+	EU-152	121.78	20.50	-4.56E-02	2.84E-01	2.84E-01
		244.69	5.40	1.21E-01		1.56E+00
		344.27	19.13	1.58E-01		4.09E-01
		778.89	9.20	5.16E-02		1.35E+00
		964.01	10.40	3.53E-01		1.57E+00
		1085.78	7.22	1.24E+00		2.19E+00
		1112.02	9.60	7.88E-02		1.66E+00
		1407.95	14.94	5.83E-01		9.27E-01
+	GD-153	97.43	31.30	5.23E-03	2.74E-01	2.74E-01
		103.18	22.20	1.19E-01		3.48E-01
+	EU-154	123.07	40.50	3.43E-02	1.48E-01	1.48E-01
		723.30	19.70	3.94E-02		6.92E-01
		873.19	11.50	-5.15E-01		1.04E+00
		996.32	10.30	-2.52E-02		1.34E+00
		1004.76	17.90	-6.84E-01		7.39E-01
		1274.45	35.50	-7.40E-02		4.51E-01
+	EU-155	86.50	30.90	2.87E-01	2.66E-01	2.66E-01
		105.30	20.70	-1.54E-01		2.82E-01
+	EU-156	811.77	10.40	-4.73E+01	1.03E+02	1.03E+02
		1153.47	7.20	9.15E+01		2.18E+02
		1230.71	8.90	-1.27E+02		1.79E+02
+	HO-166M	184.41	72.60	1.37E-01	1.07E-01	1.07E-01
		280.45	29.60	2.18E-02		2.49E-01
		410.94	11.10	-9.70E-02		7.40E-01
		711.69	54.10	-5.68E-02		2.10E-01
+	TM-171	66.72	0.14	-9.94E+00	6.14E+01	6.14E+01
+	HF-172	67.35	5.31	-2.62E-01	5.91E-01	1.62E+00
		125.81	11.30	-2.63E-01		5.91E-01
+	LU-172	181.53	20.60	-1.36E+04	6.43E+03	9.63E+03
		900.72	29.81	-6.46E+03		1.20E+04
		1093.66	62.50	-9.92E+02		6.43E+03
+	LU-173	100.72	5.24	-9.22E-01	4.22E-01	1.26E+00
		272.11	21.20	1.31E-01		4.22E-01
+	HF-175	343.40	84.00	9.45E-02	2.45E-01	2.45E-01
+	LU-176	88.34	13.30	9.96E-03	7.33E-02	5.95E-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	6.20E-02	7.33E-02	8.36E-02
		306.78		94.00	-3.79E-02		7.33E-02
+	HF-181	133.02		41.70	2.99E-01	5.66E-01	7.50E-01
		345.85		17.20	8.82E-01		2.25E+00
		482.03		82.80	3.84E-01		5.66E-01
+	TA-182	67.75		41.20	-2.36E-01	3.40E-01	3.40E-01
		1121.30		34.90	-3.34E-02		1.01E+00
		1189.05		16.23	-5.42E-01		1.98E+00
		1221.41		26.98	-3.42E-02		1.18E+00
		1231.02		11.44	-2.80E+00		2.72E+00
+	IR-192	308.46		29.68	-1.73E-01	4.28E-01	5.93E-01
		468.07		48.10	-5.04E-01		4.28E-01
+	HG-203	279.19		77.30	3.07E-01	4.36E-01	4.36E-01
+	TL-204	374.74		94.11	-1.70E-02	8.16E-02	8.16E-02
		899.15		99.16	-8.32E-02		1.31E-01
		911.74		91.10	3.00E-01		2.09E-01
+	BI-207	569.67		97.72	-1.03E-02	9.42E-02	9.42E-02
		1063.62		74.90	3.44E-03		2.09E-01
+	TL-208	583.14	*	30.22	1.28E+00	3.90E-01	3.90E-01
		860.37	*	4.48	1.08E+00		1.91E+00
		2614.66	*	35.85	1.15E+00		4.11E-01
+	BI-210M	262.00		45.00	-2.17E-02	1.54E-01	1.54E-01
		300.00		23.00	9.45E-02		3.52E-01
+	PB-210	46.50		4.25	1.20E+00	2.08E+00	2.08E+00
+	PB-211	404.84		2.90	-1.26E+00	2.81E+00	2.81E+00
		831.96		2.90	-1.83E+00		4.58E+00
+	BI-212	727.17		11.80	7.94E-01	1.16E+00	1.16E+00
		1620.62		2.75	1.36E+00		4.31E+00
+	PB-212	238.63	*	44.60	1.25E+00	2.76E-01	2.76E-01
		300.09		3.41	6.38E-01		2.37E+00
+	BI-214	609.31	*	46.30	1.38E+00	4.16E-01	4.16E-01
		1120.29	*	15.10	1.19E+00		1.10E+00
		1764.49	*	15.80	1.40E+00		5.89E-01
		2204.22	*	4.98	2.03E+00		2.05E+00
+	PB-214	295.21	*	19.19	1.34E+00	3.04E-01	4.86E-01
		351.92	*	37.19	1.37E+00		3.04E-01
+	RN-219	401.80		6.50	3.66E-01	1.31E+00	1.31E+00
+	RA-223	323.87		3.88	-1.19E-01	2.03E+00	2.03E+00
+	RA-224	240.98	*	3.95	3.76E+00	3.12E+00	3.12E+00
+	RA-225	40.00		31.00	-5.62E+00	3.26E+01	3.26E+01
+	RA-226	186.21	*	3.28	3.25E+00	3.72E+00	3.72E+00
+	TH-227	50.10		8.40	-3.29E-01	9.63E-01	9.63E-01
		236.00		11.50	1.78E-01		1.00E+00
		256.20		6.30	-9.44E-02		1.10E+00
+	AC-228	338.32	*	11.40	1.67E+00	4.82E-01	1.01E+00
		911.07	*	27.70	1.08E+00		4.82E-01
		969.11	*	16.60	7.67E-01		9.39E-01
+	TH-230	48.44		16.90	3.43E-01	5.01E-01	5.01E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-230	62.85	4.60	9.17E-01	5.01E-01	1.75E+00
		67.67	0.37	-1.44E+01		2.08E+01
+	PA-231	283.67	1.60	-3.53E-01	3.25E+00	4.36E+00
		302.67	2.30	7.32E-01		3.25E+00
+	TH-231	25.64	14.70	1.39E+00	1.13E+00	1.66E+00
		84.21	6.40	-1.83E+00		1.13E+00
+	PA-233	311.98	38.60	-2.91E-03	2.41E+00	2.41E+00
+	PA-234	131.20	20.40	3.12E-01	3.10E-01	3.10E-01
		733.99	8.80	-1.64E+00		1.26E+00
		946.00	12.00	8.31E-01		1.14E+00
+	PA-234M	1001.03	0.92	9.92E-01	1.50E+01	1.50E+01
+	TH-234	63.29	3.80	1.11E+00	2.11E+00	2.11E+00
+	U-235	143.76	10.50	9.01E-02	6.05E-01	6.05E-01
		163.35	4.70	8.61E-02		1.32E+00
		205.31	4.70	5.68E-02		1.51E+00
+	NP-237	86.50	12.60	6.78E-01	6.29E-01	6.29E-01
+	NP-239	106.10	22.70	-7.21E+11	1.21E+12	1.21E+12
		228.18	10.70	-1.34E+12		3.26E+12
		277.60	14.10	1.53E+12		2.69E+12
+	AM-241	59.54	35.90	-3.05E-02	2.19E-01	2.19E-01
+	AM-243	74.67	66.00	6.93E-01	1.58E-01	1.58E-01
+	CM-243	209.75	3.29	1.26E+00	5.59E-01	2.22E+00
		228.14	10.60	-2.80E-01		6.79E-01
		277.60	14.00	3.18E-01		5.59E-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
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	3.27E+00	3.27E+00	7.55E-01	1.56E+00
	NA-22	1274.54		99.94	1.69E-01	1.69E-01	-2.77E-02	7.82E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	9.80E-02	9.80E-02	-1.48E-02	4.10E-02
+	K-40	1460.81	*	10.67	1.33E+00	1.33E+00	2.32E+01	6.07E-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	8.16E-02	8.16E-02	-5.66E-02	4.01E-02
		78.34		96.00	1.04E-01		4.24E-01	5.15E-02
	SC-46	889.25		99.98	2.93E-01	2.93E-01	-3.57E-02	1.37E-01
		1120.51		99.99	4.38E-01		-1.96E-02	2.08E-01
	V-48	983.52		99.98	9.75E+00	9.75E+00	4.99E+00	4.53E+00
		1312.10		97.50	1.14E+01		1.99E+00	5.24E+00
	CR-51	320.08		9.83	9.01E+00	9.01E+00	-3.22E-01	4.32E+00
	MN-54	834.83		99.97	1.76E-01	1.76E-01	1.29E-01	8.30E-02
	CO-56	846.75		99.96	2.70E-01	2.70E-01	7.76E-02	1.26E-01
		1037.75		14.03	2.35E+00		-2.04E-01	1.09E+00
		1238.25		67.00	7.05E-01		2.61E-01	3.32E-01
		1771.40		15.51	9.55E-01		0.00E+00	3.58E-01
		2598.48		16.90	9.25E-01		-2.51E-01	2.92E-01
	CO-57	122.06		85.51	8.66E-02	8.66E-02	-1.39E-02	4.22E-02
		136.48		10.60	7.07E-01		-5.16E-01	3.44E-01
	CO-58	810.76		99.40	3.21E-01	3.21E-01	2.80E-02	1.50E-01
	FE-59	1099.22		56.50	1.13E+00	1.13E+00	8.15E-03	5.23E-01
		1291.56		43.20	1.61E+00		4.29E-01	7.42E-01
	CO-60	1173.22		100.00	1.72E-01	1.54E-01	6.72E-02	8.03E-02
		1332.49		100.00	1.54E-01		1.26E-02	7.07E-02
	ZN-65	1115.52		50.75	4.74E-01	4.74E-01	-4.28E-02	2.24E-01
	GA-67	93.31		35.70	3.13E+08	3.13E+08	3.69E+08	1.54E+08
		208.95		2.24	4.71E+09		-1.19E+09	2.29E+09
		300.22		16.00	7.36E+08		1.98E+08	3.55E+08
	SE-75	121.11		16.70	6.05E-01	1.76E-01	-5.16E-01	2.95E-01
		136.00		59.20	1.76E-01		-9.67E-02	8.59E-02
		264.65		59.80	2.02E-01		-5.25E-02	9.71E-02
		279.53		25.20	5.45E-01		3.48E-01	2.63E-01
		400.65		11.40	1.32E+00		5.54E-01	6.28E-01
	RB-82	776.52		13.00	1.42E+01	1.42E+01	2.43E+00	6.70E+00
	RB-83	520.41		46.00	4.37E-01	4.37E-01	3.14E-02	2.06E-01
		529.64		30.30	5.95E-01		-3.96E-01	2.79E-01
		552.65		16.40	1.31E+00		3.55E-01	6.21E-01
	KR-85	513.99		0.43	2.72E+01	2.72E+01	2.39E+01	1.30E+01
	SR-85	513.99		99.27	3.38E-01	3.38E-01	2.97E-01	1.62E-01
	Y-88	898.02		93.40	2.62E-01	1.72E-01	-9.44E-02	1.22E-01
		1836.01		99.38	1.72E-01		5.49E-02	7.03E-02
	MO-93	263.06		56.72	1.25E-01	1.00E-01	1.52E-02	6.02E-02
		684.67		99.68	1.14E-01		-2.03E-02	5.38E-02
		1477.11		99.08	1.00E-01		5.31E-03	4.33E-02
	NB-93M	16.57		9.43	7.99E+00	7.99E+00	1.57E+01	3.89E+00
	NB-94	702.63		100.00	1.20E-01	1.20E-01	2.38E-02	5.67E-02
		871.10		100.00	1.26E-01		-2.02E-02	5.87E-02
	NB-95	765.79		99.81	1.00E+00	1.00E+00	5.05E-01	4.76E-01
	NB-95M	235.69		25.00	8.73E+07	8.73E+07	1.55E+07	4.28E+07
	ZR-95	724.18		43.70	8.95E-01	6.26E-01	5.10E-02	4.24E-01

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	ZR-95	756.72		55.30	6.26E-01	6.26E-01	1.80E-01	2.94E-01
	MO-99	181.06		6.20	7.73E+10	6.55E+10	-4.36E+09	3.76E+10
		739.58		12.80	6.55E+10		4.49E+09	3.07E+10
		778.00		4.50	2.02E+11		1.58E+10	9.50E+10
	RU-103	497.08		89.00	5.16E-01	5.16E-01	-2.51E-01	2.42E-01
	RU-106	621.84		9.80	1.16E+00	1.16E+00	1.44E-01	5.41E-01
	AG-108M	433.93		89.90	9.57E-02	9.57E-02	1.40E-02	4.55E-02
		614.37		90.40	1.04E-01		3.23E-03	4.85E-02
		722.95		90.50	1.43E-01		-5.12E-02	6.74E-02
+	CD-109	88.03	*	3.72	4.24E+00	4.24E+00	4.50E+00	2.10E+00
	AG-110M	657.75		93.14	1.63E-01	1.63E-01	2.22E-02	7.69E-02
		677.61		10.53	1.45E+00		-3.09E-02	6.82E-01
		706.67		16.46	9.76E-01		5.52E-01	4.61E-01
		763.93		21.98	7.75E-01		-2.79E-01	3.66E-01
		884.67		71.63	2.18E-01		-5.08E-02	1.01E-01
		1384.27		23.94	6.65E-01		8.13E-02	2.98E-01
	CD-113M	263.70		0.02	3.00E+02	3.00E+02	-1.18E+02	1.44E+02
	SN-113	255.12		1.93	6.52E+00	2.26E-01	-4.52E-01	3.15E+00
		391.69		64.90	2.26E-01		3.26E-02	1.08E-01
	TE123M	159.00		84.10	1.31E-01	1.31E-01	9.74E-03	6.39E-02
	SB-124	602.71		97.87	3.34E-01	3.34E-01	1.35E-02	1.58E-01
		645.85		7.26	4.16E+00		4.76E-01	1.94E+00
		722.78		11.10	3.64E+00		-1.31E+00	1.72E+00
		1691.02		49.00	5.86E-01		-5.21E-02	2.45E-01
	I-125	35.49		6.49	5.60E+00	5.60E+00	2.08E+00	2.73E+00
	SB-125	176.33		6.89	9.95E-01	3.21E-01	-2.07E-01	4.84E-01
		427.89		29.33	3.21E-01		-2.66E-03	1.53E-01
		463.38		10.35	9.33E-01		2.70E-01	4.44E-01
		600.56		17.80	6.12E-01		-1.14E-01	2.89E-01
		635.90		11.32	9.91E-01		2.35E-01	4.67E-01
	SB-126	414.70		83.30	2.45E+01	2.45E+01	-5.94E+00	1.17E+01
		666.33		99.60	3.12E+01		-5.70E+00	1.48E+01
		695.00		99.60	3.13E+01		1.34E+01	1.48E+01
		720.50		53.80	5.76E+01		-5.03E+01	2.72E+01
+	SN-126	87.57	*	37.00	3.68E-01	3.68E-01	3.90E-01	1.82E-01
	SB-127	473.00		25.00	2.02E+07	1.81E+07	-5.41E+05	9.57E+06
		685.20		35.70	1.81E+07		-3.21E+06	8.52E+06
		783.80		14.70	4.91E+07		9.20E+06	2.31E+07
	I-129	29.78		57.00	2.79E-01	2.79E-01	-2.04E-01	1.36E-01
		33.60		13.20	9.43E-01		-3.79E-01	4.60E-01
		39.58		7.52	1.31E+00		-2.25E-01	6.38E-01
	I-131	284.30		6.05	6.01E+03	5.20E+02	-4.87E+02	2.89E+03
		364.48		81.20	5.20E+02		1.34E+02	2.49E+02
		636.97		7.26	7.37E+03		6.63E+02	3.46E+03
		722.89		1.80	3.73E+04		-1.34E+04	1.76E+04
	TE-132	49.72		13.10	9.21E+08	1.20E+08	-3.14E+08	4.51E+08
		228.16		88.00	1.20E+08		-4.95E+07	5.84E+07
	BA-133	81.00		33.00	2.41E-01	1.81E-01	-7.63E-01	1.19E-01
		302.84		17.80	4.28E-01		9.64E-02	2.06E-01
		356.01		60.00	1.81E-01		2.03E-02	8.75E-02
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	1.03E+05	1.03E+05	-3.26E+05	5.06E+04
	CS-134	563.23		8.38	1.27E+00	1.35E-01	-4.92E-02	5.98E-01

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	569.32	15.43	6.50E-01	1.35E-01	-7.08E-02	3.05E-01
	604.70	97.60	1.35E-01		1.95E-03	6.41E-02
	795.84	85.40	1.58E-01		1.52E-01	7.42E-02
	801.93	8.73	1.40E+00		-8.07E-01	6.52E-01
CS-135	268.24	16.00	4.82E-01	4.82E-01	4.50E-02	2.33E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.55E+02	2.16E+01	-2.97E+01	7.53E+01
	163.89	4.61	2.49E+02		3.74E+01	1.21E+02
	176.55	13.56	8.77E+01		-1.02E+01	4.26E+01
	273.65	12.66	1.12E+02		2.28E+01	5.40E+01
	340.57	48.50	3.76E+01		-9.87E-01	1.82E+01
	818.50	99.70	2.16E+01		-4.95E+00	1.01E+01
	1048.07	79.60	3.27E+01		-4.68E+00	1.52E+01
	1235.34	19.70	1.85E+02		9.62E+01	8.73E+01
CS-137	661.65	85.12	1.36E-01	1.36E-01	-6.66E-02	6.43E-02
LA-138	788.74	34.00	3.44E-01	1.68E-01	8.13E-02	1.61E-01
	1435.80	66.00	1.68E-01		3.63E-02	7.45E-02
CE-139	165.85	80.35	1.24E-01	1.24E-01	-8.86E-02	6.05E-02
BA-140	162.64	6.70	2.00E+02	7.41E+01	1.31E+01	9.72E+01
	304.84	4.50	3.39E+02		-2.00E+02	1.63E+02
	423.70	3.20	5.64E+02		1.70E+02	2.68E+02
	437.55	2.00	9.23E+02		6.92E+02	4.39E+02
	537.32	25.00	7.41E+01		-1.02E+00	3.48E+01
LA-140	328.77	20.50	8.82E+01	3.01E+01	3.92E+01	4.24E+01
	487.03	45.50	3.79E+01		-1.67E+01	1.78E+01
	815.85	23.50	1.08E+02		2.72E+01	5.03E+01
	1596.49	95.49	3.01E+01		-7.22E-01	1.35E+01
CE-141	145.44	48.40	1.10E+00	1.10E+00	5.87E-01	5.37E-01
@ 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	7.06E-01	7.06E-01	-2.82E-01	3.45E-01
PM-144	476.78	42.00	2.58E-01	1.08E-01	-8.50E-02	1.22E-01
	618.01	98.60	1.08E-01		-1.84E-02	5.06E-02
	696.49	99.49	1.48E-01		9.11E-03	7.01E-02
PM-145	36.85	21.70	5.05E-01	2.70E-01	-3.22E-02	2.47E-01
	37.36	39.70	2.70E-01		-1.72E-02	1.32E-01
	42.30	15.10	5.99E-01		-8.27E-01	2.93E-01
	72.40	2.31	3.81E+00		-1.08E+01	1.88E+00
PM-146	453.90	39.94	2.27E-01	2.27E-01	3.80E-02	1.08E-01
	735.90	14.01	8.56E-01		1.41E-01	4.02E-01
	747.13	13.10	9.12E-01		3.65E-01	4.28E-01
ND-147	91.11	28.90	1.50E+02	1.50E+02	3.07E+02	7.36E+01
	531.02	13.10	3.53E+02		1.90E+01	1.66E+02
PM-149	285.90	3.10	7.17E+13	7.17E+13	-5.92E+12	3.44E+13
EU-152	121.78	20.50	2.84E-01	2.84E-01	-4.56E-02	1.38E-01
	244.69	5.40	1.56E+00		1.21E-01	7.59E-01
	344.27	19.13	4.09E-01		1.58E-01	1.96E-01
	778.89	9.20	1.35E+00		5.16E-02	6.37E-01
	964.01	10.40	1.57E+00		3.53E-01	7.43E-01
	1085.78	7.22	2.19E+00		1.24E+00	1.02E+00

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	1112.02		9.60	1.66E+00	2.84E-01	7.88E-02	7.75E-01
		1407.95		14.94	9.27E-01		5.83E-01	4.21E-01
	GD-153	97.43		31.30	2.74E-01	2.74E-01	5.23E-03	1.34E-01
		103.18		22.20	3.48E-01		1.19E-01	1.70E-01
	EU-154	123.07		40.50	1.48E-01	1.48E-01	3.43E-02	7.22E-02
		723.30		19.70	6.92E-01		3.94E-02	3.28E-01
		873.19		11.50	1.04E+00		-5.15E-01	4.83E-01
		996.32		10.30	1.34E+00		-2.52E-02	6.22E-01
		1004.76		17.90	7.39E-01		-6.84E-01	3.43E-01
		1274.45		35.50	4.51E-01		-7.40E-02	2.09E-01
	EU-155	86.50		30.90	2.66E-01	2.66E-01	2.87E-01	1.31E-01
		105.30		20.70	2.82E-01		-1.54E-01	1.38E-01
	EU-156	811.77		10.40	1.03E+02	1.03E+02	-4.73E+01	4.80E+01
		1153.47		7.20	2.18E+02		9.15E+01	1.02E+02
		1230.71		8.90	1.79E+02		-1.27E+02	8.36E+01
	HO-166M	184.41		72.60	1.07E-01	1.07E-01	1.37E-01	5.24E-02
		280.45		29.60	2.49E-01		2.18E-02	1.20E-01
		410.94		11.10	7.40E-01		-9.70E-02	3.52E-01
		711.69		54.10	2.10E-01		-5.68E-02	9.87E-02
	TM-171	66.72		0.14	6.14E+01	6.14E+01	-9.94E+00	3.02E+01
	HF-172	67.35		5.31	1.62E+00	5.91E-01	-2.62E-01	7.94E-01
		125.81		11.30	5.91E-01		-2.63E-01	2.88E-01
	LU-172	181.53		20.60	9.63E+03	6.43E+03	-1.36E+04	4.69E+03
		900.72		29.81	1.20E+04		-6.46E+03	5.59E+03
		1093.66		62.50	6.43E+03		-9.92E+02	2.98E+03
	LU-173	100.72		5.24	1.26E+00	4.22E-01	-9.22E-01	6.15E-01
		272.11		21.20	4.22E-01		1.31E-01	2.04E-01
	HF-175	343.40		84.00	2.45E-01	2.45E-01	9.45E-02	1.17E-01
	LU-176	88.34		13.30	5.95E-01	7.33E-02	9.96E-03	2.93E-01
		201.83		86.00	8.36E-02		6.20E-02	4.07E-02
		306.78		94.00	7.33E-02		-3.79E-02	3.51E-02
	HF-181	133.02		41.70	7.50E-01	5.66E-01	2.99E-01	3.66E-01
		345.85		17.20	2.25E+00		8.82E-01	1.08E+00
		482.03		82.80	5.66E-01		3.84E-01	2.69E-01
	TA-182	67.75		41.20	3.40E-01	3.40E-01	-2.36E-01	1.67E-01
		1121.30		34.90	1.01E+00		-3.34E-02	4.78E-01
		1189.05		16.23	1.98E+00		-5.42E-01	9.29E-01
		1221.41		26.98	1.18E+00		-3.42E-02	5.54E-01
		1231.02		11.44	2.72E+00		-2.80E+00	1.27E+00
	IR-192	308.46		29.68	5.93E-01	4.28E-01	-1.73E-01	2.84E-01
		468.07		48.10	4.28E-01		-5.04E-01	2.02E-01
	HG-203	279.19		77.30	4.36E-01	4.36E-01	3.07E-01	2.11E-01
	TL-204	374.74		94.11	8.16E-02	8.16E-02	-1.70E-02	3.88E-02
		899.15		99.16	1.31E-01		-8.32E-02	6.11E-02
		911.74		91.10	2.09E-01		3.00E-01	9.97E-02
	BI-207	569.67		97.72	9.42E-02	9.42E-02	-1.03E-02	4.43E-02
		1063.62		74.90	2.09E-01		3.44E-03	9.81E-02
+	TL-208	583.14	*	30.22	3.90E-01	3.90E-01	1.28E+00	1.86E-01
		860.37	*	4.48	1.91E+00		1.08E+00	8.62E-01
		2614.66	*	35.85	4.11E-01		1.15E+00	1.72E-01
	BI-210M	262.00		45.00	1.54E-01	1.54E-01	-2.17E-02	7.42E-02
		300.00		23.00	3.52E-01		9.45E-02	1.70E-01
	PB-210	46.50		4.25	2.08E+00	2.08E+00	1.20E+00	1.02E+00

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

	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	2.81E+00	2.81E+00	-1.26E+00	1.34E+00
		831.96		2.90	4.58E+00		-1.83E+00	2.15E+00
	BI-212	727.17		11.80	1.16E+00	1.16E+00	7.94E-01	5.53E-01
		1620.62		2.75	4.31E+00		1.36E+00	1.89E+00
+	PB-212	238.63	*	44.60	2.76E-01	2.76E-01	1.25E+00	1.35E-01
		300.09		3.41	2.37E+00		6.38E-01	1.14E+00
+	BI-214	609.31	*	46.30	4.16E-01	4.16E-01	1.38E+00	2.02E-01
		1120.29	*	15.10	1.10E+00		1.19E+00	5.14E-01
		1764.49	*	15.80	5.89E-01		1.40E+00	2.45E-01
		2204.22	*	4.98	2.05E+00		2.03E+00	8.28E-01
+	PB-214	295.21	*	19.19	4.86E-01	3.04E-01	1.34E+00	2.36E-01
		351.92	*	37.19	3.04E-01		1.37E+00	1.47E-01
	RN-219	401.80		6.50	1.31E+00	1.31E+00	3.66E-01	6.26E-01
	RA-223	323.87		3.88	2.03E+00	2.03E+00	-1.19E-01	9.74E-01
+	RA-224	240.98	*	3.95	3.12E+00	3.12E+00	3.76E+00	1.53E+00
	RA-225	40.00		31.00	3.26E+01	3.26E+01	-5.62E+00	1.59E+01
+	RA-226	186.21	*	3.28	3.72E+00	3.72E+00	3.25E+00	1.83E+00
	TH-227	50.10		8.40	9.63E-01	9.63E-01	-3.29E-01	4.71E-01
		236.00		11.50	1.00E+00		1.78E-01	4.92E-01
		256.20		6.30	1.10E+00		-9.44E-02	5.28E-01
+	AC-228	338.32	*	11.40	1.01E+00	4.82E-01	1.67E+00	4.90E-01
		911.07	*	27.70	4.82E-01		1.08E+00	2.26E-01
		969.11	*	16.60	9.39E-01		7.67E-01	4.42E-01
	TH-230	48.44		16.90	5.01E-01	5.01E-01	3.43E-01	2.45E-01
		62.85		4.60	1.75E+00		9.17E-01	8.60E-01
		67.67		0.37	2.08E+01		-1.44E+01	1.02E+01
	PA-231	283.67		1.60	4.36E+00	3.25E+00	-3.53E-01	2.09E+00
		302.67		2.30	3.25E+00		7.32E-01	1.56E+00
	TH-231	25.64		14.70	1.66E+00	1.13E+00	1.39E+00	8.11E-01
		84.21		6.40	1.13E+00		-1.83E+00	5.57E-01
	PA-233	311.98		38.60	2.41E+00	2.41E+00	-2.91E-03	1.16E+00
	PA-234	131.20		20.40	3.10E-01	3.10E-01	3.12E-01	1.52E-01
		733.99		8.80	1.26E+00		-1.64E+00	5.90E-01
		946.00		12.00	1.14E+00		8.31E-01	5.34E-01
	PA-234M	1001.03		0.92	1.50E+01	1.50E+01	9.92E-01	7.01E+00
	TH-234	63.29		3.80	2.11E+00	2.11E+00	1.11E+00	1.04E+00
	U-235	143.76		10.50	6.05E-01	6.05E-01	9.01E-02	2.95E-01
		163.35		4.70	1.32E+00		8.61E-02	6.41E-01
		205.31		4.70	1.51E+00		5.68E-02	7.32E-01
	NP-237	86.50		12.60	6.29E-01	6.29E-01	6.78E-01	3.09E-01
	NP-239	106.10		22.70	1.21E+12	1.21E+12	-7.21E+11	5.92E+11
		228.18		10.70	3.26E+12		-1.34E+12	1.58E+12
		277.60		14.10	2.69E+12		1.53E+12	1.30E+12
	AM-241	59.54		35.90	2.19E-01	2.19E-01	-3.05E-02	1.08E-01
	AM-243	74.67		66.00	1.58E-01	1.58E-01	6.93E-01	7.82E-02
	CM-243	209.75		3.29	2.22E+00	5.59E-01	1.26E+00	1.08E+00
		228.14		10.60	6.79E-01		-2.80E-01	3.29E-01
		277.60		14.00	5.59E-01		3.18E-01	2.70E-01

Analysis Report for 1707090-14

HTC-A07-S001-1824-01

+ = 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

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: HTC-A07-S001-1824-01

Elapsed Live time: 3600
Elapsed Real Time: 3625

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	12	99
17:	103	99	99	87	85	86	86	104
25:	87	85	80	81	76	51	83	62
33:	75	82	74	92	79	85	62	92
41:	77	80	82	94	112	126	112	88
49:	90	96	102	91	125	94	112	81
57:	133	119	129	122	133	185	181	135
65:	131	142	138	160	128	166	153	173
73:	249	330	350	437	318	191	136	115
81:	125	114	157	143	166	182	204	177
89:	172	155	181	215	189	106	104	97
97:	97	92	96	100	82	71	73	97
105:	101	70	78	85	85	100	76	77
113:	100	75	110	79	85	60	69	85
121:	71	89	75	92	80	76	83	88
129:	104	96	86	83	76	73	59	67
137:	73	78	70	78	82	82	83	84
145:	77	75	76	85	66	65	63	83
153:	70	75	66	67	66	78	60	65
161:	67	62	60	71	62	54	58	52
169:	74	71	68	64	63	72	57	58
177:	50	63	59	61	66	67	67	89
185:	123	112	70	70	64	53	65	57
193:	53	59	53	58	50	62	55	56
201:	61	74	67	57	49	49	48	74
209:	65	68	60	48	54	45	69	60
217:	52	53	52	31	53	53	46	50
225:	32	50	52	56	51	50	54	61
233:	60	38	56	79	241	318	206	105
241:	119	72	47	44	37	39	48	43
249:	36	37	38	37	29	37	31	39
257:	45	34	42	31	40	29	23	44
265:	34	30	28	45	58	50	33	39
273:	24	38	36	49	47	29	36	39
281:	30	37	22	32	23	26	35	24
289:	24	27	28	40	74	128	110	45
297:	31	35	37	41	31	33	30	24
305:	15	25	25	31	23	16	39	28
313:	28	22	27	29	25	23	17	34
321:	31	24	31	25	24	34	37	36
329:	35	24	32	19	34	31	32	38
337:	65	79	49	26	18	24	26	27
345:	28	22	17	22	39	94	185	135
353:	58	29	20	19	24	26	21	20
361:	33	22	25	18	22	21	27	23

369:	22	16	16	10	19	10	31	21

Sample Title: HTC-A07-S001-1824-01

Channel								
377:	20	16	25	15	20	18	21	23
385:	26	22	19	17	26	13	23	24
393:	19	20	22	14	17	28	21	26
401:	20	24	13	19	16	27	16	18
409:	27	18	17	23	14	17	21	9
417:	21	20	14	19	18	15	12	21
425:	19	24	12	18	26	21	25	9
433:	15	20	16	24	16	17	22	10
441:	13	11	19	18	9	20	20	25
449:	13	18	19	16	26	20	14	10
457:	15	14	12	10	23	18	30	13
465:	16	15	16	19	7	12	24	18
473:	11	22	18	12	18	15	20	23
481:	12	24	10	17	10	10	11	17
489:	11	11	15	11	13	10	15	7
497:	14	10	14	10	23	13	12	20
505:	15	22	13	26	32	61	27	28
513:	14	13	10	17	13	10	16	11
521:	21	11	16	10	17	3	12	11
529:	11	17	10	11	16	16	12	13
537:	8	10	15	7	8	13	10	15
545:	14	11	13	13	20	14	13	17
553:	13	11	12	14	10	21	22	11
561:	12	13	14	10	14	11	15	6
569:	11	16	12	12	10	16	7	11
577:	16	11	9	20	36	74	76	26
585:	11	9	7	10	16	8	14	13
593:	16	9	14	10	13	7	10	15
601:	15	16	17	15	9	15	43	113
609:	135	49	14	10	12	7	10	7
617:	14	9	12	6	15	10	6	15
625:	9	9	16	11	17	11	11	16
633:	14	11	18	8	10	11	12	10
641:	10	9	6	14	8	12	11	11
649:	7	11	10	14	12	12	9	6
657:	12	14	10	17	8	10	8	7
665:	13	21	15	17	9	8	15	12
673:	9	13	12	9	9	13	13	8
681:	9	9	8	10	14	10	12	7
689:	6	11	9	15	10	11	13	16
697:	6	9	14	7	12	11	11	12
705:	14	6	10	7	19	8	7	6
713:	3	14	9	8	14	9	9	9
721:	11	12	12	8	11	24	17	16
729:	10	9	9	8	9	10	7	8
737:	4	11	15	8	6	10	10	10
745:	5	7	9	10	9	8	6	7
753:	11	8	8	13	4	13	7	9
761:	6	8	8	11	16	13	17	20
769:	14	10	13	8	11	10	10	8
777:	12	8	10	9	7	8	8	9
785:	13	12	8	10	4	3	5	8
793:	8	17	10	8	8	9	6	5

801:	4	11	4	8	8	12	10	7

Sample Title: HTC-A07-S001-1824-01

Channel								
809:	5	7	11	11	6	4	5	10
817:	8	6	6	8	5	13	6	10
825:	11	13	7	9	5	14	12	8
833:	10	10	10	7	15	10	8	5
841:	6	7	5	8	5	9	3	6
849:	5	10	5	5	8	10	8	6
857:	6	11	11	11	4	6	7	10
865:	9	8	8	13	2	4	8	7
873:	9	10	10	5	4	6	8	12
881:	3	6	4	4	8	7	7	8
889:	6	10	9	5	10	16	8	5
897:	5	4	8	4	8	8	13	8
905:	5	8	4	2	20	47	31	20
913:	7	5	2	6	6	7	4	12
921:	5	8	4	5	3	8	7	7
929:	8	7	8	11	14	8	11	6
937:	6	6	4	5	8	10	6	4
945:	7	7	7	10	12	7	2	14
953:	3	7	4	6	8	6	6	7
961:	5	10	9	19	18	11	12	24
969:	28	12	8	2	8	9	10	4
977:	7	3	7	6	7	4	6	9
985:	5	10	6	3	5	5	10	7
993:	6	5	6	7	7	7	12	5
1001:	6	7	10	4	12	4	5	3
1009:	14	7	6	10	3	4	6	9
1017:	4	10	7	6	3	11	8	1
1025:	11	6	7	10	14	12	7	5
1033:	3	5	10	6	5	8	10	8
1041:	5	7	9	5	10	4	5	6
1049:	6	9	7	11	6	7	5	7
1057:	7	1	10	4	8	10	8	3
1065:	10	17	5	11	13	5	9	5
1073:	5	7	7	4	9	7	5	4
1081:	8	7	8	9	9	8	12	4
1089:	7	7	5	5	9	5	5	9
1097:	4	6	6	7	7	3	6	6
1105:	4	6	4	9	9	8	8	9
1113:	6	9	8	8	12	10	25	20
1121:	12	3	6	11	8	11	7	4
1129:	4	7	8	6	9	10	14	7
1137:	8	6	10	8	5	9	7	5
1145:	10	2	8	8	7	8	7	6
1153:	10	10	13	9	7	4	8	9
1161:	9	9	9	9	15	5	5	6
1169:	5	12	4	6	13	8	7	12
1177:	4	4	5	11	9	10	8	14
1185:	11	4	6	9	11	14	10	8
1193:	6	10	5	14	8	5	8	16
1201:	7	11	7	11	7	5	6	7
1209:	5	2	9	9	12	12	9	3
1217:	12	11	3	1	7	9	10	14
1225:	7	7	11	8	6	6	7	8

1233:	9	8	6	14	15	15	10	9

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Channel								
1241:	6	10	9	10	7	6	8	6
1249:	7	10	7	7	6	7	7	6
1257:	4	5	6	2	6	3	5	4
1265:	5	8	7	6	6	5	3	5
1273:	5	6	9	12	2	7	7	8
1281:	6	6	7	6	3	3	6	4
1289:	7	9	4	5	2	5	5	5
1297:	4	4	7	2	9	10	4	6
1305:	3	2	6	11	0	4	12	6
1313:	2	3	5	3	4	3	3	5
1321:	8	4	4	4	3	4	6	5
1329:	6	6	6	4	3	1	3	10
1337:	2	6	3	4	2	3	5	3
1345:	3	6	1	0	1	2	5	1
1353:	3	5	0	5	6	2	4	2
1361:	4	3	2	4	3	6	1	1
1369:	5	6	4	4	5	7	5	5
1377:	4	5	2	4	3	3	1	4
1385:	4	1	1	5	2	2	1	5
1393:	1	4	5	1	1	1	4	3
1401:	3	1	2	2	3	5	4	7
1409:	6	3	1	2	1	2	1	3
1417:	2	3	1	3	3	4	3	4
1425:	2	1	2	2	1	3	1	3
1433:	3	0	2	3	2	4	2	2
1441:	2	0	1	1	2	3	1	1
1449:	1	2	4	4	3	1	2	1
1457:	6	44	86	183	133	60	11	2
1465:	0	1	5	1	0	2	2	6
1473:	2	2	0	1	1	0	3	3
1481:	2	2	2	1	3	2	1	2
1489:	0	0	0	1	0	2	2	4
1497:	0	3	1	1	0	2	3	2
1505:	5	2	4	2	3	2	1	2
1513:	1	0	0	2	1	4	0	0
1521:	3	2	0	1	1	0	3	0
1529:	1	2	1	1	4	1	1	0
1537:	0	1	2	2	2	2	1	1
1545:	1	3	4	0	1	2	3	0
1553:	2	0	1	2	4	2	1	0
1561:	1	1	0	0	0	3	1	1
1569:	0	1	2	3	2	0	0	0
1577:	1	1	2	3	1	3	2	2
1585:	2	2	5	5	6	3	2	7
1593:	4	2	3	2	1	2	1	2
1601:	1	3	3	0	1	2	2	0
1609:	0	0	2	2	3	0	0	3
1617:	1	3	3	2	3	1	1	1
1625:	2	1	1	1	2	1	1	1
1633:	2	1	0	0	2	1	2	0
1641:	1	0	0	1	1	0	1	2
1649:	1	0	1	1	2	2	3	1
1657:	3	1	4	2	0	2	1	0

1665:	3	0	1	1	2	1	0	0

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

2097:	0	0	0	3	1	0	2	0

Sample Title: HTC-A07-S001-1824-01

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

2529:	0	0	0	0	0	0	0	0

Sample Title: HTC-A07-S001-1824-01

Channel								
2537:	0	1	0	1	0	1	1	1
2545:	0	1	0	0	0	0	0	2
2553:	0	0	0	0	0	0	0	0
2561:	0	0	0	1	1	0	0	0
2569:	0	0	0	0	0	0	1	0
2577:	0	0	1	1	0	0	0	0
2585:	0	0	1	0	1	0	1	1
2593:	0	2	1	0	0	0	0	0
2601:	0	0	0	0	1	0	0	1
2609:	0	1	0	4	9	11	14	11
2617:	1	0	1	0	0	1	0	2
2625:	0	0	0	1	0	0	0	0
2633:	0	0	0	0	0	0	1	0
2641:	0	0	1	0	2	2	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	1	0	0	0
2665:	1	0	0	1	0	0	0	0
2673:	1	0	0	0	0	0	0	0
2681:	0	0	1	0	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	2	0	0	0	0	0	0	0
2705:	0	0	0	0	0	0	0	0
2713:	1	0	0	0	0	1	0	1
2721:	0	0	1	0	0	0	0	0
2729:	0	1	0	1	0	0	0	0
2737:	0	0	0	0	0	0	0	1
2745:	0	1	0	0	0	1	0	1
2753:	0	0	2	0	0	0	0	0
2761:	0	0	0	0	0	0	0	0
2769:	0	0	1	0	1	0	0	0
2777:	0	0	0	0	0	1	0	0
2785:	0	0	0	0	0	1	1	0
2793:	0	1	0	0	1	0	1	0
2801:	1	1	1	0	0	1	0	0
2809:	0	0	0	0	1	0	1	1
2817:	0	1	0	0	0	1	1	0
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	1	0	0
2841:	0	0	0	1	0	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	1	0	0	0	0
2873:	0	0	1	0	0	0	1	0
2881:	0	0	1	0	0	0	0	0
2889:	0	1	0	0	0	0	1	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	1
2913:	0	0	0	0	0	0	0	0
2921:	0	0	1	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	1	1	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	1	0	2	0	0

2961:	0	1	1	0	1	0	0	0

Sample Title: HTC-A07-S001-1824-01

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

3393:	0	0	0	1	0	0	0	0

Sample Title: HTC-A07-S001-1824-01

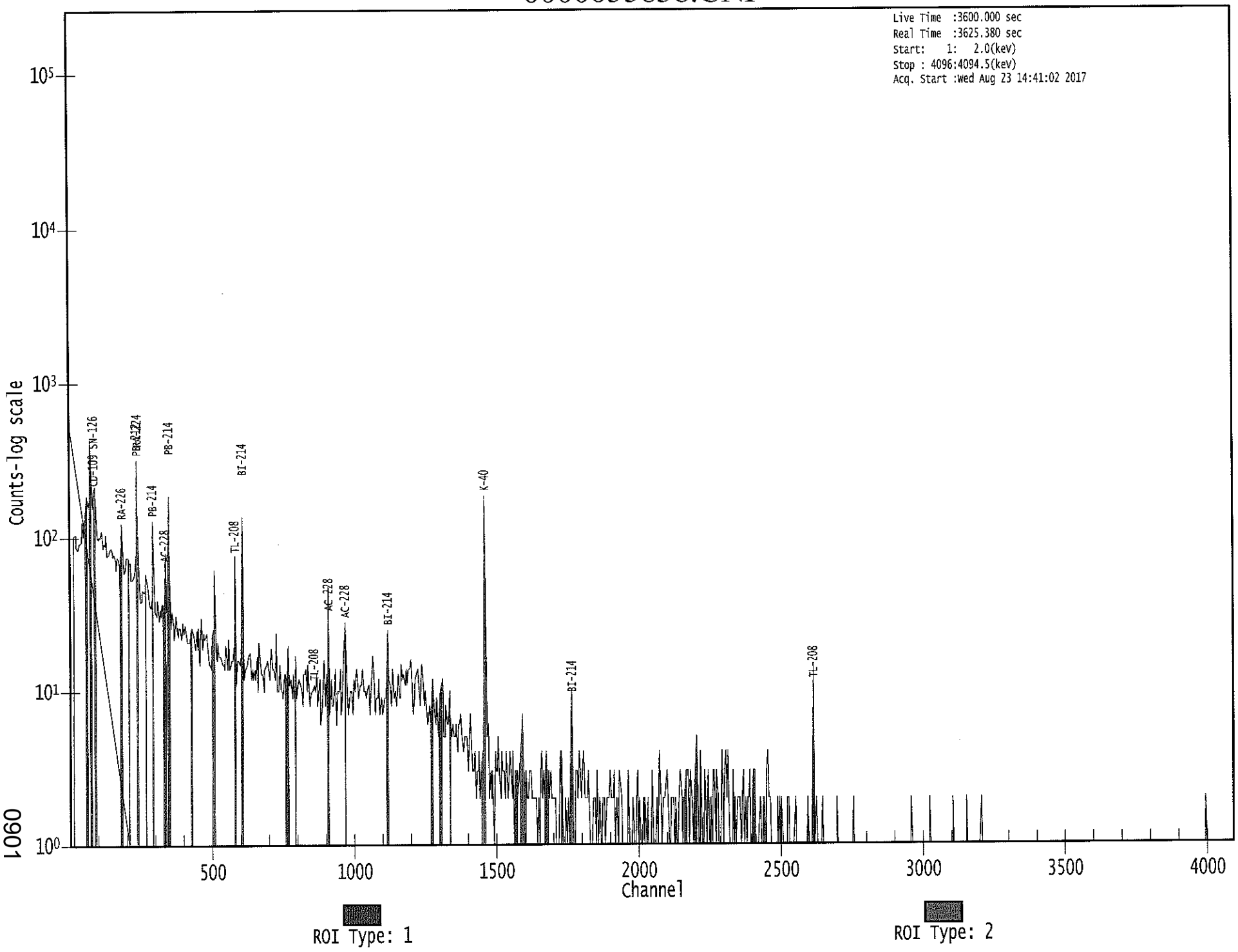
Channel								
3401:	0	0	0	0	1	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	1	0	0	0
3425:	0	1	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	1	0	0	0	1	1	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	1	0	0
3473:	1	0	0	0	0	0	0	0
3481:	0	0	0	0	1	1	1	0
3489:	1	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0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

3825:	0	0	0	0	0	1	0	0

Sample Title: HTC-A07-S001-1824-01

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	1	0	0	0	0	0	0
3849:	0	0	0	0	0	1	0	0
3857:	0	0	1	0	1	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	1	1	0	0	0	0	0
3889:	0	0	0	0	1	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	1	0	0	0	1	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	1
3937:	0	0	0	0	1	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	1
3985:	0	0	0	0	0	0	0	0
3993:	0	0	2	0	0	0	1	0
4001:	0	0	1	0	0	0	0	0
4009:	0	0	0	0	0	0	1	0
4017:	1	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	1	0	0	0	0	0	0
4049:	0	1	0	0	0	0	0	0
4057:	0	0	0	0	0	1	0	1
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	1	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055838.CNF



0901

Apex-Gamma

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-15
Sample Description	: HTC-A07-S001-2430-01
Sample Type	: SOIL
Sample Size	: 6.852E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:56:15AM
Acquisition Started	: 8/23/2017 3:41:51PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.7 seconds
Dead Time	: 0.05 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55839

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 4:41:56PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.27	46.90	0.0000	0.00
2	63.32	63.92	0.0000	0.00
3	74.66	75.26	0.0000	0.00
4	77.19	77.78	0.0000	0.00
5	92.57	93.14	0.0000	0.00
6	185.73	186.21	0.0000	0.00
7	197.35	197.81	0.0000	0.00
8	209.75	210.21	0.0000	0.00
9	238.54	238.97	0.0000	0.00
10	241.74	242.17	0.0000	0.00
11	269.55	269.94	0.0000	0.00
12	275.91	276.30	0.0000	0.00
13	295.15	295.52	0.0000	0.00
14	300.20	300.56	0.0000	0.00
15	327.47	327.80	0.0000	0.00
16	338.22	338.54	0.0000	0.00
17	351.94	352.25	0.0000	0.00
18	356.69	357.00	0.0000	0.00
19	463.14	463.33	0.0000	0.00
20	510.54	510.69	0.0000	0.00
21	518.19	518.33	0.0000	0.00
22	579.53	579.61	0.0000	0.00
23	583.28	583.35	0.0000	0.00
24	609.49	609.54	0.0000	0.00
25	613.33	613.38	0.0000	0.00
26	727.14	727.08	0.0000	0.00
27	764.00	763.90	0.0000	0.00
28	768.30	768.19	0.0000	0.00
29	785.51	785.38	0.0000	0.00
30	794.76	794.63	0.0000	0.00
31	905.05	904.80	0.0000	0.00
32	911.42	911.17	0.0000	0.00
33	934.10	933.82	0.0000	0.00
34	965.10	964.80	0.0000	0.00
35	969.19	968.88	0.0000	0.00
36	1000.27	999.93	0.0000	0.00
37	1058.57	1058.17	0.0000	0.00
38	1120.50	1120.04	0.0000	0.00
39	1172.42	1171.91	0.0000	0.00
40	1238.82	1238.25	0.0000	0.00
41	1302.84	1302.20	0.0000	0.00
42	1379.04	1378.33	0.0000	0.00

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1385.83	1385.11	0.0000	0.00
44	1461.36	1460.56	0.0000	0.00
45	1465.34	1464.54	0.0000	0.00
46	1507.02	1506.18	0.0000	0.00
47	1509.62	1508.78	0.0000	0.00
48	1572.24	1571.34	0.0000	0.00
49	1588.69	1587.77	0.0000	0.00
50	1593.39	1592.47	0.0000	0.00
51	1633.15	1632.19	0.0000	0.00
52	1731.42	1730.36	0.0000	0.00
53	1765.11	1764.02	0.0000	0.00
54	1925.21	1923.96	0.0000	0.00
55	1930.11	1928.86	0.0000	0.00
56	1978.59	1977.29	0.0000	0.00
57	2103.83	2102.41	0.0000	0.00
58	2119.45	2118.01	0.0000	0.00
59	2204.65	2203.13	0.0000	0.00
60	2254.08	2252.51	0.0000	0.00
61	2448.38	2446.63	0.0000	0.00
62	2615.66	2613.75	0.0000	0.00
63	2619.16	2617.25	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 4:41:56PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.27	44 -	49	46.90	1.39E+02	82.53	1.26E+03	1.22
	2	63.32	61 -	66	63.92	2.23E+02	104.61	2.02E+03	1.40
M	3	74.66	71 -	86	75.26	5.09E+02	110.46	1.92E+03	1.81
m	4	77.19	71 -	86	77.78	9.02E+02	118.45	1.95E+03	1.82
	5	92.57	90 -	96	93.14	4.39E+02	118.87	2.20E+03	1.86
	6	185.73	182 -	190	186.21	3.36E+02	102.34	1.41E+03	2.18
	7	197.35	194 -	201	197.81	7.66E+01	82.97	1.10E+03	4.70
	8	209.75	207 -	214	210.21	9.84E+01	86.21	1.17E+03	2.37
M	9	238.54	233 -	250	238.97	1.20E+03	85.46	5.87E+02	1.82
m	10	241.74	233 -	250	242.17	3.08E+02	86.65	5.25E+02	1.82
	11	269.55	265 -	273	269.94	1.25E+02	76.83	8.28E+02	2.66
	12	275.91	274 -	280	276.30	5.77E+01	60.54	6.27E+02	3.18
	13	295.15	292 -	299	295.52	3.65E+02	76.00	7.27E+02	1.87
	14	300.20	299 -	304	300.56	4.57E+01	51.82	5.09E+02	1.77
	15	327.47	324 -	330	327.80	7.71E+01	55.94	5.10E+02	2.27
	16	338.22	334 -	343	338.54	2.16E+02	76.16	7.05E+02	1.77
M	17	351.94	347 -	362	352.25	8.26E+02	67.30	2.74E+02	1.64
m	18	356.69	347 -	362	357.00	3.74E+01	37.54	2.31E+02	1.74
	19	463.14	460 -	467	463.33	4.59E+01	48.95	3.62E+02	1.83
	20	510.54	506 -	516	510.69	1.90E+02	62.84	4.29E+02	2.05
	21	518.19	516 -	520	518.33	2.58E+01	29.63	1.62E+02	1.48
M	22	579.53	577 -	589	579.61	3.80E+01	23.92	9.54E+01	2.13
m	23	583.28	577 -	589	583.35	3.82E+02	46.39	1.45E+02	1.83
M	24	609.49	604 -	618	609.54	6.14E+02	55.92	1.49E+02	1.78
m	25	613.33	604 -	618	613.38	2.64E+01	51.25	2.26E+02	2.49
	26	727.14	722 -	731	727.08	9.07E+01	47.48	2.71E+02	2.04
M	27	764.00	762 -	771	763.90	1.79E+01	21.73	1.03E+02	2.13
m	28	768.30	762 -	771	768.19	5.05E+01	31.89	1.78E+02	2.14
	29	785.51	782 -	788	785.38	4.87E+01	31.60	1.45E+02	1.47
	30	794.76	792 -	798	794.63	3.75E+01	31.09	1.51E+02	2.65
M	31	905.05	898 -	922	904.80	2.59E+01	27.42	1.21E+02	2.20
m	32	911.42	898 -	922	911.17	2.55E+02	38.37	9.58E+01	2.09
	33	934.10	930 -	937	933.82	3.74E+01	31.30	1.35E+02	1.49
M	34	965.10	962 -	977	964.80	3.63E+01	23.96	1.11E+02	2.22
m	35	969.19	962 -	977	968.88	1.10E+02	35.86	1.37E+02	2.22
	36	1000.27	996 -	1003	999.93	3.25E+01	26.15	9.31E+01	5.33
	37	1058.57	1054 -	1063	1058.17	2.89E+01	35.68	1.66E+02	2.24
	38	1120.50	1115 -	1125	1120.04	1.32E+02	48.45	2.45E+02	1.99
	39	1172.42	1169 -	1175	1171.91	2.95E+01	23.36	7.89E+01	3.02
	40	1238.82	1234 -	1242	1238.25	4.95E+01	41.73	2.35E+02	1.66

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1302.84	1299 -	1305	1302.20	1.95E+01	20.60	6.30E+01	4.03
M	42	1379.04	1373 -	1389	1378.33	2.30E+01	21.04	5.45E+01	2.88
m	43	1385.83	1373 -	1389	1385.11	1.58E+01	19.46	3.52E+01	2.88
M	44	1461.36	1454 -	1478	1460.56	1.20E+03	71.35	3.17E+01	2.19
m	45	1465.34	1454 -	1478	1464.54	4.75E+01	54.22	3.25E+01	2.65
M	46	1507.02	1505 -	1514	1506.18	7.51E+00	7.23	9.92E+00	2.42
m	47	1509.62	1505 -	1514	1508.78	2.45E+01	16.44	2.92E+01	2.42
	48	1572.24	1568 -	1575	1571.34	2.19E+01	11.49	6.24E+00	5.62
M	49	1588.69	1583 -	1599	1587.77	2.09E+01	18.00	5.20E+01	2.69
m	50	1593.39	1583 -	1599	1592.47	2.57E+01	16.45	2.70E+01	2.44
	51	1633.15	1625 -	1638	1632.19	2.01E+01	22.43	3.99E+01	8.59
	52	1731.42	1726 -	1736	1730.36	3.58E+01	16.09	1.25E+01	3.30
	53	1765.11	1758 -	1770	1764.02	1.09E+02	27.74	3.96E+01	2.22
M	54	1925.21	1922 -	1931	1923.96	5.39E+00	6.32	6.94E+00	3.39
m	55	1930.11	1922 -	1931	1928.86	7.97E+00	8.19	7.41E+00	3.39
	56	1978.59	1973 -	1981	1977.29	8.73E+00	8.02	4.55E+00	3.65
	57	2103.83	2097 -	2107	2102.41	2.97E+01	15.58	1.66E+01	6.00
	58	2119.45	2115 -	2121	2118.01	1.35E+01	8.50	2.93E+00	1.53
	59	2204.65	2197 -	2208	2203.13	4.10E+01	14.56	6.00E+00	2.45
	60	2254.08	2248 -	2255	2252.51	9.83E+00	8.00	4.33E+00	3.70
	61	2448.38	2443 -	2449	2446.63	5.56E+00	7.78	6.89E+00	2.01
M	62	2615.66	2608 -	2621	2613.75	1.23E+02	24.66	0.00E+00	2.73
m	63	2619.16	2608 -	2621	2617.25	8.42E+00	21.63	0.00E+00	2.74

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 4:41:56PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.27	44 -	49	1.39E+02	82.53	1.26E+03	6.50E+01
	2	63.32	61 -	66	2.23E+02	104.61	2.02E+03	8.24E+01
M	3	74.66	71 -	86	5.09E+02	110.46	1.92E+03	7.20E+01
m	4	77.19	71 -	86	9.02E+02	118.45	1.95E+03	7.27E+01
	5	92.57	90 -	96	4.39E+02	118.87	2.20E+03	9.14E+01

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	6	185.73	182 -	190	3.36E+02	102.34	1.41E+03	7.85E+01
	7	197.35	194 -	201	7.66E+01	82.97	1.10E+03	6.67E+01
	8	209.75	207 -	214	9.84E+01	86.21	1.17E+03	6.90E+01
M	9	238.54	233 -	250	1.20E+03	85.46	5.87E+02	3.98E+01
m	10	241.74	233 -	250	3.08E+02	86.65	5.25E+02	3.77E+01
	11	269.55	265 -	273	1.25E+02	76.83	8.28E+02	6.04E+01
	12	275.91	274 -	280	5.77E+01	60.54	6.27E+02	4.82E+01
	13	295.15	292 -	299	3.65E+02	76.00	7.27E+02	5.40E+01
	14	300.20	299 -	304	4.57E+01	51.82	5.09E+02	4.11E+01
	15	327.47	324 -	330	7.71E+01	55.94	5.10E+02	4.37E+01
	16	338.22	334 -	343	2.16E+02	76.16	7.05E+02	5.78E+01
M	17	351.94	347 -	362	8.26E+02	67.30	2.74E+02	2.72E+01
m	18	356.69	347 -	362	3.74E+01	37.54	2.31E+02	2.50E+01
	19	463.14	460 -	467	4.59E+01	48.95	3.62E+02	3.87E+01
	20	510.54	506 -	516	1.90E+02	62.84	4.29E+02	4.64E+01
	21	518.19	516 -	520	2.58E+01	29.63	1.62E+02	2.29E+01
M	22	579.53	577 -	589	3.80E+01	23.92	9.54E+01	1.61E+01
m	23	583.28	577 -	589	3.82E+02	46.39	1.45E+02	1.98E+01
M	24	609.49	604 -	618	6.14E+02	55.92	1.49E+02	2.00E+01
m	25	613.33	604 -	618	2.64E+01	51.25	2.26E+02	2.47E+01
	26	727.14	722 -	731	9.07E+01	47.48	2.71E+02	3.57E+01
M	27	764.00	762 -	771	1.79E+01	21.73	1.03E+02	1.67E+01
m	28	768.30	762 -	771	5.05E+01	31.89	1.78E+02	2.19E+01
	29	785.51	782 -	788	4.87E+01	31.60	1.45E+02	2.33E+01
	30	794.76	792 -	798	3.75E+01	31.09	1.51E+02	2.35E+01
M	31	905.05	898 -	922	2.59E+01	27.42	1.21E+02	1.81E+01
m	32	911.42	898 -	922	2.55E+02	38.37	9.58E+01	1.61E+01
	33	934.10	930 -	937	3.74E+01	31.30	1.35E+02	2.37E+01
M	34	965.10	962 -	977	3.63E+01	23.96	1.11E+02	1.73E+01
m	35	969.19	962 -	977	1.10E+02	35.86	1.37E+02	1.92E+01
	36	1000.27	996 -	1003	3.25E+01	26.15	9.31E+01	1.94E+01
	37	1058.57	1054 -	1063	2.89E+01	35.68	1.66E+02	2.80E+01
	38	1120.50	1115 -	1125	1.32E+02	48.45	2.45E+02	3.51E+01
	39	1172.42	1169 -	1175	2.95E+01	23.36	7.89E+01	1.70E+01
	40	1238.82	1234 -	1242	4.95E+01	41.73	2.35E+02	3.23E+01
	41	1302.84	1299 -	1305	1.95E+01	20.60	6.30E+01	1.53E+01
M	42	1379.04	1373 -	1389	2.30E+01	21.04	5.45E+01	1.21E+01
m	43	1385.83	1373 -	1389	1.58E+01	19.46	3.52E+01	9.75E+00
M	44	1461.36	1454 -	1478	1.20E+03	71.35	3.17E+01	9.26E+00
m	45	1465.34	1454 -	1478	4.75E+01	54.22	3.25E+01	9.37E+00
M	46	1507.02	1505 -	1514	7.51E+00	7.23	9.92E+00	5.18E+00
m	47	1509.62	1505 -	1514	2.45E+01	16.44	2.92E+01	8.88E+00
	48	1572.24	1568 -	1575	2.19E+01	11.49	6.24E+00	5.48E+00
M	49	1588.69	1583 -	1599	2.09E+01	18.00	5.20E+01	1.19E+01
m	50	1593.39	1583 -	1599	2.57E+01	16.45	2.70E+01	8.54E+00
	51	1633.15	1625 -	1638	2.01E+01	22.43	3.99E+01	1.69E+01
	52	1731.42	1726 -	1736	3.58E+01	16.09	1.25E+01	8.84E+00
	53	1765.11	1758 -	1770	1.09E+02	27.74	3.96E+01	1.50E+01
M	54	1925.21	1922 -	1931	5.39E+00	6.32	6.94E+00	4.33E+00
m	55	1930.11	1922 -	1931	7.97E+00	8.19	7.41E+00	4.48E+00
	56	1978.59	1973 -	1981	8.73E+00	8.02	4.55E+00	4.45E+00

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	57	2103.83	2097 -	2107	2.97E+01	15.58	1.66E+01	9.15E+00
	58	2119.45	2115 -	2121	1.35E+01	8.50	2.93E+00	3.50E+00
	59	2204.65	2197 -	2208	4.10E+01	14.56	6.00E+00	5.70E+00
	60	2254.08	2248 -	2255	9.83E+00	8.00	4.33E+00	4.08E+00
	61	2448.38	2443 -	2449	5.56E+00	7.78	6.89E+00	5.09E+00
M	62	2615.66	2608 -	2621	1.23E+02	24.66	0.00E+00	0.00E+00
m	63	2619.16	2608 -	2621	8.42E+00	21.63	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/23/2017 4:41:56PM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.27	44 -	49	46.90	1.39E+02	82.53	1.26E+03	PB-210
	2	63.32	61 -	66	63.92	2.23E+02	104.61	2.02E+03	TH-234
									TH-230
M	3	74.66	71 -	86	75.26	5.09E+02	110.46	1.92E+03	AM-243
m	4	77.19	71 -	86	77.78	9.02E+02	118.45	1.95E+03	.....
	5	92.57	90 -	96	93.14	4.39E+02	118.87	2.20E+03	GA-67
	6	185.73	182 -	190	186.21	3.36E+02	102.34	1.41E+03	RA-226
	7	197.35	194 -	201	197.81	7.66E+01	82.97	1.10E+03	.....
	8	209.75	207 -	214	210.21	9.84E+01	86.21	1.17E+03	CM-243
									GA-67
M	9	238.54	233 -	250	238.97	1.20E+03	85.46	5.87E+02	PB-212
m	10	241.74	233 -	250	242.17	3.08E+02	86.65	5.25E+02	RA-224
	11	269.55	265 -	273	269.94	1.25E+02	76.83	8.28E+02	.....
	12	275.91	274 -	280	276.30	5.77E+01	60.54	6.27E+02	.....
	13	295.15	292 -	299	295.52	3.65E+02	76.00	7.27E+02	PB-214
	14	300.20	299 -	304	300.56	4.57E+01	51.82	5.09E+02	GA-67
									PB-212
									BI-210M
	15	327.47	324 -	330	327.80	7.71E+01	55.94	5.10E+02	.....

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	16	338.22	334 -	343	338.54	2.16E+02	76.16	7.05E+02	AC-228
M	17	351.94	347 -	362	352.25	8.26E+02	67.30	2.74E+02	PB-214
m	18	356.69	347 -	362	357.00	3.74E+01	37.54	2.31E+02	BA-133
	19	463.14	460 -	467	463.33	4.59E+01	48.95	3.62E+02	SB-125
	20	510.54	506 -	516	510.69	1.90E+02	62.84	4.29E+02	.....
	21	518.19	516 -	520	518.33	2.58E+01	29.63	1.62E+02	.....
M	22	579.53	577 -	589	579.61	3.80E+01	23.92	9.54E+01	.....
m	23	583.28	577 -	589	583.35	3.82E+02	46.39	1.45E+02	TL-208
M	24	609.49	604 -	618	609.54	6.14E+02	55.92	1.49E+02	BI-214
m	25	613.33	604 -	618	613.38	2.64E+01	51.25	2.26E+02	.....
	26	727.14	722 -	731	727.08	9.07E+01	47.48	2.71E+02	BI-212
M	27	764.00	762 -	771	763.90	1.79E+01	21.73	1.03E+02	AG-110M
m	28	768.30	762 -	771	768.19	5.05E+01	31.89	1.78E+02	.....
	29	785.51	782 -	788	785.38	4.87E+01	31.60	1.45E+02	.....
	30	794.76	792 -	798	794.63	3.75E+01	31.09	1.51E+02	.....
M	31	905.05	898 -	922	904.80	2.59E+01	27.42	1.21E+02	.....
m	32	911.42	898 -	922	911.17	2.55E+02	38.37	9.58E+01	TL-204 AC-228
	33	934.10	930 -	937	933.82	3.74E+01	31.30	1.35E+02	.....
M	34	965.10	962 -	977	964.80	3.63E+01	23.96	1.11E+02	.....
m	35	969.19	962 -	977	968.88	1.10E+02	35.86	1.37E+02	AC-228
	36	1000.27	996 -	1003	999.93	3.25E+01	26.15	9.31E+01	PA-234M
	37	1058.57	1054 -	1063	1058.17	2.89E+01	35.68	1.66E+02	.....
	38	1120.50	1115 -	1125	1120.04	1.32E+02	48.45	2.45E+02	SC-46 BI-214 TA-182
	39	1172.42	1169 -	1175	1171.91	2.95E+01	23.36	7.89E+01	CO-60
	40	1238.82	1234 -	1242	1238.25	4.95E+01	41.73	2.35E+02	CO-56
	41	1302.84	1299 -	1305	1302.20	1.95E+01	20.60	6.30E+01	.....
M	42	1379.04	1373 -	1389	1378.33	2.30E+01	21.04	5.45E+01	.....
m	43	1385.83	1373 -	1389	1385.11	1.58E+01	19.46	3.52E+01	.....
M	44	1461.36	1454 -	1478	1460.56	1.20E+03	71.35	3.17E+01	K-40
m	45	1465.34	1454 -	1478	1464.54	4.75E+01	54.22	3.25E+01	.....
M	46	1507.02	1505 -	1514	1506.18	7.51E+00	7.23	9.92E+00	.....
m	47	1509.62	1505 -	1514	1508.78	2.45E+01	16.44	2.92E+01	.....
	48	1572.24	1568 -	1575	1571.34	2.19E+01	11.49	6.24E+00	.....
M	49	1588.69	1583 -	1599	1587.77	2.09E+01	18.00	5.20E+01	.....
m	50	1593.39	1583 -	1599	1592.47	2.57E+01	16.45	2.70E+01	.....
	51	1633.15	1625 -	1638	1632.19	2.01E+01	22.43	3.99E+01	.....
	52	1731.42	1726 -	1736	1730.36	3.58E+01	16.09	1.25E+01	.....
	53	1765.11	1758 -	1770	1764.02	1.09E+02	27.74	3.96E+01	BI-214
M	54	1925.21	1922 -	1931	1923.96	5.39E+00	6.32	6.94E+00	.....
m	55	1930.11	1922 -	1931	1928.86	7.97E+00	8.19	7.41E+00	.....
	56	1978.59	1973 -	1981	1977.29	8.73E+00	8.02	4.55E+00	.....
	57	2103.83	2097 -	2107	2102.41	2.97E+01	15.58	1.66E+01	.....
	58	2119.45	2115 -	2121	2118.01	1.35E+01	8.50	2.93E+00	.....
	59	2204.65	2197 -	2208	2203.13	4.10E+01	14.56	6.00E+00	BI-214
	60	2254.08	2248 -	2255	2252.51	9.83E+00	8.00	4.33E+00	.....
	61	2448.38	2443 -	2449	2446.63	5.56E+00	7.78	6.89E+00	.....
M	62	2615.66	2608 -	2621	2613.75	1.23E+02	24.66	0.00E+00	.....
m	63	2619.16	2608 -	2621	2617.25	8.42E+00	21.63	0.00E+00	.....

