SAF-RC-107
100-H Remaining Sites Burial Grounds – Soil Full Protocol
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 12/10/14
NITIAL/DATE

COMMENTS:

SDG XP0168 SAF-RC-107

Rad only Chem only ☑ Rad & Chem

☑ Complete Partial

Waste Site: 100-H-28 et al, north overburden pile

WASHINGTON CLOSURE HANFORD

SAF: RC-107, SDG: XP0168

STANDARD LEVEL IV
REPORT OF ANALYSIS

WORK ORDER #14-11131-OR

December 9, 2014

EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN

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Eberline Services – Oak Ridge Laboratory

LABORATORY DATA SUPPORT CHECKLIST

MP-001-3

14-11131

Eberline Services Work Order #_____

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

Date for Partial	Initials	Date	Initials	Checklist Items
		11/25/14	KC	Sample Log-In
		12/2/14		Data Compilation
		12-3-14		First Technical Data Review
		12/4/14		Second Technical Data Review
		12/8/14		Data Entry/Electronic Deliverable
		12/8/14		Case Narrative
		12/8/14		Electronic Deliverable Proof
		12/9/14		Samples Analyzed within Holding Time Yes? [X] No? [ ]
		12/9/14		QA/QC Review
		12/2/14		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: _____ 12/15/14

Laboratory Manager Date

SECTION I

CHAIN OF CUSTODY

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100-H Field Remediation	Sampling Location: 100-H-28 et al, north overburden pile		SAF No.: RC-107
Ice Chest No.: RCC-08-022	Field Logbook No.: EL-1627-08	COA: 01H2832000	Method of Shipment: Commercial Carrier - fed ex
Shipped To: Eberline Services Oak Ridge	Offsite Property No.: A131 204		Bill of Lading/Air Bill No.: See OSPC

Price Code: 8B

Data Turnaround: 7days

Other Labs Shipped To: GEL Laboratories Charlston

14-11131

Preservation	None	None									
Type of Container	G/P	G/P									
No. of Container(s)	1	1									
Volume	1000mL	120mL									
Sample Analysis	See item (3) in Special Instructions	See item (4) in Special Instructions									

REC'D NOV 25 2014

POSSIBLE SAMPLE HAZARDS/REMARKS

none

Special Handling and/or Storage

none

Sample No.	Matrix	Sample Date	Sample Time										
~~J1V1L0~~	~~SOIL~~	DWShea 11/20/14											
~~J1V1L1~~	~~SOIL~~												
J1V1L2 4	SOIL	11/20/14	1102	✓	✓								
J1V1L3 5	SOIL	11/20/14	1051	✓	✓								
~~J1V1L4~~	~~SOIL~~	DWShea 11/20/14											

CHAIN OF POSSESSION / **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe [signature]	11-20-14 1110	DWShea DWSHEA WCH	11/20/14 1110
DWShea DWSHEA	11/20/14 1545	C. Bingham [signature]	11-20-14 1545
C. Bingham [signature] WCH	11-20-14 1550	1060 Battelle, fridge #1A	11-20-14 1550
1060 Battelle, fridge #1A	11-24-14 0715	C. Bingham [signature]	11-24-14 0715
C. Bingham [signature] WCH	11-24-14 0730	fed ex	
Fed Ex		Kristen Carlsten	11/25/14 1130

SPECIAL INSTRUCTIONS

(3) Gamma Spec (Client List) {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}
(4) Carbon-14 Low Level; Nickel-63; Strontium-89,90 -- Total Sr; Tritium - H3 Low Level Soil

REVIEWED BY K. Wood Vlaemel DATE 11-24-14

FINAL SAMPLE DISPOSITION Disposal Method: 0005 Disposed By: Date/Time:

XP0168

WCH-EE-011

Washington Closure Hanford — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119 | Page 2 of 3

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7 days		
Project Designation: 100-H Field Remediation	Sampling Location: 100-H-28 et al, north overburden pile	SAF No.: RC-107	
Ice Chest No.: RCC-08-022	Field Logbook No.: EL-1627-08	COA: 01H2832000	Method of Shipment: Commercial Carrier – fed ex
Shipped To: Eberline Services Oak Ridge	Offsite Property No.: A131204		Bill of Lading/Air Bill No.: See OSPC

Other Labs Shipped To: GEL Laboratories Charlston

POSSIBLE SAMPLE HAZARDS/REMARKS: none

Special Handling and/or Storage: none

14-111131

REC'D NOV 25 2014

Sample No.	Matrix	Sample Date	Sample Time	Preservation	Type of Container	No. of Container(s)	Volume	Sample Analysis
				None	G/P	1	1000mL	See item (3) in Special Instructions
				None	G/P	1	120mL	See item (4) in Special Instructions
~~J1V1L5~~	~~SOIL~~	DWS 11/20/14						
~~J1V1L6~~	~~SOIL~~							
~~J1V1L7~~	~~SOIL~~							
J1V1L8 6	SOIL	11/20/14	1008	✓	✓			
J1V1L9 7	SOIL	11/20/14	DWS 11/20/14 1038	✓	✓			

CHAIN OF POSSESSION / Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	11-20-14 1110	WCH DwsheaDwsHEA	11/20/14 1110
DwsheaDwsHEA	11/20/14 1545	C. Bingham	11-20-14 1545
C. Bingham	11-20-14 1550	1060 Battelle, Fridge #1A	11-20-14 1550
1060 Battelle, Fridge #1A	11-24-14 0715	C. Bingham	11-24-14 0715
C. Bingham WCH	11-24-14 0730	fed ex	
FedEx		Kristen Curlst	11/25/14 1130

FINAL SAMPLE DISPOSITION: Disposal Method: 90 | Disposed By | Date/Time

WCH-EE-011

SPECIAL INSTRUCTIONS

(3) Gamma Spec (Client List) {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}
(4) Carbon-14 Low Level; Nickel-63; Strontium-89,90 -- Total Sr; Tritium - H3 Low Level Soil

REVIEWED BY K. Woodward DATE 11-24-14

XPO168

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100-H Field Remediation	Sampling Location: 100-H-28 et al, north overburden pile		SAF No.: RC-107
Ice Chest No.: RCC-08-022	Field Logbook No.: EL-1627-08	COA: 01H2832000	Method of Shipment: Commercial Carrier - fed ex
Shipped To: Eberline Services Oak Ridge	Offsite Property No.: A131 204		Bill of Lading/Air Bill No.: See OSPC

Price Code: 8B

Data Turnaround: 7days

Other Labs Shipped To: GEL Laboratories Charlston

14-11131

Preservation	None	None									
Type of Container	G/P	G/P									
No. of Container(s)	1	1									
Volume	1000mL	120mL									
Sample Analysis	See item (3) in Special Instructions	See item (4) in Special Instructions									

POSSIBLE SAMPLE HAZARDS/REMARKS

none

Special Handling and/or Storage

none

REC'D NOV 25 2014

Sample No.	Matrix	Sample Date	Sample Time										
~~J1V1M0~~	~~SOIL~~	DWS 11/20/14											
J1V1M1 8	SOIL	11/20/14	1026	✓	✓								
J1V1M2 9	SOIL	11/20/14	1008	✓	✓								

CHAIN OF POSSESSION / **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	11-20-14 1110	DWSHEA DWSHEA WCH	11/20/14 1110
DWSHEA DWSHEA	11/20/14 1545	~~1060 Battelle, fridge~~ 11-20-14 CMB #1A	C. Bingham 11-20-14 1545
C. Bingham	11-20-14 1550	1060 Battelle, fridge #1A	11-20-14 1550
1060 Battelle, fridge #1A	11-24-14 0715	C. Bingham	11-24-14 0715
C. Bingham WCH	11-24-14 1130	fed ex	
FedEx		Kristen Carlston	11/25/14 1130

SPECIAL INSTRUCTIONS

(3) Gamma Spec (Client List) {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}
(4) Carbon-14 Low Level; Nickel-63; Strontium-89,90 -- Total Sr; Tritium - H3 Low Level Soil

REVIEWED BY K. Woodvine mml DATE 11-24-14

FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

XP0168

WCH-EE-011

0007

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119

Collector Q Stowe	**Company Contact** Joan Kessner	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Price Code 8B	**Data Turnaround** 7days		
Project Designation 100-H Field Remediation	**Sampling Location** 100-H-28 et al, north overburden pile		**SAF No.** RC-107
Ice Chest No. RCC-08-022	**Field Logbook No.** EL-1627-08	**COA** 01H2832000	**Method of Shipment** Commercial Carrier - fed ex
Shipped To Eberline Services Oak Ridge	**Offsite Property No.** A131204		**Bill of Lading/Air Bill No.** See OSPC

Other Labs Shipped To
GEL Laboratories Charlston

POSSIBLE SAMPLE HAZARDS/REMARKS
none

Special Handling and/or Storage
none

Preservation	None	None					14-11131			
Type of Container	G/P	G/P								
No. of Container(s)	1	1								
Volume	1000mL	120mL								
Sample Analysis	See item (3) in Special Instructions	See item (4) in Special Instructions				REC'D NOV 25 2014				

Sample No.	Matrix	Sample Date	Sample Time								
J1V1L0 10	SOIL	11/24/14	0821	✓	✓						
J1V1L1 11	SOIL	11/24/14	0804	✓	✓						
~~J1V1L2~~	~~SOIL~~	DWShea 11/20/14									
~~J1V1L3~~	~~SOIL~~										
J1V1L4 12	SOIL	11/24/14	0758	✓	✓						

CHAIN OF POSSESSION / **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	11/24/14 0822	DWShea DWSHEA	11/24/14 0822
DWShea DWSHEA	11/24/14 0933	C Bingham	11-24-14 0933
C Bingham NCH	11-24-14 0950	fed ex	
Fed Ex		Kwater Carlst	11/25/14 1130

FINAL SAMPLE DISPOSITION — Disposal Method: 00 — Disposed By — Date/Time

SPECIAL INSTRUCTIONS

(3) Gamma Spec (Client List) {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}
(4) Carbon-14 Low Level; Nickel-63; Strontium-89,90 -- Total Sr; Tritium - H3 Low Level Soil

REVIEWED BY K Woodward DATE 11-24-14

11-24-14 CMB

XP0169 8

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119

Collector Q Stowe	**Company Contact** Joan Kessner	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Price Code 8B	**Data Turnaround** 7days		
Project Designation 100-H Field Remediation	**Sampling Location** 100-H-28 et al, north overburden pile		**SAF No.** RC-107
Ice Chest No. RCC-08-022	**Field Logbook No.** EL-1627-08	**COA** 01H2832000	**Method of Shipment** Commercial Carrier - fed ex
Shipped To Eberline Services Oak Ridge	**Offsite Property No.** A131 204		**Bill of Lading/Air Bill No.** See OSPC

Other Labs Shipped To
GEL Laboratories Charlston

POSSIBLE SAMPLE HAZARDS/REMARKS
none

Special Handling and/or Storage
none

Preservation	None	None						14-11131			
Type of Container	G/P	G/P									
No. of Container(s)	1	1									
Volume	1000mL	120mL									
Sample Analysis	See item (3) in Special Instructions	See item (4) in Special Instructions						REC'D NOV 25 2014			

Sample No.	Matrix	Sample Date	Sample Time									
J1V1L5 13	SOIL	11/24/14	0743	✓	✓							
J1V1L6 14	SOIL	11/24/14	0738	✓	✓							
J1V1L7 15	SOIL	11/24/14	0732	✓	✓							
~~J1V1L8~~	~~SOIL~~	DWShea 11/20/14										
~~J1V1L9~~	~~SOIL~~											

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	11/24/14 0822	DWShea DWSHEA	11/24/14 0822
DWShea DWSHEA	11/24/14 0933	C. Bingham	11-24-14 0933
C Bingham WCH	11-24-14 0950	Fed Ex	
Fed Ex		Kurt Carlot	11/25/14 1130

FINAL SAMPLE DISPOSITION — Disposal Method: 60 — Disposed By — Date/Time

WCH-EE-011

SPECIAL INSTRUCTIONS

(3) Gamma Spec (Client List) {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}
(4) Carbon-14 Low Level; Nickel-63; Strontium-89,90 -- Total Sr; Tritium - H3 Low Level Soil

REVIEWED BY K. Woodward DATE 11-24-14

11-24-14 CMB

XP01698

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100-H Field Remediation	Sampling Location: 100-H-28 et al, north overburden pile		SAF No.: RC-107
Ice Chest No.: RCC-08-022	Field Logbook No.: EL-1627-08	COA: 01H2832000	Method of Shipment: Commercial Carrier fed ex
Shipped To: Eberline Services Oak Ridge	Offsite Property No.: A131204		Bill of Lading/Air Bill No.: See OSPC

Price Code: 8B

Data Turnaround: 7 days

Other Labs Shipped To: GEL Laboratories Charlston

14-11131

Preservation	None	None									
Type of Container	G/P	G/P									
No. of Container(s)	1	1									
Volume	1000mL	120mL									
Sample Analysis	See item (3) in Special Instructions	See item (4) in Special Instructions									

POSSIBLE SAMPLE HAZARDS/REMARKS

none

Special Handling and/or Storage

none

REC'D NOV 25 2014

Sample No.	Matrix	Sample Date	Sample Time										
J1V1M0 16	SOIL	11/24/14	0726	✓	✓								
~~J1V1M1~~	~~SOIL~~	DWShea											
~~J1V1M2~~	~~SOIL~~	11/20/14											

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	11/24/14 0822	WCH DWShea DWSHEA	11/24/14 0822
DW Shea DWSHEA	11/24/14 0933	C. Bingham	11-24-14 0933
C. Bingham WCH	11-24-14 0950	fed ex	
Fed Ex		Kristen Coulst	11/25/14 1130

FINAL SAMPLE DISPOSITION — Disposal Method: 0010 — Disposed By: — Date/Time:

SPECIAL INSTRUCTIONS

(3) Gamma Spec (Client List) {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}
(4) Carbon-14 Low Level; Nickel-63; Strontium-89,90 -- Total Sr; Tritium - H3 Low Level Soil

REVIEWED BY K. Wood Vlaemare DATE 11-24-14

11-24-14 CMB

XP0169 8

WCH-EE-011

EBERLINE SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #	14-11131
Lab Deadline	12/1/2014
Analysis	C0014 - Level 4
Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Run MS	04	48	L1.4
	05	53	L1.4
	06	53	L1.4
	07	54	L1.4
	08	50	L1.4
	09	51	L1.4
	10	50	L1.4
	11	46	L1.4
	12	45	L1.4
	13	51	L1.4
	14	52	L1.4
	15	50	L1.4
	16	49	L1.4
	17	0	L1.4

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1430	Kmy scej	11-25-14
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1500	Kmy scej	11-26-14
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	11/26/14 1508
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	AG	11/29/14 0900
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		

EBERLINE SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #	14-11131
Lab Deadline	12/1/2014
Analysis	Ni063 - Level 4
Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Run MS	04	48	L1.4
	05	53	L1.4
	06	53	L1.4
	07	54	L1.4
	08	50	L1.4
	09	51	L1.4
	10	50	L1.4
	11	46	L1.4
	12	45	L1.4
	13	51	L1.4
	14	52	L1.4
	15	50	L1.4
	16	49	L1.4
	17	0	L1.4

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1430	Kemy Guy	11-25-14
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 0830	Kemy Guy	11.26.14
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0830 TM	11/26/14
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1320 TM	12/1/14
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1322	12/
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICO 12/4/14	1508
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		

0012

EBERLINE SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #	14-11131
Lab Deadline	12/1/2014
Analysis	Gamma - Level 4
Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Report Ag108m, Am241, Ba133, Cs137, Co60, Eu152/154/155, K40, Pa234m, Pb212/214, Th234, Tl208, U235 and positives.	04	48	L1.4
	05	53	L1.4
	06	53	L1.4
	07	54	L1.4
	08	50	L1.4
	09	51	L1.4
	10	50	L1.4
	11	46	L1.4
	12	45	L1.4
	13	51	L1.4
	14	52	L1.4
	15	50	L1.4
	16	49	L1.4
	> 17 <	< NOT REQUESTED	<<<

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1430	Kenny Scoggins	11-25-14
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 0845	Kenny Scoggins	11-26-14
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 0845	C	11/26/14
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB 11/26/14 1404	
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		

0013

SECTION II

SAMPLE ACKNOWLEDGEMENT & CORRESPONDENCE

Client Name	Contract/PO	Project Type	Date Received	Required Turnaround Days	Eberline Services Work Order
Washington Closure Hanford	S00W235A01	Environmental	11/25/2014	7	14-11131
Project Name	**Client WO**	**Sample Disp**	**Lab Deadline**	**Internal Deadline**	**Client Deadline**
S00W235A01	SAF: RC-107; SDG: XP0168	H	12/01/2014	12/02/2014	12/02/2014

Internal ID	Client ID	Sample Date	Matrix	Storage	C0014	Gamma	Ni063																						TH
01	LCS	11/25/14	SO	L1.4	X	X	X																						3
02	BLANK	11/25/14	SO	L1.4	X	X	X																						3
03	DUP	11/25/14	SO	L1.4	X	X	X																						3
04	J1V1L2 SAF: RC-107	11/20/14 11:02	SO	L1.4	X	X	X																						3
05	J1V1L3 SAF: RC-107	11/20/14 10:51	SO	L1.4	X	X	X																						3
06	J1V1L8 SAF: RC-107	11/20/14 10:08	SO	L1.4	X	X	X																						3
07	J1V1L9 SAF: RC-107	11/20/14 10:38	SO	L1.4	X	X	X																						3
08	J1V1M1 SAF: RC-107	11/20/14 10:26	SO	L1.4	X	X	X																						3
09	J1V1M2 SAF: RC-107	11/20/14 10:08	SO	L1.4	X	X	X																						3
10	J1V1L0 SAF: RC-107	11/24/14 08:11	SO	L1.4	X	X	X																						3
11	J1V1L1 SAF: RC-107	11/24/14 08:04	SO	L1.4	X	X	X																						3
12	J1V1L4 SAF: RC-107	11/24/14 07:58	SO	L1.4	X	X	X																						3
13	J1V1L5 SAF: RC-107	11/24/14 07:43	SO	L1.4	X	X	X																						3
14	J1V1L6 SAF: RC-107	11/24/14 07:38	SO	L1.4	X	X	X																						3
15	J1V1L7 SAF: RC-107	11/24/14 07:32	SO	L1.4	X	X	X																						3
16	J1V1M0 SAF: RC-107	11/24/14 07:26	SO	L1.4	X	X	X																						3
17	MS	11/25/14 00:00	SO	L1.4	X		X																						2
																													0
																													0
																													0
		Totals Per Analysis (non QA samples)			14	13	14	0	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 Washington Closure Hanford 2620 Fermi Avenue Richland, WA 99354	**Report Data**	Joan Kessner Washington Closure Hanford 2620 Fermi Avenue Richland, WA 99354
Voice		*Voice*	509-375-4688
Fax		*Fax*	
Contact	Joan Kessner		
Voice	509-375-4688		
Fax			

0015

Printed: 11/25/2014 3:17 PM

Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 14-11131

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: Kristen Culata DATE: 11/25/14

Elizabeth Towery

From: Mike McDougall
Sent: Tuesday, November 25, 2014 12:50 PM
To: Kathy Shaulis; Cheryl Conner; Elizabeth Towery
Subject: FW: SDG XP0168 changes

Sent from my Android phone using TouchDown (www.nitrodesk.com)

-----Original Message-----
From: Kessner, Joan H [joan.kessner@wch-rcc.com]
Received: Tuesday, 25 Nov 2014, 12:48PM
To: Mike McDougall [mike.mcdougall@eberlineservices.com]
CC: Weiss, Richard L [richard.weiss@wch-rcc.com]
Subject: SDG XP0168 changes

Mike—
Just a follow-up on your conversation with Rich earlier today.
For SDG XP0168 (hopefully received today) please cancel the requests for Total Rad Sr and H-3. The project requires only C-14 and N-63.
Thanks for your help and hope you have a Happy Thanksgiving!!
Joan

0017

Elizabeth Towery

From: Weiss, Richard L <richard.weiss@wch-rcc.com>
Sent: Tuesday, November 25, 2014 12:00 PM
To: Elizabeth Towery
Cc: Kessner, Joan H
Subject: RE: WCH Chains

Elizabeth,

Yes, Gamma Spec should be run.

Thanks for checking.

Rich

From: Elizabeth Towery [mailto:elizabeth.towery@eberlineservices.com]
Sent: Tuesday, November 25, 2014 8:58 AM
To: Weiss, Richard L
Subject: FW: WCH Chains
Importance: High

This is the COC for the samples for which you changed the requested analyses. I will log them for Carbon-14 and Nickel-63 & not for Total Strontium or Tritium. However, you did not address Gamma.

Do you want these samples analyzed by Gamma Spec?

Thank you.

Elizabeth Towery

Eberline Analytical | Oak Ridge, TN | Data Technician | 865-481-0683 | www.eberlineservices.com |

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From: Orlette Johnson [mailto:orlette.johnson@gel.com]
Sent: Monday, November 24, 2014 4:51 PM
To: Elizabeth Towery; Kathy Shaulis; Cheryl Conner
Subject: Fwd: WCH Chains

Please see WCH chains attached. Are you guys open on Friday in case FedEx decides to hold these in Memphis? Joan is questioning she is fine with you being closed if you are she just wants to track the shipment.

-------- Original Message --------
Subject: WCH Chains
Date: Mon, 24 Nov 2014 21:39:38 +0000
From: Wood, Katie L <klwood@wch-rcc.com>

0018

To: Orlette Johnson (orlette.johnson@gel.com) <orlette.johnson@gel.com>
CC: Kessner, Joan H <joan.kessner@wch-rcc.com>

Orlette-
This SDG XP0168 shipped today.
Katie

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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-38269

December 9, 2014

Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

CASE NARRATIVE
SAF: RC-107, SDG: XP0168
Work Order # 14-11131-OR

SAMPLE RECEIPT

This work order contains thirteen soil samples received 11/25/2014. These samples were analyzed for Carbon-14, Nickel-63 and by Gamma Spectroscopy.

CLIENT ID	LAB ID	CLIENT ID	LAB ID
J1V1L2	14-11131-04	J1V1L1	14-11131-11
J1V1L3	14-11131-05	J1V1L4	14-11131-12
J1V1L8	14-11131-06	J1V1L5	14-11131-13
J1V1L9	14-11131-07	J1V1L6	14-11131-14
J1V1M1	14-11131-08	J1V1L7	14-11131-15
J1V1M2	14-11131-09	J1V1M0	14-11131-16
J1V1L0	14-11131-10		

ANALYTICAL METHODS

Carbon-14 was performed using EPA Method 520.0 Modified. Nickel-63 was performed using Method ASTM 3500-Ni Modified. Gamma Spectroscopy was performed using Method LANL ER-130 Modified.

Laboratory qualifier is as follows:

U - Result is less than or equal to MDA.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

SPECIAL CIRCUMSTANCES

Results for Nickel-63 and Gamma Spectroscopy are reported on a "dry weight" basis.

0021

ANALYTICAL RESULTS CONTINUED

CARBON-14

Representative aliquots of samples were placed into a 1-liter reaction vessel. A carbonate solution was added. Samples were oxidized using Potassium Permanganate. Carbon dioxide was evolved and Carbon-14 was captured into Harvey brand, Carb-Sorb cocktail. Carbon-14 beta emissions were then determined by beta liquid scintillation using an energy selective region.

Samples demonstrated acceptable results for all Carbon-14 analyses. The Carbon-14 method blank demonstrated an acceptable result. Results for the Carbon-14 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Carbon-14 laboratory control sample demonstrated an acceptable percent recovery. Results for the Carbon-14 matrix spike demonstrated an acceptable percent recovery.

NICKEL-63

A representative aliquot of each sample was placed into an appropriately sized beaker. Stable elemental Nickel carrier was added to each sample prior to digestion. Samples were digested in concentrated Nitric acid. After digestion, sample pH was adjusted and Nickel-63 was precipitated selectively with Dimethylglyoxime. Precipitates were selectively separated, redissolved, and residual acid was effectively neutralized. Sample residuals were placed into scintillation vials, scintillation cocktail was added and Nickel-63 activity was determined by beta liquid scintillation.

Samples demonstrated acceptable results for all Nickel-63 analyses. The Nickel-63 method blank demonstrated an acceptable result. Results for the Nickel-63 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Nickel-63 laboratory control sample demonstrated an acceptable percent recovery. Results for the Nickel-63 matrix spike demonstrated an acceptable percent recovery.

GAMMA SPECTROSCOPY

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

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

CERTIFICATION OF ACCURACY

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

M.R. McDougall
Laboratory Manager

Date: 12/9/2014

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

Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

SAF: RC-107
SDG: XP0168
Work Order: 14-11131
Date Received: 11/25/2014
Matrix: Soil

Sample Number	Lab Sample ID	QC Type	Date Analyzed	Method Name	CAS Number	Isotope	Result	2-Sigma Counting Error	Total Propagated Uncertainty	MDA	Lab Qualifier	Analysis Units
NA	14-11131-01	LCS	11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	1406.461	13.85	196.32	5.21		pCi/g
		LCS	11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	141.532	9.76	12.17	1.91		pCi/g
		LCS	11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	87.572	8.44	9.57	2.36		pCi/g
		LCS	12/1/2014	NI63_LSC	13981-37-8	Nickel-63	1342.196	9.65	79.51	2.56		pCi/g
NA	14-11131-02	BLK	11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.386	0.59	0.59	0.99	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	0.006	0.04	0.04	0.06	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	14596-10-2	Americium-241	-0.001	0.04	0.04	0.06	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	13981-41-4	Barium-133	0.062	0.06	0.06	0.08	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	0.001	0.05	0.05	0.07	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	0.047	0.04	0.04	0.08	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	14683-23-9	Europium-152	-0.010	0.28	0.28	0.14	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	15585-10-1	Europium-154	0.043	0.09	0.09	0.07	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	14391-16-3	Europium-155	-0.062	0.09	0.09	0.09	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	0.311	0.37	0.37	0.85	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	-0.954	4.74	4.74	7.28	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.012	0.06	0.06	0.10	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.059	0.08	0.08	0.14	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	0.176	0.40	0.40	0.65	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	-0.046	0.14	0.14	0.21	U	pCi/g
		BLK	11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	0	0.21	0.21	0.32	U	pCi/g
		BLK	12/1/2014	NI63_LSC	13981-37-8	Nickel-63	0	1.39	1.39	2.38	U	pCi/g
J1V1L2	14-11131-03	DUP	11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.348	0.53	0.53	0.89	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	-0.052	0.06	0.06	0.06	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	14596-10-2	Americium-241	-0.122	0.13	0.13	0.15	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	13981-41-4	Barium-133	0.016	0.03	0.03	0.11	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.573	0.13	0.13	0.20		pCi/g
		DUP	11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	-0.030	0.06	0.06	0.08	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	-0.014	0.05	0.05	0.07	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	14683-23-9	Europium-152	-0.144	0.37	0.37	0.20	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	15585-10-1	Europium-154	-0.012	0.18	0.18	0.10	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	14391-16-3	Europium-155	0.168	0.12	0.12	0.17	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	16.577	1.95	2.13	0.29		pCi/g
		DUP	11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	1.773	4.98	4.98	8.23	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.994	0.12	0.13	0.20		pCi/g
		DUP	11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.636	0.12	0.12	0.15		pCi/g
		DUP	11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	0.655	1.13	1.13	1.49	U	pCi/g
		DUP	11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.600	0.14	0.14	0.18		pCi/g
		DUP	11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	-0.181	0.24	0.24	0.37	U	pCi/g
		DUP	12/1/2014	NI63_LSC	13981-37-8	Nickel-63	1.520	1.38	1.38	2.30	U	pCi/g

0025

Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

SAF: RC-107
SDG: XP0168
Work Order: 14-11131
Date Received: 11/25/2014
Matrix: Soil

Sample Number	Lab Sample ID	QC Type	Date Analyzed	Method Name	CAS Number	Isotope	Result	2-Sigma Counting Error	Total Propagated Uncertainty	MDA	Lab Qualifier	Analysis Units
J1V1L2	14-11131-04		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.624	0.56	0.57	0.94	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	-0.003	0.02	0.02	0.05	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	-0.145	0.13	0.13	0.15	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	0.001	0.03	0.03	0.11	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.577	0.13	0.14	0.20		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	0.019	0.06	0.06	0.09	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	-0.009	0.05	0.05	0.07	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	0.167	0.34	0.34	0.20	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	-0.199	0.23	0.23	0.10	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	-0.002	0.12	0.12	0.16	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	16.356	1.99	2.16	0.92		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	-0.768	5.34	5.34	8.13	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.754	0.11	0.11	0.20		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.651	0.12	0.12	0.21		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	0.709	1.14	1.14	1.50	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.739	0.13	0.14	0.10		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	0.216	0.24	0.24	0.40	U	pCi/g
			12/1/2014	NI63_LSC	13981-37-8	Nickel-63	0.758	1.36	1.36	2.29	U	pCi/g
J1V1L3	14-11131-05		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.602	0.58	0.58	0.97	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	0.060	0.09	0.09	0.09	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	0.088	0.09	0.09	0.14	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	0.025	0.04	0.04	0.20	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.575	0.17	0.18	0.56		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	0.042	0.09	0.09	0.13	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	0.010	0.08	0.08	0.13	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	0.053	0.42	0.42	0.30	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	0.017	0.24	0.24	0.15	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	0.109	0.12	0.12	0.20	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	16.310	2.76	2.88	1.53		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	-3.907	9.81	9.81	15.03	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.804	0.17	0.17	0.28		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.405	0.19	0.19	0.35		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	0.972	0.91	0.91	1.43	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.813	0.23	0.24	0.07		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	-0.213	0.42	0.42	0.63	U	pCi/g
			12/1/2014	NI63_LSC	13981-37-8	Nickel-63	1.393	1.26	1.26	2.11	U	pCi/g

9200 0026

Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

SAF: RC-107
SDG: XP0168
Work Order: 14-11131
Date Received: 11/25/2014
Matrix: Soil

Sample Number	Lab Sample ID	QC Type	Date Analyzed	Method Name	CAS Number	Isotope	Result	2-Sigma Counting Error	Total Propagated Uncertainty	MDA	Lab Qualifier	Analysis Units
J1V1L8	14-11131-06		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.253	0.55	0.55	0.93	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	0.007	0.09	0.09	0.10	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	0.015	0.09	0.09	0.14	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	0.004	0.03	0.03	0.20	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.625	0.16	0.17	0.56		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	-0.069	0.10	0.10	0.13	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	-0.022	0.08	0.08	0.13	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	-0.261	0.52	0.52	0.30	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	0.062	0.22	0.22	0.15	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	-0.198	0.19	0.19	0.21	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	16.031	2.72	2.84	1.43		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	7.463	8.35	8.36	15.32	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.641	0.21	0.21	0.32		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.740	0.18	0.18	0.28		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	1.068	0.90	0.90	1.42	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.671	0.21	0.21	0.07		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	0.235	0.41	0.41	0.65	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	0.653	1.33	1.33	2.26	U	pCi/g
J1V1L9	14-11131-07		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.239	0.60	0.60	1.02	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	-0.080	0.05	0.05	0.04	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	-0.112	0.11	0.11	0.12	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	0.002	0.02	0.02	0.05	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.645	0.10	0.11	0.04		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	0.005	0.04	0.04	0.05	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	-0.001	0.03	0.03	0.05	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	-0.026	0.21	0.21	0.16	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	-0.030	0.11	0.11	0.08	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	0.084	0.13	0.13	0.14	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	16.626	1.82	2.01	0.67		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	2.268	3.88	3.88	6.17	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.811	0.10	0.11	0.16		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.695	0.09	0.09	0.14		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	1.079	0.96	0.96	1.28	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.681	0.15	0.15	0.19		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	0.083	0.26	0.26	0.34	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	1.005	1.21	1.21	2.03	U	pCi/g

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SAF: RC-107
SDG: XP0168
Work Order: 14-11131
Date Received: 11/25/2014
Matrix: Soil

Sample Number	Lab Sample ID	QC Type	Date Analyzed	Method Name	CAS Number	Isotope	Result	2-Sigma Counting Error	Total Propagated Uncertainty	MDA	Lab Qualifier	Analysis Units
J1V1M1	14-11131-08		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.273	0.59	0.59	1.00	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	0.001	0.02	0.02	0.04	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	0.018	0.06	0.06	0.10	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	-0.005	0.02	0.02	0.06	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.542	0.09	0.09	0.15		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	-0.030	0.05	0.05	0.06	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	-0.003	0.04	0.04	0.06	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	-0.009	0.22	0.22	0.16	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	0.052	0.12	0.12	0.08	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	0.143	0.12	0.12	0.14		pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	14.427	2.00	2.13	1.46		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	-0.018	4.15	4.15	6.22	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.634	0.10	0.10	0.17		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.552	0.10	0.10	0.19		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	0.956	0.61	0.61	1.00	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.586	0.15	0.15	0.20		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	-0.006	0.24	0.24	0.32	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	1.390	1.34	1.34	2.24	U	pCi/g
J1V1M2	14-11131-09		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.401	0.61	0.61	1.03	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	-0.043	0.05	0.05	0.04	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	-0.026	0.06	0.06	0.09	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	-0.014	0.02	0.02	0.06	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.655	0.11	0.12	0.19		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	0.038	0.04	0.04	0.05	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	-0.041	0.04	0.04	0.05	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	0.046	0.16	0.16	0.15	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	0.088	0.10	0.10	0.08		pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	0.127	0.12	0.12	0.12		pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	13.806	1.77	1.90	0.64		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	3.231	3.78	3.78	6.47	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.633	0.10	0.10	0.15		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.557	0.10	0.10	0.16		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	1.364	1.04	1.04	1.72	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.594	0.16	0.16	0.22		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	0.075	0.24	0.24	0.32	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	1.716	1.47	1.47	2.44	U	pCi/g

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Sample Number	Lab Sample ID	QC Type	Date Analyzed	Method Name	CAS Number	Isotope	Result	2-Sigma Counting Error	Total Propagated Uncertainty	MDA	Lab Qualifier	Analysis Units
J1V1L0	14-11131-10		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.351	0.53	0.54	0.90	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	-0.003	0.03	0.03	0.06	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	-0.073	0.12	0.12	0.14	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	-0.049	0.11	0.11	0.11	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.637	0.14	0.14	0.22		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	-0.005	0.06	0.06	0.08	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	0.012	0.05	0.05	0.07	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	-0.050	0.38	0.38	0.20	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	0.070	0.17	0.17	0.10	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	0.085	0.13	0.13	0.16	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	16.256	1.93	2.11	0.73		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	17.834	8.32	8.37	12.60		pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.805	0.11	0.12	0.19		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.644	0.10	0.11	0.31		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	0.940	1.07	1.07	1.43	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.778	0.13	0.14	0.18		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	0.226	0.24	0.24	0.40	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	1.156	1.39	1.39	2.33	U	pCi/g
J1V1L1	14-11131-11		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.876	0.59	0.60	0.98	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	-0.023	0.09	0.09	0.10	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	0.049	0.09	0.09	0.14	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	-0.010	0.04	0.04	0.19	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.592	0.20	0.20	0.29		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	0.020	0.09	0.09	0.12	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	0.001	0.05	0.05	0.12	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	0.204	0.48	0.48	0.30	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	0.136	0.27	0.27	0.15	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	0.161	0.16	0.16	0.26	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	16.506	2.65	2.79	1.00		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	6.234	5.48	5.49	8.57	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	1.068	0.22	0.23	0.28		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.659	0.19	0.19	0.31		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	0.001	0.93	0.93	1.42	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.794	0.23	0.24	0.07		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	-0.022	0.41	0.41	0.63	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	1.326	1.47	1.47	2.47	U	pCi/g

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Matrix: Soil

Sample Number	Lab Sample ID	QC Type	Date Analyzed	Method Name	CAS Number	Isotope	Result	2-Sigma Counting Error	Total Propagated Uncertainty	MDA	Lab Qualifier	Analysis Units
J1V1L4	14-11131-12		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.532	0.54	0.55	0.91	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	-0.096	0.05	0.05	0.04	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	-0.074	0.10	0.10	0.12	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	0.009	0.02	0.02	0.06	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.563	0.10	0.10	0.11		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	0.029	0.04	0.04	0.06	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	-0.004	0.01	0.01	0.05	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	0.149	0.16	0.16	0.15	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	-0.065	0.11	0.11	0.08	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	-0.034	0.12	0.12	0.13	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	15.403	1.73	1.90	0.78		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	2.786	2.56	2.57	4.11	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.737	0.09	0.10	0.15		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.520	0.09	0.10	0.14		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	1.256	0.92	0.92	1.25		pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.634	0.13	0.14	0.25		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	-0.037	0.25	0.25	0.32	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	1.176	1.41	1.41	2.37	U	pCi/g
J1V1L5	14-11131-13		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.325	0.62	0.62	1.04	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	0.002	0.02	0.02	0.04	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	0.049	0.07	0.07	0.11	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	-0.044	0.06	0.06	0.06	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.605	0.11	0.11	0.15		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	0.050	0.04	0.04	0.05	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	0.014	0.04	0.04	0.07	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	-0.021	0.23	0.23	0.18	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	0.047	0.11	0.11	0.09	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	0.010	0.13	0.13	0.15	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	16.523	2.10	2.26	0.87		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	2.071	4.03	4.03	6.56	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	1.090	0.16	0.16	0.17		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.609	0.09	0.10	0.30		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	0.791	0.63	0.64	1.02	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.790	0.16	0.16	0.19		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	-0.045	0.28	0.28	0.36	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	0.076	1.08	1.08	1.84	U	pCi/g

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Sample Number	Lab Sample ID	QC Type	Date Analyzed	Method Name	CAS Number	Isotope	Result	2-Sigma Counting Error	Total Propagated Uncertainty	MDA	Lab Qualifier	Analysis Units
J1V1L6	14-11131-14		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.074	0.56	0.56	0.95	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	-0.006	0.04	0.04	0.06	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	-0.127	0.12	0.12	0.15	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	0.027	0.04	0.04	0.11	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.678	0.11	0.11	0.15		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	-0.012	0.05	0.05	0.07	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	-0.005	0.05	0.05	0.08	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	0.134	0.34	0.34	0.20	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	-0.001	0.11	0.11	0.10	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	0.129	0.13	0.13	0.16	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	14.845	1.77	1.93	0.41		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	3.449	5.12	5.12	8.61	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.901	0.12	0.13	0.21		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.648	0.12	0.12	0.16		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	0.419	1.11	1.11	1.45	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.690	0.14	0.15	0.09		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	-0.056	0.24	0.24	0.38	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	0.824	1.47	1.48	2.49	U	pCi/g
J1V1L7	14-11131-15		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.349	0.59	0.59	1.00	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	0.016	0.02	0.02	0.04	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	0.007	0.07	0.07	0.10	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	0.004	0.02	0.02	0.07	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.579	0.09	0.09	0.24		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	-0.015	0.05	0.05	0.05	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	0.038	0.03	0.03	0.06	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	0.233	0.18	0.18	0.16		pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	0.015	0.11	0.11	0.08	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	-0.027	0.12	0.12	0.13	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	15.656	1.99	2.15	0.84		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	0.686	3.69	3.69	5.91	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.620	0.10	0.10	0.17		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.589	0.11	0.11	0.16		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	0.971	0.60	0.60	0.99	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.689	0.16	0.17	0.22		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	0.117	0.25	0.25	0.34	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	0.372	1.32	1.32	2.25	U	pCi/g

0031

Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

SAF: RC-107
SDG: XP0168
Work Order: 14-11131
Date Received: 11/25/2014
Matrix: Soil

Sample Number	Lab Sample ID	QC Type	Date Analyzed	Method Name	CAS Number	Isotope	Result	2-Sigma Counting Error	Total Propagated Uncertainty	MDA	Lab Qualifier	Analysis Units
J1V1M0	14-11131-16		11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	0.595	0.61	0.61	1.02	U	pCi/g
			11/26/2014	GAMMA_GS	14391-65-2	Silver-108m	-0.010	0.02	0.02	0.07	U	pCi/g
			11/26/2014	GAMMA_GS	14596-10-2	Americium-241	-0.049	0.13	0.13	0.16	U	pCi/g
			11/26/2014	GAMMA_GS	13981-41-4	Barium-133	-0.116	0.07	0.07	0.11	U	pCi/g
			11/26/2014	GAMMA_GS	14733-03-0	Bismuth-214	0.577	0.13	0.13	0.20		pCi/g
			11/26/2014	GAMMA_GS	10198-40-0	Cobalt-60	0.018	0.07	0.07	0.09	U	pCi/g
			11/26/2014	GAMMA_GS	10045-97-3	Cesium-137	0.008	0.05	0.05	0.08	U	pCi/g
			11/26/2014	GAMMA_GS	14683-23-9	Europium-152	0.157	0.30	0.30	0.19	U	pCi/g
			11/26/2014	GAMMA_GS	15585-10-1	Europium-154	0.095	0.16	0.16	0.10	U	pCi/g
			11/26/2014	GAMMA_GS	14391-16-3	Europium-155	0.035	0.13	0.13	0.17	U	pCi/g
			11/26/2014	GAMMA_GS	13966-00-2	Potassium-40	16.831	2.08	2.25	1.19		pCi/g
			11/26/2014	GAMMA_GS	15100-28-4	Protactinium-234m	0.801	5.47	5.47	8.70	U	pCi/g
			11/26/2014	GAMMA_GS	15092-94-1	Lead-212	0.866	0.11	0.12	0.19		pCi/g
			11/26/2014	GAMMA_GS	15067-28-4	Lead-214	0.591	0.10	0.11	0.15		pCi/g
			11/26/2014	GAMMA_GS	15065-10-8	Thorium-234	1.202	1.12	1.12	1.52	U	pCi/g
			11/26/2014	GAMMA_GS	14913-50-9	Thallium-208	0.882	0.17	0.17	0.04		pCi/g
			11/26/2014	GAMMA_GS	15117-96-1	Uranium-235	0.086	0.25	0.25	0.41	U	pCi/g
			12/2/2014	NI63_LSC	13981-37-8	Nickel-63	3.939	1.44	1.46	2.33		pCi/g
J1V1M0	14-11131-17	MS	11/27/2014	C14_CHEM_LSC	14762-75-5	Carbon-14	264.065	2.65	36.86	1.02		pCi/g
J1V1L2	14-11131-17	MS	12/2/2014	NI63_LSC	13981-37-8	Nickel-63	2077.907	12.06	122.77	2.60		pCi/g

0032

SECTION V

ANALYTICAL STANDARD

C-3

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
BETA STANDARD SOLUTION

Radionuclide:	C-14	**Customer:**	EBERLINE SERVICES
Half-life:	5730 ± 40 years	**P.O. No.:**	00009439
Catalog No.:	7014	**Reference Date:**	1-Nov-01 12:00 PST
Source No.:	841-40	**Contained Radioactivity:**	72.54 µCi 2684 kBq

Physical Description:

A. Mass of solution:	5.10940 g in 5 mL flame-sealed ampoule
B. Chemical form:	Sodium Benzoate in 0.1M NaOH
C. Carrier content:	None
D. Density:	1.002 g/mL @ 20°C.

Radioimpurities:

None detected

Radionuclide Concentration: 14.20 µCi/g, 525.4 kBq/g

Method of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in µCi/g was determined using a liquid scintillation counter.

Uncertainty of Measurement:

A. Type A (random) uncertainty:	± 2.0 %
B. Type B (systematic) uncertainty:	± 2.0 %
C. Uncertainty in aliquot weighing:	± 0.0 %
D. Total uncertainty at the 99% confidence level:	± 2.8 %

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 NCRP Report No. 58, 1985.
- This solution has a working life of 5 years.

Quality Control

12-Nov-01
Date Signed

IPL Ref. No.: 841-40

0034

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 REVERIFICATION
MP 009

CURRENT DATE: 9/23/2014 0:00

SOLUTION REFERENCE #: IPL 841-40 SOLUTION #: C-3

Principal Radionuclide	Half Life, Years	Half Life, Days
^{14}Carbon	5.730E+03	2.093E+06

Radionuclide: ^{14}Carbon
Certified Activity: 7.254E+01 µCi
Certified Concentration: µCi per gram

Reference Date: 11/1/2001 0:00

Ampoule /Solution Gross: Weight, Grams
Empty Ampoule: Weight, Grams
Solution Net: Weight, Grams
Total Activity in Ampoule: 72.5400 µCi

Chemical Composition of Standard Solution
Sodium Benzoate in 0.1M NaOH

Dilution Instructions:

Dilution Solvent Used: 0.1M NaOH

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 72.5400 µCi Which Equals 1.610E+08 dpm at the date listed above

And after dilution the activity of this solution is 1.610E+05 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: September 8, 2015

Verified & Approved By _____ Date: 9/23/2014 0:00

QC Approval _____ Date: 9/24/14

0035

EBERLINE SERVICES

QUALITY CONTROL PROGRAM

QCP-009

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

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

MP-009-1-A

Solution Reference # IPL 841-40 | Date 9/23/2014 0:00 | Solution # C-3a

Principal Radionuclide	Half Life, Years	Half Life, Days
^{14}Carbon	5.730E+03	2.093E+06

Radionuclide of Interest: ^{14}Carbon
Parent Solution Conc.: 1.61E+05 dpm/ml

Reference Date: 11/1/2001 0:00

Chemical Composition of Standard Solution
Sodium Benzoate in 0.1M NaOH

Dilution Instructions:

Dilution Solvent Used: 0.1 M NaOH

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 20.0000 ml
Total Activity: 3.2208E+06 dpm
Final Volume: 1000.00 ml

Final Activity Concentration: 3.2208E+03 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: September 8, 2015

Verified & Approved By _____ Date: 9/23/2014 0:00

QC Approval _____ Date: 9/24/14

0036

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

92791

Ni-63 5 mL Liquid in Flame Sealed Vial

Customer: Eberline Analytical Corporation
P.O. No.: 7873, Item 1 Product Code: 8063

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. 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.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, % Type u_A	u_B	U	Reference Date (12:00 PM EST)
Ni-63	3.656E+04	3.733E+05	0.2	1.5	3.0	02/06/2013

***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:
Impurities: γ-impurities<0.1%.
5.01669 g 0.1M HCl solution with approximately 30 µg/g Ni carrier.

Source Prepared by: R. Ormsby
R. Ormsby, Radiochemist

QA Approved:
J.D. McCorvey, Counting Room Manager

Date: 29JAN13

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

0037

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

EBERLINE SERVICES

QUALITY CONTROL PROGRAM

MP-009

Rev.4; 10/10/12
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
RECERTIFICATION

CURRENT DATE: 2/25/14
SOLUTION REFERENCE #: Analytics 92791
SOLUTION #: Ni-3

Principal Radionuclide	Half Life, Years	Half Life, Days
^{63}Ni	1.001E+02	3.656E+04

Radionuclide: ^{63}Ni
Certified Activity: 1.009E+01 µCi
Certified Concentration: µCi per gram

Reference Date: 2/6/2013 0:00

Ampoule /Solution Gross	9.2445	Weight, Grams
Empty Ampoule	4.2269	Weight, Grams
Solution Net	5.0176	Weight, Grams
Total Activity in Ampoule	10.0892	µCi

Mass checks certificate

Chemical Composition of Standard Solution
$NiCl_2$ in 0.1 N HCl

Dilution Instructions:

Dilution Solvent Used: 0.1 N HCl

Dilute to a volume of 1000.00 milliliters or grams

Certified Total Activity of 10.0892 µCi Which Equals 2.240E+07 dpm at the date listed above

And after dilution the activity of this solution is 2.240E+04 dpm/g

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 25, 2014

Verified & Approved By _____ Date: 03/11/14

QC Approval _____ Date: 3/14/14

0038

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. —

0039

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
14-11131	C0014	1	pCi	g	Washington Closure Hanford

Laboratory Control Sample

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
C-14	0.07	99.52%	13.96%	100.00%	2.80%	1.41E+03	3.96E+01	1.41E+03	1.96E+02	C-3a	3.02E+03	2.80E+00	1.04E+00

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)*
C-14	0.52	96.38%	2.73E+02	7.65E+00	2.64E+02	3.69E+01	5.95E-01	6.14E-01	5.17E+00	C-3a	3.02E+03	2.80	1.04E+00

Replicate Sample

Analyte	*Normalized Difference*	*RPD*	*Original Result*	*Original CSU*	*Replicate Result*	*Replicate CSU*
C-14	0.69	56.85	6.24E-01	5.71E-01	3.48E-01	5.32E-01

QC Summary

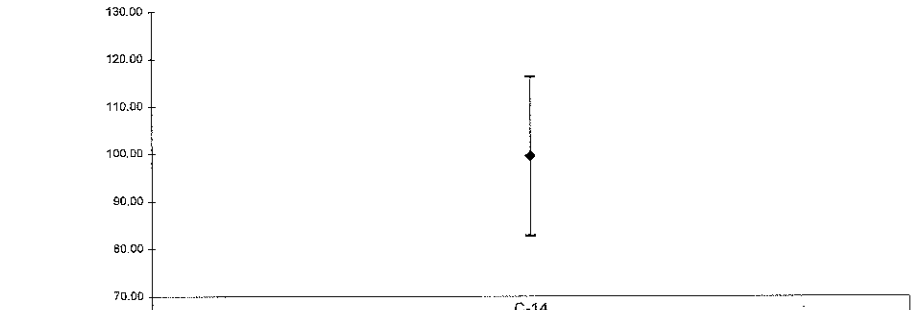
LCS Relative Bias	*LCS % R*	*LCS ND*	*MS % R*	*MS ND*	*Rep RPD*	*Rep ND*
1.00	OK	OK		OK	INV	OK

1400

Version

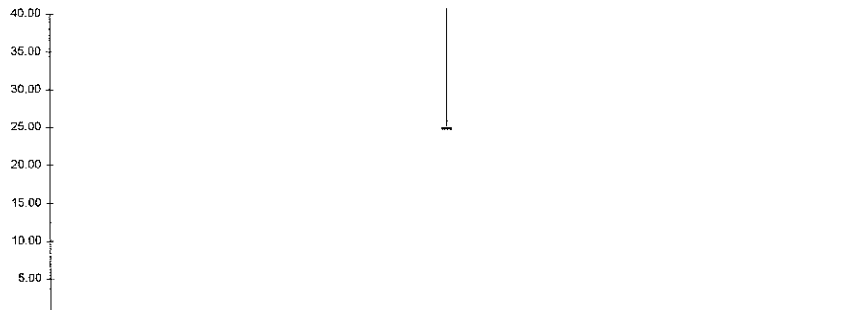
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
14-11131	C0014	1	pCi	g	Washington Closure Hanford

LCS % Recovery



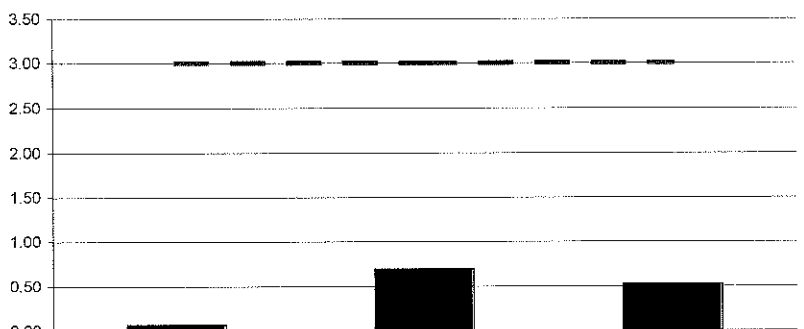
	C-14
Lower Error	82.76
Upper Error	116.28
%R	99.52
LCL	80
Mean	100
UCL	120

Replicate Sample RPD



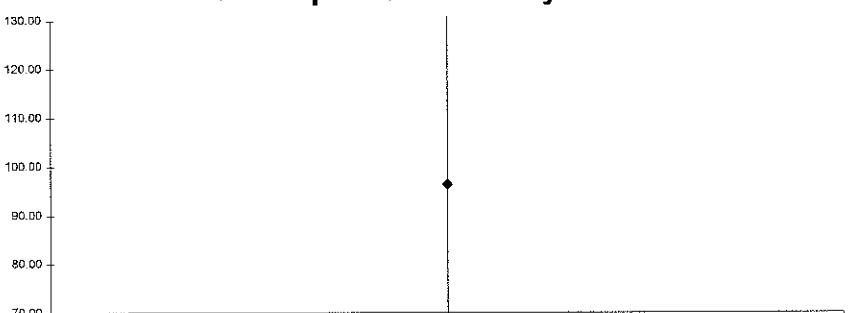
	C-14
Lower Error	89.10
Upper Error	24.60
RPD	56.85
CL	35

Normalized Difference



	LCS ND	REP ND	MS ND
C-14	0.07	0.69	0.52
UCL	3	3	3

Matrix Spike % Recovery



	C-14
Lower Error	51.87
Upper Error	140.90
%R	96.38
LCL	80
Mean	100
UCL	120

0042
Version

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
14-11131	Ni063	1	pCi	g	Washington Closure Hanford

Laboratory Control Sample

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
NI-63	9.24	76.68%	5.92%	100.00%	3.00%	1.75E+03	5.25E+01	1.34E+03	7.95E+01	Ni-3	2.21E+04	3.00E+00	1.76E-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)*
NI-63	13.36	69.11%	3.01E+03	9.02E+01	2.08E+03	1.23E+02	7.58E-01	1.36E+00	1.07E+00	Ni-3	2.21E+04	3.00	3.24E-01

Replicate Sample

Analyte	*Normalized Difference*	*RPD*	*Original Result*	*Original CSU*	*Replicate Result*	*Replicate CSU*
NI-63	0.77	66.87	7.58E-01	1.36E+00	1.52E+00	1.38E+00

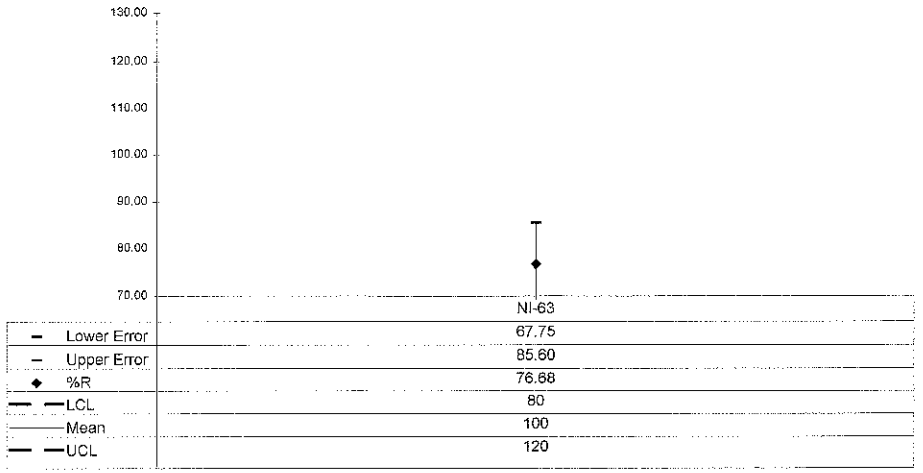
QC Summary

LCS Relative Bias	*LCS % R*	*LCS ND*	*MS % R*	*MS ND*	*Rep RPD*	*Rep ND*
0.77	OK	INV		INV	INV	OK

0043
Version

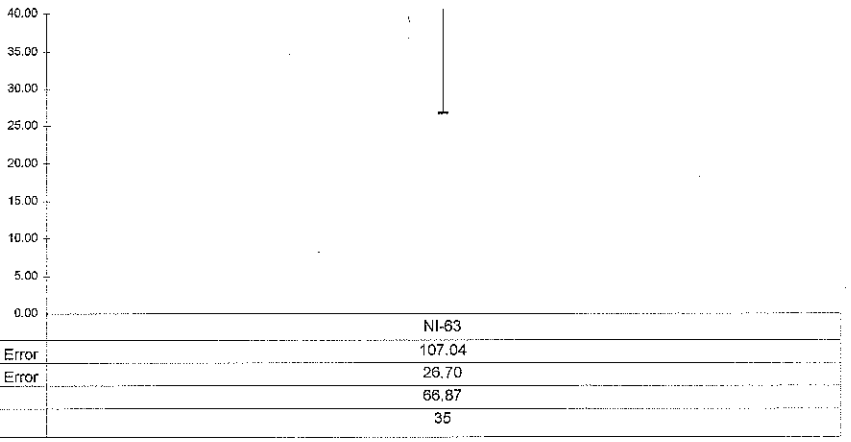
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
14-11131	Ni063	1	pCi	g	Washington Closure Hanford

LCS % Recovery



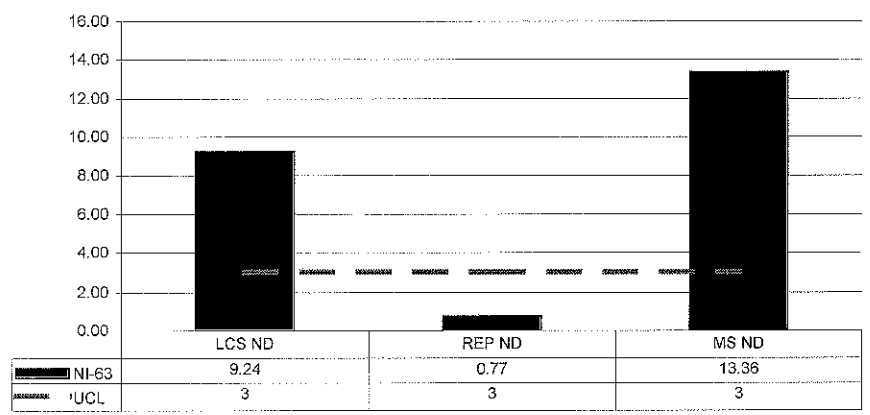
	NI-63
Lower Error	67.75
Upper Error	85.60
%R	76.68
LCL	80
Mean	100
UCL	120

Replicate Sample RPD



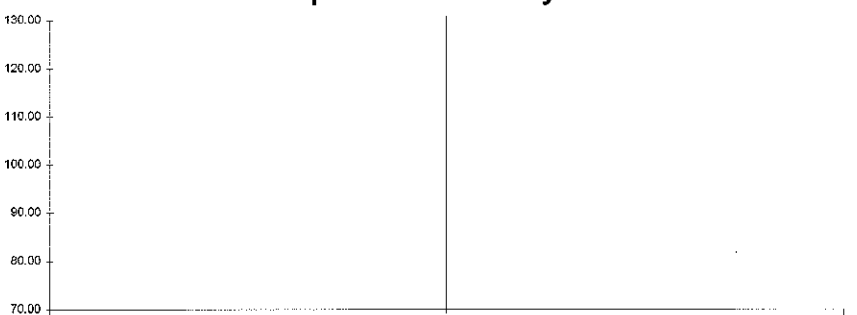
	NI-63
Lower Error	107.04
Upper Error	26.70
RPD	66.87
CL	35

Normalized Difference



	LCS ND	REP ND	MS ND
NI-63	9.24	0.77	13.36
UCL	3	3	3

Matrix Spike % Recovery



	NI-63
Lower Error	-143.84
Upper Error	282.05
%R	69.11
LCL	80
Mean	100
UCL	120

004

Version

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
14-11131	Gamma	1	pCi	g	Washington Closure Hanford

Laboratory Control Sample

Analyte	Normalized Difference	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	0.69	103.28%	8.60%	100.00%	4.00%	1.37E+02	5.48E+00	1.42E+02	1.22E+01	GAS-1302	1.37E+02	5.48E+00	7.36E+02
CS-137	0.13	100.74%	10.92%	100.00%	4.00%	8.69E+01	3.48E+00	8.76E+01	9.57E+00	GAS-1302	8.69E+01	3.48E+00	7.36E+02

Matrix Spike

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

Replicate Sample

Analyte	*Normalized Difference*	*RPD*	*Original Result*	*Original CSU*	*Replicate Result*	*Replicate CSU*
BI-214	0.04	0.67	5.77E-01	1.37E-01	5.73E-01	1.32E-01
K-40	0.14	1.34	1.64E+01	2.16E+00	1.66E+01	2.13E+00
PB-214	0.18	2.39	6.51E-01	1.23E-01	6.36E-01	1.20E-01

QC Summary

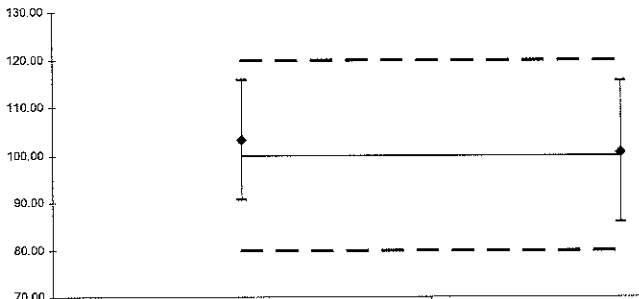
LCS Relative Bias	*LCS % R*	*LCS ND*	*MS % R*	*MS ND*	*Rep RPD*	*Rep ND*
1.03	OK	OK	<CS-137	BI-214>	NA	
1.01	OK	OK	<CO-60	K-40>	NA	OK
				PB-214>	NA	OK

0045

Version

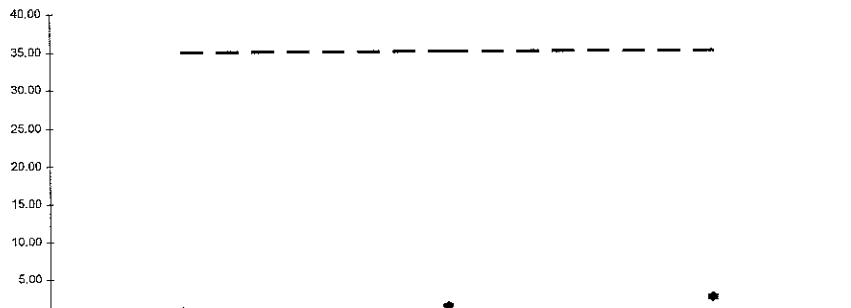
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
14-11131	Gamma	1	pCi	g	Washington Closure Hanford

LCS % Recovery



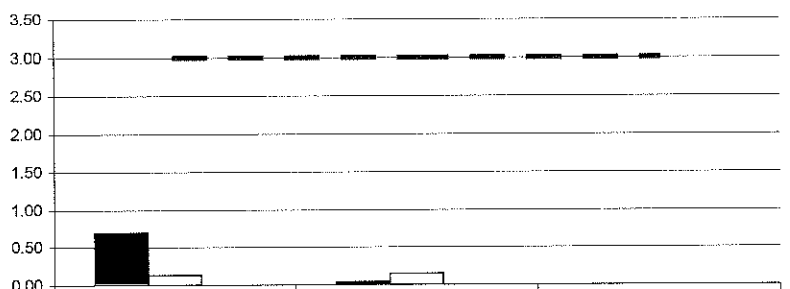
	CO-60	CS-137
Lower Error	90.68	85.81
Upper Error	115.87	115.67
%R	103.28	100.74
LCL	80	80
Mean	100	100
UCL	120	120

Replicate Sample RPD



	Bi-214	K-40	Pb-214
Lower Error	0.75	1.43	2.62
Upper Error	0.59	1.25	2.17
RPD	0.67	1.34	2.39
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
CO-60	0.69	0.04	0.00
CS-137	0.13	0.14	0.00
	0.00	0.00	0.00
UCL	3	3	3

No Matrix Spike

0046
Version

SECTION VII

LABORATORY TECHNICIAN'S NOTES

C-14 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	14-11131
Analysis Code	C0014
Run Number	1

#	Date	Dept	User	Notes
1	12/02/14 16:05	PREP	KSALLINGS KS	1st Step Samples were aliquoted and placed into 600ml beakers. Carbonate was added and samples were then oxidized using potassium permanganate. Samples were left unattended for carbonate conversions. 2nd Step Samples were placed into 1liter reaction vessels. Carbon dioxide was evolved and Carbon-14 was captured in Harvey. Samples were taken to the for counting by beta LSC.