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

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 : 8/23/2017 4:41:56PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.27	1.39E+02	82.53	2.46E-02	2.22E-03
	2	63.32	2.23E+02	104.61	2.70E-02	2.26E-03
M	3	74.66	5.09E+02	110.46	2.75E-02	2.38E-03
m	4	77.19	9.02E+02	118.45	2.75E-02	2.41E-03
	5	92.57	4.39E+02	118.87	2.73E-02	2.45E-03
	6	185.73	3.36E+02	102.34	2.17E-02	1.68E-03
	7	197.35	7.66E+01	82.97	2.10E-02	1.65E-03
	8	209.75	9.84E+01	86.21	2.03E-02	1.61E-03
M	9	238.54	1.20E+03	85.46	1.89E-02	1.53E-03
m	10	241.74	3.08E+02	86.65	1.87E-02	1.52E-03
	11	269.55	1.25E+02	76.83	1.75E-02	1.44E-03
	12	275.91	5.77E+01	60.54	1.72E-02	1.42E-03
	13	295.15	3.65E+02	76.00	1.64E-02	1.37E-03
	14	300.20	4.57E+01	51.82	1.63E-02	1.36E-03
	15	327.47	7.71E+01	55.94	1.53E-02	1.30E-03
	16	338.22	2.16E+02	76.16	1.50E-02	1.27E-03
M	17	351.94	8.26E+02	67.30	1.45E-02	1.24E-03
m	18	356.69	3.74E+01	37.54	1.44E-02	1.23E-03
	19	463.14	4.59E+01	48.95	1.19E-02	1.10E-03
	20	510.54	1.90E+02	62.84	1.10E-02	1.07E-03
	21	518.19	2.58E+01	29.63	1.09E-02	1.06E-03
M	22	579.53	3.80E+01	23.92	1.00E-02	1.02E-03
m	23	583.28	3.82E+02	46.39	9.96E-03	1.02E-03
M	24	609.49	6.14E+02	55.92	9.63E-03	1.01E-03
m	25	613.33	2.64E+01	51.25	9.59E-03	1.00E-03
	26	727.14	9.07E+01	47.48	8.41E-03	8.68E-04
M	27	764.00	1.79E+01	21.73	8.10E-03	8.09E-04
m	28	768.30	5.05E+01	31.89	8.07E-03	8.03E-04
	29	785.51	4.87E+01	31.60	7.93E-03	7.75E-04
	30	794.76	3.75E+01	31.09	7.86E-03	7.60E-04
M	31	905.05	2.59E+01	27.42	7.12E-03	5.94E-04
m	32	911.42	2.55E+02	38.37	7.08E-03	5.91E-04
	33	934.10	3.74E+01	31.30	6.95E-03	5.83E-04
M	34	965.10	3.63E+01	23.96	6.79E-03	5.71E-04

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	35	969.19	1.10E+02	35.86	6.76E-03	5.69E-04
	36	1000.27	3.25E+01	26.15	6.61E-03	5.57E-04
	37	1058.57	2.89E+01	35.68	6.33E-03	5.35E-04
	38	1120.50	1.32E+02	48.45	6.07E-03	5.11E-04
	39	1172.42	2.95E+01	23.36	5.87E-03	4.91E-04
	40	1238.82	4.95E+01	41.73	5.64E-03	4.76E-04
	41	1302.84	1.95E+01	20.60	5.44E-03	4.61E-04
M	42	1379.04	2.30E+01	21.04	5.22E-03	4.44E-04
m	43	1385.83	1.58E+01	19.46	5.20E-03	4.42E-04
M	44	1461.36	1.20E+03	71.35	5.00E-03	4.25E-04
m	45	1465.34	4.75E+01	54.22	4.99E-03	4.24E-04
M	46	1507.02	7.51E+00	7.23	4.90E-03	4.14E-04
m	47	1509.62	2.45E+01	16.44	4.89E-03	4.13E-04
	48	1572.24	2.19E+01	11.49	4.75E-03	3.99E-04
M	49	1588.69	2.09E+01	18.00	4.71E-03	3.95E-04
m	50	1593.39	2.57E+01	16.45	4.70E-03	3.94E-04
	51	1633.15	2.01E+01	22.43	4.62E-03	3.85E-04
	52	1731.42	3.58E+01	16.09	4.43E-03	3.62E-04
	53	1765.11	1.09E+02	27.74	4.37E-03	3.54E-04
M	54	1925.21	5.39E+00	6.32	4.11E-03	3.38E-04
m	55	1930.11	7.97E+00	8.19	4.11E-03	3.38E-04
	56	1978.59	8.73E+00	8.02	4.03E-03	3.38E-04
	57	2103.83	2.97E+01	15.58	3.86E-03	3.38E-04
	58	2119.45	1.35E+01	8.50	3.84E-03	3.38E-04
	59	2204.65	4.10E+01	14.56	3.74E-03	3.38E-04
	60	2254.08	9.83E+00	8.00	3.68E-03	3.38E-04
	61	2448.38	5.56E+00	7.78	3.47E-03	3.38E-04
M	62	2615.66	1.23E+02	24.66	3.30E-03	3.38E-04
m	63	2619.16	8.42E+00	21.63	3.30E-03	3.38E-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 : 8/23/2017 4:41:56PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	46.27	1.39E+02	82.53	3.67E+01	8.40E+00	1.02E+02	8.30E+01

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	2	63.32	2.23E+02	104.61	8.94E+01	1.41E+01	1.34E+02	1.06E+02
M	3	74.66	5.09E+02	110.46			5.09E+02	1.10E+02
m	4	77.19	9.02E+02	118.45	7.20E+00	1.47E+00	8.94E+02	1.18E+02
	5	92.57	4.39E+02	118.87	1.38E+02	1.72E+01	3.02E+02	1.20E+02
	6	185.73	3.36E+02	102.34	5.22E+01	7.59E+00	2.84E+02	1.03E+02
	7	197.35	7.66E+01	82.97	8.08E+00	8.45E+00	6.85E+01	8.34E+01
	8	209.75	9.84E+01	86.21			9.84E+01	8.62E+01
M	9	238.54	1.20E+03	85.46	2.13E+01	6.33E+00	1.18E+03	8.57E+01
m	10	241.74	3.08E+02	86.65			3.08E+02	8.66E+01
	11	269.55	1.25E+02	76.83			1.25E+02	7.68E+01
	12	275.91	5.77E+01	60.54			5.77E+01	6.05E+01
	13	295.15	3.65E+02	76.00			3.65E+02	7.60E+01
	14	300.20	4.57E+01	51.82			4.57E+01	5.18E+01
	15	327.47	7.71E+01	55.94			7.71E+01	5.59E+01
	16	338.22	2.16E+02	76.16			2.16E+02	7.62E+01
M	17	351.94	8.26E+02	67.30	5.79E+00	4.49E+00	8.21E+02	6.74E+01
m	18	356.69	3.74E+01	37.54			3.74E+01	3.75E+01
	19	463.14	4.59E+01	48.95			4.59E+01	4.89E+01
	20	510.54	1.90E+02	62.84	7.28E+01	5.30E+00	1.18E+02	6.31E+01
	21	518.19	2.58E+01	29.63			2.58E+01	2.96E+01
M	22	579.53	3.80E+01	23.92			3.80E+01	2.39E+01
m	23	583.28	3.82E+02	46.39	2.72E+00	3.05E+00	3.79E+02	4.65E+01
M	24	609.49	6.14E+02	55.92	6.35E+00	4.02E+00	6.08E+02	5.61E+01
m	25	613.33	2.64E+01	51.25			2.64E+01	5.13E+01
	26	727.14	9.07E+01	47.48			9.07E+01	4.75E+01
M	27	764.00	1.79E+01	21.73			1.79E+01	2.17E+01
m	28	768.30	5.05E+01	31.89			5.05E+01	3.19E+01
	29	785.51	4.87E+01	31.60			4.87E+01	3.16E+01
	30	794.76	3.75E+01	31.09			3.75E+01	3.11E+01
M	31	905.05	2.59E+01	27.42			2.59E+01	2.74E+01
m	32	911.42	2.55E+02	38.37	5.31E+00	3.00E+00	2.49E+02	3.85E+01
	33	934.10	3.74E+01	31.30			3.74E+01	3.13E+01
M	34	965.10	3.63E+01	23.96			3.63E+01	2.40E+01
m	35	969.19	1.10E+02	35.86			1.10E+02	3.59E+01
	36	1000.27	3.25E+01	26.15			3.25E+01	2.62E+01
	37	1058.57	2.89E+01	35.68			2.89E+01	3.57E+01
	38	1120.50	1.32E+02	48.45			1.32E+02	4.84E+01
	39	1172.42	2.95E+01	23.36			2.95E+01	2.34E+01
	40	1238.82	4.95E+01	41.73			4.95E+01	4.17E+01
	41	1302.84	1.95E+01	20.60			1.95E+01	2.06E+01
M	42	1379.04	2.30E+01	21.04			2.30E+01	2.10E+01
m	43	1385.83	1.58E+01	19.46			1.58E+01	1.95E+01
M	44	1461.36	1.20E+03	71.35	8.09E+00	2.23E+00	1.19E+03	7.14E+01
m	45	1465.34	4.75E+01	54.22			4.75E+01	5.42E+01
M	46	1507.02	7.51E+00	7.23			7.51E+00	7.23E+00
m	47	1509.62	2.45E+01	16.44			2.45E+01	1.64E+01
	48	1572.24	2.19E+01	11.49			2.19E+01	1.15E+01
M	49	1588.69	2.09E+01	18.00			2.09E+01	1.80E+01
m	50	1593.39	2.57E+01	16.45			2.57E+01	1.65E+01
	51	1633.15	2.01E+01	22.43			2.01E+01	2.24E+01
	52	1731.42	3.58E+01	16.09			3.58E+01	1.61E+01
	53	1765.11	1.09E+02	27.74			1.09E+02	2.77E+01
M	54	1925.21	5.39E+00	6.32			5.39E+00	6.32E+00
m	55	1930.11	7.97E+00	8.19			7.97E+00	8.19E+00

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	56	1978.59	8.73E+00	8.02			8.73E+00	8.02E+00
	57	2103.83	2.97E+01	15.58			2.97E+01	1.56E+01
	58	2119.45	1.35E+01	8.50			1.35E+01	8.50E+00
	59	2204.65	4.10E+01	14.56			4.10E+01	1.46E+01
	60	2254.08	9.83E+00	8.00			9.83E+00	8.00E+00
	61	2448.38	5.56E+00	7.78			5.56E+00	7.78E+00
M	62	2615.66	1.23E+02	24.66	5.63E+00	1.38E+00	1.18E+02	2.47E+01
m	63	2619.16	8.42E+00	21.63			8.42E+00	2.16E+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 : 8/23/2017 4:41:56PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.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	46.27	1.39E+02	82.53	3.67E+01	8.40E+00	1.02E+02	8.30E+01
	2	63.32	2.23E+02	104.61	8.94E+01	1.41E+01	1.34E+02	1.06E+02
M	3	74.66	5.09E+02	110.46			5.09E+02	1.10E+02
m	4	77.19	9.02E+02	118.45	7.20E+00	1.47E+00	8.94E+02	1.18E+02
	5	92.57	4.39E+02	118.87	1.38E+02	1.72E+01	3.02E+02	1.20E+02
	6	185.73	3.36E+02	102.34	5.22E+01	7.59E+00	2.84E+02	1.03E+02
	7	197.35	7.66E+01	82.97	8.08E+00	8.45E+00	6.85E+01	8.34E+01
	8	209.75	9.84E+01	86.21			9.84E+01	8.62E+01
M	9	238.54	1.20E+03	85.46	2.13E+01	6.33E+00	1.18E+03	8.57E+01
m	10	241.74	3.08E+02	86.65			3.08E+02	8.66E+01
	11	269.55	1.25E+02	76.83			1.25E+02	7.68E+01
	12	275.91	5.77E+01	60.54			5.77E+01	6.05E+01
	13	295.15	3.65E+02	76.00			3.65E+02	7.60E+01
	14	300.20	4.57E+01	51.82			4.57E+01	5.18E+01
	15	327.47	7.71E+01	55.94			7.71E+01	5.59E+01
	16	338.22	2.16E+02	76.16			2.16E+02	7.62E+01
M	17	351.94	8.26E+02	67.30	5.79E+00	4.49E+00	8.21E+02	6.74E+01
m	18	356.69	3.74E+01	37.54			3.74E+01	3.75E+01
	19	463.14	4.59E+01	48.95			4.59E+01	4.89E+01
	20	510.54	1.90E+02	62.84	7.28E+01	5.30E+00	1.18E+02	6.31E+01

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	21	518.19	2.58E+01	29.63			2.58E+01	2.96E+01
M	22	579.53	3.80E+01	23.92			3.80E+01	2.39E+01
m	23	583.28	3.82E+02	46.39	2.72E+00	3.05E+00	3.79E+02	4.65E+01
M	24	609.49	6.14E+02	55.92	6.35E+00	4.02E+00	6.08E+02	5.61E+01
m	25	613.33	2.64E+01	51.25			2.64E+01	5.13E+01
	26	727.14	9.07E+01	47.48			9.07E+01	4.75E+01
M	27	764.00	1.79E+01	21.73			1.79E+01	2.17E+01
m	28	768.30	5.05E+01	31.89			5.05E+01	3.19E+01
	29	785.51	4.87E+01	31.60			4.87E+01	3.16E+01
	30	794.76	3.75E+01	31.09			3.75E+01	3.11E+01
M	31	905.05	2.59E+01	27.42			2.59E+01	2.74E+01
m	32	911.42	2.55E+02	38.37	5.31E+00	3.00E+00	2.49E+02	3.85E+01
	33	934.10	3.74E+01	31.30			3.74E+01	3.13E+01
M	34	965.10	3.63E+01	23.96			3.63E+01	2.40E+01
m	35	969.19	1.10E+02	35.86			1.10E+02	3.59E+01
	36	1000.27	3.25E+01	26.15			3.25E+01	2.62E+01
	37	1058.57	2.89E+01	35.68			2.89E+01	3.57E+01
	38	1120.50	1.32E+02	48.45			1.32E+02	4.84E+01
	39	1172.42	2.95E+01	23.36			2.95E+01	2.34E+01
	40	1238.82	4.95E+01	41.73			4.95E+01	4.17E+01
	41	1302.84	1.95E+01	20.60			1.95E+01	2.06E+01
M	42	1379.04	2.30E+01	21.04			2.30E+01	2.10E+01
m	43	1385.83	1.58E+01	19.46			1.58E+01	1.95E+01
M	44	1461.36	1.20E+03	71.35	8.09E+00	2.23E+00	1.19E+03	7.14E+01
m	45	1465.34	4.75E+01	54.22			4.75E+01	5.42E+01
M	46	1507.02	7.51E+00	7.23			7.51E+00	7.23E+00
m	47	1509.62	2.45E+01	16.44			2.45E+01	1.64E+01
	48	1572.24	2.19E+01	11.49			2.19E+01	1.15E+01
M	49	1588.69	2.09E+01	18.00			2.09E+01	1.80E+01
m	50	1593.39	2.57E+01	16.45			2.57E+01	1.65E+01
	51	1633.15	2.01E+01	22.43			2.01E+01	2.24E+01
	52	1731.42	3.58E+01	16.09			3.58E+01	1.61E+01
	53	1765.11	1.09E+02	27.74			1.09E+02	2.77E+01
M	54	1925.21	5.39E+00	6.32			5.39E+00	6.32E+00
m	55	1930.11	7.97E+00	8.19			7.97E+00	8.19E+00
	56	1978.59	8.73E+00	8.02			8.73E+00	8.02E+00
	57	2103.83	2.97E+01	15.58			2.97E+01	1.56E+01
	58	2119.45	1.35E+01	8.50			1.35E+01	8.50E+00
	59	2204.65	4.10E+01	14.56			4.10E+01	1.46E+01
	60	2254.08	9.83E+00	8.00			9.83E+00	8.00E+00
	61	2448.38	5.56E+00	7.78			5.56E+00	7.78E+00
M	62	2615.66	1.23E+02	24.66	5.63E+00	1.38E+00	1.18E+02	2.47E+01
m	63	2619.16	8.42E+00	21.63			8.42E+00	2.16E+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 1707090-15

HTC-A07-S001-2430-01

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	0.953	1460.81	*	10.67	2.45E+01	2.59E+00
PB-210	0.992	46.50	*	4.25	1.08E+00	8.82E-01
BI-212	0.764	727.17	*	11.80	1.00E+00	5.34E-01
		1620.62		2.75		
PB-212	0.999	238.63	*	44.60	1.53E+00	1.67E-01
		300.09	*	3.41	9.04E-01	1.03E+00
BI-214	0.983	609.31	*	46.30	1.49E+00	2.08E-01
		1120.29	*	15.10	1.57E+00	5.94E-01
		1764.49	*	15.80	1.73E+00	4.62E-01
		2204.22	*	4.98	2.41E+00	8.85E-01
PB-214	1.000	295.21	*	19.19	1.27E+00	2.84E-01
		351.92	*	37.19	1.66E+00	1.97E-01
RA-224	0.911	240.98	*	3.95	4.56E+00	1.34E+00
RA-226	0.963	186.21	*	3.28	4.36E+00	8.14E+00
AC-228	0.990	338.32	*	11.40	1.39E+00	5.03E-01
		911.07	*	27.70	1.39E+00	2.44E-01
		969.11	*	16.60	1.08E+00	3.61E-01
PA-234M	0.912	1001.03	*	0.92	5.85E+00	4.74E+00
TH-234	1.000	63.29	*	3.80	1.43E+00	1.13E+00
AM-243	1.000	74.67	*	66.00	3.07E-01	7.19E-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 : 8/23/2017 4:41:56PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.19	2.48469E-01	6.62		
	5	92.57	8.37891E-02	19.91	Sum	
	7	197.35	1.90237E-02	60.89		
	8	209.75	2.73399E-02	43.79	Tol.	GA-67 CM-243
	11	269.55	3.46717E-02	30.78		
	12	275.91	1.60235E-02	52.47		
	15	327.47	2.14035E-02	36.30		
m	18	356.69	1.03881E-02	50.19	Tol.	BA-133
	19	463.14	1.27490E-02	53.33	Tol.	SB-125
	20	510.54	3.26805E-02	26.80		
	21	518.19	7.16770E-03	57.42		
M	22	579.53	1.05653E-02	31.44	Sum	
m	23	583.28	1.05359E-01	6.13	Tol.	TL-208
m	25	613.33	7.34027E-03	96.98		
M	27	764.00	4.96811E-03	60.74		
m	28	768.30	1.40183E-02	31.60		
	29	785.51	1.35147E-02	32.47		
	30	794.76	1.04130E-02	41.47	Sum	
M	31	905.05	7.18766E-03	52.99	Sum	
	33	934.10	1.03796E-02	41.89		
M	34	965.10	1.00697E-02	33.05	Sum	
	37	1058.57	8.01711E-03	61.81		
	39	1172.42	8.20652E-03	39.53		
	40	1238.82	1.37616E-02	42.11	Sum	
	41	1302.84	5.41667E-03	52.83		
M	42	1379.04	6.38604E-03	45.76		
m	43	1385.83	4.39894E-03	61.45		
m	45	1465.34	1.31954E-02	57.07		
M	46	1507.02	2.08517E-03	48.15	Sum	
m	47	1509.62	6.80747E-03	33.54		
	48	1572.24	6.07778E-03	26.25		
M	49	1588.69	5.81837E-03	42.97		
m	50	1593.39	7.14094E-03	32.00		
	51	1633.15	5.56944E-03	55.93		
	52	1731.42	9.93056E-03	22.50		
M	54	1925.21	1.49754E-03	58.66		
m	55	1930.11	2.21515E-03	51.32		
	56	1978.59	2.42424E-03	45.92		
	57	2103.83	8.25292E-03	26.22	Sum	
	58	2119.45	3.75926E-03	31.40		
	60	2254.08	2.73148E-03	40.68		
	61	2448.38	1.54321E-03	70.00		
M	62	2615.66	3.26732E-02	10.50		
m	63	2619.16	2.33837E-03	128.49		

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 1707090-15

HTC-A07-S001-2430-01

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.95	1460.81	*	10.67	2.45E+01	2.59E+00
PB-210	0.99	46.50	*	4.25	1.08E+00	8.82E-01
BI-212	0.76	727.17	*	11.80	1.00E+00	5.34E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.53E+00	1.67E-01
		300.09	*	3.41	9.04E-01	1.03E+00
BI-214	0.98	609.31	*	46.30	1.49E+00	2.08E-01
		1120.29	*	15.10	1.57E+00	5.94E-01
		1764.49	*	15.80	1.73E+00	4.62E-01
		2204.22	*	4.98	2.41E+00	8.85E-01
PB-214	1.00	295.21	*	19.19	1.27E+00	2.84E-01
		351.92	*	37.19	1.66E+00	1.97E-01
RA-224	0.91	240.98	*	3.95	4.56E+00	1.34E+00
RA-226	0.96	186.21	*	3.28	4.36E+00	8.14E+00
AC-228	0.99	338.32	*	11.40	1.39E+00	5.03E-01
		911.07	*	27.70	1.39E+00	2.44E-01
		969.11	*	16.60	1.08E+00	3.61E-01
PA-234M	0.91	1001.03	*	0.92	5.85E+00	4.74E+00
TH-234	1.00	63.29	*	3.80	1.43E+00	1.13E+00
AM-243	1.00	74.67	*	66.00	3.07E-01	7.19E-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 1707090-15

HTC-A07-S001-2430-01

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.953	2.45E+01	2.59E+00	
PB-210	0.992	1.08E+00	8.82E-01	
BI-212	0.764	1.00E+00	5.34E-01	
PB-212	0.999	1.52E+00	1.65E-01	
BI-214	0.983	1.57E+00	1.77E-01	
PB-214	1.000	1.53E+00	1.62E-01	
RA-224	0.911	4.56E+00	1.34E+00	
RA-226	0.963	4.36E+00	8.14E+00	
AC-228	0.990	1.31E+00	1.88E-01	
PA-234M	0.912	5.85E+00	4.74E+00	
TH-234	1.000	1.43E+00	1.13E+00	
AM-243	1.000	3.07E-01	7.19E-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 1707090-15

HTC-A07-S001-2430-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 4:41:56PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.19	2.48469E-01	6.62		
	5	92.57	8.37891E-02	19.91	Sum	
	7	197.35	1.90237E-02	60.89		
	8	209.75	2.73399E-02	43.79	Tol.	GA-67
						CM-243
	11	269.55	3.46717E-02	30.78		
	12	275.91	1.60235E-02	52.47		
	15	327.47	2.14035E-02	36.30		
m	18	356.69	1.03881E-02	50.19	Tol.	BA-133
	19	463.14	1.27490E-02	53.33	Tol.	SB-125
	20	510.54	3.26805E-02	26.80		
	21	518.19	7.16770E-03	57.42		
M	22	579.53	1.05653E-02	31.44	Sum	
m	23	583.28	1.05359E-01	6.13	Tol.	TL-208
m	25	613.33	7.34027E-03	96.98		
M	27	764.00	4.96811E-03	60.74		
m	28	768.30	1.40183E-02	31.60		
	29	785.51	1.35147E-02	32.47		
	30	794.76	1.04130E-02	41.47	Sum	
M	31	905.05	7.18766E-03	52.99	Sum	
	33	934.10	1.03796E-02	41.89		
M	34	965.10	1.00697E-02	33.05	Sum	
	37	1058.57	8.01711E-03	61.81		
	39	1172.42	8.20652E-03	39.53		
	40	1238.82	1.37616E-02	42.11	Sum	
	41	1302.84	5.41667E-03	52.83		
M	42	1379.04	6.38604E-03	45.76		
m	43	1385.83	4.39894E-03	61.45		
m	45	1465.34	1.31954E-02	57.07		
M	46	1507.02	2.08517E-03	48.15	Sum	
m	47	1509.62	6.80747E-03	33.54		
	48	1572.24	6.07778E-03	26.25		
M	49	1588.69	5.81837E-03	42.97		
m	50	1593.39	7.14094E-03	32.00		
	51	1633.15	5.56944E-03	55.93		

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	52	1731.42	9.93056E-03	22.50		
M	54	1925.21	1.49754E-03	58.66		
m	55	1930.11	2.21515E-03	51.32		
	56	1978.59	2.42424E-03	45.92		
	57	2103.83	8.25292E-03	26.22	Sum	
	58	2119.45	3.75926E-03	31.40		
	60	2254.08	2.73148E-03	40.68		
	61	2448.38	1.54321E-03	70.00		
M	62	2615.66	3.26732E-02	10.50		
m	63	2619.16	2.33837E-03	128.49		

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	7.12E-01	1.93E+00	1.93E+00
+		NA-22	1274.54		99.94	1.46E-02	8.27E-02	8.27E-02
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	1.62E-02	4.26E-02	4.26E-02
+		K-40	1460.81	*	10.67	2.45E+01	1.37E+00	1.37E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	1.85E-02	6.14E-02	6.14E-02
			78.34		96.00	2.05E-01		8.24E-02
+		SC-46	889.25		99.98	2.52E-02	1.59E-01	1.59E-01
			1120.51		99.99	5.74E-01		2.90E-01
+		V-48	983.52		99.98	-1.27E+00	5.01E+00	5.01E+00
			1312.10		97.50	5.27E-01		5.71E+00
+		CR-51	320.08		9.83	-1.56E+00	6.67E+00	6.67E+00
+		MN-54	834.83		99.97	3.83E-02	9.95E-02	9.95E-02
+		CO-56	846.75		99.96	-6.21E-02	1.53E-01	1.53E-01
			1037.75		14.03	-6.70E-01		1.07E+00
			1238.25		67.00	3.25E-01		3.98E-01

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-56	1771.40	15.51	1.94E-02	1.53E-01	7.30E-01
		2598.48	16.90	-2.67E-02		7.03E-01
+	CO-57	122.06	85.51	3.57E-02	7.36E-02	7.36E-02
		136.48	10.60	1.28E-01		6.13E-01
+	CO-58	810.76	99.40	-7.21E-02	1.60E-01	1.60E-01
+	FE-59	1099.22	56.50	-2.82E-01	6.09E-01	6.09E-01
		1291.56	43.20	-2.99E-01		8.00E-01
+	CO-60	1173.22	100.00	1.72E-02	6.90E-02	8.16E-02
		1332.49	100.00	-6.70E-03		6.90E-02
+	ZN-65	1115.52	50.75	9.64E-03	2.07E-01	2.07E-01
+	GA-67	93.31	35.70	5.41E+08	2.62E+08	2.62E+08
		208.95	2.24	3.22E+09		3.66E+09
		300.22	16.00	-1.75E+09		5.51E+08
+	SE-75	121.11	16.70	3.04E-01	1.51E-01	5.20E-01
		136.00	59.20	3.15E-02		1.51E-01
		264.65	59.80	-3.31E-03		1.66E-01
		279.53	25.20	-6.48E-02		3.92E-01
		400.65	11.40	8.18E-02		8.60E-01
+	RB-82	776.52	13.00	-1.28E+00	7.45E+00	7.45E+00
+	RB-83	520.41	46.00	-7.26E-02	2.69E-01	2.69E-01
		529.64	30.30	-6.86E-02		4.08E-01
		552.65	16.40	-1.31E-01		7.61E-01
+	KR-85	513.99	0.43	1.15E+01	1.88E+01	1.88E+01
+	SR-85	513.99	99.27	1.43E-01	2.33E-01	2.33E-01
+	Y-88	898.02	93.40	-3.68E-03	8.61E-02	1.24E-01
		1836.01	99.38	-1.68E-02		8.61E-02
+	MO-93	263.06	56.72	-8.51E-03	5.33E-02	9.94E-02
		684.67	99.68	8.00E-03		6.07E-02
		1477.11	99.08	-1.36E-03		5.33E-02
+	NB-93M	16.57	9.43	-8.75E-02	5.18E-01	5.18E-01
+	NB-94	702.63	100.00	3.87E-02	6.51E-02	7.13E-02
		871.10	100.00	-2.21E-02		6.51E-02
+	NB-95	765.79	99.81	5.85E-01	5.74E-01	5.74E-01
+	NB-95M	235.69	25.00	-3.69E+08	4.95E+07	4.95E+07
+	ZR-95	724.18	43.70	-1.52E-02	3.80E-01	5.23E-01
		756.72	55.30	1.63E-01		3.80E-01
+	MO-99	181.06	6.20	-7.90E+09	3.79E+10	5.69E+10
		739.58	12.80	1.96E+10		3.79E+10
		778.00	4.50	-5.00E+10		1.02E+11
+	RU-103	497.08	89.00	-5.54E-02	3.57E-01	3.57E-01
+	RU-106	621.84	9.80	3.56E-01	7.51E-01	7.51E-01
+	AG-108M	433.93	89.90	-1.27E-02	6.06E-02	6.06E-02
		614.37	90.40	-6.51E-01		8.56E-02
		722.95	90.50	-1.91E-04		7.61E-02
+	CD-109	88.03	3.72	1.32E+00	1.98E+00	1.98E+00
+	AG-110M	657.75	93.14	4.48E-02	8.94E-02	8.94E-02
		677.61	10.53	-2.96E-01		7.53E-01
		706.67	16.46	2.05E-01		5.67E-01

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AG-110M	763.93	21.98	-6.25E-01	8.94E-02	4.07E-01
		884.67	71.63	2.27E-02		1.17E-01
		1384.27	23.94	-9.96E-02		3.36E-01
+	CD-113M	263.70	0.02	-5.56E+00	2.48E+02	2.48E+02
+	SN-113	255.12	1.93	-1.55E+00	1.60E-01	4.34E+00
		391.69	64.90	2.97E-02		1.60E-01
+	TE123M	159.00	84.10	9.55E-03	1.03E-01	1.03E-01
+	SB-124	602.71	97.87	-1.49E-02	1.95E-01	1.95E-01
		645.85	7.26	-1.05E+00		2.54E+00
		722.78	11.10	-4.89E-03		1.94E+00
		1691.02	49.00	-1.17E-01		2.47E-01
+	I-125	35.49	6.49	-6.86E-01	2.44E+00	2.44E+00
+	SB-125	176.33	6.89	1.85E-02	2.02E-01	7.56E-01
		427.89	29.33	-4.60E-02		2.02E-01
		463.38	10.35	5.55E-01		6.63E-01
		600.56	17.80	4.91E-02		3.66E-01
		635.90	11.32	-6.67E-02		5.52E-01
+	SB-126	414.70	83.30	-6.79E+00	1.61E+01	1.79E+01
		666.33	99.60	2.84E+00		1.71E+01
		695.00	99.60	3.16E+00		1.61E+01
		720.50	53.80	-8.54E+00		3.05E+01
+	SN-126	87.57	37.00	1.15E-01	1.69E-01	1.69E-01
+	SB-127	473.00	25.00	9.32E+06	9.69E+06	1.35E+07
		685.20	35.70	1.28E+06		9.69E+06
		783.80	14.70	3.02E+07		3.01E+07
+	I-129	29.78	57.00	3.59E-02	1.02E-01	1.02E-01
		33.60	13.20	-1.27E-01		3.90E-01
		39.58	7.52	-1.75E-01		6.54E-01
+	I-131	284.30	6.05	-3.88E+02	3.29E+02	4.76E+03
		364.48	81.20	9.03E+01		3.29E+02
		636.97	7.26	-3.10E+03		3.99E+03
		722.89	1.80	-5.02E+01		2.00E+04
+	TE-132	49.72	13.10	1.59E+08	8.67E+07	5.78E+08
		228.16	88.00	2.12E+07		8.67E+07
+	BA-133	81.00	33.00	-6.91E-01	1.40E-01	1.79E-01
		302.84	17.80	5.78E-02		3.52E-01
		356.01	60.00	-7.31E-02		1.40E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-2.96E+05	7.66E+04	7.66E+04
+	CS-134	563.23	8.38	-6.25E-02	7.67E-02	7.75E-01
		569.32	15.43	1.60E-01		4.43E-01
		604.70	97.60	-8.86E-03		7.67E-02
		795.84	85.40	7.41E-02		9.65E-02
		801.93	8.73	2.47E-01		8.59E-01
+	CS-135	268.24	16.00	5.36E-01	4.00E-01	4.00E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	2.26E+01	1.28E+01	1.27E+02

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	163.89	4.61	1.40E+01	1.28E+01	1.93E+02
		176.55	13.56	1.64E+00		6.71E+01
		273.65	12.66	-1.42E+01		9.03E+01
		340.57	48.50	5.61E+01		2.83E+01
		818.50	99.70	-2.11E+00		1.28E+01
		1048.07	79.60	6.45E+00		1.93E+01
		1235.34	19.70	-9.05E+00		1.01E+02
+	CS-137	661.65	85.12	-5.20E-02	7.18E-02	7.18E-02
+	LA-138	788.74	34.00	1.40E-02	8.51E-02	1.99E-01
		1435.80	66.00	-1.84E-02		8.51E-02
+	CE-139	165.85	80.35	-1.52E-02	9.68E-02	9.68E-02
+	BA-140	162.64	6.70	-7.38E+01	4.97E+01	1.51E+02
		304.84	4.50	4.36E+00		2.62E+02
		423.70	3.20	-2.91E+01		3.77E+02
		437.55	2.00	-9.78E+01		5.95E+02
		537.32	25.00	-2.69E+00		4.97E+01
+	LA-140	328.77	20.50	5.34E+00	1.10E+01	6.64E+01
		487.03	45.50	-4.80E+00		2.63E+01
		815.85	23.50	1.22E+01		6.16E+01
		1596.49	95.49	-8.25E+00		1.10E+01
+	CE-141	145.44	48.40	2.50E-01	8.80E-01	8.80E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-3.33E-01	5.79E-01	5.79E-01
+	PM-144	476.78	42.00	-1.12E-03	7.57E-02	1.58E-01
		618.01	98.60	-1.66E-04		7.57E-02
		696.49	99.49	-8.52E-03		7.61E-02
+	PM-145	36.85	21.70	-1.24E-01	1.28E-01	2.32E-01
		37.36	39.70	2.76E-02		1.28E-01
		42.30	15.10	-7.10E-02		3.26E-01
		72.40	2.31	-4.47E+00		2.99E+00
+	PM-146	453.90	39.94	4.77E-02	1.57E-01	1.57E-01
		735.90	14.01	-1.70E-01		4.55E-01
		747.13	13.10	6.79E-02		5.12E-01
+	ND-147	91.11	28.90	2.33E+02	1.22E+02	1.22E+02
		531.02	13.10	-8.02E+00		2.25E+02
+	PM-149	285.90	3.10	8.55E+12	5.88E+13	5.88E+13
+	EU-152	121.78	20.50	1.42E-01	2.42E-01	2.42E-01
		244.69	5.40	-5.11E-02		1.06E+00
		344.27	19.13	-2.41E-02		2.86E-01
		778.89	9.20	-6.55E-02		6.75E-01
		964.01	10.40	-1.58E+00		8.27E-01
		1085.78	7.22	4.69E-01		1.07E+00
		1112.02	9.60	2.46E-01		7.68E-01
		1407.95	14.94	1.67E-01		4.86E-01
+	GD-153	97.43	31.30	4.84E-02	2.11E-01	2.11E-01
		103.18	22.20	-9.63E-02		2.83E-01
+	EU-154	123.07	40.50	4.89E-02	1.24E-01	1.24E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	723.30		19.70	-8.97E-04	1.24E-01	3.57E-01
		873.19		11.50	1.31E-01		5.83E-01
		996.32		10.30	-1.07E-01		5.89E-01
		1004.76		17.90	-5.83E-02		3.98E-01
		1274.45		35.50	3.91E-02		2.21E-01
+	EU-155	86.50		30.90	1.42E-01	2.11E-01	2.11E-01
		105.30		20.70	1.32E-01		2.45E-01
+	EU-156	811.77		10.40	-3.91E+01	5.30E+01	5.30E+01
		1153.47		7.20	2.40E+01		1.05E+02
		1230.71		8.90	-2.46E+01		9.55E+01
+	HO-166M	184.41		72.60	2.00E-01	8.73E-02	8.73E-02
		280.45		29.60	-7.86E-03		1.91E-01
		410.94		11.10	2.26E-01		5.60E-01
		711.69		54.10	7.62E-03		1.21E-01
+	TM-171	66.72		0.14	1.36E+00	4.60E+01	4.60E+01
+	HF-172	67.35		5.31	3.63E-01	4.73E-01	1.20E+00
		125.81		11.30	-4.14E-01		4.73E-01
+	LU-172	181.53		20.60	-9.36E+02	3.68E+03	6.74E+03
		900.72		29.81	-3.09E+03		6.24E+03
		1093.66		62.50	1.86E+03		3.68E+03
+	LU-173	100.72		5.24	-3.29E-01	3.45E-01	1.05E+00
		272.11		21.20	2.35E-01		3.45E-01
+	HF-175	343.40		84.00	-1.45E-02	1.74E-01	1.74E-01
+	LU-176	88.34		13.30	3.19E-01	5.68E-02	4.79E-01
		201.83		86.00	-1.62E-02		5.68E-02
		306.78		94.00	9.68E-03		5.76E-02
+	HF-181	133.02		41.70	-3.43E-01	3.35E-01	5.97E-01
		345.85		17.20	-1.35E-01		1.58E+00
		482.03		82.80	1.35E-01		3.35E-01
+	TA-182	67.75		41.20	7.70E-02	2.56E-01	2.56E-01
		1121.30		34.90	1.13E+00		6.60E-01
		1189.05		16.23	-1.97E-01		9.00E-01
		1221.41		26.98	2.05E-01		6.58E-01
		1231.02		11.44	-3.76E-01		1.46E+00
+	IR-192	308.46		29.68	-3.04E-01	2.70E-01	4.46E-01
		468.07		48.10	-3.59E-02		2.70E-01
+	HG-203	279.19		77.30	-5.20E-02	3.15E-01	3.15E-01
+	TL-204	374.74		94.11	2.27E-02	6.00E-02	6.00E-02
		899.15		99.16	5.40E-03		6.53E-02
		911.74		91.10	3.92E-01		1.51E-01
+	BI-207	569.67		97.72	-6.82E-03	6.40E-02	6.40E-02
		1063.62		74.90	6.29E-03		9.96E-02
+	TL-208	583.14		30.22	1.31E+00	3.89E-01	3.89E-01
		860.37		4.48	7.75E-01		1.56E+00
		2614.66		35.85	1.36E+00		5.59E-01
+	BI-210M	262.00		45.00	4.22E-02	1.24E-01	1.24E-01
		300.00		23.00	-1.48E+00		2.68E-01
+	PB-210	46.50	*	4.25	1.08E+00	1.43E+00	1.43E+00
+	PB-211	404.84		2.90	-9.00E-01	1.97E+00	1.97E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PB-211	831.96		2.90	-1.13E+00	1.97E+00	2.49E+00
+	BI-212	727.17	*	11.80	1.00E+00	8.20E-01	8.20E-01
		1620.62		2.75	3.41E-01		2.14E+00
+	PB-212	238.63	*	44.60	1.53E+00	3.02E-01	3.02E-01
		300.09	*	3.41	9.04E-01		1.68E+00
+	BI-214	609.31	*	46.30	1.49E+00	2.53E-01	2.53E-01
		1120.29	*	15.10	1.57E+00		8.71E-01
		1764.49	*	15.80	1.73E+00		5.19E-01
		2204.22	*	4.98	2.41E+00		8.31E-01
+	PB-214	295.21	*	19.19	1.27E+00	2.95E-01	3.85E-01
		351.92	*	37.19	1.66E+00		2.95E-01
+	RN-219	401.80		6.50	-6.81E-01	8.16E-01	8.16E-01
+	RA-223	323.87		3.88	-5.27E-02	1.51E+00	1.51E+00
+	RA-224	240.98	*	3.95	4.56E+00	3.42E+00	3.42E+00
+	RA-225	40.00		31.00	9.67E-01	1.67E+01	1.67E+01
+	RA-226	186.21	*	3.28	4.36E+00	2.49E+00	2.49E+00
+	TH-227	50.10		8.40	-9.45E-03	5.64E-01	5.90E-01
		236.00		11.50	-4.21E+00		5.64E-01
		256.20		6.30	-4.59E-02		8.79E-01
+	AC-228	338.32	*	11.40	1.39E+00	6.79E-01	7.60E-01
		911.07	*	27.70	1.39E+00		6.79E-01
		969.11	*	16.60	1.08E+00		8.81E-01
+	TH-230	48.44		16.90	3.48E-02	3.23E-01	3.23E-01
		62.85		4.60	2.15E+00		1.37E+00
		67.67		0.37	4.70E+00		1.56E+01
+	PA-231	283.67		1.60	6.69E-01	2.67E+00	3.46E+00
		302.67		2.30	4.39E-01		2.67E+00
+	TH-231	25.64		14.70	-2.76E+00	4.97E-01	4.97E-01
		84.21		6.40	-2.81E-01		9.42E-01
+	PA-233	311.98		38.60	1.46E-01	1.80E+00	1.80E+00
+	PA-234	131.20		20.40	1.88E-03	2.45E-01	2.45E-01
		733.99		8.80	-1.91E-01		6.91E-01
		946.00		12.00	-2.53E-01		5.66E-01
+	PA-234M	1001.03	*	0.92	5.85E+00	7.47E+00	7.47E+00
+	TH-234	63.29	*	3.80	1.43E+00	1.84E+00	1.84E+00
+	U-235	143.76		10.50	2.31E-01	4.88E-01	4.88E-01
		163.35		4.70	7.33E-02		1.01E+00
		205.31		4.70	2.33E-01		1.06E+00
+	NP-237	86.50		12.60	3.36E-01	4.98E-01	4.98E-01
+	NP-239	106.10		22.70	3.39E+11	1.05E+12	1.05E+12
		228.18		10.70	5.77E+11		2.36E+12
		277.60		14.10	1.38E+12		2.06E+12
+	AM-241	59.54		35.90	5.55E-02	1.54E-01	1.54E-01
+	AM-243	74.67	*	66.00	3.07E-01	2.32E-01	2.32E-01
+	CM-243	209.75		3.29	2.23E+00	4.22E-01	1.73E+00
		228.14		10.60	1.19E-01		4.85E-01
		277.60		14.00	2.84E-01		4.22E-01

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	1.93E+00	1.93E+00	7.12E-01	9.20E-01
	NA-22	1274.54		99.94	8.27E-02	8.27E-02	1.46E-02	3.84E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.26E-02	4.26E-02	1.62E-02	1.78E-02
+	K-40	1460.81	*	10.67	1.37E+00	1.37E+00	2.45E+01	6.55E-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	6.14E-02	6.14E-02	1.85E-02	3.01E-02
		78.34		96.00	8.24E-02		2.05E-01	4.07E-02
	SC-46	889.25		99.98	1.59E-01	1.59E-01	2.52E-02	7.49E-02
		1120.51		99.99	2.90E-01		5.74E-01	1.39E-01
	V-48	983.52		99.98	5.01E+00	5.01E+00	-1.27E+00	2.34E+00
		1312.10		97.50	5.71E+00		5.27E-01	2.64E+00
	CR-51	320.08		9.83	6.67E+00	6.67E+00	-1.56E+00	3.22E+00
	MN-54	834.83		99.97	9.95E-02	9.95E-02	3.83E-02	4.73E-02
	CO-56	846.75		99.96	1.53E-01	1.53E-01	-6.21E-02	7.16E-02
		1037.75		14.03	1.07E+00		-6.70E-01	4.98E-01
		1238.25		67.00	3.98E-01		3.25E-01	1.90E-01
		1771.40		15.51	7.30E-01		1.94E-02	3.13E-01
		2598.48		16.90	7.03E-01		-2.67E-02	2.88E-01
	CO-57	122.06		85.51	7.36E-02	7.36E-02	3.57E-02	3.60E-02
		136.48		10.60	6.13E-01		1.28E-01	2.99E-01
	CO-58	810.76		99.40	1.60E-01	1.60E-01	-7.21E-02	7.48E-02
	FE-59	1099.22		56.50	6.09E-01	6.09E-01	-2.82E-01	2.84E-01
		1291.56		43.20	8.00E-01		-2.99E-01	3.70E-01
	CO-60	1173.22		100.00	8.16E-02	6.90E-02	1.72E-02	3.82E-02
		1332.49		100.00	6.90E-02		-6.70E-03	3.16E-02
	ZN-65	1115.52		50.75	2.07E-01	2.07E-01	9.64E-03	9.71E-02
	GA-67	93.31		35.70	2.62E+08	2.62E+08	5.41E+08	1.29E+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)
GA-67	208.95	2.24	3.66E+09	2.62E+08	3.22E+09	1.78E+09
	300.22	16.00	5.51E+08		-1.75E+09	2.67E+08
SE-75	121.11	16.70	5.20E-01	1.51E-01	3.04E-01	2.54E-01
	136.00	59.20	1.51E-01		3.15E-02	7.38E-02
	264.65	59.80	1.66E-01		-3.31E-03	8.03E-02
	279.53	25.20	3.92E-01		-6.48E-02	1.90E-01
	400.65	11.40	8.60E-01		8.18E-02	4.13E-01
RB-82	776.52	13.00	7.45E+00	7.45E+00	-1.28E+00	3.51E+00
RB-83	520.41	46.00	2.69E-01	2.69E-01	-7.26E-02	1.28E-01
	529.64	30.30	4.08E-01		-6.86E-02	1.94E-01
	552.65	16.40	7.61E-01		-1.31E-01	3.61E-01
KR-85	513.99	0.43	1.88E+01	1.88E+01	1.15E+01	9.07E+00
SR-85	513.99	99.27	2.33E-01	2.33E-01	1.43E-01	1.13E-01
Y-88	898.02	93.40	1.24E-01	8.61E-02	-3.68E-03	5.77E-02
	1836.01	99.38	8.61E-02		-1.68E-02	3.64E-02
MO-93	263.06	56.72	9.94E-02	5.33E-02	-8.51E-03	4.82E-02
	684.67	99.68	6.07E-02		8.00E-03	2.86E-02
	1477.11	99.08	5.33E-02		-1.36E-03	2.36E-02
NB-93M	16.57	9.43	5.18E-01	5.18E-01	-8.75E-02	2.44E-01
NB-94	702.63	100.00	7.13E-02	6.51E-02	3.87E-02	3.39E-02
	871.10	100.00	6.51E-02		-2.21E-02	3.05E-02
NB-95	765.79	99.81	5.74E-01	5.74E-01	5.85E-01	2.74E-01
NB-95M	235.69	25.00	4.95E+07	4.95E+07	-3.69E+08	2.41E+07
ZR-95	724.18	43.70	5.23E-01	3.80E-01	-1.52E-02	2.50E-01
	756.72	55.30	3.80E-01		1.63E-01	1.81E-01
MO-99	181.06	6.20	5.69E+10	3.79E+10	-7.90E+09	2.76E+10
	739.58	12.80	3.79E+10		1.96E+10	1.79E+10
	778.00	4.50	1.02E+11		-5.00E+10	4.78E+10
RU-103	497.08	89.00	3.57E-01	3.57E-01	-5.54E-02	1.70E-01
RU-106	621.84	9.80	7.51E-01	7.51E-01	3.56E-01	3.56E-01
AG-108M	433.93	89.90	6.06E-02	6.06E-02	-1.27E-02	2.90E-02
	614.37	90.40	8.56E-02		-6.51E-01	4.11E-02
	722.95	90.50	7.61E-02		-1.91E-04	3.61E-02
CD-109	88.03	3.72	1.98E+00	1.98E+00	1.32E+00	9.75E-01
AG-110M	657.75	93.14	8.94E-02	8.94E-02	4.48E-02	4.24E-02
	677.61	10.53	7.53E-01		-2.96E-01	3.55E-01
	706.67	16.46	5.67E-01		2.05E-01	2.69E-01
	763.93	21.98	4.07E-01		-6.25E-01	1.92E-01
	884.67	71.63	1.17E-01		2.27E-02	5.49E-02
	1384.27	23.94	3.36E-01		-9.96E-02	1.52E-01
CD-113M	263.70	0.02	2.48E+02	2.48E+02	-5.56E+00	1.20E+02
SN-113	255.12	1.93	4.34E+00	1.60E-01	-1.55E+00	2.09E+00
	391.69	64.90	1.60E-01		2.97E-02	7.69E-02
TE123M	159.00	84.10	1.03E-01	1.03E-01	9.55E-03	5.01E-02
SB-124	602.71	97.87	1.95E-01	1.95E-01	-1.49E-02	9.25E-02
	645.85	7.26	2.54E+00		-1.05E+00	1.20E+00
	722.78	11.10	1.94E+00		-4.89E-03	9.22E-01
	1691.02	49.00	2.47E-01		-1.17E-01	1.02E-01
I-125	35.49	6.49	2.44E+00	2.44E+00	-6.86E-01	1.19E+00
SB-125	176.33	6.89	7.56E-01	2.02E-01	1.85E-02	3.68E-01
	427.89	29.33	2.02E-01		-4.60E-02	9.65E-02
	463.38	10.35	6.63E-01		5.55E-01	3.19E-01
	600.56	17.80	3.66E-01		4.91E-02	1.74E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-125	635.90	11.32	5.52E-01	2.02E-01	-6.67E-02	2.61E-01
SB-126	414.70	83.30	1.79E+01	1.61E+01	-6.79E+00	8.62E+00
	666.33	99.60	1.71E+01		2.84E+00	8.12E+00
	695.00	99.60	1.61E+01		3.16E+00	7.60E+00
	720.50	53.80	3.05E+01		-8.54E+00	1.44E+01
SN-126	87.57	37.00	1.69E-01	1.69E-01	1.15E-01	8.29E-02
SB-127	473.00	25.00	1.35E+07	9.69E+06	9.32E+06	6.43E+06
	685.20	35.70	9.69E+06		1.28E+06	4.57E+06
	783.80	14.70	3.01E+07		3.02E+07	1.43E+07
I-129	29.78	57.00	1.02E-01	1.02E-01	3.59E-02	4.98E-02
	33.60	13.20	3.90E-01		-1.27E-01	1.90E-01
	39.58	7.52	6.54E-01		-1.75E-01	3.19E-01
I-131	284.30	6.05	4.76E+03	3.29E+02	-3.88E+02	2.30E+03
	364.48	81.20	3.29E+02		9.03E+01	1.58E+02
	636.97	7.26	3.99E+03		-3.10E+03	1.88E+03
	722.89	1.80	2.00E+04		-5.02E+01	9.47E+03
TE-132	49.72	13.10	5.78E+08	8.67E+07	1.59E+08	2.82E+08
	228.16	88.00	8.67E+07		2.12E+07	4.21E+07
BA-133	81.00	33.00	1.79E-01	1.40E-01	-6.91E-01	8.77E-02
	302.84	17.80	3.52E-01		5.78E-02	1.71E-01
	356.01	60.00	1.40E-01		-7.31E-02	6.81E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	7.66E+04	7.66E+04	-2.96E+05	3.76E+04
CS-134	563.23	8.38	7.75E-01	7.67E-02	-6.25E-02	3.68E-01
	569.32	15.43	4.43E-01		1.60E-01	2.11E-01
	604.70	97.60	7.67E-02		-8.86E-03	3.66E-02
	795.84	85.40	9.65E-02		7.41E-02	4.58E-02
	801.93	8.73	8.59E-01		2.47E-01	4.06E-01
CS-135	268.24	16.00	4.00E-01	4.00E-01	5.36E-01	1.95E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.27E+02	1.28E+01	2.26E+01	6.20E+01
	163.89	4.61	1.93E+02		1.40E+01	9.40E+01
	176.55	13.56	6.71E+01		1.64E+00	3.26E+01
	273.65	12.66	9.03E+01		-1.42E+01	4.39E+01
	340.57	48.50	2.83E+01		5.61E+01	1.38E+01
	818.50	99.70	1.28E+01		-2.11E+00	6.03E+00
	1048.07	79.60	1.93E+01		6.45E+00	9.09E+00
	1235.34	19.70	1.01E+02		-9.05E+00	4.80E+01
CS-137	661.65	85.12	7.18E-02	7.18E-02	-5.20E-02	3.40E-02
LA-138	788.74	34.00	1.99E-01	8.51E-02	1.40E-02	9.39E-02
	1435.80	66.00	8.51E-02		-1.84E-02	3.81E-02
CE-139	165.85	80.35	9.68E-02	9.68E-02	-1.52E-02	4.71E-02
BA-140	162.64	6.70	1.51E+02	4.97E+01	-7.38E+01	7.34E+01
	304.84	4.50	2.62E+02		4.36E+00	1.27E+02
	423.70	3.20	3.77E+02		-2.91E+01	1.81E+02
	437.55	2.00	5.95E+02		-9.78E+01	2.85E+02
	537.32	25.00	4.97E+01		-2.69E+00	2.36E+01
LA-140	328.77	20.50	6.64E+01	1.10E+01	5.34E+00	3.22E+01
	487.03	45.50	2.63E+01		-4.80E+00	1.25E+01
	815.85	23.50	6.16E+01		1.22E+01	2.90E+01
	1596.49	95.49	1.10E+01		-8.25E+00	4.78E+00

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-141	145.44	48.40	8.80E-01	8.80E-01	2.50E-01	4.30E-01
@ 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	5.79E-01	5.79E-01	-3.33E-01	2.83E-01
PM-144	476.78	42.00	1.58E-01	7.57E-02	-1.12E-03	7.55E-02
	618.01	98.60	7.57E-02		-1.66E-04	3.59E-02
	696.49	99.49	7.61E-02		-8.52E-03	3.60E-02
PM-145	36.85	21.70	2.32E-01	1.28E-01	-1.24E-01	1.13E-01
	37.36	39.70	1.28E-01		2.76E-02	6.23E-02
	42.30	15.10	3.26E-01		-7.10E-02	1.59E-01
	72.40	2.31	2.99E+00		-4.47E+00	1.47E+00
PM-146	453.90	39.94	1.57E-01	1.57E-01	4.77E-02	7.53E-02
	735.90	14.01	4.55E-01		-1.70E-01	2.14E-01
	747.13	13.10	5.12E-01		6.79E-02	2.42E-01
ND-147	91.11	28.90	1.22E+02	1.22E+02	2.33E+02	6.02E+01
	531.02	13.10	2.25E+02		-8.02E+00	1.07E+02
PM-149	285.90	3.10	5.88E+13	5.88E+13	8.55E+12	2.85E+13
EU-152	121.78	20.50	2.42E-01	2.42E-01	1.42E-01	1.18E-01
	244.69	5.40	1.06E+00		-5.11E-02	5.17E-01
	344.27	19.13	2.86E-01		-2.41E-02	1.38E-01
	778.89	9.20	6.75E-01		-6.55E-02	3.17E-01
	964.01	10.40	8.27E-01		-1.58E+00	3.92E-01
	1085.78	7.22	1.07E+00		4.69E-01	5.02E-01
	1112.02	9.60	7.68E-01		2.46E-01	3.58E-01
	1407.95	14.94	4.86E-01		1.67E-01	2.23E-01
GD-153	97.43	31.30	2.11E-01	2.11E-01	4.84E-02	1.03E-01
	103.18	22.20	2.83E-01		-9.63E-02	1.38E-01
EU-154	123.07	40.50	1.24E-01	1.24E-01	4.89E-02	6.04E-02
	723.30	19.70	3.57E-01		-8.97E-04	1.69E-01
	873.19	11.50	5.83E-01		1.31E-01	2.73E-01
	996.32	10.30	5.89E-01		-1.07E-01	2.72E-01
	1004.76	17.90	3.98E-01		-5.83E-02	1.86E-01
	1274.45	35.50	2.21E-01		3.91E-02	1.03E-01
EU-155	86.50	30.90	2.11E-01	2.11E-01	1.42E-01	1.04E-01
	105.30	20.70	2.45E-01		1.32E-01	1.20E-01
EU-156	811.77	10.40	5.30E+01	5.30E+01	-3.91E+01	2.48E+01
	1153.47	7.20	1.05E+02		2.40E+01	4.95E+01
	1230.71	8.90	9.55E+01		-2.46E+01	4.50E+01
HO-166M	184.41	72.60	8.73E-02	8.73E-02	2.00E-01	4.27E-02
	280.45	29.60	1.91E-01		-7.86E-03	9.24E-02
	410.94	11.10	5.60E-01		2.26E-01	2.70E-01
	711.69	54.10	1.21E-01		7.62E-03	5.75E-02
TM-171	66.72	0.14	4.60E+01	4.60E+01	1.36E+00	2.26E+01
HF-172	67.35	5.31	1.20E+00	4.73E-01	3.63E-01	5.91E-01
	125.81	11.30	4.73E-01		-4.14E-01	2.31E-01
LU-172	181.53	20.60	6.74E+03	3.68E+03	-9.36E+02	3.28E+03
	900.72	29.81	6.24E+03		-3.09E+03	2.92E+03
	1093.66	62.50	3.68E+03		1.86E+03	1.73E+03
LU-173	100.72	5.24	1.05E+00	3.45E-01	-3.29E-01	5.12E-01
	272.11	21.20	3.45E-01		2.35E-01	1.68E-01
HF-175	343.40	84.00	1.74E-01	1.74E-01	-1.45E-02	8.37E-02
LU-176	88.34	13.30	4.79E-01	5.68E-02	3.19E-01	2.35E-01

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	LU-176	201.83		86.00	5.68E-02	5.68E-02	-1.62E-02	2.76E-02
		306.78		94.00	5.76E-02		9.68E-03	2.78E-02
	HF-181	133.02		41.70	5.97E-01	3.35E-01	-3.43E-01	2.91E-01
		345.85		17.20	1.58E+00		-1.35E-01	7.59E-01
		482.03		82.80	3.35E-01		1.35E-01	1.60E-01
	TA-182	67.75		41.20	2.56E-01	2.56E-01	7.70E-02	1.26E-01
		1121.30		34.90	6.60E-01		1.13E+00	3.17E-01
		1189.05		16.23	9.00E-01		-1.97E-01	4.21E-01
		1221.41		26.98	6.58E-01		2.05E-01	3.11E-01
		1231.02		11.44	1.46E+00		-3.76E-01	6.88E-01
	IR-192	308.46		29.68	4.46E-01	2.70E-01	-3.04E-01	2.15E-01
		468.07		48.10	2.70E-01		-3.59E-02	1.28E-01
	HG-203	279.19		77.30	3.15E-01	3.15E-01	-5.20E-02	1.53E-01
	TL-204	374.74		94.11	6.00E-02	6.00E-02	2.27E-02	2.88E-02
		899.15		99.16	6.53E-02		5.40E-03	3.04E-02
		911.74		91.10	1.51E-01		3.92E-01	7.31E-02
	BI-207	569.67		97.72	6.40E-02	6.40E-02	-6.82E-03	3.05E-02
		1063.62		74.90	9.96E-02		6.29E-03	4.66E-02
	TL-208	583.14		30.22	3.89E-01	3.89E-01	1.31E+00	1.89E-01
		860.37		4.48	1.56E+00		7.75E-01	7.37E-01
		2614.66		35.85	5.59E-01		1.36E+00	2.67E-01
	BI-210M	262.00		45.00	1.24E-01	1.24E-01	4.22E-02	6.03E-02
		300.00		23.00	2.68E-01		-1.48E+00	1.30E-01
+	PB-210	46.50	*	4.25	1.43E+00	1.43E+00	1.08E+00	6.99E-01
	PB-211	404.84		2.90	1.97E+00	1.97E+00	-9.00E-01	9.44E-01
		831.96		2.90	2.49E+00		-1.13E+00	1.18E+00
+	BI-212	727.17	*	11.80	8.20E-01	8.20E-01	1.00E+00	3.95E-01
		1620.62		2.75	2.14E+00		3.41E-01	9.56E-01
+	PB-212	238.63	*	44.60	3.02E-01	3.02E-01	1.53E+00	1.49E-01
		300.09	*	3.41	1.68E+00		9.04E-01	8.13E-01
+	BI-214	609.31	*	46.30	2.53E-01	2.53E-01	1.49E+00	1.23E-01
		1120.29	*	15.10	8.71E-01		1.57E+00	4.19E-01
		1764.49	*	15.80	5.19E-01		1.73E+00	2.38E-01
		2204.22	*	4.98	8.31E-01		2.41E+00	3.36E-01
+	PB-214	295.21	*	19.19	3.85E-01	2.95E-01	1.27E+00	1.88E-01
		351.92	*	37.19	2.95E-01		1.66E+00	1.45E-01
	RN-219	401.80		6.50	8.16E-01	8.16E-01	-6.81E-01	3.91E-01
	RA-223	323.87		3.88	1.51E+00	1.51E+00	-5.27E-02	7.28E-01
+	RA-224	240.98	*	3.95	3.42E+00	3.42E+00	4.56E+00	1.69E+00
	RA-225	40.00		31.00	1.67E+01	1.67E+01	9.67E-01	8.14E+00
+	RA-226	186.21	*	3.28	2.49E+00	2.49E+00	4.36E+00	1.23E+00
	TH-227	50.10		8.40	5.90E-01	5.64E-01	-9.45E-03	2.88E-01
		236.00		11.50	5.64E-01		-4.21E+00	2.75E-01
		256.20		6.30	8.79E-01		-4.59E-02	4.27E-01
+	AC-228	338.32	*	11.40	7.60E-01	6.79E-01	1.39E+00	3.71E-01
		911.07	*	27.70	6.79E-01		1.39E+00	3.32E-01
		969.11	*	16.60	8.81E-01		1.08E+00	4.27E-01
	TH-230	48.44		16.90	3.23E-01	3.23E-01	3.48E-02	1.58E-01
		62.85		4.60	1.37E+00		2.15E+00	6.71E-01
		67.67		0.37	1.56E+01		4.70E+00	7.66E+00
	PA-231	283.67		1.60	3.46E+00	2.67E+00	6.69E-01	1.67E+00
		302.67		2.30	2.67E+00		4.39E-01	1.30E+00
	TH-231	25.64		14.70	4.97E-01	4.97E-01	-2.76E+00	2.42E-01

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-231	84.21		6.40	9.42E-01	4.97E-01	-2.81E-01	4.63E-01
	PA-233	311.98		38.60	1.80E+00	1.80E+00	1.46E-01	8.68E-01
	PA-234	131.20		20.40	2.45E-01	2.45E-01	1.88E-03	1.20E-01
		733.99		8.80	6.91E-01		-1.91E-01	3.25E-01
		946.00		12.00	5.66E-01		-2.53E-01	2.65E-01
+	PA-234M	1001.03	*	0.92	7.47E+00	7.47E+00	5.85E+00	3.49E+00
+	TH-234	63.29	*	3.80	1.84E+00	1.84E+00	1.43E+00	9.05E-01
	U-235	143.76		10.50	4.88E-01	4.88E-01	2.31E-01	2.38E-01
		163.35		4.70	1.01E+00		7.33E-02	4.93E-01
		205.31		4.70	1.06E+00		2.33E-01	5.14E-01
	NP-237	86.50		12.60	4.98E-01	4.98E-01	3.36E-01	2.45E-01
	NP-239	106.10		22.70	1.05E+12	1.05E+12	3.39E+11	5.14E+11
		228.18		10.70	2.36E+12		5.77E+11	1.14E+12
		277.60		14.10	2.06E+12		1.38E+12	9.98E+11
	AM-241	59.54		35.90	1.54E-01	1.54E-01	5.55E-02	7.55E-02
+	AM-243	74.67	*	66.00	2.32E-01	2.32E-01	3.07E-01	1.15E-01
	CM-243	209.75		3.29	1.73E+00	4.22E-01	2.23E+00	8.41E-01
		228.14		10.60	4.85E-01		1.19E-01	2.35E-01
		277.60		14.00	4.22E-01		2.84E-01	2.05E-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

No Data Review Comments Entered.

Analysis Report for 1707090-15

HTC-A07-S001-2430-01

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

Sample Title: HTC-A07-S001-2430-01

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	0	0
17:	0	0	92	100	88	173	527	183
25:	88	89	88	100	83	83	91	88
33:	78	89	89	67	87	93	99	104
41:	83	81	104	93	121	108	204	136
49:	105	114	130	119	113	128	128	123
57:	125	166	160	158	155	164	215	320
65:	210	169	186	178	193	192	181	212
73:	223	232	464	430	481	676	236	189
81:	181	186	174	210	227	160	248	292
89:	176	211	204	181	359	292	166	126
97:	138	130	136	137	122	113	103	126
105:	128	122	129	119	114	115	115	124
113:	125	116	108	120	108	96	100	102
121:	114	125	114	130	99	116	100	115
129:	146	133	110	114	111	115	113	102
137:	123	128	111	105	113	112	92	150
145:	121	97	107	93	103	117	100	90
153:	101	107	142	93	102	95	101	101
161:	70	106	83	96	67	89	90	85
169:	76	93	103	94	95	94	87	79
177:	87	83	93	86	72	81	89	76
185:	121	219	198	103	75	77	82	72
193:	71	65	69	84	92	88	68	90
201:	69	69	72	74	80	82	72	73
209:	101	123	104	81	64	64	76	79
217:	75	57	70	64	57	58	54	77
225:	72	68	83	63	78	73	58	63
233:	66	65	70	87	88	246	746	309
241:	115	218	139	99	59	47	59	40
249:	52	39	56	49	58	41	41	74
257:	42	51	64	49	56	47	43	58
265:	41	56	58	48	67	82	88	60
273:	39	47	59	71	43	60	42	49
281:	43	39	49	51	49	45	39	39
289:	42	48	41	38	44	54	210	251
297:	59	44	28	72	80	45	36	39
305:	54	31	34	35	46	31	34	37
313:	42	38	36	37	40	33	33	37
321:	38	38	40	39	45	40	52	67
329:	60	29	39	43	33	37	40	34
337:	54	99	144	52	35	35	39	32
345:	26	34	32	29	29	37	124	472
353:	293	36	39	41	43	23	40	27
361:	20	21	22	30	28	28	27	30

369:	28	27	24	26	32	35	23	36

Sample Title: HTC-A07-S001-2430-01

Channel								
377:	28	18	25	23	28	30	28	29
385:	31	25	35	29	39	34	23	28
393:	30	23	33	32	19	37	27	18
401:	30	25	28	24	21	32	39	30
409:	33	48	33	28	32	29	31	18
417:	33	28	26	26	26	23	30	23
425:	25	26	22	25	26	24	23	22
433:	31	21	22	20	23	31	19	20
441:	27	24	23	21	29	21	17	28
449:	20	22	20	32	28	27	25	35
457:	22	21	32	21	27	27	54	49
465:	15	15	19	21	15	22	20	29
473:	19	15	30	26	15	17	20	20
481:	17	19	17	22	24	13	21	19
489:	21	18	23	24	21	22	14	14
497:	25	19	22	19	20	18	19	23
505:	20	11	20	27	35	59	98	59
513:	23	25	26	22	24	25	29	7
521:	17	18	15	16	22	21	12	21
529:	18	17	18	18	20	12	22	16
537:	27	22	14	15	23	14	20	17
545:	20	19	21	18	16	16	17	23
553:	19	7	19	17	16	22	17	20
561:	15	22	23	12	13	23	19	18
569:	11	27	22	20	22	19	27	9
577:	14	19	22	31	16	47	210	138
585:	38	21	18	21	17	17	16	16
593:	16	22	15	14	17	27	12	22
601:	17	17	11	16	18	20	18	54
609:	259	297	60	28	18	30	23	17
617:	18	11	22	16	13	20	16	19
625:	10	10	14	13	24	16	15	21
633:	21	10	16	7	14	17	17	10
641:	17	15	17	8	11	21	10	13
649:	21	18	19	19	16	13	17	15
657:	13	25	10	11	23	9	13	17
665:	21	23	19	13	17	14	19	15
673:	18	16	9	8	15	20	13	18
681:	15	19	14	10	12	19	10	10
689:	11	9	13	11	19	18	15	12
697:	9	17	12	17	18	17	23	21
705:	16	20	10	19	19	24	13	11
713:	14	11	17	19	12	11	16	17
721:	13	13	18	13	16	27	52	38
729:	20	17	12	16	12	15	10	8
737:	15	11	19	15	18	11	14	20
745:	5	14	18	14	14	13	14	13
753:	19	13	18	22	15	19	17	15
761:	11	13	15	22	11	16	16	40
769:	28	15	11	22	23	14	12	8
777:	17	9	11	12	15	9	16	17
785:	21	35	14	9	9	15	10	6
793:	13	25	25	20	12	12	14	13

801:	14	15	13	14	15	10	14	11

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Channel								
809:	15	5	9	13	11	9	9	19
817:	13	14	15	8	16	17	19	7
825:	5	13	15	8	12	11	17	22
833:	14	12	15	25	21	18	18	14
841:	17	13	19	10	8	12	14	10
849:	9	14	12	11	8	10	9	10
857:	16	10	9	19	17	12	9	7
865:	13	16	12	14	10	10	13	10
873:	10	10	16	9	10	6	5	8
881:	11	8	6	8	10	18	11	9
889:	14	13	9	13	15	11	8	11
897:	9	9	7	10	9	10	17	12
905:	21	12	10	8	19	47	124	84
913:	14	14	14	15	9	13	11	9
921:	16	8	6	9	17	15	9	7
929:	11	10	14	8	17	29	13	11
937:	3	11	7	18	8	8	10	6
945:	13	14	10	11	10	17	18	7
953:	7	7	15	14	8	5	11	7
961:	14	9	6	23	28	15	20	43
969:	61	35	13	12	11	13	9	10
977:	8	9	14	8	15	7	11	14
985:	5	8	14	8	17	9	11	8
993:	4	10	4	5	10	10	8	10
1001:	16	15	5	9	5	8	13	10
1009:	11	11	13	9	7	10	6	9
1017:	17	10	9	6	15	7	11	8
1025:	14	11	8	4	16	8	11	11
1033:	11	4	8	11	5	9	7	10
1041:	14	8	13	16	14	14	9	15
1049:	13	13	16	11	6	5	8	9
1057:	16	17	11	9	11	15	11	11
1065:	9	8	8	5	9	11	11	8
1073:	8	10	9	11	7	18	7	11
1081:	9	12	14	14	10	6	12	8
1089:	4	10	12	12	6	17	15	10
1097:	11	10	8	8	10	12	11	9
1105:	17	7	5	8	10	8	12	11
1113:	8	10	7	10	13	20	32	67
1121:	43	26	12	9	15	12	6	10
1129:	15	19	5	13	10	7	11	12
1137:	13	10	9	18	9	12	8	5
1145:	8	9	12	13	8	7	11	10
1153:	13	8	16	15	7	12	9	8
1161:	12	11	13	10	10	22	8	4
1169:	3	9	11	16	13	8	9	6
1177:	15	10	9	10	8	17	14	11
1185:	9	9	11	14	9	11	12	7
1193:	11	15	14	24	9	7	13	13
1201:	6	14	10	12	16	12	12	21
1209:	17	18	14	19	7	14	12	10
1217:	14	15	13	17	23	15	11	12
1225:	13	14	13	10	15	9	19	12

1233:	14	16	16	9	22	37	23	18

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Channel								
1241:	13	13	10	13	10	9	9	8
1249:	8	6	10	10	13	6	13	10
1257:	11	16	13	9	7	9	8	10
1265:	9	7	7	11	8	6	8	15
1273:	6	7	5	11	8	6	10	8
1281:	14	8	6	11	3	13	7	9
1289:	10	8	10	6	7	4	10	9
1297:	5	6	3	10	4	9	13	8
1305:	4	5	7	10	10	7	5	9
1313:	7	6	6	10	3	9	4	7
1321:	7	7	8	6	8	5	5	7
1329:	8	6	5	9	4	3	6	8
1337:	5	5	6	9	8	5	11	5
1345:	4	8	8	6	1	8	5	7
1353:	3	2	7	4	9	5	2	6
1361:	5	3	4	2	5	2	5	3
1369:	0	8	4	3	5	5	3	4
1377:	10	11	13	4	3	2	6	5
1385:	9	4	3	5	2	1	2	5
1393:	4	1	5	4	4	2	2	3
1401:	7	8	5	4	4	4	13	7
1409:	7	5	5	1	3	6	7	3
1417:	8	3	2	3	3	4	2	3
1425:	3	8	4	2	7	2	5	4
1433:	3	4	4	3	4	3	5	5
1441:	1	6	3	5	3	5	6	5
1449:	3	4	2	3	4	1	4	4
1457:	15	22	132	431	481	136	28	20
1465:	19	9	5	1	2	6	4	3
1473:	3	1	4	2	6	1	3	1
1481:	4	5	4	5	6	0	1	3
1489:	2	6	1	3	3	5	3	0
1497:	5	2	2	3	2	3	3	2
1505:	1	5	2	7	13	8	4	5
1513:	3	1	5	2	2	2	2	2
1521:	2	2	1	3	2	2	3	2
1529:	0	2	5	7	2	1	2	2
1537:	1	3	5	2	3	3	6	3
1545:	4	2	2	2	3	1	4	2
1553:	2	2	1	0	3	4	0	2
1561:	0	1	0	2	6	2	1	1
1569:	5	4	6	2	3	4	0	0
1577:	2	1	4	5	2	4	5	4
1585:	2	2	7	12	5	2	3	14
1593:	5	3	2	2	2	1	0	2
1601:	4	1	2	0	3	2	1	2
1609:	1	4	0	1	0	1	1	3
1617:	1	2	0	8	5	4	3	3
1625:	4	1	3	2	6	6	3	2
1633:	4	1	3	2	3	0	0	0
1641:	0	1	1	1	3	4	2	0
1649:	1	2	0	2	1	0	4	1
1657:	4	2	1	5	6	3	1	2

1665:	4	2	3	0	2	3	0	1

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Channel								
1673:	2	1	1	1	0	1	1	3
1681:	1	3	1	2	5	3	1	1
1689:	0	1	1	1	3	0	0	0
1697:	2	0	1	1	0	0	0	2
1705:	2	0	1	0	0	1	1	2
1713:	1	4	0	2	2	1	1	2
1721:	0	0	0	0	3	0	2	5
1729:	11	8	8	3	1	3	1	0
1737:	0	1	1	4	1	2	0	4
1745:	0	2	0	2	1	0	2	0
1753:	4	1	2	0	1	1	2	0
1761:	0	4	32	47	23	13	2	2
1769:	2	1	3	1	1	1	2	4
1777:	1	0	0	1	4	1	0	1
1785:	1	1	0	0	1	3	0	1
1793:	1	2	1	2	1	0	1	2
1801:	0	2	2	0	3	0	2	0
1809:	1	2	1	0	0	0	2	1
1817:	4	1	1	2	0	2	2	3
1825:	1	1	1	4	0	2	3	1
1833:	1	3	1	1	3	0	1	2
1841:	1	2	1	1	1	7	3	7
1849:	2	2	0	3	0	1	2	1
1857:	2	1	0	1	0	1	3	2
1865:	1	2	1	2	4	1	2	2
1873:	1	1	1	2	1	0	3	0
1881:	0	3	1	1	3	1	1	3
1889:	2	1	0	2	1	1	4	2
1897:	1	0	1	1	0	1	1	1
1905:	0	1	2	0	1	2	0	1
1913:	3	1	0	0	1	1	4	2
1921:	0	2	1	3	1	1	1	4
1929:	1	3	0	1	1	0	2	4
1937:	2	1	0	3	2	1	4	1
1945:	1	2	2	2	1	1	2	1
1953:	2	2	1	1	3	0	1	2
1961:	0	0	1	0	0	2	0	3
1969:	1	1	1	0	0	1	2	0
1977:	1	4	1	2	0	1	0	0
1985:	3	2	3	2	1	2	1	0
1993:	2	0	0	2	1	0	0	0
2001:	3	0	1	1	0	0	2	4
2009:	0	1	2	1	2	0	1	2
2017:	1	1	1	1	0	1	0	1
2025:	0	0	2	1	1	1	2	2
2033:	0	2	0	4	2	0	3	2
2041:	0	2	1	1	2	1	2	3
2049:	2	0	1	2	0	2	0	0
2057:	1	1	2	1	2	1	0	2
2065:	1	2	1	1	2	2	2	0
2073:	0	2	1	1	0	1	1	0
2081:	1	1	2	1	0	2	0	1
2089:	2	1	1	0	4	1	1	0

2097:	1	0	3	4	5	7	6	2

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Channel								
2105:	7	3	0	2	3	0	1	1
2113:	2	1	0	2	2	7	3	1
2121:	0	0	2	0	0	0	2	0
2129:	1	1	1	0	1	0	1	1
2137:	1	1	2	1	0	0	1	0
2145:	0	0	4	3	0	1	1	1
2153:	2	0	3	1	0	2	1	1
2161:	1	0	1	2	1	1	1	1
2169:	2	0	1	3	0	2	0	0
2177:	2	0	1	1	1	1	0	2
2185:	1	1	0	1	0	2	3	1
2193:	1	0	0	1	0	1	1	0
2201:	2	11	15	8	3	2	1	0
2209:	0	1	2	0	0	0	2	0
2217:	0	0	1	2	0	0	1	0
2225:	1	1	1	0	0	1	0	0
2233:	0	1	2	1	0	1	2	0
2241:	1	0	2	1	0	0	1	0
2249:	1	0	3	2	2	4	0	0
2257:	0	0	0	1	0	1	0	0
2265:	2	0	2	3	0	0	0	1
2273:	1	1	1	2	2	0	1	0
2281:	2	2	0	2	0	1	1	1
2289:	2	2	4	3	1	1	0	2
2297:	0	1	1	0	0	5	2	3
2305:	2	1	2	1	0	3	2	2
2313:	5	0	3	3	1	0	2	0
2321:	2	0	5	1	0	1	3	2
2329:	1	1	1	0	1	1	0	1
2337:	0	0	0	2	1	0	1	1
2345:	0	0	0	2	1	3	0	0
2353:	1	1	0	1	1	0	1	0
2361:	2	1	1	2	1	1	2	2
2369:	2	3	1	1	2	3	1	1
2377:	1	3	2	2	1	4	1	1
2385:	0	3	2	0	0	1	1	3
2393:	2	0	2	1	0	0	1	1
2401:	0	2	0	0	0	1	1	2
2409:	0	2	0	0	0	1	1	3
2417:	0	0	1	1	1	2	2	2
2425:	1	2	0	1	0	0	0	0
2433:	1	0	1	2	2	1	1	0
2441:	0	2	0	0	1	4	3	1
2449:	0	0	0	3	0	0	0	1
2457:	2	2	0	3	1	1	0	1
2465:	0	0	2	1	0	3	0	0
2473:	1	0	2	1	0	2	1	3
2481:	2	1	0	1	0	0	2	0
2489:	0	0	0	0	2	1	0	1
2497:	0	1	3	1	2	1	0	0
2505:	0	1	1	2	0	0	1	0
2513:	0	1	0	0	0	0	1	1
2521:	1	0	1	0	0	0	0	1

2529:	1	0	1	1	1	0	0	0

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Channel								
2537:	0	1	0	1	1	0	0	1
2545:	0	0	0	1	0	1	2	1
2553:	0	1	1	1	1	0	0	0
2561:	0	0	1	0	0	0	0	0
2569:	0	0	0	0	0	1	0	0
2577:	0	0	1	0	1	2	0	1
2585:	1	1	1	0	0	0	0	1
2593:	1	1	2	1	1	0	0	0
2601:	1	1	1	1	1	0	0	0
2609:	2	4	10	25	43	44	20	2
2617:	4	2	1	1	0	0	0	0
2625:	0	0	1	0	0	1	0	0
2633:	0	0	0	1	1	0	1	0
2641:	0	0	0	1	1	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	2	1	0
2665:	0	2	0	1	0	0	1	0
2673:	0	2	0	1	0	0	0	1
2681:	1	0	0	2	0	1	0	1
2689:	0	0	1	0	0	0	0	1
2697:	0	0	2	1	0	0	0	0
2705:	0	0	0	0	1	0	0	1
2713:	0	0	0	0	0	0	1	0
2721:	0	0	1	0	0	0	0	0
2729:	0	0	1	0	1	0	1	0
2737:	0	0	0	0	0	1	0	1
2745:	0	0	0	1	0	0	0	0
2753:	0	0	0	0	0	0	0	1
2761:	0	0	0	0	0	0	0	1
2769:	1	0	0	0	0	0	0	0
2777:	0	0	0	0	2	0	0	0
2785:	0	0	0	1	0	1	0	1
2793:	2	0	0	1	0	0	3	1
2801:	0	0	1	0	0	0	0	0
2809:	0	0	0	1	0	0	0	1
2817:	0	0	0	0	0	0	0	0
2825:	0	1	0	0	1	0	0	0
2833:	1	0	0	0	0	0	1	1
2841:	0	0	0	0	2	0	2	0
2849:	0	1	0	0	0	1	0	0
2857:	0	0	0	0	1	0	0	0
2865:	0	0	0	0	0	0	1	0
2873:	0	0	0	1	1	0	0	0
2881:	0	1	0	0	0	0	1	0
2889:	0	1	1	0	0	0	0	0
2897:	0	0	0	0	0	0	0	3
2905:	1	0	0	1	0	0	0	0
2913:	0	1	0	0	0	0	1	0
2921:	1	0	1	0	0	1	3	0
2929:	0	1	1	0	0	1	0	0
2937:	0	0	0	1	0	1	0	0
2945:	0	1	0	1	0	0	0	0
2953:	0	1	0	0	0	0	1	0

2961:	0	0	0	1	0	0	0	1

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

3393:	0	0	1	0	0	0	0	0

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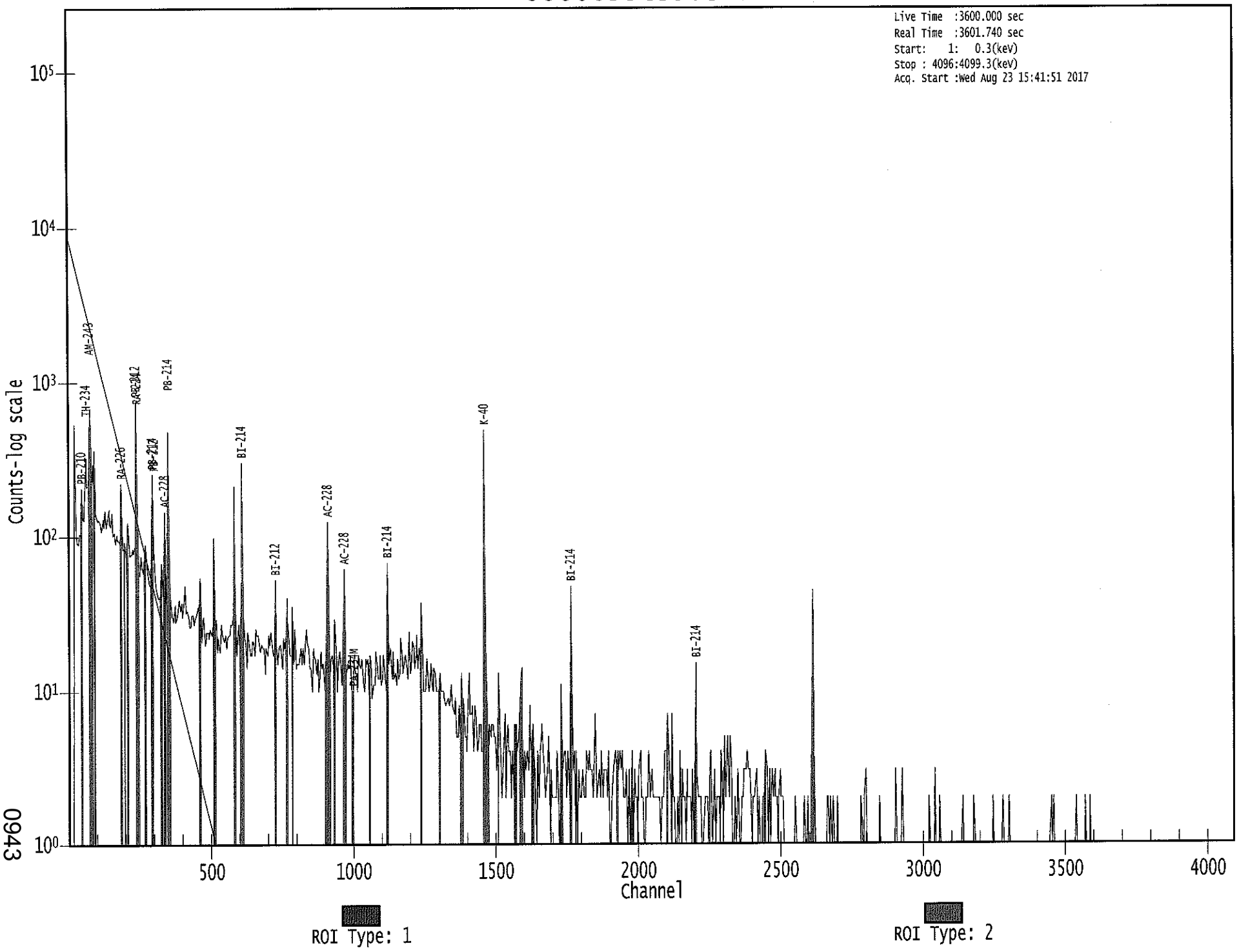
Channel								
3401:	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	1	0	1	1	0
3425:	0	0	0	0	0	0	0	1
3433:	0	0	0	0	0	0	0	1
3441:	0	0	0	1	0	1	0	0
3449:	1	0	2	2	0	1	0	0
3457:	0	0	2	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	1	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	1	0	0	0
3497:	1	0	0	0	1	0	0	0
3505:	0	0	0	1	0	0	0	1
3513:	0	0	0	0	0	0	0	0
3521:	1	0	0	1	0	0	0	1
3529:	0	0	0	0	0	1	0	0
3537:	0	0	2	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	1	0	0	0	0	0	0
3569:	0	2	0	1	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	1	2	0	1	0	0	0	0
3593:	1	0	0	0	0	0	0	0
3601:	0	0	1	0	0	0	0	0
3609:	0	1	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	1	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	1	0	0	0	0
3657:	0	0	0	0	0	0	0	1
3665:	0	0	1	0	0	0	1	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	1	0	0	0	1	0
3689:	1	0	0	0	0	0	1	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	1	0	0	1	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	0	0
3737:	1	1	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	1	0	0	0
3793:	0	0	0	0	0	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	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A07-S001-2430-01

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

0000055839.CNF



0943

Apex-Gamma

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-16
Sample Description	: HTC-A07-S001-3036-01
Sample Type	: SOIL
Sample Size	: 6.972E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:56:53AM
Acquisition Started	: 8/23/2017 3:42:00PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3602.0 seconds
Dead Time	: 0.06 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55840

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 4:42:32PM
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	43.32	42.37	0.0000	0.00
2	46.22	45.27	0.0000	0.00
3	63.54	62.59	0.0000	0.00
4	74.60	73.65	0.0000	0.00
5	77.05	76.11	0.0000	0.00
6	87.37	86.43	0.0000	0.00
7	93.17	92.23	0.0000	0.00
8	129.90	128.98	0.0000	0.00
9	186.01	185.10	0.0000	0.00
10	239.37	238.48	0.0000	0.00
11	295.33	294.45	0.0000	0.00
12	299.64	298.77	0.0000	0.00
13	338.39	337.53	0.0000	0.00
14	351.76	350.90	0.0000	0.00
15	462.69	461.88	0.0000	0.00
16	510.15	509.35	0.0000	0.00
17	583.31	582.54	0.0000	0.00
18	609.31	608.55	0.0000	0.00
19	728.94	728.22	0.0000	0.00
20	795.04	794.35	0.0000	0.00
21	911.12	910.49	0.0000	0.00
22	934.44	933.82	0.0000	0.00
23	969.10	968.49	0.0000	0.00
24	972.86	972.25	0.0000	0.00
25	1023.95	1023.36	0.0000	0.00
26	1166.38	1165.86	0.0000	0.00
27	1217.44	1216.94	0.0000	0.00
28	1329.60	1329.16	0.0000	0.00
29	1460.70	1460.32	0.0000	0.00
30	1537.02	1536.68	0.0000	0.00
31	1586.76	1586.45	0.0000	0.00
32	1592.78	1592.47	0.0000	0.00
33	1678.83	1678.57	0.0000	0.00
34	1764.10	1763.89	0.0000	0.00
35	1773.33	1773.13	0.0000	0.00
36	1779.12	1778.92	0.0000	0.00
37	1897.14	1897.00	0.0000	0.00
38	1942.80	1942.68	0.0000	0.00
39	2087.65	2087.62	0.0000	0.00
40	2105.01	2105.00	0.0000	0.00
41	2131.73	2131.73	0.0000	0.00
42	2202.06	2202.11	0.0000	0.00

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2368.57	2368.73	0.0000	0.00
44	2613.87	2614.19	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 4:42:32PM