EBERLINE SERVICES

Reagents Used in an Analysis

Internal Work Order	
14-11131	
Analysis Code	Run
C0014	1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
015074P	Harvey carbon14 cocktail	Reagent Grade	KSALLINGS	11/26/2014
014978S	Hydrochloric Acid	0.6N	KSALLINGS	11/26/2014
015389S	Potassium Permanganate	0.5M	KSALLINGS	11/26/2014
015388S	Sodium Carbonate	0.25M	KSALLINGS	11/26/2014
013356D05	Sulfuric acid	9M	KSALLINGS	11/26/2014

Tricarb 3100 (A)

DATE	SAmple #	Protocol	Client	Load Time	CT Time	Analysis	Tech
11/24	1411102A(1-4,B,R)	6	Ucor	0927	7hr	C14	C
11/24	1411110A(1-3,5,B,R)	7	Ucor	0927	7hr	C14	C
11/24/14	1411040A(1-4,6,B)	18	Ucor	1342	6hrs	Tc99	KB
11/24/14	1411057A(1-3,6,8,B)	16	Ucor	1503	6hrs	Tc99	KB
11/25	1411061A(1-5,B)	16	Ucor	0609	6hrs	Tc99	C
11/25/14	1411110A(1-4,B)	21	Ucor	1047	1hr15	Ni63	KB
11/25/14	1411063A(1-4,6)	25	Wash. Closure	1445	10hrs	Pu241	KB
11/26	1411110A(1-4)	21	Ucor	0542	7L	Ni63	C
11/26	1411057A(1-3,7,B)	1	Ucor	0607	10hrs	H3	C
11/26/14	1411135A(1-6,B)	3	Weston	1437	7hrs	H3	KB
11/26/14	1411131A(1-17,B,R)	6	Wash. Closure	1515	19hrs	C14	KB

0051

NI-63 NOTES

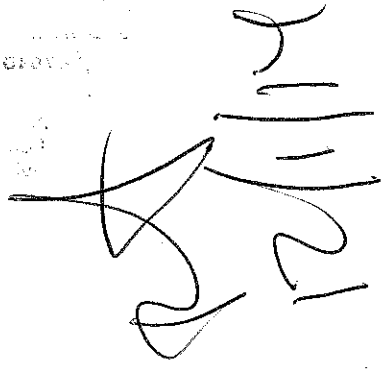
EBERLINE SERVICES

Work Order Analysis Notes

Oak Ridge Laboratory
601 Scarboro Rd.
Oak Ridge, TN 37830
Voice: 865.481.0683
www.eberlineservices.com

Internal Work Order	14-11131
Analysis Code	Ni063
Run Number	1

#	Date	Dept	User	Notes
1	12/01/14 07:32	CHEM	RMARTZ	SAMPLES WERE ALIQUOTED. SPIKES AND CARRIER WERE ADDED. SAMPLES WERE DRIED. DI H2O WAS ADDED. SAMPLES WERE PLACED ON STIRRING HOTPLATES. HCL WAS ADDED WHILE STIRRING. CITRIC ACID WAS ADDED WHILE STIRRING. NH4OH WAS ADDED TILL PH OF 8 WAS ACHIEVED. THREE ML OF DMG WERE ADDED. SAMPLES WERE FILTERED. PRECIPITATE WAS DISSOLVED WITH 8M HNO3. SAMPLES WERE DRIED 3 TIMES TO REMOVE HNO3. SAMPLES WERE TRANSFERRED TO VIALS WITH DI H2O. SCINTILLATIION COCKTAIL WAS ADDED. SAMPLES WERE SUBMITTED TO COUNT ROOM.



EBERLINE SERVICES

Reagents Used in an Analysis

Internal Work Order	
14-11131	
Analysis Code	Run
Ni063	1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
014145P	Ammonium Hydroxide	Reagent Grade	RMARTZ	12/1/2014
014426S	Citric Acid	1M	RMARTZ	12/1/2014
014471S	Dimethylglyoxime	1%	RMARTZ	12/1/2014
014585P	Hydrochloric Acid	Reagent Grade	RMARTZ	12/1/2014
013189S	Nickel Chloride	10 mg/ml	RMARTZ	12/1/2014
014460P	Nitric Acid	Reagent Grade	RMARTZ	12/1/2014
013816P	Ultima Gold XR	Reagent Grade	RMARTZ	12/1/2014

Tricarb 3100 (A) 39

DATE	Sample #	Protocol	Client	Lastime	Ctime	Analysis	Tech
11/24	141102A(1-4,B,R)	6	UCOR	0927	7hr	C-14	C
11/24	141110A(1-7,5,B,R)	7	UCOR	0927	7hr	C-14	C
11/24/14	141040A (1-4,6,B)	18	UCOR	1342	6hrs	Tc99	KB
11/24/14	141057A(1-3,6,8,D)	16	UCOR	1503	6hrs	Tc99	KB
11/25	141061A(1-5,B)	16	UCOR	0609	6hrs	Tc99	—
11/25/14	141110A (1-4,D)	21	UCOR	1047	11hr15-	Ni63	KB
11/25/14	141106B3A (1-4,6)	25	WASH. Closure	1445	10hrs	Rn241	KB
11/26	141110A(1-4)	21	UCOR	0542	IL	Ni63	C
11/26	141102A(1-3,7,B)	1	UCOR	0607	10hrs	H3	C
11/26/14	141135A(1-6,6)	3	Weston	1437	7hrs	H3	KB
11/26/14	141131A(1-17,B,R)	6	WASH. Closure	1515	19 hrs	C14	KB
11/29/14	141102A(1-4,B)	1	UCOR	0930	10hr	H-3	AC
12/1/14	141127A(1-4,B,R)	6	ECC	1250	6hrs	C14	KB
12/1/14	141131A(1-17,B,R)	21	WASH. Closure	1345	19 hrs	Ni63	KB

GAMMA NOTES

GE1

DATE	SAmple #	Client	Load Time	CT. Time	Analysis	Tech
11/25	1410181-03	Weston	0657	7L	✓	C
11/25	1410181-04	Weston	0758	7L	✓	C
11/25	1410181-01	Weston	0859	7L	✓	C
11/25	1411004-01	Weston	0971	7L	✓	C
11/25	1411004-06	Weston	1002	7L	✓	C
11/25	1411004-07	Weston	1107	7L	✓	C
11/25	1411004-10	Weston	1205	1hr	✓	C
11/25/14	1411103-03	Unitech	1306	1hr	✓	KB
11/25/14	1411103-05	Unitech	1407	1hr	✓	KB
11/25/14	1411103-04	Unitech	1508	1hr	✓	KB
11/25/14	1411103-06	Unitech	1610	1hr	✓	KB
11/25/14	1411102-04	UCOR	1711	4hr	✓	KB
11/26	CA714	LAB	0570	15	✓	C
11/26	Dwyer	LAB	0551	15	✓	C
11/26	1411128-03	Texcon	0611	7L	✓	C
11/26	1411128-04	Texcon	0712	7L	✓	C
11/26	1411127-03	Enviro.	0816	7L	✓	C
11/26	1411127-04	Enviro.	0917	7L	✓	C
11/26	1411131-07	Washington	1018	7L	✓	C
11/26	1411131-12	Washington	1119	7L	✓	C

GE 2

DATE	SAmple #	Client	Load Time	CT. Time	Analysis	Tech
11/25/14	1411110-01	UCOR	1712	30mins	✓	KB
11/25/14	1411110-03	UCOR	1744	2hrs	✓	KB
11/26	CAS 1401	LAB	0530	1h	✓	[illegible]
11/26	Daily B	LAB	0551	1h	✓	[illegible]
11/26	1411110-04	UCOR	0612	2h	✓	[illegible]
11/26	1411127-02	Enviro	0817	2h	✓	[illegible]
11/26	1411127-01	Enviro	0917	2h	✓	[illegible]
11/26	1411131-08	Washington	0951	2h	✓	—
11/26	1411131-09	Washington	1052	2h	✓	—
11/26/14	1411131-13	WASH. Closure	1154	1h	✓	KB
11/26/14	1411131-15	WASH. Closure	1255	1h	✓	KB

GE 4

DATE	SAMPLE #	Client	Load Time	CT. Time	Analysis	Tech
11/26	GW14	LAB	0570	15	✓	[illegible]
11/26	Daily [illegible]	[illegible]	0556	15	✓	
11/26	1411106-02	Tames	0617	2L	✓	—
11/26	1411131-05	Washington	0854	2L	✓	—
11/26	1411131-06	Washington	0856	2L	✓	—
11/26	1411131-11	Washington	1058	2L	✓	—
11/26/14	1411131-02	Wash. Closure	1200	1 hr	✓	KB
11/26/14	1411131-01	Wash. Closure	1700	30 mins	✓	KB

GE 3

DATE	SAmple #	Client	Load Time	CT. Time	Analysis	Tech
11/24/14	1410180-19	Weston	1648	1 hr	✓	KB
11/25	GES 1402	LAB	0527	15	✓	[illegible]
11/25	Daily B	LAB	0553	15	✓	
11/25	1411104-11	Enviro.	0620	15	B	[illegible]
11/25	1411061-02	UCOM	0675	15	B	
11/25	1410181-06	Weston	0657	2	✓	—
11/25	1410181-09	Weston	0759	2	✓	—
11/25	141081-11	Weston	0900	2	✓	—
11/25	1411004-03	Weston	1003	2	✓	[illegible]
11/25	1411004-04	Weston	1103	2	✓	[illegible]
11/25	1411004-12	Weston	1205	2	✓	—
11/25/14	1411004-15	Weston	1307	1 hr	✓	KB
11/25	1411004-18	Weston	1409	2	✓	—
11/25/14	1411129-05	TexCom	1511	1 hr	✓	KB
11/25/14	1411129-01	TexCom	1611	30 mins	✓	KB
11/25/14	1411128-01	TexCom	1643	30 mins	✓	KB
11/25/14	1411106-03	James R. Reed	1746	2 hrs	✓	KB
11/26	GES-1402	LAB	0530	15	✓	[illegible]
11/26	Daily B	LAB	0551	15	✓	—
11/26	1411106-04	James	0612	2	✓	—
11/26	1411106-01	James	0817	2	✓	—
11/26	1411131-03	Washington	0857	2	✓	[illegible]
11/26	1411131-04	Washington	0956	2	✓	[illegible]
11/26	1411131-10	Washington	1058	2	✓	—
11/26/14	1411131-14	Wash. Closure	1159	1 hr	✓	KB
11/26/14	1411131-16	Wash. Closure	1701	1 hr	✓	KB

SECTION VIII

ANALYTICAL DATA (CARBON-14)

Work Order	14-11131
Analysis Code	C0014
Run	1
Date Received	11/25/2014
Lab Deadline	12/1/2014
Client	Washington Closure Hanford
Project	S00W235A01
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EPA 520.0 Modified
Instrument Type	Beta LSC
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		11/25/14 00:00	1.0000E+00
02	MBL	BLANK		11/25/14 00:00	5.0000E+00
03	DUP	J1V1L2 SAF: RC-107	48	11/20/14 11:02	5.7500E+00
04	DO	J1V1L2 SAF: RC-107	48	11/20/14 11:02	5.4900E+00
05	TRG	J1V1L3 SAF: RC-107	53	11/20/14 10:51	5.4400E+00
06	TRG	J1V1L8 SAF: RC-107	53	11/20/14 10:08	5.6100E+00
07	TRG	J1V1L9 SAF: RC-107	54	11/20/14 10:38	5.0800E+00
08	TRG	J1V1M1 SAF: RC-107	50	11/20/14 10:26	5.1900E+00
09	TRG	J1V1M2 SAF: RC-107	51	11/20/14 10:08	5.1000E+00
10	TRG	J1V1L0 SAF: RC-107	50	11/24/14 08:11	5.7400E+00
11	TRG	J1V1L1 SAF: RC-107	46	11/24/14 08:04	5.4000E+00
12	TRG	J1V1L4 SAF: RC-107	45	11/24/14 07:58	5.7600E+00
13	TRG	J1V1L5 SAF: RC-107	51	11/24/14 07:43	5.0100E+00
14	TRG	J1V1L6 SAF: RC-107	52	11/24/14 07:38	5.5300E+00
15	TRG	J1V1L7 SAF: RC-107	50	11/24/14 07:32	5.2000E+00
16	MSO	J1V1M0 SAF: RC-107	49	11/24/14 07:26	5.1000E+00
17	MS	J1V1M0 SAF: RC-107		11/20/14 11:02	5.1700E+00

2900

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

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

0063

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

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS								
02	MBL								
03	DUP								
04	DO	11/26/14 08:28	KSALLINGS						
05	TRG	11/26/14 08:28	KSALLINGS						
06	TRG	11/26/14 08:28	KSALLINGS						
07	TRG	11/26/14 08:28	KSALLINGS						
08	TRG	11/26/14 08:28	KSALLINGS						
09	TRG	11/26/14 08:28	KSALLINGS						
10	TRG	11/26/14 08:28	KSALLINGS						
11	TRG	11/26/14 08:28	KSALLINGS						
12	TRG	11/26/14 08:28	KSALLINGS						
13	TRG	11/26/14 08:28	KSALLINGS						
14	TRG	11/26/14 08:28	KSALLINGS						
15	TRG	11/26/14 08:28	KSALLINGS						
16	MSO	11/26/14 08:28	KSALLINGS						
17	MS	11/26/14 08:28	KSALLINGS						

0064

* 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: 14-11131-C0014-1

Client: Washington Closure Hanford
Eberline Services Work Order: 14-11131
Analysis Code: C0014
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	C-14	LCS	LCS	pCi/g	1.41E+03	1.39E+01	5.21E+00	1.41E+03	99.52	OK		INV	
02	C-14	MBL	BLANK	pCi/g	3.86E-01	5.88E-01	9.92E-01					OK	OK
03	C-14	DUP	J1V1L2 SAF: RC-107	pCi/g	3.48E-01	5.30E-01	8.94E-01				INV	OK	
04	C-14	DO	J1V1L2 SAF: RC-107	pCi/g	6.24E-01	5.64E-01	9.43E-01					OK	
05	C-14	TRG	J1V1L3 SAF: RC-107	pCi/g	6.02E-01	5.78E-01	9.67E-01					OK	
06	C-14	TRG	J1V1L8 SAF: RC-107	pCi/g	2.53E-01	5.48E-01	9.28E-01					OK	
07	C-14	TRG	J1V1L9 SAF: RC-107	pCi/g	2.39E-01	6.04E-01	1.02E+00					INV	
08	C-14	TRG	J1V1M1 SAF: RC-107	pCi/g	2.73E-01	5.91E-01	1.00E+00					INV	
09	C-14	TRG	J1V1M2 SAF: RC-107	pCi/g	4.01E-01	6.10E-01	1.03E+00					INV	
10	C-14	TRG	J1V1L0 SAF: RC-107	pCi/g	3.51E-01	5.35E-01	9.02E-01					OK	
11	C-14	TRG	J1V1L1 SAF: RC-107	pCi/g	8.76E-01	5.90E-01	9.78E-01					OK	
12	C-14	TRG	J1V1L4 SAF: RC-107	pCi/g	5.32E-01	5.44E-01	9.11E-01					OK	
13	C-14	TRG	J1V1L5 SAF: RC-107	pCi/g	3.25E-01	6.18E-01	1.04E+00					INV	
14	C-14	TRG	J1V1L6 SAF: RC-107	pCi/g	7.38E-02	5.55E-01	9.47E-01					OK	
15	C-14	TRG	J1V1L7 SAF: RC-107	pCi/g	3.49E-01	5.89E-01	9.96E-01					OK	
16	C-14	MSO	J1V1M0 SAF: RC-107	pCi/g	5.95E-01	6.08E-01	1.02E+00					INV	
17	C-14	MS	J1V1M0 SAF: RC-107	pCi/g	2.64E+02	2.65E+00	1.02E+00					INV	

Preliminary Data Report & Analytical Calculations

Work Order: 14-11131-C0014-1

Client: Washington Closure Hanford

Eberline Services Work Order: 14-11131

Analysis Code: C0014

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	C-14	LCS	11/25/14 00:00	1.00E+00	0.00	0.00	0.00			
02	C-14	MBL	11/25/14 00:00	5.00E+00	0.00	0.00	0.00			
03	C-14	DUP	11/20/14 11:02	5.75E+00	0.00	0.00	0.00			
04	C-14	DO	11/20/14 11:02	5.49E+00	0.00	0.00	0.00			
05	C-14	TRG	11/20/14 10:51	5.44E+00	0.00	0.00	0.00			
06	C-14	TRG	11/20/14 10:08	5.61E+00	0.00	0.00	0.00			
07	C-14	TRG	11/20/14 10:38	5.08E+00	0.00	0.00	0.00			
08	C-14	TRG	11/20/14 10:26	5.19E+00	0.00	0.00	0.00			
09	C-14	TRG	11/20/14 10:08	5.10E+00	0.00	0.00	0.00			
10	C-14	TRG	11/24/14 08:11	5.74E+00	0.00	0.00	0.00			
11	C-14	TRG	11/24/14 08:04	5.40E+00	0.00	0.00	0.00			
12	C-14	TRG	11/24/14 07:58	5.76E+00	0.00	0.00	0.00			
13	C-14	TRG	11/24/14 07:43	5.01E+00	0.00	0.00	0.00			
14	C-14	TRG	11/24/14 07:38	5.53E+00	0.00	0.00	0.00			
15	C-14	TRG	11/24/14 07:32	5.20E+00	0.00	0.00	0.00			
16	C-14	MSO	11/24/14 07:26	5.10E+00	0.00	0.00	0.00			
17	C-14	MS	11/20/14 11:02	5.17E+00	0.00	0.00	0.00			

9900

Preliminary Data Report & Analytical Calculations

Work Order: 14-11131-C0014-1

Client: Washington Closure Hanford
Eberline Services Work Order: 14-11131
Analysis Code: C0014
Run: 1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	C-14	LCS	11/27/14 02:09	2092882.5	3100A	1	60	42666	17.6	0.65221912
02	C-14	MBL	11/27/14 03:13	2092882.5	3100A	2	60	1116	17.6	0.685112643
03	C-14	DUP	11/27/14 04:16	2092882.5	3100A	3	60	1116	17.6	0.661144423
04	C-14	DO	11/27/14 05:19	2092882.5	3100A	4	60	1158	17.6	0.656054471
05	C-14	TRG	11/27/14 06:22	2092882.5	3100A	5	60	1152	17.6	0.64586068
06	C-14	TRG	11/27/14 07:25	2092882.5	3100A	6	60	1098	17.6	0.652288681
07	C-14	TRG	11/27/14 08:28	2092882.5	3100A	7	60	1092	17.6	0.65301738
08	C-14	TRG	11/27/14 09:31	2092882.5	3100A	8	60	1098	17.6	0.653622268
09	C-14	TRG	11/27/14 10:34	2092882.5	3100A	9	60	1116	17.6	0.647333242
10	C-14	TRG	11/27/14 11:37	2092882.5	3100A	10	60	1116	17.6	0.655833262
11	C-14	TRG	11/27/14 12:40	2092882.5	3100A	11	60	1194	17.6	0.643044136
12	C-14	TRG	11/27/14 13:43	2092882.5	3100A	12	60	1146	17.6	0.647369007
13	C-14	TRG	11/27/14 14:46	2092882.5	3100A	13	60	1104	17.6	0.648988802
14	C-14	TRG	11/27/14 15:49	2092882.5	3100A	14	60	1068	17.6	0.648651821
15	C-14	TRG	11/27/14 16:52	2092882.5	3100A	15	60	1110	17.6	0.656037465
16	C-14	MSO	11/27/14 17:56	2092882.5	3100A	16	60	1146	17.6	0.653484197
17	C-14	MS	11/27/14 18:59	2092882.5	3100A	17	60	41142	17.6	0.647315356

2900

Count Room Report
Client: Washington Closure Hanfor

14-11131-C0014-1 (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	11/25/14 00:00	1.0000				0.00		
02	MBL	BLANK	11/25/14 00:00	5.0000				0.00		
03	DUP	J1V1L2 SAF: RC-107	11/20/14 11:02	5.7500				0.00		
04	DO	J1V1L2 SAF: RC-107	11/20/14 11:02	5.4900				0.00		
05	TRG	J1V1L3 SAF: RC-107	11/20/14 10:51	5.4400				0.00		
06	TRG	J1V1L8 SAF: RC-107	11/20/14 10:08	5.6100				0.00		
07	TRG	J1V1L9 SAF: RC-107	11/20/14 10:38	5.0800				0.00		
08	TRG	J1V1M1 SAF: RC-107	11/20/14 10:26	5.1900				0.00		
09	TRG	J1V1M2 SAF: RC-107	11/20/14 10:08	5.1000				0.00		
10	TRG	J1V1L0 SAF: RC-107	11/24/14 08:11	5.7400				0.00		
11	TRG	J1V1L1 SAF: RC-107	11/24/14 08:04	5.4000				0.00		
12	TRG	J1V1L4 SAF: RC-107	11/24/14 07:58	5.7600				0.00		
13	TRG	J1V1L5 SAF: RC-107	11/24/14 07:43	5.0100				0.00		
14	TRG	J1V1L6 SAF: RC-107	11/24/14 07:38	5.5300				0.00		
15	TRG	J1V1L7 SAF: RC-107	11/24/14 07:32	5.2000				0.00		
16	MSO	J1V1M0 SAF: RC-107	11/24/14 07:26	5.1000				0.00		
17	MS	J1V1M0 SAF: RC-107	11/20/14 11:02	5.1700				0.00		

8900

Spike and Tracer Worksheet

Internal Work Order	Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
14-11131	1	C0014	11/26/2014 13:30	KSALLINGS KS		

LCS & Matrix Spikes					LCS	MS	RS	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*
C-14	C-3a	3016.755	11/26/2014	**1.061**	**1.0400**	**1.0400**	**1.0300**		1413.25	39.571	1413.25	39.571	1399.67	39.191	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*

Balance Printer Tapes

Tracer	LCS

Matrix Spike

6900

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Printed: 11/26/2014 1:29 PM

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
14-11131	1	C0014	grams	12/1/2014	KSALLINGS

Lab Fraction	Washington Closure Hanford 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					5.0000E+00	5.0000E+00				
03	J1V1L2 SAF: RC-107	DUP					5.7500E+00	5.7500E+00				
04	J1V1L2 SAF: RC-107	DO					5.4900E+00	5.4900E+00				
05	J1V1L3 SAF: RC-107	TRG					5.4400E+00	5.4400E+00				
06	J1V1L8 SAF: RC-107	TRG					5.6100E+00	5.6100E+00				
07	J1V1L9 SAF: RC-107	TRG					5.0800E+00	5.0800E+00				
08	J1V1M1 SAF: RC-107	TRG					5.1900E+00	5.1900E+00				
09	J1V1M2 SAF: RC-107	TRG					5.1000E+00	5.1000E+00				
10	J1V1L0 SAF: RC-107	TRG					5.7400E+00	5.7400E+00				
11	J1V1L1 SAF: RC-107	TRG					5.4000E+00	5.4000E+00				
12	J1V1L4 SAF: RC-107	TRG					5.7600E+00	5.7600E+00				
13	J1V1L5 SAF: RC-107	TRG					5.0100E+00	5.0100E+00				
14	J1V1L6 SAF: RC-107	TRG					5.5300E+00	5.5300E+00				
15	J1V1L7 SAF: RC-107	TRG					5.2000E+00	5.2000E+00				
16	J1V1M0 SAF: RC-107	MSO					5.1000E+00	5.1000E+00				
17	MS	MS					5.1700E+00	5.1700E+00				

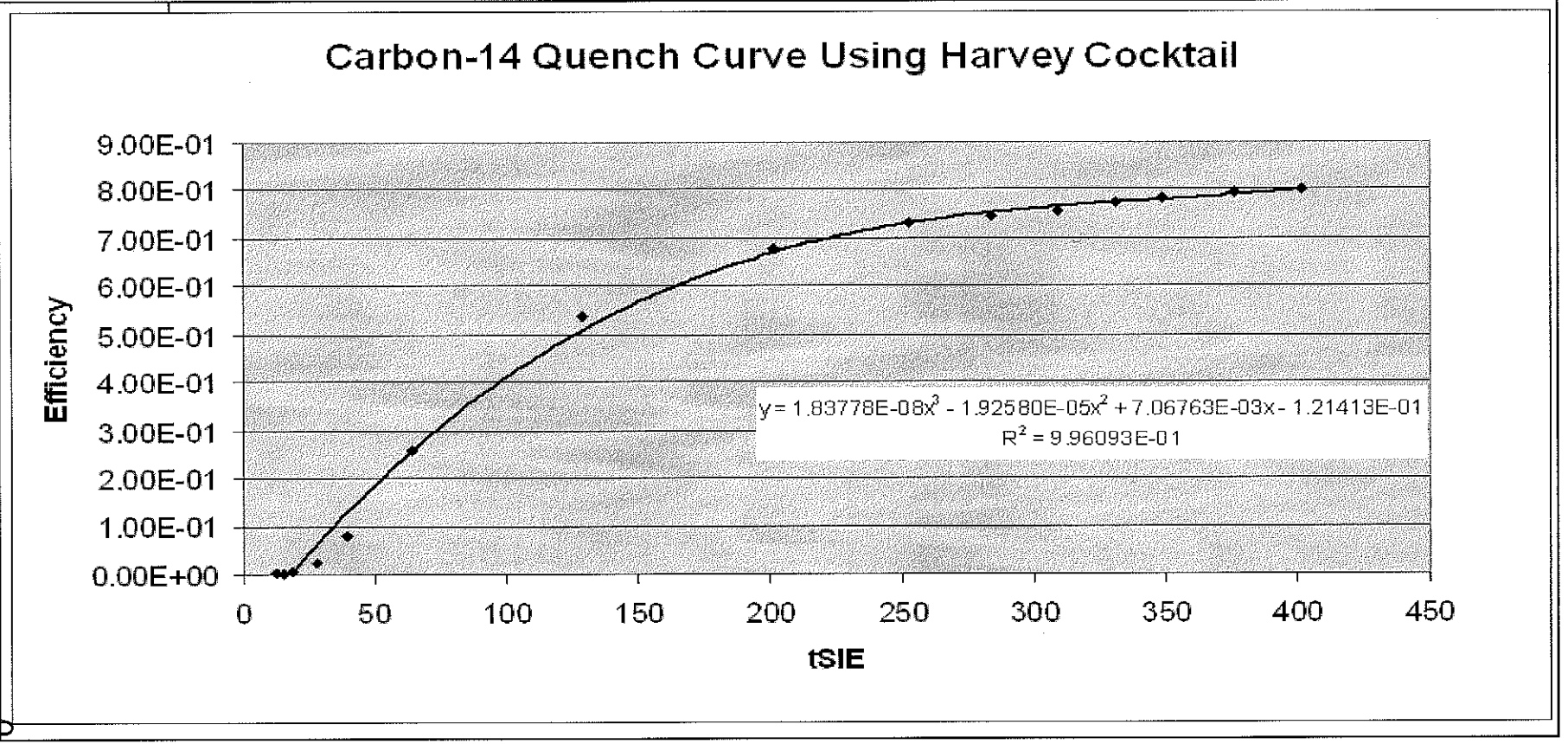
Comments	

0070

Technician: Kenny Sallings Date: 11/26/14

Work Order #	14-11131		C-14 Recovery			EBERLINE SERVICES	
tSIE	EFFICIENCY	Recovery Spike Activity	Grams Added	Total Activity	cpm	Bkg, cpm	Recovery Factor
187.58	64.801%	3016.755	1.03	3107.25765	703.3	17.6	0.340543441

12/1/2014 9:04



T200

AG 11/29/14 A

Assay Definition-

Assay Description:
C14

Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\Default\c14-cpm-6\20141127_0208
Raw Results Path: C:\Packard\Tricarb\Results\Default\c14-cpm-6\20141127_0208\20141127_0208.results
Comma-Delimited File Name: C:\Packard\Tricarb\Results\Default\c14-cpm-6\20141127_0208\1411131 ac14.csv
Assay File Name: C:\Packard\TriCarb\Assays\c14-cpm-6.lsa

Count Conditions-

Nuclide: 14C
Quench Indicator: tSIE
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 1.00
Quench Set: n/a
Count Time (min): 60.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	156.0
B	4.0	156.0
C	0.0	0.0

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: n/a Heterogeneity Monitor: n/a
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

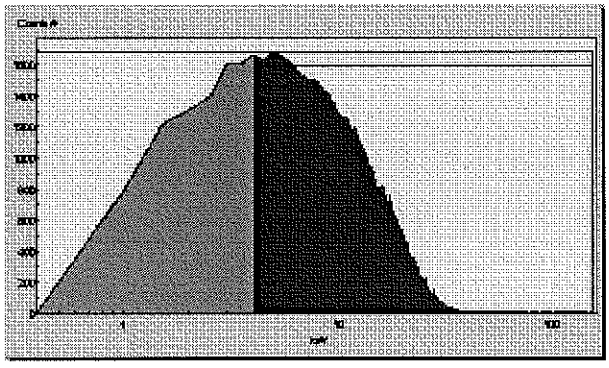
Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

DATE TIME	SMPL_ID	P#	PID	S#	CPMA	CPMB	CPMC	tSIE	Count Time
11/27/2014 2:09:56 AM	14-11131-1-C14-01S	6	12	1	846.7	711.1	0.0	190.00	60.00

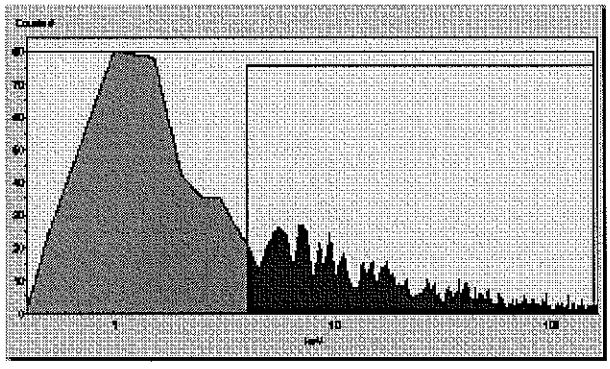
SpectraView Block Data



14-11131-1-C14-02S	6	12	2	23.9	18.6	0.0	211.05	60.00

11/27/2014 3:13:01 AM

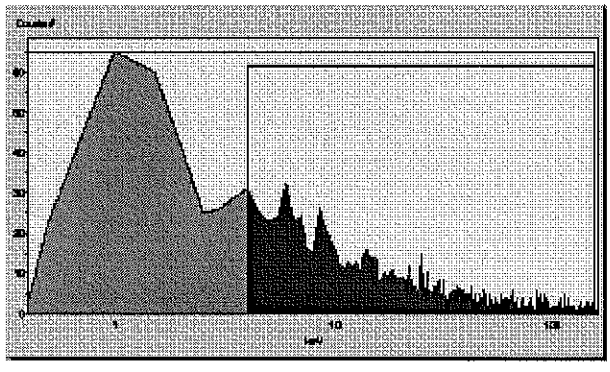
SpectraView Block Data



14-11131-1-C14-03S	6	12	3	23.1	18.6	0.0	195.27	60.00

11/27/2014 4:16:06 AM

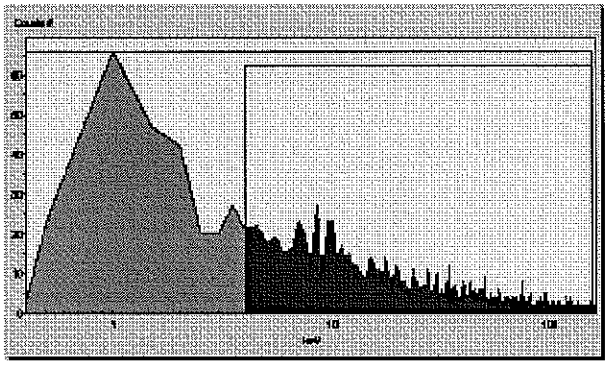
SpectraView Block Data



14-11131-1-C14-04S	6	12	4	23.4	19.3	0.0	192.23	60.00

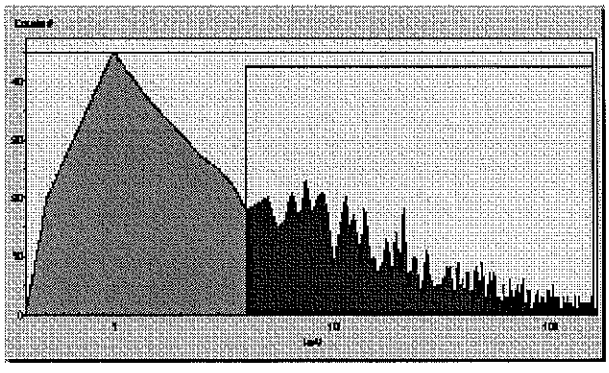
11/27/2014 5:19:10 AM

SpectraView Block Data



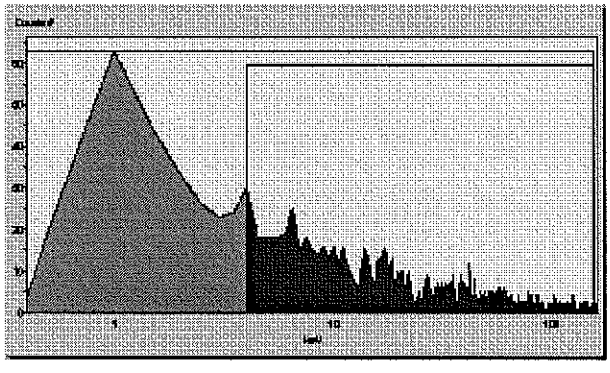
14-11131-1-C14-05S 6 12 5 22.6 19.2 0.0 186.41 60.00
11/27/2014 6:22:13 AM

SpectraView Block Data



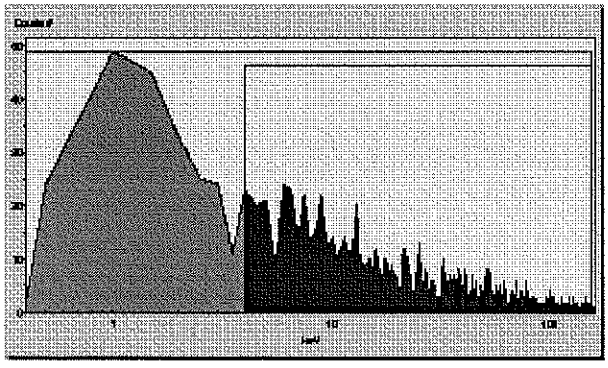
14-11131-1-C14-06S 6 12 6 22.2 18.3 0.0 190.04 60.00
11/27/2014 7:25:17 AM

SpectraView Block Data



14-11131-1-C14-07S 6 12 7 21.7 18.2 0.0 190.46 60.00
11/27/2014 8:28:21 AM

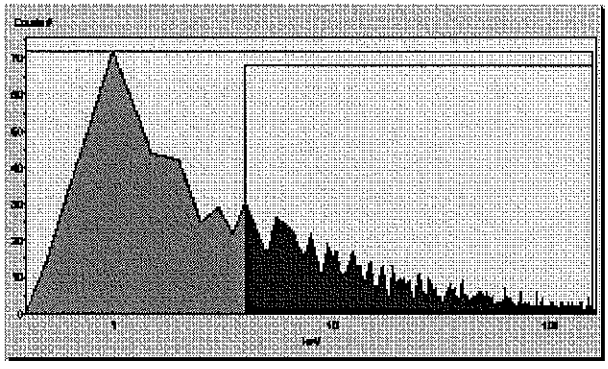
SpectraView Block Data



14-11131-1-C14-08S	6	12	8	22.4	18.3	0.0	190.81	60.00

11/27/2014 9:31:26 AM

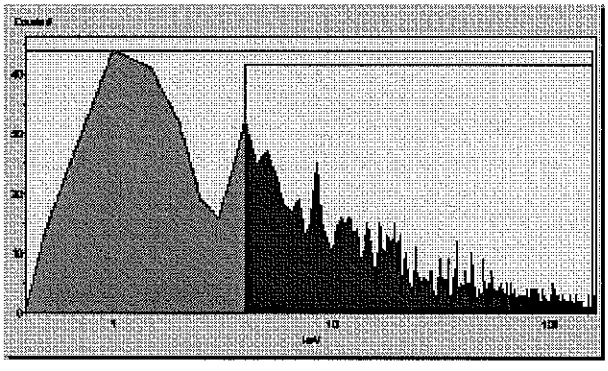
SpectraView Block Data



14-11131-1-C14-09S	6	12	9	21.8	18.6	0.0	187.23	60.00

11/27/2014 10:34:30 AM

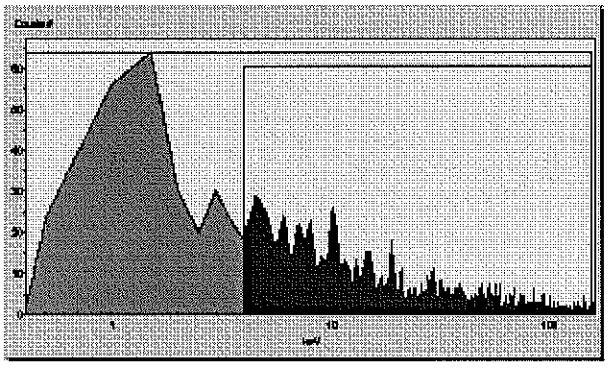
SpectraView Block Data



14-11131-1-C14-10S	6	12	10	22.8	18.6	0.0	192.10	60.00

11/27/2014 11:37:34 AM

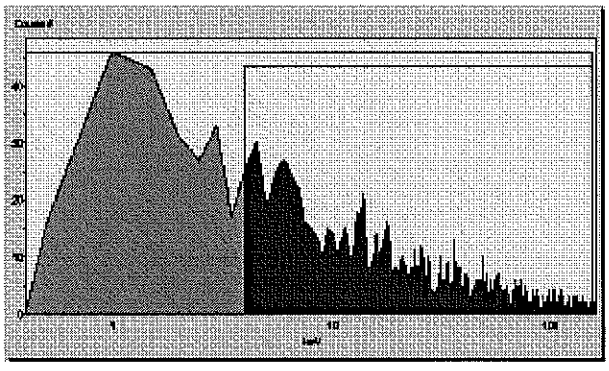
SpectraView Block Data



14-11131-1-C14-11S	6	12	11	23.5	19.9	0.0	184.86	60.00

11/27/2014 12:40:38 PM

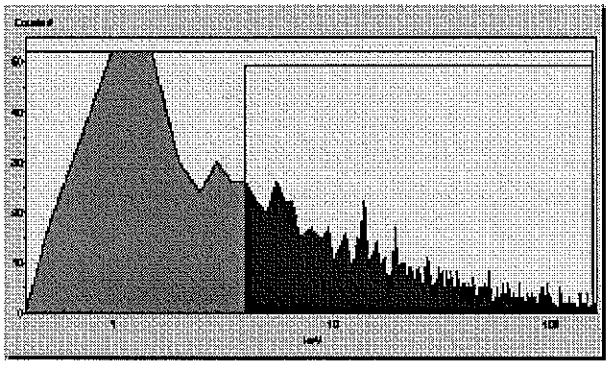
SpectraView Block Data



14-11131-1-C14-12S	6	12	12	23.0	19.1	0.0	187.25	60.00

11/27/2014 1:43:43 PM

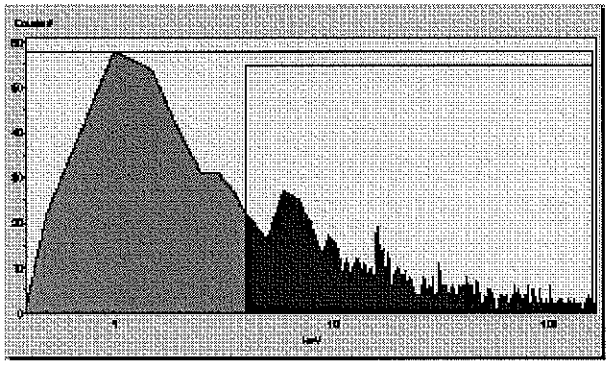
SpectraView Block Data



14-11131-1-C14-13S	6	17	13	22.8	18.4	0.0	188.16	60.00

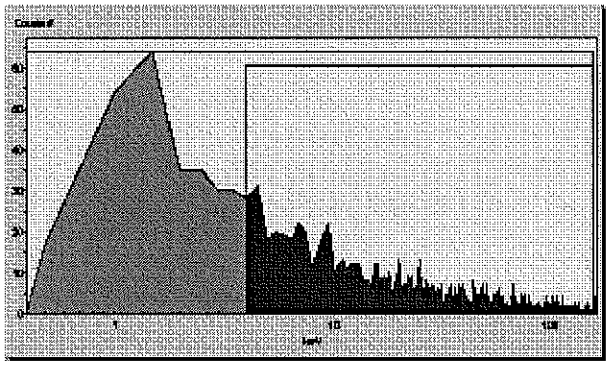
11/27/2014 2:46:52 PM

SpectraView Block Data



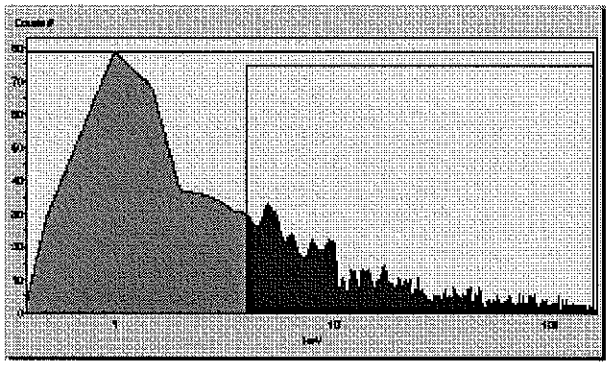
14-11131-1-C14-14S 6 17 14 22.2 17.8 0.0 187.97 60.00
11/27/2014 3:49:57 PM

SpectraView Block Data



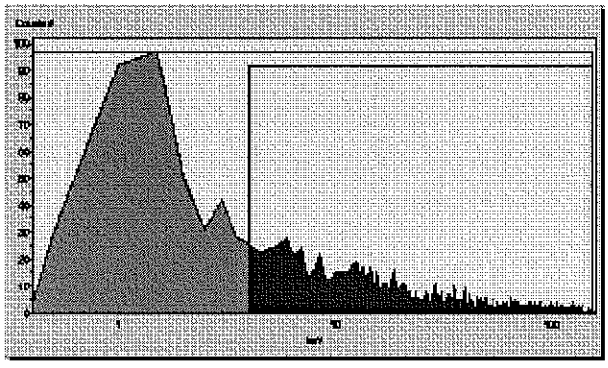
14-11131-1-C14-15S 6 17 15 23.7 18.5 0.0 192.22 60.00
11/27/2014 4:53:00 PM

SpectraView Block Data



14-11131-1-C14-16S 6 17 16 25.3 19.1 0.0 190.73 60.00
11/27/2014 5:56:05 PM

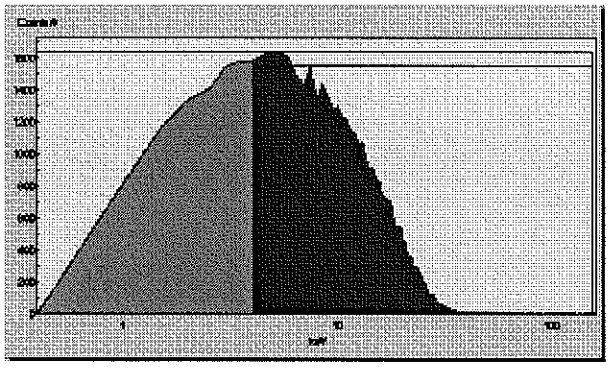
SpectraView Block Data



14-11131-1-C14-17S	6	17	17	819.9	685.7	0.0	187.22	60.00

11/27/2014 6:59:09 PM

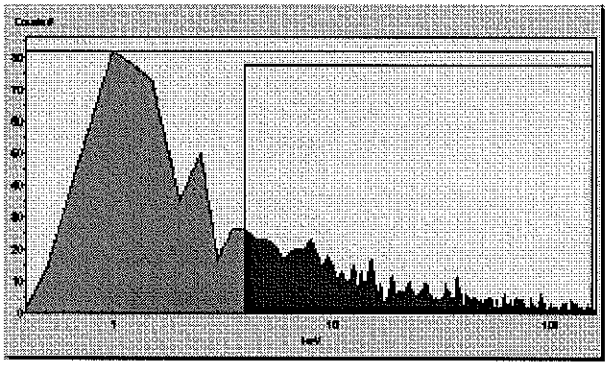
SpectraView Block Data



Sample #18	6	17	18	22.6	17.6	0.0	209.66	60.00

11/27/2014 8:02:13 PM

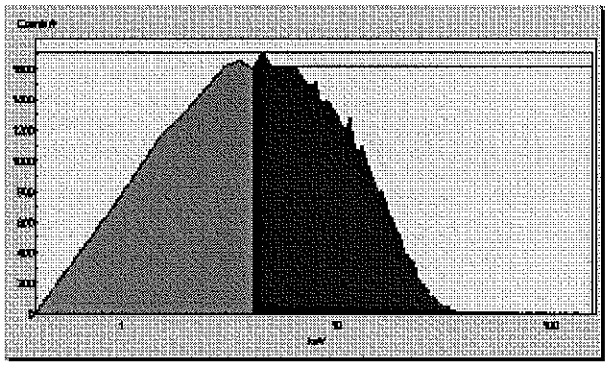
SpectraView Block Data



Sample #19	6	17	19	841.0	703.3	0.0	187.58	60.00

11/27/2014 9:05:18 PM

SpectraView Block Data



SNC Protocol

AG
11/27/14
(B)

Calibration Information
Software Version IC: 2.12
Software Version EC: 2.02
Instrument Model: Tri-Carb 3100TR
Instrument Serial Number: 427086
3H Chi Square: 24.35 Date Processed: 11/27/2014 5:24:19 AM
14C Chi Square: 15.54 Date Processed: 11/27/2014 5:24:19 AM
3H E^2/B (1-18.6 keV): 275.57 Date Processed: 11/27/2014 5:24:19 AM
14C E^2/B (4-156 keV): 554.17 Date Processed: 11/27/2014 5:24:19 AM
3H Efficiency (0-18.6 keV): 61.51 Date Processed: 11/27/2014 5:24:19 AM
14C Efficiency (0-156 keV): 95.63 Date Processed: 11/27/2014 5:24:19 AM
IPA Background Date Processed: 11/27/2014 5:24:19 AM
3H Background CPM (0-18.6 keV): 13.73 Date Processed: 11/27/2014 5:24:19 AM
14C Background CPM (0-156 keV): 20.37 Date Processed: 11/27/2014 5:24:19 AM
3H Calibration DPM: 207400
3H Reference Date: 10/29/2007
14C Calibration DPM: 120521

SECTION IX

ANALYTICAL DATA (NICKEL-63)

14-11131
Ni063
Run 1

Work Order	14-11131
Analysis Code	Ni063
Run	1
Date Received	11/25/2014
Lab Deadline	12/1/2014
Client	Washington Closure Hanford
Project	S00W235A01
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	ASTM 3500-Ni Modified
Instrument Type	Beta LSC
Radiometric Tracer	Ni-63MS
Radiometric Sol#	Ni-3
Tracer Act (dpm/g)	22117.233
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		11/25/14 00:00	1.0000E+00
02	MBL	BLANK		11/25/14 00:00	1.0000E+00
03	DUP	J1V1L2 SAF: RC-107		11/20/14 11:02	1.0391E+00
04	DMSO	J1V1L2 SAF: RC-107	48	11/20/14 11:02	1.1050E+00
05	TRG	J1V1L3 SAF: RC-107	53	11/20/14 10:51	1.1803E+00
06	TRG	J1V1L8 SAF: RC-107	53	11/20/14 10:08	1.0568E+00
07	TRG	J1V1L9 SAF: RC-107	54	11/20/14 10:38	1.2492E+00
08	TRG	J1V1M1 SAF: RC-107	50	11/20/14 10:26	1.1178E+00
09	TRG	J1V1M2 SAF: RC-107	51	11/20/14 10:08	1.0257E+00
10	TRG	J1V1L0 SAF: RC-107	50	11/24/14 08:11	1.0532E+00
11	TRG	J1V1L1 SAF: RC-107	46	11/24/14 08:04	1.0338E+00
12	TRG	J1V1L4 SAF: RC-107	45	11/24/14 07:58	1.0653E+00
13	TRG	J1V1L5 SAF: RC-107	51	11/24/14 07:43	1.3651E+00
14	TRG	J1V1L6 SAF: RC-107	52	11/24/14 07:38	1.0241E+00
15	TRG	J1V1L7 SAF: RC-107	50	11/24/14 07:32	1.1939E+00
16	TRG	J1V1M0 SAF: RC-107	49	11/24/14 07:26	1.0498E+00
17	MS	J1V1L2 SAF: RC-107		11/20/14 11:02	1.0726E+00

0800

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

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	1.0000	22117.2		0.00								
02	MBL	1.0000	22117.2		0.00								
03	DUP	1.0000	22117.2		0.00								
04	DMSO	1.0000	22117.2		0.00								
05	TRG	1.0000	22117.2		0.00								
06	TRG	1.0000	22117.2		0.00								
07	TRG	1.0000	22117.2		0.00								
08	TRG	1.0000	22117.2		0.00								
09	TRG	1.0000	22117.2		0.00								
10	TRG	1.0000	22117.2		0.00								
11	TRG	1.0000	22117.2		0.00								
12	TRG	1.0000	22117.2		0.00								
13	TRG	1.0000	22117.2		0.00								
14	TRG	1.0000	22117.2		0.00								
15	TRG	1.0000	22117.2		0.00								
16	TRG	1.0000	22117.2		0.00								
17	MS	1.0000	22117.2		0.00								

0083

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

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			12/01/14 07:27	RMARTZ				
02	MBL			12/01/14 07:27	RMARTZ				
03	DUP			12/01/14 07:27	RMARTZ				
04	DMSO	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
05	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
06	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
07	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
08	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
09	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
10	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
11	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
12	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
13	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
14	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
15	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
16	TRG	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				
17	MS	11/26/14 08:28	KSALLINGS	12/01/14 07:27	RMARTZ				

4600

* 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: 14-11131-Ni063-1

Client	Eberline Services Work Order	Analysis Code	Run
Washington Closure Hanford	14-11131	Ni063	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	NI-63	LCS	LCS	pCi/g	1.34E+03	9.65E+00	2.56E+00	1.75E+03	76.68	OK		OK	
02	NI-63	MBL	BLANK	pCi/g	0.00E+00	1.39E+00	2.38E+00					OK	OK
03	NI-63	DUP	J1V1L2 SAF: RC-107	pCi/g	1.52E+00	1.38E+00	2.30E+00				INV	OK	
04	NI-63	DMSO	J1V1L2 SAF: RC-107	pCi/g	7.58E-01	1.36E+00	2.29E+00					OK	
05	NI-63	TRG	J1V1L3 SAF: RC-107	pCi/g	1.39E+00	1.26E+00	2.11E+00					OK	
06	NI-63	TRG	J1V1L8 SAF: RC-107	pCi/g	6.53E-01	1.33E+00	2.26E+00					OK	
07	NI-63	TRG	J1V1L9 SAF: RC-107	pCi/g	1.00E+00	1.21E+00	2.03E+00					OK	
08	NI-63	TRG	J1V1M1 SAF: RC-107	pCi/g	1.39E+00	1.34E+00	2.24E+00					OK	
09	NI-63	TRG	J1V1M2 SAF: RC-107	pCi/g	1.72E+00	1.47E+00	2.44E+00					OK	
10	NI-63	TRG	J1V1L0 SAF: RC-107	pCi/g	1.16E+00	1.39E+00	2.33E+00					OK	
11	NI-63	TRG	J1V1L1 SAF: RC-107	pCi/g	1.33E+00	1.47E+00	2.47E+00					OK	
12	NI-63	TRG	J1V1L4 SAF: RC-107	pCi/g	1.18E+00	1.41E+00	2.37E+00					OK	
13	NI-63	TRG	J1V1L5 SAF: RC-107	pCi/g	7.61E-02	1.08E+00	1.84E+00					OK	
14	NI-63	TRG	J1V1L6 SAF: RC-107	pCi/g	8.24E-01	1.47E+00	2.49E+00					OK	
15	NI-63	TRG	J1V1L7 SAF: RC-107	pCi/g	3.72E-01	1.32E+00	2.25E+00					OK	
16	NI-63	TRG	J1V1M0 SAF: RC-107	pCi/g	3.94E+00	1.44E+00	2.33E+00					OK	
17	NI-63	MS	J1V1L2 SAF: RC-107	pCi/g	2.08E+03	1.21E+01	2.60E+00					OK	

0085

Client: Washington Closure Hanford
Eberline Services Work Order: 14-11131
Analysis Code: Ni063
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	NI-63	LCS	11/25/14 00:00	1.00E+00	0.00	0.00	0.00			
02	NI-63	MBL	11/25/14 00:00	1.00E+00	0.00	0.00	0.00			
03	NI-63	DUP	11/20/14 11:02	1.04E+00	0.00	0.00	0.00			
04	NI-63	DMSO	11/20/14 11:02	1.11E+00	0.00	0.00	0.00			
05	NI-63	TRG	11/20/14 10:51	1.18E+00	0.00	0.00	0.00			
06	NI-63	TRG	11/20/14 10:08	1.06E+00	0.00	0.00	0.00			
07	NI-63	TRG	11/20/14 10:38	1.25E+00	0.00	0.00	0.00			
08	NI-63	TRG	11/20/14 10:26	1.12E+00	0.00	0.00	0.00			
09	NI-63	TRG	11/20/14 10:08	1.03E+00	0.00	0.00	0.00			
10	NI-63	TRG	11/24/14 08:11	1.05E+00	0.00	0.00	0.00			
11	NI-63	TRG	11/24/14 08:04	1.03E+00	0.00	0.00	0.00			
12	NI-63	TRG	11/24/14 07:58	1.07E+00	0.00	0.00	0.00			
13	NI-63	TRG	11/24/14 07:43	1.37E+00	0.00	0.00	0.00			
14	NI-63	TRG	11/24/14 07:38	1.02E+00	0.00	0.00	0.00			
15	NI-63	TRG	11/24/14 07:32	1.19E+00	0.00	0.00	0.00			
16	NI-63	TRG	11/24/14 07:26	1.05E+00	0.00	0.00	0.00			
17	NI-63	MS	11/20/14 11:02	1.07E+00	0.00	0.00	0.00			

9800

Preliminary Data Report & Analytical Calculations

Work Order: 14-11131-Ni063-1

Client: Washington Closure Hanford
Eberline Services Work Order: 14-11131
Analysis Code: Ni063
Run: 1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	NI-63	LCS	12/01/14 19:11	36561.525	3100A	1	60	77124	15.6	0.426202404
02	NI-63	MBL	12/01/14 20:15	36561.525	3100A	2	60	936	15.6	0.458422283
03	NI-63	DUP	12/01/14 21:18	36561.525	3100A	3	60	1032	15.6	0.45645491
04	NI-63	DMSO	12/01/14 22:21	36561.525	3100A	4	60	984	15.6	0.430214148
05	NI-63	TRG	12/01/14 23:24	36561.525	3100A	5	60	1032	15.6	0.438585552
06	NI-63	TRG	12/02/14 00:27	36561.525	3100A	6	60	978	15.6	0.457297696
07	NI-63	TRG	12/02/14 01:30	36561.525	3100A	7	60	1008	15.6	0.43086048
08	NI-63	TRG	12/02/14 02:33	36561.525	3100A	8	60	1026	15.6	0.435060045
09	NI-63	TRG	12/02/14 03:36	36561.525	3100A	9	60	1038	15.6	0.435142402
10	NI-63	TRG	12/02/14 04:39	36561.525	3100A	10	60	1008	15.6	0.443995478
11	NI-63	TRG	12/02/14 05:42	36561.525	3100A	11	60	1014	15.6	0.427186181
12	NI-63	TRG	12/02/14 06:45	36561.525	3100A	12	60	1008	15.6	0.431533501
13	NI-63	TRG	12/02/14 07:48	36561.525	3100A	13	60	942	15.6	0.433627137
14	NI-63	TRG	12/02/14 08:51	36561.525	3100A	14	60	984	15.6	0.42706921
15	NI-63	TRG	12/02/14 09:54	36561.525	3100A	15	60	960	15.6	0.406164635
16	NI-63	TRG	12/02/14 10:57	36561.525	3100A	16	60	1182	15.6	0.446655945
17	NI-63	MS	12/02/14 12:00	36561.525	3100A	17	60	116808	15.6	0.390399363

480 0087

Count Room Report
Client: Washington Closure Hanford

14-11131-Ni063-1 (pCi/g) in SO
Tracer ID: Ni-3

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	11/25/14 00:00	1.0000	1.0000	22117.2330		0.00		
02	MBL	BLANK	11/25/14 00:00	1.0000	1.0000	22117.2330		0.00		
03	DUP	J1V1L2 SAF: RC-107	11/20/14 11:02	1.0391	1.0000	22117.2330		0.00		
04	DMSO	J1V1L2 SAF: RC-107	11/20/14 11:02	1.1050	1.0000	22117.2330		0.00		
05	TRG	J1V1L3 SAF: RC-107	11/20/14 10:51	1.1803	1.0000	22117.2330		0.00		
06	TRG	J1V1L8 SAF: RC-107	11/20/14 10:08	1.0568	1.0000	22117.2330		0.00		
07	TRG	J1V1L9 SAF: RC-107	11/20/14 10:38	1.2492	1.0000	22117.2330		0.00		
08	TRG	J1V1M1 SAF: RC-107	11/20/14 10:26	1.1178	1.0000	22117.2330		0.00		
09	TRG	J1V1M2 SAF: RC-107	11/20/14 10:08	1.0257	1.0000	22117.2330		0.00		
10	TRG	J1V1L0 SAF: RC-107	11/24/14 08:11	1.0532	1.0000	22117.2330		0.00		
11	TRG	J1V1L1 SAF: RC-107	11/24/14 08:04	1.0338	1.0000	22117.2330		0.00		
12	TRG	J1V1L4 SAF: RC-107	11/24/14 07:58	1.0653	1.0000	22117.2330		0.00		
13	TRG	J1V1L5 SAF: RC-107	11/24/14 07:43	1.3651	1.0000	22117.2330		0.00		
14	TRG	J1V1L6 SAF: RC-107	11/24/14 07:38	1.0241	1.0000	22117.2330		0.00		
15	TRG	J1V1L7 SAF: RC-107	11/24/14 07:32	1.1939	1.0000	22117.2330		0.00		
16	TRG	J1V1M0 SAF: RC-107	11/24/14 07:26	1.0498	1.0000	22117.2330		0.00		
17	MS	J1V1L2 SAF: RC-107	11/20/14 11:02	1.0726	1.0000	22117.2330		0.00		

0800

Spike and Tracer Worksheet

Internal Work Order	Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
14-11131	1	Ni063	12/1/2014 7:25	RMARTZ	RMM	

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
Ni-63	Ni-3	22117.233	12/1/2014	0.146	0.1757	0.3236	0.1607		1750.45	52.513	3223.94	96.718	1601.01	48.030	0.00	0.000

Tracers

fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition
01	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
02	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
03	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
04	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
05	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
06	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
07	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
08	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
09	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
10	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
11	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
12	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
13	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
14	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
15	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
16	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460
17	Ni-63MS	Ni-3	22117.233	12/1/2014	1.0000	0.1460

Balance Printer Tapes

Tracer

LCS

Matrix Spike

6800 0089

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Printed: 11/26/2014 9:22 AM

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
14-11131	1	Ni063	grams	12/1/2014	RMARTZ

Lab Fraction	Washington Closure Hanford 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					1.0000E+00	1.0000E+00				
02	BLANK	MBL					1.0000E+00	1.0000E+00				
03	J1V1L2 SAF: RC-107	DUP					1.0391E+00	1.0391E+00				
04	J1V1L2 SAF: RC-107	DMSO					1.1050E+00	1.1050E+00				
05	J1V1L3 SAF: RC-107	TRG					1.1803E+00	1.1803E+00				
06	J1V1L8 SAF: RC-107	TRG					1.0568E+00	1.0568E+00				
07	J1V1L9 SAF: RC-107	TRG					1.2492E+00	1.2492E+00				
08	J1V1M1 SAF: RC-107	TRG					1.1178E+00	1.1178E+00				
09	J1V1M2 SAF: RC-107	TRG					1.0257E+00	1.0257E+00				
10	J1V1L0 SAF: RC-107	TRG					1.0532E+00	1.0532E+00				
11	J1V1L1 SAF: RC-107	TRG					1.0338E+00	1.0338E+00				
12	J1V1L4 SAF: RC-107	TRG					1.0653E+00	1.0653E+00				
13	J1V1L5 SAF: RC-107	TRG					1.3651E+00	1.3651E+00				
14	J1V1L6 SAF: RC-107	TRG					1.0241E+00	1.0241E+00				
15	J1V1L7 SAF: RC-107	TRG					1.1939E+00	1.1939E+00				
16	J1V1M0 SAF: RC-107	TRG					1.0498E+00	1.0498E+00				
17	MS	MS					1.0726E+00	1.0726E+00				

Comments	

0600

Technician: RMA Date: 11/26/14

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

Rough Sample Preparation
Log Book

Printed: 11/26/2014 8:28 AM

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
14-11131	12/1/2014	11/25/2014	11/26/2014	11/27/2014	KSALLINGS

Eberline	Washington Closure Hanford	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	J1V1L2 SAF: RC-107	13.3200	220.9200	215.3600	207.6000	202.0400	2.68%	97.32%	0.0000	0.0000	
05	J1V1L3 SAF: RC-107	13.4200	303.2900	298.5600	289.8700	285.1400	1.63%	98.37%	0.0000	0.0000	
06	J1V1L8 SAF: RC-107	13.4800	254.0100	247.4900	240.5300	234.0100	2.71%	97.29%	0.0000	0.0000	
07	J1V1L9 SAF: RC-107	13.4000	215.6000	206.9100	202.2000	193.5100	4.30%	95.70%	0.0000	0.0000	
08	J1V1M1 SAF: RC-107	13.3800	287.9500	280.4100	274.5700	267.0300	2.75%	97.25%	0.0000	0.0000	
09	J1V1M2 SAF: RC-107	13.4000	220.5200	214.2000	207.1200	200.8000	3.05%	96.95%	0.0000	0.0000	
10	J1V1L0 SAF: RC-107	13.4000	200.4800	189.9000	187.0800	176.5000	5.66%	94.34%	0.0000	0.0000	
11	J1V1L1 SAF: RC-107	13.4200	200.3500	191.5600	186.9300	178.1400	4.70%	95.30%	0.0000	0.0000	
12	J1V1L4 SAF: RC-107	13.3600	270.8900	260.7200	257.5300	247.3600	3.95%	96.05%	0.0000	0.0000	
13	J1V1L5 SAF: RC-107	13.4400	213.1400	203.9400	199.7000	190.5000	4.61%	95.39%	0.0000	0.0000	
14	J1V1L6 SAF: RC-107	13.3900	207.1700	198.4600	193.7800	185.0700	4.49%	95.51%	0.0000	0.0000	
15	J1V1L7 SAF: RC-107	13.3700	195.5100	180.8800	182.1400	167.5100	8.03%	91.97%	0.0000	0.0000	
16	J1V1M0 SAF: RC-107	13.5400	192.5600	184.3800	179.0200	170.8400	4.57%	95.43%	0.0000	0.0000	
17	MS	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	

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

0091

Technician: Kerry Scelj

Date: Analysis: Rough Prep Logbook

Analysis: Ni063 Page No. 9028

Work Order #	14-11131		Ni-63 Recovery			EBERLINE SERVICES	
tSIE	EFFICIENCY	Recovery Spike Activity	Grams Added	Total Activity	cpm	Bkg, cpm	RF
220.21	23.502%	22117.233	0.1607	3554.239343	1616.4	18.6	1.91

12/2/2014 15:18

Efficiency = 1.923E-08x3 - 1.264Ex2 +3.013E-03x -2.1070R-02

RECOVERY FACTOR

1.91277570

Remarks

2600

Protocol# 21 - Ni63-cpm-21.lsa **User: Default**

A 12/2/14 KB

Assay Definition-

Assay Description:
ni-63

Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\Default\Ni63-cpm-21\20141201_1910
Raw Results Path: C:\Packard\Tricarb\Results\Default\Ni63-cpm-21\20141201_1910\20141201_1910.results
Comma-Delimited File Name: C:\Packard\Tricarb\Results\Default\Ni63-cpm-21\20141201_1910\1411131 a.ni63.csv
Assay File Name: C:\Packard\TriCarb\Assays\Ni63-cpm-21.lsa

Count Conditions-

Nuclide: 63Ni
Quench Indicator: tSIE
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 1.00
Quench Set: n/a
Count Time (min): 60.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	75.0
B	2.0	75.0
C	0.0	150.0

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: n/a Heterogeneity Monitor: n/a
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

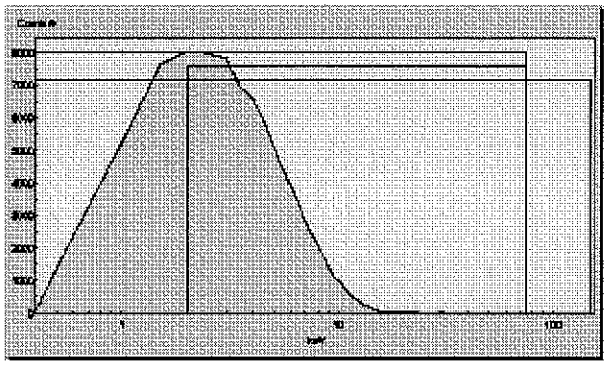
Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

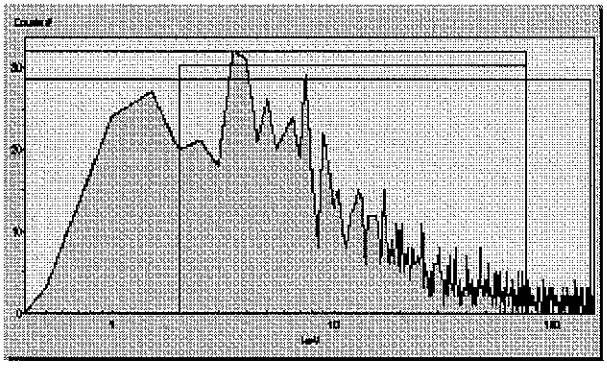
DATE TIME	SMPL_ID	P#	PID	S#	CPMA	CPMB	CPMC	tSIE	Count Time
12/1/2014 7:11:57 PM	14-11131-1-N63-01S	21	13	1	1523.7	1285.4	1526.6	176.86	60.00

SpectraView Block Data



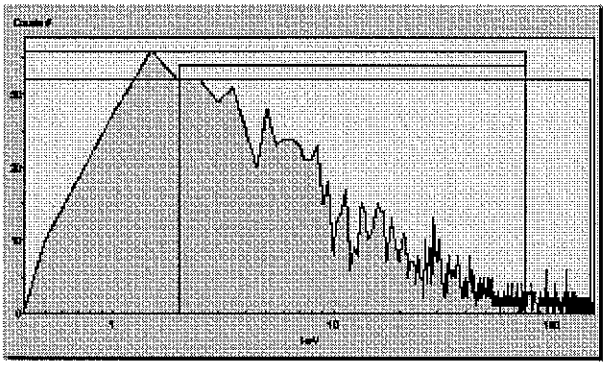
14-11131-1-N63-02S	21	13	2	16.5	15.6	19.8	239.41	60.00
12/1/2014 8:15:00 PM								

SpectraView Block Data



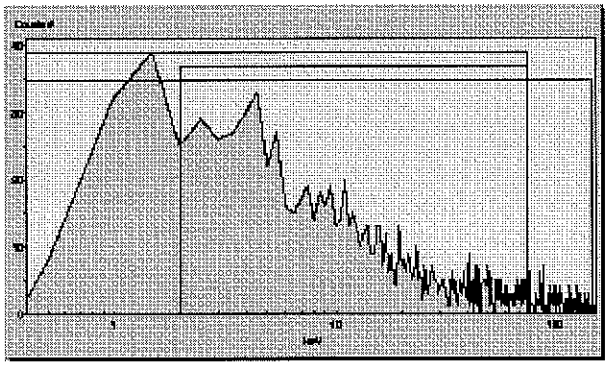
14-11131-1-N63-03S	21	13	3	18.4	17.2	21.6	235.50	60.00
12/1/2014 9:18:14 PM								

SpectraView Block Data



14-11131-1-N63-04S	21	13	4	17.8	16.4	21.6	183.18	60.00
12/1/2014 10:21:04 PM								

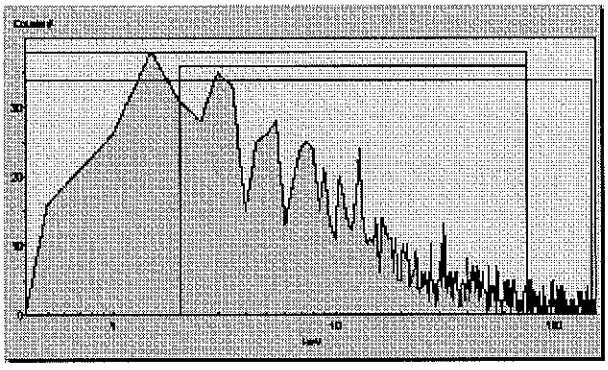
SpectraView Block Data



14-11131-1-N63-05S	21	13	5	18.6	17.2	21.7	198.21	60.00

12/1/2014 11:24:07 PM

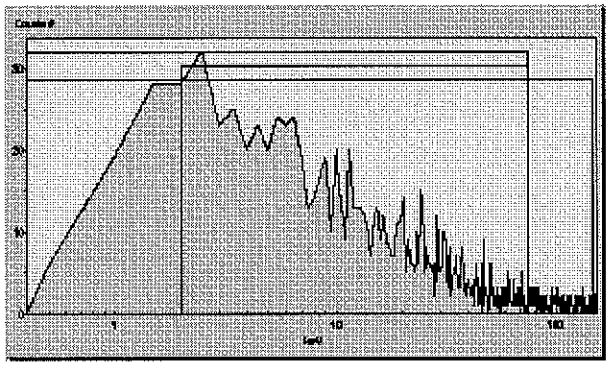
SpectraView Block Data



14-11131-1-N63-06S	21	13	6	17.2	16.3	20.0	237.19	60.00

12/2/2014 12:27:24 AM

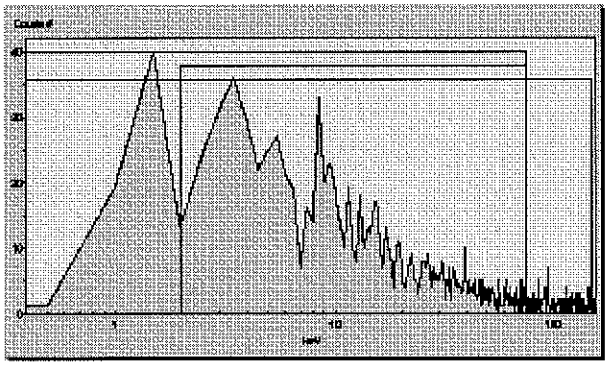
SpectraView Block Data



14-11131-1-N63-07S	21	13	7	17.8	16.8	21.1	184.25	60.00

12/2/2014 1:30:12 AM

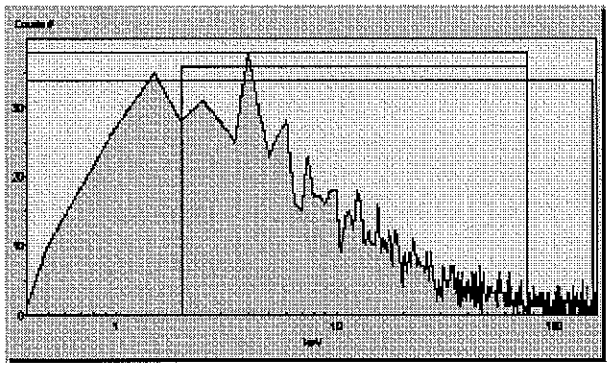
SpectraView Block Data



14-11131-1-N63-08S	21	13	8	18.3	17.1	21.4	191.57	60.00

12/2/2014 2:33:17 AM

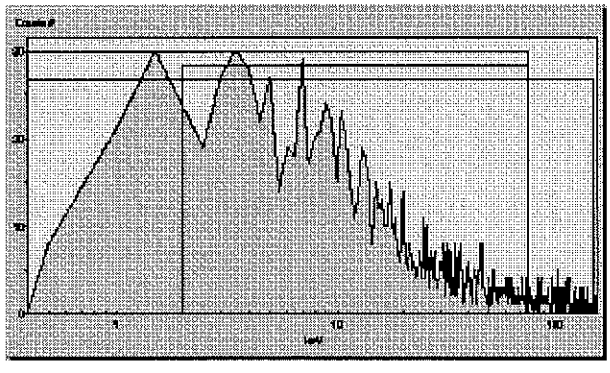
SpectraView Block Data



14-11131-1-N63-09S	21	13	9	18.3	17.3	21.4	191.72	60.00

12/2/2014 3:36:20 AM

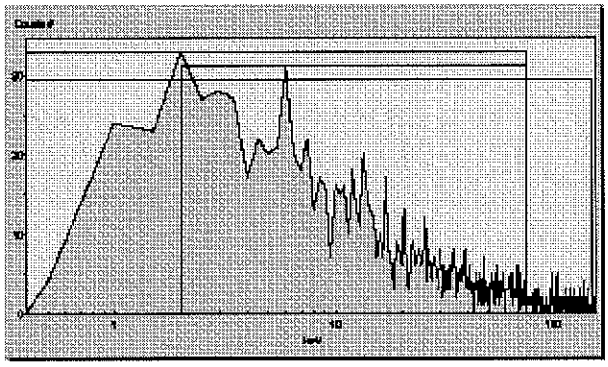
SpectraView Block Data



14-11131-1-N63-10S	21	13	10	17.6	16.8	20.5	209.18	60.00

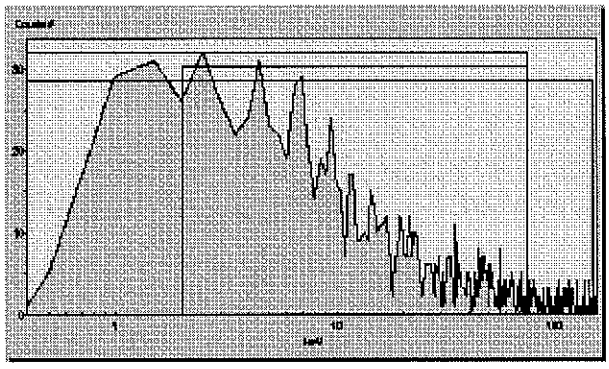
12/2/2014 4:39:26 AM

SpectraView Block Data



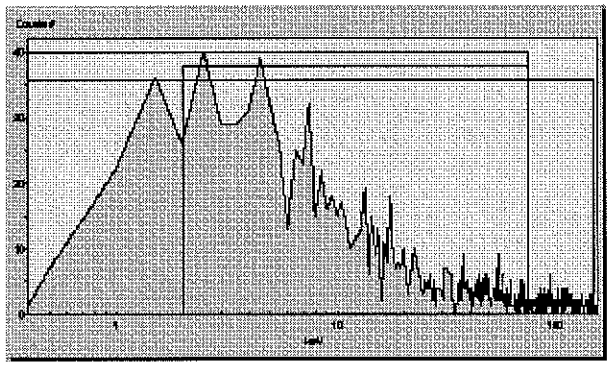
14-11131-1-N63-11S 21 13 11 18.0 16.9 21.1 178.36 60.00
12/2/2014 5:42:30 AM

SpectraView Block Data



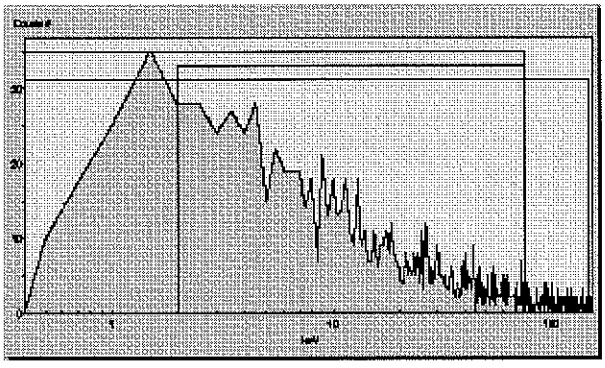
14-11131-1-N63-12S 21 13 12 17.9 16.8 21.5 185.38 60.00
12/2/2014 6:45:34 AM

SpectraView Block Data



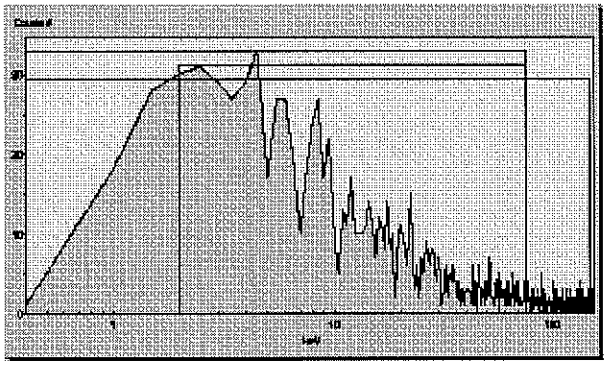
14-11131-1-N63-13S 21 17 13 16.9 15.7 19.6 189.00 60.00
12/2/2014 7:48:36 AM

SpectraView Block Data



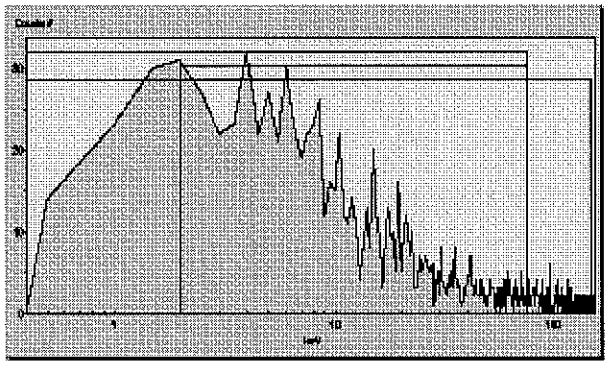
14-11131-1-N63-14S 21 17 14 17.3 16.4 20.5 178.18 60.00
12/2/2014 8:51:40 AM

SpectraView Block Data



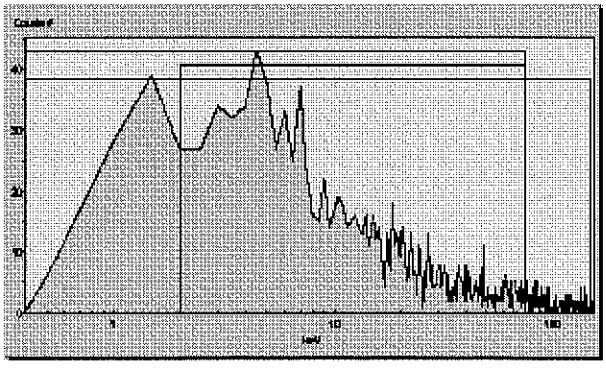
14-11131-1-N63-15S 21 17 15 17.1 16.0 20.4 151.88 60.00
12/2/2014 9:54:43 AM

SpectraView Block Data



14-11131-1-N63-16S 21 17 16 20.9 19.7 24.2 214.82 60.00
12/2/2014 10:57:48 AM

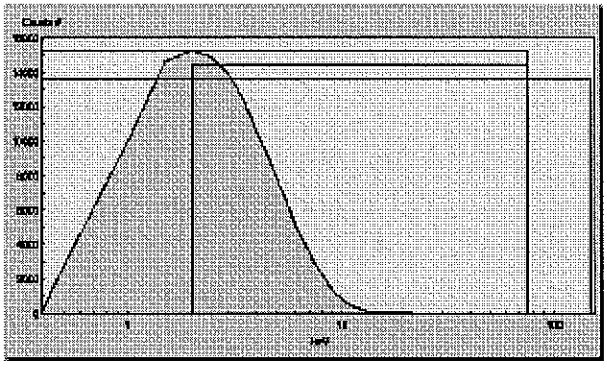
SpectraView Block Data



14-11131-1-N63-17S	21	17	17	2403.6	1946.8	2407.2	137.29	60.00

12/2/2014 12:00:54 PM

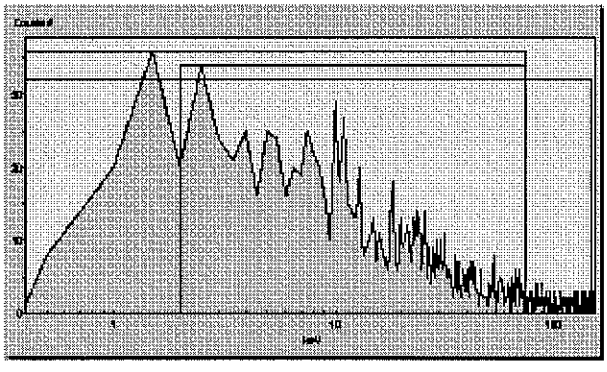
SpectraView Block Data



Sample #18	21	17	18	19.7	18.6	22.9	222.47	60.00

12/2/2014 1:03:57 PM

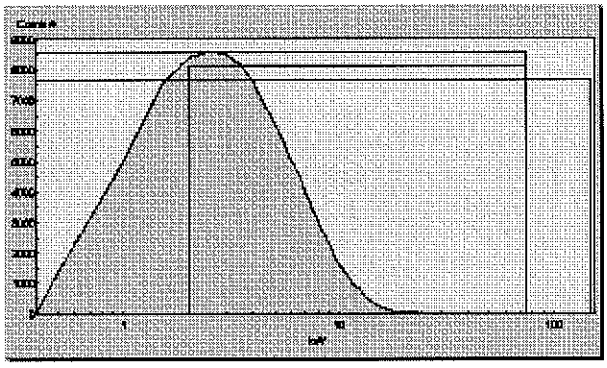
SpectraView Block Data



Sample #19	21	17	19	1848.0	1616.4	1851.5	220.21	60.00

12/2/2014 2:06:10 PM

SpectraView Block Data



SNC Protocol

Calibration Information
Software Version IC: 2.11
Software Version EC: 2.02
Instrument Model: Tri-Carb 3100TR
Instrument Serial Number: 426825
3H Chi Square: 28.57 Date Processed: 12/1/2014 6:38:41 AM
14C Chi Square: 9.15 Date Processed: 12/1/2014 6:38:41 AM
3H E^2/B (1-18.6 keV): 295.09 Date Processed: 12/1/2014 6:38:41 AM
14C E^2/B (4-156 keV): 547.04 Date Processed: 12/1/2014 6:38:41 AM
3H Efficiency (0-18.6 keV): 61.04 Date Processed: 12/1/2014 6:38:41 AM
14C Efficiency (0-156 keV): 96.19 Date Processed: 12/1/2014 6:38:41 AM
IPA Background Date Processed: 12/1/2014 6:38:41 AM
3H Background CPM (0-18.6 keV): 12.72 Date Processed: 12/1/2014 6:38:41 AM
14C Background CPM (0-156 keV): 20.27 Date Processed: 12/1/2014 6:38:41 AM
3H Calibration DPM: 183600
3H Reference Date: 2/27/2007
14C Calibration DPM: 136900

SECTION X

ANALYTICAL DATA (GAMMA SPECTROSCOPY)

14-11131
Gamma
Run 1

Work Order	14-11131
Analysis Code	Gamma
Run	1
Date Received	11/25/2014
Lab Deadline	12/1/2014
Client	Washington Closure Hanford
Project	S00W235A01
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	LANL ER-130 Modified
Instrument Type	Gamma Spectroscopy
Radiometric Tracer	
Radiometric Sol#	
Tracer Act (dpm/g)	
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		11/25/14 00:00	1.0000E+00
02	MBL	BLANK		11/25/14 00:00	1.0000E+00
03	DUP	J1V1L2 SAF: RC-107	48	11/20/14 11:02	7.1151E+02
04	DO	J1V1L2 SAF: RC-107	48	11/20/14 11:02	7.1151E+02
05	TRG	J1V1L3 SAF: RC-107	53	11/20/14 10:51	7.2308E+02
06	TRG	J1V1L8 SAF: RC-107	53	11/20/14 10:08	7.1750E+02
07	TRG	J1V1L9 SAF: RC-107	54	11/20/14 10:38	7.6652E+02
08	TRG	J1V1M1 SAF: RC-107	50	11/20/14 10:26	7.1275E+02
09	TRG	J1V1M2 SAF: RC-107	51	11/20/14 10:08	7.6964E+02
10	TRG	J1V1L0 SAF: RC-107	50	11/24/14 08:11	7.4991E+02
11	TRG	J1V1L1 SAF: RC-107	46	11/24/14 08:04	7.8364E+02
12	TRG	J1V1L4 SAF: RC-107	45	11/24/14 07:58	7.7871E+02
13	TRG	J1V1L5 SAF: RC-107	51	11/24/14 07:43	7.0201E+02
14	TRG	J1V1L6 SAF: RC-107	52	11/24/14 07:38	7.6736E+02
15	TRG	J1V1L7 SAF: RC-107	50	11/24/14 07:32	7.4190E+02
16	TRG	J1V1M0 SAF: RC-107	49	11/24/14 07:26	7.1045E+02

3010

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.

14-11131
Gamma
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				0.00								
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								

DO 4

* 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.

14-11131
Gamma
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								
02	MBL								
03	DUP								
04	DO	11/26/14 08:28	KSALLINGS						
05	TRG	11/26/14 08:28	KSALLINGS						
06	TRG	11/26/14 08:28	KSALLINGS						
07	TRG	11/26/14 08:28	KSALLINGS						
08	TRG	11/26/14 08:28	KSALLINGS						
09	TRG	11/26/14 08:28	KSALLINGS						
10	TRG	11/26/14 08:28	KSALLINGS						
11	TRG	11/26/14 08:28	KSALLINGS						
12	TRG	11/26/14 08:28	KSALLINGS						
13	TRG	11/26/14 08:28	KSALLINGS						
14	TRG	11/26/14 08:28	KSALLINGS						
15	TRG	11/26/14 08:28	KSALLINGS						
16	TRG	11/26/14 08:28	KSALLINGS						

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

Work Order: 14-11131-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
01	CO-60	LCS	LCS	pCi/g	1.42E+02	9.76E+00	1.91E+00	1.37E+02	103.28	OK		11/25/14 00:00	1.00E+00	11/26/14 13:00	YES
01	CS-137	LCS	LCS	pCi/g	8.76E+01	8.44E+00	2.36E+00	8.69E+01	100.74	OK		11/25/14 00:00	1.00E+00	11/26/14 13:00	YES
02	AG-108M	MBL	BLANK	pCi/g	6.11E-03	3.55E-02	5.72E-02					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	AM-241	MBL	BLANK	pCi/g	-1.43E-03	4.08E-02	6.29E-02					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	BA-133	MBL	BLANK	pCi/g	6.17E-02	5.87E-02	7.73E-02					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	CO-60	MBL	BLANK	pCi/g	1.40E-03	4.87E-02	7.40E-02					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	CS-137	MBL	BLANK	pCi/g	4.67E-02	4.21E-02	8.47E-02					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	EU-152	MBL	BLANK	pCi/g	-9.83E-03	2.81E-01	1.38E-01					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	EU-154	MBL	BLANK	pCi/g	4.26E-02	9.02E-02	6.54E-02					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	EU-155	MBL	BLANK	pCi/g	-6.17E-02	8.87E-02	8.79E-02					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	K-40	MBL	BLANK	pCi/g	3.11E-01	3.67E-01	8.46E-01					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	PA-234M	MBL	BLANK	pCi/g	-9.54E-01	4.74E+00	7.28E+00					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	PB-212	MBL	BLANK	pCi/g	1.21E-02	6.08E-02	9.93E-02					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	PB-214	MBL	BLANK	pCi/g	5.95E-02	8.13E-02	1.44E-01					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	TH-234	MBL	BLANK	pCi/g	1.76E-01	4.02E-01	6.45E-01					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	TL-208	MBL	BLANK	pCi/g	-4.64E-02	1.35E-01	2.11E-01					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
02	U-235	MBL	BLANK	pCi/g	0.00E+00	2.05E-01	3.24E-01					11/25/14 00:00	1.00E+00	11/26/14 12:00	NO
03	AG-108M	DUP	J1V1L2 SAF: RC-107	pCi/g	-5.18E-02	5.95E-02	5.60E-02					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
03	AM-241	DUP	J1V1L2 SAF: RC-107	pCi/g	-1.22E-01	1.26E-01	1.48E-01					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
03	BA-133	DUP	J1V1L2 SAF: RC-107	pCi/g	1.61E-02	2.87E-02	1.06E-01					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
03	BI-214	DUP	J1V1L2 SAF: RC-107	pCi/g	5.73E-01	1.29E-01	1.98E-01				NA	11/20/14 11:02	7.12E+02	11/26/14 08:54	YES
03	CO-60	DUP	J1V1L2 SAF: RC-107	pCi/g	-2.97E-02	5.77E-02	8.15E-02					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
03	CS-137	DUP	J1V1L2 SAF: RC-107	pCi/g	-1.44E-02	4.80E-02	7.03E-02					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
03	EU-152	DUP	J1V1L2 SAF: RC-107	pCi/g	-1.44E-01	3.66E-01	1.95E-01					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
03	EU-154	DUP	J1V1L2 SAF: RC-107	pCi/g	-1.15E-02	1.77E-01	9.97E-02					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
03	EU-155	DUP	J1V1L2 SAF: RC-107	pCi/g	1.68E-01	1.24E-01	1.70E-01					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
03	K-40	DUP	J1V1L2 SAF: RC-107	pCi/g	1.66E+01	1.95E+00	2.86E-01				NA	11/20/14 11:02	7.12E+02	11/26/14 08:54	YES
03	PA-234M	DUP	J1V1L2 SAF: RC-107	pCi/g	1.77E+00	4.98E+00	8.23E+00					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
03	PB-212	DUP	J1V1L2 SAF: RC-107	pCi/g	9.94E-01	1.25E-01	2.02E-01					11/20/14 11:02	7.12E+02	11/26/14 08:54	YES
03	PB-214	DUP	J1V1L2 SAF: RC-107	pCi/g	6.36E-01	1.15E-01	1.52E-01				NA	11/20/14 11:02	7.12E+02	11/26/14 08:54	YES
03	TH-234	DUP	J1V1L2 SAF: RC-107	pCi/g	6.55E-01	1.13E+00	1.49E+00					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
03	TL-208	DUP	J1V1L2 SAF: RC-107	pCi/g	6.00E-01	1.39E-01	1.80E-01					11/20/14 11:02	7.12E+02	11/26/14 08:54	YES
03	U-235	DUP	J1V1L2 SAF: RC-107	pCi/g	-1.81E-01	2.41E-01	3.71E-01					11/20/14 11:02	7.12E+02	11/26/14 08:54	NO
04	AG-108M	DO	J1V1L2 SAF: RC-107	pCi/g	-2.87E-03	1.75E-02	5.29E-02					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO
04	AM-241	DO	J1V1L2 SAF: RC-107	pCi/g	-1.45E-01	1.27E-01	1.47E-01					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO
04	BA-133	DO	J1V1L2 SAF: RC-107	pCi/g	1.38E-03	2.96E-02	1.07E-01					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO
04	BI-214	DO	J1V1L2 SAF: RC-107	pCi/g	5.77E-01	1.33E-01	2.04E-01					11/20/14 11:02	7.12E+02	11/26/14 09:56	YES
04	CO-60	DO	J1V1L2 SAF: RC-107	pCi/g	1.90E-02	5.57E-02	8.95E-02					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO

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	CS-137	DO	J1V1L2 SAF: RC-107	pCi/g	-9.26E-03	4.86E-02	7.15E-02					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO
04	EU-152	DO	J1V1L2 SAF: RC-107	pCi/g	1.67E-01	3.43E-01	2.00E-01					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO
04	EU-154	DO	J1V1L2 SAF: RC-107	pCi/g	-1.99E-01	2.31E-01	1.00E-01					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO
04	EU-155	DO	J1V1L2 SAF: RC-107	pCi/g	-2.23E-03	1.25E-01	1.57E-01					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO
04	K-40	DO	J1V1L2 SAF: RC-107	pCi/g	1.64E+01	1.99E+00	9.22E-01					11/20/14 11:02	7.12E+02	11/26/14 09:56	YES
04	PA-234M	DO	J1V1L2 SAF: RC-107	pCi/g	-7.68E-01	5.34E+00	8.13E+00					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO
04	PB-212	DO	J1V1L2 SAF: RC-107	pCi/g	7.54E-01	1.06E-01	2.03E-01					11/20/14 11:02	7.12E+02	11/26/14 09:56	YES
04	PB-214	DO	J1V1L2 SAF: RC-107	pCi/g	6.51E-01	1.18E-01	2.10E-01					11/20/14 11:02	7.12E+02	11/26/14 09:56	YES
04	TH-234	DO	J1V1L2 SAF: RC-107	pCi/g	7.09E-01	1.14E+00	1.50E+00					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO
04	TL-208	DO	J1V1L2 SAF: RC-107	pCi/g	7.39E-01	1.31E-01	9.66E-02					11/20/14 11:02	7.12E+02	11/26/14 09:56	YES
04	U-235	DO	J1V1L2 SAF: RC-107	pCi/g	2.16E-01	2.40E-01	3.99E-01					11/20/14 11:02	7.12E+02	11/26/14 09:56	NO
05	AG-108M	TRG	J1V1L3 SAF: RC-107	pCi/g	6.02E-02	8.56E-02	9.13E-02					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
05	AM-241	TRG	J1V1L3 SAF: RC-107	pCi/g	8.85E-02	8.96E-02	1.42E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
05	BA-133	TRG	J1V1L3 SAF: RC-107	pCi/g	2.51E-02	4.32E-02	2.01E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
05	BI-214	TRG	J1V1L3 SAF: RC-107	pCi/g	5.75E-01	1.75E-01	5.57E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	YES
05	CO-60	TRG	J1V1L3 SAF: RC-107	pCi/g	4.24E-02	9.22E-02	1.28E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
05	CS-137	TRG	J1V1L3 SAF: RC-107	pCi/g	1.02E-02	7.90E-02	1.29E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
05	EU-152	TRG	J1V1L3 SAF: RC-107	pCi/g	5.33E-02	4.18E-01	2.99E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
05	EU-154	TRG	J1V1L3 SAF: RC-107	pCi/g	1.72E-02	2.36E-01	1.55E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
05	EU-155	TRG	J1V1L3 SAF: RC-107	pCi/g	1.09E-01	1.20E-01	2.00E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	YES
05	K-40	TRG	J1V1L3 SAF: RC-107	pCi/g	1.63E+01	2.76E+00	1.53E+00					11/20/14 10:51	7.23E+02	11/26/14 08:54	YES
05	PA-234M	TRG	J1V1L3 SAF: RC-107	pCi/g	-3.91E+00	9.81E+00	1.50E+01					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
05	PB-212	TRG	J1V1L3 SAF: RC-107	pCi/g	8.04E-01	1.67E-01	2.77E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
05	PB-214	TRG	J1V1L3 SAF: RC-107	pCi/g	4.05E-01	1.92E-01	3.52E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	YES
05	TH-234	TRG	J1V1L3 SAF: RC-107	pCi/g	9.72E-01	9.06E-01	1.43E+00					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
05	TL-208	TRG	J1V1L3 SAF: RC-107	pCi/g	8.13E-01	2.32E-01	7.31E-02					11/20/14 10:51	7.23E+02	11/26/14 08:54	YES
05	U-235	TRG	J1V1L3 SAF: RC-107	pCi/g	-2.13E-01	4.22E-01	6.31E-01					11/20/14 10:51	7.23E+02	11/26/14 08:54	NO
06	AG-108M	TRG	J1V1L8 SAF: RC-107	pCi/g	7.18E-03	8.57E-02	9.98E-02					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO
06	AM-241	TRG	J1V1L8 SAF: RC-107	pCi/g	1.47E-02	8.97E-02	1.39E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO
06	BA-133	TRG	J1V1L8 SAF: RC-107	pCi/g	3.70E-03	3.08E-02	1.98E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO
06	BI-214	TRG	J1V1L8 SAF: RC-107	pCi/g	6.25E-01	1.65E-01	5.58E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	YES
06	CO-60	TRG	J1V1L8 SAF: RC-107	pCi/g	-6.94E-02	9.84E-02	1.35E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO
06	CS-137	TRG	J1V1L8 SAF: RC-107	pCi/g	-2.24E-02	8.07E-02	1.26E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO
06	EU-152	TRG	J1V1L8 SAF: RC-107	pCi/g	-2.61E-01	5.15E-01	3.01E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO
06	EU-154	TRG	J1V1L8 SAF: RC-107	pCi/g	6.20E-02	2.22E-01	1.52E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO
06	EU-155	TRG	J1V1L8 SAF: RC-107	pCi/g	-1.98E-01	1.91E-01	2.07E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO
06	K-40	TRG	J1V1L8 SAF: RC-107	pCi/g	1.60E+01	2.72E+00	1.43E+00					11/20/14 10:08	7.18E+02	11/26/14 09:56	YES
06	PA-234M	TRG	J1V1L8 SAF: RC-107	pCi/g	7.46E+00	8.35E+00	1.53E+01					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO

Work Order: 14-11131-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
06	PB-212	TRG	J1V1L8 SAF: RC-107	pCi/g	6.41E-01	2.10E-01	3.15E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	YES
06	PB-214	TRG	J1V1L8 SAF: RC-107	pCi/g	7.40E-01	1.78E-01	2.81E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	YES
06	TH-234	TRG	J1V1L8 SAF: RC-107	pCi/g	1.07E+00	8.99E-01	1.42E+00					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO
06	TL-208	TRG	J1V1L8 SAF: RC-107	pCi/g	6.71E-01	2.10E-01	7.37E-02					11/20/14 10:08	7.18E+02	11/26/14 09:56	YES
06	U-235	TRG	J1V1L8 SAF: RC-107	pCi/g	2.35E-01	4.11E-01	6.48E-01					11/20/14 10:08	7.18E+02	11/26/14 09:56	NO
07	AG-108M	TRG	J1V1L9 SAF: RC-107	pCi/g	-8.02E-02	5.12E-02	4.44E-02					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
07	AM-241	TRG	J1V1L9 SAF: RC-107	pCi/g	-1.12E-01	1.07E-01	1.24E-01					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
07	BA-133	TRG	J1V1L9 SAF: RC-107	pCi/g	1.97E-03	1.82E-02	5.49E-02					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
07	BI-214	TRG	J1V1L9 SAF: RC-107	pCi/g	6.45E-01	1.03E-01	3.82E-02					11/20/14 10:38	7.67E+02	11/26/14 10:18	YES
07	CO-60	TRG	J1V1L9 SAF: RC-107	pCi/g	4.83E-03	4.39E-02	5.36E-02					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
07	CS-137	TRG	J1V1L9 SAF: RC-107	pCi/g	-6.25E-04	3.31E-02	5.06E-02					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
07	EU-152	TRG	J1V1L9 SAF: RC-107	pCi/g	-2.63E-02	2.10E-01	1.58E-01					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
07	EU-154	TRG	J1V1L9 SAF: RC-107	pCi/g	-3.02E-02	1.10E-01	8.09E-02					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
07	EU-155	TRG	J1V1L9 SAF: RC-107	pCi/g	8.37E-02	1.25E-01	1.40E-01					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
07	K-40	TRG	J1V1L9 SAF: RC-107	pCi/g	1.66E+01	1.82E+00	6.66E-01					11/20/14 10:38	7.67E+02	11/26/14 10:18	YES
07	PA-234M	TRG	J1V1L9 SAF: RC-107	pCi/g	2.27E+00	3.88E+00	6.17E+00					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
07	PB-212	TRG	J1V1L9 SAF: RC-107	pCi/g	8.11E-01	1.01E-01	1.64E-01					11/20/14 10:38	7.67E+02	11/26/14 10:18	YES
07	PB-214	TRG	J1V1L9 SAF: RC-107	pCi/g	6.95E-01	8.54E-02	1.45E-01					11/20/14 10:38	7.67E+02	11/26/14 10:18	YES
07	TH-234	TRG	J1V1L9 SAF: RC-107	pCi/g	1.08E+00	9.59E-01	1.28E+00					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
07	TL-208	TRG	J1V1L9 SAF: RC-107	pCi/g	6.81E-01	1.50E-01	1.89E-01					11/20/14 10:38	7.67E+02	11/26/14 10:18	YES
07	U-235	TRG	J1V1L9 SAF: RC-107	pCi/g	8.29E-02	2.59E-01	3.40E-01					11/20/14 10:38	7.67E+02	11/26/14 10:18	NO
08	AG-108M	TRG	J1V1M1 SAF: RC-107	pCi/g	8.40E-04	2.11E-02	4.19E-02					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
08	AM-241	TRG	J1V1M1 SAF: RC-107	pCi/g	1.80E-02	6.41E-02	9.73E-02					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
08	BA-133	TRG	J1V1M1 SAF: RC-107	pCi/g	-5.29E-03	2.29E-02	6.45E-02					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
08	BI-214	TRG	J1V1M1 SAF: RC-107	pCi/g	5.42E-01	8.75E-02	1.52E-01					11/20/14 10:26	7.13E+02	11/26/14 09:51	YES
08	CO-60	TRG	J1V1M1 SAF: RC-107	pCi/g	-3.02E-02	4.63E-02	6.03E-02					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
08	CS-137	TRG	J1V1M1 SAF: RC-107	pCi/g	-3.21E-03	4.34E-02	6.19E-02					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
08	EU-152	TRG	J1V1M1 SAF: RC-107	pCi/g	-8.91E-03	2.15E-01	1.58E-01					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
08	EU-154	TRG	J1V1M1 SAF: RC-107	pCi/g	5.19E-02	1.16E-01	8.20E-02					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
08	EU-155	TRG	J1V1M1 SAF: RC-107	pCi/g	1.43E-01	1.16E-01	1.36E-01					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
08	K-40	TRG	J1V1M1 SAF: RC-107	pCi/g	1.44E+01	2.00E+00	1.46E+00					11/20/14 10:26	7.13E+02	11/26/14 09:51	YES
08	PA-234M	TRG	J1V1M1 SAF: RC-107	pCi/g	-1.83E-02	4.15E+00	6.22E+00					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
08	PB-212	TRG	J1V1M1 SAF: RC-107	pCi/g	6.34E-01	9.51E-02	1.68E-01					11/20/14 10:26	7.13E+02	11/26/14 09:51	YES
08	PB-214	TRG	J1V1M1 SAF: RC-107	pCi/g	5.52E-01	9.76E-02	1.88E-01					11/20/14 10:26	7.13E+02	11/26/14 09:51	YES
08	TH-234	TRG	J1V1M1 SAF: RC-107	pCi/g	9.56E-01	6.06E-01	9.96E-01					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
08	TL-208	TRG	J1V1M1 SAF: RC-107	pCi/g	5.86E-01	1.51E-01	2.04E-01					11/20/14 10:26	7.13E+02	11/26/14 09:51	YES
08	U-235	TRG	J1V1M1 SAF: RC-107	pCi/g	-5.70E-03	2.45E-01	3.18E-01					11/20/14 10:26	7.13E+02	11/26/14 09:51	NO
09	AG-108M	TRG	J1V1M2 SAF: RC-107	pCi/g	-4.26E-02	4.66E-02	3.91E-02					11/20/14 10:08	7.70E+02	11/26/14 10:52	NO

0108

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
09	AM-241	TRG	J1V1M2 SAF: RC-107	pCi/g	-2.62E-02	6.44E-02	9.32E-02					11/20/14 10:08	7.70E+02	11/26/14 10:52	NO
09	BA-133	TRG	J1V1M2 SAF: RC-107	pCi/g	-1.45E-02	2.25E-02	5.69E-02					11/20/14 10:08	7.70E+02	11/26/14 10:52	NO
09	BI-214	TRG	J1V1M2 SAF: RC-107	pCi/g	6.55E-01	1.11E-01	1.91E-01					11/20/14 10:08	7.70E+02	11/26/14 10:52	YES
09	CO-60	TRG	J1V1M2 SAF: RC-107	pCi/g	3.80E-02	4.07E-02	5.44E-02					11/20/14 10:08	7.70E+02	11/26/14 10:52	NO
09	CS-137	TRG	J1V1M2 SAF: RC-107	pCi/g	-4.05E-02	3.97E-02	5.18E-02					11/20/14 10:08	7.70E+02	11/26/14 10:52	NO
09	EU-152	TRG	J1V1M2 SAF: RC-107	pCi/g	4.61E-02	1.65E-01	1.53E-01					11/20/14 10:08	7.70E+02	11/26/14 10:52	NO
09	EU-154	TRG	J1V1M2 SAF: RC-107	pCi/g	8.75E-02	9.51E-02	7.71E-02					11/20/14 10:08	7.70E+02	11/26/14 10:52	NO
09	EU-155	TRG	J1V1M2 SAF: RC-107	pCi/g	1.27E-01	1.15E-01	1.20E-01					11/20/14 10:08	7.70E+02	11/26/14 10:52	NO
09	K-40	TRG	J1V1M2 SAF: RC-107	pCi/g	1.38E+01	1.77E+00	6.42E-01					11/20/14 10:08	7.70E+02	11/26/14 10:52	YES
09	PA-234M	TRG	J1V1M2 SAF: RC-107	pCi/g	3.23E+00	3.78E+00	6.47E+00					11/20/14 10:08	7.70E+02	11/26/14 10:52	NO
09	PB-212	TRG	J1V1M2 SAF: RC-107	pCi/g	6.33E-01	9.50E-02	1.52E-01					11/20/14 10:08	7.70E+02	11/26/14 10:52	YES
09	PB-214	TRG	J1V1M2 SAF: RC-107	pCi/g	5.57E-01	1.01E-01	1.59E-01					11/20/14 10:08	7.70E+02	11/26/14 10:52	YES
09	TH-234	TRG	J1V1M2 SAF: RC-107	pCi/g	1.36E+00	1.04E+00	1.72E+00					11/20/14 10:08	7.70E+02	11/26/14 10:52	YES
09	TL-208	TRG	J1V1M2 SAF: RC-107	pCi/g	5.94E-01	1.56E-01	2.19E-01					11/20/14 10:08	7.70E+02	11/26/14 10:52	YES
09	U-235	TRG	J1V1M2 SAF: RC-107	pCi/g	7.54E-02	2.41E-01	3.21E-01					11/20/14 10:08	7.70E+02	11/26/14 10:52	NO
10	AG-108M	TRG	J1V1L0 SAF: RC-107	pCi/g	-3.31E-03	2.99E-02	5.88E-02					11/24/14 08:11	7.50E+02	11/26/14 10:58	NO
10	AM-241	TRG	J1V1L0 SAF: RC-107	pCi/g	-7.28E-02	1.19E-01	1.44E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	NO
10	BA-133	TRG	J1V1L0 SAF: RC-107	pCi/g	-4.90E-02	1.13E-01	1.11E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	NO
10	BI-214	TRG	J1V1L0 SAF: RC-107	pCi/g	6.37E-01	1.38E-01	2.17E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	YES
10	CO-60	TRG	J1V1L0 SAF: RC-107	pCi/g	-4.68E-03	5.53E-02	8.22E-02					11/24/14 08:11	7.50E+02	11/26/14 10:58	NO
10	CS-137	TRG	J1V1L0 SAF: RC-107	pCi/g	1.17E-02	4.73E-02	7.45E-02					11/24/14 08:11	7.50E+02	11/26/14 10:58	NO
10	EU-152	TRG	J1V1L0 SAF: RC-107	pCi/g	-4.98E-02	3.78E-01	2.01E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	NO
10	EU-154	TRG	J1V1L0 SAF: RC-107	pCi/g	7.01E-02	1.74E-01	1.02E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	NO
10	EU-155	TRG	J1V1L0 SAF: RC-107	pCi/g	8.47E-02	1.29E-01	1.62E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	NO
10	K-40	TRG	J1V1L0 SAF: RC-107	pCi/g	1.63E+01	1.93E+00	7.33E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	YES
10	PA-234M	TRG	J1V1L0 SAF: RC-107	pCi/g	1.78E+01	8.32E+00	1.26E+01					11/24/14 08:11	7.50E+02	11/26/14 10:58	YES
10	PB-212	TRG	J1V1L0 SAF: RC-107	pCi/g	8.05E-01	1.08E-01	1.89E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	YES
10	PB-214	TRG	J1V1L0 SAF: RC-107	pCi/g	6.44E-01	1.05E-01	3.09E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	YES
10	TH-234	TRG	J1V1L0 SAF: RC-107	pCi/g	9.40E-01	1.07E+00	1.43E+00					11/24/14 08:11	7.50E+02	11/26/14 10:58	NO
10	TL-208	TRG	J1V1L0 SAF: RC-107	pCi/g	7.78E-01	1.30E-01	1.81E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	YES
10	U-235	TRG	J1V1L0 SAF: RC-107	pCi/g	2.26E-01	2.41E-01	4.01E-01					11/24/14 08:11	7.50E+02	11/26/14 10:58	NO
11	AG-108M	TRG	J1V1L1 SAF: RC-107	pCi/g	-2.26E-02	8.52E-02	9.75E-02					11/24/14 08:04	7.84E+02	11/26/14 10:58	NO
11	AM-241	TRG	J1V1L1 SAF: RC-107	pCi/g	4.86E-02	9.25E-02	1.43E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	NO
11	BA-133	TRG	J1V1L1 SAF: RC-107	pCi/g	-1.03E-02	3.86E-02	1.92E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	NO
11	BI-214	TRG	J1V1L1 SAF: RC-107	pCi/g	5.92E-01	1.99E-01	2.94E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	YES
11	CO-60	TRG	J1V1L1 SAF: RC-107	pCi/g	2.02E-02	8.78E-02	1.23E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	NO
11	CS-137	TRG	J1V1L1 SAF: RC-107	pCi/g	1.05E-03	4.80E-02	1.21E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	NO
11	EU-152	TRG	J1V1L1 SAF: RC-107	pCi/g	2.04E-01	4.76E-01	3.01E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	NO

0109

Work Order: 14-11131-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
11	EU-154	TRG	J1V1L1 SAF: RC-107	pCi/g	1.36E-01	2.73E-01	1.53E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	NO
11	EU-155	TRG	J1V1L1 SAF: RC-107	pCi/g	1.61E-01	1.57E-01	2.62E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	YES
11	K-40	TRG	J1V1L1 SAF: RC-107	pCi/g	1.65E+01	2.65E+00	9.96E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	YES
11	PA-234M	TRG	J1V1L1 SAF: RC-107	pCi/g	6.23E+00	5.48E+00	8.57E+00					11/24/14 08:04	7.84E+02	11/26/14 10:58	YES
11	PB-212	TRG	J1V1L1 SAF: RC-107	pCi/g	1.07E+00	2.19E-01	2.80E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	YES
11	PB-214	TRG	J1V1L1 SAF: RC-107	pCi/g	6.59E-01	1.88E-01	3.08E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	YES
11	TH-234	TRG	J1V1L1 SAF: RC-107	pCi/g	8.36E-04	9.32E-01	1.42E+00					11/24/14 08:04	7.84E+02	11/26/14 10:58	NO
11	TL-208	TRG	J1V1L1 SAF: RC-107	pCi/g	7.94E-01	2.33E-01	6.75E-02					11/24/14 08:04	7.84E+02	11/26/14 10:58	YES
11	U-235	TRG	J1V1L1 SAF: RC-107	pCi/g	-2.17E-02	4.12E-01	6.32E-01					11/24/14 08:04	7.84E+02	11/26/14 10:58	NO
12	AG-108M	TRG	J1V1L4 SAF: RC-107	pCi/g	-9.55E-02	4.65E-02	4.35E-02					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
12	AM-241	TRG	J1V1L4 SAF: RC-107	pCi/g	-7.44E-02	9.90E-02	1.19E-01					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
12	BA-133	TRG	J1V1L4 SAF: RC-107	pCi/g	9.27E-03	2.27E-02	5.70E-02					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
12	BI-214	TRG	J1V1L4 SAF: RC-107	pCi/g	5.63E-01	9.91E-02	1.14E-01					11/24/14 07:58	7.79E+02	11/26/14 11:19	YES
12	CO-60	TRG	J1V1L4 SAF: RC-107	pCi/g	2.88E-02	3.65E-02	5.70E-02					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
12	CS-137	TRG	J1V1L4 SAF: RC-107	pCi/g	-4.16E-03	1.15E-02	4.87E-02					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
12	EU-152	TRG	J1V1L4 SAF: RC-107	pCi/g	1.49E-01	1.58E-01	1.51E-01					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
12	EU-154	TRG	J1V1L4 SAF: RC-107	pCi/g	-6.53E-02	1.09E-01	7.94E-02					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
12	EU-155	TRG	J1V1L4 SAF: RC-107	pCi/g	-3.38E-02	1.20E-01	1.30E-01					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
12	K-40	TRG	J1V1L4 SAF: RC-107	pCi/g	1.54E+01	1.73E+00	7.84E-01					11/24/14 07:58	7.79E+02	11/26/14 11:19	YES
12	PA-234M	TRG	J1V1L4 SAF: RC-107	pCi/g	2.79E+00	2.56E+00	4.11E+00					11/24/14 07:58	7.79E+02	11/26/14 11:19	YES
12	PB-212	TRG	J1V1L4 SAF: RC-107	pCi/g	7.37E-01	9.41E-02	1.52E-01					11/24/14 07:58	7.79E+02	11/26/14 11:19	YES
12	PB-214	TRG	J1V1L4 SAF: RC-107	pCi/g	5.20E-01	9.43E-02	1.41E-01					11/24/14 07:58	7.79E+02	11/26/14 11:19	YES
12	TH-234	TRG	J1V1L4 SAF: RC-107	pCi/g	1.26E+00	9.20E-01	1.25E+00					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
12	TL-208	TRG	J1V1L4 SAF: RC-107	pCi/g	6.34E-01	1.35E-01	2.49E-01					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
12	U-235	TRG	J1V1L4 SAF: RC-107	pCi/g	-3.68E-02	2.52E-01	3.24E-01					11/24/14 07:58	7.79E+02	11/26/14 11:19	NO
13	AG-108M	TRG	J1V1L5 SAF: RC-107	pCi/g	2.34E-03	2.02E-02	4.17E-02					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
13	AM-241	TRG	J1V1L5 SAF: RC-107	pCi/g	4.89E-02	6.86E-02	1.07E-01					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
13	BA-133	TRG	J1V1L5 SAF: RC-107	pCi/g	-4.43E-02	5.91E-02	6.33E-02					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
13	BI-214	TRG	J1V1L5 SAF: RC-107	pCi/g	6.05E-01	1.06E-01	1.52E-01					11/24/14 07:43	7.02E+02	11/26/14 11:54	YES
13	CO-60	TRG	J1V1L5 SAF: RC-107	pCi/g	5.00E-02	3.76E-02	5.26E-02					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
13	CS-137	TRG	J1V1L5 SAF: RC-107	pCi/g	1.43E-02	4.25E-02	6.51E-02					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
13	EU-152	TRG	J1V1L5 SAF: RC-107	pCi/g	-2.13E-02	2.29E-01	1.76E-01					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
13	EU-154	TRG	J1V1L5 SAF: RC-107	pCi/g	4.71E-02	1.13E-01	8.96E-02					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
13	EU-155	TRG	J1V1L5 SAF: RC-107	pCi/g	9.92E-03	1.28E-01	1.47E-01					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
13	K-40	TRG	J1V1L5 SAF: RC-107	pCi/g	1.65E+01	2.10E+00	8.75E-01					11/24/14 07:43	7.02E+02	11/26/14 11:54	YES
13	PA-234M	TRG	J1V1L5 SAF: RC-107	pCi/g	2.07E+00	4.03E+00	6.56E+00					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
13	PB-212	TRG	J1V1L5 SAF: RC-107	pCi/g	1.09E+00	1.55E-01	1.65E-01					11/24/14 07:43	7.02E+02	11/26/14 11:54	YES
13	PB-214	TRG	J1V1L5 SAF: RC-107	pCi/g	6.09E-01	9.46E-02	2.98E-01					11/24/14 07:43	7.02E+02	11/26/14 11:54	YES