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)
M	1	43.32	41 -	48	42.37	3.46E+01	31.67	2.88E+02	1.42
m	2	46.22	41 -	48	45.27	1.10E+02	83.56	1.20E+03	2.22
	3	63.54	59 -	66	62.59	2.01E+02	114.93	2.07E+03	2.48
M	4	74.60	70 -	81	73.65	4.32E+02	132.02	2.18E+03	2.62
m	5	77.05	70 -	81	76.11	7.96E+02	122.28	1.84E+03	2.43
M	6	87.37	82 -	97	86.43	4.70E+02	109.67	1.75E+03	3.97
m	7	93.17	82 -	97	92.23	3.32E+02	108.39	1.58E+03	2.68
	8	129.90	125 -	133	128.98	9.44E+01	101.37	1.52E+03	2.00
	9	186.01	181 -	189	185.10	1.59E+02	86.25	1.04E+03	2.25
	10	239.37	233 -	244	238.48	8.76E+02	112.04	1.12E+03	2.53
M	11	295.33	288 -	302	294.45	2.10E+02	58.51	4.08E+02	2.61
m	12	299.64	288 -	302	298.77	7.20E+01	56.21	4.13E+02	2.61
	13	338.39	334 -	341	337.53	1.26E+02	55.03	4.14E+02	2.22
	14	351.76	345 -	357	350.90	3.99E+02	80.36	5.72E+02	2.70
	15	462.69	458 -	465	461.88	5.88E+01	38.83	2.12E+02	2.24
	16	510.15	499 -	516	509.35	1.75E+02	72.51	4.15E+02	2.76
	17	583.31	578 -	587	582.54	2.20E+02	48.09	2.05E+02	2.51
	18	609.31	603 -	612	608.55	2.57E+02	50.98	2.48E+02	2.65
	19	728.94	722 -	734	728.22	6.05E+01	44.20	2.01E+02	8.36
	20	795.04	789 -	799	794.35	4.00E+01	32.64	1.20E+02	2.83
	21	911.12	904 -	917	910.49	1.15E+02	45.00	1.70E+02	2.75
	22	934.44	931 -	937	933.82	1.80E+01	20.99	6.81E+01	3.04
M	23	969.10	962 -	978	968.49	8.48E+01	31.58	8.70E+01	2.97
m	24	972.86	962 -	978	972.25	2.23E+01	27.06	5.17E+01	2.70
	25	1023.95	1019 -	1027	1023.36	2.17E+01	25.15	8.05E+01	3.36
	26	1166.38	1163 -	1170	1165.86	1.99E+01	24.74	9.02E+01	3.39
	27	1217.44	1210 -	1222	1216.94	3.81E+01	40.56	1.76E+02	6.46
	28	1329.60	1327 -	1331	1329.16	9.54E+00	13.08	2.89E+01	1.31
	29	1460.70	1455 -	1466	1460.32	5.34E+02	50.20	4.80E+01	2.56
	30	1537.02	1531 -	1543	1536.68	1.62E+01	13.29	1.36E+01	8.72
M	31	1586.76	1583 -	1597	1586.45	2.01E+01	12.49	1.01E+01	3.19
m	32	1592.78	1583 -	1597	1592.47	2.26E+01	16.58	1.86E+01	3.52
	33	1678.83	1674 -	1682	1678.57	8.82E+00	8.02	4.36E+00	4.99
	34	1764.10	1759 -	1768	1763.89	3.86E+01	13.75	4.83E+00	2.61
	35	1773.33	1770 -	1775	1773.13	8.00E+00	5.66	0.00E+00	2.59
	36	1779.12	1776 -	1781	1778.92	5.00E+00	7.07	6.00E+00	1.95
	37	1897.14	1893 -	1900	1897.00	8.00E+00	5.66	0.00E+00	3.87
	38	1942.80	1938 -	1947	1942.68	8.00E+00	10.10	1.00E+01	7.49
	39	2087.65	2085 -	2090	2087.62	5.36E+00	6.08	3.29E+00	1.24
	40	2105.01	2102 -	2108	2105.00	8.15E+00	9.42	9.69E+00	2.88

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2131.73	2129 -	2135	2131.73	6.50E+00	8.03	7.00E+00	1.28
42	2202.06	2196 -	2206	2202.11	7.77E+00	10.61	1.05E+01	3.19
43	2368.57	2366 -	2371	2368.73	5.50E+00	7.94	7.00E+00	2.74
44	2613.87	2609 -	2619	2614.19	5.30E+01	14.56	0.00E+00	1.65

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 : 8/23/2017 4:42:32PM

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
M	1	43.32	41 -	48	3.46E+01	31.67	2.88E+02	2.79E+01
m	2	46.22	41 -	48	1.10E+02	83.56	1.20E+03	5.70E+01
	3	63.54	59 -	66	2.01E+02	114.93	2.07E+03	9.16E+01
M	4	74.60	70 -	81	4.32E+02	132.02	2.18E+03	7.68E+01
m	5	77.05	70 -	81	7.96E+02	122.28	1.84E+03	7.05E+01
M	6	87.37	82 -	97	4.70E+02	109.67	1.75E+03	6.87E+01
m	7	93.17	82 -	97	3.32E+02	108.39	1.58E+03	6.54E+01
	8	129.90	125 -	133	9.44E+01	101.37	1.52E+03	8.18E+01
	9	186.01	181 -	189	1.59E+02	86.25	1.04E+03	6.78E+01
	10	239.37	233 -	244	8.76E+02	112.04	1.12E+03	7.82E+01
M	11	295.33	288 -	302	2.10E+02	58.51	4.08E+02	3.32E+01
m	12	299.64	288 -	302	7.20E+01	56.21	4.13E+02	3.34E+01
	13	338.39	334 -	341	1.26E+02	55.03	4.14E+02	4.13E+01
	14	351.76	345 -	357	3.99E+02	80.36	5.72E+02	2.18E+01
	15	462.69	458 -	465	5.88E+01	38.83	2.12E+02	2.93E+01
	16	510.15	499 -	516	1.75E+02	72.51	4.15E+02	2.43E+01
	17	583.31	578 -	587	2.20E+02	48.09	2.05E+02	3.11E+01
	18	609.31	603 -	612	2.57E+02	50.98	2.48E+02	4.68E+01
	19	728.94	722 -	734	6.05E+01	44.20	2.01E+02	3.40E+01
	20	795.04	789 -	799	4.00E+01	32.64	1.20E+02	2.47E+01
	21	911.12	904 -	917	1.15E+02	45.00	1.70E+02	3.25E+01
	22	934.44	931 -	937	1.80E+01	20.99	6.81E+01	1.58E+01
M	23	969.10	962 -	978	8.48E+01	31.58	8.70E+01	1.53E+01

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	24	972.86	962 -	978	2.23E+01	27.06	5.17E+01	1.18E+01
	25	1023.95	1019 -	1027	2.17E+01	25.15	8.05E+01	1.92E+01
	26	1166.38	1163 -	1170	1.99E+01	24.74	9.02E+01	1.90E+01
	27	1217.44	1210 -	1222	3.81E+01	40.56	1.76E+02	3.18E+01
	28	1329.60	1327 -	1331	9.54E+00	13.08	2.89E+01	9.47E+00
	29	1460.70	1455 -	1466	5.34E+02	50.20	4.80E+01	1.61E+01
	30	1537.02	1531 -	1543	1.62E+01	13.29	1.36E+01	8.68E+00
M	31	1586.76	1583 -	1597	2.01E+01	12.49	1.01E+01	5.21E+00
m	32	1592.78	1583 -	1597	2.26E+01	16.58	1.86E+01	7.10E+00
	33	1678.83	1674 -	1682	8.82E+00	8.02	4.36E+00	4.42E+00
	34	1764.10	1759 -	1768	3.86E+01	13.75	4.83E+00	4.84E+00
	35	1773.33	1770 -	1775	8.00E+00	5.66	0.00E+00	0.00E+00
	36	1779.12	1776 -	1781	5.00E+00	7.07	6.00E+00	4.50E+00
	37	1897.14	1893 -	1900	8.00E+00	5.66	0.00E+00	0.00E+00
	38	1942.80	1938 -	1947	8.00E+00	10.10	1.00E+01	6.88E+00
	39	2087.65	2085 -	2090	5.36E+00	6.08	3.29E+00	3.24E+00
	40	2105.01	2102 -	2108	8.15E+00	9.42	9.69E+00	6.16E+00
	41	2131.73	2129 -	2135	6.50E+00	8.03	7.00E+00	5.10E+00
	42	2202.06	2196 -	2206	7.77E+00	10.61	1.05E+01	7.42E+00
	43	2368.57	2366 -	2371	5.50E+00	7.94	7.00E+00	5.26E+00
	44	2613.87	2609 -	2619	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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/23/2017 4:42:32PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	1	43.32	41 -	48	42.37	3.46E+01	31.67	2.88E+02	.....
m	2	46.22	41 -	48	45.27	1.10E+02	83.56	1.20E+03	PB-210
	3	63.54	59 -	66	62.59	2.01E+02	114.93	2.07E+03	TH-234
									TH-230

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	4	74.60	70 -	81	73.65	4.32E+02	132.02	2.18E+03	AM-243
m	5	77.05	70 -	81	76.11	7.96E+02	122.28	1.84E+03	.....
M	6	87.37	82 -	97	86.43	4.70E+02	109.67	1.75E+03	SN-126
									CD-109
									NP-237
									EU-155
									LU-176
m	7	93.17	82 -	97	92.23	3.32E+02	108.39	1.58E+03	GA-67
	8	129.90	125 -	133	128.98	9.44E+01	101.37	1.52E+03	.....
	9	186.01	181 -	189	185.10	1.59E+02	86.25	1.04E+03	RA-226
	10	239.37	233 -	244	238.48	8.76E+02	112.04	1.12E+03	PB-212
M	11	295.33	288 -	302	294.45	2.10E+02	58.51	4.08E+02	PB-214
m	12	299.64	288 -	302	298.77	7.20E+01	56.21	4.13E+02	BI-210M
									PB-212
									GA-67
	13	338.39	334 -	341	337.53	1.26E+02	55.03	4.14E+02	AC-228
	14	351.76	345 -	357	350.90	3.99E+02	80.36	5.72E+02	PB-214
	15	462.69	458 -	465	461.88	5.88E+01	38.83	2.12E+02	SB-125
	16	510.15	499 -	516	509.35	1.75E+02	72.51	4.15E+02	.....
	17	583.31	578 -	587	582.54	2.20E+02	48.09	2.05E+02	TL-208
	18	609.31	603 -	612	608.55	2.57E+02	50.98	2.48E+02	BI-214
	19	728.94	722 -	734	728.22	6.05E+01	44.20	2.01E+02	.....
	20	795.04	789 -	799	794.35	4.00E+01	32.64	1.20E+02	CS-134
	21	911.12	904 -	917	910.49	1.15E+02	45.00	1.70E+02	AC-228
									TL-204
	22	934.44	931 -	937	933.82	1.80E+01	20.99	6.81E+01	.....
M	23	969.10	962 -	978	968.49	8.48E+01	31.58	8.70E+01	AC-228
m	24	972.86	962 -	978	972.25	2.23E+01	27.06	5.17E+01	.....
	25	1023.95	1019 -	1027	1023.36	2.17E+01	25.15	8.05E+01	.....
	26	1166.38	1163 -	1170	1165.86	1.99E+01	24.74	9.02E+01	.....
	27	1217.44	1210 -	1222	1216.94	3.81E+01	40.56	1.76E+02	.....
	28	1329.60	1327 -	1331	1329.16	9.54E+00	13.08	2.89E+01	.....
	29	1460.70	1455 -	1466	1460.32	5.34E+02	50.20	4.80E+01	K-40
	30	1537.02	1531 -	1543	1536.68	1.62E+01	13.29	1.36E+01	.....
M	31	1586.76	1583 -	1597	1586.45	2.01E+01	12.49	1.01E+01	.....
m	32	1592.78	1583 -	1597	1592.47	2.26E+01	16.58	1.86E+01	.....
	33	1678.83	1674 -	1682	1678.57	8.82E+00	8.02	4.36E+00	I-135
	34	1764.10	1759 -	1768	1763.89	3.86E+01	13.75	4.83E+00	BI-214
	35	1773.33	1770 -	1775	1773.13	8.00E+00	5.66	0.00E+00	.....
	36	1779.12	1776 -	1781	1778.92	5.00E+00	7.07	6.00E+00	.....
	37	1897.14	1893 -	1900	1897.00	8.00E+00	5.66	0.00E+00	.....
	38	1942.80	1938 -	1947	1942.68	8.00E+00	10.10	1.00E+01	.....
	39	2087.65	2085 -	2090	2087.62	5.36E+00	6.08	3.29E+00	.....
	40	2105.01	2102 -	2108	2105.00	8.15E+00	9.42	9.69E+00	.....
	41	2131.73	2129 -	2135	2131.73	6.50E+00	8.03	7.00E+00	.....
	42	2202.06	2196 -	2206	2202.11	7.77E+00	10.61	1.05E+01	.....
	43	2368.57	2366 -	2371	2368.73	5.50E+00	7.94	7.00E+00	.....
	44	2613.87	2609 -	2619	2614.19	5.30E+01	14.56	0.00E+00	TL-208

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

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 : 8/23/2017 4:42:32PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	43.32	3.46E+01	31.67	1.50E-02	1.56E-03
m	2	46.22	1.10E+02	83.56	1.63E-02	1.56E-03
	3	63.54	2.01E+02	114.93	2.16E-02	1.64E-03
M	4	74.60	4.32E+02	132.02	2.31E-02	1.88E-03
m	5	77.05	7.96E+02	122.28	2.33E-02	1.93E-03
M	6	87.37	4.70E+02	109.67	2.37E-02	2.15E-03
m	7	93.17	3.32E+02	108.39	2.36E-02	2.09E-03
	8	129.90	9.44E+01	101.37	2.15E-02	1.62E-03
	9	186.01	1.59E+02	86.25	1.69E-02	1.40E-03
	10	239.37	8.76E+02	112.04	1.35E-02	1.14E-03
M	11	295.33	2.10E+02	58.51	1.10E-02	9.13E-04
m	12	299.64	7.20E+01	56.21	1.09E-02	9.04E-04
	13	338.39	1.26E+02	55.03	9.60E-03	8.23E-04
	14	351.76	3.99E+02	80.36	9.22E-03	7.94E-04
	15	462.69	5.88E+01	38.83	6.95E-03	6.81E-04
	16	510.15	1.75E+02	72.51	6.29E-03	6.61E-04
	17	583.31	2.20E+02	48.09	5.50E-03	6.31E-04
	18	609.31	2.57E+02	50.98	5.27E-03	6.20E-04
	19	728.94	6.05E+01	44.20	4.44E-03	5.14E-04
	20	795.04	4.00E+01	32.64	4.10E-03	4.31E-04
	21	911.12	1.15E+02	45.00	3.62E-03	2.99E-04
	22	934.44	1.80E+01	20.99	3.54E-03	2.93E-04
M	23	969.10	8.48E+01	31.58	3.43E-03	2.85E-04
m	24	972.86	2.23E+01	27.06	3.41E-03	2.84E-04
	25	1023.95	2.17E+01	25.15	3.26E-03	2.72E-04
	26	1166.38	1.99E+01	24.74	2.91E-03	2.39E-04
	27	1217.44	3.81E+01	40.56	2.80E-03	2.35E-04
	28	1329.60	9.54E+00	13.08	2.59E-03	2.27E-04
	29	1460.70	5.34E+02	50.20	2.38E-03	2.08E-04
	30	1537.02	1.62E+01	13.29	2.28E-03	1.96E-04
M	31	1586.76	2.01E+01	12.49	2.21E-03	1.89E-04
m	32	1592.78	2.26E+01	16.58	2.20E-03	1.88E-04
	33	1678.83	8.82E+00	8.02	2.10E-03	1.75E-04
	34	1764.10	3.86E+01	13.75	2.00E-03	1.62E-04

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1773.33	8.00E+00	5.66	1.99E-03	1.61E-04
36	1779.12	5.00E+00	7.07	1.98E-03	1.60E-04
37	1897.14	8.00E+00	5.66	1.86E-03	1.51E-04
38	1942.80	8.00E+00	10.10	1.81E-03	1.51E-04
39	2087.65	5.36E+00	6.08	1.68E-03	1.51E-04
40	2105.01	8.15E+00	9.42	1.67E-03	1.51E-04
41	2131.73	6.50E+00	8.03	1.64E-03	1.51E-04
42	2202.06	7.77E+00	10.61	1.58E-03	1.51E-04
43	2368.57	5.50E+00	7.94	1.45E-03	1.51E-04
44	2613.87	5.30E+01	14.56	1.28E-03	1.51E-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 : 8/23/2017 4:42:32PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	43.32	3.46E+01	31.67			3.46E+01	3.17E+01
m	2	46.22	1.10E+02	83.56	2.81E+01	8.29E+00	8.22E+01	8.40E+01
	3	63.54	2.01E+02	114.93	5.67E+01	8.57E+00	1.44E+02	1.15E+02
M	4	74.60	4.32E+02	132.02	2.66E+01	8.34E+00	4.05E+02	1.32E+02
m	5	77.05	7.96E+02	122.28			7.96E+02	1.22E+02
M	6	87.37	4.70E+02	109.67			4.70E+02	1.10E+02
m	7	93.17	3.32E+02	108.39	5.99E+01	8.61E+00	2.72E+02	1.09E+02
	8	129.90	9.44E+01	101.37			9.44E+01	1.01E+02
	9	186.01	1.59E+02	86.25	2.43E+01	7.50E+00	1.35E+02	8.66E+01
	10	239.37	8.76E+02	112.04	1.06E+01	6.01E+00	8.65E+02	1.12E+02
M	11	295.33	2.10E+02	58.51			2.10E+02	5.85E+01
m	12	299.64	7.20E+01	56.21			7.20E+01	5.62E+01
	13	338.39	1.26E+02	55.03			1.26E+02	5.50E+01
	14	351.76	3.99E+02	80.36			3.99E+02	8.04E+01
	15	462.69	5.88E+01	38.83			5.88E+01	3.88E+01
	16	510.15	1.75E+02	72.51	4.55E+01	4.99E+00	1.30E+02	7.27E+01
	17	583.31	2.20E+02	48.09			2.20E+02	4.81E+01
	18	609.31	2.57E+02	50.98			2.57E+02	5.10E+01
	19	728.94	6.05E+01	44.20			6.05E+01	4.42E+01
	20	795.04	4.00E+01	32.64			4.00E+01	3.26E+01

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	21	911.12	1.15E+02	45.00			1.15E+02	4.50E+01
	22	934.44	1.80E+01	20.99			1.80E+01	2.10E+01
M	23	969.10	8.48E+01	31.58			8.48E+01	3.16E+01
m	24	972.86	2.23E+01	27.06			2.23E+01	2.71E+01
	25	1023.95	2.17E+01	25.15			2.17E+01	2.52E+01
	26	1166.38	1.99E+01	24.74			1.99E+01	2.47E+01
	27	1217.44	3.81E+01	40.56			3.81E+01	4.06E+01
	28	1329.60	9.54E+00	13.08			9.54E+00	1.31E+01
	29	1460.70	5.34E+02	50.20			5.34E+02	5.02E+01
	30	1537.02	1.62E+01	13.29			1.62E+01	1.33E+01
M	31	1586.76	2.01E+01	12.49			2.01E+01	1.25E+01
m	32	1592.78	2.26E+01	16.58			2.26E+01	1.66E+01
	33	1678.83	8.82E+00	8.02			8.82E+00	8.02E+00
	34	1764.10	3.86E+01	13.75			3.86E+01	1.37E+01
	35	1773.33	8.00E+00	5.66			8.00E+00	5.66E+00
	36	1779.12	5.00E+00	7.07			5.00E+00	7.07E+00
	37	1897.14	8.00E+00	5.66			8.00E+00	5.66E+00
	38	1942.80	8.00E+00	10.10			8.00E+00	1.01E+01
	39	2087.65	5.36E+00	6.08			5.36E+00	6.08E+00
	40	2105.01	8.15E+00	9.42			8.15E+00	9.42E+00
	41	2131.73	6.50E+00	8.03			6.50E+00	8.03E+00
	42	2202.06	7.77E+00	10.61			7.77E+00	1.06E+01
	43	2368.57	5.50E+00	7.94			5.50E+00	7.94E+00
	44	2613.87	5.30E+01	14.56			5.30E+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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 4:42:32PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	1	43.32	3.46E+01	31.67			3.46E+01	3.17E+01
m	2	46.22	1.10E+02	83.56	2.81E+01	8.29E+00	8.22E+01	8.40E+01
	3	63.54	2.01E+02	114.93	5.67E+01	8.57E+00	1.44E+02	1.15E+02
M	4	74.60	4.32E+02	132.02	2.66E+01	8.34E+00	4.05E+02	1.32E+02

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	5	77.05	7.96E+02	122.28			7.96E+02	1.22E+02
M	6	87.37	4.70E+02	109.67			4.70E+02	1.10E+02
m	7	93.17	3.32E+02	108.39	5.99E+01	8.61E+00	2.72E+02	1.09E+02
	8	129.90	9.44E+01	101.37			9.44E+01	1.01E+02
	9	186.01	1.59E+02	86.25	2.43E+01	7.50E+00	1.35E+02	8.66E+01
	10	239.37	8.76E+02	112.04	1.06E+01	6.01E+00	8.65E+02	1.12E+02
M	11	295.33	2.10E+02	58.51			2.10E+02	5.85E+01
m	12	299.64	7.20E+01	56.21			7.20E+01	5.62E+01
	13	338.39	1.26E+02	55.03			1.26E+02	5.50E+01
	14	351.76	3.99E+02	80.36			3.99E+02	8.04E+01
	15	462.69	5.88E+01	38.83			5.88E+01	3.88E+01
	16	510.15	1.75E+02	72.51	4.55E+01	4.99E+00	1.30E+02	7.27E+01
	17	583.31	2.20E+02	48.09			2.20E+02	4.81E+01
	18	609.31	2.57E+02	50.98			2.57E+02	5.10E+01
	19	728.94	6.05E+01	44.20			6.05E+01	4.42E+01
	20	795.04	4.00E+01	32.64			4.00E+01	3.26E+01
	21	911.12	1.15E+02	45.00			1.15E+02	4.50E+01
	22	934.44	1.80E+01	20.99			1.80E+01	2.10E+01
M	23	969.10	8.48E+01	31.58			8.48E+01	3.16E+01
m	24	972.86	2.23E+01	27.06			2.23E+01	2.71E+01
	25	1023.95	2.17E+01	25.15			2.17E+01	2.52E+01
	26	1166.38	1.99E+01	24.74			1.99E+01	2.47E+01
	27	1217.44	3.81E+01	40.56			3.81E+01	4.06E+01
	28	1329.60	9.54E+00	13.08			9.54E+00	1.31E+01
	29	1460.70	5.34E+02	50.20			5.34E+02	5.02E+01
	30	1537.02	1.62E+01	13.29			1.62E+01	1.33E+01
M	31	1586.76	2.01E+01	12.49			2.01E+01	1.25E+01
m	32	1592.78	2.26E+01	16.58			2.26E+01	1.66E+01
	33	1678.83	8.82E+00	8.02			8.82E+00	8.02E+00
	34	1764.10	3.86E+01	13.75			3.86E+01	1.37E+01
	35	1773.33	8.00E+00	5.66			8.00E+00	5.66E+00
	36	1779.12	5.00E+00	7.07			5.00E+00	7.07E+00
	37	1897.14	8.00E+00	5.66			8.00E+00	5.66E+00
	38	1942.80	8.00E+00	10.10			8.00E+00	1.01E+01
	39	2087.65	5.36E+00	6.08			5.36E+00	6.08E+00
	40	2105.01	8.15E+00	9.42			8.15E+00	9.42E+00
	41	2131.73	6.50E+00	8.03			6.50E+00	8.03E+00
	42	2202.06	7.77E+00	10.61			7.77E+00	1.06E+01
	43	2368.57	5.50E+00	7.94			5.50E+00	7.94E+00
	44	2613.87	5.30E+01	14.56			5.30E+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

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

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	2.26E+01	2.93E+00
CD-109	0.933	88.03	*	3.72	6.67E+00	1.72E+00
SN-126	0.994	87.57	*	37.00	5.78E-01	1.45E-01
TL-208	0.833	583.14	*	30.22	1.42E+00	3.52E-01
		860.37		4.48		
		2614.66	*	35.85	1.24E+00	3.72E-01
PB-210	0.987	46.50	*	4.25	1.29E+00	1.32E+00
PB-212	0.920	238.63	*	44.60	1.54E+00	2.38E-01
		300.09	*	3.41	2.09E+00	1.64E+00
BI-214	0.673	609.31	*	46.30	1.13E+00	2.62E-01
		1120.29		15.10		
		1764.49	*	15.80	1.32E+00	4.81E-01
		2204.22		4.98		
PB-214	0.996	295.21	*	19.19	1.07E+00	3.11E-01
		351.92	*	37.19	1.25E+00	2.74E-01
RA-226	0.993	186.21	*	3.28	2.62E+00	5.09E+00
AC-228	1.000	338.32	*	11.40	1.24E+00	5.52E-01
		911.07	*	27.70	1.23E+00	4.94E-01
		969.11	*	16.60	1.61E+00	6.13E-01
TH-234	0.990	63.29	*	3.80	1.89E+00	1.52E+00
NP-237	0.886	86.50	*	12.60	1.70E+00	4.25E-01
AM-243	0.999	74.67	*	66.00	2.86E-01	9.63E-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 : 8/23/2017 4:42:32PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	1	43.32	9.60829E-03	45.78		
m	5	77.05	2.21118E-01	7.68		
m	7	93.17	7.55169E-02	20.00	Sum	
	8	129.90	2.62357E-02	53.67		
	15	462.69	1.63359E-02	33.02	Tol.	SB-125
	16	510.15	3.60913E-02	27.97		
	19	728.94	1.67935E-02	36.56		
	20	795.04	1.11083E-02	40.81	Sum	
	22	934.44	4.99199E-03	58.41	Sum	
m	24	972.86	6.19888E-03	60.62		
	25	1023.95	6.03719E-03	57.87		
	26	1166.38	5.52564E-03	62.18	Sum	
	27	1217.44	1.05941E-02	53.17		
	28	1329.60	2.65046E-03	68.52		
	30	1537.02	4.50483E-03	40.96		
M	31	1586.76	5.59369E-03	31.01		
m	32	1592.78	6.28741E-03	36.62	D-Esc	
	33	1678.83	2.44950E-03	45.45	Tol.	I-135
	35	1773.33	2.22222E-03	35.36		
	36	1779.12	1.38889E-03	70.71		
	37	1897.14	2.22222E-03	35.36		
	38	1942.80	2.22222E-03	63.12		
	39	2087.65	1.48810E-03	56.77		
	40	2105.01	2.26496E-03	57.77		
	41	2131.73	1.80556E-03	61.78		
	42	2202.06	2.15812E-03	68.26		
	43	2368.57	1.52778E-03	72.16		

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 1707090-16

HTC-A07-S001-3036-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	2.26E+01	2.93E+00
CD-109	0.93	88.03	*	3.72	6.67E+00	1.72E+00
SN-126	0.99	87.57	*	37.00	5.78E-01	1.45E-01
TL-208	0.83	583.14	*	30.22	1.42E+00	3.52E-01
		860.37		4.48		
		2614.66	*	35.85	1.24E+00	3.72E-01
PB-210	0.98	46.50	*	4.25	1.29E+00	1.32E+00
PB-212	0.92	238.63	*	44.60	1.54E+00	2.38E-01
		300.09	*	3.41	2.09E+00	1.64E+00
BI-214	0.67	609.31	*	46.30	1.13E+00	2.62E-01
		1120.29		15.10		
		1764.49	*	15.80	1.32E+00	4.81E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.07E+00	3.11E-01
		351.92	*	37.19	1.25E+00	2.74E-01
RA-226	0.99	186.21	*	3.28	2.62E+00	5.09E+00
AC-228	1.00	338.32	*	11.40	1.24E+00	5.52E-01
		911.07	*	27.70	1.23E+00	4.94E-01
		969.11	*	16.60	1.61E+00	6.13E-01
TH-234	0.99	63.29	*	3.80	1.89E+00	1.52E+00
NP-237	0.88	86.50	*	12.60	1.70E+00	4.25E-01
AM-243	0.99	74.67	*	66.00	2.86E-01	9.63E-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	0.998	2.26E+01	2.93E+00	
?	CD-109	0.933	6.67E+00	1.72E+00	
?	SN-126	0.994	5.78E-01	1.45E-01	
	TL-208	0.833	1.34E+00	2.55E-01	
	PB-210	0.987	1.29E+00	1.32E+00	

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	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	PB-212	0.920	1.55E+00	2.36E-01	
	BI-214	0.673	1.18E+00	2.30E-01	
	PB-214	0.996	1.17E+00	2.06E-01	
	RA-226	0.993	2.62E+00	5.09E+00	
	AC-228	1.000	1.33E+00	3.16E-01	
	TH-234	0.990	1.89E+00	1.52E+00	
?	NP-237	0.886	1.70E+00	4.25E-01	
	AM-243	0.999	2.86E-01	9.63E-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 1707090-16

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 4:42:32PM
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	1	43.32	9.60829E-03	45.78		
m	5	77.05	2.21118E-01	7.68		
m	7	93.17	7.55169E-02	20.00	Sum	
	8	129.90	2.62357E-02	53.67		
	15	462.69	1.63359E-02	33.02	Tol.	SB-125
	16	510.15	3.60913E-02	27.97		
	19	728.94	1.67935E-02	36.56		
	20	795.04	1.11083E-02	40.81	Sum	
	22	934.44	4.99199E-03	58.41	Sum	
m	24	972.86	6.19888E-03	60.62		
	25	1023.95	6.03719E-03	57.87		
	26	1166.38	5.52564E-03	62.18	Sum	
	27	1217.44	1.05941E-02	53.17		
	28	1329.60	2.65046E-03	68.52		
	30	1537.02	4.50483E-03	40.96		
M	31	1586.76	5.59369E-03	31.01		
m	32	1592.78	6.28741E-03	36.62	D-Esc	
	33	1678.83	2.44950E-03	45.45	Tol.	I-135
	35	1773.33	2.22222E-03	35.36		
	36	1779.12	1.38889E-03	70.71		
	37	1897.14	2.22222E-03	35.36		
	38	1942.80	2.22222E-03	63.12		
	39	2087.65	1.48810E-03	56.77		
	40	2105.01	2.26496E-03	57.77		
	41	2131.73	1.80556E-03	61.78		
	42	2202.06	2.15812E-03	68.26		
	43	2368.57	1.52778E-03	72.16		

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	3.32E-01	2.77E+00	2.77E+00
+		NA-22	1274.54		99.94	-2.29E-02	1.46E-01	1.46E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	5.18E-02	1.00E-01	1.00E-01
+		K-40	1460.81	*	10.67	2.26E+01	1.48E+00	1.48E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	2.48E-03	7.76E-02	7.76E-02
			78.34		96.00	4.17E-01		9.97E-02
+		SC-46	889.25		99.98	-3.01E-02	2.70E-01	2.70E-01
			1120.51		99.99	1.26E-01		3.64E-01
+		V-48	983.52		99.98	3.56E+00	8.75E+00	8.75E+00
			1312.10		97.50	-7.97E-01		1.02E+01
+		CR-51	320.08		9.83	-2.88E-01	8.29E+00	8.29E+00
+		MN-54	834.83		99.97	9.98E-02	1.64E-01	1.64E-01
+		CO-56	846.75		99.96	1.42E-01	3.03E-01	3.03E-01
			1037.75		14.03	6.86E-01		2.24E+00
			1238.25		67.00	-3.32E-01		6.11E-01
			1771.40		15.51	-3.09E+00		1.39E+00
			2598.48		16.90	2.10E-01		1.27E+00
+		CO-57	122.06		85.51	-8.44E-03	8.64E-02	8.64E-02
			136.48		10.60	-2.65E-02		7.10E-01
+		CO-58	810.76		99.40	3.94E-02	2.92E-01	2.92E-01
+		FE-59	1099.22		56.50	5.24E-02	1.22E+00	1.22E+00
			1291.56		43.20	1.24E+00		1.68E+00
+		CO-60	1173.22		100.00	4.11E-02	1.48E-01	1.65E-01
			1332.49		100.00	1.01E-02		1.48E-01
+		ZN-65	1115.52		50.75	-1.14E-01	4.12E-01	4.12E-01
+		GA-67	93.31		35.70	4.21E+08	2.97E+08	2.97E+08
			208.95		2.24	2.91E+09		4.68E+09
			300.22		16.00	-7.80E+08		7.38E+08
+		SE-75	121.11		16.70	-2.87E-01	1.75E-01	5.99E-01
			136.00		59.20	-4.00E-02		1.75E-01
			264.65		59.80	-1.47E-01		2.03E-01
			279.53		25.20	2.31E-01		4.92E-01
			400.65		11.40	-3.18E-01		1.20E+00
+		RB-82	776.52		13.00	-4.97E+00	1.29E+01	1.29E+01
+		RB-83	520.41		46.00	2.50E-02	3.89E-01	3.89E-01
			529.64		30.30	-4.69E-02		5.78E-01
			552.65		16.40	7.52E-01		1.15E+00

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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	2.13E+01	2.65E+01	2.65E+01
+	SR-85	513.99		99.27	2.64E-01	3.29E-01	3.29E-01
+	Y-88	898.02		93.40	-2.67E-02	2.02E-01	2.41E-01
		1836.01		99.38	3.35E-02		2.02E-01
+	MO-93	263.06		56.72	-4.86E-03	1.03E-01	1.24E-01
		684.67		99.68	-7.99E-03		1.09E-01
		1477.11		99.08	1.90E-02		1.03E-01
+	NB-93M	16.57		9.43	1.46E+01	7.54E+00	7.54E+00
+	NB-94	702.63		100.00	-4.26E-02	1.09E-01	1.09E-01
		871.10		100.00	-2.61E-02		1.10E-01
+	NB-95	765.79		99.81	6.37E-01	9.13E-01	9.13E-01
+	NB-95M	235.69		25.00	1.75E+08	8.42E+07	8.42E+07
+	ZR-95	724.18		43.70	1.27E-02	5.61E-01	8.07E-01
		756.72		55.30	-1.88E-01		5.61E-01
+	MO-99	181.06		6.20	3.45E+10	6.52E+10	7.67E+10
		739.58		12.80	2.95E+09		6.52E+10
		778.00		4.50	-3.98E+10		1.87E+11
+	RU-103	497.08		89.00	-1.19E-01	4.86E-01	4.86E-01
+	RU-106	621.84		9.80	-1.04E+00	1.02E+00	1.02E+00
+	AG-108M	433.93		89.90	-3.26E-02	8.43E-02	8.43E-02
		614.37		90.40	5.95E-02		1.10E-01
		722.95		90.50	3.46E-02		1.32E-01
+	CD-109	88.03	*	3.72	6.67E+00	4.09E+00	4.09E+00
+	AG-110M	657.75		93.14	-1.55E-02	1.50E-01	1.50E-01
		677.61		10.53	1.02E+00		1.39E+00
		706.67		16.46	3.65E-01		9.23E-01
		763.93		21.98	-1.00E-02		7.26E-01
		884.67		71.63	1.99E-02		2.22E-01
		1384.27		23.94	-2.67E-01		5.57E-01
+	CD-113M	263.70		0.02	-1.58E+02	2.99E+02	2.99E+02
+	SN-113	255.12		1.93	-1.87E-01	2.03E-01	6.52E+00
		391.69		64.90	-1.40E-01		2.03E-01
+	TE123M	159.00		84.10	-2.75E-02	1.28E-01	1.28E-01
+	SB-124	602.71		97.87	1.04E-01	3.25E-01	3.25E-01
		645.85		7.26	-1.15E+00		3.62E+00
		722.78		11.10	8.85E-01		3.38E+00
		1691.02		49.00	3.31E-02		4.97E-01
+	I-125	35.49		6.49	-4.46E-01	5.24E+00	5.24E+00
+	SB-125	176.33		6.89	-1.60E-01	2.90E-01	9.51E-01
		427.89		29.33	6.23E-02		2.90E-01
		463.38		10.35	9.55E-01		9.85E-01
		600.56		17.80	5.66E-02		5.79E-01
		635.90		11.32	-1.16E-01		7.92E-01
+	SB-126	414.70		83.30	-8.86E+00	2.31E+01	2.31E+01
		666.33		99.60	1.96E+01		2.90E+01
		695.00		99.60	2.54E+01		3.03E+01
		720.50		53.80	1.33E+01		5.26E+01
+	SN-126	87.57	*	37.00	5.78E-01	3.54E-01	3.54E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-127	473.00	25.00	-3.50E+06	1.74E+07	1.79E+07
		685.20	35.70	-1.28E+06		1.74E+07
		783.80	14.70	2.18E+07		4.63E+07
+	I-129	29.78	57.00	-1.10E-02	2.66E-01	2.66E-01
		33.60	13.20	-5.11E-01		8.87E-01
		39.58	7.52	2.53E-01		1.25E+00
+	I-131	284.30	6.05	2.26E+03	4.61E+02	5.92E+03
		364.48	81.20	-6.06E+01		4.61E+02
		636.97	7.26	-3.33E+03		5.76E+03
		722.89	1.80	9.09E+03		3.47E+04
+	TE-132	49.72	13.10	-3.11E+08	1.16E+08	8.83E+08
		228.16	88.00	2.70E+07		1.16E+08
+	BA-133	81.00	33.00	-9.52E-01	1.64E-01	2.25E-01
		302.84	17.80	-2.05E-02		4.09E-01
		356.01	60.00	-1.28E-01		1.64E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-4.08E+05	9.66E+04	9.66E+04
+	CS-134	563.23	8.38	1.01E+00	1.22E-01	1.32E+00
		569.32	15.43	-2.32E-02		6.52E-01
		604.70	97.60	-7.31E-04		1.22E-01
		795.84	85.40	5.91E-02		1.54E-01
		801.93	8.73	2.99E-01		1.41E+00
+	CS-135	268.24	16.00	-3.25E-02	4.57E-01	4.57E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	1.41E+01	2.05E+01	1.51E+02
		163.89	4.61	9.59E+01		2.48E+02
		176.55	13.56	1.99E+01		8.53E+01
		273.65	12.66	-8.17E+00		1.06E+02
		340.57	48.50	5.56E+00		3.60E+01
		818.50	99.70	2.65E-01		2.05E+01
		1048.07	79.60	5.13E+00		3.16E+01
		1235.34	19.70	3.17E+01		1.70E+02
+	CS-137	661.65	85.12	6.85E-03	1.31E-01	1.31E-01
+	LA-138	788.74	34.00	-1.67E-03	1.81E-01	3.17E-01
		1435.80	66.00	1.20E-02		1.81E-01
+	CE-139	165.85	80.35	7.46E-02	1.24E-01	1.24E-01
+	BA-140	162.64	6.70	9.58E+01	7.94E+01	2.00E+02
		304.84	4.50	4.49E+01		3.18E+02
		423.70	3.20	-1.76E+02		5.18E+02
		437.55	2.00	1.55E+01		8.47E+02
		537.32	25.00	3.33E+01		7.94E+01
+	LA-140	328.77	20.50	6.92E+00	3.00E+01	8.46E+01
		487.03	45.50	-3.65E+00		3.54E+01
		815.85	23.50	-5.53E+01		9.57E+01
		1596.49	95.49	1.24E+00		3.00E+01
+	CE-141	145.44	48.40	2.93E-01	1.08E+00	1.08E+00
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	CE-143	293.26	42.00	1.00E+26	1.00E+26	1.00E+26
@		664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-2.63E-03	6.99E-01	6.99E-01
+	PM-144	476.78	42.00	-7.87E-02	1.12E-01	2.20E-01
		618.01	98.60	2.28E-02		1.12E-01
		696.49	99.49	4.65E-02		1.38E-01
+	PM-145	36.85	21.70	2.70E-01	2.57E-01	4.80E-01
		37.36	39.70	1.44E-01		2.57E-01
		42.30	15.10	-9.90E-03		5.77E-01
		72.40	2.31	1.89E-01		3.60E+00
+	PM-146	453.90	39.94	9.22E-02	2.08E-01	2.08E-01
		735.90	14.01	-1.10E-01		8.46E-01
		747.13	13.10	-3.50E-02		8.84E-01
+	ND-147	91.11	28.90	2.43E+02	1.41E+02	1.41E+02
		531.02	13.10	-6.30E+01		3.18E+02
+	PM-149	285.90	3.10	-8.86E+12	7.03E+13	7.03E+13
+	EU-152	121.78	20.50	-2.77E-02	2.83E-01	2.83E-01
		244.69	5.40	-2.11E-01		1.48E+00
		344.27	19.13	1.77E-02		3.83E-01
		778.89	9.20	-1.13E-01		1.27E+00
		964.01	10.40	5.67E-02		1.54E+00
		1085.78	7.22	-3.86E-01		1.72E+00
		1112.02	9.60	7.46E-01		1.64E+00
		1407.95	14.94	-6.81E-02		7.97E-01
+	GD-153	97.43	31.30	3.71E-02	2.58E-01	2.58E-01
		103.18	22.20	-1.70E-01		3.23E-01
+	EU-154	123.07	40.50	3.15E-03	1.45E-01	1.45E-01
		723.30	19.70	9.81E-03		6.23E-01
		873.19	11.50	-8.40E-02		9.93E-01
		996.32	10.30	3.57E-02		1.19E+00
		1004.76	17.90	-5.38E-02		7.23E-01
		1274.45	35.50	-6.13E-02		3.90E-01
+	EU-155	86.50	30.90	2.86E-01	2.55E-01	2.55E-01
		105.30	20.70	-1.63E-01		2.73E-01
+	EU-156	811.77	10.40	-2.20E+01	9.56E+01	9.56E+01
		1153.47	7.20	-7.01E+01		1.86E+02
		1230.71	8.90	-1.45E+01		1.83E+02
+	HO-166M	184.41	72.60	1.20E-01	9.93E-02	9.93E-02
		280.45	29.60	5.56E-02		2.33E-01
		410.94	11.10	2.26E-01		7.09E-01
		711.69	54.10	9.57E-02		2.18E-01
+	TM-171	66.72	0.14	1.86E+00	5.94E+01	5.94E+01
+	HF-172	67.35	5.31	4.88E-02	5.86E-01	1.56E+00
		125.81	11.30	-2.88E-02		5.86E-01
+	LU-172	181.53	20.60	2.23E+03	6.65E+03	9.17E+03
		900.72	29.81	-1.50E+03		1.16E+04
		1093.66	62.50	1.80E+03		6.65E+03
+	LU-173	100.72	5.24	2.94E-01	4.03E-01	1.20E+00
		272.11	21.20	2.20E-01		4.03E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HF-175	343.40		84.00	1.06E-02	2.29E-01	2.29E-01
+	LU-176	88.34		13.30	6.84E-01	7.27E-02	5.81E-01
		201.83		86.00	4.76E-02		7.89E-02
		306.78		94.00	5.68E-03		7.27E-02
+	HF-181	133.02		41.70	-1.63E-02	4.78E-01	7.34E-01
		345.85		17.20	9.87E-02		2.24E+00
		482.03		82.80	9.56E-02		4.78E-01
+	TA-182	67.75		41.20	1.04E-02	3.24E-01	3.24E-01
		1121.30		34.90	4.89E-01		8.52E-01
		1189.05		16.23	-6.13E-01		1.75E+00
		1221.41		26.98	9.36E-02		1.22E+00
		1231.02		11.44	-8.50E-01		2.71E+00
+	IR-192	308.46		29.68	-1.13E-02	3.99E-01	5.96E-01
		468.07		48.10	-1.16E-01		3.99E-01
+	HG-203	279.19		77.30	7.04E-02	3.90E-01	3.90E-01
+	TL-204	374.74		94.11	-3.29E-02	7.96E-02	7.96E-02
		899.15		99.16	-1.57E-02		1.25E-01
		911.74		91.10	4.58E-01		2.19E-01
+	BI-207	569.67		97.72	-3.36E-03	9.45E-02	9.45E-02
		1063.62		74.90	-5.01E-02		1.68E-01
+	TL-208	583.14	*	30.22	1.42E+00	6.35E-02	4.21E-01
		860.37		4.48	1.24E+00		2.94E+00
		2614.66	*	35.85	1.24E+00		6.35E-02
+	BI-210M	262.00		45.00	3.05E-02	1.55E-01	1.55E-01
		300.00		23.00	-3.69E-01		3.49E-01
+	PB-210	46.50	*	4.25	1.29E+00	2.33E+00	2.33E+00
+	PB-211	404.84		2.90	-9.12E-01	2.67E+00	2.67E+00
		831.96		2.90	-1.72E-01		4.33E+00
+	BI-212	727.17		11.80	3.47E-01	1.08E+00	1.08E+00
		1620.62		2.75	-3.16E-01		2.87E+00
+	PB-212	238.63	*	44.60	1.54E+00	2.85E-01	2.85E-01
		300.09	*	3.41	2.09E+00		3.95E+00
+	BI-214	609.31	*	46.30	1.13E+00	4.22E-01	4.25E-01
		1120.29		15.10	3.66E-01		1.06E+00
		1764.49	*	15.80	1.32E+00		4.22E-01
		2204.22		4.98	0.00E+00		2.38E+00
+	PB-214	295.21	*	19.19	1.07E+00	3.69E-01	6.92E-01
		351.92	*	37.19	1.25E+00		3.69E-01
+	RN-219	401.80		6.50	-1.04E-01	1.19E+00	1.19E+00
+	RA-223	323.87		3.88	-8.60E-01	1.85E+00	1.85E+00
+	RA-224	240.98		3.95	1.58E+01	3.25E+00	3.25E+00
+	RA-225	40.00		31.00	6.33E+00	3.12E+01	3.12E+01
+	RA-226	186.21	*	3.28	2.62E+00	2.71E+00	2.71E+00
+	TH-227	50.10		8.40	-3.22E-01	9.14E-01	9.14E-01
		236.00		11.50	2.00E+00		9.60E-01
		256.20		6.30	2.12E-01		1.11E+00
+	AC-228	338.32	*	11.40	1.24E+00	7.28E-01	8.40E-01
		911.07	*	27.70	1.23E+00		7.28E-01

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.61E+00	7.28E-01	1.30E+00
+	TH-230	48.44		16.90	1.62E-02	4.81E-01	4.81E-01
		62.85		4.60	2.22E+00		1.72E+00
		67.67		0.37	6.32E-01		1.98E+01
+	PA-231	283.67		1.60	1.63E+00	3.11E+00	4.28E+00
		302.67		2.30	-1.56E-01		3.11E+00
+	TH-231	25.64		14.70	-7.88E-02	1.10E+00	1.50E+00
		84.21		6.40	-7.42E-01		1.10E+00
+	PA-233	311.98		38.60	5.95E-01	2.38E+00	2.38E+00
+	PA-234	131.20		20.40	2.21E-01	3.05E-01	3.05E-01
		733.99		8.80	-1.01E-01		1.35E+00
		946.00		12.00	-2.31E-01		1.02E+00
+	PA-234M	1001.03		0.92	2.22E-01	1.33E+01	1.33E+01
+	TH-234	63.29	*	3.80	1.89E+00	2.47E+00	2.47E+00
+	U-235	143.76		10.50	2.88E-01	5.96E-01	5.96E-01
		163.35		4.70	6.30E-01		1.32E+00
		205.31		4.70	-1.28E+00		1.44E+00
+	NP-237	86.50	*	12.60	1.70E+00	1.04E+00	1.04E+00
+	NP-239	106.10		22.70	-2.24E+11	1.20E+12	1.20E+12
		228.18		10.70	7.33E+11		3.16E+12
		277.60		14.10	-9.16E+10		2.38E+12
+	AM-241	59.54		35.90	-1.51E-02	2.13E-01	2.13E-01
+	AM-243	74.67	*	66.00	2.86E-01	1.80E-01	1.80E-01
+	CM-243	209.75		3.29	1.63E+00	4.89E-01	2.19E+00
		228.14		10.60	1.51E-01		6.49E-01
		277.60		14.00	-1.88E-02		4.89E-01

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

NUCLIDE MDA REPORT

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

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	2.77E+00	2.77E+00	3.32E-01	1.31E+00
	NA-22	1274.54		99.94	1.46E-01	1.46E-01	-2.29E-02	6.71E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	1.00E-01	1.00E-01	5.18E-02	4.27E-02
+	K-40	1460.81	*	10.67	1.48E+00	1.48E+00	2.26E+01	6.82E-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	7.76E-02	7.76E-02	2.48E-03	3.81E-02
		78.34		96.00	9.97E-02		4.17E-01	4.92E-02
	SC-46	889.25		99.98	2.70E-01	2.70E-01	-3.01E-02	1.26E-01
		1120.51		99.99	3.64E-01		1.26E-01	1.71E-01
	V-48	983.52		99.98	8.75E+00	8.75E+00	3.56E+00	4.05E+00
		1312.10		97.50	1.02E+01		-7.97E-01	4.67E+00
	CR-51	320.08		9.83	8.29E+00	8.29E+00	-2.88E-01	3.97E+00
	MN-54	834.83		99.97	1.64E-01	1.64E-01	9.98E-02	7.73E-02
	CO-56	846.75		99.96	3.03E-01	3.03E-01	1.42E-01	1.42E-01
		1037.75		14.03	2.24E+00		6.86E-01	1.04E+00
		1238.25		67.00	6.11E-01		-3.32E-01	2.87E-01
		1771.40		15.51	1.39E+00		-3.09E+00	5.83E-01
		2598.48		16.90	1.27E+00		2.10E-01	4.77E-01
	CO-57	122.06		85.51	8.64E-02	8.64E-02	-8.44E-03	4.22E-02
		136.48		10.60	7.10E-01		-2.65E-02	3.47E-01
	CO-58	810.76		99.40	2.92E-01	2.92E-01	3.94E-02	1.37E-01
	FE-59	1099.22		56.50	1.22E+00	1.22E+00	5.24E-02	5.70E-01
		1291.56		43.20	1.68E+00		1.24E+00	7.83E-01
	CO-60	1173.22		100.00	1.65E-01	1.48E-01	4.11E-02	7.71E-02
		1332.49		100.00	1.48E-01		1.01E-02	6.80E-02
	ZN-65	1115.52		50.75	4.12E-01	4.12E-01	-1.14E-01	1.93E-01
	GA-67	93.31		35.70	2.97E+08	2.97E+08	4.21E+08	1.46E+08
		208.95		2.24	4.68E+09		2.91E+09	2.28E+09
		300.22		16.00	7.38E+08		-7.80E+08	3.57E+08
	SE-75	121.11		16.70	5.99E-01	1.75E-01	-2.87E-01	2.93E-01
		136.00		59.20	1.75E-01		-4.00E-02	8.54E-02
		264.65		59.80	2.03E-01		-1.47E-01	9.78E-02
		279.53		25.20	4.92E-01		2.31E-01	2.37E-01
		400.65		11.40	1.20E+00		-3.18E-01	5.73E-01
	RB-82	776.52		13.00	1.29E+01	1.29E+01	-4.97E+00	6.05E+00
	RB-83	520.41		46.00	3.89E-01	3.89E-01	2.50E-02	1.83E-01
		529.64		30.30	5.78E-01		-4.69E-02	2.71E-01
		552.65		16.40	1.15E+00		7.52E-01	5.39E-01
	KR-85	513.99		0.43	2.65E+01	2.65E+01	2.13E+01	1.27E+01
	SR-85	513.99		99.27	3.29E-01	3.29E-01	2.64E-01	1.58E-01
	Y-88	898.02		93.40	2.41E-01	2.02E-01	-2.67E-02	1.12E-01
		1836.01		99.38	2.02E-01		3.35E-02	8.67E-02
	MO-93	263.06		56.72	1.24E-01	1.03E-01	-4.86E-03	5.97E-02
		684.67		99.68	1.09E-01		-7.99E-03	5.12E-02
		1477.11		99.08	1.03E-01		1.90E-02	4.49E-02
	NB-93M	16.57		9.43	7.54E+00	7.54E+00	1.46E+01	3.67E+00
	NB-94	702.63		100.00	1.09E-01	1.09E-01	-4.26E-02	5.11E-02
		871.10		100.00	1.10E-01		-2.61E-02	5.11E-02
	NB-95	765.79		99.81	9.13E-01	9.13E-01	6.37E-01	4.32E-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-95M	235.69		25.00	8.42E+07	8.42E+07	1.75E+08	4.13E+07
	ZR-95	724.18		43.70	8.07E-01	5.61E-01	1.27E-02	3.82E-01
		756.72		55.30	5.61E-01		-1.88E-01	2.63E-01
	MO-99	181.06		6.20	7.67E+10	6.52E+10	3.45E+10	3.74E+10
		739.58		12.80	6.52E+10		2.95E+09	3.07E+10
		778.00		4.50	1.87E+11		-3.98E+10	8.77E+10
	RU-103	497.08		89.00	4.86E-01	4.86E-01	-1.19E-01	2.28E-01
	RU-106	621.84		9.80	1.02E+00	1.02E+00	-1.04E+00	4.77E-01
	AG-108M	433.93		89.90	8.43E-02	8.43E-02	-3.26E-02	4.00E-02
		614.37		90.40	1.10E-01		5.95E-02	5.20E-02
		722.95		90.50	1.32E-01		3.46E-02	6.26E-02
+	CD-109	88.03	*	3.72	4.09E+00	4.09E+00	6.67E+00	2.02E+00
	AG-110M	657.75		93.14	1.50E-01	1.50E-01	-1.55E-02	7.09E-02
		677.61		10.53	1.39E+00		1.02E+00	6.59E-01
		706.67		16.46	9.23E-01		3.65E-01	4.36E-01
		763.93		21.98	7.26E-01		-1.00E-02	3.42E-01
		884.67		71.63	2.22E-01		1.99E-02	1.04E-01
		1384.27		23.94	5.57E-01		-2.67E-01	2.46E-01
	CD-113M	263.70		0.02	2.99E+02	2.99E+02	-1.58E+02	1.44E+02
	SN-113	255.12		1.93	6.52E+00	2.03E-01	-1.87E-01	3.15E+00
		391.69		64.90	2.03E-01		-1.40E-01	9.66E-02
	TE123M	159.00		84.10	1.28E-01	1.28E-01	-2.75E-02	6.25E-02
	SB-124	602.71		97.87	3.25E-01	3.25E-01	1.04E-01	1.54E-01
		645.85		7.26	3.62E+00		-1.15E+00	1.68E+00
		722.78		11.10	3.38E+00		8.85E-01	1.60E+00
		1691.02		49.00	4.97E-01		3.31E-02	2.04E-01
	I-125	35.49		6.49	5.24E+00	5.24E+00	-4.46E-01	2.55E+00
	SB-125	176.33		6.89	9.51E-01	2.90E-01	-1.60E-01	4.63E-01
		427.89		29.33	2.90E-01		6.23E-02	1.38E-01
		463.38		10.35	9.85E-01		9.55E-01	4.71E-01
		600.56		17.80	5.79E-01		5.66E-02	2.73E-01
		635.90		11.32	7.92E-01		-1.16E-01	3.69E-01
	SB-126	414.70		83.30	2.31E+01	2.31E+01	-8.86E+00	1.10E+01
		666.33		99.60	2.90E+01		1.96E+01	1.37E+01
		695.00		99.60	3.03E+01		2.54E+01	1.44E+01
		720.50		53.80	5.26E+01		1.33E+01	2.48E+01
+	SN-126	87.57	*	37.00	3.54E-01	3.54E-01	5.78E-01	1.75E-01
	SB-127	473.00		25.00	1.79E+07	1.74E+07	-3.50E+06	8.44E+06
		685.20		35.70	1.74E+07		-1.28E+06	8.17E+06
		783.80		14.70	4.63E+07		2.18E+07	2.17E+07
	I-129	29.78		57.00	2.66E-01	2.66E-01	-1.10E-02	1.30E-01
		33.60		13.20	8.87E-01		-5.11E-01	4.32E-01
		39.58		7.52	1.25E+00		2.53E-01	6.10E-01
	I-131	284.30		6.05	5.92E+03	4.61E+02	2.26E+03	2.85E+03
		364.48		81.20	4.61E+02		-6.06E+01	2.20E+02
		636.97		7.26	5.76E+03		-3.33E+03	2.67E+03
		722.89		1.80	3.47E+04		9.09E+03	1.64E+04
	TE-132	49.72		13.10	8.83E+08	1.16E+08	-3.11E+08	4.32E+08
		228.16		88.00	1.16E+08		2.70E+07	5.63E+07
	BA-133	81.00		33.00	2.25E-01	1.64E-01	-9.52E-01	1.11E-01
		302.84		17.80	4.09E-01		-2.05E-02	1.97E-01
		356.01		60.00	1.64E-01		-1.28E-01	7.92E-02
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for 1707090-16

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
XE-133	81.00	38.00	9.66E+04	9.66E+04	-4.08E+05	4.75E+04
CS-134	563.23	8.38	1.32E+00	1.22E-01	1.01E+00	6.27E-01
	569.32	15.43	6.52E-01		-2.32E-02	3.08E-01
	604.70	97.60	1.22E-01		-7.31E-04	5.80E-02
	795.84	85.40	1.54E-01		5.91E-02	7.24E-02
	801.93	8.73	1.41E+00		2.99E-01	6.61E-01
CS-135	268.24	16.00	4.57E-01	4.57E-01	-3.25E-02	2.21E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.51E+02	2.05E+01	1.41E+01	7.37E+01
	163.89	4.61	2.48E+02		9.59E+01	1.21E+02
	176.55	13.56	8.53E+01		1.99E+01	4.15E+01
	273.65	12.66	1.06E+02		-8.17E+00	5.11E+01
	340.57	48.50	3.60E+01		5.56E+00	1.74E+01
	818.50	99.70	2.05E+01		2.65E-01	9.56E+00
	1048.07	79.60	3.16E+01		5.13E+00	1.47E+01
	1235.34	19.70	1.70E+02		3.17E+01	8.01E+01
CS-137	661.65	85.12	1.31E-01	1.31E-01	6.85E-03	6.20E-02
LA-138	788.74	34.00	3.17E-01	1.81E-01	-1.67E-03	1.48E-01
	1435.80	66.00	1.81E-01		1.20E-02	8.14E-02
CE-139	165.85	80.35	1.24E-01	1.24E-01	7.46E-02	6.02E-02
BA-140	162.64	6.70	2.00E+02	7.94E+01	9.58E+01	9.75E+01
	304.84	4.50	3.18E+02		4.49E+01	1.53E+02
	423.70	3.20	5.18E+02		-1.76E+02	2.46E+02
	437.55	2.00	8.47E+02		1.55E+01	4.02E+02
	537.32	25.00	7.94E+01		3.33E+01	3.76E+01
LA-140	328.77	20.50	8.46E+01	3.00E+01	6.92E+00	4.08E+01
	487.03	45.50	3.54E+01		-3.65E+00	1.66E+01
	815.85	23.50	9.57E+01		-5.53E+01	4.45E+01
	1596.49	95.49	3.00E+01		1.24E+00	1.35E+01
CE-141	145.44	48.40	1.08E+00	1.08E+00	2.93E-01	5.25E-01
@ 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	6.99E-01	6.99E-01	-2.63E-03	3.41E-01
PM-144	476.78	42.00	2.20E-01	1.12E-01	-7.87E-02	1.04E-01
	618.01	98.60	1.12E-01		2.28E-02	5.25E-02
	696.49	99.49	1.38E-01		4.65E-02	6.53E-02
PM-145	36.85	21.70	4.80E-01	2.57E-01	2.70E-01	2.34E-01
	37.36	39.70	2.57E-01		1.44E-01	1.25E-01
	42.30	15.10	5.77E-01		-9.90E-03	2.82E-01
	72.40	2.31	3.60E+00		1.89E-01	1.77E+00
PM-146	453.90	39.94	2.08E-01	2.08E-01	9.22E-02	9.86E-02
	735.90	14.01	8.46E-01		-1.10E-01	3.99E-01
	747.13	13.10	8.84E-01		-3.50E-02	4.15E-01
ND-147	91.11	28.90	1.41E+02	1.41E+02	2.43E+02	6.94E+01
	531.02	13.10	3.18E+02		-6.30E+01	1.49E+02
PM-149	285.90	3.10	7.03E+13	7.03E+13	-8.86E+12	3.38E+13
EU-152	121.78	20.50	2.83E-01	2.83E-01	-2.77E-02	1.38E-01
	244.69	5.40	1.48E+00		-2.11E-01	7.18E-01
	344.27	19.13	3.83E-01		1.77E-02	1.83E-01
	778.89	9.20	1.27E+00		-1.13E-01	5.95E-01

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	964.01		10.40	1.54E+00	2.83E-01	5.67E-02	7.31E-01
		1085.78		7.22	1.72E+00		-3.86E-01	7.95E-01
		1112.02		9.60	1.64E+00		7.46E-01	7.70E-01
		1407.95		14.94	7.97E-01		-6.81E-02	3.58E-01
	GD-153	97.43		31.30	2.58E-01	2.58E-01	3.71E-02	1.26E-01
		103.18		22.20	3.23E-01		-1.70E-01	1.58E-01
	EU-154	123.07		40.50	1.45E-01	1.45E-01	3.15E-03	7.06E-02
		723.30		19.70	6.23E-01		9.81E-03	2.95E-01
		873.19		11.50	9.93E-01		-8.40E-02	4.62E-01
		996.32		10.30	1.19E+00		3.57E-02	5.51E-01
		1004.76		17.90	7.23E-01		-5.38E-02	3.37E-01
		1274.45		35.50	3.90E-01		-6.13E-02	1.80E-01
	EU-155	86.50		30.90	2.55E-01	2.55E-01	2.86E-01	1.25E-01
		105.30		20.70	2.73E-01		-1.63E-01	1.33E-01
	EU-156	811.77		10.40	9.56E+01	9.56E+01	-2.20E+01	4.45E+01
		1153.47		7.20	1.86E+02		-7.01E+01	8.66E+01
		1230.71		8.90	1.83E+02		-1.45E+01	8.58E+01
	HO-166M	184.41		72.60	9.93E-02	9.93E-02	1.20E-01	4.85E-02
		280.45		29.60	2.33E-01		5.56E-02	1.12E-01
		410.94		11.10	7.09E-01		2.26E-01	3.38E-01
		711.69		54.10	2.18E-01		9.57E-02	1.03E-01
	TM-171	66.72		0.14	5.94E+01	5.94E+01	1.86E+00	2.92E+01
	HF-172	67.35		5.31	1.56E+00	5.86E-01	4.88E-02	7.68E-01
		125.81		11.30	5.86E-01		-2.88E-02	2.86E-01
	LU-172	181.53		20.60	9.17E+03	6.65E+03	2.23E+03	4.47E+03
		900.72		29.81	1.16E+04		-1.50E+03	5.41E+03
		1093.66		62.50	6.65E+03		1.80E+03	3.11E+03
	LU-173	100.72		5.24	1.20E+00	4.03E-01	2.94E-01	5.86E-01
		272.11		21.20	4.03E-01		2.20E-01	1.95E-01
	HF-175	343.40		84.00	2.29E-01	2.29E-01	1.06E-02	1.10E-01
	LU-176	88.34		13.30	5.81E-01	7.27E-02	6.84E-01	2.86E-01
		201.83		86.00	7.89E-02		4.76E-02	3.84E-02
		306.78		94.00	7.27E-02		5.68E-03	3.49E-02
	HF-181	133.02		41.70	7.34E-01	4.78E-01	-1.63E-02	3.59E-01
		345.85		17.20	2.24E+00		9.87E-02	1.08E+00
		482.03		82.80	4.78E-01		9.56E-02	2.26E-01
	TA-182	67.75		41.20	3.24E-01	3.24E-01	1.04E-02	1.59E-01
		1121.30		34.90	8.52E-01		4.89E-01	4.01E-01
		1189.05		16.23	1.75E+00		-6.13E-01	8.18E-01
		1221.41		26.98	1.22E+00		9.36E-02	5.75E-01
		1231.02		11.44	2.71E+00		-8.50E-01	1.27E+00
	IR-192	308.46		29.68	5.96E-01	3.99E-01	-1.13E-02	2.86E-01
		468.07		48.10	3.99E-01		-1.16E-01	1.88E-01
	HG-203	279.19		77.30	3.90E-01	3.90E-01	7.04E-02	1.88E-01
	TL-204	374.74		94.11	7.96E-02	7.96E-02	-3.29E-02	3.79E-02
		899.15		99.16	1.25E-01		-1.57E-02	5.85E-02
		911.74		91.10	2.19E-01		4.58E-01	1.05E-01
	BI-207	569.67		97.72	9.45E-02	9.45E-02	-3.36E-03	4.46E-02
		1063.62		74.90	1.68E-01		-5.01E-02	7.76E-02
+	TL-208	583.14	*	30.22	4.21E-01	6.35E-02	1.42E+00	2.02E-01
		860.37		4.48	2.94E+00		1.24E+00	1.38E+00
		2614.66	*	35.85	6.35E-02		1.24E+00	0.00E+00
	BI-210M	262.00		45.00	1.55E-01	1.55E-01	3.05E-02	7.51E-02

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-210M	300.00		23.00	3.49E-01	1.55E-01	-3.69E-01	1.69E-01
+	PB-210	46.50	*	4.25	2.33E+00	2.33E+00	1.29E+00	1.14E+00
	PB-211	404.84		2.90	2.67E+00	2.67E+00	-9.12E-01	1.27E+00
		831.96		2.90	4.33E+00		-1.72E-01	2.04E+00
	BI-212	727.17		11.80	1.08E+00	1.08E+00	3.47E-01	5.14E-01
		1620.62		2.75	2.87E+00		-3.16E-01	1.19E+00
+	PB-212	238.63	*	44.60	2.85E-01	2.85E-01	1.54E+00	1.40E-01
		300.09	*	3.41	3.95E+00		2.09E+00	1.94E+00
+	BI-214	609.31	*	46.30	4.25E-01	4.22E-01	1.13E+00	2.06E-01
		1120.29		15.10	1.06E+00		3.66E-01	4.98E-01
		1764.49	*	15.80	4.22E-01		1.32E+00	1.65E-01
		2204.22		4.98	2.38E+00		0.00E+00	1.01E+00
+	PB-214	295.21	*	19.19	6.92E-01	3.69E-01	1.07E+00	3.39E-01
		351.92	*	37.19	3.69E-01		1.25E+00	1.80E-01
	RN-219	401.80		6.50	1.19E+00	1.19E+00	-1.04E-01	5.67E-01
	RA-223	323.87		3.88	1.85E+00	1.85E+00	-8.60E-01	8.87E-01
	RA-224	240.98		3.95	3.25E+00	3.25E+00	1.58E+01	1.60E+00
	RA-225	40.00		31.00	3.12E+01	3.12E+01	6.33E+00	1.52E+01
+	RA-226	186.21	*	3.28	2.71E+00	2.71E+00	2.62E+00	1.33E+00
	TH-227	50.10		8.40	9.14E-01	9.14E-01	-3.22E-01	4.47E-01
		236.00		11.50	9.60E-01		2.00E+00	4.71E-01
		256.20		6.30	1.11E+00		2.12E-01	5.34E-01
+	AC-228	338.32	*	11.40	8.40E-01	7.28E-01	1.24E+00	4.07E-01
		911.07	*	27.70	7.28E-01		1.23E+00	3.50E-01
		969.11	*	16.60	1.30E+00		1.61E+00	6.27E-01
	TH-230	48.44		16.90	4.81E-01	4.81E-01	1.62E-02	2.35E-01
		62.85		4.60	1.72E+00		2.22E+00	8.46E-01
		67.67		0.37	1.98E+01		6.32E-01	9.70E+00
	PA-231	283.67		1.60	4.28E+00	3.11E+00	1.63E+00	2.06E+00
		302.67		2.30	3.11E+00		-1.56E-01	1.50E+00
	TH-231	25.64		14.70	1.50E+00	1.10E+00	-7.88E-02	7.33E-01
		84.21		6.40	1.10E+00		-7.42E-01	5.42E-01
	PA-233	311.98		38.60	2.38E+00	2.38E+00	5.95E-01	1.14E+00
	PA-234	131.20		20.40	3.05E-01	3.05E-01	2.21E-01	1.49E-01
		733.99		8.80	1.35E+00		-1.01E-01	6.36E-01
		946.00		12.00	1.02E+00		-2.31E-01	4.73E-01
	PA-234M	1001.03		0.92	1.33E+01	1.33E+01	2.22E-01	6.18E+00
+	TH-234	63.29	*	3.80	2.47E+00	2.47E+00	1.89E+00	1.22E+00
	U-235	143.76		10.50	5.96E-01	5.96E-01	2.88E-01	2.91E-01
		163.35		4.70	1.32E+00		6.30E-01	6.41E-01
		205.31		4.70	1.44E+00		-1.28E+00	6.99E-01
+	NP-237	86.50	*	12.60	1.04E+00	1.04E+00	1.70E+00	5.15E-01
	NP-239	106.10		22.70	1.20E+12	1.20E+12	-2.24E+11	5.88E+11
		228.18		10.70	3.16E+12		7.33E+11	1.53E+12
		277.60		14.10	2.38E+12		-9.16E+10	1.15E+12
	AM-241	59.54		35.90	2.13E-01	2.13E-01	-1.51E-02	1.05E-01
+	AM-243	74.67	*	66.00	1.80E-01	1.80E-01	2.86E-01	8.92E-02
	CM-243	209.75		3.29	2.19E+00	4.89E-01	1.63E+00	1.07E+00
		228.14		10.60	6.49E-01		1.51E-01	3.15E-01
		277.60		14.00	4.89E-01		-1.88E-02	2.35E-01

Analysis Report for 1707090-16

HTC-A07-S001-3036-01

+ = 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

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: HTC-A07-S001-3036-01

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	12	116
17:	101	95	90	85	84	70	96	93
25:	79	82	74	69	82	76	78	72
33:	69	71	71	81	87	90	91	69
41:	66	102	82	99	131	129	98	91
49:	105	96	84	115	125	118	100	120
57:	115	129	116	150	133	204	183	171
65:	152	129	142	129	167	130	163	176
73:	276	329	377	453	337	170	131	134
81:	130	102	131	180	180	215	216	153
89:	166	182	173	196	203	112	88	94
97:	91	93	100	89	81	85	88	80
105:	78	95	98	101	95	102	97	103
113:	83	86	94	102	75	90	84	79
121:	97	81	87	92	85	93	92	119
129:	107	93	93	92	79	83	77	81
137:	79	77	91	77	82	95	83	94
145:	83	100	81	71	77	91	59	76
153:	80	68	75	73	71	69	81	58
161:	78	83	70	60	75	68	54	59
169:	48	55	60	59	64	67	56	61
177:	71	63	68	75	49	65	81	79
185:	110	118	71	54	53	56	52	58
193:	66	62	61	53	55	78	57	58
201:	57	65	54	65	56	50	70	87
209:	79	55	55	56	49	49	53	39
217:	55	61	49	46	54	53	41	60
225:	48	57	57	41	49	40	38	57
233:	47	45	48	108	237	339	212	114
241:	108	81	59	39	46	35	42	45
249:	43	29	41	47	35	45	41	42
257:	39	42	50	35	33	44	36	41
265:	31	41	35	47	48	50	57	33
273:	31	30	31	38	36	33	34	33
281:	34	37	30	29	29	36	22	28
289:	34	23	29	31	47	99	99	64
297:	34	45	54	42	21	23	29	26
305:	23	29	30	30	26	32	29	29
313:	30	30	22	28	23	20	18	24
321:	31	30	25	24	29	27	44	38
329:	36	28	28	36	39	22	28	42
337:	87	73	44	19	18	27	28	22
345:	22	33	22	33	35	110	164	139
353:	45	19	21	20	22	22	27	21
361:	29	29	20	16	19	16	18	25

369:	17	24	18	29	24	17	15	20

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Channel								
377:	14	24	25	18	17	22	24	24
385:	17	21	29	11	21	17	21	19
393:	24	16	24	22	16	15	25	24
401:	17	18	25	16	27	17	18	23
409:	19	20	18	24	16	16	11	21
417:	16	14	28	14	15	18	20	19
425:	15	20	18	20	22	15	16	14
433:	20	20	8	20	22	13	16	19
441:	13	20	27	5	16	14	20	16
449:	11	14	18	15	19	10	20	20
457:	15	11	13	24	23	37	32	16
465:	9	18	13	18	11	11	21	18
473:	10	15	11	17	13	17	11	18
481:	8	19	11	12	12	9	14	13
489:	13	12	12	18	15	11	8	11
497:	13	14	11	15	11	18	17	21
505:	9	11	13	27	48	61	38	29
513:	17	18	9	10	11	13	12	16
521:	9	7	19	10	18	9	10	9
529:	8	12	20	12	9	11	13	11
537:	20	21	16	14	8	19	15	10
545:	12	13	8	10	9	13	14	16
553:	10	9	14	7	7	12	13	17
561:	19	18	16	20	16	13	12	13
569:	15	11	19	12	7	14	10	16
577:	12	9	15	15	33	90	77	47
585:	13	14	9	11	18	10	10	8
593:	21	11	12	15	12	8	18	18
601:	15	13	10	16	14	13	39	106
609:	95	62	20	6	14	10	13	15
617:	18	6	5	12	11	9	12	9
625:	16	11	12	6	8	13	7	14
633:	7	10	11	9	5	6	8	11
641:	12	6	12	6	13	9	7	7
649:	11	8	10	13	11	10	14	8
657:	12	5	14	14	8	14	8	16
665:	13	11	12	4	15	12	4	7
673:	10	6	15	8	15	11	13	13
681:	9	8	9	13	11	11	6	9
689:	4	14	8	14	14	13	9	14
697:	5	15	11	4	10	6	12	11
705:	14	5	14	13	16	8	9	12
713:	11	9	10	6	11	15	8	11
721:	9	7	7	12	14	19	16	15
729:	9	17	16	8	14	7	8	6
737:	12	9	10	12	8	15	7	8
745:	9	8	13	4	9	10	8	10
753:	7	6	11	7	8	8	7	8
761:	13	7	9	14	11	7	18	14
769:	12	7	9	14	9	7	8	9
777:	9	7	8	8	15	10	7	8
785:	9	12	6	4	8	7	5	10
793:	12	11	17	7	11	8	4	6

801:	9	6	14	5	10	8	7	10

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Channel								
809:	5	7	10	5	8	8	4	9
817:	6	4	5	12	10	8	7	9
825:	6	14	10	4	6	8	9	9
833:	11	20	9	11	8	9	8	10
841:	8	9	10	8	16	8	9	7
849:	10	7	4	7	3	14	6	15
857:	4	8	12	13	15	5	6	11
865:	3	9	7	4	6	6	7	9
873:	6	5	8	8	6	6	11	9
881:	4	10	12	5	8	8	8	6
889:	8	5	4	12	8	7	8	9
897:	3	11	5	6	8	9	6	9
905:	7	7	9	10	26	44	35	21
913:	15	5	7	3	2	8	10	6
921:	7	6	11	14	8	5	8	13
929:	4	4	4	7	13	6	10	8
937:	4	7	7	9	5	1	12	6
945:	5	7	14	4	9	8	8	6
953:	7	1	4	7	8	10	5	10
961:	13	3	14	19	8	13	21	29
969:	30	12	4	12	7	4	5	7
977:	6	1	3	7	9	5	7	7
985:	5	5	6	4	6	6	7	5
993:	6	6	6	3	8	3	9	9
1001:	7	4	5	9	3	10	6	8
1009:	7	9	6	6	8	8	6	9
1017:	8	5	8	9	3	4	10	11
1025:	8	7	2	4	11	6	6	8
1033:	6	6	7	11	10	5	6	7
1041:	4	4	5	8	5	6	7	11
1049:	10	5	7	9	8	3	9	8
1057:	5	8	11	4	6	7	4	4
1065:	6	8	3	6	9	6	7	11
1073:	7	5	3	5	11	8	5	7
1081:	9	7	11	3	3	5	2	4
1089:	5	5	8	6	9	7	13	9
1097:	6	11	8	9	0	10	5	10
1105:	5	6	8	7	6	13	9	10
1113:	8	9	8	5	6	7	18	18
1121:	10	7	5	6	8	6	6	6
1129:	6	7	7	5	10	4	7	5
1137:	1	8	7	7	5	7	8	9
1145:	6	4	9	8	2	10	5	8
1153:	3	9	9	11	5	13	8	9
1161:	7	3	6	7	10	11	10	8
1169:	7	6	7	7	11	14	8	7
1177:	7	8	8	6	6	11	9	12
1185:	6	7	9	11	3	3	10	8
1193:	12	5	11	8	6	10	9	6
1201:	7	8	8	9	12	8	7	10
1209:	7	6	10	8	9	6	13	15
1217:	11	11	5	8	19	5	9	12
1225:	10	8	8	9	8	8	11	13

1233:	12	6	3	10	14	7	11	8

Sample Title: HTC-A07-S001-3036-01

Channel								
1241:	8	11	8	9	15	8	10	9
1249:	9	4	8	7	8	5	9	6
1257:	5	5	5	5	5	6	4	3
1265:	5	8	5	6	7	8	5	6
1273:	4	5	4	6	4	3	4	7
1281:	5	6	8	3	6	3	7	8
1289:	8	5	8	6	4	8	5	4
1297:	3	2	2	2	5	6	7	1
1305:	5	6	3	4	3	3	3	9
1313:	3	5	8	3	4	8	3	6
1321:	3	4	6	6	1	4	3	4
1329:	10	5	2	3	6	5	6	5
1337:	5	4	2	3	2	3	2	2
1345:	5	6	2	3	1	6	3	2
1353:	1	6	2	2	2	4	2	2
1361:	3	2	3	4	4	2	4	3
1369:	2	3	0	3	2	4	2	5
1377:	6	5	7	5	3	3	2	1
1385:	2	2	1	1	4	1	2	3
1393:	2	3	3	0	2	3	3	3
1401:	5	3	5	2	1	2	6	6
1409:	4	1	1	4	5	2	0	4
1417:	4	5	3	2	4	1	4	1
1425:	4	5	1	1	1	3	3	6
1433:	1	2	4	1	3	4	3	2
1441:	7	2	2	1	3	2	1	2
1449:	0	3	4	3	1	3	1	4
1457:	5	26	89	190	155	67	15	3
1465:	1	2	2	4	4	2	3	1
1473:	2	3	1	2	1	2	2	2
1481:	2	2	1	0	3	2	1	1
1489:	4	0	2	0	0	1	3	2
1497:	3	1	2	3	3	6	0	2
1505:	3	0	1	4	1	4	0	2
1513:	1	2	4	2	2	1	2	2
1521:	1	1	5	1	1	3	0	0
1529:	3	0	0	0	3	4	2	1
1537:	1	3	2	2	4	1	0	2
1545:	0	2	1	1	3	0	1	1
1553:	2	2	1	3	1	2	2	1
1561:	2	1	0	1	0	1	1	1
1569:	1	4	1	0	1	1	0	2
1577:	3	3	3	3	4	1	0	5
1585:	3	2	8	5	1	3	5	7
1593:	8	4	3	2	0	2	0	1
1601:	0	0	1	0	0	1	0	0
1609:	1	1	1	1	0	2	0	1
1617:	1	1	1	2	0	1	1	0
1625:	0	2	2	2	1	4	1	1
1633:	2	2	0	1	0	1	2	0
1641:	0	2	1	1	0	1	3	0
1649:	0	2	2	0	1	0	1	2
1657:	0	2	1	2	2	1	1	0