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
13	TH-234	TRG	J1V1L5 SAF: RC-107	pCi/g	7.91E-01	6.35E-01	1.02E+00					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
13	TL-208	TRG	J1V1L5 SAF: RC-107	pCi/g	7.90E-01	1.60E-01	1.91E-01					11/24/14 07:43	7.02E+02	11/26/14 11:54	YES
13	U-235	TRG	J1V1L5 SAF: RC-107	pCi/g	-4.55E-02	2.80E-01	3.57E-01					11/24/14 07:43	7.02E+02	11/26/14 11:54	NO
14	AG-108M	TRG	J1V1L6 SAF: RC-107	pCi/g	-6.32E-03	3.58E-02	5.94E-02					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
14	AM-241	TRG	J1V1L6 SAF: RC-107	pCi/g	-1.27E-01	1.24E-01	1.48E-01					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
14	BA-133	TRG	J1V1L6 SAF: RC-107	pCi/g	2.68E-02	3.80E-02	1.11E-01					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
14	BI-214	TRG	J1V1L6 SAF: RC-107	pCi/g	6.78E-01	1.07E-01	1.50E-01					11/24/14 07:38	7.67E+02	11/26/14 11:59	YES
14	CO-60	TRG	J1V1L6 SAF: RC-107	pCi/g	-1.25E-02	4.95E-02	7.24E-02					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
14	CS-137	TRG	J1V1L6 SAF: RC-107	pCi/g	-5.44E-03	5.05E-02	7.58E-02					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
14	EU-152	TRG	J1V1L6 SAF: RC-107	pCi/g	1.34E-01	3.39E-01	1.96E-01					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
14	EU-154	TRG	J1V1L6 SAF: RC-107	pCi/g	-5.12E-04	1.07E-01	9.52E-02					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
14	EU-155	TRG	J1V1L6 SAF: RC-107	pCi/g	1.29E-01	1.34E-01	1.57E-01					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
14	K-40	TRG	J1V1L6 SAF: RC-107	pCi/g	1.48E+01	1.77E+00	4.14E-01					11/24/14 07:38	7.67E+02	11/26/14 11:59	YES
14	PA-234M	TRG	J1V1L6 SAF: RC-107	pCi/g	3.45E+00	5.12E+00	8.61E+00					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
14	PB-212	TRG	J1V1L6 SAF: RC-107	pCi/g	9.01E-01	1.18E-01	2.15E-01					11/24/14 07:38	7.67E+02	11/26/14 11:59	YES
14	PB-214	TRG	J1V1L6 SAF: RC-107	pCi/g	6.48E-01	1.17E-01	1.62E-01					11/24/14 07:38	7.67E+02	11/26/14 11:59	YES
14	TH-234	TRG	J1V1L6 SAF: RC-107	pCi/g	4.19E-01	1.11E+00	1.45E+00					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
14	TL-208	TRG	J1V1L6 SAF: RC-107	pCi/g	6.90E-01	1.41E-01	8.96E-02					11/24/14 07:38	7.67E+02	11/26/14 11:59	YES
14	U-235	TRG	J1V1L6 SAF: RC-107	pCi/g	-5.61E-02	2.35E-01	3.75E-01					11/24/14 07:38	7.67E+02	11/26/14 11:59	NO
15	AG-108M	TRG	J1V1L7 SAF: RC-107	pCi/g	1.64E-02	2.11E-02	3.98E-02					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
15	AM-241	TRG	J1V1L7 SAF: RC-107	pCi/g	7.20E-03	6.71E-02	1.01E-01					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
15	BA-133	TRG	J1V1L7 SAF: RC-107	pCi/g	3.60E-03	2.25E-02	6.57E-02					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
15	BI-214	TRG	J1V1L7 SAF: RC-107	pCi/g	5.79E-01	8.90E-02	2.37E-01					11/24/14 07:32	7.42E+02	11/26/14 12:55	YES
15	CO-60	TRG	J1V1L7 SAF: RC-107	pCi/g	-1.50E-02	4.82E-02	4.67E-02					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
15	CS-137	TRG	J1V1L7 SAF: RC-107	pCi/g	3.77E-02	3.46E-02	5.95E-02					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
15	EU-152	TRG	J1V1L7 SAF: RC-107	pCi/g	2.33E-01	1.77E-01	1.59E-01					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
15	EU-154	TRG	J1V1L7 SAF: RC-107	pCi/g	1.52E-02	1.08E-01	8.05E-02					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
15	EU-155	TRG	J1V1L7 SAF: RC-107	pCi/g	-2.67E-02	1.24E-01	1.34E-01					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
15	K-40	TRG	J1V1L7 SAF: RC-107	pCi/g	1.57E+01	1.99E+00	8.45E-01					11/24/14 07:32	7.42E+02	11/26/14 12:55	YES
15	PA-234M	TRG	J1V1L7 SAF: RC-107	pCi/g	6.86E-01	3.69E+00	5.91E+00					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
15	PB-212	TRG	J1V1L7 SAF: RC-107	pCi/g	6.20E-01	9.67E-02	1.67E-01					11/24/14 07:32	7.42E+02	11/26/14 12:55	YES
15	PB-214	TRG	J1V1L7 SAF: RC-107	pCi/g	5.89E-01	1.07E-01	1.62E-01					11/24/14 07:32	7.42E+02	11/26/14 12:55	YES
15	TH-234	TRG	J1V1L7 SAF: RC-107	pCi/g	9.71E-01	6.01E-01	9.86E-01					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
15	TL-208	TRG	J1V1L7 SAF: RC-107	pCi/g	6.89E-01	1.64E-01	2.19E-01					11/24/14 07:32	7.42E+02	11/26/14 12:55	YES
15	U-235	TRG	J1V1L7 SAF: RC-107	pCi/g	1.17E-01	2.54E-01	3.39E-01					11/24/14 07:32	7.42E+02	11/26/14 12:55	NO
16	AG-108M	TRG	J1V1M0 SAF: RC-107	pCi/g	-1.00E-02	2.49E-02	6.56E-02					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO
16	AM-241	TRG	J1V1M0 SAF: RC-107	pCi/g	-4.87E-02	1.25E-01	1.56E-01					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO
16	BA-133	TRG	J1V1M0 SAF: RC-107	pCi/g	-1.16E-01	6.76E-02	1.11E-01					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO

Work Order: 14-11131-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
16	BI-214	TRG	J1V1M0 SAF: RC-107	pCi/g	5.77E-01	1.28E-01	2.03E-01					11/24/14 07:26	7.10E+02	11/26/14 13:00	YES
16	CO-60	TRG	J1V1M0 SAF: RC-107	pCi/g	1.77E-02	6.53E-02	9.38E-02					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO
16	CS-137	TRG	J1V1M0 SAF: RC-107	pCi/g	8.47E-03	5.37E-02	8.03E-02					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO
16	EU-152	TRG	J1V1M0 SAF: RC-107	pCi/g	1.57E-01	2.95E-01	1.94E-01					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO
16	EU-154	TRG	J1V1M0 SAF: RC-107	pCi/g	9.48E-02	1.59E-01	9.84E-02					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO
16	EU-155	TRG	J1V1M0 SAF: RC-107	pCi/g	3.48E-02	1.25E-01	1.70E-01					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO
16	K-40	TRG	J1V1M0 SAF: RC-107	pCi/g	1.68E+01	2.08E+00	1.19E+00					11/24/14 07:26	7.10E+02	11/26/14 13:00	YES
16	PA-234M	TRG	J1V1M0 SAF: RC-107	pCi/g	8.01E-01	5.47E+00	8.70E+00					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO
16	PB-212	TRG	J1V1M0 SAF: RC-107	pCi/g	8.66E-01	1.13E-01	1.92E-01					11/24/14 07:26	7.10E+02	11/26/14 13:00	YES
16	PB-214	TRG	J1V1M0 SAF: RC-107	pCi/g	5.91E-01	1.02E-01	1.55E-01					11/24/14 07:26	7.10E+02	11/26/14 13:00	YES
16	TH-234	TRG	J1V1M0 SAF: RC-107	pCi/g	1.20E+00	1.12E+00	1.52E+00					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO
16	TL-208	TRG	J1V1M0 SAF: RC-107	pCi/g	8.82E-01	1.68E-01	3.56E-02					11/24/14 07:26	7.10E+02	11/26/14 13:00	YES
16	U-235	TRG	J1V1M0 SAF: RC-107	pCi/g	8.56E-02	2.51E-01	4.13E-01					11/24/14 07:26	7.10E+02	11/26/14 13:00	NO

210 of 212

Count Room Report
Client: Washington Closure Hanfor

14-11131-Gamma-1 (pCi/g) in
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	11/25/14 00:00	1.0000				0.00		
02	MBL	BLANK	11/25/14 00:00	1.0000				0.00		
03	DUP	J1V1L2 SAF: RC-107	11/20/14 11:02	711.5100				0.00		
04	DO	J1V1L2 SAF: RC-107	11/20/14 11:02	711.5100				0.00		
05	TRG	J1V1L3 SAF: RC-107	11/20/14 10:51	723.0800				0.00		
06	TRG	J1V1L8 SAF: RC-107	11/20/14 10:08	717.5000				0.00		
07	TRG	J1V1L9 SAF: RC-107	11/20/14 10:38	766.5200				0.00		
08	TRG	J1V1M1 SAF: RC-107	11/20/14 10:26	712.7500				0.00		
09	TRG	J1V1M2 SAF: RC-107	11/20/14 10:08	769.6400				0.00		
10	TRG	J1V1L0 SAF: RC-107	11/24/14 08:11	749.9100				0.00		
11	TRG	J1V1L1 SAF: RC-107	11/24/14 08:04	783.6400				0.00		
12	TRG	J1V1L4 SAF: RC-107	11/24/14 07:58	778.7100				0.00		
13	TRG	J1V1L5 SAF: RC-107	11/24/14 07:43	702.0100				0.00		
14	TRG	J1V1L6 SAF: RC-107	11/24/14 07:38	767.3600				0.00		
15	TRG	J1V1L7 SAF: RC-107	11/24/14 07:32	741.9000				0.00		
16	TRG	J1V1M0 SAF: RC-107	11/24/14 07:26	710.4500				0.00		

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Printed: 11/26/2014 8:32 AM

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
14-11131	1	Gamma	grams	12/1/2014	KSALLINGS

Lab Fraction	Washington Closure Hanford 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	J1V1L2 SAF: RC-107	DUP					7.1151E+02	7.1151E+02				
04	J1V1L2 SAF: RC-107	DO					7.1151E+02	7.1151E+02				
05	J1V1L3 SAF: RC-107	TRG					7.2308E+02	7.2308E+02				
06	J1V1L8 SAF: RC-107	TRG					7.1750E+02	7.1750E+02				
07	J1V1L9 SAF: RC-107	TRG					7.6652E+02	7.6652E+02				
08	J1V1M1 SAF: RC-107	TRG					7.1275E+02	7.1275E+02				
09	J1V1M2 SAF: RC-107	TRG					7.6964E+02	7.6964E+02				
10	J1V1L0 SAF: RC-107	TRG					7.4991E+02	7.4991E+02				
11	J1V1L1 SAF: RC-107	TRG					7.8364E+02	7.8364E+02				
12	J1V1L4 SAF: RC-107	TRG					7.7871E+02	7.7871E+02				
13	J1V1L5 SAF: RC-107	TRG					7.0201E+02	7.0201E+02				
14	J1V1L6 SAF: RC-107	TRG					7.6736E+02	7.6736E+02				
15	J1V1L7 SAF: RC-107	TRG					7.4190E+02	7.4190E+02				
16	J1V1M0 SAF: RC-107	TRG					7.1045E+02	7.1045E+02				

Comments	

0114

Technician: Kenny Sallings Date: 11/26/14

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
14-11131	12/1/2014	11/25/2014	11/26/2014	11/27/2014	KSALLINGS

Eberline	Washington Closure Hanford	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	J1V1L2 SAF: RC-107	26.8600	1566.1000	1529.7200	1539.2400	1502.8600	2.36%	97.64%			
05	J1V1L3 SAF: RC-107	26.8700	1773.7000	1743.0500	1746.8300	1716.1800	1.75%	98.25%			
06	J1V1L8 SAF: RC-107	26.7600	1760.8500	1710.2500	1734.0900	1683.4900	2.92%	97.08%			
07	J1V1L9 SAF: RC-107	26.8100	1471.5400	1412.4400	1444.7300	1385.6300	4.09%	95.91%			
08	J1V1M1 SAF: RC-107	26.9100	1720.8000	1677.2000	1693.8900	1650.2900	2.57%	97.43%			
09	J1V1M2 SAF: RC-107	26.8600	1654.4000	1606.6000	1627.5400	1579.7400	2.94%	97.06%			
10	J1V1L0 SAF: RC-107	26.7800	1442.2200	1369.5600	1415.4400	1342.7800	5.13%	94.87%			
11	J1V1L1 SAF: RC-107	26.9400	1309.8600	1246.0000	1282.9200	1219.0600	4.98%	95.02%			
12	J1V1L4 SAF: RC-107	26.9000	1491.5800	1431.2800	1464.6800	1404.3800	4.12%	95.88%			
13	J1V1L5 SAF: RC-107	26.8900	1481.0000	1422.2800	1454.1100	1395.3900	4.04%	95.96%			
14	J1V1L6 SAF: RC-107	26.8900	1435.4400	1379.1200	1408.5500	1352.2300	4.00%	96.00%			
15	J1V1L7 SAF: RC-107	26.8700	1429.1400	1343.8800	1402.2700	1317.0100	6.08%	93.92%			
16	J1V1M0 SAF: RC-107	26.9200	1423.2800	1363.3200	1396.3600	1336.4000	4.29%	95.71%			
17	MS										

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

0115

Technician: Kenny Salley

Date: Analysis: Rough Prep Logbook

Analysis: Gamma Page No. 9027

Eckert & Ziegler
Analytics

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

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

GAS-1302

94268

Sand in 16 Ounce PP Taral Jar Filled to Top

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

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

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* γps/gram	This Source γps	Uncertainty* , % Type u_A	u_B	U	Calibration Method*
Am-241	59.5	1.580E+05	———	2.094E+03	0.1	1.7	3.5	4π LS
Cd-109	88.0	4.626E+02	1.641E+05	2.952E+03	0.5	2.3	4.7	HPGe
Co-57	122.1	2.718E+02	8.866E+04	1.595E+03	0.4	2.0	4.1	HPGe
Ce-139	165.9	1.376E+02	1.243E+05	2.236E+03	0.4	1.9	3.9	HPGe
Hg-203	279.2	4.661E+01	2.627E+05	4.727E+03	0.3	1.9	3.8	HPGe
Sn-113	391.7	1.151E+02	1.736E+05	3.124E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.098E+04	1.120E+05	2.015E+03	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.197E+05	7.553E+03	0.5	1.9	3.9	HPGe
Co-60	1173.2	1.925E+03	2.074E+05	3.732E+03	0.6	1.9	4.0	HPGe
Co-60	1332.5	1.925E+03	2.074E+05	3.732E+03	0.7	1.9	4.0	HPGe
Y-88	1836.1	1.066E+02	4.444E+05	7.996E+03	0.7	1.9	4.0	HPGe

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

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

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FOUNDED 1956

0116

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Apex-Gamma

Analysis Report for 1411131-01
GAS-1302

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-01
Sample Description	: GAS-1302
Sample Type	: SOIL
Sample Size	: 7.360E+02 grams
Facility	: Countroom
Sample Taken On	: 7/1/2013 8:48:10AM
Acquisition Started	: 11/26/2014 1:00:54PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1402
Live Time	: 1800.0 seconds
Real Time	: 1828.8 seconds
Dead Time	: 1.58 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 14 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 11/8/2014
Efficiency Calibration Description	:
Sample Number	: 15656

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/26/14

Analysis Report for 1411131-01

GAS-1302

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 1:31:26PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	22.36	21.61	0.0000	0.00
2	32.49	31.74	0.0000	0.00
3	53.81	53.07	0.0000	0.00
4	59.45	58.71	0.0000	0.00
5	68.81	68.07	0.0000	0.00
6	87.81	87.08	0.0000	0.00
7	122.04	121.32	0.0000	0.00
8	136.46	135.75	0.0000	0.00
9	165.93	165.24	0.0000	0.00
10	239.17	238.50	0.0000	0.00
11	310.60	309.97	0.0000	0.00
12	391.79	391.19	0.0000	0.00
13	661.78	661.32	0.0000	0.00
14	683.18	682.72	0.0000	0.00
15	898.26	897.91	0.0000	0.00
16	990.57	990.27	0.0000	0.00
17	1173.47	1173.27	0.0000	0.00
18	1206.90	1206.72	0.0000	0.00
19	1332.77	1332.66	0.0000	0.00
20	1622.19	1622.26	0.0000	0.00
21	1720.80	1720.94	0.0000	0.00
22	1819.77	1819.97	0.0000	0.00
23	1836.34	1836.56	0.0000	0.00
24	1936.54	1936.81	0.0000	0.00
25	2204.59	2205.06	0.0000	0.00
26	2214.70	2215.17	0.0000	0.00
27	2250.86	2251.36	0.0000	0.00
28	2506.35	2507.04	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-01

GAS-1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 1:31:26PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	22.36	19 -	25	21.61	1.22E+05	985.07	9.00E+04	2.44
	2	32.49	30 -	35	31.74	1.69E+03	280.16	1.44E+04	2.10
M	3	53.81	44 -	62	53.07	1.82E+04	1017.11	6.52E+04	6.63
m	4	59.45	44 -	62	58.71	5.52E+04	626.89	2.51E+04	2.25
	5	68.81	64 -	75	68.07	2.26E+03	645.84	5.13E+04	6.43
	6	87.81	80 -	93	87.08	4.36E+04	782.68	4.77E+04	2.38
	7	122.04	116 -	126	121.32	1.24E+04	464.01	2.19E+04	2.33
	8	136.46	132 -	139	135.75	1.47E+03	292.44	1.32E+04	2.12
	9	165.93	161 -	170	165.24	4.18E+03	340.41	1.41E+04	2.40
	10	239.17	236 -	241	238.50	2.18E+02	190.32	7.04E+03	2.92
	11	310.60	305 -	314	309.97	4.36E+02	239.86	7.97E+03	5.58
	12	391.79	387 -	395	391.19	1.53E+03	215.43	6.19E+03	2.51
	13	661.78	655 -	667	661.32	1.26E+04	304.51	4.95E+03	2.51
	14	683.18	680 -	686	682.72	1.63E+02	116.95	2.37E+03	3.18
	15	898.26	893 -	902	897.91	1.35E+03	188.54	4.29E+03	2.62
	16	990.57	987 -	994	990.27	1.43E+02	131.39	2.77E+03	3.68
	17	1173.47	1167 -	1180	1173.27	1.18E+04	260.03	2.23E+03	2.69
	18	1206.90	1201 -	1211	1206.72	7.32E+01	86.52	9.50E+02	7.88
	19	1332.77	1325 -	1340	1332.66	1.06E+04	223.01	7.04E+02	2.75
	20	1622.19	1619 -	1626	1622.26	2.31E+01	27.06	1.04E+02	4.50
	21	1720.80	1718 -	1723	1720.94	1.49E+01	15.78	3.63E+01	2.02
	22	1819.77	1815 -	1824	1819.97	2.90E+01	18.06	3.00E+01	5.73
	23	1836.34	1829 -	1844	1836.56	7.50E+02	60.99	7.15E+01	2.91
	24	1936.54	1932 -	1941	1936.81	2.16E+01	13.82	1.47E+01	2.88
	25	2204.59	2201 -	2209	2205.06	1.81E+01	10.01	3.85E+00	5.11
	26	2214.70	2211 -	2218	2215.17	9.31E+00	9.17	7.38E+00	4.12
	27	2250.86	2247 -	2255	2251.36	9.93E+00	9.82	8.14E+00	5.72
	28	2506.35	2501 -	2511	2507.04	4.11E+01	14.36	5.89E+00	3.43

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 1411131-01

GAS-1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 1:31:26PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	22.36	19 -	25	1.22E+05	985.07	9.00E+04	5.70E+02
	2	32.49	30 -	35	1.69E+03	280.16	1.44E+04	2.20E+02
M	3	53.81	44 -	62	1.82E+04	1017.11	6.52E+04	4.20E+02
m	4	59.45	44 -	62	5.52E+04	626.89	2.51E+04	2.61E+02
	5	68.81	64 -	75	2.26E+03	645.84	5.13E+04	5.25E+02
	6	87.81	80 -	93	4.36E+04	782.68	4.77E+04	5.44E+02
	7	122.04	116 -	126	1.24E+04	464.01	2.19E+04	3.35E+02
	8	136.46	132 -	139	1.47E+03	292.44	1.32E+04	2.32E+02
	9	165.93	161 -	170	4.18E+03	340.41	1.41E+04	2.59E+02
	10	239.17	236 -	241	2.18E+02	190.32	7.04E+03	1.55E+02
	11	310.60	305 -	314	4.36E+02	239.86	7.97E+03	1.94E+02
	12	391.79	387 -	395	1.53E+03	215.43	6.19E+03	1.65E+02
	13	661.78	655 -	667	1.26E+04	304.51	4.95E+03	1.69E+02
	14	683.18	680 -	686	1.63E+02	116.95	2.37E+03	9.38E+01
	15	898.26	893 -	902	1.35E+03	188.54	4.29E+03	1.43E+02
	16	990.57	987 -	994	1.43E+02	131.39	2.77E+03	1.06E+02
	17	1173.47	1167 -	1180	1.18E+04	260.03	2.23E+03	1.18E+02
	18	1206.90	1201 -	1211	7.32E+01	86.52	9.50E+02	6.97E+01
	19	1332.77	1325 -	1340	1.06E+04	223.01	7.04E+02	6.96E+01
	20	1622.19	1619 -	1626	2.31E+01	27.06	1.04E+02	2.08E+01
	21	1720.80	1718 -	1723	1.49E+01	15.78	3.63E+01	1.13E+01
	22	1819.77	1815 -	1824	2.90E+01	18.06	3.00E+01	1.19E+01
	23	1836.34	1829 -	1844	7.50E+02	60.99	7.15E+01	2.20E+01
	24	1936.54	1932 -	1941	2.16E+01	13.82	1.47E+01	8.40E+00
	25	2204.59	2201 -	2209	1.81E+01	10.01	3.85E+00	4.35E+00
	26	2214.70	2211 -	2218	9.31E+00	9.17	7.38E+00	5.62E+00
	27	2250.86	2247 -	2255	9.93E+00	9.82	8.14E+00	6.19E+00
	28	2506.35	2501 -	2511	4.11E+01	14.36	5.89E+00	5.33E+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 1411131-01

GAS-1302

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 1:31:26PM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	22.36	19 -	25	21.61	1.22E+05	985.07	9.00E+04	.....
	2	32.49	30 -	35	31.74	1.69E+03	280.16	1.44E+04	.....
M	3	53.81	44 -	62	53.07	1.82E+04	1017.11	6.52E+04	.....
m	4	59.45	44 -	62	58.71	5.52E+04	626.89	2.51E+04	AM-241
	5	68.81	64 -	75	68.07	2.26E+03	645.84	5.13E+04	TI-44
	6	87.81	80 -	93	87.08	4.36E+04	782.68	4.77E+04	CD-109 SN-126 LU-176
	7	122.04	116 -	126	121.32	1.24E+04	464.01	2.19E+04	CO-57 EU-152 SE-75
	8	136.46	132 -	139	135.75	1.47E+03	292.44	1.32E+04	CO-57 SE-75
	9	165.93	161 -	170	165.24	4.18E+03	340.41	1.41E+04	CE-139
	10	239.17	236 -	241	238.50	2.18E+02	190.32	7.04E+03	PB-212
	11	310.60	305 -	314	309.97	4.36E+02	239.86	7.97E+03	.....
	12	391.79	387 -	395	391.19	1.53E+03	215.43	6.19E+03	SN-113
	13	661.78	655 -	667	661.32	1.26E+04	304.51	4.95E+03	CS-137
	14	683.18	680 -	686	682.72	1.63E+02	116.95	2.37E+03	.....
	15	898.26	893 -	902	897.91	1.35E+03	188.54	4.29E+03	Y-88
	16	990.57	987 -	994	990.27	1.43E+02	131.39	2.77E+03	.....
	17	1173.47	1167 -	1180	1173.27	1.18E+04	260.03	2.23E+03	CO-60
	18	1206.90	1201 -	1211	1206.72	7.32E+01	86.52	9.50E+02	.....
	19	1332.77	1325 -	1340	1332.66	1.06E+04	223.01	7.04E+02	CO-60
	20	1622.19	1619 -	1626	1622.26	2.31E+01	27.06	1.04E+02	.....
	21	1720.80	1718 -	1723	1720.94	1.49E+01	15.78	3.63E+01	.....
	22	1819.77	1815 -	1824	1819.97	2.90E+01	18.06	3.00E+01	.....
	23	1836.34	1829 -	1844	1836.56	7.50E+02	60.99	7.15E+01	Y-88
	24	1936.54	1932 -	1941	1936.81	2.16E+01	13.82	1.47E+01	.....
	25	2204.59	2201 -	2209	2205.06	1.81E+01	10.01	3.85E+00	BI-214
	26	2214.70	2211 -	2218	2215.17	9.31E+00	9.17	7.38E+00	.....
	27	2250.86	2247 -	2255	2251.36	9.93E+00	9.82	8.14E+00	.....
	28	2506.35	2501 -	2511	2507.04	4.11E+01	14.36	5.89E+00	.....

Analysis Report for 1411131-01

GAS-1302

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 1:31:26PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	22.36	1.22E+05	985.07	3.04E-02	1.78E-03
	2	32.49	1.69E+03	280.16	2.90E-02	1.78E-03
M	3	53.81	1.82E+04	1017.11	2.49E-02	1.78E-03
m	4	59.45	5.52E+04	626.89	2.39E-02	1.78E-03
	5	68.81	2.26E+03	645.84	2.24E-02	1.73E-03
	6	87.81	4.36E+04	782.68	1.96E-02	1.63E-03
	7	122.04	1.24E+04	464.01	1.60E-02	1.53E-03
	8	136.46	1.47E+03	292.44	1.47E-02	1.42E-03
	9	165.93	4.18E+03	340.41	1.27E-02	1.21E-03
	10	239.17	2.18E+02	190.32	9.40E-03	9.85E-04
	11	310.60	4.36E+02	239.86	7.43E-03	8.26E-04
	12	391.79	1.53E+03	215.43	5.97E-03	7.36E-04
	13	661.78	1.26E+04	304.51	3.57E-03	3.40E-04
	14	683.18	1.63E+02	116.95	3.46E-03	3.28E-04
	15	898.26	1.35E+03	188.54	2.65E-03	2.08E-04
	16	990.57	1.43E+02	131.39	2.41E-03	1.96E-04
	17	1173.47	1.18E+04	260.03	2.05E-03	1.73E-04
	18	1206.90	7.32E+01	86.52	2.00E-03	1.82E-04
	19	1332.77	1.06E+04	223.01	1.83E-03	2.16E-04
	20	1622.19	2.31E+01	27.06	1.54E-03	1.55E-04
	21	1720.80	1.49E+01	15.78	1.46E-03	1.35E-04
	22	1819.77	2.90E+01	18.06	1.40E-03	1.14E-04
	23	1836.34	7.50E+02	60.99	1.39E-03	1.11E-04
	24	1936.54	2.16E+01	13.82	1.33E-03	1.11E-04
	25	2204.59	1.81E+01	10.01	1.21E-03	1.11E-04
	26	2214.70	9.31E+00	9.17	1.20E-03	1.11E-04
	27	2250.86	9.93E+00	9.82	1.19E-03	1.11E-04
	28	2506.35	4.11E+01	14.36	1.10E-03	1.11E-04

Analysis Report for 1411131-01

GAS-1302

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 1:31:26PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015428.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	22.36	1.22E+05	985.07			1.22E+05	9.85E+02
	2	32.49	1.69E+03	280.16			1.69E+03	2.80E+02
M	3	53.81	1.82E+04	1017.11			1.82E+04	1.02E+03
m	4	59.45	5.52E+04	626.89	9.16E+00	2.77E+00	5.52E+04	6.27E+02
	5	68.81	2.26E+03	645.84			2.26E+03	6.46E+02
	6	87.81	4.36E+04	782.68	7.64E+00	2.33E+00	4.36E+04	7.83E+02
	7	122.04	1.24E+04	464.01			1.24E+04	4.64E+02
	8	136.46	1.47E+03	292.44			1.47E+03	2.92E+02
	9	165.93	4.18E+03	340.41			4.18E+03	3.40E+02
	10	239.17	2.18E+02	190.32	7.31E+00	2.98E+00	2.10E+02	1.90E+02
	11	310.60	4.36E+02	239.86			4.36E+02	2.40E+02
	12	391.79	1.53E+03	215.43			1.53E+03	2.15E+02
	13	661.78	1.26E+04	304.51	1.54E+00	1.22E+00	1.26E+04	3.05E+02
	14	683.18	1.63E+02	116.95			1.63E+02	1.17E+02
	15	898.26	1.35E+03	188.54			1.35E+03	1.89E+02
	16	990.57	1.43E+02	131.39			1.43E+02	1.31E+02
	17	1173.47	1.18E+04	260.03	1.50E+00	1.13E+00	1.18E+04	2.60E+02
	18	1206.90	7.32E+01	86.52			7.32E+01	8.65E+01
	19	1332.77	1.06E+04	223.01			1.06E+04	2.23E+02
	20	1622.19	2.31E+01	27.06			2.31E+01	2.71E+01
	21	1720.80	1.49E+01	15.78			1.49E+01	1.58E+01
	22	1819.77	2.90E+01	18.06			2.90E+01	1.81E+01
	23	1836.34	7.50E+02	60.99			7.50E+02	6.10E+01
	24	1936.54	2.16E+01	13.82			2.16E+01	1.38E+01
	25	2204.59	1.81E+01	10.01			1.81E+01	1.00E+01
	26	2214.70	9.31E+00	9.17			9.31E+00	9.17E+00
	27	2250.86	9.93E+00	9.82			9.93E+00	9.82E+00
	28	2506.35	4.11E+01	14.36			4.11E+01	1.44E+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 1411131-01

GAS-1302

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 1:31:26PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015428.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	22.36	1.22E+05	985.07			1.22E+05	9.85E+02
	2	32.49	1.69E+03	280.16			1.69E+03	2.80E+02
M	3	53.81	1.82E+04	1017.11			1.82E+04	1.02E+03
m	4	59.45	5.52E+04	626.89	9.16E+00	2.77E+00	5.52E+04	6.27E+02
	5	68.81	2.26E+03	645.84			2.26E+03	6.46E+02
	6	87.81	4.36E+04	782.68	7.64E+00	2.33E+00	4.36E+04	7.83E+02
	7	122.04	1.24E+04	464.01			1.24E+04	4.64E+02
	8	136.46	1.47E+03	292.44			1.47E+03	2.92E+02
	9	165.93	4.18E+03	340.41			4.18E+03	3.40E+02
	10	239.17	2.18E+02	190.32	7.31E+00	2.98E+00	2.10E+02	1.90E+02
	11	310.60	4.36E+02	239.86			4.36E+02	2.40E+02
	12	391.79	1.53E+03	215.43			1.53E+03	2.15E+02
	13	661.78	1.26E+04	304.51	1.54E+00	1.22E+00	1.26E+04	3.05E+02
	14	683.18	1.63E+02	116.95			1.63E+02	1.17E+02
	15	898.26	1.35E+03	188.54			1.35E+03	1.89E+02
	16	990.57	1.43E+02	131.39			1.43E+02	1.31E+02
	17	1173.47	1.18E+04	260.03	1.50E+00	1.13E+00	1.18E+04	2.60E+02
	18	1206.90	7.32E+01	86.52			7.32E+01	8.65E+01
	19	1332.77	1.06E+04	223.01			1.06E+04	2.23E+02
	20	1622.19	2.31E+01	27.06			2.31E+01	2.71E+01
	21	1720.80	1.49E+01	15.78			1.49E+01	1.58E+01
	22	1819.77	2.90E+01	18.06			2.90E+01	1.81E+01
	23	1836.34	7.50E+02	60.99			7.50E+02	6.10E+01
	24	1936.54	2.16E+01	13.82			2.16E+01	1.38E+01
	25	2204.59	1.81E+01	10.01			1.81E+01	1.00E+01
	26	2214.70	9.31E+00	9.17			9.31E+00	9.17E+00
	27	2250.86	9.93E+00	9.82			9.93E+00	9.82E+00
	28	2506.35	4.11E+01	14.36			4.11E+01	1.44E+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 1411131-01

GAS-1302

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	0.982	122.06	*	85.51	6.87E+01	7.08E+00
		136.48	*	10.60	7.14E+01	1.60E+01
CO-60	0.988	1173.22	*	100.00	1.41E+02	1.22E+01
		1332.49	*	100.00	1.43E+02	1.71E+01
Y-88	0.878	898.02	*	93.40	3.13E+02	5.03E+01
		1836.01	*	99.38	3.12E+02	3.56E+01
CD-109	0.986	88.03	*	3.72	2.62E+03	2.71E+02
SN-113	0.853	255.12		1.93		
		391.69	*	64.90	1.77E+02	3.35E+01
SN-126	0.991	87.57	*	37.00	1.22E+02	1.04E+01
CS-137	0.997	661.65	*	85.12	8.76E+01	8.62E+00
CE-139	0.932	165.85	*	80.35	1.10E+02	1.39E+01
PB-212	0.855	238.63	*	44.60	1.02E+00	9.33E-01
		300.09		3.41		
AM-241	0.999	59.54	*	35.90	1.31E+02	9.89E+00

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 1:31:26PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	22.36	6.79637E+01	0.40		
2	32.49	9.40416E-01	8.28		

Analysis Report for 1411131-01

GAS-1302

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	3	53.81	1.00935E+01	2.80		
	5	68.81	1.25766E+00	14.26		
	11	310.60	2.42469E-01	27.48	D-Esc	
	14	683.18	9.05333E-02	35.88		
	16	990.57	7.93812E-02	45.98		
	18	1206.90	4.06600E-02	59.11		
	20	1622.19	1.28148E-02	58.65		
	21	1720.80	8.25758E-03	53.08		
	22	1819.77	1.61111E-02	31.13		
	24	1936.54	1.20211E-02	31.94		
	25	2204.59	1.00417E-02	27.70	Tol.	BI-214
	26	2214.70	5.17094E-03	49.23		
	27	2250.86	5.51587E-03	49.47		
	28	2506.35	2.28093E-02	17.49	Sum	

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.98	122.06	*	85.51	6.87E+01	7.08E+00
		136.48	*	10.60	7.14E+01	1.60E+01
CO-60	0.98	1173.22	*	100.00	1.41E+02	1.22E+01
		1332.49	*	100.00	1.43E+02	1.71E+01
Y-88	0.87	898.02	*	93.40	3.13E+02	5.03E+01
		1836.01	*	99.38	3.12E+02	3.56E+01
CD-109	0.98	88.03	*	3.72	2.62E+03	2.71E+02
SN-113	0.85	255.12		1.93		
		391.69	*	64.90	1.77E+02	3.35E+01
SN-126	0.99	87.57	*	37.00	1.22E+02	1.04E+01
CS-137	0.99	661.65	*	85.12	8.76E+01	8.62E+00
CE-139	0.93	165.85	*	80.35	1.10E+02	1.39E+01
PB-212	0.85	238.63	*	44.60	1.02E+00	9.33E-01
		300.09		3.41		

Analysis Report for 1411131-01

GAS-1302

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AM-241	0.99	59.54	*	35.90	1.31E+02	9.89E+00

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	CO-57	0.982	6.91E+01	6.47E+00	
	CO-60	0.988	1.42E+02	9.96E+00	
	Y-88	0.878	3.12E+02	2.90E+01	
?	CD-109	0.986	2.62E+03	2.71E+02	
	SN-113	0.853	1.77E+02	3.35E+01	
?	SN-126	0.991	1.22E+02	1.04E+01	
	CS-137	0.997	8.76E+01	8.62E+00	
	CE-139	0.932	1.10E+02	1.39E+01	
	PB-212	0.855	1.02E+00	9.33E-01	
	AM-241	0.999	1.31E+02	9.89E+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 1411131-01

GAS-1302

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 1:31:26PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	22.36	6.79637E+01	0.40		
	2	32.49	9.40416E-01	8.28		
M	3	53.81	1.00935E+01	2.80		
	5	68.81	1.25766E+00	14.26		
	11	310.60	2.42469E-01	27.48	D-Esc	
	14	683.18	9.05333E-02	35.88		
	16	990.57	7.93812E-02	45.98		
	18	1206.90	4.06600E-02	59.11		
	20	1622.19	1.28148E-02	58.65		
	21	1720.80	8.25758E-03	53.08		
	22	1819.77	1.61111E-02	31.13		
	24	1936.54	1.20211E-02	31.94		
	25	2204.59	1.00417E-02	27.70	Tol.	BI-214
	26	2214.70	5.17094E-03	49.23		
	27	2250.86	5.51587E-03	49.47		
	28	2506.35	2.28093E-02	17.49	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	5.03E+03	7.97E+03	7.97E+03

Analysis Report for 1411131-01

GAS-1302

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		NA-22	1274.54		99.94	1.82E-01	1.14E+00	1.14E+00
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	1.80E-02	3.97E-01	3.97E-01
+		K-40	1460.81		10.67	9.08E-01	5.62E+00	5.62E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-1.28E+01	6.51E-01	6.51E-01
			78.34		96.00	-2.87E-01		7.05E-01
+		SC-46	889.25		99.98	-1.96E+01	1.09E+02	1.12E+02
			1120.51		99.99	5.86E+01		1.09E+02
+		V-48	983.52		99.98	-4.51E+09	3.83E+09	7.60E+09
			1312.10		97.50	-1.30E+09		3.83E+09
+		CR-51	320.08		9.83	-1.08E+06	3.12E+06	3.12E+06
+		MN-54	834.83		99.97	-1.06E+00	4.30E+00	4.30E+00
+		CO-56	846.75		99.96	-6.36E+01	7.55E+01	1.29E+02
			1037.75		14.03	3.72E+01		1.08E+03
			1238.25		67.00	-1.56E+01		1.16E+02
			1771.40		15.51	5.96E+00		2.94E+02
			2598.48		16.90	1.03E+01		7.55E+01
+		CO-57	122.06	*	85.51	6.87E+01	3.74E+00	3.74E+00
			136.48	*	10.60	7.14E+01		2.27E+01
+		CO-58	810.76		99.40	4.91E+01	2.06E+02	2.06E+02
+		FE-59	1099.22		56.50	1.18E+03	5.20E+03	8.64E+03
			1291.56		43.20	-2.18E+02		5.20E+03
+		CO-60	1173.22	*	100.00	1.41E+02	1.91E+00	2.85E+00
			1332.49	*	100.00	1.43E+02		1.91E+00
+		ZN-65	1115.52		50.75	1.21E+01	1.42E+01	1.42E+01
+	@	GA-67	93.31		35.70	1.00E+26	1.00E+26	1.00E+26
	@		208.95		2.24	1.00E+26		1.00E+26
	@		300.22		16.00	1.00E+26		1.00E+26
+		SE-75	121.11		16.70	1.84E+03	2.01E+01	1.02E+02
			136.00		59.20	5.64E+01		2.01E+01
			264.65		59.80	2.08E+00		2.51E+01
			279.53		25.20	1.24E+01		5.93E+01
			400.65		11.40	4.89E+00		1.60E+02
+		RB-82	776.52		13.00	-4.75E+05	1.08E+07	1.08E+07
+		RB-83	520.41		46.00	1.56E+01	1.37E+02	1.37E+02
			529.64		30.30	-1.53E+01		2.06E+02
			552.65		16.40	7.27E+01		3.83E+02
+		KR-85	513.99		0.43	1.09E+02	2.61E+02	2.61E+02
+		SR-85	513.99		99.27	1.05E+02	2.51E+02	2.51E+02
+		Y-88	898.02	*	93.40	3.13E+02	1.95E+01	6.69E+01
			1836.01	*	99.38	3.12E+02		1.95E+01
+		NB-93M	16.57		9.43	-3.72E+02	7.09E+00	7.09E+00
+		NB-94	702.63		100.00	-8.44E-01	1.14E+00	1.14E+00
			871.10		100.00	-1.32E+00		1.48E+00
+		NB-95	765.79		99.81	1.25E+04	3.16E+04	3.16E+04

Analysis Report for 1411131-01

GAS-1302

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	@	NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26
+		ZR-95	724.18		43.70	2.54E+02	5.66E+02	7.07E+02
			756.72		55.30	8.25E+01		5.66E+02
+	@	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	-4.56E+03	9.55E+03	9.55E+03
+		RU-106	621.84		9.80	-8.30E+00	2.92E+01	2.92E+01
+		AG-108M	433.93		89.90	1.52E-01	1.13E+00	1.13E+00
			614.37		90.40	-5.68E-01		1.18E+00
			722.95		90.50	-1.16E-01		1.32E+00
+		CD-109	88.03	*	3.72	2.62E+03	6.56E+01	6.56E+01
+		AG-110M	657.75		93.14	-4.77E-01	9.10E+00	1.12E+01
			677.61		10.53	-1.46E+01		4.36E+01
			706.67		16.46	3.17E+00		2.93E+01
			763.93		21.98	4.01E+00		2.32E+01
			884.67		71.63	-4.01E+00		9.10E+00
			1384.27		23.94	4.24E-01		9.24E+00
+		CD-113M	263.70		0.02	2.64E+03	3.60E+03	3.60E+03
+		SN-113	255.12		1.93	-4.15E+02	3.86E+01	8.69E+02
			391.69	*	64.90	1.77E+02		3.86E+01
+		TE123M	159.00		84.10	-1.61E+00	1.40E+01	1.40E+01
+		SB-124	602.71		97.87	-1.90E+02	3.99E+02	3.99E+02
			645.85		7.26	-1.71E+03		5.71E+03
			722.78		11.10	-6.54E+02		3.92E+03
			1691.02		49.00	2.81E+02		4.55E+02
+		I-125	35.49		6.49	-3.05E+03	2.15E+03	2.15E+03
+		SB-125	176.33		6.89	-3.85E-01	4.78E+00	1.27E+01
			427.89		29.33	-2.23E+00		4.78E+00
			463.38		10.35	-4.85E+00		1.49E+01
			600.56		17.80	-4.67E-01		8.47E+00
			635.90		11.32	4.52E+00		1.42E+01
+		SB-126	414.70		83.30	1.79E+11	3.30E+12	3.30E+12
			666.33		99.60	-3.61E+11		6.53E+12
			695.00		99.60	1.05E+12		3.32E+12
			720.50		53.80	3.16E+12		6.38E+12
+		SN-126	87.57	*	37.00	1.22E+02	3.06E+00	3.06E+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	-1.55E+01	8.94E-01	8.94E-01
			33.60		13.20	-8.74E+00		2.81E+00
			39.58		7.52	-2.56E+01		5.14E+00
+		I-131	284.30		6.05	1.04E+19	1.77E+19	2.09E+20
			364.48		81.20	-4.14E+18		1.77E+19
			636.97		7.26	-2.28E+19		2.53E+20
			722.89		1.80	-1.80E+20		1.08E+21
+	@	TE-132	49.72		13.10	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1411131-01

GAS-1302

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	@	TE-132	228.16		88.00	1.00E+26	1.00E+26	1.00E+26
+		BA-133	81.00		33.00	-9.19E-01	1.59E+00	2.30E+00
			302.84		17.80	-8.48E-01		4.82E+00
			356.01		60.00	2.40E-01		1.59E+00
+	@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+		CS-134	563.23		8.38	-1.29E+00	1.77E+00	1.95E+01
			569.32		15.43	1.18E+00		1.06E+01
			604.70		97.60	8.40E-01		1.77E+00
			795.84		85.40	4.44E-01		2.51E+00
			801.93		8.73	2.09E+00		2.47E+01
+		CS-135	268.24		16.00	2.03E+00	4.78E+00	4.78E+00
+	@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@		1260.41		28.60	1.00E+26		1.00E+26
	@		1678.03		9.54	1.00E+26		1.00E+26
+		CS-136	153.22		7.46	2.53E+12	7.59E+11	4.39E+12
			163.89		4.61	-6.45E+11		9.14E+12
			176.55		13.56	-7.55E+10		2.50E+12
			273.65		12.66	-1.66E+12		3.28E+12
			340.57		48.50	1.53E+11		9.61E+11
			818.50		99.70	1.41E+11		7.59E+11
			1048.07		79.60	9.06E+10		1.14E+12
			1235.34		19.70	-4.41E+11		2.40E+12
+		CS-137	661.65	*	85.12	8.76E+01	2.36E+00	2.36E+00
+		LA-138	788.74		34.00	-9.66E-01	8.51E-01	3.84E+00
			1435.80		66.00	5.20E-02		8.51E-01
+		CE-139	165.85	*	80.35	1.10E+02	1.38E+01	1.38E+01
+		BA-140	162.64		6.70	-2.46E+12	4.88E+12	1.35E+13
			304.84		4.50	-5.26E+12		2.09E+13
			423.70		3.20	3.17E+12		3.67E+13
			437.55		2.00	1.26E+13		6.15E+13
			537.32		25.00	2.67E+10		4.88E+12
+		LA-140	328.77		20.50	-1.24E+12	9.05E+11	4.80E+12
			487.03		45.50	-9.83E+11		2.69E+12
			815.85		23.50	-4.83E+11		6.95E+12
			1596.49		95.49	2.55E+11		9.05E+11
+		CE-141	145.44		48.40	3.00E+04	6.81E+04	6.81E+04
+	@	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	-8.82E-01	1.97E+01	1.97E+01
+		PM-144	476.78		42.00	2.57E+00	2.93E+00	6.79E+00
			618.01		98.60	1.68E+00		2.93E+00
			696.49		99.49	7.02E-01		3.08E+00
+		PM-145	36.85		21.70	-3.92E+00	9.87E-01	1.83E+00
			37.36		39.70	-2.73E+00		9.87E-01
			42.30		15.10	-8.47E+00		3.03E+00
			72.40		2.31	8.97E+00		2.91E+01
+		PM-146	453.90		39.94	3.56E-01	3.20E+00	3.20E+00
			735.90		14.01	-1.39E+00		1.00E+01

Analysis Report for 1411131-01

GAS-1302

		Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		PM-146	747.13	13.10	6.74E-01	3.20E+00	1.09E+01
+		ND-147	91.11	28.90	1.68E+16	4.59E+14	4.59E+14
			531.02	13.10	-6.24E+13		9.04E+14
+	@	PM-149	285.90	3.10	1.00E+26	1.00E+26	1.00E+26
+		EU-152	121.78	20.50	8.30E+01	3.99E+00	4.57E+00
			244.69	5.40	-3.13E+00		1.49E+01
			344.27	19.13	-1.03E+00		4.76E+00
			778.89	9.20	3.02E+00		1.48E+01
			964.01	10.40	-2.38E+00		1.80E+01
			1085.78	7.22	-7.09E+00		2.48E+01
			1112.02	9.60	4.48E+00		1.89E+01
			1407.95	14.94	2.21E-01		3.99E+00
+		GD-153	97.43	31.30	-4.35E+00	7.21E+00	7.21E+00
			103.18	22.20	4.75E+00		1.06E+01
+		EU-154	123.07	40.50	4.27E+01	2.40E+00	2.40E+00
			723.30	19.70	-5.90E-01		6.72E+00
			873.19	11.50	-1.06E+00		1.47E+01
			996.32	10.30	-7.51E-01		1.74E+01
			1004.76	17.90	-4.66E+00		9.98E+00
			1274.45	35.50	3.93E-01		2.46E+00
+		EU-155	86.50	30.90	1.74E+02	3.22E+00	4.60E+00
			105.30	20.70	1.39E+00		3.22E+00
+		EU-156	811.77	10.40	-4.24E+10	1.48E+11	1.91E+11
			1153.47	7.20	1.49E+11		2.83E+11
			1230.71	8.90	4.56E+10		1.48E+11
+		HO-166M	184.41	72.60	1.32E-01	9.01E-01	9.01E-01
			280.45	29.60	-4.55E-01		2.59E+00
			410.94	11.10	2.62E+00		8.61E+00
			711.69	54.10	1.45E-01		2.18E+00
+		TM-171	66.72	0.14	-4.85E+04	7.01E+02	7.01E+02
+		HF-172	81.75	4.52	-8.30E+00	1.23E+01	2.66E+01
			125.81	11.30	1.63E+00		1.23E+01
+	@	LU-172	181.53	20.60	1.00E+26	1.00E+26	1.00E+26
	@		810.06	16.63	1.00E+26		1.00E+26
	@		912.12	15.25	1.00E+26		1.00E+26
	@		1093.66	62.50	1.00E+26		1.00E+26
+		LU-173	100.72	5.24	9.92E+00	7.27E+00	2.06E+01
			272.11	21.20	-5.46E+00		7.27E+00
+		HF-175	343.40	84.00	-1.87E+01	1.63E+02	1.63E+02
+		LU-176	88.34	13.30	3.25E+02	8.09E-01	8.66E+00
			201.83	86.00	2.04E-02		8.09E-01
			306.78	94.00	8.13E-02		8.52E-01
+		TA-182	67.75	41.20	-6.48E+02	3.28E+01	3.28E+01
			1121.30	34.90	4.50E+00		9.88E+01
			1189.05	16.23	5.30E+01		1.62E+02
			1221.41	26.98	1.42E+01		7.84E+01
			1231.02	11.44	5.37E+01		1.74E+02
+		IR-192	308.46	29.68	1.24E+02	2.78E+02	3.32E+02
			468.07	48.10	-5.81E+01		2.78E+02

Analysis Report for 1411131-01

GAS-1302

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HG-203	279.19		77.30	4.30E+02	2.05E+03	2.05E+03
+	BI-207	569.67		97.72	1.20E-01	1.08E+00	1.08E+00
		1063.62		74.90	-4.69E-01		2.23E+00
+	TL-208	583.14		30.22	7.62E-01	7.49E-01	3.46E+00
		860.37		4.48	9.02E+00		3.34E+01
		2614.66		35.85	3.19E-01		7.49E-01
+	BI-210M	262.00		45.00	2.76E-01	1.71E+00	1.71E+00
		300.00		23.00	1.61E+00		3.46E+00
+	PB-210	46.50		4.25	-9.31E+00	1.38E+01	1.38E+01
+	PB-211	404.84		2.90	-6.60E-01	3.24E+01	3.24E+01
		831.96		2.90	-4.23E+01		4.69E+01
+	BI-212	727.17		11.80	2.51E+00	1.01E+01	1.01E+01
		1620.62		2.75	-2.47E+00		2.21E+01
+	PB-212	238.63	*	44.60	1.02E+00	1.52E+00	1.52E+00
		300.09		3.41	1.08E+01		2.33E+01
+	BI-214	609.31		46.30	5.31E-01	2.32E+00	2.32E+00
		1120.29		15.10	5.57E+00		1.04E+01
		1764.49		15.80	-2.08E+00		2.83E+00
		2204.22		4.98	-9.06E-02		7.99E+00
+	PB-214	295.21		19.19	3.18E+00	2.30E+00	4.14E+00
		351.92		37.19	-6.30E-01		2.30E+00
+	RN-219	401.80		6.50	4.04E+00	1.44E+01	1.44E+01
+	RA-223	323.87		3.88	-1.06E+00	2.11E+01	2.11E+01
+	RA-224	240.98		3.95	-4.19E+00	1.91E+01	1.91E+01
+	RA-225	40.00		31.00	-1.71E+11	3.43E+10	3.43E+10
+	RA-226	186.21		3.28	1.32E+01	2.03E+01	2.03E+01
+	TH-227	50.10		8.40	1.84E+01	6.64E+00	7.71E+00
		236.00		11.50	-2.03E+00		6.64E+00
		256.20		6.30	1.35E+00		1.21E+01
+	AC-228	338.32		11.40	9.91E-01	5.98E+00	7.39E+00
		911.07		27.70	-1.38E+00		5.98E+00
		969.11		16.60	-3.78E+00		1.00E+01
+	TH-230	48.44		16.90	9.42E+00	3.65E+00	3.65E+00
		62.85		4.60	7.63E+02		2.31E+01
		67.67		0.37	-3.22E+03		1.63E+02
+	PA-231	283.67		1.60	3.49E-01	3.40E+01	4.84E+01
		302.67		2.30	-5.98E+00		3.40E+01
+	TH-231	25.64		14.70	-5.89E+01	8.08E+00	8.08E+00
		84.21		6.40	1.63E+02		1.58E+01
+	PA-233	311.98		38.60	9.23E+05	1.12E+06	1.12E+06
+	PA-234	131.20		20.40	-3.16E-01	2.74E+00	2.74E+00
		733.99		8.80	9.90E-01		1.34E+01
		946.00		12.00	7.44E+00		1.53E+01
+	PA-234M	1001.03		0.92	-6.03E+01	1.73E+02	1.73E+02
+	TH-234	63.29		3.80	3.16E+02	2.42E+01	2.42E+01
+	U-235	143.76		10.50	-3.25E+00	5.47E+00	5.47E+00
		163.35		4.70	-1.15E+00		1.63E+01

Analysis Report for 1411131-01

GAS-1302

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	U-235	205.31		4.70	-1.41E+00	5.47E+00	1.50E+01
+	NP-237	86.50		12.60	3.51E+02	9.27E+00	9.27E+00
+ @	NP-239	106.10		22.70	1.00E+26	1.00E+26	1.00E+26
@		228.18		10.70	1.00E+26		1.00E+26
@		277.60		14.10	1.00E+26		1.00E+26
+	AM-241	59.54	*	35.90	1.31E+02	3.29E+00	3.29E+00
+	AM-243	74.67		66.00	-1.15E-01	9.76E-01	9.76E-01
+	CM-243	209.75		3.29	-4.12E+00	5.65E+00	2.28E+01
		228.14		10.60	4.23E+00		7.50E+00
		277.60		14.00	1.52E+00		5.65E+00

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	7.97E+03	7.97E+03	5.03E+03	3.94E+03
	NA-22	1274.54	99.94	1.14E+00	1.14E+00	1.82E-01	5.48E-01
@	NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09	99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65	99.76	3.97E-01	3.97E-01	1.80E-02	1.79E-01
	K-40	1460.81	10.67	5.62E+00	5.62E+00	9.08E-01	2.65E+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	6.51E-01	6.51E-01	-1.28E+01	3.24E-01
		78.34	96.00	7.05E-01		-2.87E-01	3.51E-01
	SC-46	889.25	99.98	1.12E+02	1.09E+02	-1.96E+01	5.51E+01
		1120.51	99.99	1.09E+02		5.86E+01	5.37E+01
	V-48	983.52	99.98	7.60E+09	3.83E+09	-4.51E+09	3.75E+09

Analysis Report for 1411131-01

GAS-1302

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	V-48	1312.10		97.50	3.83E+09	3.83E+09	-1.30E+09	1.85E+09
	CR-51	320.08		9.83	3.12E+06	3.12E+06	-1.08E+06	1.54E+06
	MN-54	834.83		99.97	4.30E+00	4.30E+00	-1.06E+00	2.12E+00
	CO-56	846.75		99.96	1.29E+02	7.55E+01	-6.36E+01	6.37E+01
		1037.75		14.03	1.08E+03		3.72E+01	5.30E+02
		1238.25		67.00	1.16E+02		-1.56E+01	5.62E+01
		1771.40		15.51	2.94E+02		5.96E+00	1.36E+02
		2598.48		16.90	7.55E+01		1.03E+01	2.39E+01
+	CO-57	122.06	*	85.51	3.74E+00	3.74E+00	6.87E+01	1.86E+00
		136.48	*	10.60	2.27E+01		7.14E+01	1.13E+01
	CO-58	810.76		99.40	2.06E+02	2.06E+02	4.91E+01	1.02E+02
	FE-59	1099.22		56.50	8.64E+03	5.20E+03	1.18E+03	4.26E+03
		1291.56		43.20	5.20E+03		-2.18E+02	2.50E+03
+	CO-60	1173.22	*	100.00	2.85E+00	1.91E+00	1.41E+02	1.41E+00
		1332.49	*	100.00	1.91E+00		1.43E+02	9.35E-01
	ZN-65	1115.52		50.75	1.42E+01	1.42E+01	1.21E+01	6.99E+00
@	GA-67	93.31		35.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		208.95		2.24	1.00E+26		1.00E+26	1.00E+20
@		300.22		16.00	1.00E+26		1.00E+26	1.00E+20
	SE-75	121.11		16.70	1.02E+02	2.01E+01	1.84E+03	5.08E+01
		136.00		59.20	2.01E+01		5.64E+01	1.00E+01
		264.65		59.80	2.51E+01		2.08E+00	1.24E+01
		279.53		25.20	5.93E+01		1.24E+01	2.94E+01
		400.65		11.40	1.60E+02		4.89E+00	7.92E+01
	RB-82	776.52		13.00	1.08E+07	1.08E+07	-4.75E+05	5.32E+06
	RB-83	520.41		46.00	1.37E+02	1.37E+02	1.56E+01	6.77E+01
		529.64		30.30	2.06E+02		-1.53E+01	1.02E+02
		552.65		16.40	3.83E+02		7.27E+01	1.89E+02
	KR-85	513.99		0.43	2.61E+02	2.61E+02	1.09E+02	1.29E+02
	SR-85	513.99		99.27	2.51E+02	2.51E+02	1.05E+02	1.24E+02
+	Y-88	898.02	*	93.40	6.69E+01	1.95E+01	3.13E+02	3.32E+01
		1836.01	*	99.38	1.95E+01		3.12E+02	9.17E+00
	NB-93M	16.57		9.43	7.09E+00	7.09E+00	-3.72E+02	3.53E+00
	NB-94	702.63		100.00	1.14E+00	1.14E+00	-8.44E-01	5.59E-01
		871.10		100.00	1.48E+00		-1.32E+00	7.31E-01
	NB-95	765.79		99.81	3.16E+04	3.16E+04	1.25E+04	1.56E+04
@	NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	ZR-95	724.18		43.70	7.07E+02	5.66E+02	2.54E+02	3.49E+02
		756.72		55.30	5.66E+02		8.25E+01	2.79E+02
@	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	9.55E+03	9.55E+03	-4.56E+03	4.72E+03
	RU-106	621.84		9.80	2.92E+01	2.92E+01	-8.30E+00	1.44E+01
	AG-108M	433.93		89.90	1.13E+00	1.13E+00	1.52E-01	5.60E-01
		614.37		90.40	1.18E+00		-5.68E-01	5.84E-01
		722.95		90.50	1.32E+00		-1.16E-01	6.50E-01
+	CD-109	88.03	*	3.72	6.56E+01	6.56E+01	2.62E+03	3.27E+01
	AG-110M	657.75		93.14	1.12E+01	9.10E+00	-4.77E-01	5.59E+00
		677.61		10.53	4.36E+01		-1.46E+01	2.15E+01
		706.67		16.46	2.93E+01		3.17E+00	1.44E+01
		763.93		21.98	2.32E+01		4.01E+00	1.14E+01
		884.67		71.63	9.10E+00		-4.01E+00	4.49E+00