1665:	1	0	1	2	1	0	1	0

Sample Title: HTC-A07-S001-3036-01

Channel								
1673:	1	0	1	3	0	0	2	4
1681:	1	0	0	1	0	1	0	1
1689:	0	1	2	1	0	2	0	0
1697:	2	0	1	0	1	0	1	4
1705:	1	3	0	2	0	1	1	2
1713:	3	0	0	2	1	4	1	1
1721:	1	2	3	0	3	0	0	1
1729:	5	5	2	2	1	2	1	0
1737:	0	0	0	1	2	1	2	1
1745:	3	0	2	3	1	2	3	2
1753:	1	0	0	0	1	1	0	0
1761:	2	2	12	14	8	2	1	0
1769:	0	0	0	2	3	3	0	0
1777:	1	1	3	3	0	2	1	0
1785:	1	1	0	2	1	1	0	0
1793:	1	0	0	0	0	1	1	0
1801:	0	0	0	1	0	2	3	0
1809:	2	0	2	1	0	0	1	1
1817:	0	0	0	0	2	1	0	1
1825:	2	0	1	2	0	0	2	2
1833:	0	0	0	2	4	2	0	2
1841:	3	0	1	2	1	1	3	1
1849:	1	1	1	0	2	1	1	2
1857:	2	2	0	2	0	1	1	1
1865:	1	1	1	1	0	0	3	0
1873:	0	2	0	2	0	0	0	2
1881:	0	0	3	0	1	2	1	2
1889:	0	0	0	0	0	0	1	2
1897:	2	2	1	0	0	1	2	0
1905:	0	1	0	3	2	0	1	1
1913:	0	0	1	2	0	2	2	0
1921:	0	1	1	0	2	1	2	0
1929:	1	0	1	0	1	1	0	2
1937:	1	0	3	1	1	1	0	3
1945:	2	2	0	1	0	1	0	0
1953:	2	1	0	2	0	1	1	0
1961:	2	0	0	2	2	0	1	0
1969:	1	0	2	0	0	0	1	3
1977:	2	1	1	0	2	1	1	3
1985:	1	2	3	1	0	1	0	1
1993:	0	0	0	0	0	2	1	2
2001:	2	0	1	0	2	0	0	0
2009:	0	0	2	2	0	2	0	0
2017:	2	0	0	1	0	3	1	1
2025:	0	0	3	0	0	0	0	1
2033:	0	3	0	0	2	0	1	1
2041:	0	0	0	2	2	0	1	0
2049:	0	0	1	3	1	1	1	0
2057:	0	1	0	0	0	1	0	0
2065:	1	2	1	2	0	1	0	1
2073:	1	0	1	0	1	1	2	0
2081:	1	1	0	0	0	1	1	4
2089:	1	0	1	0	0	3	1	0

2097:	0	1	1	3	1	1	1	4

Sample Title: HTC-A07-S001-3036-01

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

2529:	0	0	1	1	1	0	0	0

Sample Title: HTC-A07-S001-3036-01

Channel								
2537:	0	0	1	0	0	2	0	0
2545:	0	0	1	0	0	1	0	1
2553:	0	2	0	0	0	0	1	0
2561:	1	0	1	0	0	0	0	0
2569:	0	0	1	1	0	0	0	0
2577:	1	0	1	0	0	0	0	1
2585:	0	2	0	0	0	0	0	0
2593:	0	0	1	0	0	0	0	0
2601:	0	0	2	1	0	0	0	0
2609:	0	0	2	5	6	21	10	6
2617:	2	1	0	0	1	0	0	0
2625:	0	0	0	1	1	0	0	0
2633:	2	0	0	0	0	0	0	1
2641:	0	0	0	0	0	0	0	0
2649:	0	1	0	0	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	1	1	1	0	0	1
2681:	0	0	0	0	0	0	0	0
2689:	0	1	0	1	0	0	0	0
2697:	0	1	0	0	0	0	0	0
2705:	2	0	2	0	0	0	0	0
2713:	1	0	1	0	0	1	0	0
2721:	0	1	0	0	0	0	0	0
2729:	0	0	0	0	0	1	0	0
2737:	0	0	0	0	0	0	0	0
2745:	1	0	0	0	0	0	0	0
2753:	0	1	0	0	0	0	0	0
2761:	0	0	0	0	0	0	0	1
2769:	0	0	0	0	0	0	0	1
2777:	0	0	1	0	0	0	0	1
2785:	0	0	0	0	1	0	0	0
2793:	1	0	0	0	0	0	0	0
2801:	0	0	1	0	0	1	0	0
2809:	0	0	0	0	0	0	0	1
2817:	0	0	0	1	0	0	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	2	0	0	0	0	0	0
2849:	0	0	0	0	0	2	0	1
2857:	1	0	0	1	0	1	0	1
2865:	1	0	0	1	0	0	1	1
2873:	0	0	0	0	0	1	0	0
2881:	1	0	0	0	0	1	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	1	0	0	0	0	0
2905:	0	1	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	1	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	1	0	0	0	0
2945:	0	0	1	1	0	0	0	0
2953:	0	0	0	0	0	0	0	1

2961:	0	0	1	0	0	0	0	0

Sample Title: HTC-A07-S001-3036-01

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

3393:	1	0	0	1	0	0	0	0

Sample Title: HTC-A07-S001-3036-01

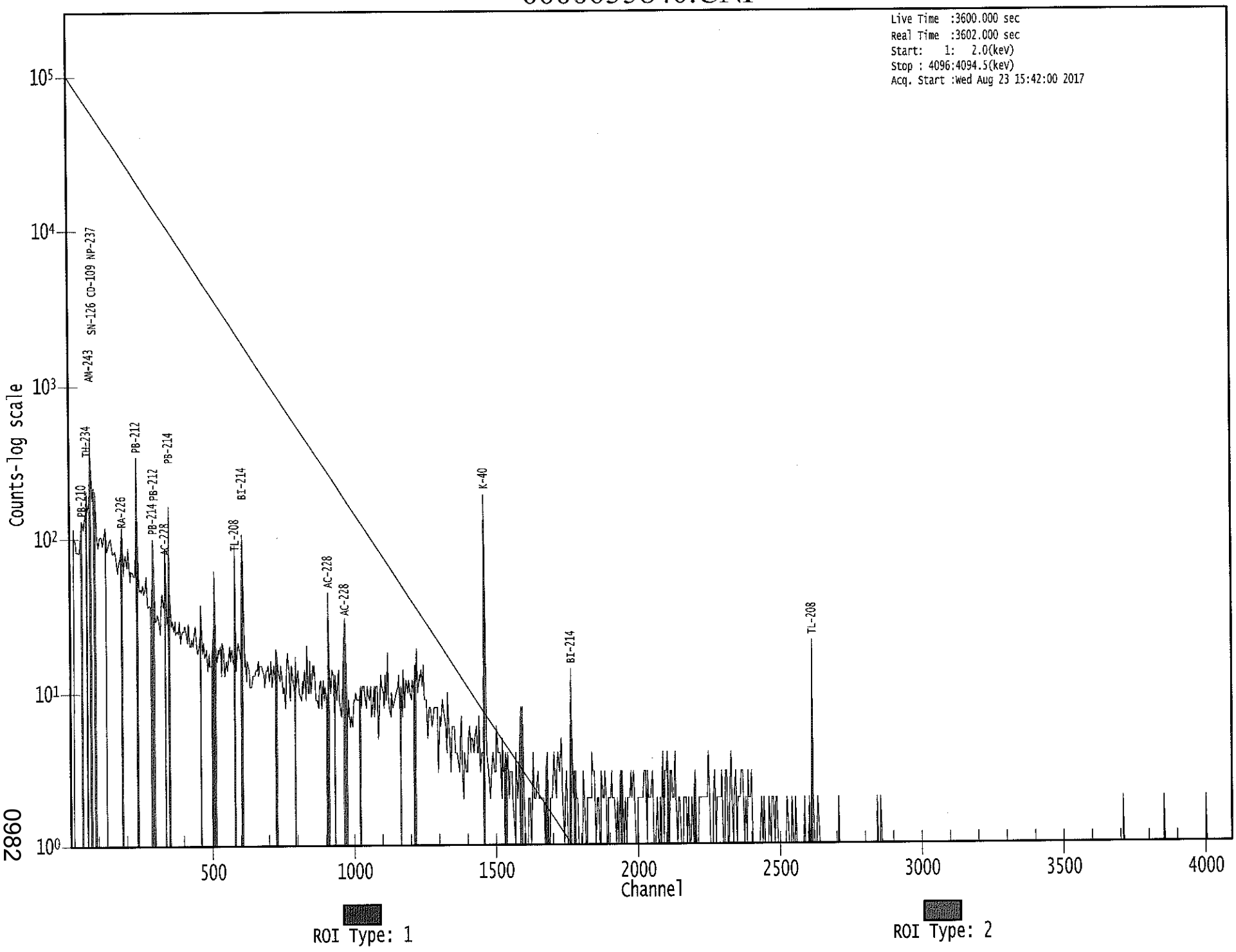
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	1	0
3441:	1	1	0	1	0	0	0	0
3449:	1	0	1	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	1	0	0	1	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	1	0	0	0	0	1
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	1	0	0	0	0	0	1	0
3529:	0	0	0	0	0	1	0	0
3537:	0	0	0	0	1	0	0	0
3545:	0	0	0	0	0	0	0	1
3553:	0	0	1	0	0	0	0	0
3561:	0	0	0	0	0	0	0	1
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	1	0
3593:	1	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	1	0	0	0
3625:	0	0	1	0	0	0	0	0
3633:	0	0	0	0	1	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	1	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	1	0	0	0	0
3689:	0	0	0	0	1	0	0	0
3697:	0	1	0	1	0	1	0	0
3705:	0	0	0	0	2	0	1	0
3713:	0	0	0	0	0	0	1	0
3721:	0	0	0	0	0	0	1	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	1	0	0	0
3745:	1	0	0	0	0	0	0	0
3753:	1	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	1	0	1	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	1
3817:	0	0	0	0	0	0	0	1

3825:	0	0	0	0	0	1	0	1

Sample Title: HTC-A07-S001-3036-01

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

0000055840.CNF



0982

 KB 9/23/17

Apex-Gamma

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-17
Sample Description	: HTC-A07-S001-3642-01
Sample Type	: SOIL
Sample Size	: 6.712E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:57:22AM
Acquisition Started	: 8/23/2017 4:42:43PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.6 seconds
Dead Time	: 0.04 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 18 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55844

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 5:43:11PM
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	46.76	47.38	0.0000	0.00
2	61.85	62.46	0.0000	0.00
3	74.72	75.31	0.0000	0.00
4	77.21	77.80	0.0000	0.00
5	92.42	93.00	0.0000	0.00
6	186.24	186.72	0.0000	0.00
7	209.72	210.18	0.0000	0.00
8	238.62	239.04	0.0000	0.00
9	241.83	242.26	0.0000	0.00
10	269.77	270.16	0.0000	0.00
11	295.35	295.72	0.0000	0.00
12	300.66	301.02	0.0000	0.00
13	327.95	328.28	0.0000	0.00
14	338.64	338.97	0.0000	0.00
15	351.95	352.26	0.0000	0.00
16	409.95	410.20	0.0000	0.00
17	463.12	463.32	0.0000	0.00
18	511.30	511.45	0.0000	0.00
19	583.72	583.80	0.0000	0.00
20	609.50	609.55	0.0000	0.00
21	696.85	696.81	0.0000	0.00
22	744.49	744.40	0.0000	0.00
23	794.50	794.36	0.0000	0.00
24	860.71	860.51	0.0000	0.00
25	911.45	911.20	0.0000	0.00
26	915.26	915.00	0.0000	0.00
27	934.39	934.12	0.0000	0.00
28	965.51	965.20	0.0000	0.00
29	969.24	968.93	0.0000	0.00
30	1121.20	1120.74	0.0000	0.00
31	1132.31	1131.84	0.0000	0.00
32	1239.37	1238.79	0.0000	0.00
33	1246.46	1245.88	0.0000	0.00
34	1351.18	1350.50	0.0000	0.00
35	1409.29	1408.54	0.0000	0.00
36	1413.06	1412.31	0.0000	0.00
37	1461.48	1460.69	0.0000	0.00
38	1509.91	1509.06	0.0000	0.00
39	1540.80	1539.92	0.0000	0.00
40	1620.15	1619.19	0.0000	0.00
41	1630.63	1629.66	0.0000	0.00
42	1667.38	1666.38	0.0000	0.00

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1715.04	1714.00	0.0000	0.00
44	1721.16	1720.11	0.0000	0.00
45	1729.69	1728.63	0.0000	0.00
46	1764.68	1763.58	0.0000	0.00
47	1847.56	1846.38	0.0000	0.00
48	1917.50	1916.26	0.0000	0.00
49	1925.54	1924.29	0.0000	0.00
50	2012.73	2011.40	0.0000	0.00
51	2104.36	2102.94	0.0000	0.00
52	2118.34	2116.90	0.0000	0.00
53	2138.33	2136.88	0.0000	0.00
54	2205.10	2203.58	0.0000	0.00
55	2233.59	2232.04	0.0000	0.00
56	2325.22	2323.59	0.0000	0.00
57	2404.08	2402.38	0.0000	0.00
58	2615.24	2613.33	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 5:43:11PM

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	46.76	44 -	51	47.38	1.51E+02	96.97	1.48E+03	1.96
	2	61.85	58 -	65	62.46	2.48E+02	119.53	2.22E+03	1.62
M	3	74.72	71 -	82	75.31	4.61E+02	103.23	1.65E+03	1.81
m	4	77.21	71 -	82	77.80	8.14E+02	110.62	1.63E+03	1.82
m	5	92.42	83 -	98	93.00	4.08E+02	99.92	1.50E+03	2.02
	6	186.24	183 -	190	186.72	3.06E+02	86.02	1.02E+03	2.01
	7	209.72	207 -	213	210.18	7.35E+01	73.48	9.17E+02	1.87
M	8	238.62	235 -	246	239.04	1.08E+03	82.71	6.17E+02	1.74
m	9	241.83	235 -	246	242.26	3.22E+02	94.28	6.93E+02	2.44
	10	269.77	265 -	274	270.16	1.30E+02	78.91	8.17E+02	2.28
M	11	295.35	290 -	304	295.72	3.62E+02	55.73	3.65E+02	1.65
m	12	300.66	290 -	304	301.02	8.30E+01	50.21	4.25E+02	2.06
	13	327.95	325 -	332	328.28	5.98E+01	58.03	5.24E+02	2.11
	14	338.64	335 -	343	338.97	1.98E+02	71.51	6.61E+02	1.52
	15	351.95	349 -	356	352.26	6.30E+02	75.02	5.23E+02	1.83
	16	409.95	408 -	414	410.20	5.05E+01	43.10	3.01E+02	2.75
	17	463.12	460 -	467	463.32	4.09E+01	45.17	3.06E+02	1.62
	18	511.30	507 -	517	511.45	2.35E+02	62.34	3.85E+02	2.49
	19	583.72	579 -	589	583.80	3.14E+02	63.87	3.68E+02	2.02
	20	609.50	605 -	614	609.55	4.79E+02	63.66	3.06E+02	2.13
	21	696.85	694 -	699	696.81	3.07E+01	26.02	1.11E+02	2.84
	22	744.49	738 -	752	744.40	5.74E+01	52.20	2.63E+02	9.27
	23	794.50	791 -	797	794.36	5.03E+01	30.15	1.27E+02	2.34
	24	860.71	857 -	864	860.51	3.36E+01	30.13	1.31E+02	2.09
M	25	911.45	904 -	919	911.20	2.46E+02	37.19	8.21E+01	1.98
m	26	915.26	904 -	919	915.00	2.18E+01	28.97	6.94E+01	2.00
	27	934.39	930 -	937	934.12	5.19E+01	27.50	9.01E+01	3.38
M	28	965.51	962 -	977	965.20	6.22E+01	31.30	9.28E+01	2.22
m	29	969.24	962 -	977	968.93	1.37E+02	35.04	1.10E+02	2.22
	30	1121.20	1116 -	1129	1120.74	9.90E+01	57.78	3.20E+02	2.15
	31	1132.31	1129 -	1136	1131.84	3.22E+01	24.74	8.17E+01	5.48
M	32	1239.37	1235 -	1248	1238.79	4.65E+01	32.54	1.65E+02	2.33
m	33	1246.46	1235 -	1248	1245.88	2.23E+01	28.48	1.30E+02	2.33
	34	1351.18	1344 -	1356	1350.50	2.41E+01	25.43	6.38E+01	7.85
M	35	1409.29	1399 -	1414	1408.54	2.96E+01	19.60	4.29E+01	2.63
m	36	1413.06	1399 -	1414	1412.31	1.22E+01	11.42	2.93E+01	2.38
	37	1461.48	1454 -	1467	1460.69	1.15E+03	73.63	9.07E+01	2.35
	38	1509.91	1504 -	1513	1509.06	1.84E+01	21.42	5.52E+01	1.46
	39	1540.80	1534 -	1546	1539.92	1.56E+01	18.42	3.28E+01	1.30
	40	1620.15	1615 -	1622	1619.19	2.21E+01	12.65	1.19E+01	2.83

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1630.63	1624 -	1635	1629.66	1.93E+01	17.78	2.95E+01	5.78
42	1667.38	1664 -	1668	1666.38	7.36E+00	7.92	7.27E+00	1.83
43	1715.04	1712 -	1716	1714.00	7.00E+00	5.29	0.00E+00	2.50
44	1721.16	1717 -	1723	1720.11	7.11E+00	6.95	3.78E+00	2.65
45	1729.69	1724 -	1733	1728.63	1.37E+01	14.00	2.07E+01	2.44
46	1764.68	1758 -	1767	1763.58	1.01E+02	24.78	3.07E+01	2.60
47	1847.56	1842 -	1849	1846.38	1.20E+01	12.00	1.60E+01	4.65
48	1917.50	1914 -	1918	1916.26	5.64E+00	5.85	2.71E+00	2.07
49	1925.54	1920 -	1927	1924.29	8.86E+00	10.20	1.03E+01	3.14
50	2012.73	2009 -	2013	2011.40	5.00E+00	4.47	0.00E+00	1.70
51	2104.36	2099 -	2107	2102.94	2.50E+01	15.53	2.00E+01	5.28
52	2118.34	2114 -	2119	2116.90	6.50E+00	8.43	9.00E+00	2.09
53	2138.33	2133 -	2141	2136.88	8.25E+00	9.41	7.50E+00	1.48
54	2205.10	2200 -	2207	2203.58	1.38E+01	13.27	2.05E+01	1.30
55	2233.59	2229 -	2234	2232.04	5.13E+00	7.07	5.75E+00	2.59
56	2325.22	2321 -	2327	2323.59	9.14E+00	10.25	9.71E+00	3.28
57	2404.08	2399 -	2405	2402.38	8.00E+00	5.66	0.00E+00	1.66
58	2615.24	2609 -	2618	2613.33	1.10E+02	23.39	1.67E+01	2.42

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 : 8/23/2017 5:43:11PM

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	46.76	44 -	51	1.51E+02	96.97	1.48E+03	7.71E+01
	2	61.85	58 -	65	2.48E+02	119.53	2.22E+03	9.48E+01
M	3	74.72	71 -	82	4.61E+02	103.23	1.65E+03	6.67E+01
m	4	77.21	71 -	82	8.14E+02	110.62	1.63E+03	6.64E+01
m	5	92.42	83 -	98	4.08E+02	99.92	1.50E+03	6.37E+01
	6	186.24	183 -	190	3.06E+02	86.02	1.02E+03	6.46E+01
	7	209.72	207 -	213	7.35E+01	73.48	9.17E+02	5.87E+01
M	8	238.62	235 -	246	1.08E+03	82.71	6.17E+02	4.08E+01
m	9	241.83	235 -	246	3.22E+02	94.28	6.93E+02	4.33E+01
	10	269.77	265 -	274	1.30E+02	78.91	8.17E+02	6.21E+01

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	11	295.35	290 -	304	3.62E+02	55.73	3.65E+02	3.14E+01
m	12	300.66	290 -	304	8.30E+01	50.21	4.25E+02	3.39E+01
	13	327.95	325 -	332	5.98E+01	58.03	5.24E+02	4.60E+01
	14	338.64	335 -	343	1.98E+02	71.51	6.61E+02	5.40E+01
	15	351.95	349 -	356	6.30E+02	75.02	5.23E+02	4.58E+01
	16	409.95	408 -	414	5.05E+01	43.10	3.01E+02	3.34E+01
	17	463.12	460 -	467	4.09E+01	45.17	3.06E+02	3.56E+01
	18	511.30	507 -	517	2.35E+02	62.34	3.85E+02	4.46E+01
	19	583.72	579 -	589	3.14E+02	63.87	3.68E+02	4.37E+01
	20	609.50	605 -	614	4.79E+02	63.66	3.06E+02	3.80E+01
	21	696.85	694 -	699	3.07E+01	26.02	1.11E+02	1.94E+01
	22	744.49	738 -	752	5.74E+01	52.20	2.63E+02	4.11E+01
	23	794.50	791 -	797	5.03E+01	30.15	1.27E+02	2.19E+01
	24	860.71	857 -	864	3.36E+01	30.13	1.31E+02	2.29E+01
M	25	911.45	904 -	919	2.46E+02	37.19	8.21E+01	1.49E+01
m	26	915.26	904 -	919	2.18E+01	28.97	6.94E+01	1.37E+01
	27	934.39	930 -	937	5.19E+01	27.50	9.01E+01	1.92E+01
M	28	965.51	962 -	977	6.22E+01	31.30	9.28E+01	1.58E+01
m	29	969.24	962 -	977	1.37E+02	35.04	1.10E+02	1.72E+01
	30	1121.20	1116 -	1129	9.90E+01	57.78	3.20E+02	1.95E+01
	31	1132.31	1129 -	1136	3.22E+01	24.74	8.17E+01	1.81E+01
M	32	1239.37	1235 -	1248	4.65E+01	32.54	1.65E+02	2.11E+01
m	33	1246.46	1235 -	1248	2.23E+01	28.48	1.30E+02	1.88E+01
	34	1351.18	1344 -	1356	2.41E+01	25.43	6.38E+01	1.93E+01
M	35	1409.29	1399 -	1414	2.96E+01	19.60	4.29E+01	1.08E+01
m	36	1413.06	1399 -	1414	1.22E+01	11.42	2.93E+01	8.90E+00
	37	1461.48	1454 -	1467	1.15E+03	73.63	9.07E+01	2.35E+01
	38	1509.91	1504 -	1513	1.84E+01	21.42	5.52E+01	1.61E+01
	39	1540.80	1534 -	1546	1.56E+01	18.42	3.28E+01	1.37E+01
	40	1620.15	1615 -	1622	2.21E+01	12.65	1.19E+01	6.96E+00
	41	1630.63	1624 -	1635	1.93E+01	17.78	2.95E+01	1.27E+01
	42	1667.38	1664 -	1668	7.36E+00	7.92	7.27E+00	4.74E+00
	43	1715.04	1712 -	1716	7.00E+00	5.29	0.00E+00	0.00E+00
	44	1721.16	1717 -	1723	7.11E+00	6.95	3.78E+00	3.66E+00
	45	1729.69	1724 -	1733	1.37E+01	14.00	2.07E+01	9.77E+00
	46	1764.68	1758 -	1767	1.01E+02	24.78	3.07E+01	1.20E+01
	47	1847.56	1842 -	1849	1.20E+01	12.00	1.60E+01	8.05E+00
	48	1917.50	1914 -	1918	5.64E+00	5.85	2.71E+00	2.81E+00
	49	1925.54	1920 -	1927	8.86E+00	10.20	1.03E+01	6.81E+00
	50	2012.73	2009 -	2013	5.00E+00	4.47	0.00E+00	0.00E+00
	51	2104.36	2099 -	2107	2.50E+01	15.53	2.00E+01	9.77E+00
	52	2118.34	2114 -	2119	6.50E+00	8.43	9.00E+00	5.51E+00
	53	2138.33	2133 -	2141	8.25E+00	9.41	7.50E+00	6.12E+00
	54	2205.10	2200 -	2207	1.38E+01	13.27	2.05E+01	9.04E+00
	55	2233.59	2229 -	2234	5.13E+00	7.07	5.75E+00	4.46E+00
	56	2325.22	2321 -	2327	9.14E+00	10.25	9.71E+00	6.80E+00
	57	2404.08	2399 -	2405	8.00E+00	5.66	0.00E+00	0.00E+00
	58	2615.24	2609 -	2618	1.10E+02	23.39	1.67E+01	8.56E+00

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

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 : 8/23/2017 5:43:11PM

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	46.76	44 -	51	47.38	1.51E+02	96.97	1.48E+03	PB-210
	2	61.85	58 -	65	62.46	2.48E+02	119.53	2.22E+03	TH-230
M	3	74.72	71 -	82	75.31	4.61E+02	103.23	1.65E+03	AM-243
m	4	77.21	71 -	82	77.80	8.14E+02	110.62	1.63E+03	.....
m	5	92.42	83 -	98	93.00	4.08E+02	99.92	1.50E+03	GA-67
	6	186.24	183 -	190	186.72	3.06E+02	86.02	1.02E+03	RA-226
	7	209.72	207 -	213	210.18	7.35E+01	73.48	9.17E+02	CM-243 GA-67
M	8	238.62	235 -	246	239.04	1.08E+03	82.71	6.17E+02	PB-212
m	9	241.83	235 -	246	242.26	3.22E+02	94.28	6.93E+02	RA-224
	10	269.77	265 -	274	270.16	1.30E+02	78.91	8.17E+02	.....
M	11	295.35	290 -	304	295.72	3.62E+02	55.73	3.65E+02	PB-214
m	12	300.66	290 -	304	301.02	8.30E+01	50.21	4.25E+02	GA-67 PB-212 BI-210M
	13	327.95	325 -	332	328.28	5.98E+01	58.03	5.24E+02	LA-140
	14	338.64	335 -	343	338.97	1.98E+02	71.51	6.61E+02	AC-228
	15	351.95	349 -	356	352.26	6.30E+02	75.02	5.23E+02	PB-214
	16	409.95	408 -	414	410.20	5.05E+01	43.10	3.01E+02	HO-166M
	17	463.12	460 -	467	463.32	4.09E+01	45.17	3.06E+02	SB-125
	18	511.30	507 -	517	511.45	2.35E+02	62.34	3.85E+02	.....
	19	583.72	579 -	589	583.80	3.14E+02	63.87	3.68E+02	TL-208
	20	609.50	605 -	614	609.55	4.79E+02	63.66	3.06E+02	BI-214
	21	696.85	694 -	699	696.81	3.07E+01	26.02	1.11E+02	PM-144
	22	744.49	738 -	752	744.40	5.74E+01	52.20	2.63E+02	.....
	23	794.50	791 -	797	794.36	5.03E+01	30.15	1.27E+02	.....
	24	860.71	857 -	864	860.51	3.36E+01	30.13	1.31E+02	TL-208
M	25	911.45	904 -	919	911.20	2.46E+02	37.19	8.21E+01	TL-204 AC-228
m	26	915.26	904 -	919	915.00	2.18E+01	28.97	6.94E+01	.....

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	27	934.39	930 -	937	934.12	5.19E+01	27.50	9.01E+01	.....
M	28	965.51	962 -	977	965.20	6.22E+01	31.30	9.28E+01	.....
m	29	969.24	962 -	977	968.93	1.37E+02	35.04	1.10E+02	AC-228
	30	1121.20	1116 -	1129	1120.74	9.90E+01	57.78	3.20E+02	TA-182 SC-46 BI-214
	31	1132.31	1129 -	1136	1131.84	3.22E+01	24.74	8.17E+01	I-135
M	32	1239.37	1235 -	1248	1238.79	4.65E+01	32.54	1.65E+02	.....
m	33	1246.46	1235 -	1248	1245.88	2.23E+01	28.48	1.30E+02	.....
	34	1351.18	1344 -	1356	1350.50	2.41E+01	25.43	6.38E+01	.....
M	35	1409.29	1399 -	1414	1408.54	2.96E+01	19.60	4.29E+01	.....
m	36	1413.06	1399 -	1414	1412.31	1.22E+01	11.42	2.93E+01	.....
	37	1461.48	1454 -	1467	1460.69	1.15E+03	73.63	9.07E+01	K-40
	38	1509.91	1504 -	1513	1509.06	1.84E+01	21.42	5.52E+01	.....
	39	1540.80	1534 -	1546	1539.92	1.56E+01	18.42	3.28E+01	.....
	40	1620.15	1615 -	1622	1619.19	2.21E+01	12.65	1.19E+01	BI-212
	41	1630.63	1624 -	1635	1629.66	1.93E+01	17.78	2.95E+01	.....
	42	1667.38	1664 -	1668	1666.38	7.36E+00	7.92	7.27E+00	.....
	43	1715.04	1712 -	1716	1714.00	7.00E+00	5.29	0.00E+00	.....
	44	1721.16	1717 -	1723	1720.11	7.11E+00	6.95	3.78E+00	.....
	45	1729.69	1724 -	1733	1728.63	1.37E+01	14.00	2.07E+01	.....
	46	1764.68	1758 -	1767	1763.58	1.01E+02	24.78	3.07E+01	BI-214
	47	1847.56	1842 -	1849	1846.38	1.20E+01	12.00	1.60E+01	.....
	48	1917.50	1914 -	1918	1916.26	5.64E+00	5.85	2.71E+00	.....
	49	1925.54	1920 -	1927	1924.29	8.86E+00	10.20	1.03E+01	.....
	50	2012.73	2009 -	2013	2011.40	5.00E+00	4.47	0.00E+00	.....
	51	2104.36	2099 -	2107	2102.94	2.50E+01	15.53	2.00E+01	.....
	52	2118.34	2114 -	2119	2116.90	6.50E+00	8.43	9.00E+00	.....
	53	2138.33	2133 -	2141	2136.88	8.25E+00	9.41	7.50E+00	.....
	54	2205.10	2200 -	2207	2203.58	1.38E+01	13.27	2.05E+01	BI-214
	55	2233.59	2229 -	2234	2232.04	5.13E+00	7.07	5.75E+00	.....
	56	2325.22	2321 -	2327	2323.59	9.14E+00	10.25	9.71E+00	.....
	57	2404.08	2399 -	2405	2402.38	8.00E+00	5.66	0.00E+00	.....
	58	2615.24	2609 -	2618	2613.33	1.10E+02	23.39	1.67E+01	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/23/2017 5:43:11PM

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.76	1.51E+02	96.97	2.47E-02	2.22E-03
	2	61.85	2.48E+02	119.53	2.69E-02	2.24E-03
M	3	74.72	4.61E+02	103.23	2.75E-02	2.38E-03
m	4	77.21	8.14E+02	110.62	2.75E-02	2.41E-03
m	5	92.42	4.08E+02	99.92	2.73E-02	2.45E-03
	6	186.24	3.06E+02	86.02	2.17E-02	1.68E-03
	7	209.72	7.35E+01	73.48	2.04E-02	1.61E-03
M	8	238.62	1.08E+03	82.71	1.89E-02	1.53E-03
m	9	241.83	3.22E+02	94.28	1.87E-02	1.52E-03
	10	269.77	1.30E+02	78.91	1.75E-02	1.44E-03
M	11	295.35	3.62E+02	55.73	1.64E-02	1.37E-03
m	12	300.66	8.30E+01	50.21	1.62E-02	1.36E-03
	13	327.95	5.98E+01	58.03	1.53E-02	1.29E-03
	14	338.64	1.98E+02	71.51	1.49E-02	1.27E-03
	15	351.95	6.30E+02	75.02	1.45E-02	1.24E-03
	16	409.95	5.05E+01	43.10	1.30E-02	1.13E-03
	17	463.12	4.09E+01	45.17	1.19E-02	1.10E-03
	18	511.30	2.35E+02	62.34	1.10E-02	1.07E-03
	19	583.72	3.14E+02	63.87	9.96E-03	1.02E-03
	20	609.50	4.79E+02	63.66	9.63E-03	1.01E-03
	21	696.85	3.07E+01	26.02	8.69E-03	9.16E-04
	22	744.49	5.74E+01	52.20	8.26E-03	8.40E-04
	23	794.50	5.03E+01	30.15	7.86E-03	7.61E-04
	24	860.71	3.36E+01	30.13	7.40E-03	6.56E-04
M	25	911.45	2.46E+02	37.19	7.08E-03	5.91E-04
m	26	915.26	2.18E+01	28.97	7.06E-03	5.90E-04
	27	934.39	5.19E+01	27.50	6.95E-03	5.83E-04
M	28	965.51	6.22E+01	31.30	6.78E-03	5.71E-04
m	29	969.24	1.37E+02	35.04	6.76E-03	5.69E-04
	30	1121.20	9.90E+01	57.78	6.07E-03	5.11E-04
	31	1132.31	3.22E+01	24.74	6.03E-03	5.07E-04
M	32	1239.37	4.65E+01	32.54	5.64E-03	4.76E-04
m	33	1246.46	2.23E+01	28.48	5.62E-03	4.74E-04
	34	1351.18	2.41E+01	25.43	5.30E-03	4.50E-04
M	35	1409.29	2.96E+01	19.60	5.14E-03	4.37E-04
m	36	1413.06	1.22E+01	11.42	5.13E-03	4.36E-04
	37	1461.48	1.15E+03	73.63	5.00E-03	4.25E-04
	38	1509.91	1.84E+01	21.42	4.89E-03	4.13E-04
	39	1540.80	1.56E+01	18.42	4.82E-03	4.06E-04
	40	1620.15	2.21E+01	12.65	4.65E-03	3.88E-04
	41	1630.63	1.93E+01	17.78	4.63E-03	3.85E-04
	42	1667.38	7.36E+00	7.92	4.55E-03	3.77E-04
	43	1715.04	7.00E+00	5.29	4.46E-03	3.66E-04
	44	1721.16	7.11E+00	6.95	4.45E-03	3.64E-04
	45	1729.69	1.37E+01	14.00	4.44E-03	3.62E-04
	46	1764.68	1.01E+02	24.78	4.37E-03	3.54E-04
	47	1847.56	1.20E+01	12.00	4.23E-03	3.38E-04
	48	1917.50	5.64E+00	5.85	4.12E-03	3.38E-04
	49	1925.54	8.86E+00	10.20	4.11E-03	3.38E-04
	50	2012.73	5.00E+00	4.47	3.99E-03	3.38E-04
	51	2104.36	2.50E+01	15.53	3.86E-03	3.38E-04
	52	2118.34	6.50E+00	8.43	3.84E-03	3.38E-04
	53	2138.33	8.25E+00	9.41	3.82E-03	3.38E-04

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2205.10	1.38E+01	13.27	3.74E-03	3.38E-04
55	2233.59	5.13E+00	7.07	3.70E-03	3.38E-04
56	2325.22	9.14E+00	10.25	3.60E-03	3.38E-04
57	2404.08	8.00E+00	5.66	3.51E-03	3.38E-04
58	2615.24	1.10E+02	23.39	3.31E-03	3.38E-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 : 8/23/2017 5:43:11PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.76	1.51E+02	96.97	3.67E+01	8.40E+00	1.15E+02	9.73E+01
	2	61.85	2.48E+02	119.53			2.48E+02	1.20E+02
M	3	74.72	4.61E+02	103.23			4.61E+02	1.03E+02
m	4	77.21	8.14E+02	110.62	7.20E+00	1.47E+00	8.07E+02	1.11E+02
m	5	92.42	4.08E+02	99.92	1.38E+02	1.72E+01	2.70E+02	1.01E+02
	6	186.24	3.06E+02	86.02	5.22E+01	7.59E+00	2.54E+02	8.64E+01
	7	209.72	7.35E+01	73.48			7.35E+01	7.35E+01
M	8	238.62	1.08E+03	82.71	2.13E+01	6.33E+00	1.05E+03	8.30E+01
m	9	241.83	3.22E+02	94.28			3.22E+02	9.43E+01
	10	269.77	1.30E+02	78.91	1.23E+00	4.98E+00	1.28E+02	7.91E+01
M	11	295.35	3.62E+02	55.73			3.62E+02	5.57E+01
m	12	300.66	8.30E+01	50.21			8.30E+01	5.02E+01
	13	327.95	5.98E+01	58.03			5.98E+01	5.80E+01
	14	338.64	1.98E+02	71.51			1.98E+02	7.15E+01
	15	351.95	6.30E+02	75.02	5.79E+00	4.49E+00	6.24E+02	7.52E+01
	16	409.95	5.05E+01	43.10			5.05E+01	4.31E+01
	17	463.12	4.09E+01	45.17			4.09E+01	4.52E+01
	18	511.30	2.35E+02	62.34	7.28E+01	5.30E+00	1.62E+02	6.26E+01
	19	583.72	3.14E+02	63.87	2.72E+00	3.05E+00	3.11E+02	6.39E+01
	20	609.50	4.79E+02	63.66	6.35E+00	4.02E+00	4.73E+02	6.38E+01
	21	696.85	3.07E+01	26.02			3.07E+01	2.60E+01
	22	744.49	5.74E+01	52.20			5.74E+01	5.22E+01
	23	794.50	5.03E+01	30.15			5.03E+01	3.02E+01
	24	860.71	3.36E+01	30.13			3.36E+01	3.01E+01
M	25	911.45	2.46E+02	37.19	5.31E+00	3.00E+00	2.41E+02	3.73E+01

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	26	915.26	2.18E+01	28.97			2.18E+01	2.90E+01
	27	934.39	5.19E+01	27.50			5.19E+01	2.75E+01
M	28	965.51	6.22E+01	31.30			6.22E+01	3.13E+01
m	29	969.24	1.37E+02	35.04			1.37E+02	3.50E+01
	30	1121.20	9.90E+01	57.78			9.90E+01	5.78E+01
	31	1132.31	3.22E+01	24.74			3.22E+01	2.47E+01
M	32	1239.37	4.65E+01	32.54			4.65E+01	3.25E+01
m	33	1246.46	2.23E+01	28.48			2.23E+01	2.85E+01
	34	1351.18	2.41E+01	25.43			2.41E+01	2.54E+01
M	35	1409.29	2.96E+01	19.60			2.96E+01	1.96E+01
m	36	1413.06	1.22E+01	11.42			1.22E+01	1.14E+01
	37	1461.48	1.15E+03	73.63	8.09E+00	2.23E+00	1.14E+03	7.37E+01
	38	1509.91	1.84E+01	21.42			1.84E+01	2.14E+01
	39	1540.80	1.56E+01	18.42			1.56E+01	1.84E+01
	40	1620.15	2.21E+01	12.65			2.21E+01	1.26E+01
	41	1630.63	1.93E+01	17.78			1.93E+01	1.78E+01
	42	1667.38	7.36E+00	7.92			7.36E+00	7.92E+00
	43	1715.04	7.00E+00	5.29			7.00E+00	5.29E+00
	44	1721.16	7.11E+00	6.95			7.11E+00	6.95E+00
	45	1729.69	1.37E+01	14.00			1.37E+01	1.40E+01
	46	1764.68	1.01E+02	24.78			1.01E+02	2.48E+01
	47	1847.56	1.20E+01	12.00	1.22E+00	1.50E+00	1.08E+01	1.21E+01
	48	1917.50	5.64E+00	5.85			5.64E+00	5.85E+00
	49	1925.54	8.86E+00	10.20			8.86E+00	1.02E+01
	50	2012.73	5.00E+00	4.47			5.00E+00	4.47E+00
	51	2104.36	2.50E+01	15.53			2.50E+01	1.55E+01
	52	2118.34	6.50E+00	8.43			6.50E+00	8.43E+00
	53	2138.33	8.25E+00	9.41			8.25E+00	9.41E+00
	54	2205.10	1.38E+01	13.27			1.38E+01	1.33E+01
	55	2233.59	5.13E+00	7.07			5.13E+00	7.07E+00
	56	2325.22	9.14E+00	10.25			9.14E+00	1.02E+01
	57	2404.08	8.00E+00	5.66			8.00E+00	5.66E+00
	58	2615.24	1.10E+02	23.39	5.63E+00	1.38E+00	1.04E+02	2.34E+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 1707090-17

HTC-A07-S001-3642-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/23/2017 5:43:11PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.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	46.76	1.51E+02	96.97	3.67E+01	8.40E+00	1.15E+02	9.73E+01
	2	61.85	2.48E+02	119.53			2.48E+02	1.20E+02
M	3	74.72	4.61E+02	103.23			4.61E+02	1.03E+02
m	4	77.21	8.14E+02	110.62	7.20E+00	1.47E+00	8.07E+02	1.11E+02
m	5	92.42	4.08E+02	99.92	1.38E+02	1.72E+01	2.70E+02	1.01E+02
	6	186.24	3.06E+02	86.02	5.22E+01	7.59E+00	2.54E+02	8.64E+01
	7	209.72	7.35E+01	73.48			7.35E+01	7.35E+01
M	8	238.62	1.08E+03	82.71	2.13E+01	6.33E+00	1.05E+03	8.30E+01
m	9	241.83	3.22E+02	94.28			3.22E+02	9.43E+01
	10	269.77	1.30E+02	78.91	1.23E+00	4.98E+00	1.28E+02	7.91E+01
M	11	295.35	3.62E+02	55.73			3.62E+02	5.57E+01
m	12	300.66	8.30E+01	50.21			8.30E+01	5.02E+01
	13	327.95	5.98E+01	58.03			5.98E+01	5.80E+01
	14	338.64	1.98E+02	71.51			1.98E+02	7.15E+01
	15	351.95	6.30E+02	75.02	5.79E+00	4.49E+00	6.24E+02	7.52E+01
	16	409.95	5.05E+01	43.10			5.05E+01	4.31E+01
	17	463.12	4.09E+01	45.17			4.09E+01	4.52E+01
	18	511.30	2.35E+02	62.34	7.28E+01	5.30E+00	1.62E+02	6.26E+01
	19	583.72	3.14E+02	63.87	2.72E+00	3.05E+00	3.11E+02	6.39E+01
	20	609.50	4.79E+02	63.66	6.35E+00	4.02E+00	4.73E+02	6.38E+01
	21	696.85	3.07E+01	26.02			3.07E+01	2.60E+01
	22	744.49	5.74E+01	52.20			5.74E+01	5.22E+01
	23	794.50	5.03E+01	30.15			5.03E+01	3.02E+01
	24	860.71	3.36E+01	30.13			3.36E+01	3.01E+01
M	25	911.45	2.46E+02	37.19	5.31E+00	3.00E+00	2.41E+02	3.73E+01
m	26	915.26	2.18E+01	28.97			2.18E+01	2.90E+01
	27	934.39	5.19E+01	27.50			5.19E+01	2.75E+01
M	28	965.51	6.22E+01	31.30			6.22E+01	3.13E+01
m	29	969.24	1.37E+02	35.04			1.37E+02	3.50E+01
	30	1121.20	9.90E+01	57.78			9.90E+01	5.78E+01
	31	1132.31	3.22E+01	24.74			3.22E+01	2.47E+01
M	32	1239.37	4.65E+01	32.54			4.65E+01	3.25E+01
m	33	1246.46	2.23E+01	28.48			2.23E+01	2.85E+01
	34	1351.18	2.41E+01	25.43			2.41E+01	2.54E+01
M	35	1409.29	2.96E+01	19.60			2.96E+01	1.96E+01
m	36	1413.06	1.22E+01	11.42			1.22E+01	1.14E+01
	37	1461.48	1.15E+03	73.63	8.09E+00	2.23E+00	1.14E+03	7.37E+01
	38	1509.91	1.84E+01	21.42			1.84E+01	2.14E+01
	39	1540.80	1.56E+01	18.42			1.56E+01	1.84E+01
	40	1620.15	2.21E+01	12.65			2.21E+01	1.26E+01
	41	1630.63	1.93E+01	17.78			1.93E+01	1.78E+01

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1667.38	7.36E+00	7.92			7.36E+00	7.92E+00
43	1715.04	7.00E+00	5.29			7.00E+00	5.29E+00
44	1721.16	7.11E+00	6.95			7.11E+00	6.95E+00
45	1729.69	1.37E+01	14.00			1.37E+01	1.40E+01
46	1764.68	1.01E+02	24.78			1.01E+02	2.48E+01
47	1847.56	1.20E+01	12.00	1.22E+00	1.50E+00	1.08E+01	1.21E+01
48	1917.50	5.64E+00	5.85			5.64E+00	5.85E+00
49	1925.54	8.86E+00	10.20			8.86E+00	1.02E+01
50	2012.73	5.00E+00	4.47			5.00E+00	4.47E+00
51	2104.36	2.50E+01	15.53			2.50E+01	1.55E+01
52	2118.34	6.50E+00	8.43			6.50E+00	8.43E+00
53	2138.33	8.25E+00	9.41			8.25E+00	9.41E+00
54	2205.10	1.38E+01	13.27			1.38E+01	1.33E+01
55	2233.59	5.13E+00	7.07			5.13E+00	7.07E+00
56	2325.22	9.14E+00	10.25			9.14E+00	1.02E+01
57	2404.08	8.00E+00	5.66			8.00E+00	5.66E+00
58	2615.24	1.10E+02	23.39	5.63E+00	1.38E+00	1.04E+02	2.34E+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	0.930	1460.81	*	10.67	2.39E+01	2.60E+00
TL-208	0.949	583.14	*	30.22	1.16E+00	2.66E-01
		860.37	*	4.48	1.13E+00	1.02E+00
		2614.66	*	35.85	9.82E-01	2.43E-01
PB-210	0.989	46.50	*	4.25	1.23E+00	1.05E+00
PB-212	0.996	238.63	*	44.60	1.40E+00	1.58E-01
		300.09	*	3.41	1.68E+00	1.02E+00
BI-214	0.965	609.31	*	46.30	1.19E+00	2.02E-01
		1120.29	*	15.10	1.21E+00	7.13E-01
		1764.49	*	15.80	1.63E+00	4.22E-01
		2204.22	*	4.98	8.28E-01	8.01E-01
PB-214	0.999	295.21	*	19.19	1.28E+00	2.25E-01
		351.92	*	37.19	1.29E+00	1.90E-01
RA-224	0.890	240.98	*	3.95	4.87E+00	1.48E+00

Analysis Report for 1707090-17

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Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-226	1.000	186.21	*	3.28	4.00E+00	7.44E+00
AC-228	0.984	338.32	*	11.40	1.30E+00	4.82E-01
		911.07	*	27.70	1.37E+00	2.42E-01
		969.11	*	16.60	1.36E+00	3.67E-01
AM-243	1.000	74.67	*	66.00	2.85E-01	6.83E-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 : 8/23/2017 5:43:11PM
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	61.85	6.88743E-02	24.10	Tol.	TH-230
m	4	77.21	2.24075E-01	6.86		
m	5	92.42	7.50648E-02	18.76	Tol.	GA-67
	7	209.72	2.04302E-02	49.95	Tol.	GA-67
						CM-243
	10	269.77	3.56362E-02	30.82		
	13	327.95	1.66011E-02	48.55	Tol.	LA-140
	16	409.95	1.40278E-02	42.67	Tol.	HO-166M
	17	463.12	1.13638E-02	55.20	Tol.	SB-125
	18	511.30	4.49522E-02	19.33		
	21	696.85	8.52875E-03	42.37	Tol.	PM-144
	22	744.49	1.59487E-02	45.46		
	23	794.50	1.39608E-02	30.00		
m	26	915.26	6.04492E-03	66.55		
	27	934.39	1.44244E-02	26.47		
M	28	965.51	1.72700E-02	25.17		
	31	1132.31	8.93455E-03	38.46		
M	32	1239.37	1.29210E-02	34.98		
m	33	1246.46	6.19503E-03	63.85		
	34	1351.18	6.70139E-03	52.70		
M	35	1409.29	8.22924E-03	33.07		
m	36	1413.06	3.39080E-03	46.79		
	38	1509.91	5.10870E-03	58.25		
	39	1540.80	4.34028E-03	58.94		

Analysis Report for 1707090-17

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
40	1620.15	6.13095E-03	28.65	Tol.	BI-212
41	1630.63	5.35131E-03	46.14		
42	1667.38	2.04545E-03	53.79		
43	1715.04	1.94444E-03	37.80		
44	1721.16	1.97531E-03	48.84	Sum	
45	1729.69	3.79630E-03	51.22		
47	1847.56	2.99322E-03	56.11		
48	1917.50	1.56746E-03	51.86		
49	1925.54	2.46032E-03	57.57		
50	2012.73	1.38889E-03	44.72		
51	2104.36	6.94841E-03	31.05	S-Esc	
52	2118.34	1.80556E-03	64.82		
53	2138.33	2.29167E-03	57.01		
55	2233.59	1.42361E-03	68.99		
56	2325.22	2.53968E-03	56.04		
57	2404.08	2.22222E-03	35.36		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.93	1460.81	*	10.67	2.39E+01	2.60E+00
TL-208	0.94	583.14	*	30.22	1.16E+00	2.66E-01
		860.37	*	4.48	1.13E+00	1.02E+00
		2614.66	*	35.85	9.82E-01	2.43E-01
PB-210	0.98	46.50	*	4.25	1.23E+00	1.05E+00
PB-212	0.99	238.63	*	44.60	1.40E+00	1.58E-01
		300.09	*	3.41	1.68E+00	1.02E+00
BI-214	0.96	609.31	*	46.30	1.19E+00	2.02E-01
		1120.29	*	15.10	1.21E+00	7.13E-01
		1764.49	*	15.80	1.63E+00	4.22E-01
		2204.22	*	4.98	8.28E-01	8.01E-01
PB-214	0.99	295.21	*	19.19	1.28E+00	2.25E-01

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.99	351.92	*	37.19	1.29E+00	1.90E-01
RA-224	0.89	240.98	*	3.95	4.87E+00	1.48E+00
RA-226	1.00	186.21	*	3.28	4.00E+00	7.44E+00
AC-228	0.98	338.32	*	11.40	1.30E+00	4.82E-01
		911.07	*	27.70	1.37E+00	2.42E-01
		969.11	*	16.60	1.36E+00	3.67E-01
AM-243	1.00	74.67	*	66.00	2.85E-01	6.83E-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	0.930	2.39E+01	2.60E+00	
TL-208	0.949	1.06E+00	1.77E-01	
PB-210	0.989	1.23E+00	1.05E+00	
PB-212	0.996	1.41E+00	1.56E-01	
BI-214	0.965	1.24E+00	1.73E-01	
PB-214	0.999	1.29E+00	1.45E-01	
RA-224	0.890	4.87E+00	1.48E+00	
RA-226	1.000	4.00E+00	7.44E+00	
AC-228	0.984	1.36E+00	1.86E-01	
AM-243	1.000	2.85E-01	6.83E-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 1707090-17

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 5:43:11PM
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	61.85	6.88743E-02	24.10	Tol.	TH-230
m	4	77.21	2.24075E-01	6.86		
m	5	92.42	7.50648E-02	18.76	Tol.	GA-67
	7	209.72	2.04302E-02	49.95	Tol.	GA-67
						CM-243
	10	269.77	3.56362E-02	30.82		
	13	327.95	1.66011E-02	48.55	Tol.	LA-140
	16	409.95	1.40278E-02	42.67	Tol.	HO-166M
	17	463.12	1.13638E-02	55.20	Tol.	SB-125
	18	511.30	4.49522E-02	19.33		
	21	696.85	8.52875E-03	42.37	Tol.	PM-144
	22	744.49	1.59487E-02	45.46		
	23	794.50	1.39608E-02	30.00		
m	26	915.26	6.04492E-03	66.55		
	27	934.39	1.44244E-02	26.47		
M	28	965.51	1.72700E-02	25.17		
	31	1132.31	8.93455E-03	38.46		
M	32	1239.37	1.29210E-02	34.98		
m	33	1246.46	6.19503E-03	63.85		
	34	1351.18	6.70139E-03	52.70		
M	35	1409.29	8.22924E-03	33.07		
m	36	1413.06	3.39080E-03	46.79		
	38	1509.91	5.10870E-03	58.25		
	39	1540.80	4.34028E-03	58.94		
	40	1620.15	6.13095E-03	28.65	Tol.	BI-212
	41	1630.63	5.35131E-03	46.14		
	42	1667.38	2.04545E-03	53.79		
	43	1715.04	1.94444E-03	37.80		
	44	1721.16	1.97531E-03	48.84	Sum	
	45	1729.69	3.79630E-03	51.22		
	47	1847.56	2.99322E-03	56.11		
	48	1917.50	1.56746E-03	51.86		
	49	1925.54	2.46032E-03	57.57		
	50	2012.73	1.38889E-03	44.72		
	51	2104.36	6.94841E-03	31.05	S-Esc	

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
52	2118.34	1.80556E-03	64.82		
53	2138.33	2.29167E-03	57.01		
55	2233.59	1.42361E-03	68.99		
56	2325.22	2.53968E-03	56.04		
57	2404.08	2.22222E-03	35.36		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	8.65E-01	2.00E+00	2.00E+00
+	NA-22	1274.54		99.94	4.43E-02	9.07E-02	9.07E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	3.04E-02	5.08E-02	5.08E-02
+	K-40	1460.81	*	10.67	2.39E+01	1.06E+00	1.06E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.87E-02	6.06E-02	6.06E-02
		78.34		96.00	1.84E-01		7.93E-02
+	SC-46	889.25		99.98	1.67E-02	1.44E-01	1.44E-01
		1120.51		99.99	3.99E-01		2.81E-01
+	V-48	983.52		99.98	-8.81E-02	4.94E+00	4.94E+00
		1312.10		97.50	2.37E-01		5.08E+00
+	CR-51	320.08		9.83	-5.77E-01	6.38E+00	6.38E+00
+	MN-54	834.83		99.97	-1.97E-02	8.45E-02	8.45E-02
+	CO-56	846.75		99.96	1.89E-02	1.53E-01	1.53E-01
		1037.75		14.03	-5.95E-02		1.10E+00
		1238.25		67.00	3.64E-01		3.95E-01
		1771.40		15.51	-2.64E-01		4.27E-01
		2598.48		16.90	-2.39E-02		5.74E-01
+	CO-57	122.06		85.51	-2.83E-02	6.84E-02	6.84E-02
		136.48		10.60	-9.57E-02		5.92E-01
+	CO-58	810.76		99.40	4.03E-02	1.66E-01	1.66E-01
+	FE-59	1099.22		56.50	-1.36E-02	6.00E-01	6.00E-01

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	FE-59	1291.56	43.20	5.67E-03	6.00E-01	7.19E-01
+	CO-60	1173.22	100.00	1.99E-02	7.27E-02	8.28E-02
		1332.49	100.00	-1.59E-02		7.27E-02
+	ZN-65	1115.52	50.75	-4.76E-02	2.11E-01	2.11E-01
+	GA-67	93.31	35.70	5.04E+08	2.57E+08	2.57E+08
		208.95	2.24	2.33E+09		3.50E+09
		300.22	16.00	-1.67E+09		5.63E+08
+	SE-75	121.11	16.70	-8.19E-02	1.46E-01	4.91E-01
		136.00	59.20	-2.36E-02		1.46E-01
		264.65	59.80	3.58E-03		1.56E-01
		279.53	25.20	1.86E-01		4.08E-01
		400.65	11.40	-1.26E-01		8.67E-01
+	RB-82	776.52	13.00	-7.17E-01	7.50E+00	7.50E+00
+	RB-83	520.41	46.00	-2.88E-02	2.58E-01	2.58E-01
		529.64	30.30	2.30E-02		4.20E-01
		552.65	16.40	-2.10E-01		7.49E-01
+	KR-85	513.99	0.43	3.61E+01	1.96E+01	1.96E+01
+	SR-85	513.99	99.27	4.48E-01	2.43E-01	2.43E-01
+	Y-88	898.02	93.40	3.26E-03	9.16E-02	1.34E-01
		1836.01	99.38	-3.67E-02		9.16E-02
+	MO-93	263.06	56.72	2.26E-02	5.79E-02	9.20E-02
		684.67	99.68	-1.12E-02		5.84E-02
		1477.11	99.08	9.15E-03		5.79E-02
+	NB-93M	16.57	9.43	-2.26E-01	5.18E-01	5.18E-01
+	NB-94	702.63	100.00	4.51E-03	6.09E-02	6.13E-02
		871.10	100.00	-2.09E-02		6.09E-02
+	NB-95	765.79	99.81	4.79E-01	5.63E-01	5.63E-01
+	NB-95M	235.69	25.00	-3.54E+08	4.95E+07	4.95E+07
+	ZR-95	724.18	43.70	-2.97E-01	3.24E-01	4.56E-01
		756.72	55.30	7.50E-02		3.24E-01
+	MO-99	181.06	6.20	1.91E+10	3.70E+10	5.69E+10
		739.58	12.80	3.34E+09		3.70E+10
		778.00	4.50	-4.16E+10		1.10E+11
+	RU-103	497.08	89.00	-6.44E-02	3.31E-01	3.31E-01
+	RU-106	621.84	9.80	-4.63E-01	7.01E-01	7.01E-01
+	AG-108M	433.93	89.90	-1.67E-02	5.79E-02	5.79E-02
		614.37	90.40	7.68E-03		8.20E-02
		722.95	90.50	-1.25E-01		6.83E-02
+	CD-109	88.03	3.72	-8.70E-01	1.96E+00	1.96E+00
+	AG-110M	657.75	93.14	-1.23E-02	8.73E-02	8.73E-02
		677.61	10.53	1.55E-01		7.07E-01
		706.67	16.46	-2.04E-01		4.98E-01
		763.93	21.98	-5.00E-01		4.02E-01
		884.67	71.63	1.87E-02		1.17E-01
		1384.27	23.94	-1.32E-01		3.28E-01
+	CD-113M	263.70	0.02	4.12E+01	2.30E+02	2.30E+02
+	SN-113	255.12	1.93	1.01E+00	1.55E-01	4.28E+00
		391.69	64.90	4.59E-02		1.55E-01

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE123M	159.00	84.10	2.30E-02	1.05E-01	1.05E-01
+	SB-124	602.71	97.87	7.25E-03	1.97E-01	1.97E-01
		645.85	7.26	4.36E-01		2.60E+00
		722.78	11.10	-3.20E+00		1.74E+00
		1691.02	49.00	7.01E-02		2.88E-01
+	I-125	35.49	6.49	-1.13E+00	2.41E+00	2.41E+00
+	SB-125	176.33	6.89	-1.31E-01	1.97E-01	7.24E-01
		427.89	29.33	4.60E-02		1.97E-01
		463.38	10.35	3.32E-01		6.26E-01
		600.56	17.80	-2.76E-02		3.63E-01
		635.90	11.32	2.70E-01		5.59E-01
+	SB-126	414.70	83.30	-4.65E-01	1.63E+01	1.69E+01
		666.33	99.60	7.90E+00		1.69E+01
		695.00	99.60	-2.72E-01		1.63E+01
		720.50	53.80	-5.23E+00		2.89E+01
+	SN-126	87.57	37.00	1.28E-01	1.68E-01	1.68E-01
+	SB-127	473.00	25.00	3.27E+06	9.40E+06	1.27E+07
		685.20	35.70	-1.80E+06		9.40E+06
		783.80	14.70	1.39E+07		2.93E+07
+	I-129	29.78	57.00	4.45E-02	1.01E-01	1.01E-01
		33.60	13.20	-2.61E-01		3.85E-01
		39.58	7.52	2.36E-01		6.62E-01
+	I-131	284.30	6.05	1.15E+03	3.45E+02	4.71E+03
		364.48	81.20	1.30E+02		3.45E+02
		636.97	7.26	-2.46E+02		4.15E+03
		722.89	1.80	-3.30E+04		1.80E+04
+	TE-132	49.72	13.10	-5.11E+08	7.63E+07	5.75E+08
		228.16	88.00	-3.72E+07		7.63E+07
+	BA-133	81.00	33.00	-6.86E-01	1.36E-01	1.69E-01
		302.84	17.80	-4.10E-02		3.51E-01
		356.01	60.00	1.64E-02		1.36E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-2.96E+05	7.29E+04	7.29E+04
+	CS-134	563.23	8.38	2.28E-01	7.78E-02	8.17E-01
		569.32	15.43	1.39E-01		4.23E-01
		604.70	97.60	5.84E-04		7.78E-02
		795.84	85.40	8.68E-03		9.73E-02
		801.93	8.73	3.38E-02		7.73E-01
+	CS-135	268.24	16.00	5.80E-01	3.92E-01	3.92E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	7.05E+01	1.01E+01	1.25E+02
		163.89	4.61	-1.71E+01		1.92E+02
		176.55	13.56	-1.17E+01		6.44E+01
		273.65	12.66	-1.83E+01		8.81E+01
		340.57	48.50	6.33E+01		2.95E+01
		818.50	99.70	-1.24E+00		1.01E+01
		1048.07	79.60	-9.98E-01		1.76E+01

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	1235.34	19.70	6.06E+00	1.01E+01	9.65E+01
+	CS-137	661.65	85.12	-3.08E-02	7.13E-02	7.13E-02
+	LA-138	788.74	34.00	1.56E-02	8.84E-02	1.89E-01
		1435.80	66.00	8.23E-03		8.84E-02
+	CE-139	165.85	80.35	-1.91E-02	9.52E-02	9.52E-02
+	BA-140	162.64	6.70	3.33E+01	5.24E+01	1.58E+02
		304.84	4.50	8.92E+01		2.80E+02
		423.70	3.20	-6.51E+01		3.75E+02
		437.55	2.00	3.97E+02		6.02E+02
		537.32	25.00	1.14E+01		5.24E+01
+	LA-140	328.77	20.50	3.10E+01	1.31E+01	6.39E+01
		487.03	45.50	-7.96E+00		2.61E+01
		815.85	23.50	-1.96E+01		4.84E+01
		1596.49	95.49	-2.91E+00		1.31E+01
+	CE-141	145.44	48.40	6.17E-01	8.55E-01	8.55E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-2.21E-01	5.71E-01	5.71E-01
+	PM-144	476.78	42.00	4.78E-02	7.51E-02	1.64E-01
		618.01	98.60	5.93E-03		7.66E-02
		696.49	99.49	1.25E-02		7.51E-02
+	PM-145	36.85	21.70	-3.36E-02	1.28E-01	2.30E-01
		37.36	39.70	2.41E-02		1.28E-01
		42.30	15.10	5.64E-02		3.16E-01
		72.40	2.31	-4.29E+00		2.88E+00
+	PM-146	453.90	39.94	-4.65E-02	1.36E-01	1.36E-01
		735.90	14.01	1.39E-01		4.52E-01
		747.13	13.10	-1.21E-01		4.86E-01
+	ND-147	91.11	28.90	2.20E+02	1.20E+02	1.20E+02
		531.02	13.10	-1.71E+01		2.32E+02
+	PM-149	285.90	3.10	1.55E+13	5.87E+13	5.87E+13
+	EU-152	121.78	20.50	-3.81E-02	2.28E-01	2.28E-01
		244.69	5.40	-4.41E-01		1.01E+00
		344.27	19.13	2.89E-02		3.01E-01
		778.89	9.20	-1.16E-01		7.57E-01
		964.01	10.40	-1.71E+00		8.51E-01
		1085.78	7.22	-1.46E-01		9.40E-01
		1112.02	9.60	-2.02E-01		8.05E-01
		1407.95	14.94	-3.46E-03		5.11E-01
+	GD-153	97.43	31.30	3.62E-02	2.05E-01	2.05E-01
		103.18	22.20	-6.01E-02		2.78E-01
+	EU-154	123.07	40.50	-2.59E-02	1.16E-01	1.16E-01
		723.30	19.70	-5.88E-01		3.20E-01
		873.19	11.50	8.38E-02		5.46E-01
		996.32	10.30	1.57E-02		7.11E-01
		1004.76	17.90	1.51E-02		4.06E-01
		1274.45	35.50	1.19E-01		2.43E-01
+	EU-155	86.50	30.90	2.10E-01	2.09E-01	2.09E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-155	105.30		20.70	-8.66E-02	2.09E-01	2.32E-01
+	EU-156	811.77		10.40	6.72E+00	5.28E+01	5.28E+01
		1153.47		7.20	7.42E+01		1.10E+02
		1230.71		8.90	4.36E+01		1.04E+02
+	HO-166M	184.41		72.60	1.25E-01	8.14E-02	8.14E-02
		280.45		29.60	3.74E-02		1.91E-01
		410.94		11.10	8.64E-02		5.33E-01
		711.69		54.10	7.79E-02		1.23E-01
+	TM-171	66.72		0.14	6.82E+00	4.49E+01	4.49E+01
+	HF-172	67.35		5.31	3.68E-01	4.59E-01	1.19E+00
		125.81		11.30	-1.95E-01		4.59E-01
+	LU-172	181.53		20.60	2.24E+03	3.41E+03	6.70E+03
		900.72		29.81	3.08E+03		6.80E+03
		1093.66		62.50	1.07E+03		3.41E+03
+	LU-173	100.72		5.24	4.39E-01	3.37E-01	1.04E+00
		272.11		21.20	-4.78E-02		3.37E-01
+	HF-175	343.40		84.00	2.70E-02	1.87E-01	1.87E-01
+	LU-176	88.34		13.30	-2.10E-01	5.56E-02	4.72E-01
		201.83		86.00	-1.30E-02		5.56E-02
		306.78		94.00	2.52E-02		5.97E-02
+	HF-181	133.02		41.70	-2.27E-01	3.37E-01	5.88E-01
		345.85		17.20	1.62E-01		1.64E+00
		482.03		82.80	6.00E-03		3.37E-01
+	TA-182	67.75		41.20	7.82E-02	2.53E-01	2.53E-01
		1121.30		34.90	7.71E-01		6.36E-01
		1189.05		16.23	-4.48E-01		7.41E-01
		1221.41		26.98	-6.30E-02		5.56E-01
		1231.02		11.44	6.65E-01		1.59E+00
+	IR-192	308.46		29.68	3.18E-01	2.71E-01	4.74E-01
		468.07		48.10	3.62E-02		2.71E-01
+	HG-203	279.19		77.30	1.49E-01	3.28E-01	3.28E-01
+	TL-204	374.74		94.11	3.13E-02	5.95E-02	5.95E-02
		899.15		99.16	2.17E-02		7.26E-02
		911.74		91.10	3.64E-01		1.50E-01
+	BI-207	569.67		97.72	2.00E-02	5.97E-02	5.97E-02
		1063.62		74.90	3.91E-02		9.71E-02
+	TL-208	583.14	*	30.22	1.16E+00	2.05E-01	3.36E-01
		860.37	*	4.48	1.13E+00		1.64E+00
		2614.66	*	35.85	9.82E-01		2.05E-01
+	BI-210M	262.00		45.00	3.30E-03	1.13E-01	1.13E-01
		300.00		23.00	-9.44E-01		2.80E-01
+	PB-210	46.50	*	4.25	1.23E+00	1.71E+00	1.71E+00
+	PB-211	404.84		2.90	2.72E-01	1.97E+00	1.97E+00
		831.96		2.90	1.50E+00		2.47E+00
+	BI-212	727.17		11.80	4.48E-01	6.31E-01	6.31E-01
		1620.62		2.75	1.26E+00		2.35E+00
+	PB-212	238.63	*	44.60	1.40E+00	2.18E-01	2.18E-01
		300.09	*	3.41	1.68E+00		3.21E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BI-214	609.31	*	46.30	1.19E+00	1.99E-01	1.99E-01
		1120.29	*	15.10	1.21E+00		1.12E+00
		1764.49	*	15.80	1.63E+00		4.31E-01
		2204.22	*	4.98	8.28E-01		1.25E+00
+	PB-214	295.21	*	19.19	1.28E+00	1.97E-01	5.60E-01
		351.92	*	37.19	1.29E+00		1.97E-01
+	RN-219	401.80		6.50	2.91E-02	8.64E-01	8.64E-01
+	RA-223	323.87		3.88	-7.02E-02	1.37E+00	1.37E+00
+	RA-224	240.98	*	3.95	4.87E+00	2.49E+00	2.49E+00
+	RA-225	40.00		31.00	6.82E+00	1.66E+01	1.66E+01
+	RA-226	186.21	*	3.28	4.00E+00	2.12E+00	2.12E+00
+	TH-227	50.10		8.40	-1.47E-01	5.60E-01	5.89E-01
		236.00		11.50	-4.01E+00		5.60E-01
		256.20		6.30	-7.09E-02		8.33E-01
+	AC-228	338.32	*	11.40	1.30E+00	4.27E-01	7.28E-01
		911.07	*	27.70	1.37E+00		4.27E-01
		969.11	*	16.60	1.36E+00		7.85E-01
+	TH-230	48.44		16.90	2.42E-01	3.11E-01	3.11E-01
		62.85		4.60	1.42E+00		1.32E+00
		67.67		0.37	4.77E+00		1.54E+01
+	PA-231	283.67		1.60	1.39E+00	2.67E+00	3.49E+00
		302.67		2.30	-3.11E-01		2.67E+00
+	TH-231	25.64		14.70	-3.25E+00	4.72E-01	4.72E-01
		84.21		6.40	-3.43E-01		9.14E-01
+	PA-233	311.98		38.60	-1.32E+00	1.71E+00	1.71E+00
+	PA-234	131.20		20.40	1.10E-01	2.46E-01	2.46E-01
		733.99		8.80	1.91E-01		7.28E-01
		946.00		12.00	-1.20E-01		5.63E-01
+	PA-234M	1001.03		0.92	1.82E+00	7.87E+00	7.87E+00
+	TH-234	63.29		3.80	9.52E-01	1.59E+00	1.59E+00
+	U-235	143.76		10.50	-1.45E-01	4.62E-01	4.62E-01
		163.35		4.70	-8.92E-02		1.00E+00
		205.31		4.70	1.36E-01		1.04E+00
+	NP-237	86.50		12.60	4.96E-01	4.95E-01	4.95E-01
+	NP-239	106.10		22.70	-9.78E+10	1.05E+12	1.05E+12
		228.18		10.70	-1.01E+12		2.08E+12
		277.60		14.10	1.43E+12		2.07E+12
+	AM-241	59.54		35.90	-8.59E-02	1.51E-01	1.51E-01
+	AM-243	74.67	*	66.00	2.85E-01	1.68E-01	1.68E-01
+	CM-243	209.75		3.29	1.36E+00	4.20E-01	1.62E+00
		228.14		10.60	-2.06E-01		4.23E-01
		277.60		14.00	2.91E-01		4.20E-01

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	2.00E+00	2.00E+00	8.65E-01	9.56E-01
	NA-22	1274.54		99.94	9.07E-02	9.07E-02	4.43E-02	4.24E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	5.08E-02	5.08E-02	3.04E-02	2.19E-02
+	K-40	1460.81	*	10.67	1.06E+00	1.06E+00	2.39E+01	5.04E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	6.06E-02	6.06E-02	1.87E-02	2.97E-02
		78.34		96.00	7.93E-02		1.84E-01	3.91E-02
	SC-46	889.25		99.98	1.44E-01	1.44E-01	1.67E-02	6.71E-02
		1120.51		99.99	2.81E-01		3.99E-01	1.35E-01
	V-48	983.52		99.98	4.94E+00	4.94E+00	-8.81E-02	2.30E+00
		1312.10		97.50	5.08E+00		2.37E-01	2.33E+00
	CR-51	320.08		9.83	6.38E+00	6.38E+00	-5.77E-01	3.07E+00
	MN-54	834.83		99.97	8.45E-02	8.45E-02	-1.97E-02	3.97E-02
	CO-56	846.75		99.96	1.53E-01	1.53E-01	1.89E-02	7.17E-02
		1037.75		14.03	1.10E+00		-5.95E-02	5.08E-01
		1238.25		67.00	3.95E-01		3.64E-01	1.88E-01
		1771.40		15.51	4.27E-01		-2.64E-01	1.60E-01
		2598.48		16.90	5.74E-01		-2.39E-02	2.22E-01
	CO-57	122.06		85.51	6.84E-02	6.84E-02	-2.83E-02	3.33E-02
		136.48		10.60	5.92E-01		-9.57E-02	2.89E-01
	CO-58	810.76		99.40	1.66E-01	1.66E-01	4.03E-02	7.80E-02
	FE-59	1099.22		56.50	6.00E-01	6.00E-01	-1.36E-02	2.80E-01
		1291.56		43.20	7.19E-01		5.67E-03	3.30E-01
	CO-60	1173.22		100.00	8.28E-02	7.27E-02	1.99E-02	3.87E-02
		1332.49		100.00	7.27E-02		-1.59E-02	3.34E-02
	ZN-65	1115.52		50.75	2.11E-01	2.11E-01	-4.76E-02	9.91E-02
	GA-67	93.31		35.70	2.57E+08	2.57E+08	5.04E+08	1.26E+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)
GA-67	208.95	2.24	3.50E+09	2.57E+08	2.33E+09	1.70E+09
	300.22	16.00	5.63E+08		-1.67E+09	2.73E+08
SE-75	121.11	16.70	4.91E-01	1.46E-01	-8.19E-02	2.39E-01
	136.00	59.20	1.46E-01		-2.36E-02	7.12E-02
	264.65	59.80	1.56E-01		3.58E-03	7.57E-02
	279.53	25.20	4.08E-01		1.86E-01	1.98E-01
	400.65	11.40	8.67E-01		-1.26E-01	4.16E-01
RB-82	776.52	13.00	7.50E+00	7.50E+00	-7.17E-01	3.53E+00
RB-83	520.41	46.00	2.58E-01	2.58E-01	-2.88E-02	1.22E-01
	529.64	30.30	4.20E-01		2.30E-02	2.00E-01
	552.65	16.40	7.49E-01		-2.10E-01	3.55E-01
KR-85	513.99	0.43	1.96E+01	1.96E+01	3.61E+01	9.47E+00
SR-85	513.99	99.27	2.43E-01	2.43E-01	4.48E-01	1.18E-01
Y-88	898.02	93.40	1.34E-01	9.16E-02	3.26E-03	6.25E-02
	1836.01	99.38	9.16E-02		-3.67E-02	3.90E-02
MO-93	263.06	56.72	9.20E-02	5.79E-02	2.26E-02	4.45E-02
	684.67	99.68	5.84E-02		-1.12E-02	2.75E-02
	1477.11	99.08	5.79E-02		9.15E-03	2.58E-02
NB-93M	16.57	9.43	5.18E-01	5.18E-01	-2.26E-01	2.44E-01
NB-94	702.63	100.00	6.13E-02	6.09E-02	4.51E-03	2.89E-02
	871.10	100.00	6.09E-02		-2.09E-02	2.84E-02
NB-95	765.79	99.81	5.63E-01	5.63E-01	4.79E-01	2.68E-01
NB-95M	235.69	25.00	4.95E+07	4.95E+07	-3.54E+08	2.41E+07
ZR-95	724.18	43.70	4.56E-01	3.24E-01	-2.97E-01	2.16E-01
	756.72	55.30	3.24E-01		7.50E-02	1.52E-01
MO-99	181.06	6.20	5.69E+10	3.70E+10	1.91E+10	2.76E+10
	739.58	12.80	3.70E+10		3.34E+09	1.75E+10
	778.00	4.50	1.10E+11		-4.16E+10	5.16E+10
RU-103	497.08	89.00	3.31E-01	3.31E-01	-6.44E-02	1.57E-01
RU-106	621.84	9.80	7.01E-01	7.01E-01	-4.63E-01	3.31E-01
AG-108M	433.93	89.90	5.79E-02	5.79E-02	-1.67E-02	2.76E-02
	614.37	90.40	8.20E-02		7.68E-03	3.93E-02
	722.95	90.50	6.83E-02		-1.25E-01	3.22E-02
CD-109	88.03	3.72	1.96E+00	1.96E+00	-8.70E-01	9.62E-01
AG-110M	657.75	93.14	8.73E-02	8.73E-02	-1.23E-02	4.13E-02
	677.61	10.53	7.07E-01		1.55E-01	3.32E-01
	706.67	16.46	4.98E-01		-2.04E-01	2.35E-01
	763.93	21.98	4.02E-01		-5.00E-01	1.90E-01
	884.67	71.63	1.17E-01		1.87E-02	5.49E-02
	1384.27	23.94	3.28E-01		-1.32E-01	1.48E-01
CD-113M	263.70	0.02	2.30E+02	2.30E+02	4.12E+01	1.11E+02
SN-113	255.12	1.93	4.28E+00	1.55E-01	1.01E+00	2.06E+00
	391.69	64.90	1.55E-01		4.59E-02	7.43E-02
TE123M	159.00	84.10	1.05E-01	1.05E-01	2.30E-02	5.13E-02
SB-124	602.71	97.87	1.97E-01	1.97E-01	7.25E-03	9.33E-02
	645.85	7.26	2.60E+00		4.36E-01	1.23E+00
	722.78	11.10	1.74E+00		-3.20E+00	8.21E-01
	1691.02	49.00	2.88E-01		7.01E-02	1.23E-01
I-125	35.49	6.49	2.41E+00	2.41E+00	-1.13E+00	1.17E+00
SB-125	176.33	6.89	7.24E-01	1.97E-01	-1.31E-01	3.51E-01
	427.89	29.33	1.97E-01		4.60E-02	9.41E-02
	463.38	10.35	6.26E-01		3.32E-01	3.00E-01
	600.56	17.80	3.63E-01		-2.76E-02	1.72E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-125	635.90	11.32	5.59E-01	1.97E-01	2.70E-01	2.64E-01
SB-126	414.70	83.30	1.69E+01	1.63E+01	-4.65E-01	8.08E+00
	666.33	99.60	1.69E+01		7.90E+00	8.00E+00
	695.00	99.60	1.63E+01		-2.72E-01	7.70E+00
	720.50	53.80	2.89E+01		-5.23E+00	1.36E+01
SN-126	87.57	37.00	1.68E-01	1.68E-01	1.28E-01	8.23E-02
SB-127	473.00	25.00	1.27E+07	9.40E+06	3.27E+06	6.06E+06
	685.20	35.70	9.40E+06		-1.80E+06	4.42E+06
	783.80	14.70	2.93E+07		1.39E+07	1.39E+07
I-129	29.78	57.00	1.01E-01	1.01E-01	4.45E-02	4.92E-02
	33.60	13.20	3.85E-01		-2.61E-01	1.87E-01
	39.58	7.52	6.62E-01		2.36E-01	3.22E-01
I-131	284.30	6.05	4.71E+03	3.45E+02	1.15E+03	2.28E+03
	364.48	81.20	3.45E+02		1.30E+02	1.65E+02
	636.97	7.26	4.15E+03		-2.46E+02	1.96E+03
	722.89	1.80	1.80E+04		-3.30E+04	8.46E+03
TE-132	49.72	13.10	5.75E+08	7.63E+07	-5.11E+08	2.81E+08
	228.16	88.00	7.63E+07		-3.72E+07	3.68E+07
BA-133	81.00	33.00	1.69E-01	1.36E-01	-6.86E-01	8.28E-02
	302.84	17.80	3.51E-01		-4.10E-02	1.70E-01
	356.01	60.00	1.36E-01		1.64E-02	6.62E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	7.29E+04	7.29E+04	-2.96E+05	3.57E+04
CS-134	563.23	8.38	8.17E-01	7.78E-02	2.28E-01	3.89E-01
	569.32	15.43	4.23E-01		1.39E-01	2.01E-01
	604.70	97.60	7.78E-02		5.84E-04	3.72E-02
	795.84	85.40	9.73E-02		8.68E-03	4.62E-02
	801.93	8.73	7.73E-01		3.38E-02	3.62E-01
CS-135	268.24	16.00	3.92E-01	3.92E-01	5.80E-01	1.91E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.25E+02	1.01E+01	7.05E+01	6.08E+01
	163.89	4.61	1.92E+02		-1.71E+01	9.33E+01
	176.55	13.56	6.44E+01		-1.17E+01	3.13E+01
	273.65	12.66	8.81E+01		-1.83E+01	4.28E+01
	340.57	48.50	2.95E+01		6.33E+01	1.44E+01
	818.50	99.70	1.01E+01		-1.24E+00	4.67E+00
	1048.07	79.60	1.76E+01		-9.98E-01	8.25E+00
	1235.34	19.70	9.65E+01		6.06E+00	4.57E+01
CS-137	661.65	85.12	7.13E-02	7.13E-02	-3.08E-02	3.37E-02
LA-138	788.74	34.00	1.89E-01	8.84E-02	1.56E-02	8.87E-02
	1435.80	66.00	8.84E-02		8.23E-03	3.97E-02
CE-139	165.85	80.35	9.52E-02	9.52E-02	-1.91E-02	4.62E-02
BA-140	162.64	6.70	1.58E+02	5.24E+01	3.33E+01	7.67E+01
	304.84	4.50	2.80E+02		8.92E+01	1.35E+02
	423.70	3.20	3.75E+02		-6.51E+01	1.79E+02
	437.55	2.00	6.02E+02		3.97E+02	2.88E+02
	537.32	25.00	5.24E+01		1.14E+01	2.49E+01
LA-140	328.77	20.50	6.39E+01	1.31E+01	3.10E+01	3.09E+01
	487.03	45.50	2.61E+01		-7.96E+00	1.24E+01
	815.85	23.50	4.84E+01		-1.96E+01	2.24E+01
	1596.49	95.49	1.31E+01		-2.91E+00	5.79E+00

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-141	145.44	48.40	8.55E-01	8.55E-01	6.17E-01	4.17E-01
@ 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	5.71E-01	5.71E-01	-2.21E-01	2.78E-01
PM-144	476.78	42.00	1.64E-01	7.51E-02	4.78E-02	7.84E-02
	618.01	98.60	7.66E-02		5.93E-03	3.64E-02
	696.49	99.49	7.51E-02		1.25E-02	3.54E-02
PM-145	36.85	21.70	2.30E-01	1.28E-01	-3.36E-02	1.12E-01
	37.36	39.70	1.28E-01		2.41E-02	6.22E-02
	42.30	15.10	3.16E-01		5.64E-02	1.54E-01
	72.40	2.31	2.88E+00		-4.29E+00	1.42E+00
PM-146	453.90	39.94	1.36E-01	1.36E-01	-4.65E-02	6.47E-02
	735.90	14.01	4.52E-01		1.39E-01	2.13E-01
	747.13	13.10	4.86E-01		-1.21E-01	2.29E-01
ND-147	91.11	28.90	1.20E+02	1.20E+02	2.20E+02	5.89E+01
	531.02	13.10	2.32E+02		-1.71E+01	1.10E+02
PM-149	285.90	3.10	5.87E+13	5.87E+13	1.55E+13	2.84E+13
EU-152	121.78	20.50	2.28E-01	2.28E-01	-3.81E-02	1.11E-01
	244.69	5.40	1.01E+00		-4.41E-01	4.88E-01
	344.27	19.13	3.01E-01		2.89E-02	1.45E-01
	778.89	9.20	7.57E-01		-1.16E-01	3.58E-01
	964.01	10.40	8.51E-01		-1.71E+00	4.04E-01
	1085.78	7.22	9.40E-01		-1.46E-01	4.36E-01
	1112.02	9.60	8.05E-01		-2.02E-01	3.77E-01
	1407.95	14.94	5.11E-01		-3.46E-03	2.36E-01
GD-153	97.43	31.30	2.05E-01	2.05E-01	3.62E-02	1.00E-01
	103.18	22.20	2.78E-01		-6.01E-02	1.36E-01
EU-154	123.07	40.50	1.16E-01	1.16E-01	-2.59E-02	5.64E-02
	723.30	19.70	3.20E-01		-5.88E-01	1.51E-01
	873.19	11.50	5.46E-01		8.38E-02	2.55E-01
	996.32	10.30	7.11E-01		1.57E-02	3.33E-01
	1004.76	17.90	4.06E-01		1.51E-02	1.90E-01
	1274.45	35.50	2.43E-01		1.19E-01	1.13E-01
EU-155	86.50	30.90	2.09E-01	2.09E-01	2.10E-01	1.03E-01
	105.30	20.70	2.32E-01		-8.66E-02	1.13E-01
EU-156	811.77	10.40	5.28E+01	5.28E+01	6.72E+00	2.46E+01
	1153.47	7.20	1.10E+02		7.42E+01	5.15E+01
	1230.71	8.90	1.04E+02		4.36E+01	4.94E+01
HO-166M	184.41	72.60	8.14E-02	8.14E-02	1.25E-01	3.97E-02
	280.45	29.60	1.91E-01		3.74E-02	9.27E-02
	410.94	11.10	5.33E-01		8.64E-02	2.56E-01
	711.69	54.10	1.23E-01		7.79E-02	5.85E-02
TM-171	66.72	0.14	4.49E+01	4.49E+01	6.82E+00	2.20E+01
HF-172	67.35	5.31	1.19E+00	4.59E-01	3.68E-01	5.83E-01
	125.81	11.30	4.59E-01		-1.95E-01	2.24E-01
LU-172	181.53	20.60	6.70E+03	3.41E+03	2.24E+03	3.25E+03
	900.72	29.81	6.80E+03		3.08E+03	3.20E+03
	1093.66	62.50	3.41E+03		1.07E+03	1.59E+03
LU-173	100.72	5.24	1.04E+00	3.37E-01	4.39E-01	5.09E-01
	272.11	21.20	3.37E-01		-4.78E-02	1.64E-01
HF-175	343.40	84.00	1.87E-01	1.87E-01	2.70E-02	9.03E-02
LU-176	88.34	13.30	4.72E-01	5.56E-02	-2.10E-01	2.32E-01

Analysis Report for 1707090-17

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	LU-176	201.83		86.00	5.56E-02	5.56E-02	-1.30E-02	2.70E-02
		306.78		94.00	5.97E-02		2.52E-02	2.88E-02
	HF-181	133.02		41.70	5.88E-01	3.37E-01	-2.27E-01	2.87E-01
		345.85		17.20	1.64E+00		1.62E-01	7.91E-01
		482.03		82.80	3.37E-01		6.00E-03	1.60E-01
	TA-182	67.75		41.20	2.53E-01	2.53E-01	7.82E-02	1.24E-01
		1121.30		34.90	6.36E-01		7.71E-01	3.05E-01
		1189.05		16.23	7.41E-01		-4.48E-01	3.41E-01
		1221.41		26.98	5.56E-01		-6.30E-02	2.60E-01
		1231.02		11.44	1.59E+00		6.65E-01	7.54E-01
	IR-192	308.46		29.68	4.74E-01	2.71E-01	3.18E-01	2.29E-01
		468.07		48.10	2.71E-01		3.62E-02	1.29E-01
	HG-203	279.19		77.30	3.28E-01	3.28E-01	1.49E-01	1.59E-01
	TL-204	374.74		94.11	5.95E-02	5.95E-02	3.13E-02	2.85E-02
		899.15		99.16	7.26E-02		2.17E-02	3.40E-02
		911.74		91.10	1.50E-01		3.64E-01	7.26E-02
	BI-207	569.67		97.72	5.97E-02	5.97E-02	2.00E-02	2.83E-02
		1063.62		74.90	9.71E-02		3.91E-02	4.53E-02
+	TL-208	583.14	*	30.22	3.36E-01	2.05E-01	1.16E+00	1.63E-01
		860.37	*	4.48	1.64E+00		1.13E+00	7.72E-01
		2614.66	*	35.85	2.05E-01		9.82E-01	8.95E-02
	BI-210M	262.00		45.00	1.13E-01	1.13E-01	3.30E-03	5.48E-02
		300.00		23.00	2.80E-01		-9.44E-01	1.36E-01
+	PB-210	46.50	*	4.25	1.71E+00	1.71E+00	1.23E+00	8.39E-01
	PB-211	404.84		2.90	1.97E+00	1.97E+00	2.72E-01	9.47E-01
		831.96		2.90	2.47E+00		1.50E+00	1.16E+00
	BI-212	727.17		11.80	6.31E-01	6.31E-01	4.48E-01	3.00E-01
		1620.62		2.75	2.35E+00		1.26E+00	1.06E+00
+	PB-212	238.63	*	44.60	2.18E-01	2.18E-01	1.40E+00	1.07E-01
		300.09	*	3.41	3.21E+00		1.68E+00	1.58E+00
+	BI-214	609.31	*	46.30	1.99E-01	1.99E-01	1.19E+00	9.63E-02
		1120.29	*	15.10	1.12E+00		1.21E+00	5.45E-01
		1764.49	*	15.80	4.31E-01		1.63E+00	1.94E-01
		2204.22	*	4.98	1.25E+00		8.28E-01	5.44E-01
+	PB-214	295.21	*	19.19	5.60E-01	1.97E-01	1.28E+00	2.75E-01
		351.92	*	37.19	1.97E-01		1.29E+00	9.55E-02
	RN-219	401.80		6.50	8.64E-01	8.64E-01	2.91E-02	4.15E-01
	RA-223	323.87		3.88	1.37E+00	1.37E+00	-7.02E-02	6.58E-01
+	RA-224	240.98	*	3.95	2.49E+00	2.49E+00	4.87E+00	1.22E+00
	RA-225	40.00		31.00	1.66E+01	1.66E+01	6.82E+00	8.06E+00
+	RA-226	186.21	*	3.28	2.12E+00	2.12E+00	4.00E+00	1.04E+00
	TH-227	50.10		8.40	5.89E-01	5.60E-01	-1.47E-01	2.87E-01
		236.00		11.50	5.60E-01		-4.01E+00	2.73E-01
		256.20		6.30	8.33E-01		-7.09E-02	4.03E-01
+	AC-228	338.32	*	11.40	7.28E-01	4.27E-01	1.30E+00	3.55E-01
		911.07	*	27.70	4.27E-01		1.37E+00	2.06E-01
		969.11	*	16.60	7.85E-01		1.36E+00	3.79E-01
	TH-230	48.44		16.90	3.11E-01	3.11E-01	2.42E-01	1.52E-01
		62.85		4.60	1.32E+00		1.42E+00	6.46E-01
		67.67		0.37	1.54E+01		4.77E+00	7.56E+00
	PA-231	283.67		1.60	3.49E+00	2.67E+00	1.39E+00	1.69E+00
		302.67		2.30	2.67E+00		-3.11E-01	1.29E+00
	TH-231	25.64		14.70	4.72E-01	4.72E-01	-3.25E+00	2.30E-01

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-231	84.21		6.40	9.14E-01	4.72E-01	-3.43E-01	4.49E-01
	PA-233	311.98		38.60	1.71E+00	1.71E+00	-1.32E+00	8.26E-01
	PA-234	131.20		20.40	2.46E-01	2.46E-01	1.10E-01	1.20E-01
		733.99		8.80	7.28E-01		1.91E-01	3.43E-01
		946.00		12.00	5.63E-01		-1.20E-01	2.63E-01
	PA-234M	1001.03		0.92	7.87E+00	7.87E+00	1.82E+00	3.68E+00
	TH-234	63.29		3.80	1.59E+00	1.59E+00	9.52E-01	7.82E-01
	U-235	143.76		10.50	4.62E-01	4.62E-01	-1.45E-01	2.25E-01
		163.35		4.70	1.00E+00		-8.92E-02	4.88E-01
		205.31		4.70	1.04E+00		1.36E-01	5.05E-01
	NP-237	86.50		12.60	4.95E-01	4.95E-01	4.96E-01	2.43E-01
	NP-239	106.10		22.70	1.05E+12	1.05E+12	-9.78E+10	5.11E+11
		228.18		10.70	2.08E+12		-1.01E+12	1.00E+12
		277.60		14.10	2.07E+12		1.43E+12	1.00E+12
	AM-241	59.54		35.90	1.51E-01	1.51E-01	-8.59E-02	7.39E-02
+	AM-243	74.67	*	66.00	1.68E-01	1.68E-01	2.85E-01	8.32E-02
	CM-243	209.75		3.29	1.62E+00	4.20E-01	1.36E+00	7.89E-01
		228.14		10.60	4.23E-01		-2.06E-01	2.04E-01
		277.60		14.00	4.20E-01		2.91E-01	2.04E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

Analysis Report for 1707090-17

HTC-A07-S001-3642-01

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

Sample Title: HTC-A07-S001-3642-01

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	0	0
17:	0	1	87	107	94	168	548	176
25:	79	76	55	87	95	71	84	79
33:	87	76	70	72	93	85	89	91
41:	91	95	76	77	96	107	150	131
49:	101	119	110	102	122	132	121	112
57:	109	117	145	149	163	165	203	256
65:	162	165	179	175	170	170	164	187
73:	196	209	409	387	438	598	202	161
81:	165	168	154	157	203	168	237	274
89:	159	190	195	173	322	259	140	122
97:	131	106	113	130	109	108	119	100
105:	96	122	111	109	128	107	132	100
113:	88	120	104	91	87	100	110	112
121:	102	94	89	101	94	110	91	107
129:	118	126	112	111	110	103	99	93
137:	114	100	109	115	98	97	91	104
145:	94	106	108	100	86	78	84	95
153:	100	96	98	101	77	102	103	98
161:	86	88	93	91	83	60	86	75
169:	71	85	76	79	58	83	68	85
177:	79	62	82	94	74	73	65	73
185:	84	194	168	86	94	54	66	65
193:	70	77	70	63	65	70	67	76
201:	58	80	62	67	70	81	68	67
209:	87	104	80	69	57	61	56	65
217:	66	54	44	68	60	64	43	74
225:	48	62	62	52	41	52	49	61
233:	61	77	63	74	77	234	676	290
241:	127	171	144	58	52	41	49	54
249:	43	58	44	43	53	49	53	39
257:	52	38	38	41	47	40	40	42
265:	36	40	50	51	46	90	82	63
273:	40	40	45	48	51	65	59	36
281:	44	35	48	35	45	35	65	27
289:	37	38	38	53	46	38	169	218
297:	79	37	41	62	75	43	46	35
305:	35	45	51	43	31	38	34	28
313:	27	30	41	33	39	30	27	37
321:	27	36	30	30	31	32	43	58
329:	63	33	35	27	42	37	41	38
337:	34	91	150	53	51	38	33	37
345:	36	29	36	33	26	36	94	368
353:	254	42	36	35	35	42	24	25
361:	29	24	32	20	25	37	32	25

369:	25	19	18	22	24	29	33	32

Sample Title: HTC-A07-S001-3642-01

Channel								
377:	15	31	24	24	35	24	26	30
385:	41	22	29	31	40	23	22	27
393:	23	26	27	25	15	26	26	31
401:	19	25	29	28	29	38	24	19
409:	39	38	35	25	22	23	20	29
417:	27	21	21	31	23	25	25	26
425:	25	21	20	26	23	21	20	16
433:	17	20	18	22	28	24	22	22
441:	22	13	18	14	29	23	21	20
449:	19	19	24	19	16	22	13	16
457:	24	20	28	19	15	28	48	32
465:	20	18	14	18	18	14	20	23
473:	8	18	31	21	13	20	25	20
481:	20	22	20	16	11	18	23	22
489:	18	22	18	24	13	10	17	16
497:	18	14	16	19	14	18	19	16
505:	21	25	17	28	28	64	98	68
513:	37	26	25	21	15	15	7	29
521:	24	12	11	14	19	13	19	12
529:	16	10	24	20	25	19	19	23
537:	16	21	15	23	12	16	15	17
545:	14	24	17	16	17	19	11	20
553:	8	19	10	22	18	19	15	19
561:	18	21	28	17	14	20	15	20
569:	27	14	16	10	13	16	8	20
577:	15	21	21	17	17	32	153	142
585:	39	19	20	21	17	10	11	12
593:	14	10	23	20	14	17	14	15
601:	18	18	20	13	17	17	23	44
609:	206	214	64	17	22	8	23	14
617:	22	23	15	11	10	16	18	14
625:	12	16	14	16	13	13	16	7
633:	17	15	17	15	14	9	13	11
641:	10	20	18	15	8	17	16	15
649:	12	12	12	12	17	16	20	18
657:	16	13	14	15	8	17	14	15
665:	15	22	16	18	14	9	17	14
673:	7	9	11	16	6	14	11	15
681:	9	16	8	8	10	12	11	18
689:	16	12	14	13	9	10	12	17
697:	20	18	9	9	14	14	19	12
705:	14	10	11	13	18	16	16	16
713:	11	13	18	15	5	10	15	17
721:	13	13	12	13	8	13	37	29
729:	21	10	12	15	10	21	19	9
737:	8	9	9	14	17	18	17	9
745:	13	12	10	16	14	10	13	8
753:	10	6	15	12	13	10	12	13
761:	15	7	14	18	16	13	14	36
769:	25	12	16	13	11	14	10	21
777:	12	10	13	15	11	17	19	16
785:	17	19	14	14	9	8	13	7
793:	16	27	29	15	7	9	15	10

801:	8	11	16	9	6	14	10	15

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Channel								
809:	17	9	13	8	9	5	6	10
817:	4	10	7	6	11	12	7	6
825:	8	8	12	10	11	15	16	10
833:	11	13	21	6	11	14	9	16
841:	16	10	9	16	9	15	10	9
849:	6	9	10	10	12	9	8	4
857:	7	8	11	20	21	7	16	9
865:	12	12	15	12	6	11	9	11
873:	10	5	11	8	6	10	10	9
881:	13	11	7	9	7	12	10	10
889:	7	8	14	6	6	13	8	3
897:	8	16	11	11	14	15	6	10
905:	12	13	12	6	10	41	126	77
913:	25	8	16	12	11	7	5	6
921:	7	10	9	5	5	8	9	9
929:	5	9	7	9	17	18	21	13
937:	3	6	9	10	9	10	5	5
945:	15	10	13	6	16	15	11	12
953:	18	11	12	10	8	9	14	7
961:	8	4	10	18	36	26	15	44
969:	70	38	13	9	10	11	7	8
977:	6	12	5	10	12	8	7	10
985:	9	7	14	5	12	13	11	9
993:	9	16	9	8	12	10	9	12
1001:	9	13	11	10	7	10	11	10
1009:	9	10	9	3	12	9	10	5
1017:	9	13	11	5	13	13	6	1
1025:	10	10	8	10	11	11	11	7
1033:	9	11	8	8	12	3	7	5
1041:	10	6	7	11	13	13	13	13
1049:	8	7	7	11	13	6	7	10
1057:	8	2	13	9	10	9	9	5
1065:	13	12	7	7	9	10	12	8
1073:	9	10	9	10	8	12	9	7
1081:	11	10	10	8	9	7	5	6
1089:	7	10	8	8	10	6	16	8
1097:	8	9	9	18	7	5	9	7
1105:	7	11	6	8	13	10	8	6
1113:	8	11	14	12	18	10	23	53
1121:	54	19	15	11	18	12	5	5
1129:	4	17	13	8	9	7	12	3
1137:	8	4	6	14	12	7	12	8
1145:	9	11	7	6	9	10	14	10
1153:	12	13	8	16	11	4	14	5
1161:	8	4	9	12	9	7	7	16
1169:	5	13	10	7	12	14	7	8
1177:	10	5	11	5	5	9	11	5
1185:	9	5	7	6	11	4	5	8
1193:	16	7	17	10	10	14	11	15
1201:	10	10	8	14	8	17	11	6
1209:	19	14	12	15	15	13	14	16
1217:	8	8	13	13	7	11	14	5
1225:	12	8	15	22	15	15	14	12

1233:	13	18	9	16	16	25	32	17

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Channel								
1241:	15	5	10	8	8	19	11	7
1249:	10	15	7	6	6	10	5	11
1257:	5	9	4	11	10	6	8	4
1265:	9	6	10	14	8	8	9	16
1273:	9	12	7	7	10	7	6	11
1281:	10	10	8	5	6	6	5	7
1289:	6	4	13	6	4	1	4	8
1297:	7	6	9	9	4	8	7	7
1305:	8	5	6	6	8	8	3	3
1313:	5	7	4	7	6	5	4	5
1321:	6	5	7	7	4	2	4	9
1329:	7	5	3	10	6	6	7	7
1337:	9	8	8	6	5	6	2	4
1345:	2	4	5	7	6	7	4	2
1353:	1	4	9	1	3	4	3	3
1361:	4	4	2	8	6	1	8	1
1369:	1	5	5	7	6	4	5	8
1377:	17	9	13	3	2	7	1	8
1385:	3	5	3	6	2	5	2	3
1393:	4	2	5	7	6	2	2	6
1401:	6	7	8	3	3	7	7	10
1409:	16	1	3	9	4	0	6	3
1417:	2	5	6	2	4	3	2	0
1425:	5	2	4	4	4	5	3	5
1433:	3	6	6	0	3	3	5	1
1441:	4	1	4	2	2	1	4	5
1449:	1	3	4	4	4	3	3	6
1457:	9	29	116	371	423	160	29	17
1465:	17	10	3	3	2	1	4	2
1473:	4	2	4	3	1	6	3	2
1481:	3	3	5	2	1	4	2	3
1489:	1	3	2	0	2	2	4	4
1497:	3	1	3	3	5	1	3	2
1505:	3	2	4	6	13	6	6	2
1513:	2	4	4	3	3	0	6	3
1521:	2	3	4	0	5	3	4	0
1529:	5	3	0	2	1	1	3	0
1537:	2	2	7	3	3	2	2	3
1545:	3	1	2	2	2	3	1	3
1553:	1	3	4	2	1	3	0	5
1561:	0	2	3	1	3	2	0	2
1569:	3	1	4	2	1	0	3	2
1577:	1	2	3	3	4	3	2	2
1585:	1	4	7	12	6	4	6	11
1593:	3	4	5	0	2	4	3	0
1601:	1	1	0	2	2	1	1	3
1609:	2	0	1	1	1	1	0	3
1617:	2	3	6	8	6	0	2	1
1625:	3	3	3	2	6	3	5	1
1633:	2	4	1	1	1	3	3	1
1641:	2	1	2	1	3	2	0	0
1649:	2	1	1	3	3	1	0	3
1657:	1	2	4	1	9	2	2	0

1665:	2	4	5	0	1	0	2	2

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Channel								
1673:	2	2	1	1	2	0	1	0
1681:	0	1	2	1	2	1	2	1
1689:	1	2	2	1	2	1	0	0
1697:	0	2	2	1	2	2	1	1
1705:	0	0	1	1	2	2	0	0
1713:	2	3	2	0	0	1	2	1
1721:	4	1	0	1	1	2	2	3
1729:	6	5	3	1	0	3	2	2
1737:	1	1	1	1	1	1	0	0
1745:	1	1	0	0	0	2	1	1
1753:	1	1	1	1	3	1	3	3
1761:	7	13	27	36	19	7	0	2
1769:	1	0	0	0	0	2	1	1
1777:	2	2	2	4	0	0	1	1
1785:	1	0	3	1	1	1	2	1
1793:	2	0	1	1	1	2	1	0
1801:	3	0	0	1	3	0	2	3
1809:	4	0	1	0	0	0	0	1
1817:	0	1	1	2	1	1	3	0
1825:	0	1	0	1	0	1	2	1
1833:	6	1	1	1	1	0	4	2
1841:	1	1	1	4	1	4	4	5
1849:	0	2	0	0	1	1	2	2
1857:	2	0	2	1	2	1	3	2
1865:	0	0	2	2	0	1	1	1
1873:	4	2	1	0	0	3	1	2
1881:	0	1	2	0	0	2	0	0
1889:	1	1	1	1	1	1	1	1
1897:	1	1	0	1	0	2	1	1
1905:	1	1	4	1	1	2	1	0
1913:	0	0	1	3	3	0	1	2
1921:	1	1	2	4	1	3	0	0
1929:	0	2	0	1	0	1	2	2
1937:	2	2	1	1	3	3	2	1
1945:	0	0	0	1	0	1	3	0
1953:	3	2	1	3	0	0	0	2
1961:	1	0	1	0	0	0	0	2
1969:	0	1	1	1	1	1	1	2
1977:	1	0	3	0	2	2	0	0
1985:	0	2	3	1	1	2	2	2
1993:	1	1	2	2	1	0	1	2
2001:	2	1	1	1	1	1	0	0
2009:	0	0	3	2	0	0	0	2
2017:	2	1	0	2	1	1	1	0
2025:	0	0	2	0	1	2	1	3
2033:	0	0	2	0	1	3	1	0
2041:	3	2	1	2	1	1	1	0
2049:	1	0	1	0	1	1	3	1
2057:	0	0	0	1	1	0	0	1
2065:	0	2	1	1	2	1	0	0
2073:	0	2	2	1	0	1	3	0
2081:	0	1	1	0	0	1	1	1
2089:	3	1	0	1	0	2	0	2

2097:	3	3	1	5	3	7	7	6

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

2529:	1	0	0	0	0	0	0	0

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Channel								
2537:	2	2	0	0	1	0	0	0
2545:	1	0	1	0	0	1	1	0
2553:	0	0	0	2	2	0	0	1
2561:	1	0	0	1	0	0	0	0
2569:	0	0	0	2	1	0	0	1
2577:	1	0	1	0	0	1	1	0
2585:	0	0	0	0	0	0	0	1
2593:	0	2	0	0	0	0	1	1
2601:	0	1	0	0	0	0	2	0
2609:	0	1	5	17	40	38	11	3
2617:	3	0	3	1	1	1	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	2	0	0	0	0	1	0
2641:	1	0	0	0	0	0	1	0
2649:	0	0	0	0	0	0	2	0
2657:	0	1	1	0	0	1	0	0
2665:	0	0	0	1	0	0	0	0
2673:	1	1	0	0	1	2	0	0
2681:	0	0	0	0	0	0	1	0
2689:	0	0	1	1	0	1	0	0
2697:	2	0	0	0	0	0	0	0
2705:	0	0	1	0	0	0	0	0
2713:	0	1	0	1	0	0	0	2
2721:	0	0	1	3	0	0	1	0
2729:	0	1	0	0	0	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	2	0	0	1	0	0	0	0
2753:	0	0	0	0	2	0	0	0
2761:	0	0	0	0	0	0	0	0
2769:	0	0	0	2	1	0	1	0
2777:	2	0	1	0	0	2	1	0
2785:	0	0	0	2	0	0	0	0
2793:	0	0	0	0	0	0	1	0
2801:	0	0	0	1	0	0	0	1
2809:	0	1	2	0	0	0	1	0
2817:	0	0	0	0	0	1	0	0
2825:	1	0	0	1	0	0	1	1
2833:	1	0	1	0	1	0	1	0
2841:	0	1	0	0	0	1	1	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	2	0	0	1	1
2865:	0	0	0	0	0	0	0	1
2873:	0	0	0	1	0	1	1	0
2881:	0	0	0	0	1	0	0	0
2889:	0	0	0	0	0	0	1	0
2897:	0	1	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	1	0	0	0	1	0	0	0
2921:	0	0	1	0	0	0	1	1
2929:	0	0	0	1	0	0	0	0
2937:	0	1	0	0	1	0	0	0
2945:	0	1	1	1	1	0	0	0
2953:	2	2	0	0	0	0	1	1

2961:	0	0	0	1	0	0	0	0

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

3393:	0	0	0	0	1	0	0	0

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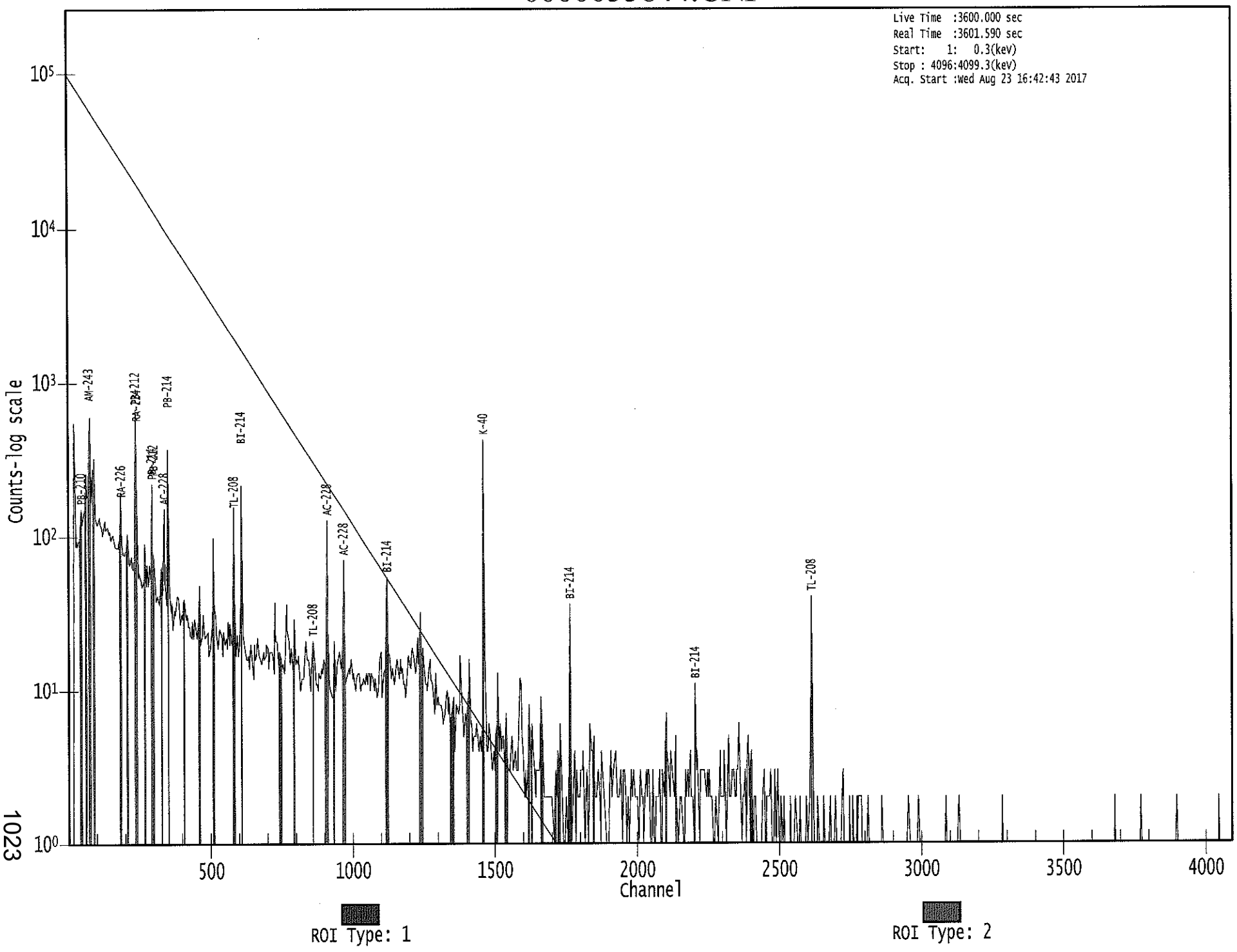
Channel								
3401:	0	1	0	0	1	0	0	0
3409:	1	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	1	0	0
3433:	0	0	0	1	0	0	0	0
3441:	0	0	1	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	1	1	0
3465:	0	0	0	0	0	0	1	0
3473:	0	0	0	1	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	1	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	1	0
3505:	0	0	1	1	0	0	0	0
3513:	1	0	0	0	0	0	0	0
3521:	0	0	0	0	1	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	1
3545:	0	0	0	0	0	0	1	0
3553:	0	0	0	0	0	0	0	1
3561:	0	0	1	0	0	0	0	0
3569:	0	0	0	0	1	0	0	0
3577:	0	0	0	0	0	1	0	0
3585:	0	0	0	0	0	1	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	1	0	1	0	0	0
3609:	1	0	0	0	0	0	0	0
3617:	0	0	0	1	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	1
3641:	0	0	0	1	0	0	0	1
3649:	1	0	1	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	1	1	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	2
3681:	0	0	0	0	0	1	1	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	1	0	0	0	1
3705:	0	0	1	0	0	0	0	0
3713:	1	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	1	0
3729:	0	0	0	0	0	1	0	0
3737:	0	1	0	0	0	0	0	0
3745:	1	1	0	0	0	0	0	0
3753:	0	0	0	0	0	0	1	1
3761:	1	0	0	0	0	0	0	0
3769:	0	2	0	0	0	0	1	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	1	0	0	0	0	0	0
3801:	0	0	1	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	1	0	0	0	0	1	0	1

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A07-S001-3642-01

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

0000055844.CNF



VLB 8/23/17

Apex-Gamma

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-18
Sample Description	: HTC-A07-S001-4248-01
Sample Type	: SOIL
Sample Size	: 6.655E+02 grams
Facility	: Countroom
Sample Taken On	: 5/16/2017 8:57:49AM
Acquisition Started	: 8/23/2017 4:42:51PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.8 seconds
Dead Time	: 0.05 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55845

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/23/2017 5:43:46PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.44	45.49	0.0000	0.00
2	69.70	68.75	0.0000	0.00
3	75.39	74.45	0.0000	0.00
4	186.17	185.26	0.0000	0.00
5	208.77	207.87	0.0000	0.00
6	211.98	211.08	0.0000	0.00
7	238.85	237.96	0.0000	0.00
8	242.89	242.00	0.0000	0.00
9	270.90	270.02	0.0000	0.00
10	277.22	276.34	0.0000	0.00
11	295.82	294.95	0.0000	0.00
12	338.21	337.36	0.0000	0.00
13	352.15	351.29	0.0000	0.00
14	387.18	386.33	0.0000	0.00
15	477.99	477.18	0.0000	0.00
16	582.96	582.19	0.0000	0.00
17	609.34	608.58	0.0000	0.00
18	770.50	769.81	0.0000	0.00
19	861.55	860.89	0.0000	0.00
20	911.20	910.56	0.0000	0.00
21	968.27	967.66	0.0000	0.00
22	1076.07	1075.51	0.0000	0.00
23	1460.76	1460.39	0.0000	0.00
24	1590.44	1590.13	0.0000	0.00
25	1729.10	1728.86	0.0000	0.00
26	1764.80	1764.58	0.0000	0.00
27	1806.59	1806.40	0.0000	0.00
28	2047.05	2047.00	0.0000	0.00
29	2102.93	2102.92	0.0000	0.00
30	2203.54	2203.59	0.0000	0.00
31	2329.30	2329.43	0.0000	0.00
32	2614.02	2614.33	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/23/2017 5:43:46PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.44	41 -	49	45.49	1.30E+02	96.28	1.35E+03	5.40
m	2	69.70	56 -	81	68.75	1.39E+02	126.90	2.05E+03	3.44
m	3	75.39	56 -	81	74.45	9.13E+02	158.19	2.55E+03	3.93
	4	186.17	181 -	189	185.26	1.54E+02	82.03	9.40E+02	2.21
M	5	208.77	205 -	213	207.87	7.34E+01	48.48	4.67E+02	2.30
m	6	211.98	205 -	213	211.08	4.37E+01	56.05	5.55E+02	1.89
M	7	238.85	234 -	245	237.96	6.94E+02	77.37	5.24E+02	2.28
m	8	242.89	234 -	245	242.00	1.05E+02	59.55	4.58E+02	2.12
	9	270.90	266 -	273	270.02	9.21E+01	51.77	3.80E+02	2.73
	10	277.22	274 -	280	276.34	4.26E+01	44.67	3.37E+02	3.36
	11	295.82	291 -	300	294.95	1.45E+02	74.03	7.00E+02	1.89
	12	338.21	333 -	340	337.36	9.27E+01	54.11	4.23E+02	2.09
	13	352.15	347 -	355	351.29	3.41E+02	60.46	3.45E+02	2.34
	14	387.18	382 -	393	386.33	5.15E+01	59.03	4.15E+02	3.60
	15	477.99	474 -	481	477.18	3.43E+01	33.05	1.57E+02	3.37
	16	582.96	577 -	588	582.19	1.76E+02	49.40	2.20E+02	2.58
	17	609.34	603 -	614	608.58	2.58E+02	49.68	1.79E+02	2.45
	18	770.50	764 -	775	769.81	4.27E+01	35.61	1.35E+02	7.52
	19	861.55	854 -	873	860.89	6.10E+01	51.42	2.00E+02	5.45
	20	911.20	907 -	914	910.56	1.04E+02	26.98	5.15E+01	2.49
	21	968.27	962 -	974	967.66	8.21E+01	35.58	1.10E+02	2.73
	22	1076.07	1073 -	1078	1075.51	1.58E+01	17.80	5.05E+01	2.08
	23	1460.76	1454 -	1467	1460.39	4.66E+02	46.66	3.44E+01	3.08
	24	1590.44	1585 -	1594	1590.13	2.05E+01	17.03	2.90E+01	5.08
	25	1729.10	1723 -	1734	1728.86	1.32E+01	10.00	5.63E+00	1.99
	26	1764.80	1759 -	1770	1764.58	2.78E+01	18.76	3.04E+01	2.57
	27	1806.59	1803 -	1808	1806.40	5.00E+00	4.47	0.00E+00	1.24
	28	2047.05	2044 -	2049	2047.00	5.00E+00	4.47	0.00E+00	1.50
	29	2102.93	2098 -	2106	2102.92	1.36E+01	11.86	1.29E+01	4.45
	30	2203.54	2199 -	2208	2203.59	1.60E+01	11.58	1.00E+01	3.28
	31	2329.30	2325 -	2332	2329.43	7.00E+00	5.29	0.00E+00	2.22
	32	2614.02	2610 -	2618	2614.33	5.70E+01	15.10	0.00E+00	2.56

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

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 : 8/23/2017 5:43:46PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.44	41 -	49	1.30E+02	96.28	1.35E+03	7.69E+01
m	2	69.70	56 -	81	1.39E+02	126.90	2.05E+03	7.44E+01
m	3	75.39	56 -	81	9.13E+02	158.19	2.55E+03	8.30E+01
	4	186.17	181 -	189	1.54E+02	82.03	9.40E+02	6.43E+01
M	5	208.77	205 -	213	7.34E+01	48.48	4.67E+02	3.55E+01
m	6	211.98	205 -	213	4.37E+01	56.05	5.55E+02	3.87E+01
M	7	238.85	234 -	245	6.94E+02	77.37	5.24E+02	3.76E+01
m	8	242.89	234 -	245	1.05E+02	59.55	4.58E+02	3.52E+01
	9	270.90	266 -	273	9.21E+01	51.77	3.80E+02	3.95E+01
	10	277.22	274 -	280	4.26E+01	44.67	3.37E+02	3.51E+01
	11	295.82	291 -	300	1.45E+02	74.03	7.00E+02	5.75E+01
	12	338.21	333 -	340	9.27E+01	54.11	4.23E+02	4.16E+01
	13	352.15	347 -	355	3.41E+02	60.46	3.45E+02	3.93E+01
	14	387.18	382 -	393	5.15E+01	59.03	4.15E+02	1.55E+01
	15	477.99	474 -	481	3.43E+01	33.05	1.57E+02	2.54E+01
	16	582.96	577 -	588	1.76E+02	49.40	2.20E+02	3.42E+01
	17	609.34	603 -	614	2.58E+02	49.68	1.79E+02	3.12E+01
	18	770.50	764 -	775	4.27E+01	35.61	1.35E+02	2.72E+01
	19	861.55	854 -	873	6.10E+01	51.42	2.00E+02	4.03E+01
	20	911.20	907 -	914	1.04E+02	26.98	5.15E+01	1.45E+01
	21	968.27	962 -	974	8.21E+01	35.58	1.10E+02	2.52E+01
	22	1076.07	1073 -	1078	1.58E+01	17.80	5.05E+01	1.31E+01
	23	1460.76	1454 -	1467	4.66E+02	46.66	3.44E+01	1.46E+01
	24	1590.44	1585 -	1594	2.05E+01	17.03	2.90E+01	1.19E+01
	25	1729.10	1723 -	1734	1.32E+01	10.00	5.63E+00	5.65E+00
	26	1764.80	1759 -	1770	2.78E+01	18.76	3.04E+01	1.28E+01
	27	1806.59	1803 -	1808	5.00E+00	4.47	0.00E+00	0.00E+00
	28	2047.05	2044 -	2049	5.00E+00	4.47	0.00E+00	0.00E+00
	29	2102.93	2098 -	2106	1.36E+01	11.86	1.29E+01	7.65E+00
	30	2203.54	2199 -	2208	1.60E+01	11.58	1.00E+01	6.88E+00
	31	2329.30	2325 -	2332	7.00E+00	5.29	0.00E+00	0.00E+00

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2614.02	2610 -	2618	5.70E+01	15.10	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 : 8/23/2017 5:43:46PM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.44	41 -	49	45.49	1.30E+02	96.28	1.35E+03	PB-210
m	2	69.70	56 -	81	68.75	1.39E+02	126.90	2.05E+03	.....
m	3	75.39	56 -	81	74.45	9.13E+02	158.19	2.55E+03	AM-243
	4	186.17	181 -	189	185.26	1.54E+02	82.03	9.40E+02	RA-226
M	5	208.77	205 -	213	207.87	7.34E+01	48.48	4.67E+02	GA-67
									CM-243
m	6	211.98	205 -	213	211.08	4.37E+01	56.05	5.55E+02	.....
M	7	238.85	234 -	245	237.96	6.94E+02	77.37	5.24E+02	PB-212
m	8	242.89	234 -	245	242.00	1.05E+02	59.55	4.58E+02	.....
	9	270.90	266 -	273	270.02	9.21E+01	51.77	3.80E+02	.....
	10	277.22	274 -	280	276.34	4.26E+01	44.67	3.37E+02	CM-243
									NP-239
	11	295.82	291 -	300	294.95	1.45E+02	74.03	7.00E+02	PB-214
	12	338.21	333 -	340	337.36	9.27E+01	54.11	4.23E+02	AC-228
	13	352.15	347 -	355	351.29	3.41E+02	60.46	3.45E+02	PB-214
	14	387.18	382 -	393	386.33	5.15E+01	59.03	4.15E+02	.....
	15	477.99	474 -	481	477.18	3.43E+01	33.05	1.57E+02	BE-7
	16	582.96	577 -	588	582.19	1.76E+02	49.40	2.20E+02	TL-208
	17	609.34	603 -	614	608.58	2.58E+02	49.68	1.79E+02	BI-214
	18	770.50	764 -	775	769.81	4.27E+01	35.61	1.35E+02	.....
	19	861.55	854 -	873	860.89	6.10E+01	51.42	2.00E+02	.....
	20	911.20	907 -	914	910.56	1.04E+02	26.98	5.15E+01	AC-228
									TL-204
	21	968.27	962 -	974	967.66	8.21E+01	35.58	1.10E+02	AC-228
	22	1076.07	1073 -	1078	1075.51	1.58E+01	17.80	5.05E+01	.....

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
23	1460.76	1454 -	1467	1460.39	4.66E+02	46.66	3.44E+01	K-40
24	1590.44	1585 -	1594	1590.13	2.05E+01	17.03	2.90E+01	.....
25	1729.10	1723 -	1734	1728.86	1.32E+01	10.00	5.63E+00	.....
26	1764.80	1759 -	1770	1764.58	2.78E+01	18.76	3.04E+01	BI-214
27	1806.59	1803 -	1808	1806.40	5.00E+00	4.47	0.00E+00	.....
28	2047.05	2044 -	2049	2047.00	5.00E+00	4.47	0.00E+00	.....
29	2102.93	2098 -	2106	2102.92	1.36E+01	11.86	1.29E+01	.....
30	2203.54	2199 -	2208	2203.59	1.60E+01	11.58	1.00E+01	BI-214
31	2329.30	2325 -	2332	2329.43	7.00E+00	5.29	0.00E+00	.....
32	2614.02	2610 -	2618	2614.33	5.70E+01	15.10	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 : 8/23/2017 5:43:46PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.44	1.30E+02	96.28	1.64E-02	1.56E-03
m	2	69.70	1.39E+02	126.90	2.26E-02	1.78E-03
m	3	75.39	9.13E+02	158.19	2.32E-02	1.90E-03
	4	186.17	1.54E+02	82.03	1.69E-02	1.40E-03
M	5	208.77	7.34E+01	48.48	1.54E-02	1.29E-03
m	6	211.98	4.37E+01	56.05	1.51E-02	1.27E-03
M	7	238.85	6.94E+02	77.37	1.36E-02	1.14E-03
m	8	242.89	1.05E+02	59.55	1.34E-02	1.12E-03
	9	270.90	9.21E+01	51.77	1.20E-02	9.87E-04
	10	277.22	4.26E+01	44.67	1.17E-02	9.56E-04
	11	295.82	1.45E+02	74.03	1.10E-02	9.12E-04
	12	338.21	9.27E+01	54.11	9.60E-03	8.23E-04
	13	352.15	3.41E+02	60.46	9.21E-03	7.94E-04
	14	387.18	5.15E+01	59.03	8.35E-03	7.20E-04
	15	477.99	3.43E+01	33.05	6.72E-03	6.75E-04
	16	582.96	1.76E+02	49.40	5.51E-03	6.31E-04
	17	609.34	2.58E+02	49.68	5.27E-03	6.20E-04
	18	770.50	4.27E+01	35.61	4.22E-03	4.62E-04
	19	861.55	6.10E+01	51.42	3.81E-03	3.48E-04
	20	911.20	1.04E+02	26.98	3.62E-03	2.99E-04

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
21	968.27	8.21E+01	35.58	3.43E-03	2.85E-04
22	1076.07	1.58E+01	17.80	3.12E-03	2.60E-04
23	1460.76	4.66E+02	46.66	2.38E-03	2.08E-04
24	1590.44	2.05E+01	17.03	2.21E-03	1.88E-04
25	1729.10	1.32E+01	10.00	2.04E-03	1.67E-04
26	1764.80	2.78E+01	18.76	2.00E-03	1.62E-04
27	1806.59	5.00E+00	4.47	1.95E-03	1.56E-04
28	2047.05	5.00E+00	4.47	1.72E-03	1.51E-04
29	2102.93	1.36E+01	11.86	1.67E-03	1.51E-04
30	2203.54	1.60E+01	11.58	1.58E-03	1.51E-04
31	2329.30	7.00E+00	5.29	1.48E-03	1.51E-04
32	2614.02	5.70E+01	15.10	1.28E-03	1.51E-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 : 8/23/2017 5:43:46PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.44	1.30E+02	96.28	2.81E+01	8.29E+00	1.02E+02	9.66E+01
m	2	69.70	1.39E+02	126.90			1.39E+02	1.27E+02
m	3	75.39	9.13E+02	158.19	2.66E+01	8.34E+00	8.86E+02	1.58E+02
	4	186.17	1.54E+02	82.03	2.43E+01	7.50E+00	1.30E+02	8.24E+01
M	5	208.77	7.34E+01	48.48			7.34E+01	4.85E+01
m	6	211.98	4.37E+01	56.05			4.37E+01	5.61E+01
M	7	238.85	6.94E+02	77.37	1.06E+01	6.01E+00	6.83E+02	7.76E+01
m	8	242.89	1.05E+02	59.55			1.05E+02	5.95E+01
	9	270.90	9.21E+01	51.77			9.21E+01	5.18E+01
	10	277.22	4.26E+01	44.67			4.26E+01	4.47E+01
	11	295.82	1.45E+02	74.03			1.45E+02	7.40E+01
	12	338.21	9.27E+01	54.11			9.27E+01	5.41E+01
	13	352.15	3.41E+02	60.46			3.41E+02	6.05E+01
	14	387.18	5.15E+01	59.03			5.15E+01	5.90E+01
	15	477.99	3.43E+01	33.05			3.43E+01	3.30E+01
	16	582.96	1.76E+02	49.40			1.76E+02	4.94E+01
	17	609.34	2.58E+02	49.68			2.58E+02	4.97E+01
	18	770.50	4.27E+01	35.61			4.27E+01	3.56E+01

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
19	861.55	6.10E+01	51.42			6.10E+01	5.14E+01
20	911.20	1.04E+02	26.98			1.04E+02	2.70E+01
21	968.27	8.21E+01	35.58			8.21E+01	3.56E+01
22	1076.07	1.58E+01	17.80			1.58E+01	1.78E+01
23	1460.76	4.66E+02	46.66			4.66E+02	4.67E+01
24	1590.44	2.05E+01	17.03			2.05E+01	1.70E+01
25	1729.10	1.32E+01	10.00			1.32E+01	1.00E+01
26	1764.80	2.78E+01	18.76			2.78E+01	1.88E+01
27	1806.59	5.00E+00	4.47			5.00E+00	4.47E+00
28	2047.05	5.00E+00	4.47			5.00E+00	4.47E+00
29	2102.93	1.36E+01	11.86			1.36E+01	1.19E+01
30	2203.54	1.60E+01	11.58			1.60E+01	1.16E+01
31	2329.30	7.00E+00	5.29			7.00E+00	5.29E+00
32	2614.02	5.70E+01	15.10			5.70E+01	1.51E+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 : 8/23/2017 5:43:46PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.44	1.30E+02	96.28	2.81E+01	8.29E+00	1.02E+02	9.66E+01
m	2	69.70	1.39E+02	126.90			1.39E+02	1.27E+02
m	3	75.39	9.13E+02	158.19	2.66E+01	8.34E+00	8.86E+02	1.58E+02
	4	186.17	1.54E+02	82.03	2.43E+01	7.50E+00	1.30E+02	8.24E+01
M	5	208.77	7.34E+01	48.48			7.34E+01	4.85E+01
m	6	211.98	4.37E+01	56.05			4.37E+01	5.61E+01
M	7	238.85	6.94E+02	77.37	1.06E+01	6.01E+00	6.83E+02	7.76E+01
m	8	242.89	1.05E+02	59.55			1.05E+02	5.95E+01
	9	270.90	9.21E+01	51.77			9.21E+01	5.18E+01
	10	277.22	4.26E+01	44.67			4.26E+01	4.47E+01
	11	295.82	1.45E+02	74.03			1.45E+02	7.40E+01
	12	338.21	9.27E+01	54.11			9.27E+01	5.41E+01
	13	352.15	3.41E+02	60.46			3.41E+02	6.05E+01
	14	387.18	5.15E+01	59.03			5.15E+01	5.90E+01

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
15	477.99	3.43E+01	33.05			3.43E+01	3.30E+01
16	582.96	1.76E+02	49.40			1.76E+02	4.94E+01
17	609.34	2.58E+02	49.68			2.58E+02	4.97E+01
18	770.50	4.27E+01	35.61			4.27E+01	3.56E+01
19	861.55	6.10E+01	51.42			6.10E+01	5.14E+01
20	911.20	1.04E+02	26.98			1.04E+02	2.70E+01
21	968.27	8.21E+01	35.58			8.21E+01	3.56E+01
22	1076.07	1.58E+01	17.80			1.58E+01	1.78E+01
23	1460.76	4.66E+02	46.66			4.66E+02	4.67E+01
24	1590.44	2.05E+01	17.03			2.05E+01	1.70E+01
25	1729.10	1.32E+01	10.00			1.32E+01	1.00E+01
26	1764.80	2.78E+01	18.76			2.78E+01	1.88E+01
27	1806.59	5.00E+00	4.47			5.00E+00	4.47E+00
28	2047.05	5.00E+00	4.47			5.00E+00	4.47E+00
29	2102.93	1.36E+01	11.86			1.36E+01	1.19E+01
30	2203.54	1.60E+01	11.58			1.60E+01	1.16E+01
31	2329.30	7.00E+00	5.29			7.00E+00	5.29E+00
32	2614.02	5.70E+01	15.10			5.70E+01	1.51E+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
BE-7	0.959	477.59	*	10.42	2.00E+00	1.94E+00
K-40	1.000	1460.81	*	10.67	2.07E+01	2.77E+00
TL-208	0.848	583.14	*	30.22	1.19E+00	3.62E-01
		860.37		4.48		
		2614.66	*	35.85	1.40E+00	4.07E-01
PB-210	0.999	46.50	*	4.25	1.66E+00	1.58E+00
PB-212	0.891	238.63	*	44.60	1.27E+00	1.80E-01
		300.09		3.41		
BI-214	0.732	609.31	*	46.30	1.19E+00	2.69E-01
		1120.29		15.10		
		1764.49	*	15.80	9.94E-01	6.75E-01
		2204.22	*	4.98	2.29E+00	1.67E+00
PB-214	0.975	295.21	*	19.19	7.74E-01	4.01E-01

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.975	351.92	*	37.19	1.12E+00	2.21E-01
RA-226	1.000	186.21	*	3.28	2.64E+00	5.11E+00
AC-228	0.965	338.32	*	11.40	9.56E-01	5.64E-01
		911.07	*	27.70	1.17E+00	3.19E-01
		969.11	*	16.60	1.63E+00	7.18E-01
AM-243	0.919	74.67	*	66.00	6.54E-01	1.29E-01
CM-243	0.337	209.75	*	3.29	1.65E+00	1.10E+00
		228.14		10.60		
		277.60	*	14.00	2.94E-01	3.09E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 5:43:46PM
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	69.70	3.85511E-02	45.72		
m	6	211.98	1.21318E-02	64.17		
m	8	242.89	2.91373E-02	28.38		
	9	270.90	2.55831E-02	28.10		
	14	387.18	1.42997E-02	57.33		
	18	770.50	1.18561E-02	41.71		
	19	861.55	1.69444E-02	42.15		
	22	1076.07	4.38008E-03	56.46		
	24	1590.44	5.69841E-03	41.51		
	25	1729.10	3.66319E-03	37.91		
	27	1806.59	1.38889E-03	44.72		
	28	2047.05	1.38889E-03	44.72		
	29	2102.93	3.76389E-03	43.78	S-Esc	
	31	2329.30	1.94444E-03	37.80		

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

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
BE-7	0.95	477.59	*	10.42	2.00E+00	1.94E+00
K-40	1.00	1460.81	*	10.67	2.07E+01	2.77E+00
TL-208	0.84	583.14	*	30.22	1.19E+00	3.62E-01
		860.37		4.48		
		2614.66	*	35.85	1.40E+00	4.07E-01
PB-210	0.99	46.50	*	4.25	1.66E+00	1.58E+00
PB-212	0.89	238.63	*	44.60	1.27E+00	1.80E-01
		300.09		3.41		
BI-214	0.73	609.31	*	46.30	1.19E+00	2.69E-01
		1120.29		15.10		
		1764.49	*	15.80	9.94E-01	6.75E-01
		2204.22	*	4.98	2.29E+00	1.67E+00
PB-214	0.97	295.21	*	19.19	7.74E-01	4.01E-01
		351.92	*	37.19	1.12E+00	2.21E-01
RA-226	1.00	186.21	*	3.28	2.64E+00	5.11E+00
AC-228	0.96	338.32	*	11.40	9.56E-01	5.64E-01
		911.07	*	27.70	1.17E+00	3.19E-01
		969.11	*	16.60	1.63E+00	7.18E-01
AM-243	0.91	74.67	*	66.00	6.54E-01	1.29E-01
CM-243	0.33	209.75	*	3.29	1.65E+00	1.10E+00
		228.14		10.60		
		277.60	*	14.00	2.94E-01	3.09E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BE-7	0.959	2.00E+00	1.94E+00	
K-40	1.000	2.07E+01	2.77E+00	
TL-208	0.848	1.29E+00	2.70E-01	
PB-210	0.999	1.66E+00	1.58E+00	
PB-212	0.891	1.27E+00	1.80E-01	
BI-214	0.732	1.19E+00	2.47E-01	
PB-214	0.975	1.04E+00	1.94E-01	
RA-226	1.000	2.64E+00	5.11E+00	
AC-228	0.965	1.19E+00	2.59E-01	
AM-243	0.919	6.54E-01	1.29E-01	
CM-243	0.337	3.94E-01	2.98E-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 1707090-18

HTC-A07-S001-4248-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/23/2017 5:43:46PM
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	69.70	3.85511E-02	45.72		
m	6	211.98	1.21318E-02	64.17		
m	8	242.89	2.91373E-02	28.38		
	9	270.90	2.55831E-02	28.10		
	14	387.18	1.42997E-02	57.33		
	18	770.50	1.18561E-02	41.71		
	19	861.55	1.69444E-02	42.15		
	22	1076.07	4.38008E-03	56.46		
	24	1590.44	5.69841E-03	41.51		
	25	1729.10	3.66319E-03	37.91		
	27	1806.59	1.38889E-03	44.72		
	28	2047.05	1.38889E-03	44.72		
	29	2102.93	3.76389E-03	43.78	S-Esc	
	31	2329.30	1.94444E-03	37.80		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	*	10.42	2.00E+00	3.13E+00	3.13E+00
+	NA-22	1274.54		99.94	9.92E-02	1.80E-01	1.80E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	NA-24	2754.09		99.86	1.00E+26	1.00E+26	1.00E+26
+	AL-26	1808.65		99.76	-1.93E-02	8.71E-02	8.71E-02
+	K-40	1460.81	*	10.67	2.07E+01	1.41E+00	1.41E+00
+ @	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-1.13E-01	7.60E-02	7.60E-02
		78.34		96.00	3.75E-01		9.85E-02
+	SC-46	889.25		99.98	1.06E-01	2.73E-01	2.73E-01
		1120.51		99.99	3.27E-01		3.95E-01
+	V-48	983.52		99.98	-2.24E+00	9.42E+00	9.42E+00
		1312.10		97.50	-6.83E-01		1.04E+01
+	CR-51	320.08		9.83	1.51E+00	8.50E+00	8.50E+00
+	MN-54	834.83		99.97	-7.00E-02	1.54E-01	1.54E-01
+	CO-56	846.75		99.96	-2.54E-02	2.69E-01	2.69E-01
		1037.75		14.03	-4.30E-01		2.35E+00
		1238.25		67.00	1.88E-01		6.25E-01
		1771.40		15.51	4.00E-01		1.59E+00
		2598.48		16.90	-6.62E-01		9.13E-01
+	CO-57	122.06		85.51	-2.26E-02	8.46E-02	8.46E-02
		136.48		10.60	2.16E-01		7.11E-01
+	CO-58	810.76		99.40	1.14E-01	3.06E-01	3.06E-01
+	FE-59	1099.22		56.50	2.26E-01	1.15E+00	1.15E+00
		1291.56		43.20	-6.70E-01		1.41E+00
+	CO-60	1173.22		100.00	3.15E-02	1.23E-01	1.74E-01
		1332.49		100.00	1.13E-02		1.23E-01
+	ZN-65	1115.52		50.75	-2.31E-01	3.83E-01	3.83E-01
+	GA-67	93.31		35.70	4.87E+08	2.97E+08	2.97E+08
		208.95		2.24	2.96E+09		4.78E+09
		300.22		16.00	4.11E+07		7.40E+08
+	SE-75	121.11		16.70	-1.19E-01	1.73E-01	5.93E-01
		136.00		59.20	-7.12E-03		1.73E-01
		264.65		59.80	1.40E-02		1.89E-01
		279.53		25.20	4.92E-02		4.77E-01
		400.65		11.40	-8.30E-02		1.23E+00
+	RB-82	776.52		13.00	-3.65E+00	1.26E+01	1.26E+01
+	RB-83	520.41		46.00	1.21E-01	4.16E-01	4.16E-01
		529.64		30.30	-3.25E-01		5.76E-01
		552.65		16.40	-3.78E-02		1.09E+00
+	KR-85	513.99		0.43	2.34E+01	2.70E+01	2.70E+01
+	SR-85	513.99		99.27	2.91E-01	3.35E-01	3.35E-01
+	Y-88	898.02		93.40	-2.18E-01	2.12E-01	2.22E-01
		1836.01		99.38	3.38E-02		2.12E-01
+	MO-93	263.06		56.72	9.23E-03	8.90E-02	1.14E-01
		684.67		99.68	-5.71E-02		1.10E-01
		1477.11		99.08	2.17E-02		8.90E-02
+	NB-93M	16.57		9.43	1.55E+01	7.96E+00	7.96E+00
+	NB-94	702.63		100.00	-1.01E-01	1.10E-01	1.11E-01
		871.10		100.00	-1.25E-02		1.10E-01

Analysis Report for 1707090-18

HTC-A07-S001-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	1.43E-02	8.57E-01	8.57E-01
+	NB-95M	235.69	25.00	1.58E+07	8.39E+07	8.39E+07
+	ZR-95	724.18	43.70	5.61E-01	5.10E-01	9.13E-01
		756.72	55.30	-1.36E-01		5.10E-01
+	MO-99	181.06	6.20	-9.83E+09	7.26E+10	7.42E+10
		739.58	12.80	4.70E+10		7.26E+10
		778.00	4.50	-8.32E+09		1.86E+11
+	RU-103	497.08	89.00	-5.50E-02	4.64E-01	4.64E-01
+	RU-106	621.84	9.80	5.23E-01	1.26E+00	1.26E+00
+	AG-108M	433.93	89.90	4.07E-02	8.83E-02	8.83E-02
		614.37	90.40	-1.77E-02		9.88E-02
		722.95	90.50	3.60E-02		1.45E-01
+	CD-109	88.03	3.72	-1.70E+00	2.22E+00	2.22E+00
+	AG-110M	657.75	93.14	-3.74E-02	1.50E-01	1.50E-01
		677.61	10.53	-1.33E-01		1.34E+00
		706.67	16.46	1.53E-01		9.63E-01
		763.93	21.98	2.09E-01		6.53E-01
		884.67	71.63	2.13E-02		2.04E-01
		1384.27	23.94	-4.40E-01		4.50E-01
+	CD-113M	263.70	0.02	1.98E+01	2.79E+02	2.79E+02
+	SN-113	255.12	1.93	-1.58E+00	2.24E-01	5.86E+00
		391.69	64.90	-4.15E-03		2.24E-01
+	TE123M	159.00	84.10	1.70E-03	1.27E-01	1.27E-01
+	SB-124	602.71	97.87	2.60E-02	3.11E-01	3.11E-01
		645.85	7.26	3.84E-01		3.94E+00
		722.78	11.10	9.21E-01		3.70E+00
		1691.02	49.00	-2.00E-01		4.17E-01
+	I-125	35.49	6.49	-2.68E+00	5.12E+00	5.12E+00
+	SB-125	176.33	6.89	-3.84E-02	2.85E-01	9.62E-01
		427.89	29.33	-1.02E-01		2.85E-01
		463.38	10.35	4.69E-01		9.34E-01
		600.56	17.80	1.45E-01		5.88E-01
		635.90	11.32	4.17E-01		9.29E-01
+	SB-126	414.70	83.30	8.76E+00	2.58E+01	2.58E+01
		666.33	99.60	-3.79E+00		2.68E+01
		695.00	99.60	1.07E+01		3.13E+01
		720.50	53.80	-2.83E+01		5.73E+01
+	SN-126	87.57	37.00	-1.47E-01	1.92E-01	1.92E-01
+	SB-127	473.00	25.00	4.70E+06	1.77E+07	1.93E+07
		685.20	35.70	-9.19E+06		1.77E+07
		783.80	14.70	2.22E+07		4.83E+07
+	I-129	29.78	57.00	9.05E-02	2.67E-01	2.67E-01
		33.60	13.20	-3.44E-01		8.82E-01
		39.58	7.52	3.33E-01		1.23E+00
+	I-131	284.30	6.05	4.15E+02	4.91E+02	5.44E+03
		364.48	81.20	1.41E+02		4.91E+02
		636.97	7.26	6.13E+02		6.85E+03
		722.89	1.80	9.49E+03		3.81E+04

Analysis Report for 1707090-18

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72	13.10	-1.01E+08	1.20E+08	8.72E+08
		228.16	88.00	2.92E+07		1.20E+08
+	BA-133	81.00	33.00	3.15E-02	1.60E-01	2.30E-01
		302.84	17.80	-1.66E-01		4.34E-01
		356.01	60.00	3.27E-03		1.60E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	1.36E+04	9.92E+04	9.92E+04
+	CS-134	563.23	8.38	1.73E-01	1.16E-01	1.16E+00
		569.32	15.43	-2.28E-01		5.99E-01
		604.70	97.60	-7.15E-03		1.16E-01
		795.84	85.40	-7.07E-03		1.45E-01
		801.93	8.73	4.16E-01		1.52E+00
+	CS-135	268.24	16.00	-5.81E-03	4.38E-01	4.38E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	4.84E+01	2.20E+01	1.56E+02
		163.89	4.61	7.07E+01		2.40E+02
		176.55	13.56	3.14E+01		8.64E+01
		273.65	12.66	-5.65E+01		1.04E+02
		340.57	48.50	2.28E-01		3.58E+01
		818.50	99.70	7.56E+00		2.20E+01
		1048.07	79.60	-1.54E+01		3.01E+01
		1235.34	19.70	1.34E+02		1.76E+02
+	CS-137	661.65	85.12	4.72E-02	1.32E-01	1.32E-01
+	LA-138	788.74	34.00	-1.07E-01	1.50E-01	3.28E-01
		1435.80	66.00	-7.03E-02		1.50E-01
+	CE-139	165.85	80.35	-4.58E-02	1.19E-01	1.19E-01
+	BA-140	162.64	6.70	9.08E+01	7.04E+01	1.93E+02
		304.84	4.50	-6.09E+01		3.46E+02
		423.70	3.20	1.26E+02		5.59E+02
		437.55	2.00	2.19E+02		8.07E+02
		537.32	25.00	-1.11E+00		7.04E+01
+	LA-140	328.77	20.50	2.24E+01	2.81E+01	8.51E+01
		487.03	45.50	2.13E+00		3.63E+01
		815.85	23.50	-7.99E+01		1.02E+02
		1596.49	95.49	-1.74E+00		2.81E+01
+	CE-141	145.44	48.40	-1.19E-02	1.02E+00	1.02E+00
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-2.94E-01	6.71E-01	6.71E-01
+	PM-144	476.78	42.00	7.17E-02	1.10E-01	2.47E-01
		618.01	98.60	-2.35E-02		1.10E-01
		696.49	99.49	6.90E-02		1.46E-01
+	PM-145	36.85	21.70	-1.28E-01	2.50E-01	4.67E-01
		37.36	39.70	-6.85E-02		2.50E-01
		42.30	15.10	6.17E-02		5.85E-01
		72.40	2.31	-4.20E+00		3.66E+00

Analysis Report for 1707090-18

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-146	453.90	39.94	-1.22E-01	2.14E-01	2.14E-01
		735.90	14.01	3.44E-01		9.10E-01
		747.13	13.10	1.38E-01		8.99E-01
+	ND-147	91.11	28.90	2.90E+02	1.38E+02	1.38E+02
		531.02	13.10	-1.72E+02		3.20E+02
+	PM-149	285.90	3.10	-6.16E+13	6.69E+13	6.69E+13
+	EU-152	121.78	20.50	-7.41E-02	2.77E-01	2.77E-01
		244.69	5.40	1.09E-01		1.49E+00
		344.27	19.13	3.18E-02		4.11E-01
		778.89	9.20	1.92E-01		1.26E+00
		964.01	10.40	4.53E-02		1.37E+00
		1085.78	7.22	-8.54E-01		1.66E+00
		1112.02	9.60	-6.25E-01		1.42E+00
		1407.95	14.94	1.28E-01		8.07E-01
+	GD-153	97.43	31.30	-4.22E-01	2.51E-01	2.51E-01
		103.18	22.20	5.72E-02		3.30E-01
+	EU-154	123.07	40.50	-4.11E-02	1.43E-01	1.43E-01
		723.30	19.70	4.33E-01		7.05E-01
		873.19	11.50	1.36E-01		1.02E+00
		996.32	10.30	1.03E-01		1.30E+00
		1004.76	17.90	4.07E-02		6.97E-01
		1274.45	35.50	2.65E-01		4.81E-01
+	EU-155	86.50	30.90	5.07E-02	2.38E-01	2.38E-01
		105.30	20.70	-1.84E-01		2.69E-01
+	EU-156	811.77	10.40	-1.63E+01	1.00E+02	1.00E+02
		1153.47	7.20	-1.49E+01		1.83E+02
		1230.71	8.90	-2.49E+01		1.75E+02
+	HO-166M	184.41	72.60	1.08E-01	9.85E-02	9.85E-02
		280.45	29.60	4.33E-02		2.26E-01
		410.94	11.10	4.29E-02		7.25E-01
		711.69	54.10	4.20E-02		2.23E-01
+	TM-171	66.72	0.14	-4.49E+01	5.74E+01	5.74E+01
+	HF-172	67.35	5.31	-1.18E+00	5.74E-01	1.51E+00
		125.81	11.30	2.34E-01		5.74E-01
+	LU-172	181.53	20.60	2.69E+02	6.50E+03	8.98E+03
		900.72	29.81	4.96E+03		1.14E+04
		1093.66	62.50	3.12E+03		6.50E+03
+	LU-173	100.72	5.24	3.79E-01	3.83E-01	1.22E+00
		272.11	21.20	6.27E-02		3.83E-01
+	HF-175	343.40	84.00	1.90E-02	2.46E-01	2.46E-01
+	LU-176	88.34	13.30	-4.09E-01	7.17E-02	5.35E-01
		201.83	86.00	2.90E-02		7.81E-02
		306.78	94.00	-1.55E-02		7.17E-02
+	HF-181	133.02	41.70	-2.53E-01	4.49E-01	6.99E-01
		345.85	17.20	5.79E-01		2.33E+00
		482.03	82.80	-2.45E-01		4.49E-01
+	TA-182	67.75	41.20	-4.73E-01	3.17E-01	3.17E-01
		1121.30	34.90	6.89E-01		8.98E-01
		1189.05	16.23	-4.15E-02		1.82E+00

Analysis Report for 1707090-18

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TA-182	1221.41		26.98	7.28E-02	3.17E-01	1.14E+00
		1231.02		11.44	-2.17E+00		2.59E+00
+	IR-192	308.46		29.68	-1.39E-01	4.20E-01	5.62E-01
		468.07		48.10	-3.53E-01		4.20E-01
+	HG-203	279.19		77.30	4.07E-01	3.99E-01	3.99E-01
+	TL-204	374.74		94.11	2.75E-02	8.85E-02	8.85E-02
		899.15		99.16	1.10E-02		1.22E-01
		911.74		91.10	3.30E-01		2.04E-01
+	BI-207	569.67		97.72	-3.31E-02	8.69E-02	8.69E-02
		1063.62		74.90	-1.18E-02		1.69E-01
+	TL-208	583.14	*	30.22	1.19E+00	6.65E-02	4.83E-01
		860.37		4.48	3.32E+00		3.24E+00
		2614.66	*	35.85	1.40E+00		6.65E-02
+	BI-210M	262.00		45.00	2.80E-02	1.41E-01	1.41E-01
		300.00		23.00	1.93E-02		3.47E-01
+	PB-210	46.50	*	4.25	1.66E+00	2.58E+00	2.58E+00
+	PB-211	404.84		2.90	-4.88E-02	2.74E+00	2.74E+00
		831.96		2.90	1.57E+00		4.39E+00
+	BI-212	727.17		11.80	2.25E-01	1.14E+00	1.14E+00
		1620.62		2.75	1.41E+00		3.92E+00
+	PB-212	238.63	*	44.60	1.27E+00	2.53E-01	2.53E-01
		300.09		3.41	1.30E-01		2.34E+00
+	BI-214	609.31	*	46.30	1.19E+00	3.01E-01	3.01E-01
		1120.29		15.10	9.52E-01		1.15E+00
		1764.49	*	15.80	9.94E-01		1.01E+00
		2204.22	*	4.98	2.29E+00		2.36E+00
+	PB-214	295.21	*	19.19	7.74E-01	2.68E-01	6.29E-01
		351.92	*	37.19	1.12E+00		2.68E-01
+	RN-219	401.80		6.50	3.79E-02	1.22E+00	1.22E+00
+	RA-223	323.87		3.88	-6.12E-01	1.86E+00	1.86E+00
+	RA-224	240.98		3.95	1.57E+01	3.26E+00	3.26E+00
+	RA-225	40.00		31.00	8.32E+00	3.08E+01	3.08E+01
+	RA-226	186.21	*	3.28	2.64E+00	2.70E+00	2.70E+00
+	TH-227	50.10		8.40	-1.04E-01	8.96E-01	8.96E-01
		236.00		11.50	1.79E-01		9.49E-01
		256.20		6.30	-1.27E-02		1.00E+00
+	AC-228	338.32	*	11.40	9.56E-01	3.57E-01	8.85E-01
		911.07	*	27.70	1.17E+00		3.57E-01
		969.11	*	16.60	1.63E+00		1.05E+00
+	TH-230	48.44		16.90	1.62E-01	4.70E-01	4.70E-01
		62.85		4.60	2.13E+00		1.66E+00
		67.67		0.37	-2.89E+01		1.94E+01
+	PA-231	283.67		1.60	2.99E-01	3.30E+00	3.91E+00
		302.67		2.30	-1.26E+00		3.30E+00
+	TH-231	25.64		14.70	-1.88E-01	1.04E+00	1.50E+00
		84.21		6.40	-3.63E-02		1.04E+00
+	PA-233	311.98		38.60	-5.77E-01	2.23E+00	2.23E+00
+	PA-234	131.20		20.40	-1.84E-02	2.86E-01	2.86E-01