Analysis Report for 1411131-01

GAS-1302

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AG-110M	1384.27		23.94	9.24E+00	9.10E+00	4.24E-01	4.35E+00
	CD-113M	263.70		0.02	3.60E+03	3.60E+03	2.64E+03	1.79E+03
+	SN-113	255.12		1.93	8.69E+02	3.86E+01	-4.15E+02	4.31E+02
		391.69	*	64.90	3.86E+01		1.77E+02	1.91E+01
	TE123M	159.00		84.10	1.40E+01	1.40E+01	-1.61E+00	6.97E+00
	SB-124	602.71		97.87	3.99E+02	3.99E+02	-1.90E+02	1.97E+02
		645.85		7.26	5.71E+03		-1.71E+03	2.82E+03
		722.78		11.10	3.92E+03		-6.54E+02	1.93E+03
		1691.02		49.00	4.55E+02		2.81E+02	2.13E+02
	I-125	35.49		6.49	2.15E+03	2.15E+03	-3.05E+03	1.07E+03
	SB-125	176.33		6.89	1.27E+01	4.78E+00	-3.85E-01	6.32E+00
		427.89		29.33	4.78E+00		-2.23E+00	2.37E+00
		463.38		10.35	1.49E+01		-4.85E+00	7.37E+00
		600.56		17.80	8.47E+00		-4.67E-01	4.18E+00
		635.90		11.32	1.42E+01		4.52E+00	7.02E+00
	SB-126	414.70		83.30	3.30E+12	3.30E+12	1.79E+11	1.63E+12
		666.33		99.60	6.53E+12		-3.61E+11	3.24E+12
		695.00		99.60	3.32E+12		1.05E+12	1.64E+12
		720.50		53.80	6.38E+12		3.16E+12	3.14E+12
+	SN-126	87.57	*	37.00	3.06E+00	3.06E+00	1.22E+02	1.53E+00
@	SB-127	473.00		25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		685.20		35.70	1.00E+26		1.00E+26	1.00E+20
@		783.80		14.70	1.00E+26		1.00E+26	1.00E+20
	I-129	29.78		57.00	8.94E-01	8.94E-01	-1.55E+01	4.45E-01
		33.60		13.20	2.81E+00		-8.74E+00	1.40E+00
		39.58		7.52	5.14E+00		-2.56E+01	2.56E+00
	I-131	284.30		6.05	2.09E+20	1.77E+19	1.04E+19	1.04E+20
		364.48		81.20	1.77E+19		-4.14E+18	8.74E+18
		636.97		7.26	2.53E+20		-2.28E+19	1.25E+20
		722.89		1.80	1.08E+21		-1.80E+20	5.30E+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	2.30E+00	1.59E+00	-9.19E-01	1.15E+00
		302.84		17.80	4.82E+00		-8.48E-01	2.39E+00
		356.01		60.00	1.59E+00		2.40E-01	7.86E-01
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CS-134	563.23		8.38	1.95E+01	1.77E+00	-1.29E+00	9.60E+00
		569.32		15.43	1.06E+01		1.18E+00	5.25E+00
		604.70		97.60	1.77E+00		8.40E-01	8.76E-01
		795.84		85.40	2.51E+00		4.44E-01	1.24E+00
		801.93		8.73	2.47E+01		2.09E+00	1.22E+01
	CS-135	268.24		16.00	4.78E+00	4.78E+00	2.03E+00	2.37E+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	4.39E+12	7.59E+11	2.53E+12	2.18E+12
		163.89		4.61	9.14E+12		-6.45E+11	4.55E+12
		176.55		13.56	2.50E+12		-7.55E+10	1.24E+12
		273.65		12.66	3.28E+12		-1.66E+12	1.63E+12
		340.57		48.50	9.61E+11		1.53E+11	4.76E+11
		818.50		99.70	7.59E+11		1.41E+11	3.74E+11
		1048.07		79.60	1.14E+12		9.06E+10	5.60E+11
		1235.34		19.70	2.40E+12		-4.41E+11	1.16E+12

Analysis Report for 1411131-01

GAS-1302

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	CS-137	661.65	*	85.12	2.36E+00	2.36E+00	8.76E+01	1.17E+00
	LA-138	788.74		34.00	3.84E+00	8.51E-01	-9.66E-01	1.89E+00
		1435.80		66.00	8.51E-01		5.20E-02	4.01E-01
+	CE-139	165.85	*	80.35	1.38E+01	1.38E+01	1.10E+02	6.85E+00
	BA-140	162.64		6.70	1.35E+13	4.88E+12	-2.46E+12	6.73E+12
		304.84		4.50	2.09E+13		-5.26E+12	1.04E+13
		423.70		3.20	3.67E+13		3.17E+12	1.82E+13
		437.55		2.00	6.15E+13		1.26E+13	3.04E+13
		537.32		25.00	4.88E+12		2.67E+10	2.41E+12
	LA-140	328.77		20.50	4.80E+12	9.05E+11	-1.24E+12	2.38E+12
		487.03		45.50	2.69E+12		-9.83E+11	1.33E+12
		815.85		23.50	6.95E+12		-4.83E+11	3.43E+12
		1596.49		95.49	9.05E+11		2.55E+11	4.30E+11
	CE-141	145.44		48.40	6.81E+04	6.81E+04	3.00E+04	3.38E+04
@	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	1.97E+01	1.97E+01	-8.82E-01	9.79E+00
	PM-144	476.78		42.00	6.79E+00	2.93E+00	2.57E+00	3.36E+00
		618.01		98.60	2.93E+00		1.68E+00	1.44E+00
		696.49		99.49	3.08E+00		7.02E-01	1.52E+00
	PM-145	36.85		21.70	1.83E+00	9.87E-01	-3.92E+00	9.12E-01
		37.36		39.70	9.87E-01		-2.73E+00	4.91E-01
		42.30		15.10	3.03E+00		-8.47E+00	1.51E+00
		72.40		2.31	2.91E+01		8.97E+00	1.45E+01
	PM-146	453.90		39.94	3.20E+00	3.20E+00	3.56E-01	1.58E+00
		735.90		14.01	1.00E+01		-1.39E+00	4.93E+00
		747.13		13.10	1.09E+01		6.74E-01	5.35E+00
	ND-147	91.11		28.90	4.59E+14	4.59E+14	1.68E+16	2.29E+14
		531.02		13.10	9.04E+14		-6.24E+13	4.47E+14
@	PM-149	285.90		3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	EU-152	121.78		20.50	4.57E+00	3.99E+00	8.30E+01	2.28E+00
		244.69		5.40	1.49E+01		-3.13E+00	7.39E+00
		344.27		19.13	4.76E+00		-1.03E+00	2.36E+00
		778.89		9.20	1.48E+01		3.02E+00	7.31E+00
		964.01		10.40	1.80E+01		-2.38E+00	8.88E+00
		1085.78		7.22	2.48E+01		-7.09E+00	1.22E+01
		1112.02		9.60	1.89E+01		4.48E+00	9.31E+00
		1407.95		14.94	3.99E+00		2.21E-01	1.88E+00
	GD-153	97.43		31.30	7.21E+00	7.21E+00	-4.35E+00	3.58E+00
		103.18		22.20	1.06E+01		4.75E+00	5.26E+00
	EU-154	123.07		40.50	2.40E+00	2.40E+00	4.27E+01	1.20E+00
		723.30		19.70	6.72E+00		-5.90E-01	3.31E+00
		873.19		11.50	1.47E+01		-1.06E+00	7.26E+00
		996.32		10.30	1.74E+01		-7.51E-01	8.55E+00
		1004.76		17.90	9.98E+00		-4.66E+00	4.92E+00
		1274.45		35.50	2.46E+00		3.93E-01	1.19E+00
	EU-155	86.50		30.90	4.60E+00	3.22E+00	1.74E+02	2.29E+00
		105.30		20.70	3.22E+00		1.39E+00	1.60E+00
	EU-156	811.77		10.40	1.91E+11	1.48E+11	-4.24E+10	9.42E+10
		1153.47		7.20	2.83E+11		1.49E+11	1.39E+11
		1230.71		8.90	1.48E+11		4.56E+10	7.15E+10
	HO-166M	184.41		72.60	9.01E-01	9.01E-01	1.32E-01	4.47E-01

Analysis Report for 1411131-01

GAS-1302

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	HO-166M	280.45		29.60	2.59E+00	9.01E-01	-4.55E-01	1.29E+00
		410.94		11.10	8.61E+00		2.62E+00	4.26E+00
		711.69		54.10	2.18E+00		1.45E-01	1.07E+00
	TM-171	66.72		0.14	7.01E+02	7.01E+02	-4.85E+04	3.49E+02
	HF-172	81.75		4.52	2.66E+01	1.23E+01	-8.30E+00	1.32E+01
		125.81		11.30	1.23E+01		1.63E+00	6.13E+00
@	LU-172	181.53		20.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		810.06		16.63	1.00E+26		1.00E+26	1.00E+20
@		912.12		15.25	1.00E+26		1.00E+26	1.00E+20
@		1093.66		62.50	1.00E+26		1.00E+26	1.00E+20
	LU-173	100.72		5.24	2.06E+01	7.27E+00	9.92E+00	1.02E+01
		272.11		21.20	7.27E+00		-5.46E+00	3.60E+00
	HF-175	343.40		84.00	1.63E+02	1.63E+02	-1.87E+01	8.07E+01
	LU-176	88.34		13.30	8.66E+00	8.09E-01	3.25E+02	4.32E+00
		201.83		86.00	8.09E-01		2.04E-02	4.01E-01
		306.78		94.00	8.52E-01		8.13E-02	4.22E-01
	TA-182	67.75		41.20	3.28E+01	3.28E+01	-6.48E+02	1.64E+01
		1121.30		34.90	9.88E+01		4.50E+00	4.86E+01
		1189.05		16.23	1.62E+02		5.30E+01	7.92E+01
		1221.41		26.98	7.84E+01		1.42E+01	3.80E+01
		1231.02		11.44	1.74E+02		5.37E+01	8.42E+01
	IR-192	308.46		29.68	3.32E+02	2.78E+02	1.24E+02	1.64E+02
		468.07		48.10	2.78E+02		-5.81E+01	1.37E+02
	HG-203	279.19		77.30	2.05E+03	2.05E+03	4.30E+02	1.01E+03
	BI-207	569.67		97.72	1.08E+00	1.08E+00	1.20E-01	5.32E-01
		1063.62		74.90	2.23E+00		-4.69E-01	1.10E+00
	TL-208	583.14		30.22	3.46E+00	7.49E-01	7.62E-01	1.71E+00
		860.37		4.48	3.34E+01		9.02E+00	1.65E+01
		2614.66		35.85	7.49E-01		3.19E-01	3.03E-01
	BI-210M	262.00		45.00	1.71E+00	1.71E+00	2.76E-01	8.49E-01
		300.00		23.00	3.46E+00		1.61E+00	1.71E+00
	PB-210	46.50		4.25	1.38E+01	1.38E+01	-9.31E+00	6.85E+00
	PB-211	404.84		2.90	3.24E+01	3.24E+01	-6.60E-01	1.61E+01
		831.96		2.90	4.69E+01		-4.23E+01	2.31E+01
	BI-212	727.17		11.80	1.01E+01	1.01E+01	2.51E+00	4.97E+00
		1620.62		2.75	2.21E+01		-2.47E+00	1.04E+01
+	PB-212	238.63	*	44.60	1.52E+00	1.52E+00	1.02E+00	7.53E-01
		300.09		3.41	2.33E+01		1.08E+01	1.16E+01
	BI-214	609.31		46.30	2.32E+00	2.32E+00	5.31E-01	1.14E+00
		1120.29		15.10	1.04E+01		5.57E+00	5.11E+00
		1764.49		15.80	2.83E+00		-2.08E+00	1.29E+00
		2204.22		4.98	7.99E+00		-9.06E-02	3.53E+00
	PB-214	295.21		19.19	4.14E+00	2.30E+00	3.18E+00	2.05E+00
		351.92		37.19	2.30E+00		-6.30E-01	1.14E+00
	RN-219	401.80		6.50	1.44E+01	1.44E+01	4.04E+00	7.13E+00
	RA-223	323.87		3.88	2.11E+01	2.11E+01	-1.06E+00	1.05E+01
	RA-224	240.98		3.95	1.91E+01	1.91E+01	-4.19E+00	9.49E+00
	RA-225	40.00		31.00	3.43E+10	3.43E+10	-1.71E+11	1.71E+10
	RA-226	186.21		3.28	2.03E+01	2.03E+01	1.32E+01	1.01E+01
	TH-227	50.10		8.40	7.71E+00	6.64E+00	1.84E+01	3.84E+00
		236.00		11.50	6.64E+00		-2.03E+00	3.29E+00
		256.20		6.30	1.21E+01		1.35E+00	6.02E+00
	AC-228	338.32		11.40	7.39E+00	5.98E+00	9.91E-01	3.66E+00

Analysis Report for 1411131-01

GAS-1302

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AC-228	911.07		27.70	5.98E+00	5.98E+00	-1.38E+00	2.95E+00
		969.11		16.60	1.00E+01		-3.78E+00	4.93E+00
	TH-230	48.44		16.90	3.65E+00	3.65E+00	9.42E+00	1.82E+00
		62.85		4.60	2.31E+01		7.63E+02	1.15E+01
		67.67		0.37	1.63E+02		-3.22E+03	8.13E+01
	PA-231	283.67		1.60	4.84E+01	3.40E+01	3.49E-01	2.40E+01
		302.67		2.30	3.40E+01		-5.98E+00	1.68E+01
	TH-231	25.64		14.70	8.08E+00	8.08E+00	-5.89E+01	4.03E+00
		84.21		6.40	1.58E+01		1.63E+02	7.88E+00
	PA-233	311.98		38.60	1.12E+06	1.12E+06	9.23E+05	5.53E+05
	PA-234	131.20		20.40	2.74E+00	2.74E+00	-3.16E-01	1.36E+00
		733.99		8.80	1.34E+01		9.90E-01	6.58E+00
		946.00		12.00	1.53E+01		7.44E+00	7.57E+00
	PA-234M	1001.03		0.92	1.73E+02	1.73E+02	-6.03E+01	8.50E+01
	TH-234	63.29		3.80	2.42E+01	2.42E+01	3.16E+02	1.21E+01
	U-235	143.76		10.50	5.47E+00	5.47E+00	-3.25E+00	2.72E+00
		163.35		4.70	1.63E+01		-1.15E+00	8.11E+00
		205.31		4.70	1.50E+01		-1.41E+00	7.45E+00
	NP-237	86.50		12.60	9.27E+00	9.27E+00	3.51E+02	4.62E+00
@	NP-239	106.10		22.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		228.18		10.70	1.00E+26		1.00E+26	1.00E+20
@		277.60		14.10	1.00E+26		1.00E+26	1.00E+20
+	AM-241	59.54	*	35.90	3.29E+00	3.29E+00	1.31E+02	1.64E+00
	AM-243	74.67		66.00	9.76E-01	9.76E-01	-1.15E-01	4.86E-01
	CM-243	209.75		3.29	2.28E+01	5.65E+00	-4.12E+00	1.13E+01
		228.14		10.60	7.50E+00		4.23E+00	3.72E+00
		277.60		14.00	5.65E+00		1.52E+00	2.80E+00

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

Analysis Report for 1411131-01

GAS-1302

No Data Review Comments Entered.

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

Sample Title: GAS-1302

Elapsed Live time: 1800
Elapsed Real Time: 1829

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	2	537	1801
17:	2048	2598	6854	26207	49259	37767	18685	17017
25:	11552	3567	1226	976	1013	1293	1682	1984
33:	1521	1217	1197	1265	1297	1245	1212	1406
41:	1539	1605	1778	1884	2083	2428	2789	3439
49:	3916	3925	3882	3818	4030	4145	4525	4947
57:	8617	19923	23853	11450	2830	1760	1795	2039
65:	2212	2356	2397	2449	2433	2344	2383	2296
73:	2317	2360	2316	2336	2351	2346	2345	2366
81:	2462	2564	2722	2808	3484	9115	17811	14578
89:	4694	1371	1128	1200	1157	1127	1019	1065
97:	1114	1193	1078	1034	1228	1176	1077	1129
105:	1116	1068	1094	1142	1137	1017	1119	1198
113:	1145	1162	1173	1114	1174	1209	1310	2873
121:	5783	5057	2100	1001	877	821	926	862
129:	908	861	855	853	836	972	1244	1493
137:	1094	830	770	844	808	865	831	793
145:	834	791	742	828	829	749	816	767
153:	804	794	780	828	784	741	768	756
161:	748	732	852	1508	2359	1989	996	687
169:	665	683	653	722	662	700	674	689
177:	639	663	712	670	651	668	765	729
185:	694	755	738	734	700	761	741	744
193:	668	675	704	695	710	699	677	676
201:	679	689	703	705	705	663	695	723
209:	674	699	724	698	795	705	738	747
217:	716	694	680	689	735	670	687	694
225:	703	721	660	694	669	708	654	680
233:	612	623	624	608	637	678	642	621
241:	550	582	557	558	565	567	621	585
249:	581	581	557	562	578	571	561	506
257:	533	563	592	525	557	498	543	503
265:	562	550	526	508	479	502	516	457
273:	481	458	467	503	495	489	498	455
281:	472	450	464	447	488	485	497	450
289:	443	469	417	474	480	448	452	460
297:	519	473	437	414	426	426	446	409
305:	389	432	420	460	467	500	441	433
313:	469	410	386	440	391	429	417	423
321:	419	455	399	409	450	406	364	380
329:	415	451	395	373	440	389	383	431
337:	401	433	413	396	362	424	410	391
345:	389	415	396	377	375	413	387	400
353:	388	367	376	380	392	405	414	371
361:	397	380	391	379	377	355	389	367

369:	364	380	370	363	388	348	384	344

Sample Title: GAS-1302

Channel								
377:	394	347	381	361	401	371	357	333
385:	365	352	346	370	380	644	927	813
393:	466	339	341	339	373	365	358	370
401:	364	353	380	348	324	343	361	376
409:	360	333	365	361	363	362	329	342
417:	373	344	325	363	329	369	378	376
425:	362	343	345	335	377	341	328	377
433:	377	381	336	355	363	365	369	367
441:	367	368	363	367	345	402	382	380
449:	351	358	372	366	386	366	368	395
457:	381	336	367	352	401	363	349	368
465:	373	341	381	391	364	385	345	328
473:	361	386	362	316	305	302	349	323
481:	301	294	294	277	296	283	273	299
489:	318	307	290	318	250	280	265	317
497:	260	288	259	275	280	294	260	265
505:	236	278	264	263	296	270	273	327
513:	256	241	265	259	248	260	241	259
521:	276	259	255	243	241	259	255	248
529:	227	231	258	250	213	232	238	244
537:	240	261	234	238	251	238	228	232
545:	212	236	206	244	230	216	206	217
553:	223	225	240	218	236	209	219	241
561:	205	211	238	198	216	209	223	212
569:	243	199	207	226	209	218	206	211
577:	201	209	208	192	202	240	235	209
585:	221	216	217	207	207	226	190	223
593:	212	218	214	224	206	199	197	210
601:	211	217	210	205	206	205	208	250
609:	201	219	193	186	195	196	197	192
617:	222	203	206	203	203	228	190	182
625:	209	202	217	254	203	204	229	190
633:	216	198	212	220	234	199	216	188
641:	199	193	234	228	212	195	180	189
649:	203	200	229	224	210	210	202	227
657:	231	240	617	2300	4761	4104	1549	330
665:	192	188	171	181	201	150	184	207
673:	164	158	176	198	183	188	179	153
681:	204	220	217	196	195	164	180	179
689:	195	190	190	189	152	207	184	196
697:	190	169	182	174	171	163	166	195
705:	167	187	174	214	184	181	185	173
713:	187	173	182	200	183	162	175	177
721:	179	199	199	186	155	180	170	197
729:	167	182	179	151	161	185	167	198
737:	151	175	174	173	147	183	161	174
745:	152	182	185	174	177	162	175	168
753:	165	183	155	174	164	172	184	181
761:	168	154	178	168	182	149	190	191
769:	197	161	143	166	196	180	161	163
777:	190	184	180	176	193	184	185	186
785:	169	201	206	206	192	158	168	172
793:	199	192	183	192	196	200	207	185

801:	180	195	167	166	199	207	183	183

Sample Title: GAS-1302

Channel								
809:	191	170	192	181	183	189	188	186
817:	180	198	196	207	206	176	175	186
825:	208	204	210	206	145	186	178	187
833:	180	186	175	183	196	188	197	186
841:	192	197	195	180	172	197	175	197
849:	186	189	218	192	200	203	177	190
857:	196	208	203	199	216	203	213	211
865:	204	200	203	178	214	189	187	204
873:	184	201	205	215	237	221	208	218
881:	187	234	217	214	229	196	215	212
889:	210	205	260	230	229	211	239	326
897:	577	708	496	289	219	199	205	229
905:	223	209	236	196	219	222	228	231
913:	226	217	248	222	224	269	236	245
921:	238	214	237	243	276	260	240	262
929:	225	267	227	233	273	259	229	282
937:	256	272	221	221	260	248	252	249
945:	275	243	249	284	277	248	261	240
953:	267	260	257	260	263	261	259	242
961:	251	233	247	216	208	208	211	189
969:	198	203	200	198	188	205	179	188
977:	183	222	184	192	182	155	208	163
985:	200	185	179	201	214	185	216	180
993:	183	170	163	198	161	197	170	163
1001:	181	163	184	166	160	182	172	187
1009:	192	186	187	169	160	187	166	187
1017:	170	165	206	179	165	164	179	191
1025:	168	194	168	174	171	187	176	151
1033:	166	171	186	158	157	175	166	174
1041:	202	162	181	175	175	172	163	164
1049:	161	164	176	178	162	156	154	173
1057:	175	156	155	161	155	177	163	149
1065:	127	186	158	175	162	141	184	190
1073:	166	147	169	163	150	186	174	175
1081:	151	157	155	159	168	160	180	141
1089:	154	181	163	152	189	162	175	149
1097:	160	169	151	178	160	162	156	161
1105:	141	157	187	155	156	160	173	178
1113:	133	171	153	153	149	148	149	130
1121:	132	117	117	117	108	109	99	115
1129:	113	96	104	95	105	103	101	107
1137:	107	104	90	94	103	106	106	92
1145:	112	115	83	92	87	82	91	103
1153:	96	105	103	96	119	87	81	83
1161:	84	92	90	89	90	103	98	92
1169:	100	165	645	2280	4152	3494	1321	270
1177:	77	68	72	64	62	71	74	71
1185:	63	69	71	71	55	66	58	78
1193:	71	61	55	49	67	54	56	48
1201:	50	51	62	47	51	42	45	54
1209:	50	60	36	41	44	57	37	43
1217:	48	50	47	27	42	38	35	37
1225:	41	39	27	35	38	34	38	40

1233:	34	37	34	30	23	27	34	32

Sample Title: GAS-1302

Channel								
1241:	36	34	32	30	27	31	34	23
1249:	31	36	22	37	22	31	26	29
1257:	33	27	24	26	26	20	26	25
1265:	25	36	32	25	25	32	23	21
1273:	22	18	22	40	28	22	24	20
1281:	20	28	26	23	24	27	28	24
1289:	22	25	22	28	24	29	17	23
1297:	25	26	20	17	35	27	25	30
1305:	38	21	26	30	26	24	26	18
1313:	33	25	14	26	28	30	22	31
1321:	21	31	29	40	25	40	42	27
1329:	48	296	1303	3131	3573	1913	475	67
1337:	13	15	10	15	10	16	12	15
1345:	13	11	11	9	8	10	12	11
1353:	15	12	11	16	9	10	11	8
1361:	10	17	9	15	10	8	7	8
1369:	8	5	7	10	7	5	9	13
1377:	5	11	14	10	11	10	12	6
1385:	12	6	9	11	12	3	12	12
1393:	12	12	11	7	20	13	12	15
1401:	11	11	15	12	4	12	12	11
1409:	11	10	14	6	7	8	9	18
1417:	8	7	10	10	5	10	9	11
1425:	9	7	8	5	9	6	8	3
1433:	20	5	10	8	11	13	9	12
1441:	13	14	8	15	5	6	9	14
1449:	7	11	9	7	11	13	8	10
1457:	11	8	17	9	16	11	9	9
1465:	11	11	11	9	14	11	10	5
1473:	12	7	11	14	16	10	16	13
1481:	10	11	10	3	5	9	11	9
1489:	14	13	15	11	13	12	12	9
1497:	12	17	12	10	8	15	12	10
1505:	11	6	8	15	10	8	15	13
1513:	8	13	13	12	8	9	6	12
1521:	8	13	14	7	10	10	15	5
1529:	12	11	9	10	10	8	8	9
1537:	9	2	13	10	14	5	15	10
1545:	16	10	10	8	16	13	15	6
1553:	17	16	17	11	17	15	12	9
1561:	12	11	11	7	7	14	7	16
1569:	11	8	12	10	8	13	16	16
1577:	11	13	11	10	10	11	12	12
1585:	19	10	13	10	14	13	8	19
1593:	17	10	15	19	11	13	18	13
1601:	11	8	14	13	10	22	17	6
1609:	11	15	11	9	11	13	9	11
1617:	6	9	7	15	7	9	16	12
1625:	5	4	7	9	9	9	9	11
1633:	14	13	8	7	11	6	7	7
1641:	8	10	12	3	8	15	8	9
1649:	10	6	7	12	9	4	8	5
1657:	12	7	13	9	11	8	13	11

1665:	4	2	7	4	10	7	7	6

Sample Title: GAS-1302

Channel								
1673:	6	11	7	10	9	3	4	11
1681:	4	6	5	8	5	7	5	9
1689:	16	4	8	10	11	8	8	8
1697:	4	3	5	4	5	8	12	4
1705:	8	3	8	5	8	6	8	8
1713:	0	7	3	7	4	5	5	5
1721:	8	8	2	2	3	5	7	3
1729:	5	7	2	5	7	6	4	3
1737:	6	6	4	4	4	6	3	5
1745:	2	5	3	6	4	1	5	3
1753:	3	4	2	5	6	5	1	5
1761:	0	3	4	7	3	6	4	5
1769:	1	0	8	6	6	4	8	2
1777:	4	2	4	4	5	5	7	2
1785:	4	5	3	4	3	6	3	7
1793:	3	3	3	2	0	5	4	3
1801:	4	3	3	5	3	3	3	4
1809:	6	0	0	1	2	1	2	3
1817:	1	9	5	6	6	4	7	1
1825:	2	4	2	3	2	4	2	3
1833:	9	36	106	221	225	122	33	9
1841:	6	2	3	3	1	4	1	1
1849:	4	3	5	5	2	3	2	3
1857:	1	1	3	1	2	5	1	5
1865:	1	0	1	3	3	2	4	1
1873:	6	1	2	2	2	0	2	0
1881:	2	1	3	2	1	2	2	3
1889:	3	4	2	4	1	2	1	2
1897:	3	0	2	3	4	0	1	2
1905:	4	2	4	3	3	1	1	1
1913:	1	0	3	5	3	3	2	3
1921:	3	6	5	3	3	1	5	2
1929:	3	2	2	0	3	2	3	4
1937:	6	6	2	2	1	0	3	1
1945:	3	3	3	2	1	1	2	4
1953:	1	4	2	2	0	2	2	3
1961:	1	3	3	3	2	3	2	1
1969:	2	2	1	0	3	1	2	1
1977:	1	4	3	0	3	1	4	1
1985:	0	3	2	2	4	0	1	2
1993:	1	4	1	2	2	2	4	3
2001:	5	1	3	6	1	5	4	1
2009:	2	1	1	1	2	3	1	1
2017:	4	1	2	2	1	1	2	1
2025:	1	3	3	3	3	2	1	4
2033:	2	3	1	2	3	2	2	3
2041:	1	1	1	2	1	0	2	1
2049:	2	2	1	0	2	4	3	3
2057:	2	2	0	3	4	2	0	0
2065:	2	1	2	3	2	0	2	1
2073:	2	1	4	1	1	1	1	1
2081:	3	2	0	0	2	2	2	3
2089:	2	2	3	6	1	3	0	2

2097:	2	3	3	0	4	0	3	4

Sample Title: GAS-1302

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

2529:	0	0	0	0	0	0	1	0

Sample Title: GAS-1302

Channel								
2537:	0	0	0	1	0	0	0	0
2545:	0	0	0	0	0	0	1	0
2553:	1	0	0	0	0	0	0	0
2561:	0	0	0	0	0	0	0	0
2569:	0	0	0	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	0	0	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	1	0	0	0	0	0	0	0
2609:	0	0	0	1	0	0	1	2
2617:	1	1	0	0	0	0	0	0
2625:	0	0	0	0	0	0	0	0
2633:	1	0	0	0	0	0	0	0
2641:	0	0	0	1	0	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	0	1	0	0	0	0	1
2673:	0	0	0	1	0	0	0	0
2681:	0	0	0	0	0	0	0	0
2689:	1	0	0	0	0	0	0	0
2697:	0	0	0	0	0	0	0	0
2705:	1	0	0	0	0	0	1	0
2713:	0	1	1	0	0	0	0	0
2721:	0	0	0	0	0	1	0	0
2729:	1	0	0	0	1	0	0	1
2737:	3	0	1	0	0	0	0	0
2745:	0	0	0	0	0	0	0	2
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	1	0	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	1	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	1
2801:	0	0	0	0	0	0	0	1
2809:	0	0	0	1	0	0	0	0
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	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	1	0	0	0	0	0
2865:	1	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	1	0	0	0	0	0	0
2913:	0	0	0	2	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	1	0	0
2945:	0	1	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: GAS-1302

Channel								
2969:	0	0	1	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	0	0	0	0
3017:	1	0	0	0	0	0	0	0
3025:	0	0	0	0	0	1	0	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	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	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	1	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	0	0	1	0	0
3129:	0	0	0	0	0	0	0	1
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	1	0	0	2
3153:	0	0	0	0	1	0	1	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	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	1	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	1	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	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	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	1	1	1	0
3297:	0	0	0	0	0	0	0	0
3305:	0	1	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	1	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	1	0	0
3353:	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	1
3377:	1	0	0	0	1	0	0	0
3385:	0	0	0	0	0	0	0	0

3393:	0	0	0	1	0	1	0	0

Sample Title: GAS-1302

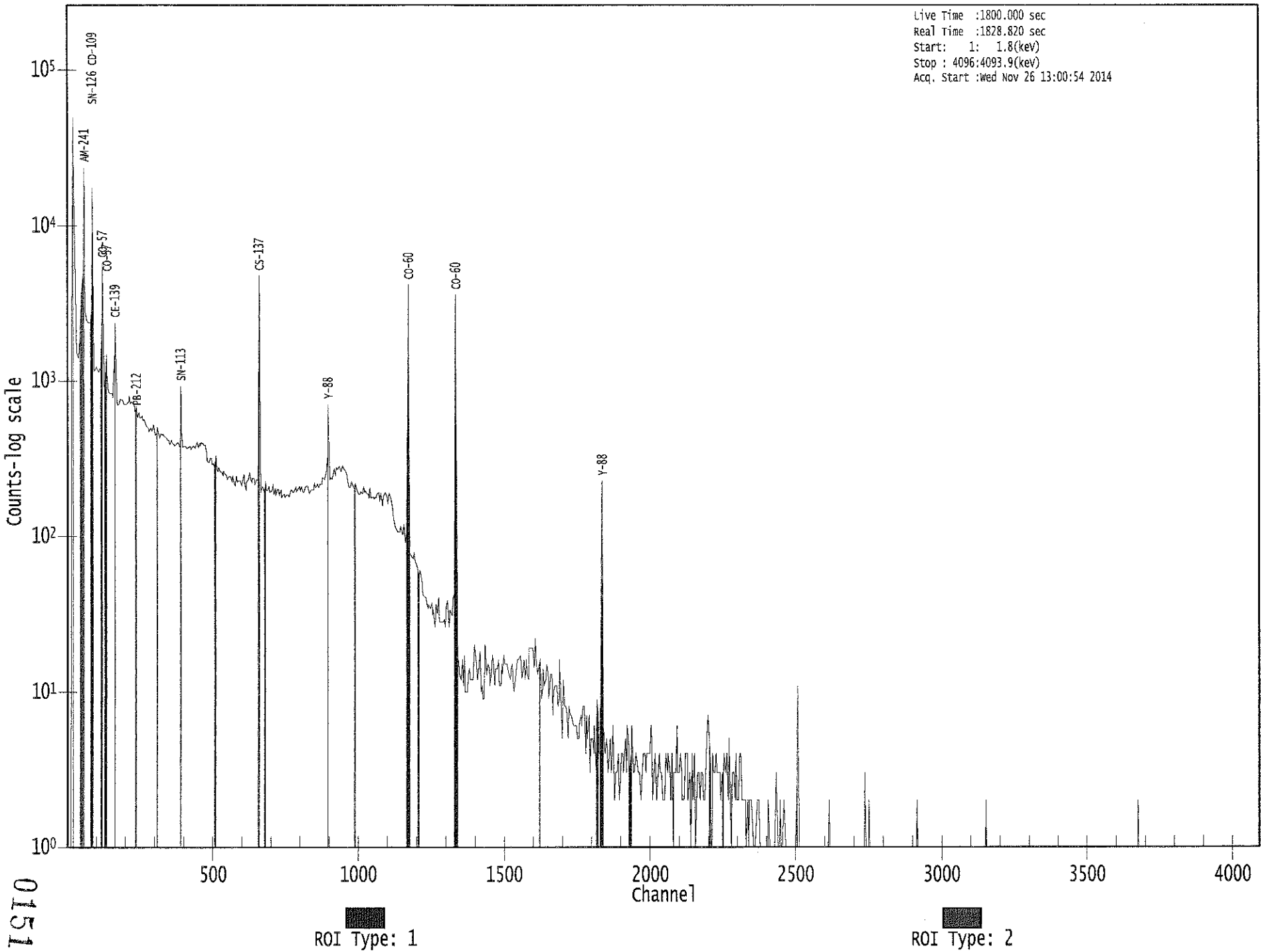
Channel								
3401:	0	0	0	1	0	0	0	0
3409:	0	0	0	0	0	0	1	0
3417:	0	0	1	0	0	0	0	1
3425:	0	0	0	1	0	0	0	0
3433:	0	0	0	0	0	0	0	1
3441:	0	0	0	0	0	0	0	0
3449:	1	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	1	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	1	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	1	0	0	0	0	1	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	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	1	0	0	0
3577:	0	1	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	1
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	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	2	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	1	1	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:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	1	0	0
3761:	0	0	0	0	1	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	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	1	0	0
3809:	0	0	0	1	0	0	0	0
3817:	0	0	0	0	0	0	1	0

3825:	0	0	0	0	0	0	0	0

Sample Title: GAS-1302

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

0000015656.CNF



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Apex-Gamma

Analysis Report for 1411131-02
BLANK

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11/26

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-02
Sample Description	: BLANK
Sample Type	: SOIL
Sample Size	: 7.834E+02 grams
Facility	: Countroom
Sample Taken On	: 11/26/2014 8:48:35AM
Acquisition Started	: 11/26/2014 12:00:02PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3600.9 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 11/8/2014
Efficiency Calibration Description	:
Sample Number	: 15647

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

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11/26/14

Analysis Report for 1411131-02

BLANK

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 1:00:04PM
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	45.25	44.51	0.0000	0.00
2	90.12	89.40	0.0000	0.00
3	184.07	183.38	0.0000	0.00
4	417.17	416.59	0.0000	0.00
5	510.00	509.46	0.0000	0.00
6	558.47	557.95	0.0000	0.00
7	791.89	791.48	0.0000	0.00
8	867.82	867.45	0.0000	0.00
9	883.55	883.19	0.0000	0.00
10	917.25	916.91	0.0000	0.00
11	955.52	955.20	0.0000	0.00
12	1048.79	1048.53	0.0000	0.00
13	1131.87	1131.65	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-02

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PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 1:00:04PM

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	45.25	39 -	50	44.51	8.79E+01	47.71	2.42E+02	1.86
2	90.12	82 -	96	89.40	1.37E+02	51.06	2.15E+02	9.33
3	184.07	177 -	187	183.38	3.67E+01	40.36	1.97E+02	2.18
4	417.17	412 -	421	416.59	2.38E+01	18.41	3.44E+01	2.27
5	510.00	505 -	514	509.46	3.30E+01	21.95	5.00E+01	1.33
6	558.47	555 -	561	557.95	8.50E+00	11.37	1.70E+01	2.18
7	791.89	788 -	794	791.48	6.64E+00	8.99	8.73E+00	2.46
8	867.82	865 -	870	867.45	5.83E+00	7.94	6.33E+00	1.99
9	883.55	879 -	887	883.19	9.53E+00	11.17	1.29E+01	5.01
10	917.25	912 -	921	916.91	1.17E+01	9.00	4.57E+00	7.34
11	955.52	951 -	960	955.20	1.50E+01	7.75	0.00E+00	6.99
12	1048.79	1044 -	1053	1048.53	1.04E+01	8.77	5.23E+00	4.84
13	1131.87	1128 -	1134	1131.65	7.22E+00	6.95	3.56E+00	1.20

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 1:00:04PM

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	45.25	39 -	50	8.79E+01	47.71	2.42E+02	3.61E+01
2	90.12	82 -	96	1.37E+02	51.06	2.15E+02	3.73E+01

Analysis Report for 1411131-02

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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
3	184.07	177 -	187	3.67E+01	40.36	1.97E+02	3.16E+01
4	417.17	412 -	421	2.38E+01	18.41	3.44E+01	1.28E+01
5	510.00	505 -	514	3.30E+01	21.95	5.00E+01	1.54E+01
6	558.47	555 -	561	8.50E+00	11.37	1.70E+01	8.02E+00
7	791.89	788 -	794	6.64E+00	8.99	8.73E+00	6.05E+00
8	867.82	865 -	870	5.83E+00	7.94	6.33E+00	5.18E+00
9	883.55	879 -	887	9.53E+00	11.17	1.29E+01	7.65E+00
10	917.25	912 -	921	1.17E+01	9.00	4.57E+00	4.80E+00
11	955.52	951 -	960	1.50E+01	7.75	0.00E+00	0.00E+00
12	1048.79	1044 -	1053	1.04E+01	8.77	5.23E+00	4.90E+00
13	1131.87	1128 -	1134	7.22E+00	6.95	3.56E+00	3.62E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 1:00:04PM

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	45.25	39 -	50	44.51	8.79E+01	47.71	2.42E+02	.....
2	90.12	82 -	96	89.40	1.37E+02	51.06	2.15E+02	ND-147
3	184.07	177 -	187	183.38	3.67E+01	40.36	1.97E+02	HO-166M
4	417.17	412 -	421	416.59	2.38E+01	18.41	3.44E+01	.....
5	510.00	505 -	514	509.46	3.30E+01	21.95	5.00E+01	.....
6	558.47	555 -	561	557.95	8.50E+00	11.37	1.70E+01	.....
7	791.89	788 -	794	791.48	6.64E+00	8.99	8.73E+00	.....
8	867.82	865 -	870	867.45	5.83E+00	7.94	6.33E+00	.....
9	883.55	879 -	887	883.19	9.53E+00	11.17	1.29E+01	.....
10	917.25	912 -	921	916.91	1.17E+01	9.00	4.57E+00	.....
11	955.52	951 -	960	955.20	1.50E+01	7.75	0.00E+00	.....
12	1048.79	1044 -	1053	1048.53	1.04E+01	8.77	5.23E+00	CS-136
13	1131.87	1128 -	1134	1131.65	7.22E+00	6.95	3.56E+00	I-135

Analysis Report for 1411131-02

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 1:00:04PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	45.25	8.79E+01	47.71	2.65E-02	1.78E-03
2	90.12	1.37E+02	51.06	1.93E-02	1.63E-03
3	184.07	3.67E+01	40.36	1.17E-02	1.16E-03
4	417.17	2.38E+01	18.41	5.62E-03	6.99E-04
5	510.00	3.30E+01	21.95	4.62E-03	5.63E-04
6	558.47	8.50E+00	11.37	4.22E-03	4.92E-04
7	791.89	6.64E+00	8.99	2.99E-03	2.67E-04
8	867.82	5.83E+00	7.94	2.74E-03	2.25E-04
9	883.55	9.53E+00	11.17	2.69E-03	2.16E-04
10	917.25	1.17E+01	9.00	2.59E-03	2.05E-04
11	955.52	1.50E+01	7.75	2.49E-03	2.01E-04
12	1048.79	1.04E+01	8.77	2.28E-03	1.89E-04
13	1131.87	7.22E+00	6.95	2.12E-03	1.78E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 1:00:04PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015428.CNF

Analysis Report for 1411131-02

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	45.25	8.79E+01	47.71			8.79E+01	4.77E+01
2	90.12	1.37E+02	51.06			1.37E+02	5.11E+01
3	184.07	3.67E+01	40.36			3.67E+01	4.04E+01
4	417.17	2.38E+01	18.41			2.38E+01	1.84E+01
5	510.00	3.30E+01	21.95			3.30E+01	2.20E+01
6	558.47	8.50E+00	11.37	0.00E+00	0.00E+00	8.50E+00	1.14E+01
7	791.89	6.64E+00	8.99			6.64E+00	8.99E+00
8	867.82	5.83E+00	7.94			5.83E+00	7.94E+00
9	883.55	9.53E+00	11.17			9.53E+00	1.12E+01
10	917.25	1.17E+01	9.00			1.17E+01	9.00E+00
11	955.52	1.50E+01	7.75			1.50E+01	7.75E+00
12	1048.79	1.04E+01	8.77			1.04E+01	8.77E+00
13	1131.87	7.22E+00	6.95			7.22E+00	6.95E+00

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 1:00:04PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015428.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	45.25	8.79E+01	47.71			8.79E+01	4.77E+01
2	90.12	1.37E+02	51.06			1.37E+02	5.11E+01
3	184.07	3.67E+01	40.36			3.67E+01	4.04E+01
4	417.17	2.38E+01	18.41			2.38E+01	1.84E+01
5	510.00	3.30E+01	21.95			3.30E+01	2.20E+01
6	558.47	8.50E+00	11.37	0.00E+00	0.00E+00	8.50E+00	1.14E+01
7	791.89	6.64E+00	8.99			6.64E+00	8.99E+00
8	867.82	5.83E+00	7.94			5.83E+00	7.94E+00
9	883.55	9.53E+00	11.17			9.53E+00	1.12E+01
10	917.25	1.17E+01	9.00			1.17E+01	9.00E+00
11	955.52	1.50E+01	7.75			1.50E+01	7.75E+00
12	1048.79	1.04E+01	8.77			1.04E+01	8.77E+00
13	1131.87	7.22E+00	6.95			7.22E+00	6.95E+00

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M = First peak in a multiplet region
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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
ND-147	0.613	91.11	*	28.90	2.36E-01	9.06E-02
		531.02		13.10		

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 1:00:04PM
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	45.25	2.44032E-02	27.15		
3	184.07	1.01872E-02	55.03	Tol.	HO-166M
4	417.17	6.60569E-03	38.71		
5	510.00	9.16667E-03	33.26		
6	558.47	2.36111E-03	66.88		
7	791.89	1.84343E-03	67.70		
8	867.82	1.62037E-03	68.03		
9	883.55	2.64757E-03	58.59		

Analysis Report for 1411131-02

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
10	917.25	3.25397E-03	38.41		
11	955.52	4.16667E-03	25.82		
12	1048.79	2.88462E-03	42.25	Tol.	CS-136
13	1131.87	2.00617E-03	48.09	Tol.	I-135

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
ND-147	0.61	91.11	*	28.90	2.36E-01	9.06E-02
		531.02		13.10		

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

INTERFERENCE CORRECTED REPORT

Analysis Report for 1411131-02

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Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
ND-147	0.613	2.36E-01	9.06E-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 1411131-02

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 1:00:04PM
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	45.25	2.44032E-02	27.15		
3	184.07	1.01872E-02	55.03	Tol.	HO-166M
4	417.17	6.60569E-03	38.71		
5	510.00	9.16667E-03	33.26		
6	558.47	2.36111E-03	66.88		
7	791.89	1.84343E-03	67.70		
8	867.82	1.62037E-03	68.03		
9	883.55	2.64757E-03	58.59		
10	917.25	3.25397E-03	38.41		
11	955.52	4.16667E-03	25.82		
12	1048.79	2.88462E-03	42.25	Tol.	CS-136
13	1131.87	2.00617E-03	48.09	Tol.	I-135

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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	-5.61E-02	4.77E-01	4.77E-01
+	NA-22	1274.54	99.94	1.51E-02	7.11E-02	7.11E-02
+	NA-24	1368.53	99.99	4.15E-02	1.02E-01	1.16E-01
		2754.09	99.86	1.83E-03		1.02E-01
+	AL-26	1808.65	99.76	-9.11E-03	9.64E-02	9.64E-02

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Analysis Report for 1411131-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	K-40	1460.81	10.67	3.11E-01	8.46E-01	8.46E-01
+	AR-41	1293.64	99.16	1.23E-01	3.77E-01	3.77E-01
+	TI-44	67.88	94.40	1.13E-02	2.56E-02	2.75E-02
		78.34	96.00	-5.09E-03		2.56E-02
+	SC-46	889.25	99.98	-3.14E-03	6.99E-02	6.99E-02
		1120.51	99.99	1.79E-02		7.80E-02
+	V-48	983.52	99.98	-2.39E-02	6.63E-02	6.63E-02
		1312.10	97.50	1.78E-02		8.47E-02
+	CR-51	320.08	9.83	-6.68E-02	4.50E-01	4.50E-01
+	MN-54	834.83	99.97	8.19E-03	6.79E-02	6.79E-02
+	CO-56	846.75	99.96	-1.34E-02	6.45E-02	6.45E-02
		1037.75	14.03	5.94E-03		5.17E-01
		1238.25	67.00	3.67E-02		1.28E-01
		1771.40	15.51	-4.33E-02		4.66E-01
		2598.48	16.90	-1.76E-01		4.90E-01
+	CO-57	122.06	85.51	1.99E-03	3.31E-02	3.31E-02
		136.48	10.60	1.80E-01		3.23E-01
+	CO-58	810.76	99.40	-1.98E-03	5.75E-02	5.75E-02
+	FE-59	1099.22	56.50	4.67E-02	1.47E-01	1.47E-01
		1291.56	43.20	-1.45E-02		1.67E-01
+	CO-60	1173.22	100.00	1.40E-03	7.40E-02	8.13E-02
		1332.49	100.00	3.50E-03		7.40E-02
+	ZN-65	1115.52	50.75	9.61E-03	1.32E-01	1.32E-01
+	GA-67	93.31	35.70	4.80E-02	8.73E-02	8.73E-02
		208.95	2.24	-2.19E-01		1.66E+00
		300.22	16.00	1.84E-01		3.51E-01
+	SE-75	121.11	16.70	-3.65E-02	5.70E-02	1.66E-01
		136.00	59.20	2.74E-02		5.70E-02
		264.65	59.80	-2.91E-02		6.33E-02
		279.53	25.20	3.79E-02		1.77E-01
		400.65	11.40	-2.93E-02		3.94E-01
+	RB-82	776.52	13.00	9.70E-02	5.03E-01	5.03E-01
+	RB-83	520.41	46.00	-3.50E-02	1.06E-01	1.06E-01
		529.64	30.30	-2.15E-02		1.52E-01
		552.65	16.40	1.63E-02		3.08E-01
+	KR-85	513.99	0.43	1.50E+00	1.65E+01	1.65E+01
+	SR-85	513.99	99.27	6.56E-03	7.23E-02	7.23E-02
+	Y-88	898.02	93.40	-3.88E-03	7.48E-02	7.80E-02
		1836.01	99.38	-4.02E-02		7.48E-02
+	NB-93M	16.57	9.43	3.78E-01	2.25E-01	2.25E-01
+	NB-94	702.63	100.00	-2.14E-02	5.90E-02	5.90E-02
		871.10	100.00	-5.86E-03		6.61E-02
+	NB-95	765.79	99.81	2.08E-02	7.48E-02	7.48E-02
+	NB-95M	235.69	25.00	6.09E-03	1.77E-01	1.77E-01
+	ZR-95	724.18	43.70	-2.71E-02	1.08E-01	1.12E-01
		756.72	55.30	5.55E-03		1.08E-01
+	MO-99	181.06	6.20	-8.74E-02	5.04E-01	6.72E-01

Analysis Report for 1411131-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	MO-99	739.58	12.80	1.13E-02	5.04E-01	5.04E-01
		778.00	4.50	1.72E-01		1.32E+00
+	RU-103	497.08	89.00	8.00E-03	6.80E-02	6.80E-02
+	RU-106	621.84	9.80	1.20E-01	7.15E-01	7.15E-01
+	AG-108M	433.93	89.90	6.43E-03	5.72E-02	5.72E-02
		614.37	90.40	1.41E-03		7.77E-02
		722.95	90.50	6.11E-03		6.09E-02
+	CD-109	88.03	3.72	1.34E-01	8.04E-01	8.04E-01
+	AG-110M	657.75	93.14	-3.52E-02	6.58E-02	6.58E-02
		677.61	10.53	6.96E-02		6.14E-01
		706.67	16.46	0.00E+00		3.91E-01
		763.93	21.98	9.57E-02		3.31E-01
		884.67	71.63	2.24E-02		1.06E-01
		1384.27	23.94	4.43E-02		3.40E-01
+	CD-113M	263.70	0.02	-8.13E+01	1.69E+02	1.69E+02
+	SN-113	255.12	1.93	-3.38E-01	7.58E-02	2.22E+00
		391.69	64.90	-3.16E-03		7.58E-02
+	TE123M	159.00	84.10	1.36E-02	4.45E-02	4.45E-02
+	SB-124	602.71	97.87	-2.16E-03	6.73E-02	6.73E-02
		645.85	7.26	-3.07E-01		8.50E-01
		722.78	11.10	8.53E-02		5.15E-01
		1691.02	49.00	-7.91E-02		1.22E-01
+	I-125	35.49	6.49	-3.64E-02	2.83E-01	2.83E-01
+	SB-125	176.33	6.89	-1.42E-01	1.75E-01	5.57E-01
		427.89	29.33	6.02E-02		1.75E-01
		463.38	10.35	-1.02E-01		5.15E-01
		600.56	17.80	3.54E-02		3.56E-01
		635.90	11.32	1.94E-01		5.70E-01
+	SB-126	414.70	83.30	-9.93E-03	6.13E-02	6.13E-02
		666.33	99.60	-2.74E-03		6.98E-02
		695.00	99.60	3.36E-02		7.41E-02
		720.50	53.80	4.81E-02		1.17E-01
+	SN-126	87.57	37.00	1.34E-02	8.06E-02	8.06E-02
+	SB-127	473.00	25.00	-4.21E-03	1.66E-01	2.13E-01
		685.20	35.70	-5.63E-02		1.66E-01
		783.80	14.70	-1.91E-01		2.91E-01
+	I-129	29.78	57.00	-2.26E-03	3.53E-02	3.53E-02
		33.60	13.20	-1.56E-02		1.43E-01
		39.58	7.52	-3.22E-02		2.52E-01
+	I-131	284.30	6.05	-3.13E-01	6.28E-02	7.72E-01
		364.48	81.20	-4.42E-03		6.28E-02
		636.97	7.26	4.58E-01		9.37E-01
		722.89	1.80	5.32E-01		3.21E+00
+	TE-132	49.72	13.10	-6.15E-03	4.62E-02	1.75E-01
		228.16	88.00	-5.52E-03		4.62E-02
+	BA-133	81.00	33.00	-1.95E-02	7.73E-02	7.73E-02
		302.84	17.80	1.28E-02		2.89E-01
		356.01	60.00	6.17E-02		1.00E-01
+	I-133	529.87	86.30	-8.53E-03	6.02E-02	6.02E-02

Analysis Report for 1411131-02

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-134	563.23		8.38	1.42E-01	6.65E-02	6.70E-01
		569.32		15.43	2.04E-02		3.68E-01
		604.70		97.60	-2.52E-02		6.65E-02
		795.84		85.40	4.49E-03		7.81E-02
		801.93		8.73	2.12E-01		7.23E-01
+	CS-135	268.24		16.00	-6.92E-02	2.29E-01	2.29E-01
+	I-135	1131.51		22.50	7.77E-02	4.47E-01	5.14E-01
		1260.41		28.60	7.27E-02		4.47E-01
		1678.03		9.54	-3.96E-01		7.28E-01
+	CS-136	153.22		7.46	-9.22E-02	6.51E-02	4.71E-01
		163.89		4.61	-1.63E-01		7.95E-01
		176.55		13.56	-7.27E-02		2.85E-01
		273.65		12.66	-5.80E-02		3.10E-01
		340.57		48.50	3.14E-02		1.05E-01
		818.50		99.70	3.52E-03		6.51E-02
		1048.07		79.60	3.82E-02		1.04E-01
		1235.34		19.70	-1.36E-02		3.97E-01
+	CS-137	661.65		85.12	4.67E-02	8.47E-02	8.47E-02
+	LA-138	788.74		34.00	1.25E-02	1.54E-01	1.77E-01
		1435.80		66.00	5.38E-02		1.54E-01
+	CE-139	165.85		80.35	1.75E-03	4.68E-02	4.68E-02
+	BA-140	162.64		6.70	-7.30E-02	2.03E-01	5.60E-01
		304.84		4.50	6.22E-01		1.13E+00
		423.70		3.20	4.73E-02		1.51E+00
		437.55		2.00	-7.89E-01		2.50E+00
		537.32		25.00	1.02E-01		2.03E-01
+	LA-140	328.77		20.50	-3.73E-03	9.74E-02	2.22E-01
		487.03		45.50	3.86E-02		1.14E-01
		815.85		23.50	1.02E-01		2.93E-01
		1596.49		95.49	6.49E-03		9.74E-02
+	CE-141	145.44		48.40	-1.10E-02	6.98E-02	6.98E-02
+	CE-143	57.36		11.80	-1.12E-01	1.36E-01	1.92E-01
		293.26		42.00	3.61E-02		1.36E-01
		664.55		5.20	2.99E-03		1.45E+00
+	CE-144	133.54		10.80	-1.87E-02	2.91E-01	2.91E-01
+	PM-144	476.78		42.00	-6.27E-02	7.23E-02	1.13E-01
		618.01		98.60	1.69E-02		7.28E-02
		696.49		99.49	1.95E-02		7.23E-02
+	PM-145	36.85		21.70	-3.47E-03	4.69E-02	8.58E-02
		37.36		39.70	-7.50E-03		4.69E-02
		42.30		15.10	8.51E-03		1.40E-01
		72.40		2.31	3.61E-01		1.11E+00
+	PM-146	453.90		39.94	-6.38E-02	1.23E-01	1.23E-01
		735.90		14.01	3.04E-02		4.28E-01
		747.13		13.10	-1.15E-01		4.50E-01
+	ND-147	91.11	*	28.90	2.36E-01	1.34E-01	1.34E-01
		531.02		13.10	-2.18E-02		3.55E-01
+	PM-149	285.90		3.10	-8.78E-01	1.54E+00	1.54E+00
+	EU-152	121.78		20.50	8.27E-03	1.38E-01	1.38E-01

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Analysis Report for 1411131-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-152	244.69	5.40	2.61E-01	1.38E-01	8.39E-01
		344.27	19.13	-1.42E-01		2.33E-01
		778.89	9.20	8.10E-02		6.21E-01
		964.01	10.40	-1.49E-01		4.48E-01
		1085.78	7.22	3.17E-01		1.05E+00
		1112.02	9.60	-2.31E-01		5.55E-01
		1407.95	14.94	-9.83E-03		4.83E-01
+	GD-153	97.43	31.30	1.01E-02	8.36E-02	8.36E-02
		103.18	22.20	1.33E-02		1.19E-01
+	EU-154	123.07	40.50	-2.97E-02	6.54E-02	6.54E-02
		723.30	19.70	2.81E-02		2.80E-01
		873.19	11.50	3.32E-02		5.10E-01
		996.32	10.30	1.14E-01		7.31E-01
		1004.76	17.90	-1.58E-01		3.57E-01
		1274.45	35.50	4.26E-02		2.00E-01
+	EU-155	86.50	30.90	-9.71E-02	8.79E-02	8.79E-02
		105.30	20.70	-6.17E-02		1.31E-01
+	EU-156	811.77	10.40	-1.47E-01	5.29E-01	5.29E-01
		1153.47	7.20	2.57E-01		9.65E-01
		1230.71	8.90	2.17E-01		7.24E-01
+	HO-166M	184.41	72.60	5.09E-03	5.79E-02	5.79E-02
		280.45	29.60	6.35E-02		1.55E-01
		410.94	11.10	6.83E-02		4.14E-01
		711.69	54.10	5.33E-03		1.22E-01
+	TM-171	66.72	0.14	5.88E+00	1.83E+01	1.83E+01
+	HF-172	81.75	4.52	-1.11E-01	2.36E-01	5.65E-01
		125.81	11.30	-6.88E-02		2.36E-01
+	LU-172	181.53	20.60	6.59E-02	1.13E-01	2.09E-01
		810.06	16.63	-1.20E-02		3.48E-01
		912.12	15.25	-1.80E-02		4.61E-01
		1093.66	62.50	1.95E-02		1.13E-01
+	LU-173	100.72	5.24	1.55E-01	1.85E-01	4.83E-01
		272.11	21.20	4.34E-02		1.85E-01
+	HF-175	343.40	84.00	3.19E-03	5.49E-02	5.49E-02
+	LU-176	88.34	13.30	2.13E-01	4.49E-02	2.35E-01
		201.83	86.00	8.11E-03		4.49E-02
		306.78	94.00	-1.11E-02		4.96E-02
+	TA-182	67.75	41.20	2.59E-02	6.30E-02	6.30E-02
		1121.30	34.90	3.85E-02		2.14E-01
		1189.05	16.23	1.46E-01		5.86E-01
		1221.41	26.98	-4.99E-02		1.93E-01
		1231.02	11.44	1.68E-01		5.60E-01
+	IR-192	308.46	29.68	-1.04E-01	1.12E-01	1.42E-01
		468.07	48.10	2.21E-02		1.12E-01
+	HG-203	279.19	77.30	1.23E-02	5.79E-02	5.79E-02
+	BI-207	569.67	97.72	3.23E-03	5.81E-02	5.81E-02
		1063.62	74.90	-5.56E-02		1.03E-01
+	TL-208	583.14	30.22	-4.64E-02	2.11E-01	2.11E-01
		860.37	4.48	1.17E-01		1.78E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TL-208	2614.66	35.85	7.81E-02	2.11E-01	3.27E-01
+	BI-210M	262.00	45.00	6.18E-02	9.73E-02	9.73E-02
		300.00	23.00	1.84E-01		2.42E-01
+	PB-210	46.50	4.25	4.67E-01	5.37E-01	5.37E-01
+	PB-211	404.84	2.90	-4.37E-01	1.46E+00	1.46E+00
		831.96	2.90	3.71E-01		2.40E+00
+	BI-212	727.17	11.80	2.50E-02	4.35E-01	4.35E-01
		1620.62	2.75	-1.32E-01		2.72E+00
+	PB-212	238.63	44.60	1.21E-02	9.93E-02	9.93E-02
		300.09	3.41	1.24E+00		1.63E+00
+	BI-214	609.31	46.30	3.34E-02	1.55E-01	1.55E-01
		1120.29	15.10	1.18E-01		5.16E-01
		1764.49	15.80	-7.52E-02		4.55E-01
		2204.22	4.98	6.38E-01		1.92E+00
+	PB-214	295.21	19.19	-4.45E-02	1.44E-01	2.72E-01
		351.92	37.19	5.95E-02		1.44E-01
+	RN-219	401.80	6.50	-2.61E-01	6.69E-01	6.69E-01
+	RA-223	323.87	3.88	1.94E-01	1.18E+00	1.18E+00
+	RA-224	240.98	3.95	1.40E-01	1.14E+00	1.14E+00
+	RA-225	40.00	31.00	-7.88E-03	6.18E-02	6.18E-02
+	RA-226	186.21	3.28	5.22E-02	1.31E+00	1.31E+00
+	TH-227	50.10	8.40	-9.31E-03	2.64E-01	2.64E-01
		236.00	11.50	1.29E-02		3.74E-01
		256.20	6.30	1.63E-01		6.92E-01
+	AC-228	338.32	11.40	1.02E-01	2.21E-01	4.44E-01
		911.07	27.70	-4.15E-02		2.21E-01
		969.11	16.60	-3.24E-02		3.52E-01
+	TH-230	48.44	16.90	-2.05E-03	1.34E-01	1.34E-01
		62.85	4.60	3.16E-01		5.45E-01
		67.67	0.37	2.89E+00		7.01E+00
+	PA-231	283.67	1.60	-8.88E-02	2.23E+00	2.90E+00
		302.67	2.30	9.89E-02		2.23E+00
+	TH-231	25.64	14.70	-4.20E-02	1.46E-01	1.46E-01
		84.21	6.40	-4.85E-02		4.18E-01
+	PA-233	311.98	38.60	2.02E-02	1.18E-01	1.18E-01
+	PA-234	131.20	20.40	-2.76E-02	1.44E-01	1.44E-01
		733.99	8.80	4.59E-02		6.58E-01
		946.00	12.00	-3.24E-01		5.29E-01
+	PA-234M	1001.03	0.92	-9.54E-01	7.28E+00	7.28E+00
+	TH-234	63.29	3.80	1.76E-01	6.45E-01	6.45E-01
+	U-235	143.76	10.50	0.00E+00	3.24E-01	3.24E-01
		163.35	4.70	-1.58E-01		7.72E-01
		205.31	4.70	3.67E-01		8.08E-01
+	NP-237	86.50	12.60	-2.38E-01	2.16E-01	2.16E-01
+	NP-239	106.10	22.70	-5.92E-02	1.25E-01	1.25E-01
		228.18	10.70	6.06E-02		3.96E-01
		277.60	14.10	-3.92E-02		3.19E-01

Analysis Report for 1411131-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AM-241	59.54	35.90	-1.43E-03	6.29E-02	6.29E-02
+	AM-243	74.67	66.00	4.84E-03	3.81E-02	3.81E-02
+	CM-243	209.75	3.29	-6.33E-01	3.07E-01	1.07E+00
		228.14	10.60	-4.43E-02		3.71E-01
		277.60	14.00	-3.78E-02		3.07E-01

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

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	4.77E-01	4.77E-01	-5.61E-02	2.13E-01
NA-22	1274.54	99.94	7.11E-02	7.11E-02	1.51E-02	2.87E-02
NA-24	1368.53	99.99	1.16E-01	1.02E-01	4.15E-02	4.91E-02
	2754.09	99.86	1.02E-01		1.83E-03	3.61E-02
AL-26	1808.65	99.76	9.64E-02	9.64E-02	-9.11E-03	3.89E-02
K-40	1460.81	10.67	8.46E-01	8.46E-01	3.11E-01	3.51E-01
AR-41	1293.64	99.16	3.77E-01	3.77E-01	1.23E-01	1.60E-01
TI-44	67.88	94.40	2.75E-02	2.56E-02	1.13E-02	1.31E-02
	78.34	96.00	2.56E-02		-5.09E-03	1.22E-02
SC-46	889.25	99.98	6.99E-02	6.99E-02	-3.14E-03	3.01E-02
	1120.51	99.99	7.80E-02		1.79E-02	3.29E-02
V-48	983.52	99.98	6.63E-02	6.63E-02	-2.39E-02	2.78E-02
	1312.10	97.50	8.47E-02		1.78E-02	3.51E-02
CR-51	320.08	9.83	4.50E-01	4.50E-01	-6.68E-02	2.07E-01
MN-54	834.83	99.97	6.79E-02	6.79E-02	8.19E-03	2.94E-02
CO-56	846.75	99.96	6.45E-02	6.45E-02	-1.34E-02	2.76E-02
	1037.75	14.03	5.17E-01		5.94E-03	2.18E-01
	1238.25	67.00	1.28E-01		3.67E-02	5.39E-02

Analysis Report for 1411131-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-56	1771.40	15.51	4.66E-01	6.45E-02	-4.33E-02	1.74E-01
	2598.48	16.90	4.90E-01		-1.76E-01	1.74E-01
CO-57	122.06	85.51	3.31E-02	3.31E-02	1.99E-03	1.56E-02
	136.48	10.60	3.23E-01		1.80E-01	1.53E-01
CO-58	810.76	99.40	5.75E-02	5.75E-02	-1.98E-03	2.43E-02
FE-59	1099.22	56.50	1.47E-01	1.47E-01	4.67E-02	6.28E-02
	1291.56	43.20	1.67E-01		-1.45E-02	6.74E-02
CO-60	1173.22	100.00	8.13E-02	7.40E-02	1.40E-03	3.43E-02
	1332.49	100.00	7.40E-02		3.50E-03	2.99E-02
ZN-65	1115.52	50.75	1.32E-01	1.32E-01	9.61E-03	5.40E-02
GA-67	93.31	35.70	8.73E-02	8.73E-02	4.80E-02	4.17E-02
	208.95	2.24	1.66E+00		-2.19E-01	7.73E-01
	300.22	16.00	3.51E-01		1.84E-01	1.65E-01
SE-75	121.11	16.70	1.66E-01	5.70E-02	-3.65E-02	7.82E-02
	136.00	59.20	5.70E-02		2.74E-02	2.70E-02
	264.65	59.80	6.33E-02		-2.91E-02	2.91E-02
	279.53	25.20	1.77E-01		3.79E-02	8.24E-02
	400.65	11.40	3.94E-01		-2.93E-02	1.77E-01
RB-82	776.52	13.00	5.03E-01	5.03E-01	9.70E-02	2.19E-01
RB-83	520.41	46.00	1.06E-01	1.06E-01	-3.50E-02	4.67E-02
	529.64	30.30	1.52E-01		-2.15E-02	6.62E-02
	552.65	16.40	3.08E-01		1.63E-02	1.35E-01
KR-85	513.99	0.43	1.65E+01	1.65E+01	1.50E+00	7.60E+00
SR-85	513.99	99.27	7.23E-02	7.23E-02	6.56E-03	3.33E-02
Y-88	898.02	93.40	7.80E-02	7.48E-02	-3.88E-03	3.38E-02
	1836.01	99.38	7.48E-02		-4.02E-02	2.80E-02
NB-93M	16.57	9.43	2.25E-01	2.25E-01	3.78E-01	1.08E-01
NB-94	702.63	100.00	5.90E-02	5.90E-02	-2.14E-02	2.56E-02
	871.10	100.00	6.61E-02		-5.86E-03	2.83E-02
NB-95	765.79	99.81	7.48E-02	7.48E-02	2.08E-02	3.32E-02
NB-95M	235.69	25.00	1.77E-01	1.77E-01	6.09E-03	8.30E-02
ZR-95	724.18	43.70	1.12E-01	1.08E-01	-2.71E-02	4.69E-02
	756.72	55.30	1.08E-01		5.55E-03	4.65E-02
MO-99	181.06	6.20	6.72E-01	5.04E-01	-8.74E-02	3.18E-01
	739.58	12.80	5.04E-01		1.13E-02	2.19E-01
	778.00	4.50	1.32E+00		1.72E-01	5.61E-01
RU-103	497.08	89.00	6.80E-02	6.80E-02	8.00E-03	3.09E-02
RU-106	621.84	9.80	7.15E-01	7.15E-01	1.20E-01	3.23E-01
AG-108M	433.93	89.90	5.72E-02	5.72E-02	6.43E-03	2.59E-02
	614.37	90.40	7.77E-02		1.41E-03	3.51E-02
	722.95	90.50	6.09E-02		6.11E-03	2.61E-02
CD-109	88.03	3.72	8.04E-01	8.04E-01	1.34E-01	3.84E-01
AG-110M	657.75	93.14	6.58E-02	6.58E-02	-3.52E-02	2.90E-02
	677.61	10.53	6.14E-01		6.96E-02	2.71E-01
	706.67	16.46	3.91E-01		0.00E+00	1.72E-01
	763.93	21.98	3.31E-01		9.57E-02	1.46E-01
	884.67	71.63	1.06E-01		2.24E-02	4.64E-02
	1384.27	23.94	3.40E-01		4.43E-02	1.40E-01
CD-113M	263.70	0.02	1.69E+02	1.69E+02	-8.13E+01	7.79E+01
SN-113	255.12	1.93	2.22E+00	7.58E-02	-3.38E-01	1.03E+00
	391.69	64.90	7.58E-02		-3.16E-03	3.46E-02
TE123M	159.00	84.10	4.45E-02	4.45E-02	1.36E-02	2.11E-02
SB-124	602.71	97.87	6.73E-02	6.73E-02	-2.16E-03	3.03E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-124	645.85	7.26	8.50E-01	6.73E-02	-3.07E-01	3.76E-01
	722.78	11.10	5.15E-01		8.53E-02	2.22E-01
	1691.02	49.00	1.22E-01		-7.91E-02	4.34E-02
I-125	35.49	6.49	2.83E-01	2.83E-01	-3.64E-02	1.34E-01
SB-125	176.33	6.89	5.57E-01	1.75E-01	-1.42E-01	2.63E-01
	427.89	29.33	1.75E-01		6.02E-02	7.97E-02
	463.38	10.35	5.15E-01		-1.02E-01	2.33E-01
	600.56	17.80	3.56E-01		3.54E-02	1.59E-01
	635.90	11.32	5.70E-01		1.94E-01	2.54E-01
SB-126	414.70	83.30	6.13E-02	6.13E-02	-9.93E-03	2.79E-02
	666.33	99.60	6.98E-02		-2.74E-03	3.12E-02
	695.00	99.60	7.41E-02		3.36E-02	3.32E-02
	720.50	53.80	1.17E-01		4.81E-02	5.09E-02
SN-126	87.57	37.00	8.06E-02	8.06E-02	1.34E-02	3.85E-02
SB-127	473.00	25.00	2.13E-01	1.66E-01	-4.21E-03	9.58E-02
	685.20	35.70	1.66E-01		-5.63E-02	7.21E-02
	783.80	14.70	2.91E-01		-1.91E-01	1.15E-01
I-129	29.78	57.00	3.53E-02	3.53E-02	-2.26E-03	1.69E-02
	33.60	13.20	1.43E-01		-1.56E-02	6.79E-02
	39.58	7.52	2.52E-01		-3.22E-02	1.20E-01
I-131	284.30	6.05	7.72E-01	6.28E-02	-3.13E-01	3.59E-01
	364.48	81.20	6.28E-02		-4.42E-03	2.89E-02
	636.97	7.26	9.37E-01		4.58E-01	4.19E-01
	722.89	1.80	3.21E+00		5.32E-01	1.38E+00
TE-132	49.72	13.10	1.75E-01	4.62E-02	-6.15E-03	8.33E-02
	228.16	88.00	4.62E-02		-5.52E-03	2.16E-02
BA-133	81.00	33.00	7.73E-02	7.73E-02	-1.95E-02	3.67E-02
	302.84	17.80	2.89E-01		1.28E-02	1.35E-01
	356.01	60.00	1.00E-01		6.17E-02	4.69E-02
I-133	529.87	86.30	6.02E-02	6.02E-02	-8.53E-03	2.63E-02
CS-134	563.23	8.38	6.70E-01	6.65E-02	1.42E-01	2.98E-01
	569.32	15.43	3.68E-01		2.04E-02	1.64E-01
	604.70	97.60	6.65E-02		-2.52E-02	2.98E-02
	795.84	85.40	7.81E-02		4.49E-03	3.39E-02
	801.93	8.73	7.23E-01		2.12E-01	3.11E-01
CS-135	268.24	16.00	2.29E-01	2.29E-01	-6.92E-02	1.05E-01
I-135	1131.51	22.50	5.14E-01	4.47E-01	7.77E-02	2.17E-01
	1260.41	28.60	4.47E-01		7.27E-02	1.89E-01
	1678.03	9.54	7.28E-01		-3.96E-01	2.30E-01
CS-136	153.22	7.46	4.71E-01	6.51E-02	-9.22E-02	2.23E-01
	163.89	4.61	7.95E-01		-1.63E-01	3.76E-01
	176.55	13.56	2.85E-01		-7.27E-02	1.35E-01
	273.65	12.66	3.10E-01		-5.80E-02	1.43E-01
	340.57	48.50	1.05E-01		3.14E-02	4.85E-02
	818.50	99.70	6.51E-02		3.52E-03	2.80E-02
	1048.07	79.60	1.04E-01		3.82E-02	4.46E-02
	1235.34	19.70	3.97E-01		-1.36E-02	1.65E-01
CS-137	661.65	85.12	8.47E-02	8.47E-02	4.67E-02	3.81E-02
LA-138	788.74	34.00	1.77E-01	1.54E-01	1.25E-02	7.56E-02
	1435.80	66.00	1.54E-01		5.38E-02	6.55E-02
CE-139	165.85	80.35	4.68E-02	4.68E-02	1.75E-03	2.21E-02
BA-140	162.64	6.70	5.60E-01	2.03E-01	-7.30E-02	2.65E-01
	304.84	4.50	1.13E+00		6.22E-01	5.29E-01

Analysis Report for 1411131-02

BLANK

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BA-140	423.70		3.20	1.51E+00	2.03E-01	4.73E-02	6.84E-01
		437.55		2.00	2.50E+00		-7.89E-01	1.13E+00
		537.32		25.00	2.03E-01		1.02E-01	8.93E-02
	LA-140	328.77		20.50	2.22E-01	9.74E-02	-3.73E-03	1.02E-01
		487.03		45.50	1.14E-01		3.86E-02	5.11E-02
		815.85		23.50	2.93E-01		1.02E-01	1.27E-01
		1596.49		95.49	9.74E-02		6.49E-03	3.99E-02
	CE-141	145.44		48.40	6.98E-02	6.98E-02	-1.10E-02	3.30E-02
	CE-143	57.36		11.80	1.92E-01	1.36E-01	-1.12E-01	9.09E-02
		293.26		42.00	1.36E-01		3.61E-02	6.39E-02
		664.55		5.20	1.45E+00		2.99E-03	6.51E-01
	CE-144	133.54		10.80	2.91E-01	2.91E-01	-1.87E-02	1.37E-01
	PM-144	476.78		42.00	1.13E-01	7.23E-02	-6.27E-02	5.05E-02
		618.01		98.60	7.28E-02		1.69E-02	3.30E-02
		696.49		99.49	7.23E-02		1.95E-02	3.23E-02
	PM-145	36.85		21.70	8.58E-02	4.69E-02	-3.47E-03	4.08E-02
		37.36		39.70	4.69E-02		-7.50E-03	2.23E-02
		42.30		15.10	1.40E-01		8.51E-03	6.69E-02
		72.40		2.31	1.11E+00		3.61E-01	5.27E-01
	PM-146	453.90		39.94	1.23E-01	1.23E-01	-6.38E-02	5.50E-02
		735.90		14.01	4.28E-01		3.04E-02	1.85E-01
		747.13		13.10	4.50E-01		-1.15E-01	1.94E-01
+	ND-147	91.11	*	28.90	1.34E-01	1.34E-01	2.36E-01	6.46E-02
		531.02		13.10	3.55E-01		-2.18E-02	1.55E-01
	PM-149	285.90		3.10	1.54E+00	1.54E+00	-8.78E-01	7.17E-01
	EU-152	121.78		20.50	1.38E-01	1.38E-01	8.27E-03	6.49E-02
		244.69		5.40	8.39E-01		2.61E-01	3.93E-01
		344.27		19.13	2.33E-01		-1.42E-01	1.06E-01
		778.89		9.20	6.21E-01		8.10E-02	2.64E-01
		964.01		10.40	4.48E-01		-1.49E-01	1.73E-01
		1085.78		7.22	1.05E+00		3.17E-01	4.42E-01
		1112.02		9.60	5.55E-01		-2.31E-01	2.15E-01
		1407.95		14.94	4.83E-01		-9.83E-03	1.92E-01
	GD-153	97.43		31.30	8.36E-02	8.36E-02	1.01E-02	3.95E-02
		103.18		22.20	1.19E-01		1.33E-02	5.64E-02
	EU-154	123.07		40.50	6.54E-02	6.54E-02	-2.97E-02	3.07E-02
		723.30		19.70	2.80E-01		2.81E-02	1.20E-01
		873.19		11.50	5.10E-01		3.32E-02	2.14E-01
		996.32		10.30	7.31E-01		1.14E-01	3.13E-01
		1004.76		17.90	3.57E-01		-1.58E-01	1.48E-01
		1274.45		35.50	2.00E-01		4.26E-02	8.08E-02
	EU-155	86.50		30.90	8.79E-02	8.79E-02	-9.71E-02	4.18E-02
		105.30		20.70	1.31E-01		-6.17E-02	6.18E-02
	EU-156	811.77		10.40	5.29E-01	5.29E-01	-1.47E-01	2.22E-01
		1153.47		7.20	9.65E-01		2.57E-01	3.95E-01
		1230.71		8.90	7.24E-01		2.17E-01	2.87E-01
	HO-166M	184.41		72.60	5.79E-02	5.79E-02	5.09E-03	2.74E-02
		280.45		29.60	1.55E-01		6.35E-02	7.21E-02
		410.94		11.10	4.14E-01		6.83E-02	1.86E-01
		711.69		54.10	1.22E-01		5.33E-03	5.40E-02
	TM-171	66.72		0.14	1.83E+01	1.83E+01	5.88E+00	8.74E+00
	HF-172	81.75		4.52	5.65E-01	2.36E-01	-1.11E-01	2.69E-01
		125.81		11.30	2.36E-01		-6.88E-02	1.11E-01

Analysis Report for 1411131-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
LU-172	181.53	20.60	2.09E-01	1.13E-01	6.59E-02	9.91E-02
	810.06	16.63	3.48E-01		-1.20E-02	1.47E-01
	912.12	15.25	4.61E-01		-1.80E-02	1.97E-01
	1093.66	62.50	1.13E-01		1.95E-02	4.67E-02
LU-173	100.72	5.24	4.83E-01	1.85E-01	1.55E-01	2.28E-01
	272.11	21.20	1.85E-01		4.34E-02	8.51E-02
HF-175	343.40	84.00	5.49E-02	5.49E-02	3.19E-03	2.52E-02
LU-176	88.34	13.30	2.35E-01	4.49E-02	2.13E-01	1.12E-01
	201.83	86.00	4.49E-02		8.11E-03	2.11E-02
	306.78	94.00	4.96E-02		-1.11E-02	2.30E-02
TA-182	67.75	41.20	6.30E-02	6.30E-02	2.59E-02	3.01E-02
	1121.30	34.90	2.14E-01		3.85E-02	8.96E-02
	1189.05	16.23	5.86E-01		1.46E-01	2.54E-01
	1221.41	26.98	1.93E-01		-4.99E-02	7.24E-02
	1231.02	11.44	5.60E-01		1.68E-01	2.22E-01
IR-192	308.46	29.68	1.42E-01	1.12E-01	-1.04E-01	6.52E-02
	468.07	48.10	1.12E-01		2.21E-02	5.06E-02
HG-203	279.19	77.30	5.79E-02	5.79E-02	1.23E-02	2.69E-02
BI-207	569.67	97.72	5.81E-02	5.81E-02	3.23E-03	2.58E-02
	1063.62	74.90	1.03E-01		-5.56E-02	4.39E-02
TL-208	583.14	30.22	2.11E-01	2.11E-01	-4.64E-02	9.47E-02
	860.37	4.48	1.78E+00		1.17E-01	7.86E-01
	2614.66	35.85	3.27E-01		7.81E-02	1.30E-01
BI-210M	262.00	45.00	9.73E-02	9.73E-02	6.18E-02	4.53E-02
	300.00	23.00	2.42E-01		1.84E-01	1.14E-01
PB-210	46.50	4.25	5.37E-01	5.37E-01	4.67E-01	2.57E-01
PB-211	404.84	2.90	1.46E+00	1.46E+00	-4.37E-01	6.51E-01
	831.96	2.90	2.40E+00		3.71E-01	1.04E+00
BI-212	727.17	11.80	4.35E-01	4.35E-01	2.50E-02	1.84E-01
	1620.62	2.75	2.72E+00		-1.32E-01	1.05E+00
PB-212	238.63	44.60	9.93E-02	9.93E-02	1.21E-02	4.66E-02
	300.09	3.41	1.63E+00		1.24E+00	7.67E-01
BI-214	609.31	46.30	1.55E-01	1.55E-01	3.34E-02	7.03E-02
	1120.29	15.10	5.16E-01		1.18E-01	2.18E-01
	1764.49	15.80	4.55E-01		-7.52E-02	1.70E-01
	2204.22	4.98	1.92E+00		6.38E-01	7.42E-01
PB-214	295.21	19.19	2.72E-01	1.44E-01	-4.45E-02	1.28E-01
	351.92	37.19	1.44E-01		5.95E-02	6.66E-02
RN-219	401.80	6.50	6.69E-01	6.69E-01	-2.61E-01	3.00E-01
RA-223	323.87	3.88	1.18E+00	1.18E+00	1.94E-01	5.45E-01
RA-224	240.98	3.95	1.14E+00	1.14E+00	1.40E-01	5.37E-01
RA-225	40.00	31.00	6.18E-02	6.18E-02	-7.88E-03	2.94E-02
RA-226	186.21	3.28	1.31E+00	1.31E+00	5.22E-02	6.20E-01
TH-227	50.10	8.40	2.64E-01	2.64E-01	-9.31E-03	1.26E-01
	236.00	11.50	3.74E-01		1.29E-02	1.75E-01
	256.20	6.30	6.92E-01		1.63E-01	3.23E-01
AC-228	338.32	11.40	4.44E-01	2.21E-01	1.02E-01	2.06E-01
	911.07	27.70	2.21E-01		-4.15E-02	9.25E-02
	969.11	16.60	3.52E-01		-3.24E-02	1.44E-01
TH-230	48.44	16.90	1.34E-01	1.34E-01	-2.05E-03	6.39E-02
	62.85	4.60	5.45E-01		3.16E-01	2.60E-01
	67.67	0.37	7.01E+00		2.89E+00	3.35E+00
PA-231	283.67	1.60	2.90E+00	2.23E+00	-8.88E-02	1.35E+00

Analysis Report for 1411131-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PA-231	302.67	2.30	2.23E+00	2.23E+00	9.89E-02	1.04E+00
TH-231	25.64	14.70	1.46E-01	1.46E-01	-4.20E-02	7.01E-02
	84.21	6.40	4.18E-01		-4.85E-02	1.99E-01
PA-233	311.98	38.60	1.18E-01	1.18E-01	2.02E-02	5.43E-02
PA-234	131.20	20.40	1.44E-01	1.44E-01	-2.76E-02	6.80E-02
	733.99	8.80	6.58E-01		4.59E-02	2.83E-01
	946.00	12.00	5.29E-01		-3.24E-01	2.21E-01
PA-234M	1001.03	0.92	7.28E+00	7.28E+00	-9.54E-01	3.05E+00
TH-234	63.29	3.80	6.45E-01	6.45E-01	1.76E-01	3.08E-01
U-235	143.76	10.50	3.24E-01	3.24E-01	0.00E+00	1.53E-01
	163.35	4.70	7.72E-01		-1.58E-01	3.65E-01
	205.31	4.70	8.08E-01		3.67E-01	3.78E-01
NP-237	86.50	12.60	2.16E-01	2.16E-01	-2.38E-01	1.03E-01
NP-239	106.10	22.70	1.25E-01	1.25E-01	-5.92E-02	5.93E-02
	228.18	10.70	3.96E-01		6.06E-02	1.85E-01
	277.60	14.10	3.19E-01		-3.92E-02	1.48E-01
AM-241	59.54	35.90	6.29E-02	6.29E-02	-1.43E-03	3.00E-02
AM-243	74.67	66.00	3.81E-02	3.81E-02	4.84E-03	1.81E-02
CM-243	209.75	3.29	1.07E+00	3.07E-01	-6.33E-01	4.99E-01
	228.14	10.60	3.71E-01		-4.43E-02	1.73E-01
	277.60	14.00	3.07E-01		-3.78E-02	1.42E-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 1411131-02

BLANK

No Data Review Comments Entered.

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

Sample Title: BLANK

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	5	45
17:	40	34	38	32	27	23	25	21
25:	21	19	21	22	14	14	16	18
33:	16	13	17	15	11	9	8	18
41:	17	15	15	21	21	27	38	8
49:	10	11	12	10	11	11	14	13
57:	6	18	18	10	16	15	23	26
65:	13	18	10	19	18	13	17	15
73:	14	17	16	13	14	14	13	16
81:	9	8	15	23	12	23	13	7
89:	16	15	34	29	23	12	9	5
97:	7	14	9	14	12	9	13	11
105:	9	9	11	12	16	10	18	18
113:	18	13	9	8	18	8	14	10
121:	5	10	9	6	11	5	12	12
129:	7	5	11	12	12	13	17	13
137:	9	13	12	14	7	12	14	12
145:	10	13	11	12	10	13	8	13
153:	9	9	15	13	10	13	7	17
161:	15	10	12	9	11	10	7	10
169:	19	7	12	12	5	9	14	10
177:	10	12	15	10	12	7	10	16
185:	22	16	5	11	12	13	8	11
193:	10	12	5	8	11	9	6	8
201:	6	9	9	9	11	8	7	7
209:	7	5	3	6	6	6	10	12
217:	6	10	8	6	7	6	4	5
225:	9	14	6	3	8	7	9	8
233:	9	10	5	9	7	7	10	6
241:	12	11	9	8	5	8	12	6
249:	6	7	6	2	9	3	6	11
257:	10	9	7	8	7	5	6	6
265:	5	0	4	4	6	7	4	5
273:	7	6	3	3	4	7	6	10
281:	8	8	9	6	6	3	5	5
289:	8	12	10	7	3	8	10	13
297:	5	11	6	11	6	11	8	6
305:	5	3	8	6	4	2	3	5
313:	11	3	6	6	6	2	5	7
321:	5	4	2	5	5	4	9	3
329:	4	6	4	3	7	6	4	6
337:	6	9	7	3	3	8	7	2
345:	6	4	1	4	3	1	13	11
353:	9	6	6	2	7	5	9	3
361:	10	5	6	6	4	3	4	3

369:	4	4	4	3	5	7	4	1

Sample Title: BLANK

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

801:	0	2	2	1	2	1	1	1

Sample Title: BLANK

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

1233:	0	1	1	0	1	0	2	1

Sample Title: BLANK

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

1665:	1	2	0	0	0	0	1	0

Sample Title: BLANK

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

2097:	0	0	0	0	0	0	0	1

Sample Title: BLANK

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

2529:	1	0	0	0	0	1	0	0

Sample Title: BLANK

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

2961:	0	0	0	0	0	0	0	0

Sample Title: BLANK

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

3393:	0	0	0	0	0	0	0	0

Sample Title: BLANK

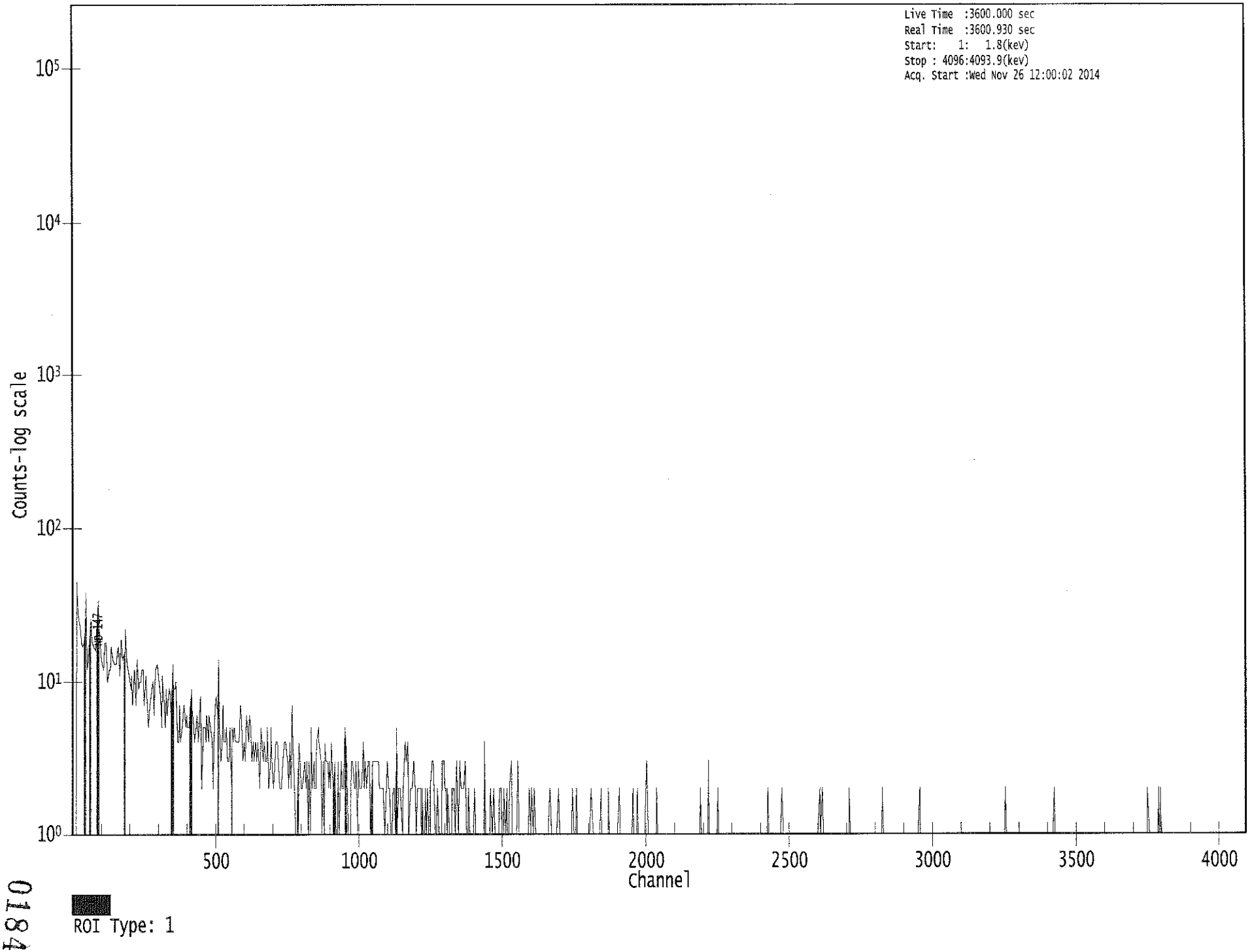
Channel								
3401:	1	0	0	0	0	0	0	1
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	0	1	0	0	2
3425:	0	1	0	0	1	0	0	1
3433:	0	0	0	0	0	0	0	0
3441:	0	1	0	1	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	1	0	0
3465:	0	1	0	0	0	0	0	0
3473:	0	1	0	0	0	1	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	1	0	0	0
3497:	0	0	0	0	0	0	0	1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

3825:	0	0	0	0	0	0	0	1

Sample Title: BLANK

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	1	0	1	0	0
3849:	0	0	1	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	1	0	0
3881:	0	0	0	0	0	0	1	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	1	0	0
3905:	0	0	0	0	0	1	0	0
3913:	0	0	0	1	0	0	0	1
3921:	0	0	0	0	0	0	1	0
3929:	0	0	0	0	1	0	1	0
3937:	1	1	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	1	0
3969:	0	0	0	1	0	0	1	0
3977:	0	0	0	1	0	0	0	0
3985:	0	0	1	0	0	0	0	0
3993:	0	0	0	0	1	0	0	0
4001:	1	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	0	0	1	1	0	0
4049:	0	0	0	0	0	1	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	1	1	0	0	1
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	1	0	0
4089:	0	0	1	0	0	0	0	0

0000015647.CNF



0184

Apex-Gamma

Analysis Report for 1411131-03
J1V1L2 SAF: RC-107

11/26

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-03
Sample Description	: J1V1L2 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.115E+02 grams
Facility	: Countroom
Sample Taken On	: 11/20/2014 8:49:07AM
Acquisition Started	: 11/26/2014 8:54:06AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3617.5 seconds
Dead Time	: 0.48 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 9 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15616

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/26/14

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 9:54:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	24.48	24.72	0.0000	0.00
2	32.97	33.21	0.0000	0.00
3	76.35	76.57	0.0000	0.00
4	84.79	85.00	0.0000	0.00
5	92.82	93.03	0.0000	0.00
6	206.55	206.70	0.0000	0.00
7	217.42	217.56	0.0000	0.00
8	238.80	238.93	0.0000	0.00
9	242.18	242.31	0.0000	0.00
10	295.41	295.51	0.0000	0.00
11	339.12	339.20	0.0000	0.00
12	352.21	352.28	0.0000	0.00
13	439.71	439.74	0.0000	0.00
14	511.52	511.51	0.0000	0.00
15	546.42	546.40	0.0000	0.00
16	583.68	583.64	0.0000	0.00
17	609.46	609.40	0.0000	0.00
18	769.65	769.52	0.0000	0.00
19	823.99	823.84	0.0000	0.00
20	908.20	908.01	0.0000	0.00
21	911.61	911.42	0.0000	0.00
22	933.07	932.87	0.0000	0.00
23	950.15	949.94	0.0000	0.00
24	969.38	969.16	0.0000	0.00
25	985.99	985.76	0.0000	0.00
26	1010.63	1010.39	0.0000	0.00
27	1121.69	1121.40	0.0000	0.00
28	1378.62	1378.23	0.0000	0.00
29	1427.36	1426.96	0.0000	0.00
30	1461.09	1460.67	0.0000	0.00
31	1509.59	1509.15	0.0000	0.00
32	1640.22	1639.74	0.0000	0.00
33	1717.26	1716.75	0.0000	0.00
34	1729.19	1728.67	0.0000	0.00
35	1765.07	1764.54	0.0000	0.00
36	2169.43	2168.77	0.0000	0.00
37	2204.34	2203.67	0.0000	0.00
38	2380.72	2380.00	0.0000	0.00
39	2614.85	2614.08	0.0000	0.00

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 9:54:25AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	24.48	21	28	24.72	1.23E+02	76.45	8.92E+02	5.18
	2	32.97	30	37	33.21	8.65E+01	75.84	9.03E+02	5.33
	3	76.35	72	81	76.57	7.05E+02	125.22	1.83E+03	4.10
M	4	84.79	82	97	85.00	5.84E+01	65.24	8.39E+02	1.53
m	5	92.82	82	97	93.03	2.52E+02	77.25	9.19E+02	2.05
	6	206.55	201	213	206.70	1.25E+02	87.35	8.39E+02	9.61
	7	217.42	214	221	217.56	5.96E+01	56.64	4.93E+02	3.99
M	8	238.80	234	246	238.93	6.58E+02	65.01	3.65E+02	1.90
m	9	242.18	234	246	242.31	1.21E+02	64.51	3.70E+02	1.88
	10	295.41	291	300	295.51	1.51E+02	63.61	4.96E+02	1.51
	11	339.12	334	344	339.20	6.99E+01	59.16	4.30E+02	1.91
	12	352.21	349	356	352.28	2.55E+02	46.26	1.83E+02	1.78
	13	439.71	436	443	439.74	3.44E+01	31.37	1.35E+02	1.57
	14	511.52	506	516	511.51	1.16E+02	48.89	2.52E+02	2.47
	15	546.42	544	552	546.40	2.56E+01	29.02	1.17E+02	3.37
	16	583.68	579	589	583.64	1.80E+02	44.13	1.60E+02	1.96
	17	609.46	605	613	609.40	1.70E+02	42.68	1.76E+02	2.07
	18	769.65	766	773	769.52	3.21E+01	26.38	9.18E+01	1.45
	19	823.99	821	827	823.84	1.66E+01	19.91	6.07E+01	3.50
M	20	908.20	907	916	908.01	8.12E+00	9.57	1.58E+01	3.60
m	21	911.61	907	916	911.42	9.14E+01	26.52	4.92E+01	2.29
	22	933.07	930	935	932.87	1.45E+01	17.09	4.51E+01	2.63
	23	950.15	948	953	949.94	2.44E+01	14.39	2.33E+01	1.21
	24	969.38	966	972	969.16	3.78E+01	27.79	1.08E+02	1.45
	25	985.99	982	991	985.76	2.88E+01	21.68	5.24E+01	4.38
	26	1010.63	1007	1014	1010.39	2.14E+01	17.32	3.52E+01	4.28
	27	1121.69	1114	1126	1121.40	4.74E+01	31.04	9.13E+01	2.47
	28	1378.62	1371	1386	1378.23	2.45E+01	25.61	5.49E+01	9.59
	29	1427.36	1423	1430	1426.96	1.32E+01	11.14	1.16E+01	4.47
	30	1461.09	1454	1467	1460.67	5.55E+02	47.12	0.00E+00	2.41
	31	1509.59	1506	1513	1509.15	1.30E+01	10.00	8.00E+00	1.83
	32	1640.22	1635	1644	1639.74	1.90E+01	8.72	0.00E+00	4.79
	33	1717.26	1714	1720	1716.75	8.00E+00	7.23	4.00E+00	1.89
	34	1729.19	1725	1732	1728.67	9.27E+00	7.75	3.45E+00	3.65
	35	1765.07	1760	1768	1764.54	2.85E+01	13.13	9.00E+00	2.17
	36	2169.43	2166	2171	2168.77	5.71E+00	6.08	2.57E+00	2.74
	37	2204.34	2201	2206	2203.67	9.00E+00	6.00	0.00E+00	2.94
	38	2380.72	2377	2382	2380.00	6.00E+00	4.90	0.00E+00	2.88
	39	2614.85	2609	2617	2614.08	3.71E+01	13.28	3.90E+00	2.24

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 9:54:25AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	24.48	21 -	28	1.23E+02	76.45	8.92E+02	6.01E+01
	2	32.97	30 -	37	8.65E+01	75.84	9.03E+02	6.04E+01
	3	76.35	72 -	81	7.05E+02	125.22	1.83E+03	9.32E+01
M	4	84.79	82 -	97	5.84E+01	65.24	8.39E+02	4.76E+01
m	5	92.82	82 -	97	2.52E+02	77.25	9.19E+02	4.98E+01
	6	206.55	201 -	213	1.25E+02	87.35	8.39E+02	6.94E+01
	7	217.42	214 -	221	5.96E+01	56.64	4.93E+02	4.48E+01
M	8	238.80	234 -	246	6.58E+02	65.01	3.65E+02	3.14E+01
m	9	242.18	234 -	246	1.21E+02	64.51	3.70E+02	3.16E+01
	10	295.41	291 -	300	1.51E+02	63.61	4.96E+02	4.82E+01
	11	339.12	334 -	344	6.99E+01	59.16	4.30E+02	4.66E+01
	12	352.21	349 -	356	2.55E+02	46.26	1.83E+02	2.75E+01
	13	439.71	436 -	443	3.44E+01	31.37	1.35E+02	2.39E+01
	14	511.52	506 -	516	1.16E+02	48.89	2.52E+02	3.61E+01
	15	546.42	544 -	552	2.56E+01	29.02	1.17E+02	2.24E+01
	16	583.68	579 -	589	1.80E+02	44.13	1.60E+02	2.88E+01
	17	609.46	605 -	613	1.70E+02	42.68	1.76E+02	2.78E+01
	18	769.65	766 -	773	3.21E+01	26.38	9.18E+01	1.96E+01
	19	823.99	821 -	827	1.66E+01	19.91	6.07E+01	1.49E+01
M	20	908.20	907 -	916	8.12E+00	9.57	1.58E+01	6.53E+00
m	21	911.61	907 -	916	9.14E+01	26.52	4.92E+01	1.15E+01
	22	933.07	930 -	935	1.45E+01	17.09	4.51E+01	1.26E+01
	23	950.15	948 -	953	2.44E+01	14.39	2.33E+01	8.60E+00
	24	969.38	966 -	972	3.78E+01	27.79	1.08E+02	2.05E+01
	25	985.99	982 -	991	2.88E+01	21.68	5.24E+01	1.55E+01
	26	1010.63	1007 -	1014	2.14E+01	17.32	3.52E+01	1.20E+01
	27	1121.69	1114 -	1126	4.74E+01	31.04	9.13E+01	2.29E+01
	28	1378.62	1371 -	1386	2.45E+01	25.61	5.49E+01	1.94E+01
	29	1427.36	1423 -	1430	1.32E+01	11.14	1.16E+01	6.93E+00
	30	1461.09	1454 -	1467	5.55E+02	47.12	0.00E+00	0.00E+00
	31	1509.59	1506 -	1513	1.30E+01	10.00	8.00E+00	5.70E+00

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1640.22	1635 -	1644	1.90E+01	8.72	0.00E+00	0.00E+00
33	1717.26	1714 -	1720	8.00E+00	7.23	4.00E+00	3.70E+00
34	1729.19	1725 -	1732	9.27E+00	7.75	3.45E+00	3.93E+00
35	1765.07	1760 -	1768	2.85E+01	13.13	9.00E+00	6.29E+00
36	2169.43	2166 -	2171	5.71E+00	6.08	2.57E+00	3.09E+00
37	2204.34	2201 -	2206	9.00E+00	6.00	0.00E+00	0.00E+00
38	2380.72	2377 -	2382	6.00E+00	4.90	0.00E+00	0.00E+00
39	2614.85	2609 -	2617	3.71E+01	13.28	3.90E+00	4.35E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 9:54:25AM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	24.48	21 -	28	24.72	1.23E+02	76.45	8.92E+02	.....
	2	32.97	30 -	37	33.21	8.65E+01	75.84	9.03E+02	I-129
	3	76.35	72 -	81	76.57	7.05E+02	125.22	1.83E+03	.....
M	4	84.79	82 -	97	85.00	5.84E+01	65.24	8.39E+02	TH-231
m	5	92.82	82 -	97	93.03	2.52E+02	77.25	9.19E+02	GA-67
	6	206.55	201 -	213	206.70	1.25E+02	87.35	8.39E+02	.....
	7	217.42	214 -	221	217.56	5.96E+01	56.64	4.93E+02	.....
M	8	238.80	234 -	246	238.93	6.58E+02	65.01	3.65E+02	PB-212
m	9	242.18	234 -	246	242.31	1.21E+02	64.51	3.70E+02	.....
	10	295.41	291 -	300	295.51	1.51E+02	63.61	4.96E+02	PB-214
	11	339.12	334 -	344	339.20	6.99E+01	59.16	4.30E+02	AC-228
	12	352.21	349 -	356	352.28	2.55E+02	46.26	1.83E+02	PB-214
	13	439.71	436 -	443	439.74	3.44E+01	31.37	1.35E+02	.....
	14	511.52	506 -	516	511.51	1.16E+02	48.89	2.52E+02	.....
	15	546.42	544 -	552	546.40	2.56E+01	29.02	1.17E+02	.....
	16	583.68	579 -	589	583.64	1.80E+02	44.13	1.60E+02	TL-208
	17	609.46	605 -	613	609.40	1.70E+02	42.68	1.76E+02	BI-214
	18	769.65	766 -	773	769.52	3.21E+01	26.38	9.18E+01	.....

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	19	823.99	821 -	827	823.84	1.66E+01	19.91	6.07E+01	.....
M	20	908.20	907 -	916	908.01	8.12E+00	9.57	1.58E+01	.....
m	21	911.61	907 -	916	911.42	9.14E+01	26.52	4.92E+01	LU-172 AC-228
	22	933.07	930 -	935	932.87	1.45E+01	17.09	4.51E+01	.....
	23	950.15	948 -	953	949.94	2.44E+01	14.39	2.33E+01	.....
	24	969.38	966 -	972	969.16	3.78E+01	27.79	1.08E+02	AC-228
	25	985.99	982 -	991	985.76	2.88E+01	21.68	5.24E+01	.....
	26	1010.63	1007 -	1014	1010.39	2.14E+01	17.32	3.52E+01	.....
	27	1121.69	1114 -	1126	1121.40	4.74E+01	31.04	9.13E+01	TA-182
	28	1378.62	1371 -	1386	1378.23	2.45E+01	25.61	5.49E+01	.....
	29	1427.36	1423 -	1430	1426.96	1.32E+01	11.14	1.16E+01	.....
	30	1461.09	1454 -	1467	1460.67	5.55E+02	47.12	0.00E+00	K-40
	31	1509.59	1506 -	1513	1509.15	1.30E+01	10.00	8.00E+00	.....
	32	1640.22	1635 -	1644	1639.74	1.90E+01	8.72	0.00E+00	.....
	33	1717.26	1714 -	1720	1716.75	8.00E+00	7.23	4.00E+00	.....
	34	1729.19	1725 -	1732	1728.67	9.27E+00	7.75	3.45E+00	.....
	35	1765.07	1760 -	1768	1764.54	2.85E+01	13.13	9.00E+00	BI-214
	36	2169.43	2166 -	2171	2168.77	5.71E+00	6.08	2.57E+00	.....
	37	2204.34	2201 -	2206	2203.67	9.00E+00	6.00	0.00E+00	BI-214
	38	2380.72	2377 -	2382	2380.00	6.00E+00	4.90	0.00E+00	.....
	39	2614.85	2609 -	2617	2614.08	3.71E+01	13.28	3.90E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 9:54:25AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	24.48	1.23E+02	76.45	2.03E-03	1.58E-03
	2	32.97	8.65E+01	75.84	6.65E-03	1.58E-03
	3	76.35	7.05E+02	125.22	2.38E-02	2.14E-03
M	4	84.79	5.84E+01	65.24	2.43E-02	2.42E-03
m	5	92.82	2.52E+02	77.25	2.44E-02	2.41E-03
	6	206.55	1.25E+02	87.35	1.70E-02	1.33E-03
	7	217.42	5.96E+01	56.64	1.63E-02	1.28E-03
M	8	238.80	6.58E+02	65.01	1.52E-02	1.18E-03

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	9	242.18	1.21E+02	64.51	1.50E-02	1.16E-03
	10	295.41	1.51E+02	63.61	1.28E-02	9.74E-04
	11	339.12	6.99E+01	59.16	1.14E-02	9.12E-04
	12	352.21	2.55E+02	46.26	1.11E-02	8.93E-04
	13	439.71	3.44E+01	31.37	9.13E-03	7.89E-04
	14	511.52	1.16E+02	48.89	8.00E-03	7.18E-04
	15	546.42	2.56E+01	29.02	7.56E-03	6.83E-04
	16	583.68	1.80E+02	44.13	7.13E-03	6.46E-04
	17	609.46	1.70E+02	42.68	6.87E-03	6.20E-04
	18	769.65	3.21E+01	26.38	5.61E-03	4.80E-04
	19	823.99	1.66E+01	19.91	5.29E-03	4.35E-04
M	20	908.20	8.12E+00	9.57	4.87E-03	3.73E-04
m	21	911.61	9.14E+01	26.52	4.85E-03	3.72E-04
	22	933.07	1.45E+01	17.09	4.75E-03	3.68E-04
	23	950.15	2.44E+01	14.39	4.68E-03	3.65E-04
	24	969.38	3.78E+01	27.79	4.60E-03	3.61E-04
	25	985.99	2.88E+01	21.68	4.54E-03	3.58E-04
	26	1010.63	2.14E+01	17.32	4.44E-03	3.54E-04
	27	1121.69	4.74E+01	31.04	4.07E-03	3.33E-04
	28	1378.62	2.45E+01	25.61	3.44E-03	2.82E-04
	29	1427.36	1.32E+01	11.14	3.35E-03	2.74E-04
	30	1461.09	5.55E+02	47.12	3.29E-03	2.69E-04
	31	1509.59	1.30E+01	10.00	3.21E-03	2.62E-04
	32	1640.22	1.90E+01	8.72	3.01E-03	2.42E-04
	33	1717.26	8.00E+00	7.23	2.91E-03	2.31E-04
	34	1729.19	9.27E+00	7.75	2.90E-03	2.29E-04
	35	1765.07	2.85E+01	13.13	2.86E-03	2.24E-04
	36	2169.43	5.71E+00	6.08	2.49E-03	2.13E-04
	37	2204.34	9.00E+00	6.00	2.46E-03	2.13E-04
	38	2380.72	6.00E+00	4.90	2.35E-03	2.13E-04
	39	2614.85	3.71E+01	13.28	2.24E-03	2.13E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 9:54:25AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015028.CNF

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	24.48	1.23E+02	76.45			1.23E+02	7.64E+01
	2	32.97	8.65E+01	75.84			8.65E+01	7.58E+01
	3	76.35	7.05E+02	125.22	1.53E+01	9.60E+00	6.90E+02	1.26E+02
M	4	84.79	5.84E+01	65.24			5.84E+01	6.52E+01
m	5	92.82	2.52E+02	77.25	7.76E+01	5.19E+00	1.74E+02	7.74E+01
	6	206.55	1.25E+02	87.35			1.25E+02	8.74E+01
	7	217.42	5.96E+01	56.64			5.96E+01	5.66E+01
M	8	238.80	6.58E+02	65.01	1.83E+01	5.69E+00	6.39E+02	6.53E+01
m	9	242.18	1.21E+02	64.51			1.21E+02	6.45E+01
	10	295.41	1.51E+02	63.61	0.00E+00	0.00E+00	1.51E+02	6.36E+01
	11	339.12	6.99E+01	59.16			6.99E+01	5.92E+01
	12	352.21	2.55E+02	46.26	8.84E+00	5.00E+00	2.47E+02	4.65E+01
	13	439.71	3.44E+01	31.37			3.44E+01	3.14E+01
	14	511.52	1.16E+02	48.89	6.18E+01	4.93E+00	5.43E+01	4.91E+01
	15	546.42	2.56E+01	29.02			2.56E+01	2.90E+01
	16	583.68	1.80E+02	44.13	2.74E+00	3.26E+00	1.77E+02	4.43E+01
	17	609.46	1.70E+02	42.68	6.02E+00	6.36E+00	1.64E+02	4.32E+01
	18	769.65	3.21E+01	26.38			3.21E+01	2.64E+01
	19	823.99	1.66E+01	19.91			1.66E+01	1.99E+01
M	20	908.20	8.12E+00	9.57			8.12E+00	9.57E+00
m	21	911.61	9.14E+01	26.52	2.16E+00	1.27E+00	8.93E+01	2.66E+01
	22	933.07	1.45E+01	17.09			1.45E+01	1.71E+01
	23	950.15	2.44E+01	14.39			2.44E+01	1.44E+01
	24	969.38	3.78E+01	27.79			3.78E+01	2.78E+01
	25	985.99	2.88E+01	21.68			2.88E+01	2.17E+01
	26	1010.63	2.14E+01	17.32			2.14E+01	1.73E+01
	27	1121.69	4.74E+01	31.04			4.74E+01	3.10E+01
	28	1378.62	2.45E+01	25.61	2.75E-02	1.50E+00	2.45E+01	2.57E+01
	29	1427.36	1.32E+01	11.14			1.32E+01	1.11E+01
	30	1461.09	5.55E+02	47.12	3.25E+00	2.03E+00	5.52E+02	4.72E+01
	31	1509.59	1.30E+01	10.00			1.30E+01	1.00E+01
	32	1640.22	1.90E+01	8.72			1.90E+01	8.72E+00
	33	1717.26	8.00E+00	7.23			8.00E+00	7.23E+00
	34	1729.19	9.27E+00	7.75			9.27E+00	7.75E+00
	35	1765.07	2.85E+01	13.13	1.84E+00	1.53E+00	2.67E+01	1.32E+01
	36	2169.43	5.71E+00	6.08			5.71E+00	6.08E+00
	37	2204.34	9.00E+00	6.00			9.00E+00	6.00E+00
	38	2380.72	6.00E+00	4.90			6.00E+00	4.90E+00
	39	2614.85	3.71E+01	13.28	3.83E+00	1.21E+00	3.32E+01	1.33E+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 1411131-03

J1V1L2 SAF: RC-107

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 9:54:25AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015028.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	24.48	1.23E+02	76.45			1.23E+02	7.64E+01
	2	32.97	8.65E+01	75.84			8.65E+01	7.58E+01
	3	76.35	7.05E+02	125.22	1.53E+01	9.60E+00	6.90E+02	1.26E+02
M	4	84.79	5.84E+01	65.24			5.84E+01	6.52E+01
m	5	92.82	2.52E+02	77.25	7.76E+01	5.19E+00	1.74E+02	7.74E+01
	6	206.55	1.25E+02	87.35			1.25E+02	8.74E+01
	7	217.42	5.96E+01	56.64			5.96E+01	5.66E+01
M	8	238.80	6.58E+02	65.01	1.83E+01	5.69E+00	6.39E+02	6.53E+01
m	9	242.18	1.21E+02	64.51			1.21E+02	6.45E+01
	10	295.41	1.51E+02	63.61	0.00E+00	0.00E+00	1.51E+02	6.36E+01
	11	339.12	6.99E+01	59.16			6.99E+01	5.92E+01
	12	352.21	2.55E+02	46.26	8.84E+00	5.00E+00	2.47E+02	4.65E+01
	13	439.71	3.44E+01	31.37			3.44E+01	3.14E+01
	14	511.52	1.16E+02	48.89	6.18E+01	4.93E+00	5.43E+01	4.91E+01
	15	546.42	2.56E+01	29.02			2.56E+01	2.90E+01
	16	583.68	1.80E+02	44.13	2.74E+00	3.26E+00	1.77E+02	4.43E+01
	17	609.46	1.70E+02	42.68	6.02E+00	6.36E+00	1.64E+02	4.32E+01
	18	769.65	3.21E+01	26.38			3.21E+01	2.64E+01
	19	823.99	1.66E+01	19.91			1.66E+01	1.99E+01
M	20	908.20	8.12E+00	9.57			8.12E+00	9.57E+00
m	21	911.61	9.14E+01	26.52	2.16E+00	1.27E+00	8.93E+01	2.66E+01
	22	933.07	1.45E+01	17.09			1.45E+01	1.71E+01
	23	950.15	2.44E+01	14.39			2.44E+01	1.44E+01
	24	969.38	3.78E+01	27.79			3.78E+01	2.78E+01
	25	985.99	2.88E+01	21.68			2.88E+01	2.17E+01
	26	1010.63	2.14E+01	17.32			2.14E+01	1.73E+01
	27	1121.69	4.74E+01	31.04			4.74E+01	3.10E+01
	28	1378.62	2.45E+01	25.61	2.75E-02	1.50E+00	2.45E+01	2.57E+01
	29	1427.36	1.32E+01	11.14			1.32E+01	1.11E+01
	30	1461.09	5.55E+02	47.12	3.25E+00	2.03E+00	5.52E+02	4.72E+01
	31	1509.59	1.30E+01	10.00			1.30E+01	1.00E+01
	32	1640.22	1.90E+01	8.72			1.90E+01	8.72E+00
	33	1717.26	8.00E+00	7.23			8.00E+00	7.23E+00
	34	1729.19	9.27E+00	7.75			9.27E+00	7.75E+00
	35	1765.07	2.85E+01	13.13	1.84E+00	1.53E+00	2.67E+01	1.32E+01
	36	2169.43	5.71E+00	6.08			5.71E+00	6.08E+00
	37	2204.34	9.00E+00	6.00			9.00E+00	6.00E+00
	38	2380.72	6.00E+00	4.90			6.00E+00	4.90E+00
	39	2614.85	3.71E+01	13.28	3.83E+00	1.21E+00	3.32E+01	1.33E+01

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

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	0.988	1460.81	*	10.67	1.66E+01	1.99E+00
GA-67	0.530	93.31	*	35.70	7.58E-01	1.09E+00
		208.95		2.24		
		300.22		16.00		
TL-208	0.865	583.14	*	30.22	8.68E-01	2.30E-01
		860.37		4.48		
		2614.66	*	35.85	4.37E-01	1.80E-01
PB-212	0.891	238.63	*	44.60	9.94E-01	1.27E-01
		300.09		3.41		
BI-214	0.726	609.31	*	46.30	5.44E-01	1.51E-01
		1120.29		15.10		
		1764.49	*	15.80	6.23E-01	3.13E-01
		2204.22	*	4.98	7.74E-01	5.21E-01
PB-214	0.989	295.21	*	19.19	6.49E-01	2.77E-01
		351.92	*	37.19	6.33E-01	1.30E-01
AC-228	0.953	338.32	*	11.40	5.67E-01	4.82E-01
		911.07	*	27.70	7.01E-01	2.15E-01
		969.11	*	16.60	5.22E-01	3.86E-01
TH-231	0.303	25.64		14.70		
		84.21	*	6.40	3.96E-01	4.44E-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 1411131-03

J1V1L2 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 9:54:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	24.48	3.41078E-02	31.13		
	2	32.97	2.40262E-02	43.84	Tol.	I-129
	3	76.35	1.91647E-01	9.10		
	6	206.55	3.48563E-02	34.81		
	7	217.42	1.65496E-02	47.53		
m	9	242.18	3.35788E-02	26.68		
	13	439.71	9.55882E-03	45.58	D-Esc	
	14	511.52	1.50811E-02	45.25		
	15	546.42	7.11310E-03	56.67		
	18	769.65	8.92094E-03	41.07		
	19	823.99	4.61879E-03	59.86		
M	20	908.20	2.25444E-03	58.93		
	22	933.07	4.01652E-03	59.09		
	23	950.15	6.77083E-03	29.51	S-Esc	
	25	985.99	8.00000E-03	37.64		
	26	1010.63	5.94729E-03	40.45		
	27	1121.69	1.31541E-02	32.77	Tol.	TA-182
	28	1378.62	6.80594E-03	52.36		
	29	1427.36	3.66959E-03	42.15		
	31	1509.59	3.61111E-03	38.46		
	32	1640.22	5.27778E-03	22.94		
	33	1717.26	2.22222E-03	45.18		
	34	1729.19	2.57576E-03	41.77		
	36	2169.43	1.58730E-03	53.22		
	38	2380.72	1.66667E-03	40.82		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	1.66E+01	1.99E+00
GA-67	0.53	93.31	*	35.70	7.58E-01	1.09E+00
		208.95		2.24		
		300.22		16.00		
TL-208	0.86	583.14	*	30.22	8.68E-01	2.30E-01
		860.37		4.48		
		2614.66	*	35.85	4.37E-01	1.80E-01
PB-212	0.89	238.63	*	44.60	9.94E-01	1.27E-01
		300.09		3.41		
BI-214	0.72	609.31	*	46.30	5.44E-01	1.51E-01
		1120.29		15.10		
		1764.49	*	15.80	6.23E-01	3.13E-01
		2204.22	*	4.98	7.74E-01	5.21E-01
PB-214	0.98	295.21	*	19.19	6.49E-01	2.77E-01
		351.92	*	37.19	6.33E-01	1.30E-01
AC-228	0.95	338.32	*	11.40	5.67E-01	4.82E-01
		911.07	*	27.70	7.01E-01	2.15E-01
		969.11	*	16.60	5.22E-01	3.86E-01
TH-231	0.30	25.64		14.70		
		84.21	*	6.40	3.96E-01	4.44E-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	0.988	1.66E+01	1.99E+00	
GA-67	0.530	7.58E-01	1.09E+00	
TL-208	0.865	6.00E-01	1.42E-01	
PB-212	0.891	9.94E-01	1.27E-01	
BI-214	0.726	5.73E-01	1.32E-01	