Analysis Report for 1707090-18

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	733.99		8.80	-1.04E+00	2.86E-01	1.34E+00
		946.00		12.00	3.51E-01		1.01E+00
+	PA-234M	1001.03		0.92	6.61E+00	1.37E+01	1.37E+01
+	TH-234	63.29		3.80	2.57E+00	2.00E+00	2.00E+00
+	U-235	143.76		10.50	1.10E-01	5.64E-01	5.64E-01
		163.35		4.70	5.96E-01		1.27E+00
		205.31		4.70	3.61E-01		1.44E+00
+	NP-237	86.50		12.60	1.20E-01	5.62E-01	5.62E-01
+	NP-239	106.10		22.70	-4.67E+11	1.18E+12	1.18E+12
		228.18		10.70	7.95E+11		3.27E+12
		277.60		14.10	8.50E+11		2.40E+12
+	AM-241	59.54		35.90	-7.73E-02	2.06E-01	2.06E-01
+	AM-243	74.67	*	66.00	6.54E-01	3.35E-01	3.35E-01
+	CM-243	209.75	*	3.29	1.65E+00	5.04E-01	2.60E+00
		228.14		10.60	1.62E-01		6.65E-01
		277.60	*	14.00	2.94E-01		5.04E-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	3.13E+00	3.13E+00	2.00E+00	1.48E+00
	NA-22	1274.54		99.94	1.80E-01	1.80E-01	9.92E-02	8.39E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	8.71E-02	8.71E-02	-1.93E-02	3.57E-02
+	K-40	1460.81	*	10.67	1.41E+00	1.41E+00	2.07E+01	6.46E-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	7.60E-02	7.60E-02	-1.13E-01	3.73E-02
	78.34	96.00	9.85E-02		3.75E-01	4.85E-02
SC-46	889.25	99.98	2.73E-01	2.73E-01	1.06E-01	1.27E-01
	1120.51	99.99	3.95E-01		3.27E-01	1.86E-01
V-48	983.52	99.98	9.42E+00	9.42E+00	-2.24E+00	4.37E+00
	1312.10	97.50	1.04E+01		-6.83E-01	4.78E+00
CR-51	320.08	9.83	8.50E+00	8.50E+00	1.51E+00	4.07E+00
MN-54	834.83	99.97	1.54E-01	1.54E-01	-7.00E-02	7.23E-02
CO-56	846.75	99.96	2.69E-01	2.69E-01	-2.54E-02	1.25E-01
	1037.75	14.03	2.35E+00		-4.30E-01	1.10E+00
	1238.25	67.00	6.25E-01		1.88E-01	2.93E-01
	1771.40	15.51	1.59E+00		4.00E-01	6.76E-01
	2598.48	16.90	9.13E-01		-6.62E-01	2.89E-01
CO-57	122.06	85.51	8.46E-02	8.46E-02	-2.26E-02	4.12E-02
	136.48	10.60	7.11E-01		2.16E-01	3.46E-01
CO-58	810.76	99.40	3.06E-01	3.06E-01	1.14E-01	1.43E-01
FE-59	1099.22	56.50	1.15E+00	1.15E+00	2.26E-01	5.35E-01
	1291.56	43.20	1.41E+00		-6.70E-01	6.41E-01
CO-60	1173.22	100.00	1.74E-01	1.23E-01	3.15E-02	8.14E-02
	1332.49	100.00	1.23E-01		1.13E-02	5.56E-02
ZN-65	1115.52	50.75	3.83E-01	3.83E-01	-2.31E-01	1.78E-01
GA-67	93.31	35.70	2.97E+08	2.97E+08	4.87E+08	1.46E+08
	208.95	2.24	4.78E+09		2.96E+09	2.33E+09
	300.22	16.00	7.40E+08		4.11E+07	3.57E+08
SE-75	121.11	16.70	5.93E-01	1.73E-01	-1.19E-01	2.89E-01
	136.00	59.20	1.73E-01		-7.12E-03	8.42E-02
	264.65	59.80	1.89E-01		1.40E-02	9.08E-02
	279.53	25.20	4.77E-01		4.92E-02	2.29E-01
	400.65	11.40	1.23E+00		-8.30E-02	5.85E-01
RB-82	776.52	13.00	1.26E+01	1.26E+01	-3.65E+00	5.89E+00
RB-83	520.41	46.00	4.16E-01	4.16E-01	1.21E-01	1.96E-01
	529.64	30.30	5.76E-01		-3.25E-01	2.70E-01
	552.65	16.40	1.09E+00		-3.78E-02	5.09E-01
KR-85	513.99	0.43	2.70E+01	2.70E+01	2.34E+01	1.29E+01
SR-85	513.99	99.27	3.35E-01	3.35E-01	2.91E-01	1.61E-01
Y-88	898.02	93.40	2.22E-01	2.12E-01	-2.18E-01	1.02E-01
	1836.01	99.38	2.12E-01		3.38E-02	9.08E-02
MO-93	263.06	56.72	1.14E-01	8.90E-02	9.23E-03	5.50E-02
	684.67	99.68	1.10E-01		-5.71E-02	5.18E-02
	1477.11	99.08	8.90E-02		2.17E-02	3.79E-02
NB-93M	16.57	9.43	7.96E+00	7.96E+00	1.55E+01	3.87E+00
NB-94	702.63	100.00	1.11E-01	1.10E-01	-1.01E-01	5.20E-02
	871.10	100.00	1.10E-01		-1.25E-02	5.07E-02
NB-95	765.79	99.81	8.57E-01	8.57E-01	1.43E-02	4.03E-01
NB-95M	235.69	25.00	8.39E+07	8.39E+07	1.58E+07	4.11E+07
ZR-95	724.18	43.70	9.13E-01	5.10E-01	5.61E-01	4.33E-01
	756.72	55.30	5.10E-01		-1.36E-01	2.36E-01
MO-99	181.06	6.20	7.42E+10	7.26E+10	-9.83E+09	3.60E+10
	739.58	12.80	7.26E+10		4.70E+10	3.43E+10
	778.00	4.50	1.86E+11		-8.32E+09	8.68E+10
RU-103	497.08	89.00	4.64E-01	4.64E-01	-5.50E-02	2.17E-01
RU-106	621.84	9.80	1.26E+00	1.26E+00	5.23E-01	5.93E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-108M	433.93	89.90	8.83E-02	8.83E-02	4.07E-02	4.19E-02
	614.37	90.40	9.88E-02		-1.77E-02	4.62E-02
	722.95	90.50	1.45E-01		3.60E-02	6.87E-02
CD-109	88.03	3.72	2.22E+00	2.22E+00	-1.70E+00	1.09E+00
AG-110M	657.75	93.14	1.50E-01	1.50E-01	-3.74E-02	7.07E-02
	677.61	10.53	1.34E+00		-1.33E-01	6.29E-01
	706.67	16.46	9.63E-01		1.53E-01	4.55E-01
	763.93	21.98	6.53E-01		2.09E-01	3.05E-01
	884.67	71.63	2.04E-01		2.13E-02	9.46E-02
	1384.27	23.94	4.50E-01		-4.40E-01	1.91E-01
CD-113M	263.70	0.02	2.79E+02	2.79E+02	1.98E+01	1.34E+02
SN-113	255.12	1.93	5.86E+00	2.24E-01	-1.58E+00	2.82E+00
	391.69	64.90	2.24E-01		-4.15E-03	1.07E-01
TE123M	159.00	84.10	1.27E-01	1.27E-01	1.70E-03	6.16E-02
SB-124	602.71	97.87	3.11E-01	3.11E-01	2.60E-02	1.46E-01
	645.85	7.26	3.94E+00		3.84E-01	1.84E+00
	722.78	11.10	3.70E+00		9.21E-01	1.75E+00
	1691.02	49.00	4.17E-01		-2.00E-01	1.61E-01
I-125	35.49	6.49	5.12E+00	5.12E+00	-2.68E+00	2.49E+00
SB-125	176.33	6.89	9.62E-01	2.85E-01	-3.84E-02	4.68E-01
	427.89	29.33	2.85E-01		-1.02E-01	1.35E-01
	463.38	10.35	9.34E-01		4.69E-01	4.44E-01
	600.56	17.80	5.88E-01		1.45E-01	2.77E-01
	635.90	11.32	9.29E-01		4.17E-01	4.36E-01
SB-126	414.70	83.30	2.58E+01	2.58E+01	8.76E+00	1.23E+01
	666.33	99.60	2.68E+01		-3.79E+00	1.26E+01
	695.00	99.60	3.13E+01		1.07E+01	1.48E+01
	720.50	53.80	5.73E+01		-2.83E+01	2.70E+01
SN-126	87.57	37.00	1.92E-01	1.92E-01	-1.47E-01	9.44E-02
SB-127	473.00	25.00	1.93E+07	1.77E+07	4.70E+06	9.14E+06
	685.20	35.70	1.77E+07		-9.19E+06	8.33E+06
	783.80	14.70	4.83E+07		2.22E+07	2.27E+07
I-129	29.78	57.00	2.67E-01	2.67E-01	9.05E-02	1.30E-01
	33.60	13.20	8.82E-01		-3.44E-01	4.29E-01
	39.58	7.52	1.23E+00		3.33E-01	5.99E-01
I-131	284.30	6.05	5.44E+03	4.91E+02	4.15E+02	2.60E+03
	364.48	81.20	4.91E+02		1.41E+02	2.34E+02
	636.97	7.26	6.85E+03		6.13E+02	3.21E+03
	722.89	1.80	3.81E+04		9.49E+03	1.81E+04
TE-132	49.72	13.10	8.72E+08	1.20E+08	-1.01E+08	4.26E+08
	228.16	88.00	1.20E+08		2.92E+07	5.81E+07
BA-133	81.00	33.00	2.30E-01	1.60E-01	3.15E-02	1.13E-01
	302.84	17.80	4.34E-01		-1.66E-01	2.09E-01
	356.01	60.00	1.60E-01		3.27E-03	7.73E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	9.92E+04	9.92E+04	1.36E+04	4.87E+04
CS-134	563.23	8.38	1.16E+00	1.16E-01	1.73E-01	5.45E-01
	569.32	15.43	5.99E-01		-2.28E-01	2.81E-01
	604.70	97.60	1.16E-01		-7.15E-03	5.49E-02
	795.84	85.40	1.45E-01		-7.07E-03	6.79E-02
	801.93	8.73	1.52E+00		4.16E-01	7.11E-01
CS-135	268.24	16.00	4.38E-01	4.38E-01	-5.81E-03	2.11E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ I-135	1260.41	28.60	1.00E+26	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	1.56E+02	2.20E+01	4.84E+01	7.59E+01
	163.89	4.61	2.40E+02		7.07E+01	1.17E+02
	176.55	13.56	8.64E+01		3.14E+01	4.20E+01
	273.65	12.66	1.04E+02		-5.65E+01	4.99E+01
	340.57	48.50	3.58E+01		2.28E-01	1.73E+01
	818.50	99.70	2.20E+01		7.56E+00	1.03E+01
	1048.07	79.60	3.01E+01		-1.54E+01	1.39E+01
	1235.34	19.70	1.76E+02		1.34E+02	8.26E+01
CS-137	661.65	85.12	1.32E-01	1.32E-01	4.72E-02	6.21E-02
LA-138	788.74	34.00	3.28E-01	1.50E-01	-1.07E-01	1.53E-01
	1435.80	66.00	1.50E-01		-7.03E-02	6.57E-02
CE-139	165.85	80.35	1.19E-01	1.19E-01	-4.58E-02	5.78E-02
BA-140	162.64	6.70	1.93E+02	7.04E+01	9.08E+01	9.40E+01
	304.84	4.50	3.46E+02		-6.09E+01	1.66E+02
	423.70	3.20	5.59E+02		1.26E+02	2.66E+02
	437.55	2.00	8.07E+02		2.19E+02	3.81E+02
	537.32	25.00	7.04E+01		-1.11E+00	3.30E+01
LA-140	328.77	20.50	8.51E+01	2.81E+01	2.24E+01	4.09E+01
	487.03	45.50	3.63E+01		2.13E+00	1.70E+01
	815.85	23.50	1.02E+02		-7.99E+01	4.75E+01
	1596.49	95.49	2.81E+01		-1.74E+00	1.25E+01
CE-141	145.44	48.40	1.02E+00	1.02E+00	-1.19E-02	4.96E-01
@ 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	6.71E-01	6.71E-01	-2.94E-01	3.27E-01
PM-144	476.78	42.00	2.47E-01	1.10E-01	7.17E-02	1.17E-01
	618.01	98.60	1.10E-01		-2.35E-02	5.14E-02
	696.49	99.49	1.46E-01		6.90E-02	6.91E-02
PM-145	36.85	21.70	4.67E-01	2.50E-01	-1.28E-01	2.28E-01
	37.36	39.70	2.50E-01		-6.85E-02	1.22E-01
	42.30	15.10	5.85E-01		6.17E-02	2.85E-01
	72.40	2.31	3.66E+00		-4.20E+00	1.80E+00
PM-146	453.90	39.94	2.14E-01	2.14E-01	-1.22E-01	1.02E-01
	735.90	14.01	9.10E-01		3.44E-01	4.29E-01
	747.13	13.10	8.99E-01		1.38E-01	4.22E-01
ND-147	91.11	28.90	1.38E+02	1.38E+02	2.90E+02	6.78E+01
	531.02	13.10	3.20E+02		-1.72E+02	1.50E+02
PM-149	285.90	3.10	6.69E+13	6.69E+13	-6.16E+13	3.20E+13
EU-152	121.78	20.50	2.77E-01	2.77E-01	-7.41E-02	1.35E-01
	244.69	5.40	1.49E+00		1.09E-01	7.26E-01
	344.27	19.13	4.11E-01		3.18E-02	1.97E-01
	778.89	9.20	1.26E+00		1.92E-01	5.92E-01
	964.01	10.40	1.37E+00		4.53E-02	6.40E-01
	1085.78	7.22	1.66E+00		-8.54E-01	7.62E-01
	1112.02	9.60	1.42E+00		-6.25E-01	6.59E-01
	1407.95	14.94	8.07E-01		1.28E-01	3.61E-01
GD-153	97.43	31.30	2.51E-01	2.51E-01	-4.22E-01	1.23E-01
	103.18	22.20	3.30E-01		5.72E-02	1.61E-01
EU-154	123.07	40.50	1.43E-01	1.43E-01	-4.11E-02	6.96E-02
	723.30	19.70	7.05E-01		4.33E-01	3.35E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-154	873.19		11.50	1.02E+00	1.43E-01	1.36E-01	4.72E-01
		996.32		10.30	1.30E+00		1.03E-01	6.03E-01
		1004.76		17.90	6.97E-01		4.07E-02	3.22E-01
		1274.45		35.50	4.81E-01		2.65E-01	2.24E-01
	EU-155	86.50		30.90	2.38E-01	2.38E-01	5.07E-02	1.17E-01
		105.30		20.70	2.69E-01		-1.84E-01	1.31E-01
	EU-156	811.77		10.40	1.00E+02	1.00E+02	-1.63E+01	4.68E+01
		1153.47		7.20	1.83E+02		-1.49E+01	8.48E+01
		1230.71		8.90	1.75E+02		-2.49E+01	8.15E+01
	HO-166M	184.41		72.60	9.85E-02	9.85E-02	1.08E-01	4.80E-02
		280.45		29.60	2.26E-01		4.33E-02	1.09E-01
		410.94		11.10	7.25E-01		4.29E-02	3.45E-01
		711.69		54.10	2.23E-01		4.20E-02	1.05E-01
	TM-171	66.72		0.14	5.74E+01	5.74E+01	-4.49E+01	2.82E+01
	HF-172	67.35		5.31	1.51E+00	5.74E-01	-1.18E+00	7.41E-01
		125.81		11.30	5.74E-01		2.34E-01	2.80E-01
	LU-172	181.53		20.60	8.98E+03	6.50E+03	2.69E+02	4.37E+03
		900.72		29.81	1.14E+04		4.96E+03	5.29E+03
		1093.66		62.50	6.50E+03		3.12E+03	3.02E+03
	LU-173	100.72		5.24	1.22E+00	3.83E-01	3.79E-01	5.96E-01
		272.11		21.20	3.83E-01		6.27E-02	1.85E-01
	HF-175	343.40		84.00	2.46E-01	2.46E-01	1.90E-02	1.18E-01
	LU-176	88.34		13.30	5.35E-01	7.17E-02	-4.09E-01	2.63E-01
		201.83		86.00	7.81E-02		2.90E-02	3.79E-02
		306.78		94.00	7.17E-02		-1.55E-02	3.43E-02
	HF-181	133.02		41.70	6.99E-01	4.49E-01	-2.53E-01	3.41E-01
		345.85		17.20	2.33E+00		5.79E-01	1.12E+00
		482.03		82.80	4.49E-01		-2.45E-01	2.10E-01
	TA-182	67.75		41.20	3.17E-01	3.17E-01	-4.73E-01	1.56E-01
		1121.30		34.90	8.98E-01		6.89E-01	4.23E-01
		1189.05		16.23	1.82E+00		-4.15E-02	8.51E-01
		1221.41		26.98	1.14E+00		7.28E-02	5.32E-01
		1231.02		11.44	2.59E+00		-2.17E+00	1.21E+00
	IR-192	308.46		29.68	5.62E-01	4.20E-01	-1.39E-01	2.69E-01
		468.07		48.10	4.20E-01		-3.53E-01	1.98E-01
	HG-203	279.19		77.30	3.99E-01	3.99E-01	4.07E-01	1.92E-01
	TL-204	374.74		94.11	8.85E-02	8.85E-02	2.75E-02	4.23E-02
		899.15		99.16	1.22E-01		1.10E-02	5.63E-02
		911.74		91.10	2.04E-01		3.30E-01	9.73E-02
	BI-207	569.67		97.72	8.69E-02	8.69E-02	-3.31E-02	4.07E-02
		1063.62		74.90	1.69E-01		-1.18E-02	7.82E-02
+	TL-208	583.14	*	30.22	4.83E-01	6.65E-02	1.19E+00	2.32E-01
		860.37		4.48	3.24E+00		3.32E+00	1.53E+00
		2614.66	*	35.85	6.65E-02		1.40E+00	0.00E+00
	BI-210M	262.00		45.00	1.41E-01	1.41E-01	2.80E-02	6.79E-02
		300.00		23.00	3.47E-01		1.93E-02	1.68E-01
+	PB-210	46.50	*	4.25	2.58E+00	2.58E+00	1.66E+00	1.27E+00
	PB-211	404.84		2.90	2.74E+00	2.74E+00	-4.88E-02	1.30E+00
		831.96		2.90	4.39E+00		1.57E+00	2.06E+00
	BI-212	727.17		11.80	1.14E+00	1.14E+00	2.25E-01	5.41E-01
		1620.62		2.75	3.92E+00		1.41E+00	1.71E+00
+	PB-212	238.63	*	44.60	2.53E-01	2.53E-01	1.27E+00	1.24E-01
		300.09		3.41	2.34E+00		1.30E-01	1.13E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	BI-214	609.31	*	46.30	3.01E-01	3.01E-01	1.19E+00	1.44E-01
		1120.29		15.10	1.15E+00		9.52E-01	5.41E-01
		1764.49	*	15.80	1.01E+00		9.94E-01	4.56E-01
		2204.22	*	4.98	2.36E+00		2.29E+00	9.86E-01
+	PB-214	295.21	*	19.19	6.29E-01	2.68E-01	7.74E-01	3.08E-01
		351.92	*	37.19	2.68E-01		1.12E+00	1.30E-01
	RN-219	401.80		6.50	1.22E+00	1.22E+00	3.79E-02	5.82E-01
	RA-223	323.87		3.88	1.86E+00	1.86E+00	-6.12E-01	8.91E-01
	RA-224	240.98		3.95	3.26E+00	3.26E+00	1.57E+01	1.60E+00
	RA-225	40.00		31.00	3.08E+01	3.08E+01	8.32E+00	1.50E+01
+	RA-226	186.21	*	3.28	2.70E+00	2.70E+00	2.64E+00	1.32E+00
	TH-227	50.10		8.40	8.96E-01	8.96E-01	-1.04E-01	4.38E-01
		236.00		11.50	9.49E-01		1.79E-01	4.65E-01
		256.20		6.30	1.00E+00		-1.27E-02	4.81E-01
+	AC-228	338.32	*	11.40	8.85E-01	3.57E-01	9.56E-01	4.29E-01
		911.07	*	27.70	3.57E-01		1.17E+00	1.63E-01
		969.11	*	16.60	1.05E+00		1.63E+00	4.99E-01
	TH-230	48.44		16.90	4.70E-01	4.70E-01	1.62E-01	2.30E-01
		62.85		4.60	1.66E+00		2.13E+00	8.14E-01
		67.67		0.37	1.94E+01		-2.89E+01	9.49E+00
	PA-231	283.67		1.60	3.91E+00	3.30E+00	2.99E-01	1.87E+00
		302.67		2.30	3.30E+00		-1.26E+00	1.59E+00
	TH-231	25.64		14.70	1.50E+00	1.04E+00	-1.88E-01	7.29E-01
		84.21		6.40	1.04E+00		-3.63E-02	5.09E-01
	PA-233	311.98		38.60	2.23E+00	2.23E+00	-5.77E-01	1.07E+00
	PA-234	131.20		20.40	2.86E-01	2.86E-01	-1.84E-02	1.39E-01
		733.99		8.80	1.34E+00		-1.04E+00	6.31E-01
		946.00		12.00	1.01E+00		3.51E-01	4.68E-01
	PA-234M	1001.03		0.92	1.37E+01	1.37E+01	6.61E+00	6.36E+00
	TH-234	63.29		3.80	2.00E+00	2.00E+00	2.57E+00	9.82E-01
	U-235	143.76		10.50	5.64E-01	5.64E-01	1.10E-01	2.75E-01
		163.35		4.70	1.27E+00		5.96E-01	6.17E-01
		205.31		4.70	1.44E+00		3.61E-01	6.99E-01
	NP-237	86.50		12.60	5.62E-01	5.62E-01	1.20E-01	2.76E-01
	NP-239	106.10		22.70	1.18E+12	1.18E+12	-4.67E+11	5.76E+11
		228.18		10.70	3.27E+12		7.95E+11	1.59E+12
		277.60		14.10	2.40E+12		8.50E+11	1.15E+12
	AM-241	59.54		35.90	2.06E-01	2.06E-01	-7.73E-02	1.01E-01
+	AM-243	74.67	*	66.00	3.35E-01	3.35E-01	6.54E-01	1.67E-01
+	CM-243	209.75	*	3.29	2.60E+00	5.04E-01	1.65E+00	1.27E+00
		228.14		10.60	6.65E-01		1.62E-01	3.22E-01
		277.60	*	14.00	5.04E-01		2.94E-01	2.43E-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 1707090-18

HTC-A07-S001-4248-01

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: HTC-A07-S001-4248-01

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	20	128
17:	98	95	79	80	84	81	80	72
25:	68	67	66	73	77	61	75	69
33:	56	65	66	73	73	67	81	79
41:	68	74	98	92	107	103	101	95
49:	66	86	78	97	101	94	98	97
57:	102	98	111	113	130	169	158	143
65:	113	118	108	143	127	138	149	156
73:	237	342	301	340	315	158	142	116
81:	98	122	126	123	108	168	152	143
89:	164	136	180	192	150	100	83	80
97:	89	85	87	95	82	78	74	77
105:	78	72	74	81	88	68	92	96
113:	67	82	69	73	84	74	79	68
121:	78	72	71	88	79	83	82	90
129:	82	68	73	65	75	65	85	69
137:	78	66	78	70	68	72	74	77
145:	62	76	75	56	72	71	72	71
153:	85	74	61	75	63	53	66	71
161:	58	53	51	58	69	57	46	59
169:	57	61	64	51	54	69	58	65
177:	49	64	59	54	51	66	49	71
185:	110	102	63	62	50	54	61	57
193:	43	52	55	55	43	60	49	51
201:	62	54	59	51	43	59	52	80
209:	63	56	70	53	45	47	46	55
217:	47	37	50	52	47	44	37	36
225:	47	44	64	44	64	37	39	58
233:	43	30	46	66	211	329	196	90
241:	99	85	42	37	43	34	42	30
249:	35	37	27	26	36	38	30	24
257:	30	31	30	30	38	21	35	24
265:	31	26	30	32	47	54	41	28
273:	24	16	41	30	43	35	24	22
281:	32	22	24	23	19	30	26	24
289:	32	41	29	24	43	105	106	30
297:	41	32	45	40	30	36	19	34
305:	20	30	26	23	18	19	24	26
313:	22	31	15	32	23	13	24	31
321:	21	22	19	24	27	31	38	33
329:	27	30	24	29	34	20	24	41
337:	61	71	32	21	23	25	32	29
345:	24	24	26	23	28	83	156	124
353:	39	22	13	16	23	13	21	12
361:	23	23	17	23	27	19	19	23

369:	19	17	17	29	19	26	22	28

Sample Title: HTC-A07-S001-4248-01

Channel								
377:	14	25	16	23	14	14	26	16
385:	27	37	19	18	17	22	29	18
393:	16	24	10	20	24	22	19	15
401:	19	18	16	25	20	13	21	17
409:	24	11	22	17	19	18	21	23
417:	18	16	17	13	20	15	25	12
425:	26	17	16	17	9	16	20	16
433:	12	11	24	14	13	12	14	8
441:	8	13	12	14	9	16	13	20
449:	17	15	15	22	12	15	16	17
457:	24	19	16	21	18	21	22	20
465:	17	10	15	10	6	19	21	16
473:	14	8	18	12	24	17	16	10
481:	8	10	9	6	23	15	8	12
489:	7	14	11	8	13	9	11	9
497:	9	9	8	11	11	18	9	18
505:	7	14	15	26	40	52	38	33
513:	18	13	8	10	11	11	16	18
521:	15	11	9	13	12	12	9	13
529:	8	10	13	7	13	16	14	12
537:	12	7	8	5	7	15	9	14
545:	13	11	13	13	8	11	8	8
553:	9	12	13	6	9	7	10	11
561:	10	14	13	12	12	12	14	6
569:	7	12	10	11	12	14	10	8
577:	7	10	13	17	37	70	62	31
585:	11	10	6	12	9	12	9	9
593:	9	8	9	17	18	11	13	18
601:	12	8	8	13	14	16	27	91
609:	90	47	11	12	13	5	9	13
617:	6	14	12	10	19	10	11	14
625:	9	12	7	12	15	9	11	12
633:	16	11	12	10	10	8	6	9
641:	9	10	8	4	11	13	10	9
649:	6	11	10	14	7	7	10	9
657:	14	10	12	7	11	9	11	12
665:	9	9	7	5	9	9	10	10
673:	9	9	10	10	7	12	10	7
681:	9	8	11	8	13	12	8	7
689:	13	12	7	16	8	13	12	8
697:	16	10	4	14	10	6	7	2
705:	12	18	19	12	15	7	7	9
713:	8	9	11	5	8	12	4	14
721:	12	11	16	11	11	21	21	10
729:	9	7	12	10	8	6	14	10
737:	11	12	12	8	10	11	9	5
745:	10	5	7	8	13	10	7	7
753:	6	10	10	3	2	1	10	4
761:	3	9	8	6	6	10	12	14
769:	15	7	8	10	8	11	3	6
777:	6	8	9	7	12	11	8	8
785:	9	8	9	5	8	7	6	7
793:	6	11	9	6	11	8	4	9

801:	7	8	14	5	11	8	6	3

Sample Title: HTC-A07-S001-4248-01

Channel								
809:	7	15	8	7	3	11	4	4
817:	9	10	5	9	10	7	4	10
825:	5	7	5	9	12	12	11	9
833:	7	7	8	10	6	5	10	11
841:	9	9	8	6	8	6	6	6
849:	6	4	3	7	6	4	8	7
857:	12	11	16	11	17	12	8	5
865:	5	5	4	5	6	11	7	5
873:	2	8	5	10	4	8	5	5
881:	7	1	9	3	6	8	8	6
889:	4	5	10	8	7	6	3	7
897:	10	4	4	2	6	10	9	5
905:	5	4	3	4	15	42	42	20
913:	3	1	5	4	6	6	3	6
921:	2	3	6	10	4	4	3	5
929:	8	6	6	6	11	7	5	7
937:	4	6	6	3	7	7	3	4
945:	7	8	5	11	4	2	8	7
953:	8	5	6	3	6	7	5	7
961:	6	3	7	13	11	9	13	25
969:	22	14	5	4	6	5	3	8
977:	5	3	4	5	9	11	7	4
985:	3	6	8	9	11	5	3	10
993:	8	8	5	3	4	6	9	7
1001:	7	9	7	3	1	3	5	9
1009:	5	3	7	9	8	6	11	9
1017:	4	3	4	4	3	4	5	5
1025:	8	4	7	6	7	5	12	5
1033:	7	4	6	7	11	7	7	6
1041:	7	7	7	7	4	1	9	6
1049:	8	5	5	13	4	7	12	2
1057:	1	11	6	4	5	5	12	4
1065:	1	7	5	7	4	4	11	4
1073:	5	6	9	11	6	4	4	7
1081:	6	5	6	3	5	6	5	1
1089:	4	5	9	12	4	9	2	9
1097:	4	4	7	6	10	8	7	7
1105:	2	12	7	7	6	6	4	2
1113:	4	2	14	6	9	9	12	24
1121:	9	8	6	5	4	4	6	4
1129:	7	6	5	13	2	6	3	5
1137:	6	4	5	2	9	6	9	3
1145:	5	5	9	5	7	3	5	6
1153:	7	7	8	5	6	10	4	5
1161:	5	9	7	4	7	5	12	9
1169:	6	11	9	6	5	5	10	8
1177:	15	7	7	5	9	9	12	8
1185:	9	11	8	3	4	6	4	13
1193:	10	9	3	6	11	3	9	6
1201:	7	8	7	4	9	8	6	13
1209:	6	8	7	10	11	9	8	6
1217:	10	6	7	10	4	10	3	14
1225:	6	8	8	6	7	6	8	7

1233:	9	9	4	14	8	14	11	4

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Channel								
1241:	6	4	7	6	5	5	8	6
1249:	3	2	2	3	5	2	4	3
1257:	6	8	5	5	2	5	7	5
1265:	5	6	3	7	4	6	9	1
1273:	10	12	3	6	10	7	3	6
1281:	5	4	8	6	4	8	0	3
1289:	5	9	6	7	3	1	2	5
1297:	5	6	4	2	6	8	3	4
1305:	5	2	5	3	3	9	3	6
1313:	4	3	3	5	5	5	5	9
1321:	2	5	5	2	1	4	3	1
1329:	3	2	2	7	3	3	3	4
1337:	3	3	3	6	4	3	1	5
1345:	2	4	2	4	3	3	2	3
1353:	2	3	3	2	2	3	2	3
1361:	3	8	3	3	1	1	2	0
1369:	2	2	3	1	0	3	3	2
1377:	6	3	2	1	1	0	1	2
1385:	1	2	1	2	5	3	0	2
1393:	2	4	1	3	0	2	2	3
1401:	5	2	3	5	0	4	3	4
1409:	3	3	2	1	0	3	2	1
1417:	3	1	0	1	3	4	2	0
1425:	2	1	1	1	5	2	2	4
1433:	2	1	2	2	1	1	1	4
1441:	2	3	3	1	2	0	1	1
1449:	4	4	1	3	2	1	2	3
1457:	3	20	88	142	140	66	12	2
1465:	2	2	0	2	0	1	0	0
1473:	3	1	0	1	0	3	1	1
1481:	1	0	2	1	3	3	3	3
1489:	2	0	1	3	1	0	2	2
1497:	0	2	2	2	4	3	2	1
1505:	2	0	2	4	2	2	2	1
1513:	0	1	0	4	7	3	0	3
1521:	2	2	0	2	0	3	1	3
1529:	0	2	1	4	2	1	0	0
1537:	4	1	2	0	2	2	1	3
1545:	2	1	3	1	2	1	0	0
1553:	2	2	0	2	2	2	1	1
1561:	0	0	1	2	2	1	2	0
1569:	0	1	1	0	1	1	0	4
1577:	2	1	2	2	2	1	2	2
1585:	2	3	2	6	6	1	5	7
1593:	3	0	2	0	1	2	3	3
1601:	0	2	0	2	0	1	2	1
1609:	1	3	0	1	3	0	0	1
1617:	1	0	3	1	3	2	3	1
1625:	1	0	1	3	1	3	1	1
1633:	2	1	1	2	1	1	1	2
1641:	2	2	1	0	0	1	0	1
1649:	0	1	2	1	0	2	0	1
1657:	0	3	1	1	3	1	1	1

1665:	2	1	2	1	1	1	0	0

Sample Title: HTC-A07-S001-4248-01

Channel								
1673:	0	0	1	2	0	0	2	0
1681:	0	0	0	2	0	3	1	1
1689:	0	0	0	0	0	2	0	1
1697:	1	0	1	1	0	2	2	1
1705:	1	1	0	1	1	1	2	1
1713:	2	1	0	2	0	1	0	1
1721:	1	1	0	2	0	1	1	3
1729:	4	1	2	1	1	0	0	0
1737:	1	1	0	2	2	0	1	1
1745:	1	1	0	3	1	1	1	0
1753:	1	1	2	1	1	1	1	0
1761:	1	1	6	11	13	6	1	1
1769:	2	0	3	2	0	2	0	0
1777:	1	0	0	2	1	0	0	0
1785:	0	0	0	0	1	2	1	1
1793:	1	0	3	2	1	1	1	0
1801:	0	0	0	0	1	1	3	0
1809:	0	0	1	1	2	2	0	3
1817:	1	0	0	0	3	1	1	0
1825:	1	1	0	0	1	1	1	0
1833:	3	0	1	2	1	4	1	0
1841:	1	1	1	0	1	3	1	3
1849:	0	1	0	2	0	1	1	1
1857:	0	0	1	2	0	0	1	3
1865:	0	0	2	1	1	1	1	1
1873:	1	1	2	0	1	0	1	1
1881:	2	0	0	0	1	2	1	3
1889:	2	0	0	1	0	0	1	1
1897:	0	1	2	1	2	0	0	1
1905:	1	0	1	0	3	0	0	1
1913:	2	1	1	1	0	0	1	0
1921:	1	0	1	1	0	0	1	0
1929:	1	0	1	1	1	0	2	2
1937:	0	0	1	1	1	0	1	1
1945:	0	2	1	4	1	3	3	2
1953:	0	1	1	2	0	2	1	1
1961:	0	2	0	1	1	0	0	1
1969:	0	0	0	0	1	3	1	2
1977:	0	1	2	0	1	2	0	0
1985:	0	2	0	0	1	0	0	0
1993:	1	2	0	1	0	1	2	0
2001:	0	1	0	0	1	1	1	0
2009:	3	0	0	1	1	0	0	1
2017:	0	1	1	4	0	0	1	0
2025:	0	0	0	0	0	0	0	2
2033:	2	1	0	1	2	0	0	0
2041:	0	1	0	0	0	1	3	1
2049:	0	0	0	0	1	0	0	0
2057:	0	0	1	0	2	0	1	0
2065:	0	1	0	0	1	2	0	1
2073:	0	0	2	0	0	0	1	0
2081:	3	0	2	1	1	1	0	1
2089:	0	2	1	0	0	0	0	0

2097:	2	1	2	0	3	4	4	3

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

2529:	0	1	0	1	1	0	0	0

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

2961:	0	0	0	0	0	0	0	0

Sample Title: HTC-A07-S001-4248-01

Channel								
2969:	0	1	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	1	0	0	1	0	0	0	0
3009:	0	1	0	0	1	0	0	0
3017:	0	0	0	1	0	0	0	1
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	1	0	1	0	0
3041:	1	0	0	0	0	0	0	0
3049:	1	0	0	1	0	1	0	0
3057:	0	0	0	0	0	0	1	0
3065:	0	1	1	0	1	1	0	1
3073:	0	0	0	1	0	0	0	0
3081:	0	0	0	0	0	2	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	0	0
3113:	0	0	0	0	0	1	0	0
3121:	0	0	3	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	1	0	1
3145:	0	1	0	0	0	0	1	0
3153:	2	1	0	0	0	0	0	1
3161:	1	0	0	1	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	1
3185:	0	0	0	1	0	0	0	0
3193:	0	0	0	0	0	0	0	1
3201:	0	1	0	0	0	0	1	0
3209:	0	0	0	0	0	0	0	0
3217:	0	1	0	0	1	0	1	0
3225:	1	0	0	0	0	1	0	0
3233:	2	0	0	0	0	0	0	0
3241:	0	0	0	0	0	1	0	0
3249:	1	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	1
3273:	0	0	0	0	1	0	0	0
3281:	0	0	1	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	1	0	0	0	0	0
3305:	0	0	0	1	0	0	0	1
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	1	1	0
3329:	0	0	0	0	0	0	1	1
3337:	0	0	1	0	0	0	0	1
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	1	0	0	0	0
3369:	0	0	0	0	0	0	0	1
3377:	0	0	1	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: HTC-A07-S001-4248-01

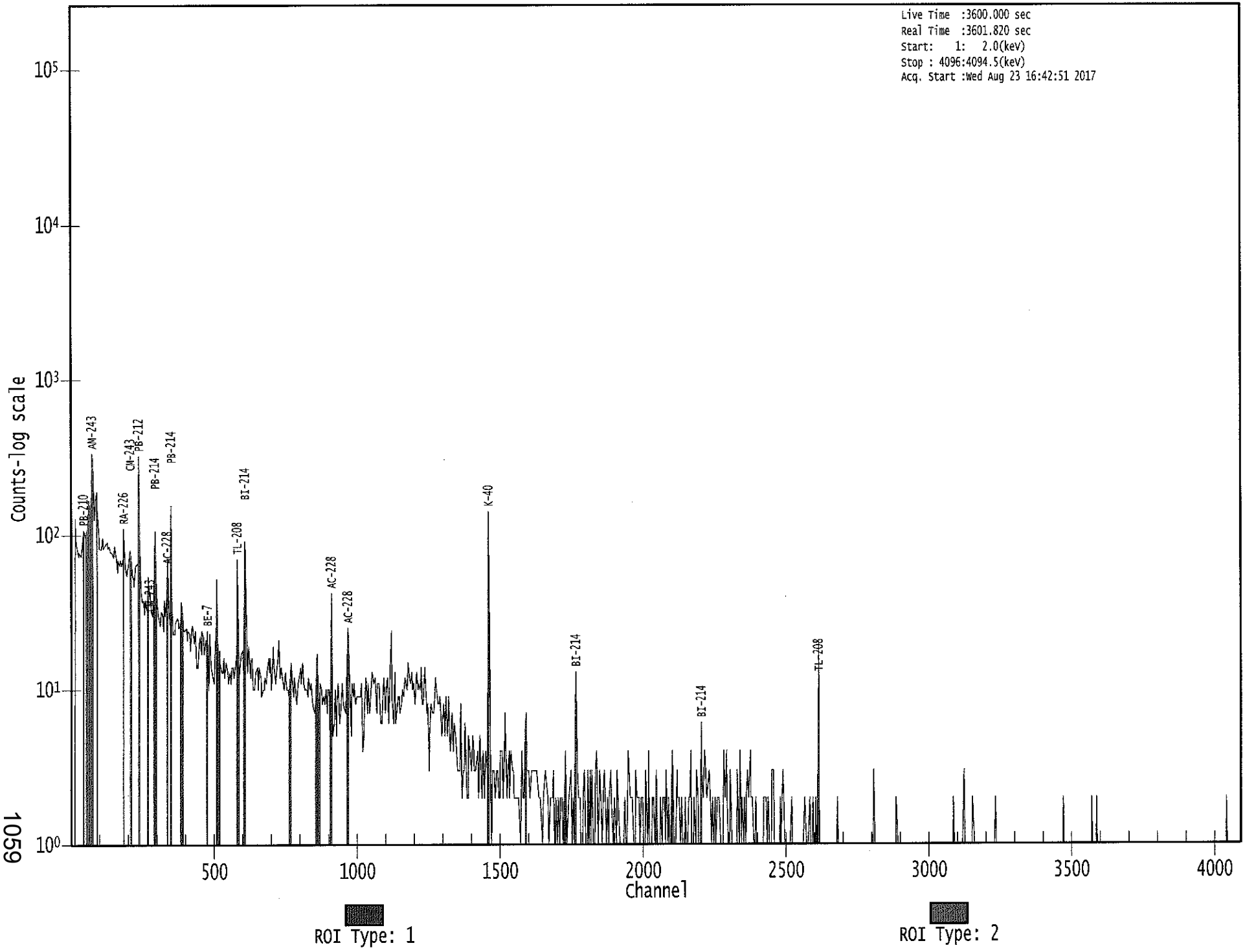
Channel								
3401:	0	0	1	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	0	1	1	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	1	1	0	0
3441:	0	1	0	0	0	0	0	0
3449:	0	0	0	0	0	0	1	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	2	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	1	0	1
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	1	0	0
3513:	1	0	0	0	0	0	0	0
3521:	1	0	0	0	1	1	0	0
3529:	0	0	1	0	1	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	1	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	2	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	1	2	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	1	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	1	0	0	0	0	0
3641:	1	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	1	0	0	0	0	0	0
3665:	1	0	0	0	0	0	0	0
3673:	0	0	0	1	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	1	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	1	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	1	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	1
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	1	0	0	0
3769:	0	0	1	0	0	1	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	1	0	0	1
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	1
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	1	0

Sample Title: HTC-A07-S001-4248-01

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

0000055845.CNF



Apex-Gamma

8/24

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-19
Sample Description	: HTC-A08-BKGD01-0006-02
Sample Type	: SOIL
Sample Size	: 5.937E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 8:58:23AM
Acquisition Started	: 8/24/2017 5:59:18AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.2 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 19 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55863

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 6:59:22AM
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	46.00	46.62	0.0000	0.00
2	76.05	76.65	0.0000	0.00
3	92.52	93.10	0.0000	0.00
4	128.91	129.45	0.0000	0.00
5	144.86	145.38	0.0000	0.00
6	181.85	182.34	0.0000	0.00
7	185.86	186.34	0.0000	0.00
8	208.95	209.40	0.0000	0.00
9	238.57	239.00	0.0000	0.00
10	241.74	242.17	0.0000	0.00
11	247.53	247.94	0.0000	0.00
12	270.11	270.50	0.0000	0.00
13	276.81	277.19	0.0000	0.00
14	295.01	295.38	0.0000	0.00
15	300.25	300.61	0.0000	0.00
16	338.45	338.78	0.0000	0.00
17	351.86	352.17	0.0000	0.00
18	409.15	409.40	0.0000	0.00
19	462.80	463.00	0.0000	0.00
20	511.06	511.21	0.0000	0.00
21	580.16	580.24	0.0000	0.00
22	583.44	583.52	0.0000	0.00
23	609.51	609.56	0.0000	0.00
24	661.95	661.95	0.0000	0.00
25	727.39	727.32	0.0000	0.00
26	768.19	768.09	0.0000	0.00
27	796.03	795.89	0.0000	0.00
28	820.74	820.58	0.0000	0.00
29	911.88	911.62	0.0000	0.00
30	926.25	925.98	0.0000	0.00
31	965.29	964.99	0.0000	0.00
32	969.51	969.20	0.0000	0.00
33	1010.28	1009.93	0.0000	0.00
34	1120.81	1120.35	0.0000	0.00
35	1156.70	1156.20	0.0000	0.00
36	1182.54	1182.02	0.0000	0.00
37	1377.38	1376.66	0.0000	0.00
38	1386.44	1385.71	0.0000	0.00
39	1461.66	1460.87	0.0000	0.00
40	1637.46	1636.49	0.0000	0.00
41	1645.34	1644.37	0.0000	0.00
42	1730.25	1729.19	0.0000	0.00

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1765.42	1764.32	0.0000	0.00
44	1802.90	1801.77	0.0000	0.00
45	1814.25	1813.11	0.0000	0.00
46	1847.96	1846.79	0.0000	0.00
47	1874.90	1873.70	0.0000	0.00
48	1932.50	1931.25	0.0000	0.00
49	1977.21	1975.91	0.0000	0.00
50	2044.06	2042.70	0.0000	0.00
51	2051.37	2050.00	0.0000	0.00
52	2105.03	2103.61	0.0000	0.00
53	2182.78	2181.29	0.0000	0.00
54	2188.23	2186.73	0.0000	0.00
55	2203.92	2202.41	0.0000	0.00
56	2226.81	2225.27	0.0000	0.00
57	2263.62	2262.04	0.0000	0.00
58	2273.88	2272.30	0.0000	0.00
59	2374.21	2372.53	0.0000	0.00
60	2615.61	2613.70	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 6:59:22AM

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	46.00	43 -	50	46.62	1.61E+02	82.61	1.03E+03	1.32
	2	76.05	72 -	81	76.65	8.77E+02	145.06	2.49E+03	3.83
	3	92.52	90 -	97	93.10	3.63E+02	105.81	1.55E+03	1.55
	4	128.91	126 -	133	129.45	1.02E+02	82.51	1.07E+03	4.31
	5	144.86	141 -	150	145.38	1.13E+02	94.48	1.20E+03	1.82
M	6	181.85	181 -	190	182.34	3.20E+01	25.59	1.98E+02	1.95
m	7	185.86	181 -	190	186.34	1.84E+02	62.15	6.22E+02	1.95
	8	208.95	206 -	213	209.40	6.12E+01	71.22	7.98E+02	1.83
M	9	238.57	235 -	246	239.00	7.94E+02	71.68	4.79E+02	1.72
m	10	241.74	235 -	246	242.17	1.72E+02	72.68	4.44E+02	1.82
	11	247.53	246 -	251	247.94	4.24E+01	45.83	3.71E+02	1.56
	12	270.11	268 -	274	270.50	4.44E+01	49.33	4.11E+02	1.37
	13	276.81	274 -	280	277.19	4.90E+01	46.05	3.50E+02	1.40
	14	295.01	292 -	298	295.38	2.98E+02	57.05	3.76E+02	2.03
	15	300.25	299 -	304	300.61	5.02E+01	44.67	3.62E+02	1.68
	16	338.45	335 -	341	338.78	1.42E+02	49.11	3.34E+02	1.74
	17	351.86	347 -	356	352.17	4.28E+02	69.73	4.50E+02	1.73
	18	409.15	406 -	413	409.40	4.71E+01	40.10	2.38E+02	2.22
	19	462.80	459 -	466	463.00	4.23E+01	40.15	2.41E+02	1.23
	20	511.06	506 -	516	511.21	1.59E+02	56.19	3.37E+02	1.81
M	21	580.16	579 -	588	580.24	1.42E+01	12.00	3.50E+01	2.56
m	22	583.44	579 -	588	583.52	2.97E+02	44.81	1.69E+02	2.34
	23	609.51	605 -	615	609.56	2.68E+02	59.91	3.36E+02	2.13
	24	661.95	657 -	667	661.95	1.17E+02	42.24	1.75E+02	2.19
	25	727.39	722 -	732	727.32	4.25E+01	43.18	2.27E+02	2.00
	26	768.19	764 -	771	768.09	4.32E+01	31.05	1.32E+02	2.21
	27	796.03	792 -	799	795.89	2.13E+01	27.06	1.07E+02	2.05
	28	820.74	817 -	824	820.58	2.03E+01	21.63	6.54E+01	4.68
	29	911.88	908 -	917	911.62	1.34E+02	37.97	1.28E+02	2.15
	30	926.25	924 -	929	925.98	1.69E+01	16.79	4.43E+01	1.68
M	31	965.29	958 -	977	964.99	3.76E+01	24.28	7.31E+01	2.22
m	32	969.51	958 -	977	969.20	1.33E+02	29.15	6.65E+01	1.99
	33	1010.28	1007 -	1013	1009.93	1.65E+01	17.53	4.10E+01	1.98
	34	1120.81	1114 -	1123	1120.35	7.43E+01	35.14	1.31E+02	2.08
	35	1156.70	1154 -	1158	1156.20	1.82E+01	17.00	4.56E+01	2.25
	36	1182.54	1180 -	1184	1182.02	1.68E+01	17.88	5.44E+01	2.73
	37	1377.38	1371 -	1382	1376.66	3.32E+01	21.63	4.15E+01	3.03
	38	1386.44	1383 -	1388	1385.71	7.69E+00	9.38	1.06E+01	1.67
	39	1461.66	1455 -	1467	1460.87	8.15E+02	62.26	7.53E+01	2.26
	40	1637.46	1635 -	1638	1636.49	8.13E+00	8.25	7.75E+00	1.80

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1645.34	1642 -	1646	1644.37	6.50E+00	8.31	9.00E+00	1.90
42	1730.25	1724 -	1733	1729.19	1.34E+01	13.86	1.92E+01	1.61
43	1765.42	1760 -	1768	1764.32	4.98E+01	16.02	8.37E+00	2.15
44	1802.90	1798 -	1804	1801.77	5.21E+00	6.34	3.57E+00	2.74
45	1814.25	1810 -	1816	1813.11	7.40E+00	8.03	5.20E+00	1.45
46	1847.96	1843 -	1850	1846.79	1.39E+01	14.83	2.61E+01	1.78
47	1874.90	1870 -	1877	1873.70	1.00E+01	6.32	0.00E+00	1.66
48	1932.50	1928 -	1933	1931.25	5.00E+00	7.07	6.00E+00	1.28
49	1977.21	1973 -	1978	1975.91	6.56E+00	6.40	2.88E+00	2.65
50	2044.06	2039 -	2045	2042.70	1.00E+01	6.32	0.00E+00	2.99
51	2051.37	2047 -	2052	2050.00	6.00E+00	4.90	0.00E+00	2.88
52	2105.03	2100 -	2108	2103.61	1.86E+01	12.84	1.48E+01	3.12
53	2182.78	2178 -	2183	2181.29	6.00E+00	7.35	6.00E+00	1.18
54	2188.23	2185 -	2189	2186.73	6.50E+00	6.67	3.00E+00	2.16
55	2203.92	2197 -	2206	2202.41	2.05E+01	10.82	5.09E+00	2.57
56	2226.81	2220 -	2230	2225.27	1.10E+01	6.63	0.00E+00	1.12
57	2263.62	2255 -	2266	2262.04	9.88E+00	11.66	1.23E+01	2.89
58	2273.88	2268 -	2276	2272.30	1.00E+01	6.32	0.00E+00	6.97
59	2374.21	2370 -	2377	2372.53	8.08E+00	9.17	9.85E+00	1.52
60	2615.61	2609 -	2618	2613.70	9.54E+01	23.60	2.53E+01	1.56

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 : 8/24/2017 6:59:22AM

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	46.00	43 -	50	1.61E+02	82.61	1.03E+03	6.46E+01
	2	76.05	72 -	81	8.77E+02	145.06	2.49E+03	1.09E+02
	3	92.52	90 -	97	3.63E+02	105.81	1.55E+03	8.11E+01
	4	128.91	126 -	133	1.02E+02	82.51	1.07E+03	6.58E+01
	5	144.86	141 -	150	1.13E+02	94.48	1.20E+03	7.57E+01
M	6	181.85	181 -	190	3.20E+01	25.59	1.98E+02	2.32E+01
m	7	185.86	181 -	190	1.84E+02	62.15	6.22E+02	4.10E+01
	8	208.95	206 -	213	6.12E+01	71.22	7.98E+02	5.71E+01

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	9	238.57	235 -	246	7.94E+02	71.68	4.79E+02	3.60E+01
m	10	241.74	235 -	246	1.72E+02	72.68	4.44E+02	3.47E+01
	11	247.53	246 -	251	4.24E+01	45.83	3.71E+02	3.61E+01
	12	270.11	268 -	274	4.44E+01	49.33	4.11E+02	3.90E+01
	13	276.81	274 -	280	4.90E+01	46.05	3.50E+02	3.61E+01
	14	295.01	292 -	298	2.98E+02	57.05	3.76E+02	3.73E+01
	15	300.25	299 -	304	5.02E+01	44.67	3.62E+02	3.48E+01
	16	338.45	335 -	341	1.42E+02	49.11	3.34E+02	3.53E+01
	17	351.86	347 -	356	4.28E+02	69.73	4.50E+02	4.61E+01
	18	409.15	406 -	413	4.71E+01	40.10	2.38E+02	3.10E+01
	19	462.80	459 -	466	4.23E+01	40.15	2.41E+02	3.12E+01
	20	511.06	506 -	516	1.59E+02	56.19	3.37E+02	4.13E+01
M	21	580.16	579 -	588	1.42E+01	12.00	3.50E+01	9.73E+00
m	22	583.44	579 -	588	2.97E+02	44.81	1.69E+02	2.14E+01
	23	609.51	605 -	615	2.68E+02	59.91	3.36E+02	4.12E+01
	24	661.95	657 -	667	1.17E+02	42.24	1.75E+02	2.98E+01
	25	727.39	722 -	732	4.25E+01	43.18	2.27E+02	3.38E+01
	26	768.19	764 -	771	4.32E+01	31.05	1.32E+02	2.31E+01
	27	796.03	792 -	799	2.13E+01	27.06	1.07E+02	2.09E+01
	28	820.74	817 -	824	2.03E+01	21.63	6.54E+01	1.62E+01
	29	911.88	908 -	917	1.34E+02	37.97	1.28E+02	2.47E+01
	30	926.25	924 -	929	1.69E+01	16.79	4.43E+01	1.20E+01
M	31	965.29	958 -	977	3.76E+01	24.28	7.31E+01	1.41E+01
m	32	969.51	958 -	977	1.33E+02	29.15	6.65E+01	1.34E+01
	33	1010.28	1007 -	1013	1.65E+01	17.53	4.10E+01	1.28E+01
	34	1120.81	1114 -	1123	7.43E+01	35.14	1.31E+02	2.52E+01
	35	1156.70	1154 -	1158	1.82E+01	17.00	4.56E+01	1.21E+01
	36	1182.54	1180 -	1184	1.68E+01	17.88	5.44E+01	1.31E+01
	37	1377.38	1371 -	1382	3.32E+01	21.63	4.15E+01	1.50E+01
	38	1386.44	1383 -	1388	7.69E+00	9.38	1.06E+01	6.22E+00
	39	1461.66	1455 -	1467	8.15E+02	62.26	7.53E+01	2.04E+01
	40	1637.46	1635 -	1638	8.13E+00	8.25	7.75E+00	4.90E+00
	41	1645.34	1642 -	1646	6.50E+00	8.31	9.00E+00	5.39E+00
	42	1730.25	1724 -	1733	1.34E+01	13.86	1.92E+01	9.67E+00
	43	1765.42	1760 -	1768	4.98E+01	16.02	8.37E+00	6.22E+00
	44	1802.90	1798 -	1804	5.21E+00	6.34	3.57E+00	3.62E+00
	45	1814.25	1810 -	1816	7.40E+00	8.03	5.20E+00	4.86E+00
	46	1847.96	1843 -	1850	1.39E+01	14.83	2.61E+01	1.05E+01
	47	1874.90	1870 -	1877	1.00E+01	6.32	0.00E+00	0.00E+00
	48	1932.50	1928 -	1933	5.00E+00	7.07	6.00E+00	4.50E+00
	49	1977.21	1973 -	1978	6.56E+00	6.40	2.88E+00	3.16E+00
	50	2044.06	2039 -	2045	1.00E+01	6.32	0.00E+00	0.00E+00
	51	2051.37	2047 -	2052	6.00E+00	4.90	0.00E+00	0.00E+00
	52	2105.03	2100 -	2108	1.86E+01	12.84	1.48E+01	7.81E+00
	53	2182.78	2178 -	2183	6.00E+00	7.35	6.00E+00	4.50E+00
	54	2188.23	2185 -	2189	6.50E+00	6.67	3.00E+00	3.54E+00
	55	2203.92	2197 -	2206	2.05E+01	10.82	5.09E+00	4.88E+00
	56	2226.81	2220 -	2230	1.10E+01	6.63	0.00E+00	0.00E+00
	57	2263.62	2255 -	2266	9.88E+00	11.66	1.23E+01	8.07E+00
	58	2273.88	2268 -	2276	1.00E+01	6.32	0.00E+00	0.00E+00
	59	2374.21	2370 -	2377	8.08E+00	9.17	9.85E+00	5.91E+00

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
60	2615.61	2609 -	2618	9.54E+01	23.60	2.53E+01	1.09E+01

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 : 8/24/2017 6:59:22AM

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	46.00	43 -	50	46.62	1.61E+02	82.61	1.03E+03	PB-210
	2	76.05	72 -	81	76.65	8.77E+02	145.06	2.49E+03	.....
	3	92.52	90 -	97	93.10	3.63E+02	105.81	1.55E+03	GA-67
	4	128.91	126 -	133	129.45	1.02E+02	82.51	1.07E+03	.....
	5	144.86	141 -	150	145.38	1.13E+02	94.48	1.20E+03	CE-141
M	6	181.85	181 -	190	182.34	3.20E+01	25.59	1.98E+02	LU-172
									MO-99
m	7	185.86	181 -	190	186.34	1.84E+02	62.15	6.22E+02	RA-226
	8	208.95	206 -	213	209.40	6.12E+01	71.22	7.98E+02	GA-67
									CM-243
M	9	238.57	235 -	246	239.00	7.94E+02	71.68	4.79E+02	PB-212
m	10	241.74	235 -	246	242.17	1.72E+02	72.68	4.44E+02	RA-224
	11	247.53	246 -	251	247.94	4.24E+01	45.83	3.71E+02	.....
	12	270.11	268 -	274	270.50	4.44E+01	49.33	4.11E+02	.....
	13	276.81	274 -	280	277.19	4.90E+01	46.05	3.50E+02	CM-243
									NP-239
	14	295.01	292 -	298	295.38	2.98E+02	57.05	3.76E+02	PB-214
	15	300.25	299 -	304	300.61	5.02E+01	44.67	3.62E+02	GA-67
									PB-212
									BI-210M
	16	338.45	335 -	341	338.78	1.42E+02	49.11	3.34E+02	AC-228
	17	351.86	347 -	356	352.17	4.28E+02	69.73	4.50E+02	PB-214
	18	409.15	406 -	413	409.40	4.71E+01	40.10	2.38E+02	.....
	19	462.80	459 -	466	463.00	4.23E+01	40.15	2.41E+02	SB-125
	20	511.06	506 -	516	511.21	1.59E+02	56.19	3.37E+02	.....

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	21	580.16	579 -	588	580.24	1.42E+01	12.00	3.50E+01	.....
m	22	583.44	579 -	588	583.52	2.97E+02	44.81	1.69E+02	TL-208
	23	609.51	605 -	615	609.56	2.68E+02	59.91	3.36E+02	BI-214
	24	661.95	657 -	667	661.95	1.17E+02	42.24	1.75E+02	CS-137
	25	727.39	722 -	732	727.32	4.25E+01	43.18	2.27E+02	BI-212
	26	768.19	764 -	771	768.09	4.32E+01	31.05	1.32E+02	.....
	27	796.03	792 -	799	795.89	2.13E+01	27.06	1.07E+02	CS-134
	28	820.74	817 -	824	820.58	2.03E+01	21.63	6.54E+01	.....
	29	911.88	908 -	917	911.62	1.34E+02	37.97	1.28E+02	TL-204 AC-228
	30	926.25	924 -	929	925.98	1.69E+01	16.79	4.43E+01	.....
M	31	965.29	958 -	977	964.99	3.76E+01	24.28	7.31E+01	.....
m	32	969.51	958 -	977	969.20	1.33E+02	29.15	6.65E+01	AC-228
	33	1010.28	1007 -	1013	1009.93	1.65E+01	17.53	4.10E+01	.....
	34	1120.81	1114 -	1123	1120.35	7.43E+01	35.14	1.31E+02	SC-46 TA-182 BI-214
	35	1156.70	1154 -	1158	1156.20	1.82E+01	17.00	4.56E+01	.....
	36	1182.54	1180 -	1184	1182.02	1.68E+01	17.88	5.44E+01	.....
	37	1377.38	1371 -	1382	1376.66	3.32E+01	21.63	4.15E+01	.....
	38	1386.44	1383 -	1388	1385.71	7.69E+00	9.38	1.06E+01	.....
	39	1461.66	1455 -	1467	1460.87	8.15E+02	62.26	7.53E+01	K-40
	40	1637.46	1635 -	1638	1636.49	8.13E+00	8.25	7.75E+00	.....
	41	1645.34	1642 -	1646	1644.37	6.50E+00	8.31	9.00E+00	.....
	42	1730.25	1724 -	1733	1729.19	1.34E+01	13.86	1.92E+01	.....
	43	1765.42	1760 -	1768	1764.32	4.98E+01	16.02	8.37E+00	BI-214
	44	1802.90	1798 -	1804	1801.77	5.21E+00	6.34	3.57E+00	.....
	45	1814.25	1810 -	1816	1813.11	7.40E+00	8.03	5.20E+00	.....
	46	1847.96	1843 -	1850	1846.79	1.39E+01	14.83	2.61E+01	.....
	47	1874.90	1870 -	1877	1873.70	1.00E+01	6.32	0.00E+00	.....
	48	1932.50	1928 -	1933	1931.25	5.00E+00	7.07	6.00E+00	.....
	49	1977.21	1973 -	1978	1975.91	6.56E+00	6.40	2.88E+00	.....
	50	2044.06	2039 -	2045	2042.70	1.00E+01	6.32	0.00E+00	.....
	51	2051.37	2047 -	2052	2050.00	6.00E+00	4.90	0.00E+00	.....
	52	2105.03	2100 -	2108	2103.61	1.86E+01	12.84	1.48E+01	.....
	53	2182.78	2178 -	2183	2181.29	6.00E+00	7.35	6.00E+00	.....
	54	2188.23	2185 -	2189	2186.73	6.50E+00	6.67	3.00E+00	.....
	55	2203.92	2197 -	2206	2202.41	2.05E+01	10.82	5.09E+00	BI-214
	56	2226.81	2220 -	2230	2225.27	1.10E+01	6.63	0.00E+00	.....
	57	2263.62	2255 -	2266	2262.04	9.88E+00	11.66	1.23E+01	.....
	58	2273.88	2268 -	2276	2272.30	1.00E+01	6.32	0.00E+00	.....
	59	2374.21	2370 -	2377	2372.53	8.08E+00	9.17	9.85E+00	.....
	60	2615.61	2609 -	2618	2613.70	9.54E+01	23.60	2.53E+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 1707090-19

HTC-A08-BKGD01-0006-02

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 6:59:22AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.00	1.61E+02	82.61	2.45E-02	2.22E-03
	2	76.05	8.77E+02	145.06	2.75E-02	2.39E-03
	3	92.52	3.63E+02	105.81	2.73E-02	2.45E-03
	4	128.91	1.02E+02	82.51	2.54E-02	1.94E-03
	5	144.86	1.13E+02	94.48	2.43E-02	1.85E-03
M	6	181.85	3.20E+01	25.59	2.20E-02	1.69E-03
m	7	185.86	1.84E+02	62.15	2.17E-02	1.68E-03
	8	208.95	6.12E+01	71.22	2.04E-02	1.61E-03
M	9	238.57	7.94E+02	71.68	1.89E-02	1.53E-03
m	10	241.74	1.72E+02	72.68	1.87E-02	1.52E-03
	11	247.53	4.24E+01	45.83	1.84E-02	1.50E-03
	12	270.11	4.44E+01	49.33	1.74E-02	1.43E-03
	13	276.81	4.90E+01	46.05	1.72E-02	1.42E-03
	14	295.01	2.98E+02	57.05	1.64E-02	1.37E-03
	15	300.25	5.02E+01	44.67	1.62E-02	1.36E-03
	16	338.45	1.42E+02	49.11	1.50E-02	1.27E-03
	17	351.86	4.28E+02	69.73	1.45E-02	1.24E-03
	18	409.15	4.71E+01	40.10	1.30E-02	1.13E-03
	19	462.80	4.23E+01	40.15	1.19E-02	1.10E-03
	20	511.06	1.59E+02	56.19	1.10E-02	1.07E-03
M	21	580.16	1.42E+01	12.00	1.00E-02	1.02E-03
m	22	583.44	2.97E+02	44.81	9.96E-03	1.02E-03
	23	609.51	2.68E+02	59.91	9.63E-03	1.01E-03
	24	661.95	1.17E+02	42.24	9.04E-03	9.71E-04
	25	727.39	4.25E+01	43.18	8.41E-03	8.68E-04
	26	768.19	4.32E+01	31.05	8.07E-03	8.03E-04
	27	796.03	2.13E+01	27.06	7.85E-03	7.58E-04
	28	820.74	2.03E+01	21.63	7.67E-03	7.19E-04
	29	911.88	1.34E+02	37.97	7.08E-03	5.91E-04
	30	926.25	1.69E+01	16.79	7.00E-03	5.86E-04
M	31	965.29	3.76E+01	24.28	6.79E-03	5.71E-04
m	32	969.51	1.33E+02	29.15	6.76E-03	5.69E-04
	33	1010.28	1.65E+01	17.53	6.56E-03	5.53E-04
	34	1120.81	7.43E+01	35.14	6.07E-03	5.11E-04
	35	1156.70	1.82E+01	17.00	5.93E-03	4.97E-04
	36	1182.54	1.68E+01	17.88	5.84E-03	4.89E-04
	37	1377.38	3.32E+01	21.63	5.22E-03	4.44E-04
	38	1386.44	7.69E+00	9.38	5.20E-03	4.42E-04
	39	1461.66	8.15E+02	62.26	5.00E-03	4.25E-04
	40	1637.46	8.13E+00	8.25	4.61E-03	3.84E-04
	41	1645.34	6.50E+00	8.31	4.60E-03	3.82E-04
	42	1730.25	1.34E+01	13.86	4.44E-03	3.62E-04
	43	1765.42	4.98E+01	16.02	4.37E-03	3.54E-04
	44	1802.90	5.21E+00	6.34	4.31E-03	3.46E-04
	45	1814.25	7.40E+00	8.03	4.29E-03	3.43E-04

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
46	1847.96	1.39E+01	14.83	4.23E-03	3.38E-04
47	1874.90	1.00E+01	6.32	4.19E-03	3.38E-04
48	1932.50	5.00E+00	7.07	4.10E-03	3.38E-04
49	1977.21	6.56E+00	6.40	4.04E-03	3.38E-04
50	2044.06	1.00E+01	6.32	3.94E-03	3.38E-04
51	2051.37	6.00E+00	4.90	3.93E-03	3.38E-04
52	2105.03	1.86E+01	12.84	3.86E-03	3.38E-04
53	2182.78	6.00E+00	7.35	3.76E-03	3.38E-04
54	2188.23	6.50E+00	6.67	3.76E-03	3.38E-04
55	2203.92	2.05E+01	10.82	3.74E-03	3.38E-04
56	2226.81	1.10E+01	6.63	3.71E-03	3.38E-04
57	2263.62	9.88E+00	11.66	3.67E-03	3.38E-04
58	2273.88	1.00E+01	6.32	3.65E-03	3.38E-04
59	2374.21	8.08E+00	9.17	3.54E-03	3.38E-04
60	2615.61	9.54E+01	23.60	3.30E-03	3.38E-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 : 8/24/2017 6:59:22AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.00	1.61E+02	82.61	3.67E+01	8.40E+00	1.24E+02	8.30E+01
	2	76.05	8.77E+02	145.06			8.77E+02	1.45E+02
	3	92.52	3.63E+02	105.81	1.38E+02	1.72E+01	2.25E+02	1.07E+02
	4	128.91	1.02E+02	82.51			1.02E+02	8.25E+01
	5	144.86	1.13E+02	94.48			1.13E+02	9.45E+01
M	6	181.85	3.20E+01	25.59			3.20E+01	2.56E+01
m	7	185.86	1.84E+02	62.15	5.22E+01	7.59E+00	1.32E+02	6.26E+01
	8	208.95	6.12E+01	71.22			6.12E+01	7.12E+01
M	9	238.57	7.94E+02	71.68	2.13E+01	6.33E+00	7.73E+02	7.20E+01
m	10	241.74	1.72E+02	72.68			1.72E+02	7.27E+01
	11	247.53	4.24E+01	45.83			4.24E+01	4.58E+01
	12	270.11	4.44E+01	49.33	1.23E+00	4.98E+00	4.31E+01	4.96E+01
	13	276.81	4.90E+01	46.05			4.90E+01	4.61E+01
	14	295.01	2.98E+02	57.05			2.98E+02	5.71E+01
	15	300.25	5.02E+01	44.67			5.02E+01	4.47E+01

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	16	338.45	1.42E+02	49.11			1.42E+02	4.91E+01
	17	351.86	4.28E+02	69.73	5.79E+00	4.49E+00	4.22E+02	6.99E+01
	18	409.15	4.71E+01	40.10			4.71E+01	4.01E+01
	19	462.80	4.23E+01	40.15			4.23E+01	4.01E+01
	20	511.06	1.59E+02	56.19	7.28E+01	5.30E+00	8.67E+01	5.64E+01
M	21	580.16	1.42E+01	12.00			1.42E+01	1.20E+01
m	22	583.44	2.97E+02	44.81	2.72E+00	3.05E+00	2.94E+02	4.49E+01
	23	609.51	2.68E+02	59.91	6.35E+00	4.02E+00	2.61E+02	6.00E+01
	24	661.95	1.17E+02	42.24			1.17E+02	4.22E+01
	25	727.39	4.25E+01	43.18			4.25E+01	4.32E+01
	26	768.19	4.32E+01	31.05			4.32E+01	3.10E+01
	27	796.03	2.13E+01	27.06			2.13E+01	2.71E+01
	28	820.74	2.03E+01	21.63			2.03E+01	2.16E+01
	29	911.88	1.34E+02	37.97	5.31E+00	3.00E+00	1.29E+02	3.81E+01
	30	926.25	1.69E+01	16.79			1.69E+01	1.68E+01
M	31	965.29	3.76E+01	24.28			3.76E+01	2.43E+01
m	32	969.51	1.33E+02	29.15			1.33E+02	2.92E+01
	33	1010.28	1.65E+01	17.53			1.65E+01	1.75E+01
	34	1120.81	7.43E+01	35.14			7.43E+01	3.51E+01
	35	1156.70	1.82E+01	17.00			1.82E+01	1.70E+01
	36	1182.54	1.68E+01	17.88			1.68E+01	1.79E+01
	37	1377.38	3.32E+01	21.63			3.32E+01	2.16E+01
	38	1386.44	7.69E+00	9.38			7.69E+00	9.38E+00
	39	1461.66	8.15E+02	62.26	8.09E+00	2.23E+00	8.07E+02	6.23E+01
	40	1637.46	8.13E+00	8.25			8.13E+00	8.25E+00
	41	1645.34	6.50E+00	8.31			6.50E+00	8.31E+00
	42	1730.25	1.34E+01	13.86			1.34E+01	1.39E+01
	43	1765.42	4.98E+01	16.02			4.98E+01	1.60E+01
	44	1802.90	5.21E+00	6.34			5.21E+00	6.34E+00
	45	1814.25	7.40E+00	8.03			7.40E+00	8.03E+00
	46	1847.96	1.39E+01	14.83	1.22E+00	1.50E+00	1.27E+01	1.49E+01
	47	1874.90	1.00E+01	6.32			1.00E+01	6.32E+00
	48	1932.50	5.00E+00	7.07			5.00E+00	7.07E+00
	49	1977.21	6.56E+00	6.40			6.56E+00	6.40E+00
	50	2044.06	1.00E+01	6.32			1.00E+01	6.32E+00
	51	2051.37	6.00E+00	4.90			6.00E+00	4.90E+00
	52	2105.03	1.86E+01	12.84			1.86E+01	1.28E+01
	53	2182.78	6.00E+00	7.35			6.00E+00	7.35E+00
	54	2188.23	6.50E+00	6.67			6.50E+00	6.67E+00
	55	2203.92	2.05E+01	10.82			2.05E+01	1.08E+01
	56	2226.81	1.10E+01	6.63			1.10E+01	6.63E+00
	57	2263.62	9.88E+00	11.66			9.88E+00	1.17E+01
	58	2273.88	1.00E+01	6.32			1.00E+01	6.32E+00
	59	2374.21	8.08E+00	9.17			8.08E+00	9.17E+00
	60	2615.61	9.54E+01	23.60	5.63E+00	1.38E+00	8.97E+01	2.36E+01

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

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 6:59:22AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.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	46.00	1.61E+02	82.61	3.67E+01	8.40E+00	1.24E+02	8.30E+01
	2	76.05	8.77E+02	145.06			8.77E+02	1.45E+02
	3	92.52	3.63E+02	105.81	1.38E+02	1.72E+01	2.25E+02	1.07E+02
	4	128.91	1.02E+02	82.51			1.02E+02	8.25E+01
	5	144.86	1.13E+02	94.48			1.13E+02	9.45E+01
M	6	181.85	3.20E+01	25.59			3.20E+01	2.56E+01
m	7	185.86	1.84E+02	62.15	5.22E+01	7.59E+00	1.32E+02	6.26E+01
	8	208.95	6.12E+01	71.22			6.12E+01	7.12E+01
M	9	238.57	7.94E+02	71.68	2.13E+01	6.33E+00	7.73E+02	7.20E+01
m	10	241.74	1.72E+02	72.68			1.72E+02	7.27E+01
	11	247.53	4.24E+01	45.83			4.24E+01	4.58E+01
	12	270.11	4.44E+01	49.33	1.23E+00	4.98E+00	4.31E+01	4.96E+01
	13	276.81	4.90E+01	46.05			4.90E+01	4.61E+01
	14	295.01	2.98E+02	57.05			2.98E+02	5.71E+01
	15	300.25	5.02E+01	44.67			5.02E+01	4.47E+01
	16	338.45	1.42E+02	49.11			1.42E+02	4.91E+01
	17	351.86	4.28E+02	69.73	5.79E+00	4.49E+00	4.22E+02	6.99E+01
	18	409.15	4.71E+01	40.10			4.71E+01	4.01E+01
	19	462.80	4.23E+01	40.15			4.23E+01	4.01E+01
	20	511.06	1.59E+02	56.19	7.28E+01	5.30E+00	8.67E+01	5.64E+01
M	21	580.16	1.42E+01	12.00			1.42E+01	1.20E+01
m	22	583.44	2.97E+02	44.81	2.72E+00	3.05E+00	2.94E+02	4.49E+01
	23	609.51	2.68E+02	59.91	6.35E+00	4.02E+00	2.61E+02	6.00E+01
	24	661.95	1.17E+02	42.24			1.17E+02	4.22E+01
	25	727.39	4.25E+01	43.18			4.25E+01	4.32E+01
	26	768.19	4.32E+01	31.05			4.32E+01	3.10E+01
	27	796.03	2.13E+01	27.06			2.13E+01	2.71E+01
	28	820.74	2.03E+01	21.63			2.03E+01	2.16E+01
	29	911.88	1.34E+02	37.97	5.31E+00	3.00E+00	1.29E+02	3.81E+01
	30	926.25	1.69E+01	16.79			1.69E+01	1.68E+01
M	31	965.29	3.76E+01	24.28			3.76E+01	2.43E+01
m	32	969.51	1.33E+02	29.15			1.33E+02	2.92E+01
	33	1010.28	1.65E+01	17.53			1.65E+01	1.75E+01
	34	1120.81	7.43E+01	35.14			7.43E+01	3.51E+01
	35	1156.70	1.82E+01	17.00			1.82E+01	1.70E+01
	36	1182.54	1.68E+01	17.88			1.68E+01	1.79E+01
	37	1377.38	3.32E+01	21.63			3.32E+01	2.16E+01
	38	1386.44	7.69E+00	9.38			7.69E+00	9.38E+00
	39	1461.66	8.15E+02	62.26	8.09E+00	2.23E+00	8.07E+02	6.23E+01

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
40	1637.46	8.13E+00	8.25			8.13E+00	8.25E+00
41	1645.34	6.50E+00	8.31			6.50E+00	8.31E+00
42	1730.25	1.34E+01	13.86			1.34E+01	1.39E+01
43	1765.42	4.98E+01	16.02			4.98E+01	1.60E+01
44	1802.90	5.21E+00	6.34			5.21E+00	6.34E+00
45	1814.25	7.40E+00	8.03			7.40E+00	8.03E+00
46	1847.96	1.39E+01	14.83	1.22E+00	1.50E+00	1.27E+01	1.49E+01
47	1874.90	1.00E+01	6.32			1.00E+01	6.32E+00
48	1932.50	5.00E+00	7.07			5.00E+00	7.07E+00
49	1977.21	6.56E+00	6.40			6.56E+00	6.40E+00
50	2044.06	1.00E+01	6.32			1.00E+01	6.32E+00
51	2051.37	6.00E+00	4.90			6.00E+00	4.90E+00
52	2105.03	1.86E+01	12.84			1.86E+01	1.28E+01
53	2182.78	6.00E+00	7.35			6.00E+00	7.35E+00
54	2188.23	6.50E+00	6.67			6.50E+00	6.67E+00
55	2203.92	2.05E+01	10.82			2.05E+01	1.08E+01
56	2226.81	1.10E+01	6.63			1.10E+01	6.63E+00
57	2263.62	9.88E+00	11.66			9.88E+00	1.17E+01
58	2273.88	1.00E+01	6.32			1.00E+01	6.32E+00
59	2374.21	8.08E+00	9.17			8.08E+00	9.17E+00
60	2615.61	9.54E+01	23.60	5.63E+00	1.38E+00	8.97E+01	2.36E+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	0.890	1460.81	*	10.67	1.91E+01	2.23E+00
CS-137	0.985	661.65	*	85.12	1.93E-01	7.29E-02
CE-141	0.903	145.44	*	48.40	1.04E+00	1.05E+00
TL-208	0.810	583.14	*	30.22	1.23E+00	2.27E-01
		860.37		4.48		
		2614.66	*	35.85	9.58E-01	2.71E-01
PB-210	0.961	46.50	*	4.25	1.52E+00	1.02E+00
BI-212	0.758	727.17	*	11.80	5.42E-01	5.53E-01
		1620.62		2.75		
PB-212	0.999	238.63	*	44.60	1.16E+00	1.43E-01

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.999	300.09	*	3.41	1.15E+00	1.02E+00
BI-214	0.962	609.31	*	46.30	7.42E-01	1.87E-01
		1120.29	*	15.10	1.03E+00	4.92E-01
		1764.49	*	15.80	9.12E-01	3.02E-01
		2204.22	*	4.98	1.39E+00	7.46E-01
PB-214	0.997	295.21	*	19.19	1.19E+00	2.49E-01
		351.92	*	37.19	9.87E-01	1.84E-01
RA-224	0.911	240.98	*	3.95	2.94E+00	1.27E+00
RA-226	0.980	186.21	*	3.28	2.35E+00	4.44E+00
AC-228	0.942	338.32	*	11.40	1.05E+00	3.75E-01
		911.07	*	27.70	8.30E-01	2.55E-01
		969.11	*	16.60	1.50E+00	3.52E-01
CM-243	0.314	209.75	*	3.29	1.16E+00	1.35E+00
		228.14		10.60		
		277.60	*	14.00	2.60E-01	2.45E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:59:22AM
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	76.05	2.43531E-01	8.27		
	3	92.52	6.24755E-02	23.83	Sum	
	4	128.91	2.84552E-02	40.27		
M	6	181.85	8.88427E-03	40.01	Tol.	MO-99 LU-172
	11	247.53	1.17873E-02	54.00		
	12	270.11	1.19784E-02	57.49		
	18	409.15	1.30698E-02	42.61		
	19	462.80	1.17604E-02	47.42	Sum	
	20	511.06	2.40939E-02	32.53		
M	21	580.16	3.95384E-03	42.15	Sum	
	26	768.19	1.19980E-02	35.94		
	27	796.03	5.91296E-03	63.55	Sum	
	28	820.74	5.63417E-03	53.33		

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	30	926.25	4.68661E-03	49.77		
M	31	965.29	1.04459E-02	32.28	Sum	
	33	1010.28	4.58709E-03	53.07		
	35	1156.70	5.05420E-03	46.72		
	36	1182.54	4.66225E-03	53.27	D-Esc	
	37	1377.38	9.23354E-03	32.54		
	38	1386.44	2.13675E-03	60.98		
	40	1637.46	2.25694E-03	50.75		
	41	1645.34	1.80556E-03	63.90		
	42	1730.25	3.71981E-03	51.74	Sum	
	44	1802.90	1.44841E-03	60.84		
	45	1814.25	2.05556E-03	54.26	Sum	
	46	1847.96	3.53335E-03	58.60	Sum	
	47	1874.90	2.77778E-03	31.62		
	48	1932.50	1.38889E-03	70.71		
	49	1977.21	1.82292E-03	48.79		
	50	2044.06	2.77778E-03	31.62		
	51	2051.37	1.66667E-03	40.82		
	52	2105.03	5.17094E-03	34.48	S-Esc	
	53	2182.78	1.66667E-03	61.24		
	54	2188.23	1.80556E-03	51.31	Sum	
	56	2226.81	3.05556E-03	30.15		
	57	2263.62	2.74306E-03	59.05		
	58	2273.88	2.77778E-03	31.62		
	59	2374.21	2.24359E-03	56.74	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	0.89	1460.81	*	10.67	1.91E+01	2.23E+00
CS-137	0.98	661.65	*	85.12	1.93E-01	7.29E-02
CE-141	0.90	145.44	*	48.40	1.04E+00	1.05E+00

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.81	583.14	*	30.22	1.23E+00	2.27E-01
		860.37		4.48		
		2614.66	*	35.85	9.58E-01	2.71E-01
PB-210	0.96	46.50	*	4.25	1.52E+00	1.02E+00
BI-212	0.75	727.17	*	11.80	5.42E-01	5.53E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.16E+00	1.43E-01
		300.09	*	3.41	1.15E+00	1.02E+00
BI-214	0.96	609.31	*	46.30	7.42E-01	1.87E-01
		1120.29	*	15.10	1.03E+00	4.92E-01
		1764.49	*	15.80	9.12E-01	3.02E-01
		2204.22	*	4.98	1.39E+00	7.46E-01
PB-214	0.99	295.21	*	19.19	1.19E+00	2.49E-01
		351.92	*	37.19	9.87E-01	1.84E-01
RA-224	0.91	240.98	*	3.95	2.94E+00	1.27E+00
RA-226	0.98	186.21	*	3.28	2.35E+00	4.44E+00
AC-228	0.94	338.32	*	11.40	1.05E+00	3.75E-01
		911.07	*	27.70	8.30E-01	2.55E-01
		969.11	*	16.60	1.50E+00	3.52E-01
CM-243	0.31	209.75	*	3.29	1.16E+00	1.35E+00
		228.14		10.60		
		277.60	*	14.00	2.60E-01	2.45E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.890	1.91E+01	2.23E+00	
CS-137	0.985	1.93E-01	7.29E-02	
CE-141	0.903	1.04E+00	1.05E+00	
TL-208	0.810	1.12E+00	1.74E-01	
PB-210	0.961	1.52E+00	1.02E+00	

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-212	0.758	5.42E-01	5.53E-01	
PB-212	0.999	1.16E+00	1.42E-01	
BI-214	0.962	8.34E-01	1.48E-01	
PB-214	0.997	1.06E+00	1.48E-01	
RA-224	0.911	2.94E+00	1.27E+00	
RA-226	0.980	2.35E+00	4.44E+00	
AC-228	0.942	1.06E+00	1.81E-01	
CM-243	0.314	2.88E-01	2.41E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:59:22AM
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	76.05	2.43531E-01	8.27		
	3	92.52	6.24755E-02	23.83	Sum	
	4	128.91	2.84552E-02	40.27		
M	6	181.85	8.88427E-03	40.01	Tol.	MO-99 LU-172
	11	247.53	1.17873E-02	54.00		
	12	270.11	1.19784E-02	57.49		
	18	409.15	1.30698E-02	42.61		
	19	462.80	1.17604E-02	47.42	Sum	
	20	511.06	2.40939E-02	32.53		
M	21	580.16	3.95384E-03	42.15	Sum	
	26	768.19	1.19980E-02	35.94		
	27	796.03	5.91296E-03	63.55	Sum	
	28	820.74	5.63417E-03	53.33		
	30	926.25	4.68661E-03	49.77		
M	31	965.29	1.04459E-02	32.28	Sum	
	33	1010.28	4.58709E-03	53.07		
	35	1156.70	5.05420E-03	46.72		
	36	1182.54	4.66225E-03	53.27	D-Esc	
	37	1377.38	9.23354E-03	32.54		
	38	1386.44	2.13675E-03	60.98		
	40	1637.46	2.25694E-03	50.75		
	41	1645.34	1.80556E-03	63.90		
	42	1730.25	3.71981E-03	51.74	Sum	
	44	1802.90	1.44841E-03	60.84		
	45	1814.25	2.05556E-03	54.26	Sum	
	46	1847.96	3.53335E-03	58.60	Sum	
	47	1874.90	2.77778E-03	31.62		
	48	1932.50	1.38889E-03	70.71		
	49	1977.21	1.82292E-03	48.79		
	50	2044.06	2.77778E-03	31.62		
	51	2051.37	1.66667E-03	40.82		
	52	2105.03	5.17094E-03	34.48	S-Esc	
	53	2182.78	1.66667E-03	61.24		
	54	2188.23	1.80556E-03	51.31	Sum	

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	2226.81	3.05556E-03	30.15		
57	2263.62	2.74306E-03	59.05		
58	2273.88	2.77778E-03	31.62		
59	2374.21	2.24359E-03	56.74	Sum	

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	1.62E-01	1.99E+00	1.99E+00
+	NA-22	1274.54		99.94	-1.34E-02	7.35E-02	7.35E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	0.00E+00	4.43E-02	4.43E-02
+	K-40	1460.81	*	10.67	1.91E+01	1.06E+00	1.06E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-4.72E-02	5.71E-02	5.71E-02
		78.34		96.00	1.41E-01		7.58E-02
+	SC-46	889.25		99.98	-1.55E-02	1.40E-01	1.40E-01
		1120.51		99.99	3.71E-01		2.60E-01
+	V-48	983.52		99.98	-6.02E-01	5.52E+00	5.52E+00
		1312.10		97.50	-3.88E-01		5.71E+00
+	CR-51	320.08		9.83	-1.79E+00	6.78E+00	6.78E+00
+	MN-54	834.83		99.97	4.21E-02	8.98E-02	8.98E-02
+	CO-56	846.75		99.96	5.09E-02	1.54E-01	1.54E-01
		1037.75		14.03	1.31E-01		1.13E+00
		1238.25		67.00	1.96E-02		3.15E-01
		1771.40		15.51	6.81E-02		5.95E-01
		2598.48		16.90	1.31E-01		7.18E-01
+	CO-57	122.06		85.51	2.31E-02	6.73E-02	6.73E-02
		136.48		10.60	-7.86E-02		5.39E-01
+	CO-58	810.76		99.40	2.77E-02	1.47E-01	1.47E-01
+	FE-59	1099.22		56.50	-1.39E-01	6.14E-01	6.14E-01
		1291.56		43.20	-8.46E-02		7.23E-01