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
PB-214	0.989	6.36E-01	1.18E-01	
AC-228	0.953	6.47E-01	1.75E-01	
TH-231	0.303	3.96E-01	4.44E-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 1411131-03

J1V1L2 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 9:54:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	24.48	3.41078E-02	31.13		
	2	32.97	2.40262E-02	43.84	Tol.	I-129
	3	76.35	1.91647E-01	9.10		
	6	206.55	3.48563E-02	34.81		
	7	217.42	1.65496E-02	47.53		
m	9	242.18	3.35788E-02	26.68		
	13	439.71	9.55882E-03	45.58	D-Esc	
	14	511.52	1.50811E-02	45.25		
	15	546.42	7.11310E-03	56.67		
	18	769.65	8.92094E-03	41.07		
	19	823.99	4.61879E-03	59.86		
M	20	908.20	2.25444E-03	58.93		
	22	933.07	4.01652E-03	59.09		
	23	950.15	6.77083E-03	29.51	S-Esc	
	25	985.99	8.00000E-03	37.64		
	26	1010.63	5.94729E-03	40.45		
	27	1121.69	1.31541E-02	32.77	Tol.	TA-182
	28	1378.62	6.80594E-03	52.36		
	29	1427.36	3.66959E-03	42.15		
	31	1509.59	3.61111E-03	38.46		
	32	1640.22	5.27778E-03	22.94		
	33	1717.26	2.22222E-03	45.18		
	34	1729.19	2.57576E-03	41.77		
	36	2169.43	1.58730E-03	53.22		
	38	2380.72	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 1411131-03

J1V1L2 SAF: RC-107

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	-7.73E-02	5.26E-01	5.26E-01
+	NA-22	1274.54		99.94	-4.10E-03	8.96E-02	8.96E-02
+	NA-24	1368.53		99.99	1.06E+00	3.58E+01	5.71E+01
		2754.09		99.86	-3.86E+00		3.58E+01
+	AL-26	1808.65		99.76	-1.10E-02	4.94E-02	4.94E-02
+	K-40	1460.81	*	10.67	1.66E+01	2.86E-01	2.86E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	2.57E-02	5.47E-02	5.47E-02
		78.34		96.00	9.11E-02		6.30E-02
+	SC-46	889.25		99.98	-2.72E-02	7.11E-02	7.11E-02
		1120.51		99.99	7.15E-02		1.09E-01
+	V-48	983.52		99.98	-1.21E-02	8.87E-02	8.87E-02
		1312.10		97.50	1.83E-02		1.22E-01
+	CR-51	320.08		9.83	-1.13E-01	6.16E-01	6.16E-01
+	MN-54	834.83		99.97	-2.73E-02	7.35E-02	7.35E-02
+	CO-56	846.75		99.96	2.70E-02	7.60E-02	7.60E-02
		1037.75		14.03	1.14E-01		5.86E-01
		1238.25		67.00	8.13E-02		1.63E-01
		1771.40		15.51	-7.55E-02		3.55E-01
		2598.48		16.90	7.16E-02		3.15E-01
+	CO-57	122.06		85.51	-7.75E-03	4.76E-02	4.76E-02
		136.48		10.60	-2.23E-01		3.59E-01
+	CO-58	810.76		99.40	5.86E-03	7.34E-02	7.34E-02
+	FE-59	1099.22		56.50	-6.41E-02	1.55E-01	1.55E-01
		1291.56		43.20	1.17E-02		2.20E-01
+	CO-60	1173.22		100.00	-2.97E-02	8.15E-02	8.15E-02
		1332.49		100.00	7.26E-04		9.03E-02
+	ZN-65	1115.52		50.75	7.24E-03	1.37E-01	1.37E-01
+	GA-67	93.31	*	35.70	7.58E-01	1.09E+00	1.09E+00
		208.95		2.24	2.76E+00		8.44E+00
		300.22		16.00	-2.28E-02		1.17E+00
+	SE-75	121.11		16.70	-3.71E-02	6.75E-02	2.50E-01
		136.00		59.20	6.86E-03		6.75E-02
		264.65		59.80	-5.78E-02		8.37E-02
		279.53		25.20	5.51E-02		1.98E-01
		400.65		11.40	-2.11E-02		4.63E-01
+	RB-82	776.52		13.00	-1.68E-01	5.05E-01	5.05E-01
+	RB-83	520.41		46.00	2.24E-02	1.31E-01	1.31E-01
		529.64		30.30	-1.28E-01		1.80E-01
		552.65		16.40	7.05E-03		3.30E-01
+	KR-85	513.99		0.43	2.27E+01	1.91E+01	1.91E+01
+	SR-85	513.99		99.27	1.06E-01	8.89E-02	8.89E-02

0200

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	-1.21E-02	7.04E-02	7.04E-02
		1836.01	99.38	3.53E-03		7.48E-02
+	NB-93M	16.57	9.43	-2.48E+00	6.06E+01	6.06E+01
+	NB-94	702.63	100.00	2.43E-02	6.84E-02	6.84E-02
		871.10	100.00	1.38E-02		6.88E-02
+	NB-95	765.79	99.81	-3.44E-03	8.86E-02	8.86E-02
+	NB-95M	235.69	25.00	3.09E+00	1.10E+00	1.10E+00
+	ZR-95	724.18	43.70	-5.09E-02	1.27E-01	1.75E-01
		756.72	55.30	-3.06E-02		1.27E-01
+	MO-99	181.06	6.20	-2.56E-01	2.20E+00	3.10E+00
		739.58	12.80	-1.94E-01		2.20E+00
		778.00	4.50	8.61E-01		5.74E+00
+	RU-103	497.08	89.00	2.82E-02	7.24E-02	7.24E-02
+	RU-106	621.84	9.80	-8.33E-02	5.69E-01	5.69E-01
+	AG-108M	433.93	89.90	-3.76E-03	5.60E-02	5.60E-02
		614.37	90.40	2.11E-02		7.63E-02
		722.95	90.50	-5.18E-02		7.39E-02
+	CD-109	88.03	3.72	1.16E+00	1.42E+00	1.42E+00
+	AG-110M	657.75	93.14	-3.17E-02	6.14E-02	6.14E-02
		677.61	10.53	-1.60E-01		6.00E-01
		706.67	16.46	9.69E-02		4.15E-01
		763.93	21.98	3.44E-02		3.32E-01
		884.67	71.63	-4.52E-03		1.03E-01
		1384.27	23.94	2.12E-02		3.14E-01
+	CD-113M	263.70	0.02	-4.23E+01	2.13E+02	2.13E+02
+	SN-113	255.12	1.93	-1.79E+00	8.07E-02	2.52E+00
		391.69	64.90	2.76E-03		8.07E-02
+	TE123M	159.00	84.10	-1.14E-04	5.18E-02	5.18E-02
+	SB-124	602.71	97.87	3.77E-03	6.84E-02	6.84E-02
		645.85	7.26	3.10E-01		8.88E-01
		722.78	11.10	-4.53E-01		6.46E-01
		1691.02	49.00	2.35E-02		1.36E-01
+	I-125	35.49	6.49	-9.38E-02	1.82E+00	1.82E+00
+	SB-125	176.33	6.89	-2.27E-02	1.97E-01	5.94E-01
		427.89	29.33	1.22E-01		1.97E-01
		463.38	10.35	2.81E-01		5.83E-01
		600.56	17.80	1.11E-01		3.66E-01
		635.90	11.32	3.43E-01		5.96E-01
+	SB-126	414.70	83.30	-4.96E-02	8.30E-02	9.09E-02
		666.33	99.60	2.94E-02		9.59E-02
		695.00	99.60	-1.08E-02		8.30E-02
		720.50	53.80	4.43E-04		1.60E-01
+	SN-126	87.57	37.00	1.15E-01	1.41E-01	1.41E-01
+	SB-127	473.00	25.00	-8.63E-02	4.97E-01	6.07E-01
		685.20	35.70	9.88E-02		4.97E-01
		783.80	14.70	3.46E-01		1.29E+00
+	I-129	29.78	57.00	-3.13E-01	3.37E-01	3.37E-01
		33.60	13.20	9.82E-01		1.04E+00

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	7.41E-01	3.37E-01	1.16E+00
+	I-131	284.30	6.05	-1.02E-01	1.03E-01	1.33E+00
		364.48	81.20	-2.85E-02		1.03E-01
		636.97	7.26	7.91E-01		1.53E+00
		722.89	1.80	-4.38E+00		6.24E+00
+	TE-132	49.72	13.10	-1.64E+00	2.05E-01	1.56E+00
		228.16	88.00	-4.16E-02		2.05E-01
+	BA-133	81.00	33.00	-5.06E-01	1.06E-01	1.39E-01
		302.84	17.80	-1.19E-01		2.79E-01
		356.01	60.00	1.61E-02		1.06E-01
+	I-133	529.87	86.30	-5.28E+00	7.43E+00	7.43E+00
+	CS-134	563.23	8.38	-3.78E-01	7.28E-02	6.07E-01
		569.32	15.43	2.98E-02		3.79E-01
		604.70	97.60	1.11E-02		7.28E-02
		795.84	85.40	3.49E-02		8.70E-02
		801.93	8.73	-3.70E-01		7.46E-01
+	CS-135	268.24	16.00	3.94E-02	3.25E-01	3.25E-01
+	I-135	1131.51	22.50	6.62E+05	1.20E+06	1.50E+06
		1260.41	28.60	5.17E+05		1.20E+06
		1678.03	9.54	-2.87E+05		2.15E+06
+	CS-136	153.22	7.46	3.13E-01	7.59E-02	7.88E-01
		163.89	4.61	3.60E-01		1.16E+00
		176.55	13.56	-1.13E-02		4.12E-01
		273.65	12.66	1.06E-01		5.64E-01
		340.57	48.50	1.70E-01		1.88E-01
		818.50	99.70	-2.94E-02		7.59E-02
		1048.07	79.60	5.39E-02		1.33E-01
		1235.34	19.70	-9.01E-02		6.77E-01
+	CS-137	661.65	85.12	-1.44E-02	7.03E-02	7.03E-02
+	LA-138	788.74	34.00	-1.20E-01	7.60E-02	1.90E-01
		1435.80	66.00	-6.89E-02		7.60E-02
+	CE-139	165.85	80.35	-4.79E-02	4.72E-02	4.72E-02
+	BA-140	162.64	6.70	-4.99E-02	3.65E-01	8.13E-01
		304.84	4.50	-1.41E+00		1.48E+00
		423.70	3.20	-1.30E+00		2.32E+00
		437.55	2.00	2.38E+00		3.85E+00
		537.32	25.00	2.39E-01		3.65E-01
+	LA-140	328.77	20.50	5.40E-02	1.06E-01	3.56E-01
		487.03	45.50	4.17E-02		1.78E-01
		815.85	23.50	5.64E-02		3.57E-01
		1596.49	95.49	4.47E-02		1.06E-01
+	CE-141	145.44	48.40	9.76E-03	9.29E-02	9.29E-02
+	CE-143	57.36	11.80	-7.03E+00	3.46E+00	9.28E+00
		293.26	42.00	5.74E+00		3.46E+00
		664.55	5.20	1.18E+01		2.69E+01
+	CE-144	133.54	10.80	-3.12E-02	3.69E-01	3.69E-01
+	PM-144	476.78	42.00	-1.50E-02	5.83E-02	1.23E-01
		618.01	98.60	1.10E-02		6.13E-02
		696.49	99.49	-3.41E-02		5.83E-02

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-145	36.85	21.70	-1.83E-01	2.46E-01	4.51E-01
		37.36	39.70	1.34E-01		2.46E-01
		42.30	15.10	-3.55E-01		4.80E-01
		72.40	2.31	-2.14E+00		2.47E+00
+	PM-146	453.90	39.94	3.44E-02	1.43E-01	1.43E-01
		735.90	14.01	2.13E-01		4.94E-01
		747.13	13.10	1.40E-02		4.99E-01
+	ND-147	91.11	28.90	-1.20E-01	2.64E-01	2.64E-01
		531.02	13.10	-1.66E-02		6.29E-01
+	PM-149	285.90	3.10	-1.56E+00	1.02E+01	1.02E+01
+	EU-152	121.78	20.50	-3.18E-02	1.95E-01	1.95E-01
		244.69	5.40	3.21E-02		1.09E+00
		344.27	19.13	4.86E-02		2.87E-01
		778.89	9.20	-1.57E-01		5.83E-01
		964.01	10.40	2.33E-01		8.51E-01
		1085.78	7.22	-3.15E-01		9.70E-01
		1112.02	9.60	1.88E-01		8.11E-01
		1407.95	14.94	-1.44E-01		4.80E-01
+	GD-153	97.43	31.30	3.12E-02	1.33E-01	1.33E-01
		103.18	22.20	-7.55E-02		1.91E-01
+	EU-154	123.07	40.50	-8.56E-03	9.97E-02	9.97E-02
		723.30	19.70	-2.38E-01		3.40E-01
		873.19	11.50	-1.37E-01		5.73E-01
		996.32	10.30	8.34E-03		7.41E-01
		1004.76	17.90	2.64E-02		4.00E-01
		1274.45	35.50	-1.15E-02		2.52E-01
+	EU-155	86.50	30.90	1.57E-01	1.70E-01	1.70E-01
		105.30	20.70	1.68E-01		2.10E-01
+	EU-156	811.77	10.40	-7.89E-02	8.19E-01	8.19E-01
		1153.47	7.20	1.08E+00		1.83E+00
		1230.71	8.90	-7.98E-01		1.36E+00
+	HO-166M	184.41	72.60	8.86E-02	6.95E-02	6.95E-02
		280.45	29.60	3.75E-02		1.61E-01
		410.94	11.10	-2.57E-01		4.88E-01
		711.69	54.10	2.69E-02		1.17E-01
+	TM-171	66.72	0.14	-7.57E+01	3.63E+01	3.63E+01
+	HF-172	81.75	4.52	-2.38E+00	3.63E-01	1.01E+00
		125.81	11.30	-2.06E-01		3.63E-01
+	LU-172	181.53	20.60	-6.39E-01	2.32E-01	3.73E-01
		810.06	16.63	1.98E-01		7.78E-01
		912.12	15.25	2.63E+00		1.50E+00
		1093.66	62.50	1.86E-02		2.32E-01
+	LU-173	100.72	5.24	4.73E-02	2.60E-01	8.03E-01
		272.11	21.20	2.59E-01		2.60E-01
+	HF-175	343.40	84.00	1.40E-02	7.20E-02	7.20E-02
+	LU-176	88.34	13.30	-2.24E-02	5.48E-02	3.99E-01
		201.83	86.00	1.09E-03		5.87E-02
		306.78	94.00	1.74E-02		5.48E-02
+	TA-182	67.75	41.20	6.12E-02	1.30E-01	1.30E-01

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TA-182	1121.30		34.90	3.54E-01	1.30E-01	3.23E-01
		1189.05		16.23	-1.67E-01		5.32E-01
		1221.41		26.98	-4.88E-02		3.27E-01
		1231.02		11.44	-3.00E-01		8.51E-01
+	IR-192	308.46		29.68	6.60E-02	1.15E-01	1.88E-01
		468.07		48.10	-9.07E-02		1.15E-01
+	HG-203	279.19		77.30	2.36E-03	6.76E-02	6.76E-02
+	BI-207	569.67		97.72	7.46E-03	6.17E-02	6.17E-02
		1063.62		74.90	1.10E-02		1.10E-01
+	TL-208	583.14	*	30.22	8.68E-01	1.80E-01	2.98E-01
		860.37		4.48	1.09E+00		1.82E+00
		2614.66	*	35.85	4.37E-01		1.80E-01
+	BI-210M	262.00		45.00	9.27E-02	1.17E-01	1.17E-01
		300.00		23.00	-4.41E-03		2.26E-01
+	PB-210	46.50		4.25	1.87E+00	1.58E+00	1.58E+00
+	PB-211	404.84		2.90	-9.19E-01	1.77E+00	1.77E+00
		831.96		2.90	1.57E-01		2.52E+00
+	BI-212	727.17		11.80	2.22E-01	6.57E-01	6.57E-01
		1620.62		2.75	-6.94E-01		2.00E+00
+	PB-212	238.63	*	44.60	9.94E-01	2.02E-01	2.02E-01
		300.09		3.41	-2.98E-02		1.52E+00
+	BI-214	609.31	*	46.30	5.44E-01	1.98E-01	1.98E-01
		1120.29		15.10	4.50E-01		6.89E-01
		1764.49	*	15.80	6.23E-01		3.81E-01
		2204.22	*	4.98	7.74E-01		2.33E-01
+	PB-214	295.21	*	19.19	6.49E-01	1.52E-01	4.26E-01
		351.92	*	37.19	6.33E-01		1.52E-01
+	RN-219	401.80		6.50	-4.58E-01	7.70E-01	7.70E-01
+	RA-223	323.87		3.88	-1.76E+00	1.30E+00	1.30E+00
+	RA-224	240.98		3.95	1.12E+01	2.47E+00	2.47E+00
+	RA-225	40.00		31.00	2.33E-01	3.64E-01	3.64E-01
+	RA-226	186.21		3.28	2.28E+00	1.55E+00	1.55E+00
+	TH-227	50.10		8.40	-7.03E-01	6.68E-01	6.68E-01
		236.00		11.50	2.12E+00		7.51E-01
		256.20		6.30	5.16E-02		7.78E-01
+	AC-228	338.32	*	11.40	5.67E-01	2.98E-01	7.79E-01
		911.07	*	27.70	7.01E-01		2.98E-01
		969.11	*	16.60	5.22E-01		6.03E-01
+	TH-230	48.44		16.90	2.48E-01	3.73E-01	3.73E-01
		62.85		4.60	1.30E+00		1.24E+00
		67.67		0.37	6.57E+00		1.40E+01
+	PA-231	283.67		1.60	-2.29E-01	2.16E+00	2.98E+00
		302.67		2.30	-9.18E-01		2.16E+00
+	TH-231	25.64		14.70	1.89E+00	1.68E+00	2.63E+00
		84.21	*	6.40	3.96E-01		1.68E+00
+	PA-233	311.98		38.60	1.50E-02	1.59E-01	1.59E-01
+	PA-234	131.20		20.40	8.31E-02	2.07E-01	2.07E-01
		733.99		8.80	-1.65E-01		7.76E-01

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	946.00		12.00	-2.22E-01	2.07E-01	6.08E-01
+	PA-234M	1001.03		0.92	1.77E+00	8.23E+00	8.23E+00
+	TH-234	63.29		3.80	6.55E-01	1.49E+00	1.49E+00
+	U-235	143.76		10.50	-1.81E-01	3.71E-01	3.71E-01
		163.35		4.70	2.57E-01		8.28E-01
		205.31		4.70	1.82E-01		1.11E+00
+	NP-237	86.50		12.60	3.85E-01	4.17E-01	4.17E-01
+	NP-239	106.10		22.70	4.58E-01	1.10E+00	1.10E+00
		228.18		10.70	-5.60E-01		2.76E+00
		277.60		14.10	-8.60E-01		1.97E+00
+	AM-241	59.54		35.90	-1.22E-01	1.48E-01	1.48E-01
+	AM-243	74.67		66.00	1.16E-01	9.84E-02	9.84E-02
+	CM-243	209.75		3.29	6.25E-01	3.37E-01	1.56E+00
		228.14		10.60	-9.60E-02		4.74E-01
		277.60		14.00	-1.47E-01		3.37E-01

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = 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	5.26E-01	5.26E-01	-7.73E-02	2.45E-01
	NA-22	1274.54		99.94	8.96E-02	8.96E-02	-4.10E-03	4.09E-02
	NA-24	1368.53		99.99	5.71E+01	3.58E+01	1.06E+00	2.53E+01
		2754.09		99.86	3.58E+01		-3.86E+00	1.27E+01
	AL-26	1808.65		99.76	4.94E-02	4.94E-02	-1.10E-02	1.96E-02
+	K-40	1460.81	*	10.67	2.86E-01	2.86E-01	1.66E+01	1.02E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TI-44	67.88		94.40	5.47E-02	5.47E-02	2.57E-02	2.67E-02
		78.34		96.00	6.30E-02		9.11E-02	3.09E-02
	SC-46	889.25		99.98	7.11E-02	7.11E-02	-2.72E-02	3.25E-02
		1120.51		99.99	1.09E-01		7.15E-02	5.10E-02
	V-48	983.52		99.98	8.87E-02	8.87E-02	-1.21E-02	4.03E-02
		1312.10		97.50	1.22E-01		1.83E-02	5.55E-02
	CR-51	320.08		9.83	6.16E-01	6.16E-01	-1.13E-01	2.94E-01
	MN-54	834.83		99.97	7.35E-02	7.35E-02	-2.73E-02	3.40E-02
	CO-56	846.75		99.96	7.60E-02	7.60E-02	2.70E-02	3.51E-02
		1037.75		14.03	5.86E-01		1.14E-01	2.68E-01
		1238.25		67.00	1.63E-01		8.13E-02	7.56E-02
		1771.40		15.51	3.55E-01		-7.55E-02	1.43E-01
		2598.48		16.90	3.15E-01		7.16E-02	1.18E-01
	CO-57	122.06		85.51	4.76E-02	4.76E-02	-7.75E-03	2.31E-02
		136.48		10.60	3.59E-01		-2.23E-01	1.73E-01
	CO-58	810.76		99.40	7.34E-02	7.34E-02	5.86E-03	3.38E-02
	FE-59	1099.22		56.50	1.55E-01	1.55E-01	-6.41E-02	7.10E-02
		1291.56		43.20	2.20E-01		1.17E-02	1.00E-01
	CO-60	1173.22		100.00	8.15E-02	8.15E-02	-2.97E-02	3.71E-02
		1332.49		100.00	9.03E-02		7.26E-04	4.11E-02
	ZN-65	1115.52		50.75	1.37E-01	1.37E-01	7.24E-03	6.13E-02
+	GA-67	93.31	*	35.70	1.09E+00	1.09E+00	7.58E-01	5.39E-01
		208.95		2.24	8.44E+00		2.76E+00	4.08E+00
		300.22		16.00	1.17E+00		-2.28E-02	5.59E-01
	SE-75	121.11		16.70	2.50E-01	6.75E-02	-3.71E-02	1.21E-01
		136.00		59.20	6.75E-02		6.86E-03	3.26E-02
		264.65		59.80	8.37E-02		-5.78E-02	4.01E-02
		279.53		25.20	1.98E-01		5.51E-02	9.48E-02
		400.65		11.40	4.63E-01		-2.11E-02	2.18E-01
	RB-82	776.52		13.00	5.05E-01	5.05E-01	-1.68E-01	2.29E-01
	RB-83	520.41		46.00	1.31E-01	1.31E-01	2.24E-02	6.15E-02
		529.64		30.30	1.80E-01		-1.28E-01	8.34E-02
		552.65		16.40	3.30E-01		7.05E-03	1.53E-01
	KR-85	513.99		0.43	1.91E+01	1.91E+01	2.27E+01	9.12E+00
	SR-85	513.99		99.27	8.89E-02	8.89E-02	1.06E-01	4.25E-02
	Y-88	898.02		93.40	7.04E-02	7.04E-02	-1.21E-02	3.20E-02
		1836.01		99.38	7.48E-02		3.53E-03	3.20E-02
	NB-93M	16.57		9.43	6.06E+01	6.06E+01	-2.48E+00	2.94E+01
	NB-94	702.63		100.00	6.84E-02	6.84E-02	2.43E-02	3.18E-02
		871.10		100.00	6.88E-02		1.38E-02	3.16E-02
	NB-95	765.79		99.81	8.86E-02	8.86E-02	-3.44E-03	4.14E-02
	NB-95M	235.69		25.00	1.10E+00	1.10E+00	3.09E+00	5.37E-01
	ZR-95	724.18		43.70	1.75E-01	1.27E-01	-5.09E-02	8.18E-02
		756.72		55.30	1.27E-01		-3.06E-02	5.89E-02
	MO-99	181.06		6.20	3.10E+00	2.20E+00	-2.56E-01	1.49E+00
		739.58		12.80	2.20E+00		-1.94E-01	1.01E+00
		778.00		4.50	5.74E+00		8.61E-01	2.61E+00
	RU-103	497.08		89.00	7.24E-02	7.24E-02	2.82E-02	3.40E-02
	RU-106	621.84		9.80	5.69E-01	5.69E-01	-8.33E-02	2.63E-01
	AG-108M	433.93		89.90	5.60E-02	5.60E-02	-3.76E-03	2.63E-02
		614.37		90.40	7.63E-02		2.11E-02	3.58E-02
		722.95		90.50	7.39E-02		-5.18E-02	3.43E-02
	CD-109	88.03		3.72	1.42E+00	1.42E+00	1.16E+00	6.93E-01

Analysis Report for 1411131-03

J1V1L2 SAF: RC-107

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	6.14E-02	6.14E-02	-3.17E-02	2.83E-02
	677.61	10.53	6.00E-01		-1.60E-01	2.78E-01
	706.67	16.46	4.15E-01		9.69E-02	1.93E-01
	763.93	21.98	3.32E-01		3.44E-02	1.55E-01
	884.67	71.63	1.03E-01		-4.52E-03	4.75E-02
	1384.27	23.94	3.14E-01		2.12E-02	1.39E-01
CD-113M	263.70	0.02	2.13E+02	2.13E+02	-4.23E+01	1.02E+02
SN-113	255.12	1.93	2.52E+00	8.07E-02	-1.79E+00	1.21E+00
	391.69	64.90	8.07E-02		2.76E-03	3.81E-02
TE123M	159.00	84.10	5.18E-02	5.18E-02	-1.14E-04	2.51E-02
SB-124	602.71	97.87	6.84E-02	6.84E-02	3.77E-03	3.20E-02
	645.85	7.26	8.88E-01		3.10E-01	4.12E-01
	722.78	11.10	6.46E-01		-4.53E-01	2.99E-01
	1691.02	49.00	1.36E-01		2.35E-02	5.76E-02
I-125	35.49	6.49	1.82E+00	1.82E+00	-9.38E-02	8.81E-01
SB-125	176.33	6.89	5.94E-01	1.97E-01	-2.27E-02	2.86E-01
	427.89	29.33	1.97E-01		1.22E-01	9.34E-02
	463.38	10.35	5.83E-01		2.81E-01	2.76E-01
	600.56	17.80	3.66E-01		1.11E-01	1.71E-01
	635.90	11.32	5.96E-01		3.43E-01	2.79E-01
SB-126	414.70	83.30	9.09E-02	8.30E-02	-4.96E-02	4.30E-02
	666.33	99.60	9.59E-02		2.94E-02	4.48E-02
	695.00	99.60	8.30E-02		-1.08E-02	3.82E-02
	720.50	53.80	1.60E-01		4.43E-04	7.38E-02
SN-126	87.57	37.00	1.41E-01	1.41E-01	1.15E-01	6.91E-02
SB-127	473.00	25.00	6.07E-01	4.97E-01	-8.63E-02	2.84E-01
	685.20	35.70	4.97E-01		9.88E-02	2.30E-01
	783.80	14.70	1.29E+00		3.46E-01	5.93E-01
I-129	29.78	57.00	3.37E-01	3.37E-01	-3.13E-01	1.63E-01
	33.60	13.20	1.04E+00		9.82E-01	5.04E-01
	39.58	7.52	1.16E+00		7.41E-01	5.62E-01
I-131	284.30	6.05	1.33E+00	1.03E-01	-1.02E-01	6.34E-01
	364.48	81.20	1.03E-01		-2.85E-02	4.85E-02
	636.97	7.26	1.53E+00		7.91E-01	7.14E-01
	722.89	1.80	6.24E+00		-4.38E+00	2.90E+00
TE-132	49.72	13.10	1.56E+00	2.05E-01	-1.64E+00	7.57E-01
	228.16	88.00	2.05E-01		-4.16E-02	9.90E-02
BA-133	81.00	33.00	1.39E-01	1.06E-01	-5.06E-01	6.79E-02
	302.84	17.80	2.79E-01		-1.19E-01	1.33E-01
	356.01	60.00	1.06E-01		1.61E-02	5.06E-02
I-133	529.87	86.30	7.43E+00	7.43E+00	-5.28E+00	3.45E+00
CS-134	563.23	8.38	6.07E-01	7.28E-02	-3.78E-01	2.80E-01
	569.32	15.43	3.79E-01		2.98E-02	1.77E-01
	604.70	97.60	7.28E-02		1.11E-02	3.43E-02
	795.84	85.40	8.70E-02		3.49E-02	4.04E-02
	801.93	8.73	7.46E-01		-3.70E-01	3.42E-01
CS-135	268.24	16.00	3.25E-01	3.25E-01	3.94E-02	1.56E-01
I-135	1131.51	22.50	1.50E+06	1.20E+06	6.62E+05	6.87E+05
	1260.41	28.60	1.20E+06		5.17E+05	5.49E+05
	1678.03	9.54	2.15E+06		-2.87E+05	8.82E+05
CS-136	153.22	7.46	7.88E-01	7.59E-02	3.13E-01	3.81E-01
	163.89	4.61	1.16E+00		3.60E-01	5.60E-01
	176.55	13.56	4.12E-01		-1.13E-02	1.98E-01

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J1V1L2 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	273.65	12.66	5.64E-01	7.59E-02	1.06E-01	2.70E-01
	340.57	48.50	1.88E-01		1.70E-01	9.04E-02
	818.50	99.70	7.59E-02		-2.94E-02	3.42E-02
	1048.07	79.60	1.33E-01		5.39E-02	6.06E-02
	1235.34	19.70	6.77E-01		-9.01E-02	3.12E-01
CS-137	661.65	85.12	7.03E-02	7.03E-02	-1.44E-02	3.25E-02
LA-138	788.74	34.00	1.90E-01	7.60E-02	-1.20E-01	8.72E-02
	1435.80	66.00	7.60E-02		-6.89E-02	3.15E-02
CE-139	165.85	80.35	4.72E-02	4.72E-02	-4.79E-02	2.27E-02
BA-140	162.64	6.70	8.13E-01	3.65E-01	-4.99E-02	3.92E-01
	304.84	4.50	1.48E+00		-1.41E+00	7.06E-01
	423.70	3.20	2.32E+00		-1.30E+00	1.09E+00
	437.55	2.00	3.85E+00		2.38E+00	1.82E+00
	537.32	25.00	3.65E-01		2.39E-01	1.72E-01
LA-140	328.77	20.50	3.56E-01	1.06E-01	5.40E-02	1.70E-01
	487.03	45.50	1.78E-01		4.17E-02	8.40E-02
	815.85	23.50	3.57E-01		5.64E-02	1.63E-01
	1596.49	95.49	1.06E-01		4.47E-02	4.63E-02
CE-141	145.44	48.40	9.29E-02	9.29E-02	9.76E-03	4.49E-02
CE-143	57.36	11.80	9.28E+00	3.46E+00	-7.03E+00	4.52E+00
	293.26	42.00	3.46E+00		5.74E+00	1.67E+00
	664.55	5.20	2.69E+01		1.18E+01	1.25E+01
CE-144	133.54	10.80	3.69E-01	3.69E-01	-3.12E-02	1.79E-01
PM-144	476.78	42.00	1.23E-01	5.83E-02	-1.50E-02	5.73E-02
	618.01	98.60	6.13E-02		1.10E-02	2.85E-02
	696.49	99.49	5.83E-02		-3.41E-02	2.68E-02
PM-145	36.85	21.70	4.51E-01	2.46E-01	-1.83E-01	2.18E-01
	37.36	39.70	2.46E-01		1.34E-01	1.19E-01
	42.30	15.10	4.80E-01		-3.55E-01	2.32E-01
	72.40	2.31	2.47E+00		-2.14E+00	1.21E+00
PM-146	453.90	39.94	1.43E-01	1.43E-01	3.44E-02	6.72E-02
	735.90	14.01	4.94E-01		2.13E-01	2.29E-01
	747.13	13.10	4.99E-01		1.40E-02	2.31E-01
ND-147	91.11	28.90	2.64E-01	2.64E-01	-1.20E-01	1.29E-01
	531.02	13.10	6.29E-01		-1.66E-02	2.94E-01
PM-149	285.90	3.10	1.02E+01	1.02E+01	-1.56E+00	4.85E+00
EU-152	121.78	20.50	1.95E-01	1.95E-01	-3.18E-02	9.47E-02
	244.69	5.40	1.09E+00		3.21E-02	5.27E-01
	344.27	19.13	2.87E-01		4.86E-02	1.37E-01
	778.89	9.20	5.83E-01		-1.57E-01	2.64E-01
	964.01	10.40	8.51E-01		2.33E-01	3.96E-01
	1085.78	7.22	9.70E-01		-3.15E-01	4.38E-01
	1112.02	9.60	8.11E-01		1.88E-01	3.69E-01
	1407.95	14.94	4.80E-01		-1.44E-01	2.12E-01
GD-153	97.43	31.30	1.33E-01	1.33E-01	3.12E-02	6.45E-02
	103.18	22.20	1.91E-01		-7.55E-02	9.29E-02
EU-154	123.07	40.50	9.97E-02	9.97E-02	-8.56E-03	4.83E-02
	723.30	19.70	3.40E-01		-2.38E-01	1.58E-01
	873.19	11.50	5.73E-01		-1.37E-01	2.62E-01
	996.32	10.30	7.41E-01		8.34E-03	3.40E-01
	1004.76	17.90	4.00E-01		2.64E-02	1.82E-01
	1274.45	35.50	2.52E-01		-1.15E-02	1.15E-01
EU-155	86.50	30.90	1.70E-01	1.70E-01	1.57E-01	8.33E-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)
	EU-155	105.30		20.70	2.10E-01	1.70E-01	1.68E-01	1.02E-01
	EU-156	811.77		10.40	8.19E-01	8.19E-01	-7.89E-02	3.76E-01
		1153.47		7.20	1.83E+00		1.08E+00	8.51E-01
		1230.71		8.90	1.36E+00		-7.98E-01	6.23E-01
	HO-166M	184.41		72.60	6.95E-02	6.95E-02	8.86E-02	3.37E-02
		280.45		29.60	1.61E-01		3.75E-02	7.67E-02
		410.94		11.10	4.88E-01		-2.57E-01	2.31E-01
		711.69		54.10	1.17E-01		2.69E-02	5.40E-02
	TM-171	66.72		0.14	3.63E+01	3.63E+01	-7.57E+01	1.77E+01
	HF-172	81.75		4.52	1.01E+00	3.63E-01	-2.38E+00	4.94E-01
		125.81		11.30	3.63E-01		-2.06E-01	1.76E-01
	LU-172	181.53		20.60	3.73E-01	2.32E-01	-6.39E-01	1.80E-01
		810.06		16.63	7.78E-01		1.98E-01	3.59E-01
		912.12		15.25	1.50E+00		2.63E+00	7.14E-01
		1093.66		62.50	2.32E-01		1.86E-02	1.06E-01
	LU-173	100.72		5.24	8.03E-01	2.60E-01	4.73E-02	3.90E-01
		272.11		21.20	2.60E-01		2.59E-01	1.25E-01
	HF-175	343.40		84.00	7.20E-02	7.20E-02	1.40E-02	3.44E-02
	LU-176	88.34		13.30	3.99E-01	5.48E-02	-2.24E-02	1.95E-01
		201.83		86.00	5.87E-02		1.09E-03	2.84E-02
		306.78		94.00	5.48E-02		1.74E-02	2.62E-02
	TA-182	67.75		41.20	1.30E-01	1.30E-01	6.12E-02	6.35E-02
		1121.30		34.90	3.23E-01		3.54E-01	1.51E-01
		1189.05		16.23	5.32E-01		-1.67E-01	2.42E-01
		1221.41		26.98	3.27E-01		-4.88E-02	1.49E-01
		1231.02		11.44	8.51E-01		-3.00E-01	3.91E-01
	IR-192	308.46		29.68	1.88E-01	1.15E-01	6.60E-02	8.98E-02
		468.07		48.10	1.15E-01		-9.07E-02	5.41E-02
	HG-203	279.19		77.30	6.76E-02	6.76E-02	2.36E-03	3.23E-02
	BI-207	569.67		97.72	6.17E-02	6.17E-02	7.46E-03	2.89E-02
		1063.62		74.90	1.10E-01		1.10E-02	5.05E-02
+	TL-208	583.14	*	30.22	2.98E-01	1.80E-01	8.68E-01	1.42E-01
		860.37		4.48	1.82E+00		1.09E+00	8.47E-01
		2614.66	*	35.85	1.80E-01		4.37E-01	7.24E-02
	BI-210M	262.00		45.00	1.17E-01	1.17E-01	9.27E-02	5.63E-02
		300.00		23.00	2.26E-01		-4.41E-03	1.08E-01
	PB-210	46.50		4.25	1.58E+00	1.58E+00	1.87E+00	7.67E-01
	PB-211	404.84		2.90	1.77E+00	1.77E+00	-9.19E-01	8.37E-01
		831.96		2.90	2.52E+00		1.57E-01	1.16E+00
	BI-212	727.17		11.80	6.57E-01	6.57E-01	2.22E-01	3.08E-01
		1620.62		2.75	2.00E+00		-6.94E-01	8.30E-01
+	PB-212	238.63	*	44.60	2.02E-01	2.02E-01	9.94E-01	9.90E-02
		300.09		3.41	1.52E+00		-2.98E-02	7.29E-01
+	BI-214	609.31	*	46.30	1.98E-01	1.98E-01	5.44E-01	9.47E-02
		1120.29		15.10	6.89E-01		4.50E-01	3.21E-01
		1764.49	*	15.80	3.81E-01		6.23E-01	1.59E-01
		2204.22	*	4.98	2.33E-01		7.74E-01	0.00E+00
+	PB-214	295.21	*	19.19	4.26E-01	1.52E-01	6.49E-01	2.07E-01
		351.92	*	37.19	1.52E-01		6.33E-01	7.25E-02
	RN-219	401.80		6.50	7.70E-01	7.70E-01	-4.58E-01	3.63E-01
	RA-223	323.87		3.88	1.30E+00	1.30E+00	-1.76E+00	6.17E-01
	RA-224	240.98		3.95	2.47E+00	2.47E+00	1.12E+01	1.21E+00
	RA-225	40.00		31.00	3.64E-01	3.64E-01	2.33E-01	1.76E-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)
	RA-226	186.21		3.28	1.55E+00	1.55E+00	2.28E+00	7.52E-01
	TH-227	50.10		8.40	6.68E-01	6.68E-01	-7.03E-01	3.24E-01
		236.00		11.50	7.51E-01		2.12E+00	3.68E-01
		256.20		6.30	7.78E-01		5.16E-02	3.73E-01
+	AC-228	338.32	*	11.40	7.79E-01	2.98E-01	5.67E-01	3.78E-01
		911.07	*	27.70	2.98E-01		7.01E-01	1.38E-01
		969.11	*	16.60	6.03E-01		5.22E-01	2.83E-01
	TH-230	48.44		16.90	3.73E-01	3.73E-01	2.48E-01	1.81E-01
		62.85		4.60	1.24E+00		1.30E+00	6.08E-01
		67.67		0.37	1.40E+01		6.57E+00	6.82E+00
	PA-231	283.67		1.60	2.98E+00	2.16E+00	-2.29E-01	1.42E+00
		302.67		2.30	2.16E+00		-9.18E-01	1.03E+00
+	TH-231	25.64		14.70	2.63E+00	1.68E+00	1.89E+00	1.27E+00
		84.21	*	6.40	1.68E+00		3.96E-01	8.30E-01
	PA-233	311.98		38.60	1.59E-01	1.59E-01	1.50E-02	7.60E-02
	PA-234	131.20		20.40	2.07E-01	2.07E-01	8.31E-02	1.00E-01
		733.99		8.80	7.76E-01		-1.65E-01	3.60E-01
		946.00		12.00	6.08E-01		-2.22E-01	2.79E-01
	PA-234M	1001.03		0.92	8.23E+00	8.23E+00	1.77E+00	3.77E+00
	TH-234	63.29		3.80	1.49E+00	1.49E+00	6.55E-01	7.28E-01
	U-235	143.76		10.50	3.71E-01	3.71E-01	-1.81E-01	1.79E-01
		163.35		4.70	8.28E-01		2.57E-01	3.99E-01
		205.31		4.70	1.11E+00		1.82E-01	5.37E-01
	NP-237	86.50		12.60	4.17E-01	4.17E-01	3.85E-01	2.04E-01
	NP-239	106.10		22.70	1.10E+00	1.10E+00	4.58E-01	5.34E-01
		228.18		10.70	2.76E+00		-5.60E-01	1.33E+00
		277.60		14.10	1.97E+00		-8.60E-01	9.40E-01
	AM-241	59.54		35.90	1.48E-01	1.48E-01	-1.22E-01	7.18E-02
	AM-243	74.67		66.00	9.84E-02	9.84E-02	1.16E-01	4.83E-02
	CM-243	209.75		3.29	1.56E+00	3.37E-01	6.25E-01	7.56E-01
		228.14		10.60	4.74E-01		-9.60E-02	2.28E-01
		277.60		14.00	3.37E-01		-1.47E-01	1.61E-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 1411131-03

J1V1L2 SAF: RC-107

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: J1V1L2 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3617

Channel								
1:	0	0	0	0	0	0	0	0
9:	8	147	137	138	120	101	97	64
17:	71	64	74	59	52	69	74	85
25:	79	71	81	58	54	56	71	78
33:	78	70	69	70	46	69	58	91
41:	63	72	68	58	63	69	116	75
49:	74	56	78	66	71	88	90	83
57:	80	98	78	87	107	95	131	178
65:	87	101	109	107	98	122	104	90
73:	101	148	259	184	247	290	117	99
81:	85	89	95	111	120	87	151	171
89:	121	115	107	103	200	150	97	73
97:	71	75	81	88	78	72	82	79
105:	87	99	79	61	70	71	84	77
113:	73	75	74	58	75	72	72	70
121:	66	74	57	65	72	63	70	66
129:	80	90	57	64	56	62	56	57
137:	48	56	45	56	72	62	53	56
145:	51	47	54	66	44	56	66	46
153:	66	61	65	61	53	61	68	52
161:	47	59	45	37	49	41	41	33
169:	65	46	44	44	35	57	42	40
177:	42	49	55	47	45	53	37	44
185:	57	106	92	38	43	35	51	46
193:	46	45	42	36	53	45	43	39
201:	25	50	41	58	39	43	40	36
209:	44	53	51	37	28	37	30	46
217:	39	46	40	36	32	27	36	46
225:	25	34	32	36	45	41	28	33
233:	33	27	39	41	50	104	405	138
241:	44	99	57	23	30	28	34	28
249:	29	31	26	20	20	29	26	23
257:	33	24	35	33	26	33	22	25
265:	39	16	20	20	27	38	39	31
273:	30	23	27	17	25	24	19	22
281:	19	30	20	19	19	19	25	22
289:	25	19	23	23	30	25	73	121
297:	29	24	21	30	26	19	15	19
305:	18	20	22	23	25	28	18	25
313:	19	23	19	31	11	23	23	29
321:	15	22	24	21	20	19	13	30
329:	36	19	13	14	21	16	12	20
337:	18	51	58	26	19	15	32	18
345:	23	24	13	17	10	19	42	143
353:	86	24	14	9	11	19	20	16
361:	13	12	16	17	13	14	16	17

369:	18	20	17	14	15	22	19	11

Sample Title: J1V1L2 SAF: RC-107

Channel								
377:	17	16	19	21	11	15	17	15
385:	18	14	12	18	18	14	16	14
393:	12	5	17	11	14	16	19	12
401:	14	13	7	13	12	17	19	13
409:	16	25	14	15	10	9	22	15
417:	13	16	21	13	11	15	14	6
425:	18	12	18	22	13	14	11	14
433:	9	11	12	12	10	13	24	15
441:	10	11	7	5	11	10	13	16
449:	5	13	7	15	21	14	9	11
457:	17	14	14	13	15	8	25	18
465:	9	14	5	13	14	12	8	10
473:	12	10	11	7	12	6	12	10
481:	9	11	9	8	13	7	17	13
489:	9	21	16	8	13	11	11	13
497:	13	14	10	11	8	9	12	16
505:	14	15	13	14	17	32	53	42
513:	22	17	13	4	14	9	9	8
521:	15	12	8	10	11	11	8	6
529:	12	8	9	9	6	19	7	14
537:	13	19	9	13	13	7	5	5
545:	14	13	13	11	7	6	8	7
553:	8	5	12	7	8	8	11	7
561:	12	8	6	5	8	3	11	10
569:	8	13	8	12	8	14	10	12
577:	7	13	5	15	6	23	65	90
585:	24	13	5	9	5	7	8	9
593:	8	7	4	12	6	12	11	7
601:	11	14	9	10	9	8	17	21
609:	82	83	22	7	9	11	12	12
617:	8	8	7	3	9	8	4	6
625:	12	6	9	11	7	8	11	5
633:	11	8	14	11	12	7	9	8
641:	4	8	9	9	9	7	6	10
649:	5	6	6	9	9	5	8	9
657:	5	8	3	4	9	8	13	5
665:	10	14	7	12	7	9	6	9
673:	9	11	8	11	5	8	7	8
681:	7	9	8	5	7	8	6	6
689:	6	4	14	8	4	6	13	5
697:	5	5	5	7	8	7	12	10
705:	3	15	8	9	7	7	5	6
713:	10	4	12	4	4	4	8	8
721:	6	12	5	7	4	14	17	16
729:	12	6	4	14	8	8	10	6
737:	7	8	11	5	2	6	8	3
745:	10	7	5	8	11	6	7	7
753:	7	7	6	6	7	9	6	9
761:	9	10	6	10	8	7	9	10
769:	21	11	5	9	6	3	6	3
777:	4	6	5	5	5	2	6	6
785:	6	13	6	3	7	6	7	2
793:	9	13	10	5	11	6	4	8

801:	6	7	7	5	6	9	8	8

Sample Title: J1V1L2 SAF: RC-107

Channel								
809:	5	9	8	4	7	7	2	8
817:	3	5	4	4	3	8	6	9
825:	12	4	5	5	7	12	4	10
833:	6	7	6	9	8	5	10	10
841:	7	6	5	7	9	7	4	9
849:	3	10	4	6	5	5	6	5
857:	11	4	6	13	13	8	7	5
865:	6	4	8	9	4	10	5	4
873:	6	4	6	3	6	7	6	11
881:	9	4	6	7	7	5	8	6
889:	5	6	6	3	9	6	3	6
897:	7	6	2	5	4	2	6	7
905:	6	3	2	9	4	16	54	33
913:	11	6	9	4	5	6	3	6
921:	1	2	5	7	4	2	7	5
929:	7	4	2	14	6	10	1	4
937:	6	2	6	5	8	5	2	5
945:	7	11	0	2	14	5	6	6
953:	3	2	10	7	5	6	5	6
961:	6	6	2	14	16	6	10	14
969:	36	18	4	4	7	5	8	5
977:	4	8	5	3	0	3	4	6
985:	10	7	5	8	4	5	3	4
993:	8	9	6	6	4	5	3	8
1001:	6	7	5	6	8	1	4	4
1009:	6	7	7	7	4	0	4	7
1017:	5	8	6	6	3	4	6	2
1025:	3	3	3	10	3	6	3	3
1033:	4	3	9	10	4	3	4	8
1041:	2	7	4	2	6	6	7	5
1049:	4	6	4	5	3	8	8	6
1057:	2	9	4	4	9	7	4	4
1065:	7	8	3	7	7	8	7	4
1073:	7	5	5	3	8	5	5	4
1081:	4	5	6	4	5	4	1	7
1089:	2	6	6	4	3	7	6	4
1097:	4	6	4	4	12	4	9	7
1105:	2	7	6	2	7	8	2	4
1113:	6	4	4	3	3	2	10	20
1121:	14	10	6	9	6	2	2	2
1129:	4	7	6	10	6	9	7	6
1137:	6	5	8	3	8	7	8	2
1145:	11	6	6	8	4	5	7	6
1153:	10	8	17	4	5	3	3	8
1161:	6	4	3	6	5	6	6	11
1169:	4	5	4	7	9	3	5	2
1177:	6	6	5	10	7	7	5	7
1185:	4	3	0	7	10	6	4	6
1193:	10	5	10	4	4	11	9	14
1201:	6	8	5	8	7	4	5	5
1209:	3	8	11	10	7	5	7	6
1217:	5	5	5	5	8	4	6	3
1225:	5	7	6	7	10	3	6	6

1233:	4	8	13	5	5	6	16	3

Sample Title: J1V1L2 SAF: RC-107

Channel								
1241:	6	3	6	10	7	5	6	7
1249:	5	3	7	5	5	4	4	3
1257:	2	5	6	7	5	5	8	5
1265:	2	6	8	4	4	8	2	3
1273:	2	3	3	6	3	7	4	5
1281:	5	6	4	7	5	1	5	4
1289:	5	4	5	1	3	3	4	3
1297:	5	2	6	3	5	3	4	4
1305:	5	4	1	5	3	3	7	4
1313:	3	1	4	7	5	4	3	1
1321:	6	3	2	5	0	7	4	4
1329:	4	3	2	8	3	2	4	5
1337:	4	1	7	2	3	3	0	3
1345:	2	1	2	0	1	1	2	5
1353:	0	3	0	2	2	3	5	0
1361:	4	1	4	4	0	2	2	3
1369:	2	3	1	3	3	4	3	6
1377:	6	7	2	3	2	5	1	1
1385:	5	0	3	1	1	1	4	3
1393:	3	1	4	4	2	4	5	5
1401:	3	4	3	2	2	2	4	3
1409:	3	2	0	1	1	4	2	1
1417:	2	2	4	3	3	0	2	1
1425:	3	3	2	4	4	0	1	0
1433:	1	1	1	0	1	2	1	5
1441:	1	2	1	3	0	2	3	3
1449:	1	2	0	1	0	0	3	3
1457:	2	3	54	169	210	92	13	1
1465:	3	2	0	0	1	1	1	1
1473:	2	0	0	0	0	1	2	1
1481:	3	2	1	0	3	1	2	3
1489:	0	4	2	0	1	0	6	0
1497:	1	2	3	3	0	0	5	0
1505:	0	1	1	3	6	3	1	1
1513:	1	0	2	0	1	3	1	3
1521:	3	0	3	0	1	1	2	0
1529:	2	0	2	1	1	1	3	2
1537:	0	0	1	1	1	1	2	0
1545:	1	0	1	1	1	3	2	0
1553:	1	0	2	2	0	0	1	0
1561:	0	1	1	0	1	2	0	0
1569:	1	0	1	0	3	3	0	2
1577:	1	2	1	2	2	1	2	1
1585:	0	1	1	4	2	3	1	8
1593:	1	3	1	0	1	2	0	0
1601:	1	0	1	0	2	2	2	3
1609:	0	0	3	0	1	3	0	0
1617:	0	1	0	0	2	2	2	1
1625:	2	1	3	1	2	1	1	3
1633:	0	0	0	1	3	2	1	4
1641:	5	1	2	0	0	0	2	0
1649:	0	3	0	0	0	2	1	0
1657:	1	0	0	4	1	1	2	0

1665:	0	0	1	1	2	1	1	1

Sample Title: J1V1L2 SAF: RC-107

Channel								
1673:	1	0	2	1	0	0	1	0
1681:	2	1	1	1	0	0	2	1
1689:	2	0	3	0	1	1	0	1
1697:	2	0	0	0	1	1	2	1
1705:	0	0	0	1	3	0	1	2
1713:	0	0	1	3	4	0	1	1
1721:	0	2	1	0	1	0	2	2
1729:	3	2	1	0	0	1	0	2
1737:	1	0	2	1	1	2	0	0
1745:	2	1	3	0	0	1	0	0
1753:	0	1	1	1	1	1	1	0
1761:	1	2	3	10	11	3	3	0
1769:	1	1	1	0	0	0	0	0
1777:	1	1	0	1	1	1	1	0
1785:	0	0	1	0	2	0	0	1
1793:	0	0	1	1	1	1	1	0
1801:	1	0	1	0	3	0	0	0
1809:	1	0	0	1	1	2	0	0
1817:	2	0	2	1	0	0	1	0
1825:	1	0	1	2	1	3	1	1
1833:	1	1	4	1	2	1	0	2
1841:	0	0	1	3	1	2	1	3
1849:	0	1	0	0	2	0	1	0
1857:	1	1	0	1	3	0	0	0
1865:	0	3	0	0	1	2	0	0
1873:	0	1	0	0	0	0	2	1
1881:	0	0	2	1	1	1	0	0
1889:	2	0	0	0	0	0	2	0
1897:	1	2	2	0	0	1	1	0
1905:	0	0	0	2	1	0	1	3
1913:	0	1	1	2	0	0	1	0
1921:	1	1	1	0	0	0	1	0
1929:	0	2	1	1	0	1	0	0
1937:	0	1	0	0	0	0	2	0
1945:	0	1	2	1	2	0	0	2
1953:	0	1	0	0	0	0	1	0
1961:	2	0	0	2	0	1	0	0
1969:	1	0	0	0	0	0	0	0
1977:	1	0	2	0	1	0	0	1
1985:	0	0	0	0	0	3	1	0
1993:	0	1	0	2	0	1	0	0
2001:	0	0	1	0	1	0	1	0
2009:	0	1	2	0	0	0	0	0
2017:	0	1	0	2	3	0	1	1
2025:	1	1	1	0	0	2	0	0
2033:	2	2	0	1	0	0	1	0
2041:	0	0	0	0	0	1	0	0
2049:	0	1	1	0	1	0	2	0
2057:	0	1	0	1	1	1	0	0
2065:	1	1	0	1	1	2	0	0
2073:	0	1	0	0	1	2	1	0
2081:	0	0	0	0	1	0	2	0
2089:	1	0	0	1	0	2	1	1

2097:	0	1	4	1	2	5	3	1

Sample Title: J1V1L2 SAF: RC-107

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

2529:	0	0	0	1	0	0	0	1

Sample Title: J1V1L2 SAF: RC-107

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

2961:	0	0	0	0	0	0	0	0

Sample Title: J1V1L2 SAF: RC-107

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

Sample Title: J1V1L2 SAF: RC-107

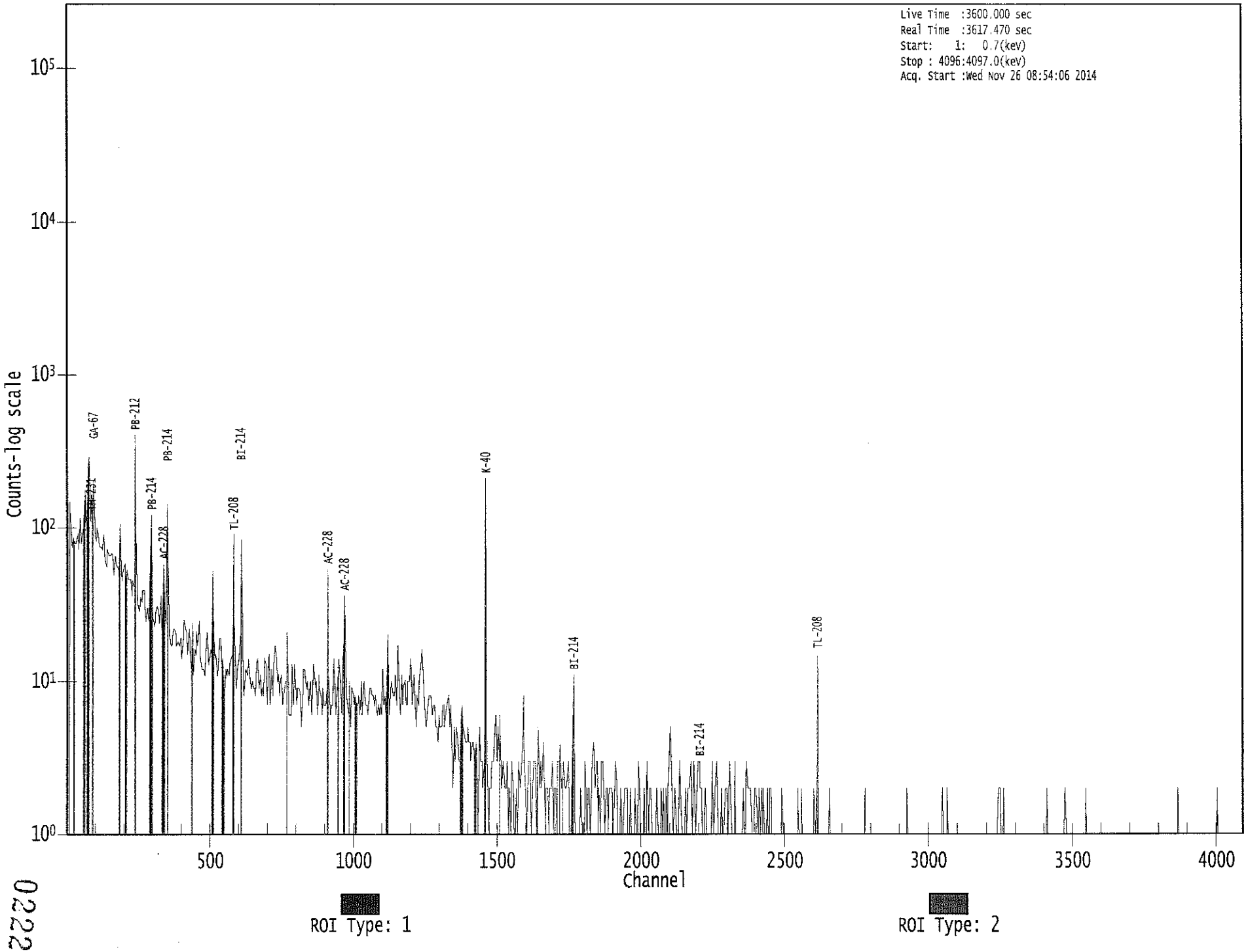
Channel								
3401:	0	0	1	0	0	0	0	1
3409:	0	0	2	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	1	0
3457:	0	0	0	1	0	0	0	0
3465:	0	0	0	0	0	1	0	0
3473:	0	2	0	0	1	0	1	0
3481:	0	0	0	0	0	0	0	0
3489:	0	1	0	0	0	0	0	0
3497:	1	0	1	0	0	0	0	0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

Sample Title: J1V1L2 SAF: RC-107

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

0000015616.CNF



0222

Apex-Gamma

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

11/26

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-04
Sample Description	: J1V1L2 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.115E+02 grams
Facility	: Countroom
Sample Taken On	: 11/20/2014 8:50:01AM
Acquisition Started	: 11/26/2014 9:56:07AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3616.9 seconds
Dead Time	: 0.47 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 9 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15632