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-60	1173.22	100.00	-1.45E-02	7.51E-02	8.17E-02
		1332.49	100.00	1.17E-02		7.51E-02
+	ZN-65	1115.52	50.75	2.11E-02	1.77E-01	1.77E-01
+	GA-67	93.31	35.70	7.71E+08	3.55E+08	3.55E+08
		208.95	2.24	3.69E+09		4.84E+09
		300.22	16.00	-1.63E+09		7.76E+08
+	SE-75	121.11	16.70	4.59E-02	1.34E-01	4.70E-01
		136.00	59.20	-1.95E-02		1.34E-01
		264.65	59.80	8.92E-02		1.56E-01
		279.53	25.20	3.29E-02		3.87E-01
		400.65	11.40	1.95E-01		8.77E-01
+	RB-82	776.52	13.00	-1.74E+00	7.44E+00	7.44E+00
+	RB-83	520.41	46.00	-1.04E-01	2.62E-01	2.62E-01
		529.64	30.30	-2.54E-01		3.90E-01
		552.65	16.40	-2.15E-01		7.83E-01
+	KR-85	513.99	0.43	3.27E+01	2.00E+01	2.00E+01
+	SR-85	513.99	99.27	4.13E-01	2.52E-01	2.52E-01
+	Y-88	898.02	93.40	1.23E-02	8.13E-02	1.34E-01
		1836.01	99.38	2.74E-02		8.13E-02
+	MO-93	263.06	56.72	-1.46E-02	5.42E-02	9.37E-02
		684.67	99.68	1.14E-02		5.85E-02
		1477.11	99.08	4.71E-03		5.42E-02
+	NB-93M	16.57	9.43	6.31E-02	5.89E-01	5.89E-01
+	NB-94	702.63	100.00	-1.10E-02	6.20E-02	6.41E-02
		871.10	100.00	6.34E-03		6.20E-02
+	NB-95	765.79	99.81	4.26E-01	5.67E-01	5.67E-01
+	NB-95M	235.69	25.00	-3.99E+08	6.50E+07	6.50E+07
+	ZR-95	724.18	43.70	-2.45E-01	3.52E-01	4.79E-01
		756.72	55.30	-8.88E-03		3.52E-01
+	MO-99	181.06	6.20	-1.82E+11	4.99E+10	8.01E+10
		739.58	12.80	-6.70E+09		4.99E+10
		778.00	4.50	-6.09E+10		1.50E+11
+	RU-103	497.08	89.00	1.97E-01	3.83E-01	3.83E-01
+	RU-106	621.84	9.80	2.60E-02	7.03E-01	7.03E-01
+	AG-108M	433.93	89.90	-8.68E-03	5.69E-02	5.69E-02
		614.37	90.40	1.36E-02		7.82E-02
		722.95	90.50	1.35E-03		7.17E-02
+	CD-109	88.03	3.72	7.83E-01	1.89E+00	1.89E+00
+	AG-110M	657.75	93.14	1.78E-03	9.83E-02	9.83E-02
		677.61	10.53	7.60E-02		7.55E-01
		706.67	16.46	-1.13E-01		5.11E-01
		763.93	21.98	-1.93E-02		4.02E-01
		884.67	71.63	-1.28E-02		1.07E-01
		1384.27	23.94	-2.35E-02		2.86E-01
+	CD-113M	263.70	0.02	5.83E+01	2.34E+02	2.34E+02
+	SN-113	255.12	1.93	-3.52E-01	1.55E-01	4.27E+00
		391.69	64.90	-2.90E-02		1.55E-01
+	TE123M	159.00	84.10	-1.67E-02	9.62E-02	9.62E-02

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-124	602.71	97.87	8.09E-02	2.15E-01	2.15E-01
		645.85	7.26	-1.38E-01		2.58E+00
		722.78	11.10	3.51E-02		1.86E+00
		1691.02	49.00	-8.23E-02		2.40E-01
+	I-125	35.49	6.49	5.90E-01	2.49E+00	2.49E+00
+	SB-125	176.33	6.89	-4.72E-02	2.03E-01	6.97E-01
		427.89	29.33	-2.45E-02		2.03E-01
		463.38	10.35	4.11E-01		6.58E-01
		600.56	17.80	1.49E-01		3.88E-01
		635.90	11.32	1.28E-01		5.20E-01
+	SB-126	414.70	83.30	-5.77E+00	1.63E+01	1.63E+01
		666.33	99.60	1.04E+00		1.85E+01
		695.00	99.60	1.48E+00		1.78E+01
		720.50	53.80	9.71E+00		3.27E+01
+	SN-126	87.57	37.00	-7.91E-03	1.59E-01	1.59E-01
+	SB-127	473.00	25.00	-2.03E+06	1.24E+07	1.65E+07
		685.20	35.70	2.42E+06		1.24E+07
		783.80	14.70	2.18E+07		3.67E+07
+	I-129	29.78	57.00	-3.49E-02	9.42E-02	9.42E-02
		33.60	13.20	3.95E-02		3.88E-01
		39.58	7.52	-1.10E-01		6.13E-01
+	I-131	284.30	6.05	2.52E+03	4.00E+02	5.39E+03
		364.48	81.20	1.14E+02		4.00E+02
		636.97	7.26	1.59E+03		4.64E+03
		722.89	1.80	4.07E+02		2.16E+04
+	TE-132	49.72	13.10	-2.15E+08	1.03E+08	7.37E+08
		228.16	88.00	-7.36E+07		1.03E+08
+	BA-133	81.00	33.00	6.69E-02	1.21E-01	1.68E-01
		302.84	17.80	5.56E-02		3.51E-01
		356.01	60.00	-1.27E-02		1.21E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	3.54E+04	8.89E+04	8.89E+04
+	CS-134	563.23	8.38	-1.66E-01	8.00E-02	7.85E-01
		569.32	15.43	-8.19E-02		4.17E-01
		604.70	97.60	8.16E-03		8.00E-02
		795.84	85.40	1.75E-02		8.50E-02
		801.93	8.73	2.01E-01		7.89E-01
+	CS-135	268.24	16.00	3.70E-02	3.55E-01	3.55E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	7.67E+01	1.07E+01	1.29E+02
		163.89	4.61	-2.10E+01		1.99E+02
		176.55	13.56	-4.55E+00		6.72E+01
		273.65	12.66	-8.75E+01		8.57E+01
		340.57	48.50	4.10E-01		3.00E+01
		818.50	99.70	-1.68E+00		1.07E+01
		1048.07	79.60	5.49E-01		1.75E+01
		1235.34	19.70	2.05E+01		9.15E+01

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-137	661.65	*	85.12	1.93E-01	1.03E-01	1.03E-01
+	LA-138	788.74		34.00	4.25E-02	8.69E-02	1.85E-01
		1435.80		66.00	-5.67E-03		8.69E-02
+	CE-139	165.85		80.35	-4.13E-02	9.38E-02	9.38E-02
+	BA-140	162.64		6.70	6.93E+01	5.57E+01	1.64E+02
		304.84		4.50	2.39E+01		2.86E+02
		423.70		3.20	-5.95E+01		4.22E+02
		437.55		2.00	6.23E+00		5.98E+02
		537.32		25.00	2.05E+01		5.57E+01
+	LA-140	328.77		20.50	1.29E+01	1.54E+01	6.69E+01
		487.03		45.50	6.74E-01		2.71E+01
		815.85		23.50	7.45E-01		4.94E+01
		1596.49		95.49	4.76E+00		1.54E+01
+	CE-141	145.44	*	48.40	1.04E+00	1.42E+00	1.42E+00
+	@ CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26		42.00	1.00E+26		1.00E+26
	@	664.55		5.20	1.00E+26		1.00E+26
+	CE-144	133.54		10.80	1.56E-01	5.59E-01	5.59E-01
+	PM-144	476.78		42.00	-1.91E-02	6.97E-02	1.56E-01
		618.01		98.60	-1.93E-02		6.97E-02
		696.49		99.49	3.55E-02		7.90E-02
+	PM-145	36.85		21.70	-6.66E-02	1.21E-01	2.24E-01
		37.36		39.70	-2.68E-02		1.21E-01
		42.30		15.10	-4.45E-03		3.23E-01
		72.40		2.31	-1.49E+00		2.86E+00
+	PM-146	453.90		39.94	3.40E-02	1.45E-01	1.45E-01
		735.90		14.01	-2.97E-01		4.14E-01
		747.13		13.10	-1.06E-01		4.59E-01
+	ND-147	91.11		28.90	2.27E+02	1.31E+02	1.31E+02
		531.02		13.10	-3.61E+01		2.43E+02
+	PM-149	285.90		3.10	6.50E+13	9.56E+13	9.56E+13
+	EU-152	121.78		20.50	2.12E-02	2.17E-01	2.17E-01
		244.69		5.40	-9.14E-01		1.01E+00
		344.27		19.13	-1.13E-01		2.86E-01
		778.89		9.20	-1.65E-01		6.72E-01
		964.01		10.40	-2.07E+00		7.35E-01
		1085.78		7.22	2.39E-01		1.05E+00
		1112.02		9.60	3.78E-01		8.07E-01
		1407.95		14.94	-1.41E-01		3.84E-01
+	GD-153	97.43		31.30	2.48E-02	1.90E-01	1.90E-01
		103.18		22.20	7.04E-02		2.66E-01
+	EU-154	123.07		40.50	-2.41E-03	1.08E-01	1.08E-01
		723.30		19.70	6.34E-03		3.36E-01
		873.19		11.50	-2.78E-02		5.57E-01
		996.32		10.30	-1.11E-01		6.62E-01
		1004.76		17.90	-3.21E-02		3.48E-01
		1274.45		35.50	-3.58E-02		1.97E-01
+	EU-155	86.50		30.90	2.36E-02	1.96E-01	1.96E-01
		105.30		20.70	5.98E-02		2.20E-01

Analysis Report for 1707090-19

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	EU-156	811.77		10.40	-2.12E+00	4.87E+01	4.87E+01
		1153.47		7.20	1.92E+01		1.12E+02
		1230.71		8.90	2.26E+01		9.24E+01
+	HO-166M	184.41		72.60	1.10E-01	7.97E-02	7.97E-02
		280.45		29.60	-2.39E-02		1.81E-01
		410.94		11.10	5.59E-01		5.34E-01
		711.69		54.10	6.78E-03		1.19E-01
+	TM-171	66.72		0.14	-7.73E+01	4.28E+01	4.28E+01
+	HF-172	67.35		5.31	-9.27E-01	4.37E-01	1.12E+00
		125.81		11.30	1.20E-02		4.37E-01
+	LU-172	181.53		20.60	-1.70E+04	3.75E+03	7.49E+03
		900.72		29.81	-4.19E+03		7.41E+03
		1093.66		62.50	-3.19E+02		3.75E+03
+	LU-173	100.72		5.24	7.42E-02	3.07E-01	9.74E-01
		272.11		21.20	2.39E-02		3.07E-01
+	HF-175	343.40		84.00	-6.89E-02	1.70E-01	1.70E-01
+	LU-176	88.34		13.30	1.88E-01	5.52E-02	4.54E-01
		201.83		86.00	1.07E-02		5.52E-02
		306.78		94.00	-2.62E-02		5.52E-02
+	HF-181	133.02		41.70	1.64E-01	3.58E-01	5.88E-01
		345.85		17.20	-2.78E-01		1.63E+00
		482.03		82.80	1.95E-01		3.58E-01
+	TA-182	67.75		41.20	-1.99E-01	2.40E-01	2.40E-01
		1121.30		34.90	1.01E+00		6.13E-01
		1189.05		16.23	-1.81E-01		8.20E-01
		1221.41		26.98	3.59E-01		6.05E-01
		1231.02		11.44	3.24E-01		1.33E+00
+	IR-192	308.46		29.68	-1.48E-01	3.09E-01	4.44E-01
		468.07		48.10	-5.88E-02		3.09E-01
+	HG-203	279.19		77.30	2.68E-02	3.16E-01	3.16E-01
+	TL-204	374.74		94.11	1.26E-02	5.87E-02	5.87E-02
		899.15		99.16	-7.14E-03		6.86E-02
		911.74		91.10	2.57E-01		1.33E-01
+	BI-207	569.67		97.72	2.60E-03	6.07E-02	6.07E-02
		1063.62		74.90	-2.16E-02		9.03E-02
+	TL-208	583.14	*	30.22	1.23E+00	2.77E-01	2.84E-01
		860.37		4.48	4.58E-01		1.51E+00
		2614.66	*	35.85	9.58E-01		2.77E-01
+	BI-210M	262.00		45.00	1.04E-02	1.20E-01	1.20E-01
		300.00		23.00	-1.13E+00		2.66E-01
+	PB-210	46.50	*	4.25	1.52E+00	1.64E+00	1.64E+00
+	PB-211	404.84		2.90	2.84E-01	1.81E+00	1.81E+00
		831.96		2.90	-2.21E-01		2.26E+00
+	BI-212	727.17	*	11.80	5.42E-01	8.97E-01	8.97E-01
		1620.62		2.75	6.93E-01		2.05E+00
+	PB-212	238.63	*	44.60	1.16E+00	2.22E-01	2.22E-01
		300.09	*	3.41	1.15E+00		1.65E+00
+	BI-214	609.31	*	46.30	7.42E-01	2.44E-01	2.44E-01

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	1120.29	*	15.10	1.03E+00	2.44E-01	7.32E-01
		1764.49	*	15.80	9.12E-01		2.77E-01
		2204.22	*	4.98	1.39E+00		8.47E-01
+	PB-214	295.21	*	19.19	1.19E+00	2.24E-01	3.10E-01
		351.92	*	37.19	9.87E-01		2.24E-01
+	RN-219	401.80		6.50	3.26E-01	8.65E-01	8.65E-01
+	RA-223	323.87		3.88	-6.67E-01	1.44E+00	1.44E+00
+	RA-224	240.98	*	3.95	2.94E+00	2.50E+00	2.50E+00
+	RA-225	40.00		31.00	-1.69E+00	1.68E+01	1.68E+01
+	RA-226	186.21	*	3.28	2.35E+00	2.44E+00	2.44E+00
+	TH-227	50.10		8.40	-4.28E-01	5.37E-01	5.37E-01
		236.00		11.50	-3.35E+00		5.46E-01
		256.20		6.30	2.73E-01		8.52E-01
+	AC-228	338.32	*	11.40	1.05E+00	3.42E-01	5.44E-01
		911.07	*	27.70	8.30E-01		3.42E-01
		969.11	*	16.60	1.50E+00		9.25E-01
+	TH-230	48.44		16.90	3.10E-01	3.01E-01	3.01E-01
		62.85		4.60	1.65E+00		1.28E+00
		67.67		0.37	-1.20E+01		1.45E+01
+	PA-231	283.67		1.60	1.01E-01	2.67E+00	3.36E+00
		302.67		2.30	4.22E-01		2.67E+00
+	TH-231	25.64		14.70	-3.38E+00	4.68E-01	4.68E-01
		84.21		6.40	-3.24E-01		8.76E-01
+	PA-233	311.98		38.60	6.20E-01	1.79E+00	1.79E+00
+	PA-234	131.20		20.40	-5.60E-02	2.34E-01	2.34E-01
		733.99		8.80	1.18E-01		7.02E-01
		946.00		12.00	4.16E-02		5.55E-01
+	PA-234M	1001.03		0.92	3.57E+00	7.27E+00	7.27E+00
+	TH-234	63.29		3.80	2.47E+00	1.57E+00	1.57E+00
+	U-235	143.76		10.50	1.75E-01	4.65E-01	4.65E-01
		163.35		4.70	-1.01E-01		9.60E-01
		205.31		4.70	-7.17E-02		1.03E+00
+	NP-237	86.50		12.60	5.58E-02	4.63E-01	4.63E-01
+	NP-239	106.10		22.70	3.18E+11	1.54E+12	1.54E+12
		228.18		10.70	-2.28E+12		3.20E+12
		277.60		14.10	6.13E+11		3.00E+12
+	AM-241	59.54		35.90	-2.72E-02	1.46E-01	1.46E-01
+	AM-243	74.67		66.00	-6.80E-02	1.16E-01	1.16E-01
+	CM-243	209.75	*	3.29	1.16E+00	3.97E-01	2.22E+00
		228.14		10.60	-2.93E-01		4.12E-01
		277.60	*	14.00	2.60E-01		3.97E-01

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

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

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	1.99E+00	1.99E+00	1.62E-01	9.40E-01
	NA-22	1274.54		99.94	7.35E-02	7.35E-02	-1.34E-02	3.34E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.43E-02	4.43E-02	0.00E+00	1.81E-02
+	K-40	1460.81	*	10.67	1.06E+00	1.06E+00	1.91E+01	4.98E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	5.71E-02	5.71E-02	-4.72E-02	2.79E-02
		78.34		96.00	7.58E-02		1.41E-01	3.72E-02
	SC-46	889.25		99.98	1.40E-01	1.40E-01	-1.55E-02	6.44E-02
		1120.51		99.99	2.60E-01		3.71E-01	1.24E-01
	V-48	983.52		99.98	5.52E+00	5.52E+00	-6.02E-01	2.55E+00
		1312.10		97.50	5.71E+00		-3.88E-01	2.59E+00
	CR-51	320.08		9.83	6.78E+00	6.78E+00	-1.79E+00	3.25E+00
	MN-54	834.83		99.97	8.98E-02	8.98E-02	4.21E-02	4.21E-02
	CO-56	846.75		99.96	1.54E-01	1.54E-01	5.09E-02	7.15E-02
		1037.75		14.03	1.13E+00		1.31E-01	5.20E-01
		1238.25		67.00	3.15E-01		1.96E-02	1.46E-01
		1771.40		15.51	5.95E-01		6.81E-02	2.36E-01
		2598.48		16.90	7.18E-01		1.31E-01	2.85E-01
	CO-57	122.06		85.51	6.73E-02	6.73E-02	2.31E-02	3.26E-02
		136.48		10.60	5.39E-01		-7.86E-02	2.61E-01
	CO-58	810.76		99.40	1.47E-01	1.47E-01	2.77E-02	6.73E-02
	FE-59	1099.22		56.50	6.14E-01	6.14E-01	-1.39E-01	2.84E-01
		1291.56		43.20	7.23E-01		-8.46E-02	3.27E-01
	CO-60	1173.22		100.00	8.17E-02	7.51E-02	-1.45E-02	3.78E-02
		1332.49		100.00	7.51E-02		1.17E-02	3.42E-02
	ZN-65	1115.52		50.75	1.77E-01	1.77E-01	2.11E-02	8.11E-02
	GA-67	93.31		35.70	3.55E+08	3.55E+08	7.71E+08	1.74E+08
		208.95		2.24	4.84E+09		3.69E+09	2.34E+09
		300.22		16.00	7.76E+08		-1.63E+09	3.74E+08
	SE-75	121.11		16.70	4.70E-01	1.34E-01	4.59E-02	2.28E-01
		136.00		59.20	1.34E-01		-1.95E-02	6.47E-02
		264.65		59.80	1.56E-01		8.92E-02	7.52E-02
		279.53		25.20	3.87E-01		3.29E-02	1.87E-01
		400.65		11.40	8.77E-01		1.95E-01	4.18E-01

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

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	7.44E+00	7.44E+00	-1.74E+00	3.47E+00
RB-83	520.41	46.00	2.62E-01	2.62E-01	-1.04E-01	1.24E-01
	529.64	30.30	3.90E-01		-2.54E-01	1.83E-01
	552.65	16.40	7.83E-01		-2.15E-01	3.69E-01
KR-85	513.99	0.43	2.00E+01	2.00E+01	3.27E+01	9.62E+00
SR-85	513.99	99.27	2.52E-01	2.52E-01	4.13E-01	1.21E-01
Y-88	898.02	93.40	1.34E-01	8.13E-02	1.23E-02	6.23E-02
	1836.01	99.38	8.13E-02		2.74E-02	3.29E-02
MO-93	263.06	56.72	9.37E-02	5.42E-02	-1.46E-02	4.51E-02
	684.67	99.68	5.85E-02		1.14E-02	2.73E-02
	1477.11	99.08	5.42E-02		4.71E-03	2.36E-02
NB-93M	16.57	9.43	5.89E-01	5.89E-01	6.31E-02	2.77E-01
NB-94	702.63	100.00	6.41E-02	6.20E-02	-1.10E-02	3.01E-02
	871.10	100.00	6.20E-02		6.34E-03	2.87E-02
NB-95	765.79	99.81	5.67E-01	5.67E-01	4.26E-01	2.68E-01
NB-95M	235.69	25.00	6.50E+07	6.50E+07	-3.99E+08	3.16E+07
ZR-95	724.18	43.70	4.79E-01	3.52E-01	-2.45E-01	2.26E-01
	756.72	55.30	3.52E-01		-8.88E-03	1.65E-01
MO-99	181.06	6.20	8.01E+10	4.99E+10	-1.82E+11	3.87E+10
	739.58	12.80	4.99E+10		-6.70E+09	2.32E+10
	778.00	4.50	1.50E+11		-6.09E+10	6.97E+10
RU-103	497.08	89.00	3.83E-01	3.83E-01	1.97E-01	1.81E-01
RU-106	621.84	9.80	7.03E-01	7.03E-01	2.60E-02	3.29E-01
AG-108M	433.93	89.90	5.69E-02	5.69E-02	-8.68E-03	2.69E-02
	614.37	90.40	7.82E-02		1.36E-02	3.71E-02
	722.95	90.50	7.17E-02		1.35E-03	3.36E-02
CD-109	88.03	3.72	1.89E+00	1.89E+00	7.83E-01	9.23E-01
AG-110M	657.75	93.14	9.83E-02	9.83E-02	1.78E-03	4.65E-02
	677.61	10.53	7.55E-01		7.60E-02	3.53E-01
	706.67	16.46	5.11E-01		-1.13E-01	2.40E-01
	763.93	21.98	4.02E-01		-1.93E-02	1.88E-01
	884.67	71.63	1.07E-01		-1.28E-02	4.92E-02
	1384.27	23.94	2.86E-01		-2.35E-02	1.25E-01
CD-113M	263.70	0.02	2.34E+02	2.34E+02	5.83E+01	1.13E+02
SN-113	255.12	1.93	4.27E+00	1.55E-01	-3.52E-01	2.05E+00
	391.69	64.90	1.55E-01		-2.90E-02	7.40E-02
TE123M	159.00	84.10	9.62E-02	9.62E-02	-1.67E-02	4.65E-02
SB-124	602.71	97.87	2.15E-01	2.15E-01	8.09E-02	1.02E-01
	645.85	7.26	2.58E+00		-1.38E-01	1.21E+00
	722.78	11.10	1.86E+00		3.51E-02	8.74E-01
	1691.02	49.00	2.40E-01		-8.23E-02	9.51E-02
I-125	35.49	6.49	2.49E+00	2.49E+00	5.90E-01	1.20E+00
SB-125	176.33	6.89	6.97E-01	2.03E-01	-4.72E-02	3.36E-01
	427.89	29.33	2.03E-01		-2.45E-02	9.65E-02
	463.38	10.35	6.58E-01		4.11E-01	3.14E-01
	600.56	17.80	3.88E-01		1.49E-01	1.84E-01
	635.90	11.32	5.20E-01		1.28E-01	2.43E-01
SB-126	414.70	83.30	1.63E+01	1.63E+01	-5.77E+00	7.71E+00
	666.33	99.60	1.85E+01		1.04E+00	8.72E+00
	695.00	99.60	1.78E+01		1.48E+00	8.32E+00
	720.50	53.80	3.27E+01		9.71E+00	1.53E+01
SN-126	87.57	37.00	1.59E-01	1.59E-01	-7.91E-03	7.78E-02
SB-127	473.00	25.00	1.65E+07	1.24E+07	-2.03E+06	7.80E+06

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	SB-127	685.20		35.70	1.24E+07	1.24E+07	2.42E+06	5.80E+06
		783.80		14.70	3.67E+07		2.18E+07	1.72E+07
	I-129	29.78		57.00	9.42E-02	9.42E-02	-3.49E-02	4.55E-02
		33.60		13.20	3.88E-01		3.95E-02	1.88E-01
		39.58		7.52	6.13E-01		-1.10E-01	2.96E-01
	I-131	284.30		6.05	5.39E+03	4.00E+02	2.52E+03	2.59E+03
		364.48		81.20	4.00E+02		1.14E+02	1.91E+02
		636.97		7.26	4.64E+03		1.59E+03	2.17E+03
		722.89		1.80	2.16E+04		4.07E+02	1.01E+04
	TE-132	49.72		13.10	7.37E+08	1.03E+08	-2.15E+08	3.58E+08
		228.16		88.00	1.03E+08		-7.36E+07	4.96E+07
	BA-133	81.00		33.00	1.68E-01	1.21E-01	6.69E-02	8.20E-02
		302.84		17.80	3.51E-01		5.56E-02	1.70E-01
		356.01		60.00	1.21E-01		-1.27E-02	5.83E-02
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	8.89E+04	8.89E+04	3.54E+04	4.34E+04
	CS-134	563.23		8.38	7.85E-01	8.00E-02	-1.66E-01	3.71E-01
		569.32		15.43	4.17E-01		-8.19E-02	1.97E-01
		604.70		97.60	8.00E-02		8.16E-03	3.80E-02
		795.84		85.40	8.50E-02		1.75E-02	3.97E-02
		801.93		8.73	7.89E-01		2.01E-01	3.67E-01
	CS-135	268.24		16.00	3.55E-01	3.55E-01	3.70E-02	1.72E-01
@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22		7.46	1.29E+02	1.07E+01	7.67E+01	6.28E+01
		163.89		4.61	1.99E+02		-2.10E+01	9.63E+01
		176.55		13.56	6.72E+01		-4.55E+00	3.24E+01
		273.65		12.66	8.57E+01		-8.75E+01	4.12E+01
		340.57		48.50	3.00E+01		4.10E-01	1.45E+01
		818.50		99.70	1.07E+01		-1.68E+00	4.87E+00
		1048.07		79.60	1.75E+01		5.49E-01	8.07E+00
		1235.34		19.70	9.15E+01		2.05E+01	4.26E+01
+	CS-137	661.65	*	85.12	1.03E-01	1.03E-01	1.93E-01	4.94E-02
	LA-138	788.74		34.00	1.85E-01	8.69E-02	4.25E-02	8.62E-02
		1435.80		66.00	8.69E-02		-5.67E-03	3.83E-02
	CE-139	165.85		80.35	9.38E-02	9.38E-02	-4.13E-02	4.54E-02
	BA-140	162.64		6.70	1.64E+02	5.57E+01	6.93E+01	7.92E+01
		304.84		4.50	2.86E+02		2.39E+01	1.37E+02
		423.70		3.20	4.22E+02		-5.95E+01	2.01E+02
		437.55		2.00	5.98E+02		6.23E+00	2.83E+02
		537.32		25.00	5.57E+01		2.05E+01	2.63E+01
	LA-140	328.77		20.50	6.69E+01	1.54E+01	1.29E+01	3.21E+01
		487.03		45.50	2.71E+01		6.74E-01	1.28E+01
		815.85		23.50	4.94E+01		7.45E-01	2.25E+01
		1596.49		95.49	1.54E+01		4.76E+00	6.77E+00
+	CE-141	145.44	*	48.40	1.42E+00	1.42E+00	1.04E+00	7.00E-01
@	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	5.59E-01	5.59E-01	1.56E-01	2.71E-01
	PM-144	476.78		42.00	1.56E-01	6.97E-02	-1.91E-02	7.38E-02
		618.01		98.60	6.97E-02		-1.93E-02	3.27E-02

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-144	696.49	99.49	7.90E-02	6.97E-02	3.55E-02	3.71E-02
PM-145	36.85	21.70	2.24E-01	1.21E-01	-6.66E-02	1.08E-01
	37.36	39.70	1.21E-01		-2.68E-02	5.86E-02
	42.30	15.10	3.23E-01		-4.45E-03	1.57E-01
	72.40	2.31	2.86E+00		-1.49E+00	1.40E+00
PM-146	453.90	39.94	1.45E-01	1.45E-01	3.40E-02	6.87E-02
	735.90	14.01	4.14E-01		-2.97E-01	1.92E-01
	747.13	13.10	4.59E-01		-1.06E-01	2.13E-01
ND-147	91.11	28.90	1.31E+02	1.31E+02	2.27E+02	6.41E+01
	531.02	13.10	2.43E+02		-3.61E+01	1.14E+02
PM-149	285.90	3.10	9.56E+13	9.56E+13	6.50E+13	4.60E+13
EU-152	121.78	20.50	2.17E-01	2.17E-01	2.12E-02	1.05E-01
	244.69	5.40	1.01E+00		-9.14E-01	4.87E-01
	344.27	19.13	2.86E-01		-1.13E-01	1.37E-01
	778.89	9.20	6.72E-01		-1.65E-01	3.12E-01
	964.01	10.40	7.35E-01		-2.07E+00	3.43E-01
	1085.78	7.22	1.05E+00		2.39E-01	4.84E-01
	1112.02	9.60	8.07E-01		3.78E-01	3.74E-01
	1407.95	14.94	3.84E-01		-1.41E-01	1.69E-01
GD-153	97.43	31.30	1.90E-01	1.90E-01	2.48E-02	9.22E-02
	103.18	22.20	2.66E-01		7.04E-02	1.29E-01
EU-154	123.07	40.50	1.08E-01	1.08E-01	-2.41E-03	5.22E-02
	723.30	19.70	3.36E-01		6.34E-03	1.58E-01
	873.19	11.50	5.57E-01		-2.78E-02	2.58E-01
	996.32	10.30	6.62E-01		-1.11E-01	3.05E-01
	1004.76	17.90	3.48E-01		-3.21E-02	1.59E-01
	1274.45	35.50	1.97E-01		-3.58E-02	8.94E-02
EU-155	86.50	30.90	1.96E-01	1.96E-01	2.36E-02	9.60E-02
	105.30	20.70	2.20E-01		5.98E-02	1.07E-01
EU-156	811.77	10.40	4.87E+01	4.87E+01	-2.12E+00	2.22E+01
	1153.47	7.20	1.12E+02		1.92E+01	5.18E+01
	1230.71	8.90	9.24E+01		2.26E+01	4.28E+01
HO-166M	184.41	72.60	7.97E-02	7.97E-02	1.10E-01	3.88E-02
	280.45	29.60	1.81E-01		-2.39E-02	8.71E-02
	410.94	11.10	5.34E-01		5.59E-01	2.55E-01
	711.69	54.10	1.19E-01		6.78E-03	5.58E-02
TM-171	66.72	0.14	4.28E+01	4.28E+01	-7.73E+01	2.09E+01
HF-172	67.35	5.31	1.12E+00	4.37E-01	-9.27E-01	5.48E-01
	125.81	11.30	4.37E-01		1.20E-02	2.12E-01
LU-172	181.53	20.60	7.49E+03	3.75E+03	-1.70E+04	3.62E+03
	900.72	29.81	7.41E+03		-4.19E+03	3.43E+03
	1093.66	62.50	3.75E+03		-3.19E+02	1.72E+03
LU-173	100.72	5.24	9.74E-01	3.07E-01	7.42E-02	4.73E-01
	272.11	21.20	3.07E-01		2.39E-02	1.48E-01
HF-175	343.40	84.00	1.70E-01	1.70E-01	-6.89E-02	8.10E-02
LU-176	88.34	13.30	4.54E-01	5.52E-02	1.88E-01	2.22E-01
	201.83	86.00	5.52E-02		1.07E-02	2.66E-02
	306.78	94.00	5.52E-02		-2.62E-02	2.64E-02
HF-181	133.02	41.70	5.88E-01	3.58E-01	1.64E-01	2.86E-01
	345.85	17.20	1.63E+00		-2.78E-01	7.79E-01
	482.03	82.80	3.58E-01		1.95E-01	1.70E-01
TA-182	67.75	41.20	2.40E-01	2.40E-01	-1.99E-01	1.17E-01
	1121.30	34.90	6.13E-01		1.01E+00	2.92E-01

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TA-182	1189.05		16.23	8.20E-01	2.40E-01	-1.81E-01	3.77E-01
		1221.41		26.98	6.05E-01		3.59E-01	2.82E-01
		1231.02		11.44	1.33E+00		3.24E-01	6.14E-01
	IR-192	308.46		29.68	4.44E-01	3.09E-01	-1.48E-01	2.13E-01
		468.07		48.10	3.09E-01		-5.88E-02	1.47E-01
	HG-203	279.19		77.30	3.16E-01	3.16E-01	2.68E-02	1.52E-01
	TL-204	374.74		94.11	5.87E-02	5.87E-02	1.26E-02	2.80E-02
		899.15		99.16	6.86E-02		-7.14E-03	3.17E-02
		911.74		91.10	1.33E-01		2.57E-01	6.38E-02
	BI-207	569.67		97.72	6.07E-02	6.07E-02	2.60E-03	2.86E-02
		1063.62		74.90	9.03E-02		-2.16E-02	4.15E-02
+	TL-208	583.14	*	30.22	2.84E-01	2.77E-01	1.23E+00	1.36E-01
		860.37		4.48	1.51E+00		4.58E-01	7.04E-01
		2614.66	*	35.85	2.77E-01		9.58E-01	1.24E-01
	BI-210M	262.00		45.00	1.20E-01	1.20E-01	1.04E-02	5.78E-02
		300.00		23.00	2.66E-01		-1.13E+00	1.28E-01
+	PB-210	46.50	*	4.25	1.64E+00	1.64E+00	1.52E+00	8.04E-01
	PB-211	404.84		2.90	1.81E+00	1.81E+00	2.84E-01	8.60E-01
		831.96		2.90	2.26E+00		-2.21E-01	1.05E+00
+	BI-212	727.17	*	11.80	8.97E-01	8.97E-01	5.42E-01	4.31E-01
		1620.62		2.75	2.05E+00		6.93E-01	8.91E-01
+	PB-212	238.63	*	44.60	2.22E-01	2.22E-01	1.16E+00	1.09E-01
		300.09	*	3.41	1.65E+00		1.15E+00	7.95E-01
+	BI-214	609.31	*	46.30	2.44E-01	2.44E-01	7.42E-01	1.18E-01
		1120.29	*	15.10	7.32E-01		1.03E+00	3.47E-01
		1764.49	*	15.80	2.77E-01		9.12E-01	1.14E-01
		2204.22	*	4.98	8.47E-01		1.39E+00	3.32E-01
+	PB-214	295.21	*	19.19	3.10E-01	2.24E-01	1.19E+00	1.50E-01
		351.92	*	37.19	2.24E-01		9.87E-01	1.09E-01
	RN-219	401.80		6.50	8.65E-01	8.65E-01	3.26E-01	4.13E-01
	RA-223	323.87		3.88	1.44E+00	1.44E+00	-6.67E-01	6.92E-01
+	RA-224	240.98	*	3.95	2.50E+00	2.50E+00	2.94E+00	1.23E+00
	RA-225	40.00		31.00	1.68E+01	1.68E+01	-1.69E+00	8.13E+00
+	RA-226	186.21	*	3.28	2.44E+00	2.44E+00	2.35E+00	1.19E+00
	TH-227	50.10		8.40	5.37E-01	5.37E-01	-4.28E-01	2.60E-01
		236.00		11.50	5.46E-01		-3.35E+00	2.65E-01
		256.20		6.30	8.52E-01		2.73E-01	4.11E-01
+	AC-228	338.32	*	11.40	5.44E-01	3.42E-01	1.05E+00	2.62E-01
		911.07	*	27.70	3.42E-01		8.30E-01	1.62E-01
		969.11	*	16.60	9.25E-01		1.50E+00	4.47E-01
	TH-230	48.44		16.90	3.01E-01	3.01E-01	3.10E-01	1.46E-01
		62.85		4.60	1.28E+00		1.65E+00	6.27E-01
		67.67		0.37	1.45E+01		-1.20E+01	7.09E+00
	PA-231	283.67		1.60	3.36E+00	2.67E+00	1.01E-01	1.62E+00
		302.67		2.30	2.67E+00		4.22E-01	1.29E+00
	TH-231	25.64		14.70	4.68E-01	4.68E-01	-3.38E+00	2.27E-01
		84.21		6.40	8.76E-01		-3.24E-01	4.29E-01
	PA-233	311.98		38.60	1.79E+00	1.79E+00	6.20E-01	8.57E-01
	PA-234	131.20		20.40	2.34E-01	2.34E-01	-5.60E-02	1.14E-01
		733.99		8.80	7.02E-01		1.18E-01	3.28E-01
		946.00		12.00	5.55E-01		4.16E-02	2.57E-01
	PA-234M	1001.03		0.92	7.27E+00	7.27E+00	3.57E+00	3.36E+00
	TH-234	63.29		3.80	1.57E+00	1.57E+00	2.47E+00	7.67E-01

Analysis Report for 1707090-19

HTC-A08-BKGD01-0006-02

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	U-235	143.76		10.50	4.65E-01	4.65E-01	1.75E-01	2.26E-01
		163.35		4.70	9.60E-01		-1.01E-01	4.64E-01
		205.31		4.70	1.03E+00		-7.17E-02	4.98E-01
	NP-237	86.50		12.60	4.63E-01	4.63E-01	5.58E-02	2.27E-01
	NP-239	106.10		22.70	1.54E+12	1.54E+12	3.18E+11	7.46E+11
		228.18		10.70	3.20E+12		-2.28E+12	1.54E+12
		277.60		14.10	3.00E+12		6.13E+11	1.44E+12
	AM-241	59.54		35.90	1.46E-01	1.46E-01	-2.72E-02	7.13E-02
	AM-243	74.67		66.00	1.16E-01	1.16E-01	-6.80E-02	5.69E-02
+	CM-243	209.75	*	3.29	2.22E+00	3.97E-01	1.16E+00	1.08E+00
		228.14		10.60	4.12E-01		-2.93E-01	1.98E-01
		277.60	*	14.00	3.97E-01		2.60E-01	1.91E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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: HTC-A08-BKGD01-0006-02

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	89	84	64	148	510	141
25:	59	44	63	54	69	54	56	46
33:	61	75	58	63	61	59	58	58
41:	67	57	64	79	86	68	142	95
49:	71	73	63	68	81	107	87	91
57:	77	104	118	105	92	119	135	217
65:	135	109	110	121	125	126	139	128
73:	148	159	320	258	346	393	152	122
81:	97	138	100	160	133	109	154	192
89:	121	144	146	133	271	175	119	82
97:	69	81	85	79	91	66	69	66
105:	89	94	63	60	73	68	81	60
113:	67	60	64	67	70	80	72	59
121:	87	69	67	66	68	57	73	88
129:	104	88	76	89	63	78	74	77
137:	69	58	49	70	63	70	69	100
145:	86	61	76	69	59	60	50	59
153:	66	76	85	61	67	56	68	50
161:	68	59	65	60	59	51	54	69
169:	66	71	69	46	64	62	53	45
177:	50	65	56	55	43	69	44	55
185:	74	142	120	65	61	46	63	55
193:	35	43	48	43	46	40	43	57
201:	48	53	54	50	53	56	53	56
209:	77	81	45	50	42	51	46	49
217:	43	46	50	37	55	54	42	41
225:	44	42	38	42	39	44	25	50
233:	49	57	44	53	60	173	520	188
241:	97	135	90	53	40	41	44	54
249:	36	30	23	28	37	29	43	32
257:	35	36	48	29	31	34	25	46
265:	34	31	36	21	30	66	45	38
273:	23	27	33	28	34	50	30	22
281:	28	35	32	25	38	34	28	33
289:	37	21	20	31	27	48	156	157
297:	40	27	29	58	49	28	35	32
305:	31	32	21	24	22	21	28	29
313:	28	24	26	22	22	27	27	20
321:	27	25	35	29	36	21	25	36
329:	43	20	34	29	24	24	28	21
337:	25	69	105	43	18	26	26	21
345:	22	20	26	27	24	24	73	251
353:	148	34	26	20	24	21	11	25
361:	17	25	25	14	26	26	27	13

369:	24	14	19	23	21	14	25	15

Sample Title: HTC-A08-BKGD01-0006-02

Channel								
377:	19	23	20	19	22	27	27	11
385:	16	29	16	21	25	21	20	16
393:	18	20	23	22	27	18	14	16
401:	34	18	16	27	20	7	20	16
409:	36	36	24	12	15	17	11	15
417:	19	11	18	24	16	15	26	24
425:	15	17	24	21	20	14	17	20
433:	10	17	15	14	12	17	14	15
441:	14	15	15	18	20	17	23	10
449:	20	15	18	14	25	21	13	17
457:	10	15	12	16	20	19	36	19
465:	23	18	15	19	16	16	14	14
473:	19	12	8	17	19	8	23	15
481:	19	10	19	14	12	10	12	13
489:	17	13	12	11	11	13	14	18
497:	10	15	15	24	15	10	18	13
505:	14	14	12	19	24	39	85	52
513:	26	24	14	19	14	13	9	15
521:	13	16	14	7	19	9	10	13
529:	12	16	6	9	15	16	18	15
537:	13	12	12	14	16	7	14	15
545:	10	13	14	17	8	17	18	12
553:	11	11	10	11	13	19	10	10
561:	12	18	14	13	15	15	20	12
569:	14	15	7	8	16	13	10	10
577:	11	12	5	19	15	42	125	120
585:	23	11	17	12	19	10	15	10
593:	5	9	12	11	10	12	10	22
601:	10	13	15	20	10	16	15	35
609:	134	132	44	13	8	12	17	14
617:	11	5	7	7	13	14	5	15
625:	13	16	9	9	7	9	9	7
633:	6	6	7	13	9	14	11	9
641:	7	11	7	10	14	9	11	10
649:	13	9	16	8	6	10	11	9
657:	8	12	11	17	34	51	28	12
665:	12	12	7	8	10	8	6	12
673:	8	8	8	8	10	15	12	13
681:	6	9	13	5	13	8	5	11
689:	5	9	10	8	13	14	9	7
697:	13	12	13	9	8	19	9	11
705:	12	10	16	8	9	10	9	13
713:	10	16	10	6	13	9	13	10
721:	9	9	8	11	18	11	24	28
729:	15	9	9	14	9	10	11	6
737:	8	3	7	11	12	4	13	10
745:	9	4	12	7	9	6	8	12
753:	13	12	11	11	8	10	10	10
761:	6	12	9	8	11	14	14	19
769:	25	14	4	12	15	11	8	13
777:	5	4	7	10	13	7	11	9
785:	9	12	17	6	7	6	7	7
793:	7	9	16	13	9	11	3	10

801:	9	8	9	10	11	8	9	9

Sample Title: HTC-A08-BKGD01-0006-02

Channel								
809:	4	7	4	5	11	3	3	3
817:	3	7	4	10	9	11	6	3
825:	7	5	5	10	5	4	10	7
833:	11	12	13	10	13	9	10	7
841:	10	9	4	5	7	7	11	10
849:	10	6	7	5	7	10	4	9
857:	7	7	3	12	16	11	7	5
865:	11	9	6	6	5	6	2	11
873:	12	9	3	9	11	8	5	14
881:	5	4	8	8	6	7	5	5
889:	4	10	6	10	8	7	7	8
897:	7	6	7	7	12	6	8	10
905:	16	7	9	5	8	20	64	50
913:	23	7	5	9	7	5	6	7
921:	6	7	2	3	11	8	6	5
929:	6	3	10	6	9	18	6	9
937:	7	9	6	8	8	11	8	5
945:	10	3	8	9	9	3	7	4
953:	6	6	8	3	5	5	6	5
961:	5	3	7	9	23	10	9	19
969:	76	37	12	4	9	9	7	9
977:	6	6	7	7	3	10	7	11
985:	10	5	10	9	5	3	6	7
993:	9	6	10	4	6	5	8	8
1001:	9	9	4	5	3	5	4	7
1009:	5	9	9	2	1	3	6	6
1017:	5	8	7	3	7	7	5	6
1025:	12	8	5	8	6	8	5	5
1033:	8	7	6	5	7	9	8	1
1041:	5	5	2	5	7	5	8	5
1049:	8	6	8	7	11	7	9	4
1057:	4	13	3	8	3	7	5	8
1065:	8	5	7	7	6	9	9	7
1073:	5	5	5	3	8	8	12	6
1081:	5	9	9	4	10	5	9	7
1089:	10	4	6	7	7	3	6	11
1097:	5	5	8	7	10	3	12	9
1105:	8	4	6	3	10	11	6	10
1113:	6	5	6	6	3	5	18	43
1121:	30	18	6	10	4	8	3	7
1129:	4	11	7	3	9	10	7	6
1137:	5	4	3	3	5	9	5	9
1145:	7	6	8	6	3	5	6	9
1153:	10	4	10	13	12	2	4	5
1161:	3	7	5	6	4	13	3	6
1169:	11	8	12	5	8	5	6	9
1177:	11	6	9	5	13	11	12	3
1185:	6	6	6	7	11	3	4	6
1193:	7	11	6	12	6	9	7	10
1201:	3	5	6	6	6	8	11	6
1209:	8	5	10	7	7	8	8	7
1217:	8	11	11	7	9	5	10	11
1225:	7	2	6	5	10	9	9	8

1233:	7	10	6	6	8	18	5	8

Sample Title: HTC-A08-BKGD01-0006-02

Channel								
1241:	9	11	5	8	6	5	5	6
1249:	6	7	7	6	7	8	9	10
1257:	2	7	4	6	8	7	5	3
1265:	3	2	3	7	4	3	6	6
1273:	5	5	2	6	4	6	8	8
1281:	10	3	5	3	4	4	5	5
1289:	1	4	4	7	1	8	5	5
1297:	5	3	9	7	4	3	6	6
1305:	4	12	5	3	8	1	5	8
1313:	6	3	4	1	4	2	3	6
1321:	1	8	3	1	3	5	5	5
1329:	3	5	6	5	5	8	4	4
1337:	4	1	3	4	4	3	7	1
1345:	2	2	1	4	5	6	2	4
1353:	5	3	4	4	3	6	1	2
1361:	2	3	3	2	5	4	2	3
1369:	3	3	1	2	5	2	10	4
1377:	13	5	5	4	2	1	2	1
1385:	3	5	2	0	1	0	3	3
1393:	1	2	1	2	5	4	2	1
1401:	5	5	6	4	1	6	1	3
1409:	3	1	2	4	2	2	2	2
1417:	4	2	6	2	4	3	1	4
1425:	1	1	5	4	4	4	3	3
1433:	3	3	0	3	6	1	2	3
1441:	1	3	3	1	3	2	4	2
1449:	1	0	1	1	2	2	0	2
1457:	2	7	65	216	339	164	25	10
1465:	11	7	5	4	2	1	2	0
1473:	2	3	3	0	3	2	2	3
1481:	2	1	3	3	1	1	1	0
1489:	2	2	1	0	0	2	5	1
1497:	4	3	0	0	0	1	1	1
1505:	1	1	2	3	5	1	2	2
1513:	2	2	4	2	5	2	1	4
1521:	3	1	0	0	1	4	2	1
1529:	2	3	4	0	2	1	1	4
1537:	1	4	3	2	1	4	1	2
1545:	1	3	1	3	1	4	1	2
1553:	0	1	0	0	2	2	1	0
1561:	0	0	2	3	1	3	2	0
1569:	2	4	0	2	3	1	4	2
1577:	0	1	3	1	2	4	4	2
1585:	1	1	2	5	5	3	3	4
1593:	6	4	2	3	1	2	1	2
1601:	0	1	0	3	1	0	0	1
1609:	0	2	0	0	5	1	2	3
1617:	2	1	0	4	6	1	1	0
1625:	0	3	0	0	1	5	7	2
1633:	3	2	2	5	5	0	1	0
1641:	2	1	2	4	4	0	1	3
1649:	1	0	2	1	1	0	4	0
1657:	3	1	0	3	4	3	1	1

1665:	2	3	3	2	0	0	0	0

Sample Title: HTC-A08-BKGD01-0006-02

Channel								
1673:	2	1	0	2	1	2	1	3
1681:	3	2	1	3	1	3	1	0
1689:	0	1	0	1	2	0	1	1
1697:	0	3	2	1	0	2	0	6
1705:	2	2	2	3	0	2	1	1
1713:	1	0	1	1	2	0	1	1
1721:	2	1	1	2	1	1	1	3
1729:	8	4	1	1	1	0	0	0
1737:	0	1	0	0	1	0	1	1
1745:	1	1	2	0	1	2	2	0
1753:	0	0	0	1	0	2	1	1
1761:	0	2	8	22	17	3	1	0
1769:	0	1	3	0	0	1	0	4
1777:	0	2	0	1	2	2	2	1
1785:	1	0	1	3	1	2	1	0
1793:	0	0	0	0	1	0	1	0
1801:	2	2	2	0	0	1	1	2
1809:	1	1	1	2	4	1	1	0
1817:	0	0	2	1	0	2	1	1
1825:	0	2	0	2	0	1	0	2
1833:	0	0	2	1	1	0	0	0
1841:	1	4	1	3	5	3	8	5
1849:	2	0	2	3	2	1	1	1
1857:	1	3	0	0	1	2	2	0
1865:	1	0	2	0	0	0	2	0
1873:	1	4	2	1	0	0	0	1
1881:	2	1	1	0	2	2	0	1
1889:	1	1	1	1	1	4	0	1
1897:	1	0	0	0	2	0	1	1
1905:	0	2	2	0	1	0	1	1
1913:	1	1	1	1	1	2	1	1
1921:	0	2	1	1	0	2	0	1
1929:	0	1	2	4	0	1	1	1
1937:	2	0	1	0	3	1	2	1
1945:	1	1	2	1	2	2	0	2
1953:	0	0	2	1	1	2	3	1
1961:	0	1	2	1	1	2	1	1
1969:	0	1	0	1	0	0	3	3
1977:	2	0	0	0	0	0	1	0
1985:	3	3	0	1	2	0	0	0
1993:	0	0	3	0	3	1	2	0
2001:	3	0	0	1	2	0	0	0
2009:	0	1	1	0	2	0	3	2
2017:	0	1	1	0	0	0	0	2
2025:	1	0	0	2	0	2	1	1
2033:	0	0	0	1	1	0	0	0
2041:	1	4	2	3	0	0	0	0
2049:	2	2	2	0	0	0	0	0
2057:	0	1	0	0	0	1	0	1
2065:	1	1	1	0	2	1	0	0
2073:	0	0	1	0	1	1	1	1
2081:	0	0	0	0	2	0	1	1
2089:	2	1	1	1	0	0	0	1

2097:	0	0	0	0	2	2	6	6

Sample Title: HTC-A08-BKGD01-0006-02

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

2529:	1	0	0	1	1	0	0	0

Sample Title: HTC-A08-BKGD01-0006-02

Channel								
2537:	1	0	1	1	0	0	1	0
2545:	0	0	1	0	2	0	1	0
2553:	1	1	0	2	0	1	0	0
2561:	1	0	0	1	3	0	1	0
2569:	0	0	0	0	0	0	1	0
2577:	0	0	1	0	1	0	1	0
2585:	0	0	0	0	0	0	1	1
2593:	0	2	1	1	0	0	1	0
2601:	0	0	0	2	0	0	1	2
2609:	0	2	4	15	17	44	16	8
2617:	1	1	2	0	0	0	0	1
2625:	1	0	0	3	0	1	0	0
2633:	0	0	0	0	0	0	2	0
2641:	1	0	0	1	0	0	0	1
2649:	0	0	0	1	0	2	0	1
2657:	2	1	0	0	0	1	0	0
2665:	0	0	0	0	0	0	0	0
2673:	1	0	0	0	0	0	0	0
2681:	0	0	0	0	0	0	0	1
2689:	0	0	0	0	0	0	0	0
2697:	0	2	1	1	1	0	1	1
2705:	0	0	0	0	0	1	0	2
2713:	0	1	0	0	0	1	0	0
2721:	0	0	1	0	0	0	0	0
2729:	0	0	0	0	0	0	1	0
2737:	0	1	0	0	1	0	0	0
2745:	0	2	0	0	0	0	0	1
2753:	0	1	1	0	0	1	0	0
2761:	0	0	0	0	0	0	1	0
2769:	0	0	0	1	0	0	0	1
2777:	2	1	0	0	0	0	0	1
2785:	0	0	0	0	0	0	1	1
2793:	0	0	1	1	0	0	0	0
2801:	1	0	1	0	0	1	1	1
2809:	0	0	1	0	1	0	0	1
2817:	0	0	1	0	1	0	0	0
2825:	0	1	0	0	1	0	0	0
2833:	1	2	1	0	0	0	0	0
2841:	0	1	0	0	0	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	1	1	1	1	0	1	1	0
2865:	1	0	0	0	0	1	0	0
2873:	0	0	0	0	0	1	0	0
2881:	0	0	0	0	1	0	1	0
2889:	0	0	0	0	0	0	0	0
2897:	1	0	0	1	0	0	0	0
2905:	0	0	1	0	0	0	0	0
2913:	0	0	1	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	1	0	0	0	0	0	0
2945:	0	1	0	0	2	1	0	1
2953:	1	0	1	1	0	0	0	0

2961:	0	0	0	0	0	0	0	1

Sample Title: HTC-A08-BKGD01-0006-02

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

3393:	0	0	0	1	0	0	0	0

Sample Title: HTC-A08-BKGD01-0006-02

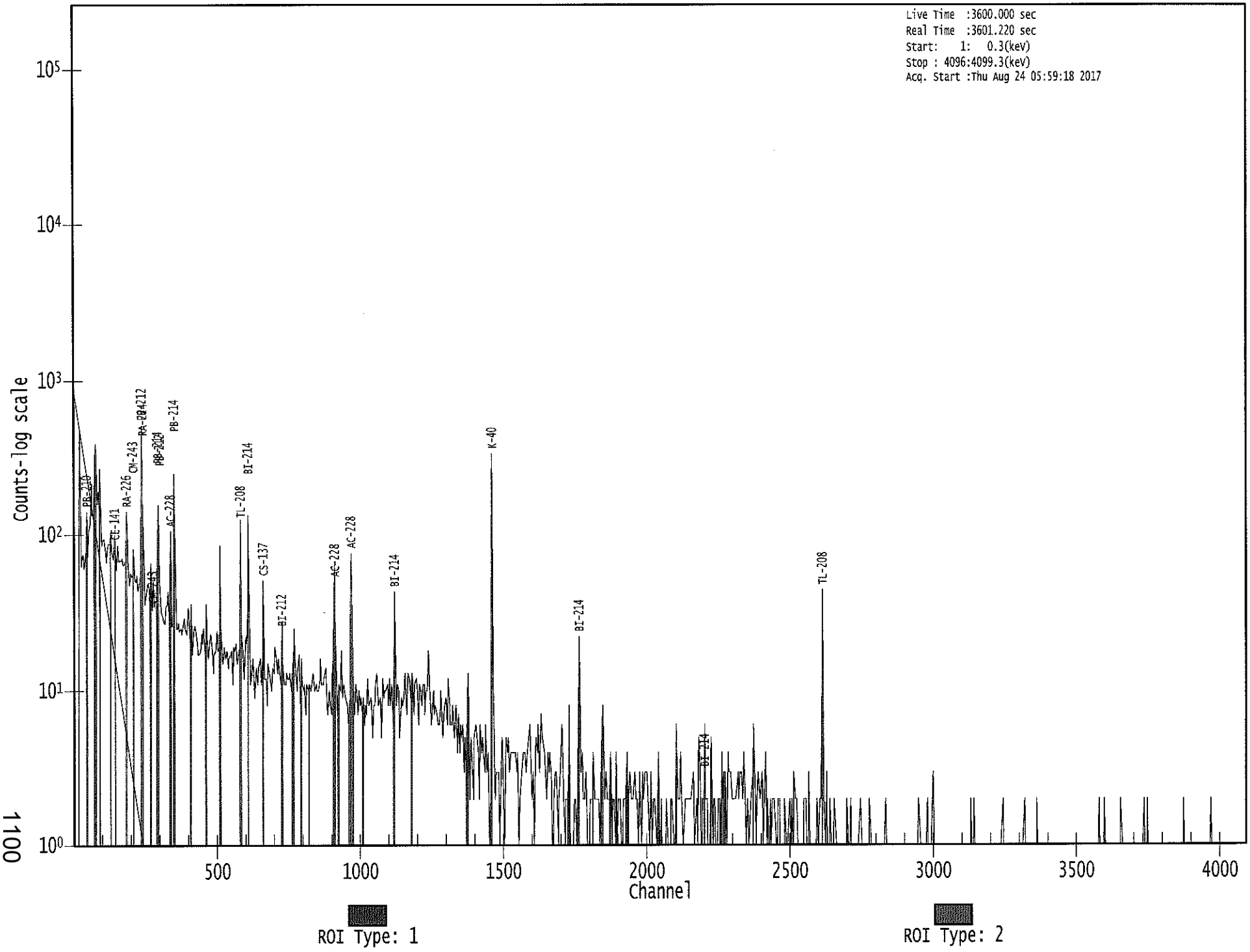
Channel								
3401:	0	1	1	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	0	0	0	0	1
3425:	0	0	1	0	1	0	0	0
3433:	0	0	0	0	0	0	1	0
3441:	0	0	0	0	1	1	0	0
3449:	0	1	0	0	0	0	0	1
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	1	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	1	0	0	0
3489:	1	0	1	0	0	0	0	0
3497:	0	0	1	0	0	0	0	0
3505:	0	0	1	0	0	0	1	0
3513:	0	1	0	0	0	0	0	1
3521:	0	0	0	0	0	0	0	0
3529:	0	0	1	0	0	0	0	1
3537:	1	0	0	1	0	1	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	1	0	0	1
3569:	0	0	0	0	0	0	0	1
3577:	0	0	2	0	0	1	0	0
3585:	0	0	0	0	0	0	0	0
3593:	1	0	1	0	2	1	1	0
3601:	1	0	0	0	0	0	1	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	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	1
3649:	0	0	0	0	2	0	0	0
3657:	0	0	0	1	0	0	0	0
3665:	1	1	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	1	0	0	1	0	0	0
3689:	0	0	0	1	0	0	0	0
3697:	0	0	0	1	0	0	0	1
3705:	0	0	0	0	0	1	0	1
3713:	0	0	1	0	0	0	1	0
3721:	0	0	1	0	0	0	0	0
3729:	0	0	1	0	0	0	0	2
3737:	0	0	0	0	0	0	0	0
3745:	0	0	2	0	0	0	0	0
3753:	0	0	0	0	0	0	1	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	1	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	1	0	0	0	1	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	1	1	0
3809:	0	0	0	0	0	1	0	0
3817:	0	1	0	0	0	0	0	1

3825:	0	0	1	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-0006-02

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

0000055863.CNF



Apex-Gamma

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Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707090-20
Sample Description	: HTC-A08-BKGD01-0612-01
Sample Type	: SOIL
Sample Size	: 6.315E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 8:58:59AM
Acquisition Started	: 8/24/2017 5:59:28AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
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)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55864

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 6:59:57AM
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	76.31	76.62	0.0000	0.00
2	87.18	87.48	0.0000	0.00
3	93.29	93.59	0.0000	0.00
4	185.69	185.88	0.0000	0.00
5	209.53	209.70	0.0000	0.00
6	238.75	238.89	0.0000	0.00
7	241.83	241.96	0.0000	0.00
8	269.98	270.08	0.0000	0.00
9	277.54	277.64	0.0000	0.00
10	295.16	295.24	0.0000	0.00
11	299.94	300.02	0.0000	0.00
12	328.14	328.18	0.0000	0.00
13	338.73	338.77	0.0000	0.00
14	351.87	351.89	0.0000	0.00
15	511.05	510.91	0.0000	0.00
16	583.28	583.06	0.0000	0.00
17	609.35	609.10	0.0000	0.00
18	728.04	727.68	0.0000	0.00
19	769.01	768.61	0.0000	0.00
20	795.81	795.38	0.0000	0.00
21	835.92	835.46	0.0000	0.00
22	860.47	859.98	0.0000	0.00
23	911.28	910.75	0.0000	0.00
24	967.99	967.40	0.0000	0.00
25	1100.71	1100.00	0.0000	0.00
26	1107.03	1106.32	0.0000	0.00
27	1120.14	1119.41	0.0000	0.00
28	1154.98	1154.21	0.0000	0.00
29	1238.21	1237.37	0.0000	0.00
30	1281.40	1280.53	0.0000	0.00
31	1401.79	1400.81	0.0000	0.00
32	1415.10	1414.11	0.0000	0.00
33	1430.75	1429.75	0.0000	0.00
34	1461.00	1459.97	0.0000	0.00
35	1620.33	1619.17	0.0000	0.00
36	1661.90	1660.71	0.0000	0.00
37	1696.16	1694.95	0.0000	0.00
38	1729.13	1727.88	0.0000	0.00
39	1764.92	1763.65	0.0000	0.00
40	2119.19	2117.65	0.0000	0.00
41	2205.35	2203.75	0.0000	0.00
42	2614.92	2613.06	0.0000	0.00

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 6:59:57AM

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	76.31	72 -	82	76.62	8.97E+02	138.57	2.06E+03	3.75
	2	87.18	86 -	89	87.48	7.49E+01	59.90	8.32E+02	1.62
	3	93.29	92 -	98	93.59	1.59E+02	85.59	1.13E+03	1.76
	4	185.69	182 -	190	185.88	2.01E+02	77.90	8.10E+02	1.40
	5	209.53	206 -	213	209.70	6.52E+01	68.59	7.26E+02	1.66
M	6	238.75	235 -	246	238.89	6.17E+02	62.74	2.93E+02	1.45
m	7	241.83	235 -	246	241.96	1.42E+02	44.77	2.59E+02	1.46
	8	269.98	267 -	274	270.08	6.88E+01	49.88	3.70E+02	2.88
	9	277.54	275 -	281	277.64	5.00E+01	45.25	3.36E+02	1.32
M	10	295.16	292 -	303	295.24	2.30E+02	44.70	2.32E+02	1.56
m	11	299.94	292 -	303	300.02	4.45E+01	35.24	2.53E+02	1.57
	12	328.14	325 -	332	328.18	4.81E+01	47.33	3.44E+02	2.96
	13	338.73	335 -	343	338.77	1.36E+02	53.97	3.55E+02	1.82
	14	351.87	348 -	355	351.89	3.60E+02	61.90	3.97E+02	1.31
	15	511.05	506 -	515	510.91	1.56E+02	49.69	2.61E+02	3.00
	16	583.28	579 -	587	583.06	2.08E+02	45.99	1.96E+02	1.57
	17	609.35	604 -	613	609.10	3.00E+02	50.30	1.90E+02	1.64
	18	728.04	726 -	731	727.68	4.49E+01	28.05	1.10E+02	1.14
	19	769.01	764 -	774	768.61	5.31E+01	38.60	1.70E+02	2.05
	20	795.81	792 -	799	795.38	4.04E+01	25.85	8.53E+01	1.98
	21	835.92	833 -	839	835.46	2.05E+01	23.02	8.30E+01	1.85
	22	860.47	856 -	863	859.98	2.08E+01	22.72	7.24E+01	2.07
	23	911.28	906 -	914	910.75	1.43E+02	34.01	8.99E+01	1.89
	24	967.99	962 -	972	967.40	9.25E+01	36.33	1.27E+02	2.01
M	25	1100.71	1099 -	1110	1100.00	1.26E+01	7.35	8.97E+00	2.12
m	26	1107.03	1099 -	1110	1106.32	1.65E+01	21.45	6.15E+01	2.83
	27	1120.14	1115 -	1124	1119.41	8.53E+01	30.07	8.14E+01	2.66
	28	1154.98	1151 -	1158	1154.21	2.07E+01	22.18	6.87E+01	3.34
	29	1238.21	1234 -	1241	1237.37	1.97E+01	25.14	9.25E+01	2.11
	30	1281.40	1277 -	1283	1280.53	1.65E+01	19.81	5.91E+01	2.70
	31	1401.79	1397 -	1404	1400.81	1.99E+01	10.20	4.14E+00	2.28
	32	1415.10	1412 -	1417	1414.11	9.71E+00	10.05	8.57E+00	2.95
	33	1430.75	1424 -	1436	1429.75	1.70E+01	16.88	2.40E+01	6.79
	34	1461.00	1454 -	1465	1459.97	6.45E+02	53.03	2.60E+01	2.55
	35	1620.33	1615 -	1623	1619.17	1.64E+01	11.16	9.24E+00	1.23
	36	1661.90	1656 -	1665	1660.71	1.38E+01	9.43	4.50E+00	3.37
	37	1696.16	1691 -	1698	1694.95	7.23E+00	10.00	1.15E+01	3.04
	38	1729.13	1724 -	1730	1727.88	7.17E+00	6.95	3.67E+00	2.73
	39	1764.92	1759 -	1768	1763.65	5.07E+01	19.42	2.46E+01	2.55
	40	2119.19	2113 -	2122	2117.65	1.18E+01	9.00	4.43E+00	2.34

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2205.35	2199 -	2207	2203.75	8.50E+00	9.62	9.00E+00	2.69
42	2614.92	2609 -	2618	2613.06	8.50E+01	20.15	8.00E+00	2.40

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 : 8/24/2017 6:59:57AM

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	76.31	72 -	82	8.97E+02	138.57	2.06E+03	1.03E+02
	2	87.18	86 -	89	7.49E+01	59.90	8.32E+02	4.71E+01
	3	93.29	92 -	98	1.59E+02	85.59	1.13E+03	6.72E+01
	4	185.69	182 -	190	2.01E+02	77.90	8.10E+02	2.21E+01
	5	209.53	206 -	213	6.52E+01	68.59	7.26E+02	5.48E+01
M	6	238.75	235 -	246	6.17E+02	62.74	2.93E+02	2.82E+01
m	7	241.83	235 -	246	1.42E+02	44.77	2.59E+02	2.64E+01
	8	269.98	267 -	274	6.88E+01	49.88	3.70E+02	3.87E+01
	9	277.54	275 -	281	5.00E+01	45.25	3.36E+02	3.53E+01
M	10	295.16	292 -	303	2.30E+02	44.70	2.32E+02	2.51E+01
m	11	299.94	292 -	303	4.45E+01	35.24	2.53E+02	2.62E+01
	12	328.14	325 -	332	4.81E+01	47.33	3.44E+02	3.72E+01
	13	338.73	335 -	343	1.36E+02	53.97	3.55E+02	4.00E+01
	14	351.87	348 -	355	3.60E+02	61.90	3.97E+02	4.02E+01
	15	511.05	506 -	515	1.56E+02	49.69	2.61E+02	3.53E+01
	16	583.28	579 -	587	2.08E+02	45.99	1.96E+02	2.94E+01
	17	609.35	604 -	613	3.00E+02	50.30	1.90E+02	3.00E+01
	18	728.04	726 -	731	4.49E+01	28.05	1.10E+02	2.03E+01
	19	769.01	764 -	774	5.31E+01	38.60	1.70E+02	2.94E+01
	20	795.81	792 -	799	4.04E+01	25.85	8.53E+01	1.85E+01
	21	835.92	833 -	839	2.05E+01	23.02	8.30E+01	1.74E+01
	22	860.47	856 -	863	2.08E+01	22.72	7.24E+01	1.71E+01
	23	911.28	906 -	914	1.43E+02	34.01	8.99E+01	1.99E+01
	24	967.99	962 -	972	9.25E+01	36.33	1.27E+02	2.53E+01
M	25	1100.71	1099 -	1110	1.26E+01	7.35	8.97E+00	4.92E+00

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	26	1107.03	1099 -	1110	1.65E+01	21.45	6.15E+01	1.29E+01
	27	1120.14	1115 -	1124	8.53E+01	30.07	8.14E+01	1.95E+01
	28	1154.98	1151 -	1158	2.07E+01	22.18	6.87E+01	1.66E+01
	29	1238.21	1234 -	1241	1.97E+01	25.14	9.25E+01	1.93E+01
	30	1281.40	1277 -	1283	1.65E+01	19.81	5.91E+01	1.49E+01
	31	1401.79	1397 -	1404	1.99E+01	10.20	4.14E+00	4.05E+00
	32	1415.10	1412 -	1417	9.71E+00	10.05	8.57E+00	6.48E+00
	33	1430.75	1424 -	1436	1.70E+01	16.88	2.40E+01	1.21E+01
	34	1461.00	1454 -	1465	6.45E+02	53.03	2.60E+01	1.79E+01
	35	1620.33	1615 -	1623	1.64E+01	11.16	9.24E+00	6.31E+00
	36	1661.90	1656 -	1665	1.38E+01	9.43	4.50E+00	4.79E+00
	37	1696.16	1691 -	1698	7.23E+00	10.00	1.15E+01	6.93E+00
	38	1729.13	1724 -	1730	7.17E+00	6.95	3.67E+00	3.64E+00
	39	1764.92	1759 -	1768	5.07E+01	19.42	2.46E+01	1.08E+01
	40	2119.19	2113 -	2122	1.18E+01	9.00	4.43E+00	4.78E+00
	41	2205.35	2199 -	2207	8.50E+00	9.62	9.00E+00	6.29E+00
	42	2614.92	2609 -	2618	8.50E+01	20.15	8.00E+00	6.68E+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 : 8/24/2017 6:59:57AM

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	76.31	72 -	82	76.62	8.97E+02	138.57	2.06E+03	.....
2	87.18	86 -	89	87.48	7.49E+01	59.90	8.32E+02	SN-126
								NP-237
								EU-155
								CD-109
3	93.29	92 -	98	93.59	1.59E+02	85.59	1.13E+03	GA-67
4	185.69	182 -	190	185.88	2.01E+02	77.90	8.10E+02	RA-226
5	209.53	206 -	213	209.70	6.52E+01	68.59	7.26E+02	CM-243

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									GA-67
M	6	238.75	235 -	246	238.89	6.17E+02	62.74	2.93E+02	PB-212
m	7	241.83	235 -	246	241.96	1.42E+02	44.77	2.59E+02	RA-224
	8	269.98	267 -	274	270.08	6.88E+01	49.88	3.70E+02	.....
	9	277.54	275 -	281	277.64	5.00E+01	45.25	3.36E+02	CM-243
									NP-239
M	10	295.16	292 -	303	295.24	2.30E+02	44.70	2.32E+02	PB-214
m	11	299.94	292 -	303	300.02	4.45E+01	35.24	2.53E+02	BI-210M
									PB-212
									GA-67
	12	328.14	325 -	332	328.18	4.81E+01	47.33	3.44E+02	LA-140
	13	338.73	335 -	343	338.77	1.36E+02	53.97	3.55E+02	AC-228
	14	351.87	348 -	355	351.89	3.60E+02	61.90	3.97E+02	PB-214
	15	511.05	506 -	515	510.91	1.56E+02	49.69	2.61E+02	.....
	16	583.28	579 -	587	583.06	2.08E+02	45.99	1.96E+02	TL-208
	17	609.35	604 -	613	609.10	3.00E+02	50.30	1.90E+02	BI-214
	18	728.04	726 -	731	727.68	4.49E+01	28.05	1.10E+02	BI-212
	19	769.01	764 -	774	768.61	5.31E+01	38.60	1.70E+02	.....
	20	795.81	792 -	799	795.38	4.04E+01	25.85	8.53E+01	CS-134
	21	835.92	833 -	839	835.46	2.05E+01	23.02	8.30E+01	.....
	22	860.47	856 -	863	859.98	2.08E+01	22.72	7.24E+01	TL-208
	23	911.28	906 -	914	910.75	1.43E+02	34.01	8.99E+01	AC-228
									TL-204
	24	967.99	962 -	972	967.40	9.25E+01	36.33	1.27E+02	.....
M	25	1100.71	1099 -	1110	1100.00	1.26E+01	7.35	8.97E+00	.....
m	26	1107.03	1099 -	1110	1106.32	1.65E+01	21.45	6.15E+01	.....
	27	1120.14	1115 -	1124	1119.41	8.53E+01	30.07	8.14E+01	BI-214
									SC-46
	28	1154.98	1151 -	1158	1154.21	2.07E+01	22.18	6.87E+01	.....
	29	1238.21	1234 -	1241	1237.37	1.97E+01	25.14	9.25E+01	CO-56
	30	1281.40	1277 -	1283	1280.53	1.65E+01	19.81	5.91E+01	.....
	31	1401.79	1397 -	1404	1400.81	1.99E+01	10.20	4.14E+00	.....
	32	1415.10	1412 -	1417	1414.11	9.71E+00	10.05	8.57E+00	.....
	33	1430.75	1424 -	1436	1429.75	1.70E+01	16.88	2.40E+01	.....
	34	1461.00	1454 -	1465	1459.97	6.45E+02	53.03	2.60E+01	K-40
	35	1620.33	1615 -	1623	1619.17	1.64E+01	11.16	9.24E+00	BI-212
	36	1661.90	1656 -	1665	1660.71	1.38E+01	9.43	4.50E+00	.....
	37	1696.16	1691 -	1698	1694.95	7.23E+00	10.00	1.15E+01	.....
	38	1729.13	1724 -	1730	1727.88	7.17E+00	6.95	3.67E+00	.....
	39	1764.92	1759 -	1768	1763.65	5.07E+01	19.42	2.46E+01	BI-214
	40	2119.19	2113 -	2122	2117.65	1.18E+01	9.00	4.43E+00	.....
	41	2205.35	2199 -	2207	2203.75	8.50E+00	9.62	9.00E+00	.....
	42	2614.92	2609 -	2618	2613.06	8.50E+01	20.15	8.00E+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 1707090-20

HTC-A08-BKGD01-0612-01

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 6:59:57AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.31	8.97E+02	138.57	2.63E-02	2.12E-03
	2	87.18	7.49E+01	59.90	2.70E-02	2.40E-03
	3	93.29	1.59E+02	85.59	2.70E-02	2.32E-03
	4	185.69	2.01E+02	77.90	2.03E-02	1.53E-03
	5	209.53	6.52E+01	68.59	1.88E-02	1.43E-03
M	6	238.75	6.17E+02	62.74	1.72E-02	1.30E-03
m	7	241.83	1.42E+02	44.77	1.71E-02	1.28E-03
	8	269.98	6.88E+01	49.88	1.58E-02	1.16E-03
	9	277.54	5.00E+01	45.25	1.55E-02	1.12E-03
M	10	295.16	2.30E+02	44.70	1.48E-02	1.10E-03
m	11	299.94	4.45E+01	35.24	1.47E-02	1.09E-03
	12	328.14	4.81E+01	47.33	1.38E-02	1.05E-03
	13	338.73	1.36E+02	53.97	1.34E-02	1.04E-03
	14	351.87	3.60E+02	61.90	1.31E-02	1.02E-03
	15	511.05	1.56E+02	49.69	9.87E-03	8.65E-04
	16	583.28	2.08E+02	45.99	8.90E-03	8.02E-04
	17	609.35	3.00E+02	50.30	8.60E-03	7.80E-04
	18	728.04	4.49E+01	28.05	7.46E-03	6.70E-04
	19	769.01	5.31E+01	38.60	7.14E-03	6.31E-04
	20	795.81	4.04E+01	25.85	6.94E-03	6.05E-04
	21	835.92	2.05E+01	23.02	6.67E-03	5.66E-04
	22	860.47	2.08E+01	22.72	6.51E-03	5.42E-04
	23	911.28	1.43E+02	34.01	6.21E-03	5.02E-04
	24	967.99	9.25E+01	36.33	5.91E-03	4.82E-04
M	25	1100.71	1.26E+01	7.35	5.32E-03	4.35E-04
m	26	1107.03	1.65E+01	21.45	5.29E-03	4.33E-04
	27	1120.14	8.53E+01	30.07	5.24E-03	4.29E-04
	28	1154.98	2.07E+01	22.18	5.12E-03	4.17E-04
	29	1238.21	1.97E+01	25.14	4.84E-03	4.16E-04
	30	1281.40	1.65E+01	19.81	4.71E-03	4.20E-04
	31	1401.79	1.99E+01	10.20	4.40E-03	4.05E-04
	32	1415.10	9.71E+00	10.05	4.37E-03	4.01E-04
	33	1430.75	1.70E+01	16.88	4.33E-03	3.96E-04
	34	1461.00	6.45E+02	53.03	4.26E-03	3.88E-04
	35	1620.33	1.64E+01	11.16	3.96E-03	3.42E-04
	36	1661.90	1.38E+01	9.43	3.89E-03	3.29E-04
	37	1696.16	7.23E+00	10.00	3.84E-03	3.20E-04
	38	1729.13	7.17E+00	6.95	3.79E-03	3.10E-04
	39	1764.92	5.07E+01	19.42	3.75E-03	3.00E-04
	40	2119.19	1.18E+01	9.00	3.40E-03	2.79E-04
	41	2205.35	8.50E+00	9.62	3.34E-03	2.79E-04
	42	2614.92	8.50E+01	20.15	3.20E-03	2.79E-04

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

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 : 8/24/2017 6:59:57AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.31	8.97E+02	138.57			8.97E+02	1.39E+02
	2	87.18	7.49E+01	59.90			7.49E+01	5.99E+01
	3	93.29	1.59E+02	85.59	4.88E+01	1.30E+00	1.10E+02	8.56E+01
	4	185.69	2.01E+02	77.90	3.48E+01	7.32E+00	1.66E+02	7.82E+01
	5	209.53	6.52E+01	68.59			6.52E+01	6.86E+01
M	6	238.75	6.17E+02	62.74	7.09E+00	6.85E+00	6.10E+02	6.31E+01
m	7	241.83	1.42E+02	44.77			1.42E+02	4.48E+01
	8	269.98	6.88E+01	49.88			6.88E+01	4.99E+01
	9	277.54	5.00E+01	45.25			5.00E+01	4.53E+01
M	10	295.16	2.30E+02	44.70			2.30E+02	4.47E+01
m	11	299.94	4.45E+01	35.24			4.45E+01	3.52E+01
	12	328.14	4.81E+01	47.33			4.81E+01	4.73E+01
	13	338.73	1.36E+02	53.97			1.36E+02	5.40E+01
	14	351.87	3.60E+02	61.90	1.04E+01	5.08E+00	3.49E+02	6.21E+01
	15	511.05	1.56E+02	49.69	7.08E+01	4.94E+00	8.49E+01	4.99E+01
	16	583.28	2.08E+02	45.99	5.65E+00	3.57E+00	2.02E+02	4.61E+01
	17	609.35	3.00E+02	50.30	1.07E+01	3.96E+00	2.89E+02	5.05E+01
	18	728.04	4.49E+01	28.05			4.49E+01	2.81E+01
	19	769.01	5.31E+01	38.60			5.31E+01	3.86E+01
	20	795.81	4.04E+01	25.85			4.04E+01	2.58E+01
	21	835.92	2.05E+01	23.02			2.05E+01	2.30E+01
	22	860.47	2.08E+01	22.72			2.08E+01	2.27E+01
	23	911.28	1.43E+02	34.01	2.63E+00	2.49E+00	1.40E+02	3.41E+01
	24	967.99	9.25E+01	36.33			9.25E+01	3.63E+01
M	25	1100.71	1.26E+01	7.35			1.26E+01	7.35E+00
m	26	1107.03	1.65E+01	21.45			1.65E+01	2.14E+01
	27	1120.14	8.53E+01	30.07	2.45E+00	2.38E+00	8.28E+01	3.02E+01
	28	1154.98	2.07E+01	22.18			2.07E+01	2.22E+01
	29	1238.21	1.97E+01	25.14			1.97E+01	2.51E+01
	30	1281.40	1.65E+01	19.81			1.65E+01	1.98E+01
	31	1401.79	1.99E+01	10.20			1.99E+01	1.02E+01
	32	1415.10	9.71E+00	10.05			9.71E+00	1.00E+01
	33	1430.75	1.70E+01	16.88			1.70E+01	1.69E+01
	34	1461.00	6.45E+02	53.03	5.90E+00	2.63E+00	6.39E+02	5.31E+01
	35	1620.33	1.64E+01	11.16			1.64E+01	1.12E+01

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	1661.90	1.38E+01	9.43			1.38E+01	9.43E+00
37	1696.16	7.23E+00	10.00			7.23E+00	1.00E+01
38	1729.13	7.17E+00	6.95			7.17E+00	6.95E+00
39	1764.92	5.07E+01	19.42	3.33E+00	1.73E+00	4.74E+01	1.95E+01
40	2119.19	1.18E+01	9.00			1.18E+01	9.00E+00
41	2205.35	8.50E+00	9.62			8.50E+00	9.62E+00
42	2614.92	8.50E+01	20.15	4.77E+00	1.52E+00	8.02E+01	2.02E+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 : 8/24/2017 6:59:57AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.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	76.31	8.97E+02	138.57			8.97E+02	1.39E+02
	2	87.18	7.49E+01	59.90			7.49E+01	5.99E+01
	3	93.29	1.59E+02	85.59	4.88E+01	1.30E+00	1.10E+02	8.56E+01
	4	185.69	2.01E+02	77.90	3.48E+01	7.32E+00	1.66E+02	7.82E+01
	5	209.53	6.52E+01	68.59			6.52E+01	6.86E+01
M	6	238.75	6.17E+02	62.74	7.09E+00	6.85E+00	6.10E+02	6.31E+01
m	7	241.83	1.42E+02	44.77			1.42E+02	4.48E+01
	8	269.98	6.88E+01	49.88			6.88E+01	4.99E+01
	9	277.54	5.00E+01	45.25			5.00E+01	4.53E+01
M	10	295.16	2.30E+02	44.70			2.30E+02	4.47E+01
m	11	299.94	4.45E+01	35.24			4.45E+01	3.52E+01
	12	328.14	4.81E+01	47.33			4.81E+01	4.73E+01
	13	338.73	1.36E+02	53.97			1.36E+02	5.40E+01
	14	351.87	3.60E+02	61.90	1.04E+01	5.08E+00	3.49E+02	6.21E+01
	15	511.05	1.56E+02	49.69	7.08E+01	4.94E+00	8.49E+01	4.99E+01
	16	583.28	2.08E+02	45.99	5.65E+00	3.57E+00	2.02E+02	4.61E+01
	17	609.35	3.00E+02	50.30	1.07E+01	3.96E+00	2.89E+02	5.05E+01
	18	728.04	4.49E+01	28.05			4.49E+01	2.81E+01
	19	769.01	5.31E+01	38.60			5.31E+01	3.86E+01
	20	795.81	4.04E+01	25.85			4.04E+01	2.58E+01
	21	835.92	2.05E+01	23.02			2.05E+01	2.30E+01

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	22	860.47	2.08E+01	22.72			2.08E+01	2.27E+01
	23	911.28	1.43E+02	34.01	2.63E+00	2.49E+00	1.40E+02	3.41E+01
	24	967.99	9.25E+01	36.33			9.25E+01	3.63E+01
M	25	1100.71	1.26E+01	7.35			1.26E+01	7.35E+00
m	26	1107.03	1.65E+01	21.45			1.65E+01	2.14E+01
	27	1120.14	8.53E+01	30.07	2.45E+00	2.38E+00	8.28E+01	3.02E+01
	28	1154.98	2.07E+01	22.18			2.07E+01	2.22E+01
	29	1238.21	1.97E+01	25.14			1.97E+01	2.51E+01
	30	1281.40	1.65E+01	19.81			1.65E+01	1.98E+01
	31	1401.79	1.99E+01	10.20			1.99E+01	1.02E+01
	32	1415.10	9.71E+00	10.05			9.71E+00	1.00E+01
	33	1430.75	1.70E+01	16.88			1.70E+01	1.69E+01
	34	1461.00	6.45E+02	53.03	5.90E+00	2.63E+00	6.39E+02	5.31E+01
	35	1620.33	1.64E+01	11.16			1.64E+01	1.12E+01
	36	1661.90	1.38E+01	9.43			1.38E+01	9.43E+00
	37	1696.16	7.23E+00	10.00			7.23E+00	1.00E+01
	38	1729.13	7.17E+00	6.95			7.17E+00	6.95E+00
	39	1764.92	5.07E+01	19.42	3.33E+00	1.73E+00	4.74E+01	1.95E+01
	40	2119.19	1.18E+01	9.00			1.18E+01	9.00E+00
	41	2205.35	8.50E+00	9.62			8.50E+00	9.62E+00
	42	2614.92	8.50E+01	20.15	4.77E+00	1.52E+00	8.02E+01	2.02E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.994	1460.81	*	10.67	1.67E+01	2.09E+00
CD-109	0.890	88.03	*	3.72	1.03E+00	8.32E-01
SN-126	0.976	87.57	*	37.00	8.92E-02	7.18E-02
EU-155	0.318	86.50	*	30.90	1.11E-01	8.94E-02
		105.30		20.70		
TL-208	0.993	583.14	*	30.22	8.94E-01	2.19E-01
		860.37	*	4.48	8.49E-01	9.29E-01
		2614.66	*	35.85	8.33E-01	2.22E-01
BI-212	0.905	727.17	*	11.80	6.06E-01	3.83E-01
		1620.62	*	2.75	1.79E+00	1.23E+00

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.997	238.63	*	44.60	9.44E-01	1.21E-01
		300.09	*	3.41	1.06E+00	8.41E-01
BI-214	0.924	609.31	*	46.30	8.64E-01	1.70E-01
		1120.29	*	15.10	1.24E+00	4.64E-01
		1764.49	*	15.80	9.52E-01	3.99E-01
		2204.22		4.98		
PB-214	1.000	295.21	*	19.19	9.60E-01	2.00E-01
		351.92	*	37.19	8.54E-01	1.66E-01
RA-224	0.891	240.98	*	3.95	2.50E+00	8.11E-01
RA-226	0.958	186.21	*	3.28	2.96E+00	5.60E+00
AC-228	0.564	338.32	*	11.40	1.05E+00	4.27E-01
		911.07	*	27.70	9.70E-01	2.48E-01
		969.11		16.60		
NP-237	0.929	86.50	*	12.60	2.62E-01	2.11E-01
CM-243	0.372	209.75	*	3.29	1.26E+00	1.33E+00
		228.14		10.60		
		277.60	*	14.00	2.76E-01	2.50E-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 : 8/24/2017 6:59:57AM
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	76.31	2.49098E-01	7.73		
	3	93.29	3.05716E-02	38.89		
	8	269.98	1.91120E-02	36.25		
	12	328.14	1.33718E-02	49.16	Sum	
	15	511.05	2.35783E-02	29.41		
	19	769.01	1.47554E-02	36.33	Sum	
	20	795.81	1.12132E-02	32.01	Sum	
	21	835.92	5.69444E-03	56.14		
	24	967.99	2.56944E-02	19.64		
M	25	1100.71	3.49191E-03	29.23		
m	26	1107.03	4.59490E-03	64.83		
	28	1154.98	5.74242E-03	53.65	Sum	

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
29	1238.21	5.48401E-03	63.67	Tol.	CO-56
30	1281.40	4.57428E-03	60.13		
31	1401.79	5.53662E-03	25.58		
32	1415.10	2.69841E-03	51.73	Sum	
33	1430.75	4.72701E-03	49.60		
36	1661.90	3.81944E-03	34.31		
37	1696.16	2.00855E-03	69.15		
38	1729.13	1.99074E-03	48.46	Sum	
40	2119.19	3.27381E-03	38.18		
41	2205.35	2.36111E-03	56.57		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	1.67E+01	2.09E+00
CD-109	0.89	88.03	*	3.72	1.03E+00	8.32E-01
SN-126	0.97	87.57	*	37.00	8.92E-02	7.18E-02
EU-155	0.31	86.50	*	30.90	1.11E-01	8.94E-02
		105.30		20.70		
TL-208	0.99	583.14	*	30.22	8.94E-01	2.19E-01
		860.37	*	4.48	8.49E-01	9.29E-01
		2614.66	*	35.85	8.33E-01	2.22E-01
BI-212	0.90	727.17	*	11.80	6.06E-01	3.83E-01
		1620.62	*	2.75	1.79E+00	1.23E+00
PB-212	0.99	238.63	*	44.60	9.44E-01	1.21E-01
		300.09	*	3.41	1.06E+00	8.41E-01
BI-214	0.92	609.31	*	46.30	8.64E-01	1.70E-01
		1120.29	*	15.10	1.24E+00	4.64E-01
		1764.49	*	15.80	9.52E-01	3.99E-01
		2204.22		4.98		
PB-214	1.00	295.21	*	19.19	9.60E-01	2.00E-01
		351.92	*	37.19	8.54E-01	1.66E-01

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-224	0.89	240.98	*	3.95	2.50E+00	8.11E-01
RA-226	0.95	186.21	*	3.28	2.96E+00	5.60E+00
AC-228	0.56	338.32	*	11.40	1.05E+00	4.27E-01
		911.07	*	27.70	9.70E-01	2.48E-01
		969.11		16.60		
NP-237	0.92	86.50	*	12.60	2.62E-01	2.11E-01
CM-243	0.37	209.75	*	3.29	1.26E+00	1.33E+00
		228.14		10.60		
		277.60	*	14.00	2.76E-01	2.50E-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	0.994	1.67E+01	2.09E+00	
?	CD-109	0.890	1.03E+00	8.32E-01	
?	SN-126	0.976	8.92E-02	7.18E-02	
?	EU-155	0.318	1.11E-01	8.94E-02	
	TL-208	0.993	8.63E-01	1.54E-01	
	BI-212	0.905	7.10E-01	3.65E-01	
	PB-212	0.997	9.46E-01	1.20E-01	
	BI-214	0.924	9.15E-01	1.48E-01	
	PB-214	1.000	8.97E-01	1.28E-01	
	RA-224	0.891	2.50E+00	8.11E-01	
	RA-226	0.958	2.96E+00	5.60E+00	
	AC-228	0.564	9.91E-01	2.15E-01	
?	NP-237	0.929	2.62E-01	2.11E-01	
	CM-243	0.372	3.09E-01	2.46E-01	

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

? = 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 1707090-20

HTC-A08-BKGD01-0612-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 6:59:57AM
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	76.31	2.49098E-01	7.73		
	3	93.29	3.05716E-02	38.89		
	8	269.98	1.91120E-02	36.25		
	12	328.14	1.33718E-02	49.16	Sum	
	15	511.05	2.35783E-02	29.41		
	19	769.01	1.47554E-02	36.33	Sum	
	20	795.81	1.12132E-02	32.01	Sum	
	21	835.92	5.69444E-03	56.14		
	24	967.99	2.56944E-02	19.64		
M	25	1100.71	3.49191E-03	29.23		
m	26	1107.03	4.59490E-03	64.83		
	28	1154.98	5.74242E-03	53.65	Sum	
	29	1238.21	5.48401E-03	63.67	Tol.	CO-56
	30	1281.40	4.57428E-03	60.13		
	31	1401.79	5.53662E-03	25.58		
	32	1415.10	2.69841E-03	51.73	Sum	
	33	1430.75	4.72701E-03	49.60		
	36	1661.90	3.81944E-03	34.31		
	37	1696.16	2.00855E-03	69.15		
	38	1729.13	1.99074E-03	48.46	Sum	
	40	2119.19	3.27381E-03	38.18		
	41	2205.35	2.36111E-03	56.57		

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

NUCLIDE MDA REPORT

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

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-1.15E-01	1.56E+00	1.56E+00
+	NA-22	1274.54		99.94	-3.65E-03	7.28E-02	7.28E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	1.52E-02	6.29E-02	6.29E-02
+	K-40	1460.81	*	10.67	1.67E+01	1.04E+00	1.04E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.28E-02	4.24E-02	4.24E-02
		78.34		96.00	2.52E-02		5.07E-02
+	SC-46	889.25		99.98	1.66E-02	1.42E-01	1.42E-01
		1120.51		99.99	4.22E-01		2.72E-01
+	V-48	983.52		99.98	-8.66E-01	5.40E+00	5.40E+00
		1312.10		97.50	1.82E+00		5.93E+00
+	CR-51	320.08		9.83	6.01E-01	5.65E+00	5.65E+00
+	MN-54	834.83		99.97	3.26E-03	8.77E-02	8.77E-02
+	CO-56	846.75		99.96	-4.75E-02	1.50E-01	1.50E-01
		1037.75		14.03	-3.09E-01		1.09E+00
		1238.25		67.00	1.69E-01		3.48E-01
		1771.40		15.51	1.43E-01		8.31E-01
		2598.48		16.90	1.89E-01		7.01E-01
+	CO-57	122.06		85.51	-1.79E-02	4.75E-02	4.75E-02
		136.48		10.60	1.68E-01		5.05E-01
+	CO-58	810.76		99.40	9.05E-02	1.82E-01	1.82E-01
+	FE-59	1099.22		56.50	-6.20E-02	5.42E-01	5.42E-01
		1291.56		43.20	1.07E-01		8.40E-01
+	CO-60	1173.22		100.00	1.09E-02	5.91E-02	7.93E-02
		1332.49		100.00	1.01E-02		5.91E-02
+	ZN-65	1115.52		50.75	6.77E-03	2.03E-01	2.03E-01
+	GA-67	93.31		35.70	5.40E+08	2.54E+08	2.54E+08
		208.95		2.24	1.39E+09		4.73E+09
		300.22		16.00	2.66E+08		6.46E+08
+	SE-75	121.11		16.70	1.06E-01	1.20E-01	3.45E-01
		136.00		59.20	-4.77E-02		1.22E-01
		264.65		59.80	-4.47E-03		1.20E-01
		279.53		25.20	4.49E-02		3.30E-01
		400.65		11.40	3.32E-01		7.53E-01
+	RB-82	776.52		13.00	2.52E+00	7.42E+00	7.42E+00
+	RB-83	520.41		46.00	1.04E-01	2.35E-01	2.35E-01
		529.64		30.30	-5.81E-02		3.24E-01
		552.65		16.40	-2.75E-02		6.08E-01
+	KR-85	513.99		0.43	-3.11E+00	1.40E+01	1.40E+01
+	SR-85	513.99		99.27	-3.93E-02	1.77E-01	1.77E-01
+	Y-88	898.02		93.40	9.98E-03	1.05E-01	1.42E-01
		1836.01		99.38	-1.05E-02		1.05E-01
+	MO-93	263.06		56.72	2.20E-02	5.44E-02	7.49E-02
		684.67		99.68	1.88E-02		6.86E-02
		1477.11		99.08	-2.38E-02		5.44E-02

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-93M	16.57		9.43	0.00E+00	6.95E+00	6.95E+00
+	NB-94	702.63		100.00	2.74E-02	5.79E-02	6.58E-02
		871.10		100.00	7.53E-03		5.79E-02
+	NB-95	765.79		99.81	9.78E-02	5.85E-01	5.85E-01
+	NB-95M	235.69		25.00	-4.53E+08	6.83E+07	6.83E+07
+	ZR-95	724.18		43.70	-5.96E-01	3.07E-01	5.41E-01
		756.72		55.30	-7.42E-02		3.07E-01
+	MO-99	181.06		6.20	2.04E+10	5.70E+10	7.77E+10
		739.58		12.80	5.91E+08		5.70E+10
		778.00		4.50	-5.43E+10		1.44E+11
+	RU-103	497.08		89.00	7.85E-02	3.13E-01	3.13E-01
+	RU-106	621.84		9.80	-6.09E-02	7.77E-01	7.77E-01
+	AG-108M	433.93		89.90	-1.17E-02	5.06E-02	5.06E-02
		614.37		90.40	-2.32E-02		7.03E-02
		722.95		90.50	-1.00E-01		7.59E-02
+	CD-109	88.03	*	3.72	1.03E+00	1.34E+00	1.34E+00
+	AG-110M	657.75		93.14	-2.50E-02	8.86E-02	8.86E-02
		677.61		10.53	2.22E-02		7.82E-01
		706.67		16.46	-8.17E-02		5.28E-01
		763.93		21.98	7.00E-02		4.29E-01
		884.67		71.63	-5.35E-02		1.04E-01
		1384.27		23.94	3.70E-02		3.32E-01
+	CD-113M	263.70		0.02	-3.72E+00	1.79E+02	1.79E+02
+	SN-113	255.12		1.93	-1.39E-01	1.35E-01	4.31E+00
		391.69		64.90	-3.95E-03		1.35E-01
+	TE123M	159.00		84.10	-2.37E-02	8.59E-02	8.59E-02
+	SB-124	602.71		97.87	9.38E-03	1.86E-01	1.86E-01
		645.85		7.26	3.40E-01		2.62E+00
		722.78		11.10	-3.46E+00		1.87E+00
		1691.02		49.00	0.00E+00		3.65E-01
+	I-125	35.49		6.49	-4.64E+01	5.87E+00	5.87E+00
+	SB-125	176.33		6.89	-2.57E-01	1.57E-01	6.65E-01
		427.89		29.33	-3.64E-02		1.57E-01
		463.38		10.35	3.31E-01		5.70E-01
		600.56		17.80	-9.38E-03		3.54E-01
		635.90		11.32	-2.83E-02		5.48E-01
+	SB-126	414.70		83.30	-6.57E+00	1.37E+01	1.37E+01
		666.33		99.60	-5.42E+00		1.70E+01
		695.00		99.60	-5.41E+00		1.63E+01
		720.50		53.80	-1.85E+00		3.40E+01
+	SN-126	87.57	*	37.00	8.92E-02	1.16E-01	1.16E-01
+	SB-127	473.00		25.00	-4.96E+06	1.31E+07	1.31E+07
		685.20		35.70	4.77E+06		1.45E+07
		783.80		14.70	-8.54E+05		3.43E+07
+	I-129	29.78		57.00	2.10E-01	4.09E-01	4.09E-01
		33.60		13.20	9.30E+00		2.08E+00
		39.58		7.52	1.17E+00		1.24E+00
+	I-131	284.30		6.05	-2.36E+03	3.16E+02	3.93E+03

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-131	364.48	81.20	-1.12E+01	3.16E+02	3.16E+02
		636.97	7.26	1.52E+03		4.89E+03
		722.89	1.80	-3.01E+04		2.28E+04
+	TE-132	49.72	13.10	-5.52E+08	1.00E+08	7.25E+08
		228.16	88.00	-6.94E+07		1.00E+08
+	BA-133	81.00	33.00	-4.49E-02	8.23E-02	1.09E-01
		302.84	17.80	1.47E-02		2.55E-01
		356.01	60.00	2.48E-02		8.23E-02
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-2.38E+04	5.77E+04	5.77E+04
+	CS-134	563.23	8.38	1.81E-01	6.89E-02	6.54E-01
		569.32	15.43	1.54E-01		3.69E-01
		604.70	97.60	4.09E-03		6.89E-02
		795.84	85.40	6.61E-02		9.58E-02
		801.93	8.73	-3.03E-01		7.72E-01
+	CS-135	268.24	16.00	-1.96E-01	2.84E-01	2.84E-01
+	@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41	28.60	1.00E+26		1.00E+26
	@	1678.03	9.54	1.00E+26		1.00E+26
+	CS-136	153.22	7.46	1.14E+01	1.27E+01	1.13E+02
		163.89	4.61	-2.24E+01		1.90E+02
		176.55	13.56	-2.48E+01		6.42E+01
		273.65	12.66	-5.65E+01		6.87E+01
		340.57	48.50	-1.10E+01		2.23E+01
		818.50	99.70	-3.39E+00		1.27E+01
		1048.07	79.60	-4.66E+00		1.70E+01
		1235.34	19.70	-1.14E+01		9.49E+01
+	CS-137	661.65	85.12	-1.89E-02	7.55E-02	7.55E-02
+	LA-138	788.74	34.00	9.98E-02	8.13E-02	1.98E-01
		1435.80	66.00	-1.67E-02		8.13E-02
+	CE-139	165.85	80.35	2.25E-02	9.13E-02	9.13E-02
+	BA-140	162.64	6.70	2.35E+01	4.57E+01	1.50E+02
		304.84	4.50	-1.76E+01		2.31E+02
		423.70	3.20	-1.65E+02		3.29E+02
		437.55	2.00	-2.57E+00		5.24E+02
		537.32	25.00	1.35E+01		4.57E+01
+	LA-140	328.77	20.50	5.42E+01	1.77E+01	6.14E+01
		487.03	45.50	-4.32E+00		2.36E+01
		815.85	23.50	3.46E+00		6.28E+01
		1596.49	95.49	-1.91E+00		1.77E+01
+	CE-141	145.44	48.40	4.55E-01	7.65E-01	7.65E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-1.32E-01	3.73E-01	3.73E-01
+	PM-144	476.78	42.00	-9.30E-03	6.73E-02	1.27E-01
		618.01	98.60	2.58E-03		7.39E-02
		696.49	99.49	-4.82E-02		6.73E-02
+	PM-145	36.85	21.70	8.52E-02	2.62E-01	5.03E-01

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-145	37.36		39.70	-9.52E-02	2.62E-01	2.62E-01
		42.30		15.10	-3.34E-01		4.04E-01
		72.40		2.31	-8.65E+00		1.77E+00
+	PM-146	453.90		39.94	1.88E-02	1.16E-01	1.16E-01
		735.90		14.01	3.76E-01		5.23E-01
		747.13		13.10	-4.38E-02		4.66E-01
+	ND-147	91.11		28.90	5.64E+01	8.30E+01	8.30E+01
		531.02		13.10	1.14E+01		2.04E+02
+	PM-149	285.90		3.10	-5.42E+13	6.91E+13	6.91E+13
+	EU-152	121.78		20.50	-5.83E-02	1.55E-01	1.55E-01
		244.69		5.40	-2.35E+00		8.26E-01
		344.27		19.13	-6.51E-02		2.22E-01
		778.89		9.20	-2.45E-01		6.49E-01
		964.01		10.40	7.33E-02		7.86E-01
		1085.78		7.22	4.25E-02		9.74E-01
		1112.02		9.60	1.19E-01		7.20E-01
		1407.95		14.94	-2.11E-02		4.33E-01
+	GD-153	97.43		31.30	-7.04E-02	1.24E-01	1.24E-01
		103.18		22.20	-3.90E-02		1.76E-01
+	EU-154	123.07		40.50	3.56E-03	8.10E-02	8.10E-02
		723.30		19.70	-4.70E-01		3.56E-01
		873.19		11.50	5.40E-02		5.16E-01
		996.32		10.30	-1.70E-01		5.93E-01
		1004.76		17.90	-7.70E-02		3.63E-01
		1274.45		35.50	-9.75E-03		1.94E-01
+	EU-155	86.50	*	30.90	1.11E-01	1.44E-01	1.44E-01
		105.30		20.70	7.86E-02		1.62E-01
+	EU-156	811.77		10.40	9.11E+00	6.22E+01	6.22E+01
		1153.47		7.20	3.17E+01		1.15E+02
		1230.71		8.90	-5.49E+00		1.01E+02
+	HO-166M	184.41		72.60	1.68E-01	7.95E-02	7.95E-02
		280.45		29.60	2.53E-02		1.45E-01
		410.94		11.10	3.44E-01		4.51E-01
		711.69		54.10	6.80E-02		1.30E-01
+	TM-171	66.72		0.14	2.89E-01	3.11E+01	3.11E+01
+	HF-172	67.35		5.31	2.53E-01	3.15E-01	8.36E-01
		125.81		11.30	9.94E-03		3.15E-01
+	LU-172	181.53		20.60	2.01E+03	3.72E+03	7.33E+03
		900.72		29.81	-1.40E+03		7.80E+03
		1093.66		62.50	7.69E+02		3.72E+03
+	LU-173	100.72		5.24	-1.22E-01	2.57E-01	6.49E-01
		272.11		21.20	6.97E-02		2.57E-01
+	HF-175	343.40		84.00	2.87E-02	1.46E-01	1.46E-01
+	LU-176	88.34		13.30	-7.55E-02	4.72E-02	3.13E-01
		201.83		86.00	-1.30E-02		5.35E-02
		306.78		94.00	-1.73E-02		4.72E-02
+	HF-181	133.02		41.70	-5.61E-02	2.87E-01	3.89E-01
		345.85		17.20	-6.66E-01		1.37E+00
		482.03		82.80	1.61E-03		2.87E-01

Analysis Report for 1707090-20

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75		41.20	5.39E-02	1.79E-01	1.79E-01
		1121.30		34.90	7.60E-01		6.17E-01
		1189.05		16.23	2.99E-01		9.70E-01
		1221.41		26.98	1.21E-01		6.43E-01
		1231.02		11.44	-7.88E-02		1.45E+00
+	IR-192	308.46		29.68	2.66E-01	2.47E-01	4.10E-01
		468.07		48.10	-2.23E-02		2.47E-01
+	HG-203	279.19		77.30	1.43E-01	2.76E-01	2.76E-01
+	TL-204	374.74		94.11	4.97E-03	5.27E-02	5.27E-02
		899.15		99.16	4.00E-03		7.35E-02
		911.74		91.10	3.06E-01		1.43E-01
+	BI-207	569.67		97.72	2.23E-02	5.35E-02	5.35E-02
		1063.62		74.90	1.99E-03		9.48E-02
+	TL-208	583.14	*	30.22	8.94E-01	1.88E-01	2.76E-01
		860.37	*	4.48	8.49E-01		1.51E+00
		2614.66	*	35.85	8.33E-01		1.88E-01
+	BI-210M	262.00		45.00	-8.69E-02	8.95E-02	8.95E-02
		300.00		23.00	8.98E-02		2.18E-01
+	PB-210	46.50		4.25	1.23E+00	1.36E+00	1.36E+00
+	PB-211	404.84		2.90	-4.98E-01	1.71E+00	1.71E+00
		831.96		2.90	5.32E-02		2.10E+00
+	BI-212	727.17	*	11.80	6.06E-01	5.84E-01	5.84E-01
		1620.62	*	2.75	1.79E+00		1.67E+00
+	PB-212	238.63	*	44.60	9.44E-01	1.99E-01	1.99E-01
		300.09	*	3.41	1.06E+00		2.51E+00
+	BI-214	609.31	*	46.30	8.64E-01	1.91E-01	1.91E-01
		1120.29	*	15.10	1.24E+00		6.35E-01
		1764.49	*	15.80	9.52E-01		5.10E-01
		2204.22		4.98	6.03E-01		1.39E+00
+	PB-214	295.21	*	19.19	9.60E-01	2.06E-01	4.39E-01
		351.92	*	37.19	8.54E-01		2.06E-01
+	RN-219	401.80		6.50	9.25E-02	7.42E-01	7.42E-01
+	RA-223	323.87		3.88	2.02E-01	1.13E+00	1.13E+00
+	RA-224	240.98	*	3.95	2.50E+00	2.24E+00	2.24E+00
+	RA-225	40.00		31.00	3.11E+01	3.29E+01	3.29E+01
+	RA-226	186.21	*	3.28	2.96E+00	2.21E+00	2.21E+00
+	TH-227	50.10		8.40	-4.06E-01	5.33E-01	5.33E-01
		236.00		11.50	-3.80E+00		5.73E-01
		256.20		6.30	-3.31E-01		7.06E-01
+	AC-228	338.32	*	11.40	1.05E+00	2.98E-01	6.42E-01
		911.07	*	27.70	9.70E-01		2.98E-01
		969.11		16.60	4.41E-01		6.33E-01
+	TH-230	48.44		16.90	-7.01E-02	2.88E-01	2.88E-01
		62.85		4.60	6.24E-01		9.90E-01
		67.67		0.37	3.26E+00		1.08E+01
+	PA-231	283.67		1.60	-1.49E+00	1.94E+00	2.47E+00
		302.67		2.30	1.11E-01		1.94E+00
+	TH-231	25.64		14.70	0.00E+00	1.24E-01	1.24E-01

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-231	84.21		6.40	3.55E-01	1.24E-01	5.81E-01
+	PA-233	311.98		38.60	5.83E-01	1.54E+00	1.54E+00
+	PA-234	131.20		20.40	-2.17E-02	1.62E-01	1.62E-01
		733.99		8.80	-3.93E-01		7.28E-01
		946.00		12.00	-1.68E-01		5.41E-01
+	PA-234M	1001.03		0.92	8.28E-01	7.31E+00	7.31E+00
+	TH-234	63.29		3.80	1.47E+00	1.20E+00	1.20E+00
+	U-235	143.76		10.50	-3.24E-02	3.98E-01	3.98E-01
		163.35		4.70	-1.08E-01		9.15E-01
		205.31		4.70	-1.03E-01		1.02E+00
+	NP-237	86.50	*	12.60	2.62E-01	3.39E-01	3.39E-01
+	NP-239	106.10		22.70	5.45E+11	1.12E+12	1.12E+12
		228.18		10.70	-2.15E+12		3.10E+12
		277.60		14.10	1.72E+12		2.70E+12
+	AM-241	59.54		35.90	-9.14E-03	1.17E-01	1.17E-01
+	AM-243	74.67		66.00	-1.37E-01	8.37E-02	8.37E-02
+	CM-243	209.75	*	3.29	1.26E+00	3.99E-01	2.17E+00
		228.14		10.60	-2.76E-01		3.99E-01
		277.60	*	14.00	2.76E-01		4.05E-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	1.56E+00	1.56E+00	-1.15E-01	7.26E-01
	NA-22	1274.54	99.94	7.28E-02	7.28E-02	-3.65E-03	3.27E-02
@	NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@	NA-24	2754.09		99.86	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	AL-26	1808.65		99.76	6.29E-02	6.29E-02	1.52E-02	2.71E-02
+	K-40	1460.81	*	10.67	1.04E+00	1.04E+00	1.67E+01	4.83E-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	4.24E-02	4.24E-02	1.28E-02	2.05E-02
		78.34		96.00	5.07E-02		2.52E-02	2.47E-02
	SC-46	889.25		99.98	1.42E-01	1.42E-01	1.66E-02	6.52E-02
		1120.51		99.99	2.72E-01		4.22E-01	1.29E-01
	V-48	983.52		99.98	5.40E+00	5.40E+00	-8.66E-01	2.48E+00
		1312.10		97.50	5.93E+00		1.82E+00	2.68E+00
	CR-51	320.08		9.83	5.65E+00	5.65E+00	6.01E-01	2.68E+00
	MN-54	834.83		99.97	8.77E-02	8.77E-02	3.26E-03	4.08E-02
	CO-56	846.75		99.96	1.50E-01	1.50E-01	-4.75E-02	6.91E-02
		1037.75		14.03	1.09E+00		-3.09E-01	4.93E-01
		1238.25		67.00	3.48E-01		1.69E-01	1.62E-01
		1771.40		15.51	8.31E-01		1.43E-01	3.48E-01
		2598.48		16.90	7.01E-01		1.89E-01	2.78E-01
	CO-57	122.06		85.51	4.75E-02	4.75E-02	-1.79E-02	2.28E-02
		136.48		10.60	5.05E-01		1.68E-01	2.44E-01
	CO-58	810.76		99.40	1.82E-01	1.82E-01	9.05E-02	8.47E-02
	FE-59	1099.22		56.50	5.42E-01	5.42E-01	-6.20E-02	2.45E-01
		1291.56		43.20	8.40E-01		1.07E-01	3.82E-01
	CO-60	1173.22		100.00	7.93E-02	5.91E-02	1.09E-02	3.63E-02
		1332.49		100.00	5.91E-02		1.01E-02	2.59E-02
	ZN-65	1115.52		50.75	2.03E-01	2.03E-01	6.77E-03	9.35E-02
	GA-67	93.31		35.70	2.54E+08	2.54E+08	5.40E+08	1.24E+08
		208.95		2.24	4.73E+09		1.39E+09	2.29E+09
		300.22		16.00	6.46E+08		2.66E+08	3.09E+08
	SE-75	121.11		16.70	3.45E-01	1.20E-01	1.06E-01	1.66E-01
		136.00		59.20	1.22E-01		-4.77E-02	5.91E-02
		264.65		59.80	1.20E-01		-4.47E-03	5.69E-02
		279.53		25.20	3.30E-01		4.49E-02	1.58E-01
		400.65		11.40	7.53E-01		3.32E-01	3.55E-01
	RB-82	776.52		13.00	7.42E+00	7.42E+00	2.52E+00	3.44E+00
	RB-83	520.41		46.00	2.35E-01	2.35E-01	1.04E-01	1.09E-01
		529.64		30.30	3.24E-01		-5.81E-02	1.50E-01
		552.65		16.40	6.08E-01		-2.75E-02	2.80E-01
	KR-85	513.99		0.43	1.40E+01	1.40E+01	-3.11E+00	6.64E+00
	SR-85	513.99		99.27	1.77E-01	1.77E-01	-3.93E-02	8.38E-02
	Y-88	898.02		93.40	1.42E-01	1.05E-01	9.98E-03	6.55E-02
		1836.01		99.38	1.05E-01		-1.05E-02	4.40E-02
	MO-93	263.06		56.72	7.49E-02	5.44E-02	2.20E-02	3.57E-02
		684.67		99.68	6.86E-02		1.88E-02	3.22E-02
		1477.11		99.08	5.44E-02		-2.38E-02	2.33E-02
	NB-93M	16.57		9.43	6.95E+00	6.95E+00	0.00E+00	0.00E+00
	NB-94	702.63		100.00	6.58E-02	5.79E-02	2.74E-02	3.08E-02
		871.10		100.00	5.79E-02		7.53E-03	2.65E-02
	NB-95	765.79		99.81	5.85E-01	5.85E-01	9.78E-02	2.76E-01
	NB-95M	235.69		25.00	6.83E+07	6.83E+07	-4.53E+08	3.32E+07
	ZR-95	724.18		43.70	5.41E-01	3.07E-01	-5.96E-01	2.56E-01
		756.72		55.30	3.07E-01		-7.42E-02	1.41E-01
	MO-99	181.06		6.20	7.77E+10	5.70E+10	2.04E+10	3.75E+10
		739.58		12.80	5.70E+10		5.91E+08	2.66E+10

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	MO-99	778.00		4.50	1.44E+11	5.70E+10	-5.43E+10	6.63E+10
	RU-103	497.08		89.00	3.13E-01	3.13E-01	7.85E-02	1.46E-01
	RU-106	621.84		9.80	7.77E-01	7.77E-01	-6.09E-02	3.65E-01
	AG-108M	433.93		89.90	5.06E-02	5.06E-02	-1.17E-02	2.37E-02
		614.37		90.40	7.03E-02		-2.32E-02	3.31E-02
		722.95		90.50	7.59E-02		-1.00E-01	3.56E-02
+	CD-109	88.03	*	3.72	1.34E+00	1.34E+00	1.03E+00	6.50E-01
	AG-110M	657.75		93.14	8.86E-02	8.86E-02	-2.50E-02	4.15E-02
		677.61		10.53	7.82E-01		2.22E-02	3.65E-01
		706.67		16.46	5.28E-01		-8.17E-02	2.47E-01
		763.93		21.98	4.29E-01		7.00E-02	2.01E-01
		884.67		71.63	1.04E-01		-5.35E-02	4.75E-02
		1384.27		23.94	3.32E-01		3.70E-02	1.46E-01
	CD-113M	263.70		0.02	1.79E+02	1.79E+02	-3.72E+00	8.51E+01
	SN-113	255.12		1.93	4.31E+00	1.35E-01	-1.39E-01	2.06E+00
		391.69		64.90	1.35E-01		-3.95E-03	6.35E-02
	TE123M	159.00		84.10	8.59E-02	8.59E-02	-2.37E-02	4.14E-02
	SB-124	602.71		97.87	1.86E-01	1.86E-01	9.38E-03	8.71E-02
		645.85		7.26	2.62E+00		3.40E-01	1.22E+00
		722.78		11.10	1.87E+00		-3.46E+00	8.75E-01
		1691.02		49.00	3.65E-01		0.00E+00	1.55E-01
	I-125	35.49		6.49	5.87E+00	5.87E+00	-4.64E+01	2.83E+00
	SB-125	176.33		6.89	6.65E-01	1.57E-01	-2.57E-01	3.21E-01
		427.89		29.33	1.57E-01		-3.64E-02	7.32E-02
		463.38		10.35	5.70E-01		3.31E-01	2.69E-01
		600.56		17.80	3.54E-01		-9.38E-03	1.66E-01
		635.90		11.32	5.48E-01		-2.83E-02	2.56E-01
	SB-126	414.70		83.30	1.37E+01	1.37E+01	-6.57E+00	6.36E+00
		666.33		99.60	1.70E+01		-5.42E+00	7.93E+00
		695.00		99.60	1.63E+01		-5.41E+00	7.55E+00
		720.50		53.80	3.40E+01		-1.85E+00	1.59E+01
+	SN-126	87.57	*	37.00	1.16E-01	1.16E-01	8.92E-02	5.62E-02
	SB-127	473.00		25.00	1.31E+07	1.31E+07	-4.96E+06	6.07E+06
		685.20		35.70	1.45E+07		4.77E+06	6.81E+06
		783.80		14.70	3.43E+07		-8.54E+05	1.59E+07
	I-129	29.78		57.00	4.09E-01	4.09E-01	2.10E-01	1.97E-01
		33.60		13.20	2.08E+00		9.30E+00	1.02E+00
		39.58		7.52	1.24E+00		1.17E+00	6.00E-01
	I-131	284.30		6.05	3.93E+03	3.16E+02	-2.36E+03	1.86E+03
		364.48		81.20	3.16E+02		-1.12E+01	1.49E+02
		636.97		7.26	4.89E+03		1.52E+03	2.28E+03
		722.89		1.80	2.28E+04		-3.01E+04	1.07E+04
	TE-132	49.72		13.10	7.25E+08	1.00E+08	-5.52E+08	3.48E+08
		228.16		88.00	1.00E+08		-6.94E+07	4.79E+07
	BA-133	81.00		33.00	1.09E-01	8.23E-02	-4.49E-02	5.27E-02
		302.84		17.80	2.55E-01		1.47E-02	1.21E-01
		356.01		60.00	8.23E-02		2.48E-02	3.90E-02
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	5.77E+04	5.77E+04	-2.38E+04	2.79E+04
	CS-134	563.23		8.38	6.54E-01	6.89E-02	1.81E-01	3.04E-01
		569.32		15.43	3.69E-01		1.54E-01	1.72E-01
		604.70		97.60	6.89E-02		4.09E-03	3.23E-02
		795.84		85.40	9.58E-02		6.61E-02	4.49E-02

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	801.93	8.73	7.72E-01	6.89E-02	-3.03E-01	3.56E-01
CS-135	268.24	16.00	2.84E-01	2.84E-01	-1.96E-01	1.36E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.13E+02	1.27E+01	1.14E+01	5.44E+01
	163.89	4.61	1.90E+02		-2.24E+01	9.17E+01
	176.55	13.56	6.42E+01		-2.48E+01	3.09E+01
	273.65	12.66	6.87E+01		-5.65E+01	3.27E+01
	340.57	48.50	2.23E+01		-1.10E+01	1.06E+01
	818.50	99.70	1.27E+01		-3.39E+00	5.88E+00
	1048.07	79.60	1.70E+01		-4.66E+00	7.76E+00
	1235.34	19.70	9.49E+01		-1.14E+01	4.40E+01
CS-137	661.65	85.12	7.55E-02	7.55E-02	-1.89E-02	3.54E-02
LA-138	788.74	34.00	1.98E-01	8.13E-02	9.98E-02	9.24E-02
	1435.80	66.00	8.13E-02		-1.67E-02	3.50E-02
CE-139	165.85	80.35	9.13E-02	9.13E-02	2.25E-02	4.41E-02
BA-140	162.64	6.70	1.50E+02	4.57E+01	2.35E+01	7.24E+01
	304.84	4.50	2.31E+02		-1.76E+01	1.10E+02
	423.70	3.20	3.29E+02		-1.65E+02	1.54E+02
	437.55	2.00	5.24E+02		-2.57E+00	2.45E+02
	537.32	25.00	4.57E+01		1.35E+01	2.12E+01
LA-140	328.77	20.50	6.14E+01	1.77E+01	5.42E+01	2.94E+01
	487.03	45.50	2.36E+01		-4.32E+00	1.10E+01
	815.85	23.50	6.28E+01		3.46E+00	2.90E+01
	1596.49	95.49	1.77E+01		-1.91E+00	7.86E+00
CE-141	145.44	48.40	7.65E-01	7.65E-01	4.55E-01	3.70E-01
@ 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	3.73E-01	3.73E-01	-1.32E-01	1.79E-01
PM-144	476.78	42.00	1.27E-01	6.73E-02	-9.30E-03	5.89E-02
	618.01	98.60	7.39E-02		2.58E-03	3.46E-02
	696.49	99.49	6.73E-02		-4.82E-02	3.11E-02
PM-145	36.85	21.70	5.03E-01	2.62E-01	8.52E-02	2.43E-01
	37.36	39.70	2.62E-01		-9.52E-02	1.26E-01
	42.30	15.10	4.04E-01		-3.34E-01	1.93E-01
	72.40	2.31	1.77E+00		-8.65E+00	8.58E-01
PM-146	453.90	39.94	1.16E-01	1.16E-01	1.88E-02	5.43E-02
	735.90	14.01	5.23E-01		3.76E-01	2.46E-01
	747.13	13.10	4.66E-01		-4.38E-02	2.16E-01
ND-147	91.11	28.90	8.30E+01	8.30E+01	5.64E+01	4.03E+01
	531.02	13.10	2.04E+02		1.14E+01	9.45E+01
PM-149	285.90	3.10	6.91E+13	6.91E+13	-5.42E+13	3.27E+13
EU-152	121.78	20.50	1.55E-01	1.55E-01	-5.83E-02	7.44E-02
	244.69	5.40	8.26E-01		-2.35E+00	3.95E-01
	344.27	19.13	2.22E-01		-6.51E-02	1.05E-01
	778.89	9.20	6.49E-01		-2.45E-01	2.99E-01
	964.01	10.40	7.86E-01		7.33E-02	3.67E-01
	1085.78	7.22	9.74E-01		4.25E-02	4.45E-01
	1112.02	9.60	7.20E-01		1.19E-01	3.28E-01
	1407.95	14.94	4.33E-01		-2.11E-02	1.92E-01
GD-153	97.43	31.30	1.24E-01	1.24E-01	-7.04E-02	5.93E-02

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	GD-153	103.18		22.20	1.76E-01	1.24E-01	-3.90E-02	8.46E-02
	EU-154	123.07		40.50	8.10E-02	8.10E-02	3.56E-03	3.89E-02
		723.30		19.70	3.56E-01		-4.70E-01	1.67E-01
		873.19		11.50	5.16E-01		5.40E-02	2.36E-01
		996.32		10.30	5.93E-01		-1.70E-01	2.69E-01
		1004.76		17.90	3.63E-01		-7.70E-02	1.65E-01
		1274.45		35.50	1.94E-01		-9.75E-03	8.75E-02
+	EU-155	86.50	*	30.90	1.44E-01	1.44E-01	1.11E-01	6.99E-02
		105.30		20.70	1.62E-01		7.86E-02	7.79E-02
	EU-156	811.77		10.40	6.22E+01	6.22E+01	9.11E+00	2.89E+01
		1153.47		7.20	1.15E+02		3.17E+01	5.30E+01
		1230.71		8.90	1.01E+02		-5.49E+00	4.69E+01
	HO-166M	184.41		72.60	7.95E-02	7.95E-02	1.68E-01	3.87E-02
		280.45		29.60	1.45E-01		2.53E-02	6.92E-02
		410.94		11.10	4.51E-01		3.44E-01	2.13E-01
		711.69		54.10	1.30E-01		6.80E-02	6.13E-02
	TM-171	66.72		0.14	3.11E+01	3.11E+01	2.89E-01	1.50E+01
	HF-172	67.35		5.31	8.36E-01	3.15E-01	2.53E-01	4.05E-01
		125.81		11.30	3.15E-01		9.94E-03	1.51E-01
	LU-172	181.53		20.60	7.33E+03	3.72E+03	2.01E+03	3.54E+03
		900.72		29.81	7.80E+03		-1.40E+03	3.61E+03
		1093.66		62.50	3.72E+03		7.69E+02	1.69E+03
	LU-173	100.72		5.24	6.49E-01	2.57E-01	-1.22E-01	3.11E-01
		272.11		21.20	2.57E-01		6.97E-02	1.23E-01
	HF-175	343.40		84.00	1.46E-01	1.46E-01	2.87E-02	6.89E-02
	LU-176	88.34		13.30	3.13E-01	4.72E-02	-7.55E-02	1.52E-01
		201.83		86.00	5.35E-02		-1.30E-02	2.58E-02
		306.78		94.00	4.72E-02		-1.73E-02	2.24E-02
	HF-181	133.02		41.70	3.89E-01	2.87E-01	-5.61E-02	1.86E-01
		345.85		17.20	1.37E+00		-6.66E-01	6.48E-01
		482.03		82.80	2.87E-01		1.61E-03	1.34E-01
	TA-182	67.75		41.20	1.79E-01	1.79E-01	5.39E-02	8.64E-02
		1121.30		34.90	6.17E-01		7.60E-01	2.92E-01
		1189.05		16.23	9.70E-01		2.99E-01	4.49E-01
		1221.41		26.98	6.43E-01		1.21E-01	2.99E-01
		1231.02		11.44	1.45E+00		-7.88E-02	6.73E-01
	IR-192	308.46		29.68	4.10E-01	2.47E-01	2.66E-01	1.95E-01
		468.07		48.10	2.47E-01		-2.23E-02	1.16E-01
	HG-203	279.19		77.30	2.76E-01	2.76E-01	1.43E-01	1.32E-01
	TL-204	374.74		94.11	5.27E-02	5.27E-02	4.97E-03	2.49E-02
		899.15		99.16	7.35E-02		4.00E-03	3.40E-02
		911.74		91.10	1.43E-01		3.06E-01	6.85E-02
	BI-207	569.67		97.72	5.35E-02	5.35E-02	2.23E-02	2.49E-02
		1063.62		74.90	9.48E-02		1.99E-03	4.35E-02
+	TL-208	583.14	*	30.22	2.76E-01	1.88E-01	8.94E-01	1.32E-01
		860.37	*	4.48	1.51E+00		8.49E-01	6.98E-01
		2614.66	*	35.85	1.88E-01		8.33E-01	7.98E-02
	BI-210M	262.00		45.00	8.95E-02	8.95E-02	-8.69E-02	4.25E-02
		300.00		23.00	2.18E-01		8.98E-02	1.04E-01
	PB-210	46.50		4.25	1.36E+00	1.36E+00	1.23E+00	6.54E-01
	PB-211	404.84		2.90	1.71E+00	1.71E+00	-4.98E-01	8.10E-01
		831.96		2.90	2.10E+00		5.32E-02	9.67E-01
+	BI-212	727.17	*	11.80	5.84E-01	5.84E-01	6.06E-01	2.74E-01

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-212	1620.62	*	2.75	1.67E+00	5.84E-01	1.79E+00	6.89E-01
+	PB-212	238.63	*	44.60	1.99E-01	1.99E-01	9.44E-01	9.73E-02
		300.09	*	3.41	2.51E+00		1.06E+00	1.22E+00
+	BI-214	609.31	*	46.30	1.91E-01	1.91E-01	8.64E-01	9.15E-02
		1120.29	*	15.10	6.35E-01		1.24E+00	2.97E-01
		1764.49	*	15.80	5.10E-01		9.52E-01	2.28E-01
		2204.22		4.98	1.39E+00		6.03E-01	5.99E-01
+	PB-214	295.21	*	19.19	4.39E-01	2.06E-01	9.60E-01	2.14E-01
		351.92	*	37.19	2.06E-01		8.54E-01	9.98E-02
	RN-219	401.80		6.50	7.42E-01	7.42E-01	9.25E-02	3.50E-01
	RA-223	323.87		3.88	1.13E+00	1.13E+00	2.02E-01	5.36E-01
+	RA-224	240.98	*	3.95	2.24E+00	2.24E+00	2.50E+00	1.09E+00
	RA-225	40.00		31.00	3.29E+01	3.29E+01	3.11E+01	1.59E+01
+	RA-226	186.21	*	3.28	2.21E+00	2.21E+00	2.96E+00	1.08E+00
	TH-227	50.10		8.40	5.33E-01	5.33E-01	-4.06E-01	2.56E-01
		236.00		11.50	5.73E-01		-3.80E+00	2.79E-01
		256.20		6.30	7.06E-01		-3.31E-01	3.37E-01
+	AC-228	338.32	*	11.40	6.42E-01	2.98E-01	1.05E+00	3.11E-01
		911.07	*	27.70	2.98E-01		9.70E-01	1.39E-01
		969.11		16.60	6.33E-01		4.41E-01	3.00E-01
	TH-230	48.44		16.90	2.88E-01	2.88E-01	-7.01E-02	1.39E-01
		62.85		4.60	9.90E-01		6.24E-01	4.80E-01
		67.67		0.37	1.08E+01		3.26E+00	5.23E+00
	PA-231	283.67		1.60	2.47E+00	1.94E+00	-1.49E+00	1.17E+00
		302.67		2.30	1.94E+00		1.11E-01	9.22E-01
	TH-231	25.64		14.70	1.24E-01	1.24E-01	0.00E+00	0.00E+00
		84.21		6.40	5.81E-01		3.55E-01	2.81E-01
	PA-233	311.98		38.60	1.54E+00	1.54E+00	5.83E-01	7.31E-01
	PA-234	131.20		20.40	1.62E-01	1.62E-01	-2.17E-02	7.76E-02
		733.99		8.80	7.28E-01		-3.93E-01	3.39E-01
		946.00		12.00	5.41E-01		-1.68E-01	2.48E-01
	PA-234M	1001.03		0.92	7.31E+00	7.31E+00	8.28E-01	3.35E+00
	TH-234	63.29		3.80	1.20E+00	1.20E+00	1.47E+00	5.83E-01
	U-235	143.76		10.50	3.98E-01	3.98E-01	-3.24E-02	1.93E-01
		163.35		4.70	9.15E-01		-1.08E-01	4.42E-01
		205.31		4.70	1.02E+00		-1.03E-01	4.93E-01
+	NP-237	86.50	*	12.60	3.39E-01	3.39E-01	2.62E-01	1.65E-01
	NP-239	106.10		22.70	1.12E+12	1.12E+12	5.45E+11	5.40E+11
		228.18		10.70	3.10E+12		-2.15E+12	1.48E+12
		277.60		14.10	2.70E+12		1.72E+12	1.29E+12
	AM-241	59.54		35.90	1.17E-01	1.17E-01	-9.14E-03	5.65E-02
	AM-243	74.67		66.00	8.37E-02	8.37E-02	-1.37E-01	4.09E-02
+	CM-243	209.75	*	3.29	2.17E+00	3.99E-01	1.26E+00	1.06E+00
		228.14		10.60	3.99E-01		-2.76E-01	1.91E-01
		277.60	*	14.00	4.05E-01		2.76E-01	1.95E-01

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

Analysis Report for 1707090-20

HTC-A08-BKGD01-0612-01

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: HTC-A08-BKGD01-0612-01

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	0	0	0	0	0	0
25:	0	0	0	0	41	88	119	124
33:	228	670	76	96	91	89	93	103
41:	119	72	60	50	62	77	93	79
49:	59	71	67	85	75	67	87	88
57:	88	95	83	87	103	92	113	152
65:	98	80	106	103	95	99	108	100
73:	112	123	336	192	383	306	103	106
81:	95	71	101	123	101	82	164	166
89:	79	144	125	110	192	144	100	62
97:	56	62	64	79	54	55	68	60
105:	72	84	65	63	68	62	60	66
113:	72	66	59	68	62	49	64	69
121:	65	67	58	73	65	67	63	60
129:	88	81	57	60	61	53	63	70
137:	43	62	67	57	76	52	44	73
145:	65	62	49	62	57	49	44	49
153:	57	58	62	55	45	56	49	54
161:	41	52	59	61	52	48	66	55
169:	48	46	40	53	48	51	61	53
177:	46	43	42	57	48	42	60	46
185:	70	166	88	46	46	42	48	46
193:	61	43	41	55	46	43	46	52
201:	42	49	49	47	55	55	49	43
209:	84	72	39	51	35	42	44	45
217:	39	51	46	40	41	36	36	41
225:	49	29	31	32	40	35	37	47
233:	31	39	44	47	37	238	468	97
241:	89	127	44	31	30	35	26	36
249:	28	30	28	33	41	25	31	35
257:	34	34	35	27	29	28	19	22
265:	36	21	23	27	38	47	43	30
273:	24	22	26	31	31	51	30	24
281:	25	23	28	19	16	21	29	21
289:	30	26	23	20	21	40	163	90
297:	37	21	34	53	37	17	21	31
305:	19	24	24	28	26	26	33	17
313:	16	27	16	22	24	26	19	17
321:	21	31	20	19	20	19	38	38
329:	34	30	19	22	24	28	22	23
337:	32	85	62	21	28	25	15	17
345:	20	13	24	31	23	28	95	271
353:	68	20	22	23	27	24	18	17
361:	24	12	15	18	17	24	12	17

369:	16	18	14	18	18	27	22	22

Sample Title: HTC-A08-BKGD01-0612-01

Channel								
377:	12	20	24	19	15	14	16	14
385:	18	19	13	23	22	22	14	27
393:	22	11	18	11	17	14	14	24
401:	17	20	19	15	20	25	21	25
409:	24	22	15	23	15	5	11	17
417:	14	11	17	11	17	13	19	13
425:	19	9	20	13	18	7	13	17
433:	17	15	10	15	19	8	17	13
441:	12	9	20	13	13	18	13	16
449:	16	14	15	9	14	11	13	20
457:	7	13	22	6	8	17	38	23
465:	14	10	19	12	13	14	16	7
473:	13	10	9	8	20	11	11	16
481:	10	11	17	9	10	17	11	18
489:	5	11	17	11	12	9	16	8
497:	13	11	16	12	10	10	18	14
505:	19	13	13	16	26	64	63	48
513:	20	12	11	10	9	11	9	15
521:	12	15	10	7	11	10	9	9
529:	9	8	14	8	15	9	14	9
537:	13	14	9	8	8	8	14	15
545:	6	16	10	10	13	10	8	11
553:	7	11	9	8	9	9	4	9
561:	9	11	15	12	12	9	15	12
569:	11	10	15	14	3	10	12	13
577:	8	16	8	9	11	50	137	62
585:	10	10	9	11	4	9	9	15
593:	7	16	13	14	10	13	9	12
601:	12	10	9	8	10	15	17	54
609:	162	81	17	18	13	8	11	9
617:	9	11	12	12	11	7	14	11
625:	15	18	10	9	11	4	12	4
633:	8	12	10	8	10	8	10	11
641:	11	8	7	10	9	15	7	6
649:	14	11	6	12	6	12	6	12
657:	15	8	8	12	12	17	10	9
665:	12	11	6	7	11	5	13	9
673:	7	10	9	10	7	12	13	8
681:	14	8	10	6	13	13	16	13
689:	5	10	6	12	3	10	9	8
697:	7	7	7	15	10	13	12	13
705:	3	15	2	13	14	7	15	13
713:	13	8	12	5	15	7	8	13
721:	10	8	7	8	14	16	40	14
729:	8	12	10	3	8	13	10	12
737:	8	14	14	1	13	6	8	9
745:	11	6	4	8	9	5	9	8
753:	5	10	8	4	8	7	5	9
761:	6	16	7	9	6	15	16	25
769:	17	10	12	13	10	5	10	5
777:	6	9	10	5	3	10	9	7
785:	8	17	5	10	8	10	5	4
793:	6	13	22	14	7	11	6	6

801:	7	8	5	7	9	11	8	8

Sample Title: HTC-A08-BKGD01-0612-01

Channel								
809:	9	12	5	4	14	3	2	9
817:	11	7	4	7	10	10	7	2
825:	6	11	4	5	6	9	9	5
833:	4	8	16	12	8	6	8	6
841:	7	8	8	9	8	3	9	2
849:	7	8	9	6	7	5	6	2
857:	5	6	8	15	12	6	3	7
865:	7	4	4	6	5	2	9	5
873:	6	5	1	10	3	6	8	8
881:	2	4	7	5	7	4	6	10
889:	3	5	6	8	5	5	9	8
897:	8	7	8	7	6	9	6	9
905:	7	5	6	7	18	43	72	26
913:	8	3	5	6	9	8	6	5
921:	6	3	3	3	4	5	9	6
929:	8	3	5	5	11	9	5	5
937:	7	3	7	6	6	6	10	2
945:	5	7	7	5	11	6	7	4
953:	5	8	6	5	10	3	5	7
961:	7	3	8	16	16	8	13	32
969:	40	11	3	6	7	9	3	6
977:	5	11	5	5	6	6	9	3
985:	5	9	6	6	4	5	7	3
993:	2	5	3	6	4	6	6	8
1001:	5	6	6	8	4	4	3	4
1009:	7	4	7	4	4	3	3	4
1017:	5	5	1	10	10	5	6	10
1025:	6	5	4	3	5	5	8	5
1033:	8	3	8	5	4	4	5	4
1041:	4	7	6	3	4	2	5	6
1049:	12	5	6	7	4	9	8	10
1057:	3	6	5	4	3	7	7	7
1065:	6	7	4	8	6	8	6	10
1073:	4	4	4	4	8	8	3	4
1081:	4	6	8	5	7	3	3	6
1089:	6	6	6	3	8	2	6	5
1097:	4	2	2	8	2	8	8	4
1105:	7	9	12	6	5	3	7	6
1113:	4	4	2	6	8	16	26	32
1121:	16	10	5	5	5	8	7	5
1129:	6	12	7	6	4	3	7	10
1137:	4	6	6	3	7	5	3	8
1145:	9	6	6	8	6	4	4	6
1153:	12	6	11	7	6	3	6	4
1161:	6	8	9	6	11	8	5	7
1169:	3	9	5	2	6	7	9	3
1177:	6	3	6	9	10	6	7	6
1185:	6	7	9	5	5	6	13	2
1193:	8	10	12	15	8	8	5	9
1201:	5	13	5	4	9	8	6	9
1209:	11	1	8	5	4	8	11	8
1217:	6	9	3	9	8	12	9	10
1225:	13	3	10	9	4	8	11	8

1233:	4	7	9	4	11	13	9	8

Sample Title: HTC-A08-BKGD01-0612-01

Channel								
1241:	5	7	7	6	7	5	6	4
1249:	7	10	4	8	10	8	4	3
1257:	7	4	2	2	5	4	2	3
1265:	4	3	3	3	3	4	5	2
1273:	2	6	3	5	4	5	6	13
1281:	7	9	2	6	3	6	5	4
1289:	6	4	9	2	6	3	4	3
1297:	4	4	4	2	2	6	1	0
1305:	2	3	2	5	3	4	5	3
1313:	4	6	4	3	4	2	2	2
1321:	2	4	4	3	3	3	2	3
1329:	1	4	4	3	1	2	2	1
1337:	2	6	8	2	3	4	4	0
1345:	3	2	4	4	2	0	5	6
1353:	4	1	2	5	2	4	4	2
1361:	0	0	3	4	5	2	6	2
1369:	6	1	1	1	3	0	3	2
1377:	5	4	2	3	3	2	1	0
1385:	4	5	1	2	3	3	2	5
1393:	4	2	1	0	0	3	2	3
1401:	4	7	3	0	1	3	2	5
1409:	1	2	3	2	5	3	3	1
1417:	0	0	4	1	3	4	2	1
1425:	3	0	6	4	3	1	1	2
1433:	4	2	2	0	1	0	1	4
1441:	1	5	2	1	2	1	3	0
1449:	2	4	0	0	1	0	2	6
1457:	18	30	138	242	172	45	3	1
1465:	1	3	6	3	0	4	3	2
1473:	1	0	1	0	4	0	2	2
1481:	1	1	1	1	3	0	2	2
1489:	2	1	4	0	0	1	4	2
1497:	1	2	2	3	1	2	2	2
1505:	5	2	0	3	2	8	2	2
1513:	2	1	0	3	1	3	2	3
1521:	1	1	2	0	1	1	1	2
1529:	0	2	2	0	3	0	1	2
1537:	4	0	1	1	2	1	4	3
1545:	1	2	1	0	2	1	2	4
1553:	0	2	3	2	1	1	3	0
1561:	0	1	2	0	1	2	1	2
1569:	0	3	2	2	1	2	1	0
1577:	1	0	0	4	1	2	2	2
1585:	3	5	4	8	6	0	8	3
1593:	4	1	0	2	1	0	2	1
1601:	4	0	0	0	0	0	1	1
1609:	3	1	2	2	1	0	0	1
1617:	1	4	3	9	1	2	0	2
1625:	0	0	2	1	6	1	1	2
1633:	0	3	2	2	4	3	0	5
1641:	1	1	1	2	2	0	2	1
1649:	0	2	0	2	2	0	1	0
1657:	1	2	2	3	2	4	1	1

1665:	0	0	2	2	0	5	1	1

Sample Title: HTC-A08-BKGD01-0612-01

Channel								
1673:	1	2	1	1	0	4	0	2
1681:	2	0	1	1	1	0	2	1
1689:	2	0	2	1	0	3	1	4
1697:	2	0	1	2	2	2	2	1
1705:	2	0	0	2	0	2	0	0
1713:	0	2	0	0	4	0	1	1
1721:	0	2	0	1	0	0	3	1
1729:	4	0	0	0	1	1	0	0
1737:	1	3	2	1	1	0	2	1
1745:	3	1	1	1	1	2	0	1
1753:	4	2	0	1	1	2	1	2
1761:	0	9	16	21	10	3	1	0
1769:	2	1	1	0	0	1	0	0
1777:	0	0	3	0	0	0	0	1
1785:	1	0	0	0	1	1	0	0
1793:	0	0	0	2	1	2	3	1
1801:	2	1	1	2	4	1	0	1
1809:	2	1	1	0	1	1	0	0
1817:	1	2	0	0	1	1	1	3
1825:	0	0	0	0	1	1	2	0
1833:	1	0	0	2	2	1	1	1
1841:	1	3	1	1	1	2	1	3
1849:	1	1	0	2	2	2	0	1
1857:	1	1	0	0	1	0	1	0
1865:	1	0	2	0	2	0	1	0
1873:	1	1	0	0	1	1	0	2
1881:	1	1	0	2	2	2	3	2
1889:	1	1	1	1	0	1	1	2
1897:	1	1	1	0	2	0	1	2
1905:	0	0	0	2	1	0	1	2
1913:	0	2	1	1	1	0	0	0
1921:	1	0	2	0	1	0	0	0
1929:	0	0	1	1	1	0	1	3
1937:	0	2	0	1	2	0	0	0
1945:	0	1	1	0	2	1	0	2
1953:	1	0	2	1	1	0	2	2
1961:	0	0	1	0	1	0	1	2
1969:	2	3	0	1	0	2	2	1
1977:	0	0	1	1	0	0	1	0
1985:	0	1	1	0	2	0	0	0
1993:	3	1	2	1	3	1	1	1
2001:	0	1	0	1	2	1	3	1
2009:	2	2	2	1	0	1	0	1
2017:	1	0	0	1	0	1	0	0
2025:	0	0	0	0	0	0	1	1
2033:	0	1	1	0	0	1	0	2
2041:	1	1	1	1	0	0	0	0
2049:	1	3	2	0	3	0	0	0
2057:	0	1	1	0	1	0	0	0
2065:	1	0	1	0	2	1	1	0
2073:	0	1	1	1	3	2	0	1
2081:	0	2	1	0	0	0	0	1
2089:	1	0	0	1	0	0	2	2

2097:	0	1	1	3	5	5	5	3

Sample Title: HTC-A08-BKGD01-0612-01

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

2529:	1	0	1	0	0	2	0	0

Sample Title: HTC-A08-BKGD01-0612-01

Channel								
2537:	1	1	0	0	1	1	0	0
2545:	0	0	0	1	0	0	0	1
2553:	0	0	0	0	0	0	0	1
2561:	0	0	0	1	0	0	0	0
2569:	1	0	0	0	0	2	0	0
2577:	0	1	0	1	0	0	0	2
2585:	2	0	0	0	0	1	0	1
2593:	1	0	0	0	1	1	0	0
2601:	0	1	0	0	0	2	0	2
2609:	0	8	10	11	21	27	9	2
2617:	1	0	0	0	0	0	0	2
2625:	1	0	0	0	1	0	0	0
2633:	0	0	1	0	0	1	0	0
2641:	0	1	0	0	0	0	0	0
2649:	0	0	1	0	0	0	0	0
2657:	0	0	0	0	0	1	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	1	0	0	0	0	0
2681:	0	0	0	0	0	0	1	0
2689:	1	0	0	0	1	0	1	0
2697:	1	0	0	0	0	0	0	0
2705:	1	0	1	1	0	0	0	0
2713:	0	0	0	0	0	0	1	0
2721:	0	0	0	0	0	1	0	0
2729:	0	0	1	0	1	0	0	0
2737:	0	0	0	0	0	1	1	1
2745:	1	1	1	1	0	1	1	1
2753:	0	0	0	2	0	0	1	0
2761:	0	0	0	0	1	0	0	0
2769:	0	0	1	0	1	0	0	0
2777:	1	0	0	1	0	0	0	1
2785:	0	0	0	0	0	0	0	1
2793:	0	0	0	1	0	0	1	0
2801:	0	0	0	0	1	1	1	0
2809:	0	0	1	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	2	0	0	0	0	1	1	0
2833:	2	1	0	0	0	0	0	0
2841:	0	1	0	0	0	0	1	1
2849:	0	0	0	1	0	0	0	1
2857:	0	0	0	0	0	2	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	1	0
2881:	2	0	0	0	0	1	0	0
2889:	0	0	0	0	0	0	0	0
2897:	1	1	0	0	1	0	0	0
2905:	0	1	0	0	0	0	0	0
2913:	0	1	0	1	0	2	0	0
2921:	1	0	0	0	1	0	0	0
2929:	0	1	0	0	1	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	1	0	2	0	0	0	0
2953:	0	1	0	0	0	0	0	0

2961:	0	0	0	2	0	0	0	0

Sample Title: HTC-A08-BKGD01-0612-01

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

Sample Title: HTC-A08-BKGD01-0612-01

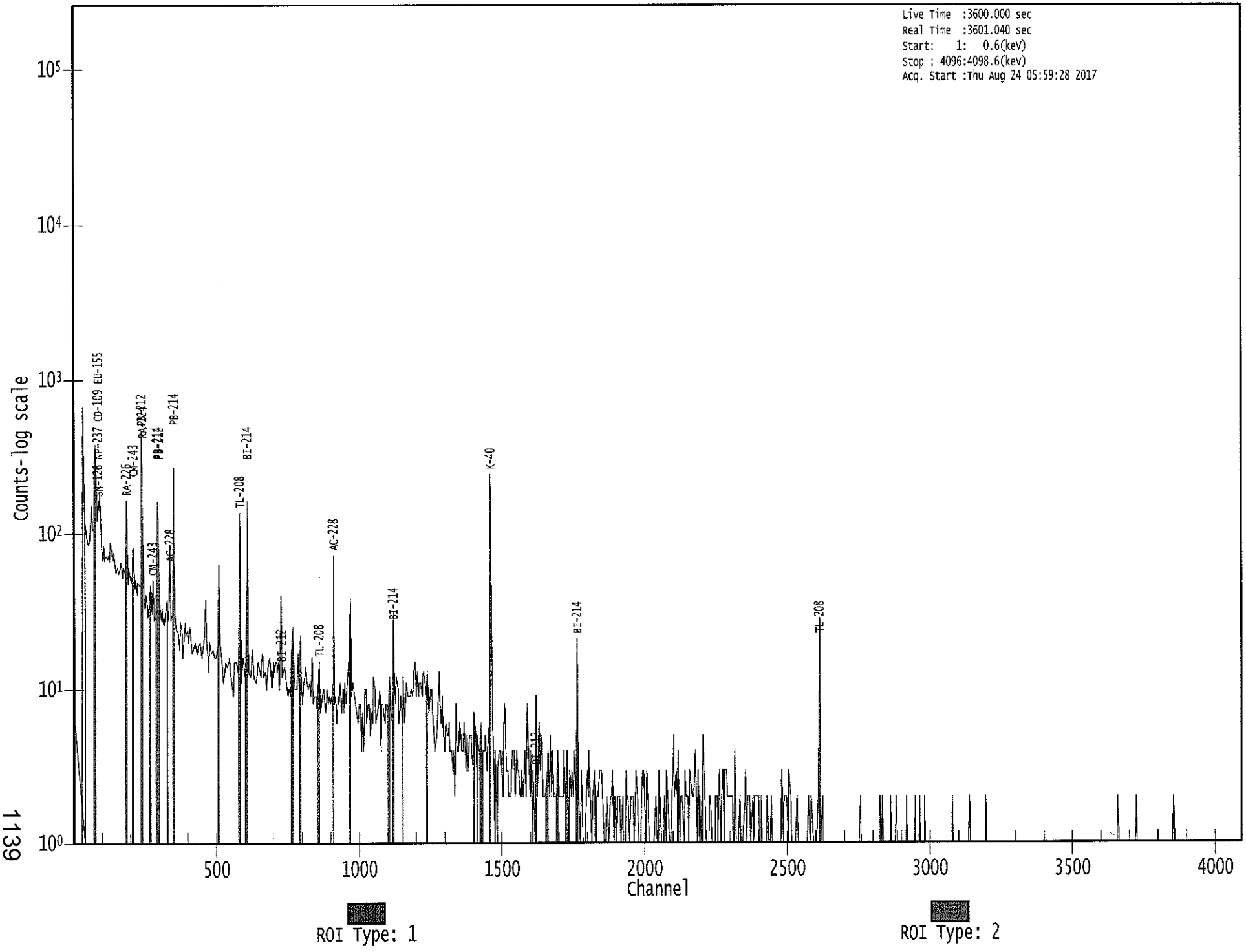
Channel								
3401:	0	0	1	0	0	0	0	0
3409:	0	0	0	1	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	1	0	0	0
3441:	0	0	0	0	1	0	1	0
3449:	1	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	1	0
3465:	0	0	0	1	0	0	0	0
3473:	0	0	0	0	0	1	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	0	0	0	0	0
3497:	1	0	0	0	1	0	0	0
3505:	0	0	0	1	0	0	0	0
3513:	0	0	0	0	0	1	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	1	0	0	1	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	1	0	1	0	0	0	0
3561:	0	1	0	0	0	0	0	0
3569:	1	0	0	0	0	0	0	0
3577:	0	0	0	1	0	0	0	0
3585:	0	0	0	0	0	0	1	0
3593:	0	0	0	0	1	0	0	0
3601:	0	0	1	1	0	0	1	0
3609:	0	0	0	0	0	0	1	0
3617:	0	1	0	0	0	0	0	0
3625:	0	0	1	0	0	0	0	0
3633:	0	0	1	0	0	0	0	0
3641:	0	0	0	0	1	0	0	0
3649:	0	1	0	0	0	0	0	0
3657:	0	2	0	0	0	0	0	1
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	1	0	0	0
3681:	0	0	0	1	0	0	0	0
3689:	0	1	0	0	1	1	0	0
3697:	1	0	0	0	0	1	0	1
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	1	0	1	1
3721:	1	0	0	2	0	0	0	0
3729:	1	0	0	0	0	0	0	0
3737:	0	0	1	0	0	0	0	0
3745:	0	0	0	0	0	0	1	0
3753:	0	0	0	0	0	0	0	0
3761:	0	1	1	1	0	0	0	0
3769:	0	0	0	1	0	0	0	0
3777:	1	0	0	0	0	0	0	0
3785:	0	1	0	1	0	0	0	1
3793:	0	0	1	0	0	0	0	0
3801:	0	0	0	1	0	0	0	0
3809:	0	0	1	0	0	0	0	0
3817:	1	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-0612-01

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

0000055864.CNF



```
*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
```

8/23

Last Results Report
8/23/17 5:33:45 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004GAW-16C.QCK

Detector: GE4
Geometry: <None>
Certificate: GAW-16
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/23/17 5:17:24 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 967.6 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	5.8260E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Peak centroid 661.65 kev	6.6067E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3318E+003	
Boundary Limits: [1.331E+003, 1.335E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1836.01 ke	1.8356E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	2.6577E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	2.5113E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	2.7734E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	3.0212E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		<Ab : : : >
Decay corrected activity	1.3709E+005	
Boundary Limits: [1.196E-001, 1.793E-001]		< : : : >
Decay corrected activity	6.1266E+004	
Boundary Limits: [4.890E-002, 7.335E-002]		< : : : >

Decay corrected activity 9.0189E+004
Boundary Limits: [7.743E-002, 1.161E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Decay corrected activity	1.8897E+005	
Boundary Limits: [1.609E-001, 2.414E-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)

```
*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
```

Last Results Report
8/23/17 5:33:10 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000003GAS-1602C.QC

Detector: GE3
Geometry: <None>
Certificate: GAS-1602
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/23/17 5:17:19 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 933.8 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	5.9896E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 kev	6.6181E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Peak centroid 1332.49 ke	1.3325E+003	
Boundary Limits: [1.330E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8358E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	1.9554E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.2318E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	2.6359E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.8738E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.5689E+005	
Boundary Limits: [1.189E-001, 1.784E-001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity	6.0617E+004	
Boundary Limits: [4.862E-002, 7.293E-002]		< : : : >

Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 9.4648E+004
Boundary Limits: [7.700E-002, 1.155E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 1.8879E+005
Boundary Limits: [1.600E-001, 2.400E-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)

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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
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Last Results Report
8/23/17 5:32:59 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002GAS-1601C.QC

Detector: GE2
Geometry: <None>
Certificate: GAS-1601
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/23/17 5:17:11 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 923.8 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]		< : : : >
Peak centroid 661.65 kev	6.6141E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3319E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8351E+003	
Boundary Limits: [1.833E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	1.2510E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.0919E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.3733E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Y-88	2.8236E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity	1.4208E+005	
Boundary Limits: [1.190E-001, 1.785E-001]		< : : : >

Decay corrected activity 7.2405E+004
Boundary Limits: [5.718E-002, 8.577E-002] < : : : >

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Decay corrected activity Boundary Limits: [7.706E-002, 1.156E-001]	1.0115E+005	< : : : >
Decay corrected activity Boundary Limits: [1.602E-001, 2.403E-001]	2.0672E+005	< : : : >

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
8/23/17 5:32:48 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001GAF-16C.QCK

Detector: GE1
Geometry: <None>
Certificate: GAF-16
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/23/17 5:17:04 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 928.7 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	6.0012E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 kev	6.6180E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3324E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8356E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	1.4317E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	1.8499E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.2163E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.4394E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.5153E+004	
Boundary Limits: [1.254E-002, 1.881E-002]		< : : : >
Decay corrected activity	6.6600E+003	

Boundary Limits: [5.134E-003, 7.700E-003] < : : : >

Decay corrected activity 1.0780E+004
Boundary Limits: [8.130E-003, 1.220E-002] < : : : >

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Decay corrected activity	2.0084E+004	
Boundary Limits: [1.690E-002, 2.534E-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)

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*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
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Last Results Report
8/23/17 5:57:06 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004B.QCK

Detector: GE4
Geometry: <None>
Certificate: <None>
Sample ID: QA Background Ch
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 8/23/17 5:41:44 AM
Measurement Date: 8/23/17 5:41:46 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 900.3 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE4 [SD: 7.1308E+000+/-131.12]	1.7211E+000	-4.1256E-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)

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*************************************************************************
*****        G E N I E   Q U A L I T Y   A S S U R A N C E          *****
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Last Results Report
8/23/17 5:56:57 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000003B.QCK

Detector: GE3
Geometry: <None>
Certificate: <None>
Sample ID: QA Background Ch
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 8/23/17 5:41:38 AM
Measurement Date: 8/23/17 5:41:40 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 901.6 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE3 [SD: 2.1795E+003+/-1174.4]	1.6290E+003	-4.6872E-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)

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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
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Last Results Report
8/23/17 5:56:48 AM

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: 8/23/17 5:41:30 AM
Measurement Date: 8/23/17 5:41:32 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 GE2 [SD:-1.7082E+035+/-******]	2.3456E+000	3.1686E-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 *****
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8/23

Last Results Report
8/23/17 5:56:39 AM

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: 8/23/17 5:41:24 AM
Measurement Date: 8/23/17 5:41:26 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: 2.2765E+000+/- 1.244]	2.2578E+000	-1.5013E-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)

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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
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Last Results Report
8/24/17 5:53:49 AM

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: 8/24/17 5:38:32 AM
Measurement Date: 8/24/17 5:38:33 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 GE2 [SD:-1.7065E+035+/-******]	2.2244E+000	3.1670E-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)

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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
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Last Results Report
8/24/17 5:53:39 AM

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: 8/24/17 5:38:25 AM
Measurement Date: 8/24/17 5:38:27 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: 2.2764E+000+/- 1.244]	2.2622E+000	-1.1432E-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)

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*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
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8/24

Last Results Report
8/24/17 5:32:38 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002GAS-1601C.QC

Detector: GE2
Geometry: <None>
Certificate: GAS-1601
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/24/17 5:16:51 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 923.9 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]		< : : : >
Peak centroid 661.65 kev	6.6144E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3319E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8351E+003	
Boundary Limits: [1.833E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	1.2387E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.1185E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.2850E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Y-88	2.9322E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity	1.4297E+005	
Boundary Limits: [1.190E-001, 1.785E-001]		< : : : >

Decay corrected activity 7.1566E+004
Boundary Limits: [5.718E-002, 8.577E-002] < : : : >

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Decay corrected activity Boundary Limits: [7.706E-002, 1.156E-001]	1.0129E+005	< : : : >
Decay corrected activity Boundary Limits: [1.602E-001, 2.403E-001]	2.0513E+005	< : : : >

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)

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*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
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8/24

Last Results Report
8/24/17 5:32:27 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001GAF-16C.QCK

Detector: GE1
Geometry: <None>
Certificate: GAF-16
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/24/17 5:16:44 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 928.7 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	6.0005E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 kev	6.6182E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3324E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8357E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	1.4475E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	1.8509E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.2410E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.3320E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.5194E+004	
Boundary Limits: [1.254E-002, 1.881E-002]		< : : : >
Decay corrected activity	6.7569E+003	

Boundary Limits: [5.134E-003, 7.700E-003] < : : : >

Decay corrected activity 1.0915E+004
Boundary Limits: [8.130E-003, 1.220E-002] < : : : >

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Decay corrected activity	1.8438E+004	
Boundary Limits: [1.690E-002, 2.534E-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)