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/26/14

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 10:56:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.30	76.51	0.0000	0.00
2	186.19	186.35	0.0000	0.00
3	209.40	209.54	0.0000	0.00
4	235.70	235.83	0.0000	0.00
5	238.94	239.06	0.0000	0.00
6	241.84	241.97	0.0000	0.00
7	269.65	269.76	0.0000	0.00
8	295.40	295.50	0.0000	0.00
9	300.71	300.80	0.0000	0.00
10	338.24	338.32	0.0000	0.00
11	352.08	352.15	0.0000	0.00
12	410.07	410.11	0.0000	0.00
13	511.13	511.12	0.0000	0.00
14	570.01	569.97	0.0000	0.00
15	574.46	574.42	0.0000	0.00
16	583.46	583.42	0.0000	0.00
17	609.59	609.54	0.0000	0.00
18	727.17	727.06	0.0000	0.00
19	772.28	772.15	0.0000	0.00
20	814.22	814.07	0.0000	0.00
21	836.76	836.60	0.0000	0.00
22	884.22	884.04	0.0000	0.00
23	911.57	911.38	0.0000	0.00
24	934.13	933.93	0.0000	0.00
25	952.27	952.06	0.0000	0.00
26	969.19	968.97	0.0000	0.00
27	989.48	989.25	0.0000	0.00
28	1052.08	1051.82	0.0000	0.00
29	1090.39	1090.12	0.0000	0.00
30	1120.45	1120.16	0.0000	0.00
31	1141.37	1141.08	0.0000	0.00
32	1148.49	1148.19	0.0000	0.00
33	1154.81	1154.51	0.0000	0.00
34	1180.37	1180.06	0.0000	0.00
35	1230.18	1229.85	0.0000	0.00
36	1305.08	1304.72	0.0000	0.00
37	1310.62	1310.26	0.0000	0.00
38	1314.87	1314.51	0.0000	0.00
39	1461.03	1460.61	0.0000	0.00
40	1496.44	1496.01	0.0000	0.00
41	1513.01	1512.57	0.0000	0.00
42	1591.38	1590.91	0.0000	0.00

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1693.31	1692.80	0.0000	0.00
44	1731.02	1730.50	0.0000	0.00
45	1764.62	1764.09	0.0000	0.00
46	1906.98	1906.40	0.0000	0.00
47	2059.40	2058.77	0.0000	0.00
48	2092.53	2091.89	0.0000	0.00
49	2104.08	2103.44	0.0000	0.00
50	2203.75	2203.08	0.0000	0.00
51	2219.61	2218.94	0.0000	0.00
52	2614.62	2613.84	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 10:56:25AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.30	71	82	76.51	7.21E+02	141.42	2.13E+03	3.97
	2	186.19	183	189	186.35	1.24E+02	61.37	5.94E+02	1.68
	3	209.40	207	213	209.54	5.43E+01	53.23	4.81E+02	1.28
M	4	235.70	235	247	235.83	2.61E+01	21.68	1.38E+02	1.89
m	5	238.94	235	247	239.06	4.95E+02	58.78	3.17E+02	1.63
m	6	241.84	235	247	241.97	1.16E+02	62.91	3.55E+02	2.08
	7	269.65	265	274	269.76	7.48E+01	58.17	4.42E+02	1.65
M	8	295.40	290	306	295.50	1.79E+02	43.34	2.38E+02	1.87
m	9	300.71	290	306	300.80	4.68E+01	50.91	3.31E+02	2.86
	10	338.24	335	342	338.32	6.50E+01	46.86	3.28E+02	1.83
	11	352.08	347	356	352.15	2.33E+02	56.61	3.23E+02	1.77
	12	410.07	408	413	410.11	2.60E+01	28.71	1.44E+02	1.53
	13	511.13	505	517	511.12	1.35E+02	50.79	2.39E+02	2.73
M	14	570.01	567	590	569.97	3.84E+01	18.85	4.18E+01	2.39
m	15	574.46	567	590	574.42	2.14E+01	22.39	6.36E+01	2.39
m	16	583.46	567	590	583.42	1.70E+02	33.66	7.83E+01	2.40
	17	609.59	605	615	609.54	1.85E+02	44.45	1.63E+02	2.10
	18	727.17	722	731	727.06	3.00E+01	33.17	1.40E+02	2.44
	19	772.28	764	779	772.15	5.10E+01	44.23	1.72E+02	6.17
	20	814.22	804	825	814.07	6.06E+01	47.39	1.55E+02	15.25
M	21	836.76	835	843	836.60	1.17E+01	10.77	2.55E+01	3.59
	22	884.22	881	888	884.04	1.62E+01	20.10	5.77E+01	3.39
	23	911.57	906	915	911.38	1.15E+02	33.51	9.50E+01	2.03
	24	934.13	932	937	933.93	1.50E+01	14.80	3.01E+01	1.63
	25	952.27	948	956	952.06	2.55E+01	19.86	4.50E+01	5.09
	26	969.19	967	973	968.97	3.02E+01	24.63	8.37E+01	1.55
	27	989.48	987	991	989.25	1.89E+01	16.07	3.83E+01	1.91
	28	1052.08	1047	1055	1051.82	1.92E+01	23.07	6.57E+01	1.43
	29	1090.39	1084	1098	1090.12	3.04E+01	30.11	8.32E+01	3.18
	30	1120.45	1115	1124	1120.16	4.32E+01	29.33	9.37E+01	2.45
	31	1141.37	1137	1144	1141.08	3.20E+01	20.69	4.59E+01	1.96
	32	1148.49	1146	1151	1148.19	1.56E+01	15.78	3.48E+01	2.00
	33	1154.81	1152	1158	1154.51	2.74E+01	20.19	5.71E+01	3.10
	34	1180.37	1177	1183	1180.06	1.66E+01	19.08	5.07E+01	4.32
	35	1230.18	1219	1241	1229.85	5.62E+01	59.04	2.42E+02	15.67
	36	1305.08	1302	1308	1304.72	2.20E+01	14.34	1.61E+01	4.07
M	37	1310.62	1309	1323	1310.26	9.94E+00	7.28	1.28E+00	2.09
m	38	1314.87	1309	1323	1314.51	1.57E+01	17.53	2.68E+01	4.17
	39	1461.03	1454	1466	1460.61	5.47E+02	49.63	3.26E+01	2.29
	40	1496.44	1491	1499	1496.01	1.45E+01	10.79	9.05E+00	4.89

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1513.01	1511 -	1515	1512.57	6.50E+00	6.96	5.00E+00	1.45
42	1591.38	1587 -	1594	1590.91	9.00E+00	11.49	1.60E+01	5.29
43	1693.31	1689 -	1696	1692.80	1.00E+01	6.32	0.00E+00	1.00
44	1731.02	1727 -	1733	1730.50	9.27E+00	7.50	3.45E+00	1.51
45	1764.62	1759 -	1768	1764.09	1.64E+01	15.52	2.51E+01	2.94
46	1906.98	1903 -	1908	1906.40	5.00E+00	4.47	0.00E+00	1.24
47	2059.40	2055 -	2061	2058.77	5.50E+00	7.78	7.00E+00	2.58
48	2092.53	2087 -	2095	2091.89	6.00E+00	7.23	4.00E+00	1.81
49	2104.08	2099 -	2107	2103.44	1.25E+01	10.42	9.00E+00	1.76
50	2203.75	2199 -	2206	2203.08	1.01E+01	8.00	3.83E+00	3.86
51	2219.61	2214 -	2221	2218.94	5.50E+00	6.63	3.00E+00	2.37
52	2614.62	2609 -	2617	2613.84	5.10E+01	14.28	0.00E+00	2.07

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 10:56:25AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	76.30	71 -	82	7.21E+02	141.42	2.13E+03	1.08E+02
	2	186.19	183 -	189	1.24E+02	61.37	5.94E+02	4.70E+01
	3	209.40	207 -	213	5.43E+01	53.23	4.81E+02	4.20E+01
M	4	235.70	235 -	247	2.61E+01	21.68	1.38E+02	1.93E+01
m	5	238.94	235 -	247	4.95E+02	58.78	3.17E+02	2.93E+01
m	6	241.84	235 -	247	1.16E+02	62.91	3.55E+02	3.10E+01
	7	269.65	265 -	274	7.48E+01	58.17	4.42E+02	4.57E+01
M	8	295.40	290 -	306	1.79E+02	43.34	2.38E+02	2.54E+01
m	9	300.71	290 -	306	4.68E+01	50.91	3.31E+02	2.99E+01
	10	338.24	335 -	342	6.50E+01	46.86	3.28E+02	3.62E+01
	11	352.08	347 -	356	2.33E+02	56.61	3.23E+02	3.92E+01
	12	410.07	408 -	413	2.60E+01	28.71	1.44E+02	2.21E+01
	13	511.13	505 -	517	1.35E+02	50.79	2.39E+02	3.71E+01
M	14	570.01	567 -	590	3.84E+01	18.85	4.18E+01	1.06E+01
m	15	574.46	567 -	590	2.14E+01	22.39	6.36E+01	1.31E+01
m	16	583.46	567 -	590	1.70E+02	33.66	7.83E+01	1.45E+01

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	17	609.59	605 -	615	1.85E+02	44.45	1.63E+02	2.89E+01
	18	727.17	722 -	731	3.00E+01	33.17	1.40E+02	2.57E+01
	19	772.28	764 -	779	5.10E+01	44.23	1.72E+02	3.44E+01
	20	814.22	804 -	825	6.06E+01	47.39	1.55E+02	3.68E+01
M	21	836.76	835 -	843	1.17E+01	10.77	2.55E+01	8.30E+00
	22	884.22	881 -	888	1.62E+01	20.10	5.77E+01	1.51E+01
	23	911.57	906 -	915	1.15E+02	33.51	9.50E+01	2.12E+01
	24	934.13	932 -	937	1.50E+01	14.80	3.01E+01	1.04E+01
	25	952.27	948 -	956	2.55E+01	19.86	4.50E+01	1.41E+01
	26	969.19	967 -	973	3.02E+01	24.63	8.37E+01	1.81E+01
	27	989.48	987 -	991	1.89E+01	16.07	3.83E+01	1.11E+01
	28	1052.08	1047 -	1055	1.92E+01	23.07	6.57E+01	1.75E+01
	29	1090.39	1084 -	1098	3.04E+01	30.11	8.32E+01	2.30E+01
	30	1120.45	1115 -	1124	4.32E+01	29.33	9.37E+01	2.16E+01
	31	1141.37	1137 -	1144	3.20E+01	20.69	4.59E+01	1.42E+01
	32	1148.49	1146 -	1151	1.56E+01	15.78	3.48E+01	1.12E+01
	33	1154.81	1152 -	1158	2.74E+01	20.19	5.71E+01	1.42E+01
	34	1180.37	1177 -	1183	1.66E+01	19.08	5.07E+01	1.42E+01
	35	1230.18	1219 -	1241	5.62E+01	59.04	2.42E+02	4.69E+01
	36	1305.08	1302 -	1308	2.20E+01	14.34	1.61E+01	8.93E+00
M	37	1310.62	1309 -	1323	9.94E+00	7.28	1.28E+00	1.86E+00
m	38	1314.87	1309 -	1323	1.57E+01	17.53	2.68E+01	8.51E+00
	39	1461.03	1454 -	1466	5.47E+02	49.63	3.26E+01	1.37E+01
	40	1496.44	1491 -	1499	1.45E+01	10.79	9.05E+00	6.29E+00
	41	1513.01	1511 -	1515	6.50E+00	6.96	5.00E+00	3.90E+00
	42	1591.38	1587 -	1594	9.00E+00	11.49	1.60E+01	8.05E+00
	43	1693.31	1689 -	1696	1.00E+01	6.32	0.00E+00	0.00E+00
	44	1731.02	1727 -	1733	9.27E+00	7.50	3.45E+00	3.60E+00
	45	1764.62	1759 -	1768	1.64E+01	15.52	2.51E+01	1.09E+01
	46	1906.98	1903 -	1908	5.00E+00	4.47	0.00E+00	0.00E+00
	47	2059.40	2055 -	2061	5.50E+00	7.78	7.00E+00	5.10E+00
	48	2092.53	2087 -	2095	6.00E+00	7.23	4.00E+00	4.37E+00
	49	2104.08	2099 -	2107	1.25E+01	10.42	9.00E+00	6.29E+00
	50	2203.75	2199 -	2206	1.01E+01	8.00	3.83E+00	4.00E+00
	51	2219.61	2214 -	2221	5.50E+00	6.63	3.00E+00	3.86E+00
	52	2614.62	2609 -	2617	5.10E+01	14.28	0.00E+00	0.00E+00

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

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 10:56:25AM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	76.30	71 -	82	76.51	7.21E+02	141.42	2.13E+03	.....
	2	186.19	183 -	189	186.35	1.24E+02	61.37	5.94E+02	RA-226
	3	209.40	207 -	213	209.54	5.43E+01	53.23	4.81E+02	CM-243
									GA-67
M	4	235.70	235 -	247	235.83	2.61E+01	21.68	1.38E+02	NB-95M
									TH-227
m	5	238.94	235 -	247	239.06	4.95E+02	58.78	3.17E+02	PB-212
m	6	241.84	235 -	247	241.97	1.16E+02	62.91	3.55E+02	RA-224
	7	269.65	265 -	274	269.76	7.48E+01	58.17	4.42E+02	.....
M	8	295.40	290 -	306	295.50	1.79E+02	43.34	2.38E+02	PB-214
m	9	300.71	290 -	306	300.80	4.68E+01	50.91	3.31E+02	GA-67
									PB-212
									BI-210M
	10	338.24	335 -	342	338.32	6.50E+01	46.86	3.28E+02	AC-228
	11	352.08	347 -	356	352.15	2.33E+02	56.61	3.23E+02	PB-214
	12	410.07	408 -	413	410.11	2.60E+01	28.71	1.44E+02	HO-166M
	13	511.13	505 -	517	511.12	1.35E+02	50.79	2.39E+02	.....
M	14	570.01	567 -	590	569.97	3.84E+01	18.85	4.18E+01	BI-207
									CS-134
m	15	574.46	567 -	590	574.42	2.14E+01	22.39	6.36E+01	.....
m	16	583.46	567 -	590	583.42	1.70E+02	33.66	7.83E+01	TL-208
	17	609.59	605 -	615	609.54	1.85E+02	44.45	1.63E+02	BI-214
	18	727.17	722 -	731	727.06	3.00E+01	33.17	1.40E+02	BI-212
	19	772.28	764 -	779	772.15	5.10E+01	44.23	1.72E+02	.....
	20	814.22	804 -	825	814.07	6.06E+01	47.39	1.55E+02	.....
M	21	836.76	835 -	843	836.60	1.17E+01	10.77	2.55E+01	.....
	22	884.22	881 -	888	884.04	1.62E+01	20.10	5.77E+01	AG-110M
	23	911.57	906 -	915	911.38	1.15E+02	33.51	9.50E+01	AC-228
									LU-172
	24	934.13	932 -	937	933.93	1.50E+01	14.80	3.01E+01	.....
	25	952.27	948 -	956	952.06	2.55E+01	19.86	4.50E+01	.....
	26	969.19	967 -	973	968.97	3.02E+01	24.63	8.37E+01	AC-228
	27	989.48	987 -	991	989.25	1.89E+01	16.07	3.83E+01	.....
	28	1052.08	1047 -	1055	1051.82	1.92E+01	23.07	6.57E+01	.....
	29	1090.39	1084 -	1098	1090.12	3.04E+01	30.11	8.32E+01	.....
	30	1120.45	1115 -	1124	1120.16	4.32E+01	29.33	9.37E+01	SC-46
									BI-214
									TA-182
	31	1141.37	1137 -	1144	1141.08	3.20E+01	20.69	4.59E+01	.....
	32	1148.49	1146 -	1151	1148.19	1.56E+01	15.78	3.48E+01	.....
	33	1154.81	1152 -	1158	1154.51	2.74E+01	20.19	5.71E+01	.....

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	34	1180.37	1177 -	1183	1180.06	1.66E+01	19.08	5.07E+01	.....
	35	1230.18	1219 -	1241	1229.85	5.62E+01	59.04	2.42E+02	EU-156 TA-182
	36	1305.08	1302 -	1308	1304.72	2.20E+01	14.34	1.61E+01	.....
M	37	1310.62	1309 -	1323	1310.26	9.94E+00	7.28	1.28E+00	.....
m	38	1314.87	1309 -	1323	1314.51	1.57E+01	17.53	2.68E+01	.....
	39	1461.03	1454 -	1466	1460.61	5.47E+02	49.63	3.26E+01	K-40
	40	1496.44	1491 -	1499	1496.01	1.45E+01	10.79	9.05E+00	.....
	41	1513.01	1511 -	1515	1512.57	6.50E+00	6.96	5.00E+00	.....
	42	1591.38	1587 -	1594	1590.91	9.00E+00	11.49	1.60E+01	.....
	43	1693.31	1689 -	1696	1692.80	1.00E+01	6.32	0.00E+00	.....
	44	1731.02	1727 -	1733	1730.50	9.27E+00	7.50	3.45E+00	.....
	45	1764.62	1759 -	1768	1764.09	1.64E+01	15.52	2.51E+01	BI-214
	46	1906.98	1903 -	1908	1906.40	5.00E+00	4.47	0.00E+00	.....
	47	2059.40	2055 -	2061	2058.77	5.50E+00	7.78	7.00E+00	.....
	48	2092.53	2087 -	2095	2091.89	6.00E+00	7.23	4.00E+00	.....
	49	2104.08	2099 -	2107	2103.44	1.25E+01	10.42	9.00E+00	.....
	50	2203.75	2199 -	2206	2203.08	1.01E+01	8.00	3.83E+00	BI-214
	51	2219.61	2214 -	2221	2218.94	5.50E+00	6.63	3.00E+00	.....
	52	2614.62	2609 -	2617	2613.84	5.10E+01	14.28	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 10:56:25AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.30	7.21E+02	141.42	2.38E-02	2.14E-03
	2	186.19	1.24E+02	61.37	1.83E-02	1.42E-03
	3	209.40	5.43E+01	53.23	1.68E-02	1.31E-03
M	4	235.70	2.61E+01	21.68	1.54E-02	1.19E-03
m	5	238.94	4.95E+02	58.78	1.52E-02	1.18E-03
m	6	241.84	1.16E+02	62.91	1.51E-02	1.17E-03
	7	269.65	7.48E+01	58.17	1.38E-02	1.04E-03
M	8	295.40	1.79E+02	43.34	1.28E-02	9.74E-04
m	9	300.71	4.68E+01	50.91	1.26E-02	9.66E-04
	10	338.24	6.50E+01	46.86	1.14E-02	9.13E-04

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	11	352.08	2.33E+02	56.61	1.11E-02	8.93E-04
	12	410.07	2.60E+01	28.71	9.70E-03	8.19E-04
	13	511.13	1.35E+02	50.79	8.01E-03	7.18E-04
M	14	570.01	3.84E+01	18.85	7.28E-03	6.59E-04
m	15	574.46	2.14E+01	22.39	7.23E-03	6.55E-04
m	16	583.46	1.70E+02	33.66	7.14E-03	6.46E-04
	17	609.59	1.85E+02	44.45	6.87E-03	6.20E-04
	18	727.17	3.00E+01	33.17	5.89E-03	5.14E-04
	19	772.28	5.10E+01	44.23	5.59E-03	4.77E-04
	20	814.22	6.06E+01	47.39	5.34E-03	4.43E-04
M	21	836.76	1.17E+01	10.77	5.22E-03	4.25E-04
	22	884.22	1.62E+01	20.10	4.98E-03	3.86E-04
	23	911.57	1.15E+02	33.51	4.85E-03	3.72E-04
	24	934.13	1.50E+01	14.80	4.75E-03	3.68E-04
	25	952.27	2.55E+01	19.86	4.67E-03	3.65E-04
	26	969.19	3.02E+01	24.63	4.60E-03	3.61E-04
	27	989.48	1.89E+01	16.07	4.52E-03	3.58E-04
	28	1052.08	1.92E+01	23.07	4.30E-03	3.46E-04
	29	1090.39	3.04E+01	30.11	4.17E-03	3.39E-04
	30	1120.45	4.32E+01	29.33	4.08E-03	3.33E-04
	31	1141.37	3.20E+01	20.69	4.01E-03	3.29E-04
	32	1148.49	1.56E+01	15.78	3.99E-03	3.28E-04
	33	1154.81	2.74E+01	20.19	3.98E-03	3.27E-04
	34	1180.37	1.66E+01	19.08	3.91E-03	3.22E-04
	35	1230.18	5.62E+01	59.04	3.78E-03	3.11E-04
	36	1305.08	2.20E+01	14.34	3.60E-03	2.95E-04
M	37	1310.62	9.94E+00	7.28	3.59E-03	2.93E-04
m	38	1314.87	1.57E+01	17.53	3.58E-03	2.92E-04
	39	1461.03	5.47E+02	49.63	3.29E-03	2.69E-04
	40	1496.44	1.45E+01	10.79	3.23E-03	2.64E-04
	41	1513.01	6.50E+00	6.96	3.20E-03	2.62E-04
	42	1591.38	9.00E+00	11.49	3.08E-03	2.50E-04
	43	1693.31	1.00E+01	6.32	2.94E-03	2.35E-04
	44	1731.02	9.27E+00	7.50	2.90E-03	2.29E-04
	45	1764.62	1.64E+01	15.52	2.86E-03	2.24E-04
	46	1906.98	5.00E+00	4.47	2.71E-03	2.13E-04
	47	2059.40	5.50E+00	7.78	2.57E-03	2.13E-04
	48	2092.53	6.00E+00	7.23	2.54E-03	2.13E-04
	49	2104.08	1.25E+01	10.42	2.54E-03	2.13E-04
	50	2203.75	1.01E+01	8.00	2.46E-03	2.13E-04
	51	2219.61	5.50E+00	6.63	2.45E-03	2.13E-04
	52	2614.62	5.10E+01	14.28	2.24E-03	2.13E-04

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

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 10:56:25AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015433.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.30	7.21E+02	141.42			7.21E+02	1.41E+02
	2	186.19	1.24E+02	61.37	3.39E+01	6.73E+00	9.00E+01	6.17E+01
	3	209.40	5.43E+01	53.23			5.43E+01	5.32E+01
M	4	235.70	2.61E+01	21.68			2.61E+01	2.17E+01
m	5	238.94	4.95E+02	58.78	1.24E+01	5.80E+00	4.82E+02	5.91E+01
m	6	241.84	1.16E+02	62.91			1.16E+02	6.29E+01
	7	269.65	7.48E+01	58.17			7.48E+01	5.82E+01
M	8	295.40	1.79E+02	43.34	2.48E+00	4.46E+00	1.76E+02	4.36E+01
m	9	300.71	4.68E+01	50.91			4.68E+01	5.09E+01
	10	338.24	6.50E+01	46.86	1.29E+00	4.12E+00	6.37E+01	4.70E+01
	11	352.08	2.33E+02	56.61	4.97E+00	4.95E+00	2.29E+02	5.68E+01
	12	410.07	2.60E+01	28.71			2.60E+01	2.87E+01
	13	511.13	1.35E+02	50.79	5.89E+01	4.93E+00	7.56E+01	5.10E+01
M	14	570.01	3.84E+01	18.85			3.84E+01	1.88E+01
m	15	574.46	2.14E+01	22.39			2.14E+01	2.24E+01
m	16	583.46	1.70E+02	33.66	3.50E+00	3.61E+00	1.67E+02	3.39E+01
	17	609.59	1.85E+02	44.45	7.39E+00	3.16E+00	1.78E+02	4.46E+01
	18	727.17	3.00E+01	33.17			3.00E+01	3.32E+01
	19	772.28	5.10E+01	44.23			5.10E+01	4.42E+01
	20	814.22	6.06E+01	47.39			6.06E+01	4.74E+01
M	21	836.76	1.17E+01	10.77			1.17E+01	1.08E+01
	22	884.22	1.62E+01	20.10			1.62E+01	2.01E+01
	23	911.57	1.15E+02	33.51	2.41E+00	2.60E+00	1.12E+02	3.36E+01
	24	934.13	1.50E+01	14.80			1.50E+01	1.48E+01
	25	952.27	2.55E+01	19.86			2.55E+01	1.99E+01
	26	969.19	3.02E+01	24.63			3.02E+01	2.46E+01
	27	989.48	1.89E+01	16.07			1.89E+01	1.61E+01
	28	1052.08	1.92E+01	23.07			1.92E+01	2.31E+01
	29	1090.39	3.04E+01	30.11			3.04E+01	3.01E+01
	30	1120.45	4.32E+01	29.33	4.52E-01	2.22E+00	4.27E+01	2.94E+01
	31	1141.37	3.20E+01	20.69			3.20E+01	2.07E+01
	32	1148.49	1.56E+01	15.78			1.56E+01	1.58E+01
	33	1154.81	2.74E+01	20.19			2.74E+01	2.02E+01
	34	1180.37	1.66E+01	19.08			1.66E+01	1.91E+01
	35	1230.18	5.62E+01	59.04			5.62E+01	5.90E+01
	36	1305.08	2.20E+01	14.34			2.20E+01	1.43E+01
M	37	1310.62	9.94E+00	7.28			9.94E+00	7.28E+00
m	38	1314.87	1.57E+01	17.53			1.57E+01	1.75E+01
	39	1461.03	5.47E+02	49.63	2.28E+00	2.00E+00	5.44E+02	4.97E+01
	40	1496.44	1.45E+01	10.79			1.45E+01	1.08E+01
	41	1513.01	6.50E+00	6.96			6.50E+00	6.96E+00
	42	1591.38	9.00E+00	11.49			9.00E+00	1.15E+01
	43	1693.31	1.00E+01	6.32			1.00E+01	6.32E+00
	44	1731.02	9.27E+00	7.50			9.27E+00	7.50E+00

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1764.62	1.64E+01	15.52	1.82E+00	1.19E+00	1.46E+01	1.56E+01
46	1906.98	5.00E+00	4.47			5.00E+00	4.47E+00
47	2059.40	5.50E+00	7.78			5.50E+00	7.78E+00
48	2092.53	6.00E+00	7.23			6.00E+00	7.23E+00
49	2104.08	1.25E+01	10.42			1.25E+01	1.04E+01
50	2203.75	1.01E+01	8.00			1.01E+01	8.00E+00
51	2219.61	5.50E+00	6.63			5.50E+00	6.63E+00
52	2614.62	5.10E+01	14.28	1.68E+00	1.12E+00	4.93E+01	1.43E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 10:56:25AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015433.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	76.30	7.21E+02	141.42			7.21E+02	1.41E+02
	2	186.19	1.24E+02	61.37	3.39E+01	6.73E+00	9.00E+01	6.17E+01
	3	209.40	5.43E+01	53.23			5.43E+01	5.32E+01
M	4	235.70	2.61E+01	21.68			2.61E+01	2.17E+01
m	5	238.94	4.95E+02	58.78	1.24E+01	5.80E+00	4.82E+02	5.91E+01
m	6	241.84	1.16E+02	62.91			1.16E+02	6.29E+01
	7	269.65	7.48E+01	58.17			7.48E+01	5.82E+01
M	8	295.40	1.79E+02	43.34	2.48E+00	4.46E+00	1.76E+02	4.36E+01
m	9	300.71	4.68E+01	50.91			4.68E+01	5.09E+01
	10	338.24	6.50E+01	46.86	1.29E+00	4.12E+00	6.37E+01	4.70E+01
	11	352.08	2.33E+02	56.61	4.97E+00	4.95E+00	2.29E+02	5.68E+01
	12	410.07	2.60E+01	28.71			2.60E+01	2.87E+01
	13	511.13	1.35E+02	50.79	5.89E+01	4.93E+00	7.56E+01	5.10E+01
M	14	570.01	3.84E+01	18.85			3.84E+01	1.88E+01
m	15	574.46	2.14E+01	22.39			2.14E+01	2.24E+01
m	16	583.46	1.70E+02	33.66	3.50E+00	3.61E+00	1.67E+02	3.39E+01
	17	609.59	1.85E+02	44.45	7.39E+00	3.16E+00	1.78E+02	4.46E+01
	18	727.17	3.00E+01	33.17			3.00E+01	3.32E+01
	19	772.28	5.10E+01	44.23			5.10E+01	4.42E+01
	20	814.22	6.06E+01	47.39			6.06E+01	4.74E+01

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	21	836.76	1.17E+01	10.77			1.17E+01	1.08E+01
	22	884.22	1.62E+01	20.10			1.62E+01	2.01E+01
	23	911.57	1.15E+02	33.51	2.41E+00	2.60E+00	1.12E+02	3.36E+01
	24	934.13	1.50E+01	14.80			1.50E+01	1.48E+01
	25	952.27	2.55E+01	19.86			2.55E+01	1.99E+01
	26	969.19	3.02E+01	24.63			3.02E+01	2.46E+01
	27	989.48	1.89E+01	16.07			1.89E+01	1.61E+01
	28	1052.08	1.92E+01	23.07			1.92E+01	2.31E+01
	29	1090.39	3.04E+01	30.11			3.04E+01	3.01E+01
	30	1120.45	4.32E+01	29.33	4.52E-01	2.22E+00	4.27E+01	2.94E+01
	31	1141.37	3.20E+01	20.69			3.20E+01	2.07E+01
	32	1148.49	1.56E+01	15.78			1.56E+01	1.58E+01
	33	1154.81	2.74E+01	20.19			2.74E+01	2.02E+01
	34	1180.37	1.66E+01	19.08			1.66E+01	1.91E+01
	35	1230.18	5.62E+01	59.04			5.62E+01	5.90E+01
	36	1305.08	2.20E+01	14.34			2.20E+01	1.43E+01
M	37	1310.62	9.94E+00	7.28			9.94E+00	7.28E+00
m	38	1314.87	1.57E+01	17.53			1.57E+01	1.75E+01
	39	1461.03	5.47E+02	49.63	2.28E+00	2.00E+00	5.44E+02	4.97E+01
	40	1496.44	1.45E+01	10.79			1.45E+01	1.08E+01
	41	1513.01	6.50E+00	6.96			6.50E+00	6.96E+00
	42	1591.38	9.00E+00	11.49			9.00E+00	1.15E+01
	43	1693.31	1.00E+01	6.32			1.00E+01	6.32E+00
	44	1731.02	9.27E+00	7.50			9.27E+00	7.50E+00
	45	1764.62	1.64E+01	15.52	1.82E+00	1.19E+00	1.46E+01	1.56E+01
	46	1906.98	5.00E+00	4.47			5.00E+00	4.47E+00
	47	2059.40	5.50E+00	7.78			5.50E+00	7.78E+00
	48	2092.53	6.00E+00	7.23			6.00E+00	7.23E+00
	49	2104.08	1.25E+01	10.42			1.25E+01	1.04E+01
	50	2203.75	1.01E+01	8.00			1.01E+01	8.00E+00
	51	2219.61	5.50E+00	6.63			5.50E+00	6.63E+00
	52	2614.62	5.10E+01	14.28	1.68E+00	1.12E+00	4.93E+01	1.43E+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 1411131-04

J1V1L2 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.992	1460.81	*	10.67	1.64E+01	2.03E+00
NB-95M	0.986	235.69	*	25.00	2.30E-01	1.92E-01
BI-207	0.399	569.67	*	97.72	5.69E-02	2.84E-02
		1063.62		74.90		
TL-208	0.881	583.14	*	30.22	8.15E-01	1.81E-01
		860.37		4.48		
		2614.66	*	35.85	6.48E-01	1.98E-01
BI-212	0.771	727.17	*	11.80	4.55E-01	5.05E-01
		1620.62		2.75		
PB-212	0.982	238.63	*	44.60	7.51E-01	1.09E-01
		300.09	*	3.41	1.15E+00	1.25E+00
BI-214	0.990	609.31	*	46.30	5.91E-01	1.57E-01
		1120.29	*	15.10	7.32E-01	5.08E-01
		1764.49	*	15.80	3.42E-01	3.65E-01
		2204.22	*	4.98	8.67E-01	6.92E-01
PB-214	0.995	295.21	*	19.19	7.57E-01	1.96E-01
		351.92	*	37.19	5.86E-01	1.53E-01
RA-224	0.888	240.98	*	3.95	2.06E+00	1.13E+00
RA-226	1.000	186.21	*	3.28	1.58E+00	3.10E+00
AC-228	0.979	338.32	*	11.40	5.16E-01	3.83E-01
		911.07	*	27.70	8.80E-01	2.72E-01
		969.11	*	16.60	4.16E-01	3.42E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 10:56:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.30	2.00410E-01	9.80		
	3	209.40	1.50829E-02	49.02	Tol.	CM-243
	7	269.65	2.07827E-02	38.88		
	12	410.07	7.22222E-03	55.20	Tol.	HO-166M
	13	511.13	2.09985E-02	33.75		
m	15	574.46	5.95721E-03	52.20	Sum	

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	19	772.28	1.41768E-02	43.33		
	20	814.22	1.68418E-02	39.08		
M	21	836.76	3.24120E-03	46.15		
	22	884.22	4.48765E-03	62.21	Sum	
	24	934.13	4.15278E-03	49.49		
	25	952.27	7.08333E-03	38.95		
	27	989.48	5.24123E-03	42.58		
	28	1052.08	5.32051E-03	60.21		
	29	1090.39	8.44329E-03	49.53		
	31	1141.37	8.89646E-03	32.30		
	32	1148.49	4.33923E-03	50.51		
	33	1154.81	7.62153E-03	36.80	Sum	
	34	1180.37	4.62302E-03	57.32	Sum	
	35	1230.18	1.56168E-02	52.50	Tol.	EU-156 TA-182
	36	1305.08	6.09722E-03	32.67		
M	37	1310.62	2.76235E-03	36.60	Sum	
m	38	1314.87	4.35107E-03	55.95		
	40	1496.44	4.02047E-03	37.29		
	41	1513.01	1.80556E-03	53.57		
	42	1591.38	2.50000E-03	63.83		
	43	1693.31	2.77778E-03	31.62	S-Esc	
	44	1731.02	2.57576E-03	40.44	Sum	
	46	1906.98	1.38889E-03	44.72		
	47	2059.40	1.52778E-03	70.71	Sum	
	48	2092.53	1.66667E-03	60.24		
	49	2104.08	3.47222E-03	41.67	S-Esc	
	51	2219.61	1.52778E-03	60.30		

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

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	1.64E+01	2.03E+00
NB-95M	0.98	235.69	*	25.00	2.30E-01	1.92E-01
BI-207	0.39	569.67	*	97.72	5.69E-02	2.84E-02
		1063.62		74.90		
TL-208	0.88	583.14	*	30.22	8.15E-01	1.81E-01
		860.37		4.48		
		2614.66	*	35.85	6.48E-01	1.98E-01
BI-212	0.77	727.17	*	11.80	4.55E-01	5.05E-01
		1620.62		2.75		
PB-212	0.98	238.63	*	44.60	7.51E-01	1.09E-01
		300.09	*	3.41	1.15E+00	1.25E+00
BI-214	0.99	609.31	*	46.30	5.91E-01	1.57E-01
		1120.29	*	15.10	7.32E-01	5.08E-01
		1764.49	*	15.80	3.42E-01	3.65E-01
		2204.22	*	4.98	8.67E-01	6.92E-01
PB-214	0.99	295.21	*	19.19	7.57E-01	1.96E-01
		351.92	*	37.19	5.86E-01	1.53E-01
RA-224	0.88	240.98	*	3.95	2.06E+00	1.13E+00
RA-226	1.00	186.21	*	3.28	1.58E+00	3.10E+00
AC-228	0.97	338.32	*	11.40	5.16E-01	3.83E-01
		911.07	*	27.70	8.80E-01	2.72E-01
		969.11	*	16.60	4.16E-01	3.42E-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	0.992	1.64E+01	2.03E+00	
NB-95M	0.986	2.30E-01	1.92E-01	
BI-207	0.399	5.69E-02	2.84E-02	
TL-208	0.881	7.39E-01	1.34E-01	
BI-212	0.771	4.55E-01	5.05E-01	

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
PB-212	0.982	7.54E-01	1.08E-01	
BI-214	0.990	5.77E-01	1.36E-01	
PB-214	0.995	6.51E-01	1.21E-01	
RA-224	0.888	2.06E+00	1.13E+00	
RA-226	1.000	1.58E+00	3.10E+00	
AC-228	0.979	6.56E-01	1.86E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 10:56:25AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.30	2.00410E-01	9.80		
	3	209.40	1.50829E-02	49.02	Tol.	CM-243
	7	269.65	2.07827E-02	38.88		
	12	410.07	7.22222E-03	55.20	Tol.	HO-166M
	13	511.13	2.09985E-02	33.75		
m	15	574.46	5.95721E-03	52.20	Sum	
	19	772.28	1.41768E-02	43.33		
	20	814.22	1.68418E-02	39.08		
M	21	836.76	3.24120E-03	46.15		
	22	884.22	4.48765E-03	62.21	Sum	
	24	934.13	4.15278E-03	49.49		
	25	952.27	7.08333E-03	38.95		
	27	989.48	5.24123E-03	42.58		
	28	1052.08	5.32051E-03	60.21		
	29	1090.39	8.44329E-03	49.53		
	31	1141.37	8.89646E-03	32.30		
	32	1148.49	4.33923E-03	50.51		
	33	1154.81	7.62153E-03	36.80	Sum	
	34	1180.37	4.62302E-03	57.32	Sum	
	35	1230.18	1.56168E-02	52.50	Tol.	EU-156 TA-182
	36	1305.08	6.09722E-03	32.67		
M	37	1310.62	2.76235E-03	36.60	Sum	
m	38	1314.87	4.35107E-03	55.95		
	40	1496.44	4.02047E-03	37.29		
	41	1513.01	1.80556E-03	53.57		
	42	1591.38	2.50000E-03	63.83		
	43	1693.31	2.77778E-03	31.62	S-Esc	
	44	1731.02	2.57576E-03	40.44	Sum	
	46	1906.98	1.38889E-03	44.72		
	47	2059.40	1.52778E-03	70.71	Sum	
	48	2092.53	1.66667E-03	60.24		
	49	2104.08	3.47222E-03	41.67	S-Esc	
	51	2219.61	1.52778E-03	60.30		

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

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	-1.91E-01	5.33E-01	5.33E-01
+	NA-22	1274.54		99.94	-7.08E-02	1.00E-01	1.00E-01
+	NA-24	1368.53		99.99	-4.68E+01	4.35E+01	5.43E+01
		2754.09		99.86	6.29E+00		4.35E+01
+	AL-26	1808.65		99.76	1.55E-02	6.28E-02	6.28E-02
+	K-40	1460.81	*	10.67	1.64E+01	9.22E-01	9.22E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.87E-02	5.32E-02	5.32E-02
		78.34		96.00	1.15E-01		6.33E-02
+	SC-46	889.25		99.98	2.24E-03	6.86E-02	6.86E-02
		1120.51		99.99	1.32E-01		1.18E-01
+	V-48	983.52		99.98	-2.62E-02	9.36E-02	9.36E-02
		1312.10		97.50	1.96E-02		1.14E-01
+	CR-51	320.08		9.83	1.89E-01	6.02E-01	6.02E-01
+	MN-54	834.83		99.97	-1.48E-02	6.72E-02	6.72E-02
+	CO-56	846.75		99.96	1.46E-02	7.24E-02	7.24E-02
		1037.75		14.03	-5.80E-02		5.66E-01
		1238.25		67.00	1.96E-02		1.62E-01
		1771.40		15.51	1.18E-01		4.20E-01
		2598.48		16.90	1.47E-02		3.52E-01
+	CO-57	122.06		85.51	7.07E-03	4.87E-02	4.87E-02
		136.48		10.60	-2.66E-02		3.78E-01
+	CO-58	810.76		99.40	-8.87E-02	6.10E-02	6.10E-02
+	FE-59	1099.22		56.50	3.60E-02	1.46E-01	1.46E-01
		1291.56		43.20	4.81E-02		2.05E-01
+	CO-60	1173.22		100.00	1.90E-02	8.95E-02	8.95E-02
		1332.49		100.00	3.83E-02		1.00E-01
+	ZN-65	1115.52		50.75	1.66E-02	1.74E-01	1.74E-01
+	GA-67	93.31		35.70	4.40E-01	4.98E-01	4.98E-01
		208.95		2.24	-6.38E-01		8.28E+00
		300.22		16.00	-3.63E+00		1.29E+00
+	SE-75	121.11		16.70	8.08E-02	7.04E-02	2.55E-01

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	1.15E-02	7.04E-02	7.04E-02
		264.65		59.80	-7.78E-03		7.95E-02
		279.53		25.20	-2.01E-02		2.05E-01
		400.65		11.40	-2.08E-01		4.59E-01
+	RB-82	776.52		13.00	3.28E-01	6.66E-01	6.66E-01
+	RB-83	520.41		46.00	5.27E-05	1.23E-01	1.23E-01
		529.64		30.30	-3.97E-02		1.93E-01
		552.65		16.40	-1.79E-01		3.50E-01
+	KR-85	513.99		0.43	1.97E+01	1.85E+01	1.85E+01
+	SR-85	513.99		99.27	9.16E-02	8.60E-02	8.60E-02
+	Y-88	898.02		93.40	2.77E-03	5.61E-02	8.60E-02
		1836.01		99.38	3.53E-03		5.61E-02
+	NB-93M	16.57		9.43	2.15E+01	6.12E+01	6.12E+01
+	NB-94	702.63		100.00	1.91E-02	6.16E-02	7.19E-02
		871.10		100.00	5.01E-03		6.16E-02
+	NB-95	765.79		99.81	4.21E-02	8.45E-02	8.45E-02
+	NB-95M	235.69	*	25.00	2.30E-01	1.11E+00	1.11E+00
+	ZR-95	724.18		43.70	-6.43E-02	1.27E-01	1.74E-01
		756.72		55.30	3.60E-02		1.27E-01
+	MO-99	181.06		6.20	-1.18E-01	2.46E+00	2.93E+00
		739.58		12.80	-2.74E-01		2.46E+00
		778.00		4.50	-1.33E+00		6.67E+00
+	RU-103	497.08		89.00	1.15E-02	7.00E-02	7.00E-02
+	RU-106	621.84		9.80	-2.91E-01	6.00E-01	6.00E-01
+	AG-108M	433.93		89.90	-2.09E-02	5.29E-02	5.29E-02
		614.37		90.40	9.84E-03		7.22E-02
		722.95		90.50	-2.87E-03		7.33E-02
+	CD-109	88.03		3.72	5.10E-01	1.32E+00	1.32E+00
+	AG-110M	657.75		93.14	3.55E-03	6.94E-02	6.94E-02
		677.61		10.53	-1.36E-01		5.68E-01
		706.67		16.46	-1.81E-01		3.98E-01
		763.93		21.98	-1.75E-02		2.93E-01
		884.67		71.63	4.33E-02		9.78E-02
		1384.27		23.94	-9.52E-02		3.00E-01
+	CD-113M	263.70		0.02	-1.71E+01	2.01E+02	2.01E+02
+	SN-113	255.12		1.93	-9.70E-02	9.11E-02	2.52E+00
		391.69		64.90	5.01E-02		9.11E-02
+	TE123M	159.00		84.10	-6.02E-04	4.83E-02	4.83E-02
+	SB-124	602.71		97.87	6.67E-03	6.70E-02	6.70E-02
		645.85		7.26	-5.47E-01		7.75E-01
		722.78		11.10	-2.51E-02		6.40E-01
		1691.02		49.00	0.00E+00		1.36E-01
+	I-125	35.49		6.49	8.42E-02	1.85E+00	1.85E+00
+	SB-125	176.33		6.89	-1.44E-03	1.81E-01	5.78E-01
		427.89		29.33	3.43E-02		1.81E-01
		463.38		10.35	4.32E-01		6.52E-01
		600.56		17.80	-1.19E-01		3.39E-01
		635.90		11.32	-1.96E-01		5.65E-01

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	4.05E-02	8.17E-02	9.16E-02
		666.33	99.60	-3.69E-02		8.17E-02
		695.00	99.60	-5.35E-02		8.72E-02
		720.50	53.80	5.60E-03		1.62E-01
+	SN-126	87.57	37.00	5.08E-02	1.32E-01	1.32E-01
+	SB-127	473.00	25.00	2.74E-01	4.96E-01	6.35E-01
		685.20	35.70	5.19E-02		4.96E-01
		783.80	14.70	6.83E-01		1.43E+00
+	I-129	29.78	57.00	-1.51E-01	3.32E-01	3.32E-01
		33.60	13.20	-6.40E-01		9.54E-01
		39.58	7.52	-5.60E-01		1.15E+00
+	I-131	284.30	6.05	-6.10E-01	1.06E-01	1.35E+00
		364.48	81.20	-2.05E-02		1.06E-01
		636.97	7.26	-1.03E+00		1.44E+00
		722.89	1.80	-2.44E-01		6.21E+00
+	TE-132	49.72	13.10	-2.62E+00	1.98E-01	1.61E+00
		228.16	88.00	-6.76E-02		1.98E-01
+	BA-133	81.00	33.00	-5.19E-01	1.07E-01	1.36E-01
		302.84	17.80	9.60E-02		3.13E-01
		356.01	60.00	1.38E-03		1.07E-01
+	I-133	529.87	86.30	-1.70E+00	8.28E+00	8.28E+00
+	CS-134	563.23	8.38	-6.31E-02	7.09E-02	6.35E-01
		569.32	15.43	8.00E-03		3.90E-01
		604.70	97.60	3.14E-03		7.09E-02
		795.84	85.40	3.67E-02		8.83E-02
		801.93	8.73	-2.58E-01		6.79E-01
+	CS-135	268.24	16.00	2.77E-01	3.39E-01	3.39E-01
+	I-135	1131.51	22.50	-7.57E+04	1.35E+06	1.56E+06
		1260.41	28.60	-5.29E+05		1.35E+06
		1678.03	9.54	-1.59E+06		1.92E+06
+	CS-136	153.22	7.46	3.50E-01	1.00E-01	7.66E-01
		163.89	4.61	1.46E-02		1.16E+00
		176.55	13.56	6.01E-03		3.99E-01
		273.65	12.66	-3.25E-02		5.75E-01
		340.57	48.50	1.72E-02		1.87E-01
		818.50	99.70	3.56E-02		1.00E-01
		1048.07	79.60	-1.95E-02		1.33E-01
		1235.34	19.70	-1.96E-02		7.29E-01
+	CS-137	661.65	85.12	-9.26E-03	7.15E-02	7.15E-02
+	LA-138	788.74	34.00	-5.36E-02	9.93E-02	1.92E-01
		1435.80	66.00	-6.66E-02		9.93E-02
+	CE-139	165.85	80.35	-1.20E-02	5.03E-02	5.03E-02
+	BA-140	162.64	6.70	-9.42E-04	3.03E-01	7.99E-01
		304.84	4.50	-6.52E-02		1.63E+00
		423.70	3.20	2.84E-01		2.31E+00
		437.55	2.00	-6.65E-01		3.46E+00
		537.32	25.00	1.78E-02		3.03E-01
+	LA-140	328.77	20.50	1.47E-01	1.03E-01	3.63E-01
		487.03	45.50	2.07E-03		1.71E-01

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	815.85	23.50	1.62E-02	1.03E-01	3.97E-01
		1596.49	95.49	2.03E-02		1.03E-01
+	CE-141	145.44	48.40	1.24E-02	9.42E-02	9.42E-02
+	CE-143	57.36	11.80	-2.13E-01	3.47E+00	9.46E+00
		293.26	42.00	4.37E+00		3.47E+00
		664.55	5.20	1.18E+01		2.59E+01
+	CE-144	133.54	10.80	-2.34E-01	3.68E-01	3.68E-01
+	PM-144	476.78	42.00	-7.79E-02	5.78E-02	1.21E-01
		618.01	98.60	1.07E-02		5.78E-02
		696.49	99.49	-9.26E-03		6.58E-02
+	PM-145	36.85	21.70	1.01E-01	2.52E-01	4.71E-01
		37.36	39.70	3.07E-02		2.52E-01
		42.30	15.10	-1.02E-01		5.05E-01
		72.40	2.31	-2.36E+00		2.43E+00
+	PM-146	453.90	39.94	-5.85E-02	1.35E-01	1.35E-01
		735.90	14.01	2.74E-01		5.24E-01
		747.13	13.10	-1.11E-01		4.45E-01
+	ND-147	91.11	28.90	2.45E-02	2.56E-01	2.56E-01
		531.02	13.10	7.31E-03		6.43E-01
+	PM-149	285.90	3.10	6.14E+00	1.10E+01	1.10E+01
+	EU-152	121.78	20.50	2.90E-02	2.00E-01	2.00E-01
		244.69	5.40	-3.39E-01		1.08E+00
		344.27	19.13	7.14E-02		2.79E-01
		778.89	9.20	1.07E-01		7.63E-01
		964.01	10.40	-1.67E-03		8.10E-01
		1085.78	7.22	6.99E-02		1.08E+00
		1112.02	9.60	1.11E-01		8.81E-01
		1407.95	14.94	1.67E-01		5.51E-01
+	GD-153	97.43	31.30	-7.66E-02	1.34E-01	1.34E-01
		103.18	22.20	-9.95E-02		1.86E-01
+	EU-154	123.07	40.50	-4.24E-03	1.00E-01	1.00E-01
		723.30	19.70	-1.32E-02		3.37E-01
		873.19	11.50	-2.75E-01		5.07E-01
		996.32	10.30	9.12E-02		6.89E-01
		1004.76	17.90	1.07E-01		4.25E-01
		1274.45	35.50	-1.99E-01		2.81E-01
+	EU-155	86.50	30.90	2.14E-02	1.57E-01	1.57E-01
		105.30	20.70	-2.23E-03		2.01E-01
+	EU-156	811.77	10.40	-5.87E-01	7.75E-01	7.75E-01
		1153.47	7.20	5.01E-01		1.81E+00
		1230.71	8.90	3.63E-02		1.57E+00
+	HO-166M	184.41	72.60	8.96E-02	6.90E-02	6.90E-02
		280.45	29.60	-8.08E-02		1.66E-01
		410.94	11.10	1.65E-01		5.10E-01
		711.69	54.10	2.08E-02		1.26E-01
+	TM-171	66.72	0.14	-3.83E+01	3.64E+01	3.64E+01
+	HF-172	81.75	4.52	4.52E-02	3.58E-01	9.87E-01
		125.81	11.30	-2.09E-01		3.58E-01
+	LU-172	181.53	20.60	3.12E-03	2.27E-01	3.67E-01

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-172	810.06		16.63	-5.18E-01	2.27E-01	6.95E-01
		912.12		15.25	2.79E+00		1.56E+00
		1093.66		62.50	-6.15E-03		2.27E-01
+	LU-173	100.72		5.24	3.52E-01	2.64E-01	8.02E-01
		272.11		21.20	1.15E-01		2.64E-01
+	HF-175	343.40		84.00	1.72E-02	6.85E-02	6.85E-02
+	LU-176	88.34		13.30	-6.98E-02	5.68E-02	3.76E-01
		201.83		86.00	4.65E-02		6.06E-02
		306.78		94.00	1.30E-02		5.68E-02
+	TA-182	67.75		41.20	4.44E-02	1.27E-01	1.27E-01
		1121.30		34.90	2.07E-01		3.21E-01
		1189.05		16.23	5.74E-02		6.13E-01
		1221.41		26.98	-1.07E-01		3.66E-01
		1231.02		11.44	2.30E-01		9.59E-01
+	IR-192	308.46		29.68	3.48E-02	1.17E-01	1.81E-01
		468.07		48.10	-1.66E-01		1.17E-01
+	HG-203	279.19		77.30	2.94E-03	7.09E-02	7.09E-02
+	BI-207	569.67	*	97.72	5.69E-02	1.00E-01	1.40E-01
		1063.62		74.90	-2.65E-02		1.00E-01
+	TL-208	583.14	*	30.22	8.15E-01	9.66E-02	4.69E-01
		860.37		4.48	1.43E+00		1.79E+00
		2614.66	*	35.85	6.48E-01		9.66E-02
+	BI-210M	262.00		45.00	2.48E-03	1.00E-01	1.00E-01
		300.00		23.00	-6.95E-01		2.47E-01
+	PB-210	46.50		4.25	9.28E-01	1.64E+00	1.64E+00
+	PB-211	404.84		2.90	4.61E-02	1.82E+00	1.82E+00
		831.96		2.90	-1.28E+00		2.15E+00
+	BI-212	727.17	*	11.80	4.55E-01	8.23E-01	8.23E-01
		1620.62		2.75	5.36E-01		1.78E+00
+	PB-212	238.63	*	44.60	7.51E-01	2.03E-01	2.03E-01
		300.09	*	3.41	1.15E+00		3.27E+00
+	BI-214	609.31	*	46.30	5.91E-01	2.04E-01	2.04E-01
		1120.29	*	15.10	7.32E-01		7.89E-01
		1764.49	*	15.80	3.42E-01		5.85E-01
		2204.22	*	4.98	8.67E-01		9.21E-01
+	PB-214	295.21	*	19.19	7.57E-01	2.10E-01	5.65E-01
		351.92	*	37.19	5.86E-01		2.10E-01
+	RN-219	401.80		6.50	2.91E-02	7.98E-01	7.98E-01
+	RA-223	323.87		3.88	-2.42E-01	1.34E+00	1.34E+00
+	RA-224	240.98	*	3.95	2.06E+00	2.31E+00	2.31E+00
+	RA-225	40.00		31.00	-1.76E-01	3.61E-01	3.61E-01
+	RA-226	186.21	*	3.28	1.58E+00	1.75E+00	1.75E+00
+	TH-227	50.10		8.40	-1.11E+00	6.85E-01	6.85E-01
		236.00		11.50	-5.48E-02		7.22E-01
		256.20		6.30	2.24E-01		7.58E-01
+	AC-228	338.32	*	11.40	5.16E-01	3.58E-01	6.11E-01
		911.07	*	27.70	8.80E-01		3.58E-01
		969.11	*	16.60	4.16E-01		5.38E-01

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Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-230	48.44	16.90	3.42E-01	3.89E-01	3.89E-01
		62.85	4.60	1.04E+00		1.23E+00
		67.67	0.37	4.77E+00		1.36E+01
+	PA-231	283.67	1.60	-1.36E+00	2.42E+00	3.03E+00
		302.67	2.30	7.42E-01		2.42E+00
+	TH-231	25.64	14.70	9.41E-01	7.02E-01	2.54E+00
		84.21	6.40	-4.64E-01		7.02E-01
+	PA-233	311.98	38.60	3.52E-02	1.50E-01	1.50E-01
+	PA-234	131.20	20.40	9.36E-02	2.07E-01	2.07E-01
		733.99	8.80	4.99E-02		7.95E-01
		946.00	12.00	1.73E-01		5.35E-01
+	PA-234M	1001.03	0.92	-7.68E-01	8.13E+00	8.13E+00
+	TH-234	63.29	3.80	7.09E-01	1.50E+00	1.50E+00
+	U-235	143.76	10.50	2.16E-01	3.99E-01	3.99E-01
		163.35	4.70	1.04E-02		8.27E-01
		205.31	4.70	2.99E-01		1.06E+00
+	NP-237	86.50	12.60	5.25E-02	3.85E-01	3.85E-01
+	NP-239	106.10	22.70	9.35E-03	1.09E+00	1.09E+00
		228.18	10.70	-9.12E-01		2.68E+00
		277.60	14.10	5.16E-01		2.13E+00
+	AM-241	59.54	35.90	-1.45E-01	1.47E-01	1.47E-01
+	AM-243	74.67	66.00	1.44E-01	9.88E-02	9.88E-02
+	CM-243	209.75	3.29	6.31E-01	3.60E-01	1.58E+00
		228.14	10.60	-1.54E-01		4.53E-01
		277.60	14.00	8.72E-02		3.60E-01

\+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
\> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = 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 1411131-04

J1V1L2 SAF: RC-107

	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	5.33E-01	5.33E-01	-1.91E-01	2.49E-01
	NA-22	1274.54		99.94	1.00E-01	1.00E-01	-7.08E-02	4.61E-02
	NA-24	1368.53		99.99	5.43E+01	4.35E+01	-4.68E+01	2.37E+01
		2754.09		99.86	4.35E+01		6.29E+00	1.63E+01
	AL-26	1808.65		99.76	6.28E-02	6.28E-02	1.55E-02	2.63E-02
+	K-40	1460.81	*	10.67	9.22E-01	9.22E-01	1.64E+01	4.21E-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	5.32E-02	5.32E-02	1.87E-02	2.59E-02
		78.34		96.00	6.33E-02		1.15E-01	3.10E-02
	SC-46	889.25		99.98	6.86E-02	6.86E-02	2.24E-03	3.13E-02
		1120.51		99.99	1.18E-01		1.32E-01	5.52E-02
	V-48	983.52		99.98	9.36E-02	9.36E-02	-2.62E-02	4.27E-02
		1312.10		97.50	1.14E-01		1.96E-02	5.17E-02
	CR-51	320.08		9.83	6.02E-01	6.02E-01	1.89E-01	2.87E-01
	MN-54	834.83		99.97	6.72E-02	6.72E-02	-1.48E-02	3.08E-02
	CO-56	846.75		99.96	7.24E-02	7.24E-02	1.46E-02	3.33E-02
		1037.75		14.03	5.66E-01		-5.80E-02	2.58E-01
		1238.25		67.00	1.62E-01		1.96E-02	7.49E-02
		1771.40		15.51	4.20E-01		1.18E-01	1.76E-01
		2598.48		16.90	3.52E-01		1.47E-02	1.36E-01
	CO-57	122.06		85.51	4.87E-02	4.87E-02	7.07E-03	2.36E-02
		136.48		10.60	3.78E-01		-2.66E-02	1.83E-01
	CO-58	810.76		99.40	6.10E-02	6.10E-02	-8.87E-02	2.76E-02
	FE-59	1099.22		56.50	1.46E-01	1.46E-01	3.60E-02	6.62E-02
		1291.56		43.20	2.05E-01		4.81E-02	9.26E-02
	CO-60	1173.22		100.00	8.95E-02	8.95E-02	1.90E-02	4.11E-02
		1332.49		100.00	1.00E-01		3.83E-02	4.61E-02
	ZN-65	1115.52		50.75	1.74E-01	1.74E-01	1.66E-02	7.98E-02
	GA-67	93.31		35.70	4.98E-01	4.98E-01	4.40E-01	2.43E-01
		208.95		2.24	8.28E+00		-6.38E-01	4.00E+00
		300.22		16.00	1.29E+00		-3.63E+00	6.18E-01
	SE-75	121.11		16.70	2.55E-01	7.04E-02	8.08E-02	1.24E-01
		136.00		59.20	7.04E-02		1.15E-02	3.40E-02
		264.65		59.80	7.95E-02		-7.78E-03	3.80E-02
		279.53		25.20	2.05E-01		-2.01E-02	9.81E-02
		400.65		11.40	4.59E-01		-2.08E-01	2.16E-01
	RB-82	776.52		13.00	6.66E-01	6.66E-01	3.28E-01	3.10E-01
	RB-83	520.41		46.00	1.23E-01	1.23E-01	5.27E-05	5.73E-02
		529.64		30.30	1.93E-01		-3.97E-02	9.03E-02
		552.65		16.40	3.50E-01		-1.79E-01	1.63E-01
	KR-85	513.99		0.43	1.85E+01	1.85E+01	1.97E+01	8.82E+00
	SR-85	513.99		99.27	8.60E-02	8.60E-02	9.16E-02	4.11E-02
	Y-88	898.02		93.40	8.60E-02	5.61E-02	2.77E-03	3.97E-02
		1836.01		99.38	5.61E-02		3.53E-03	2.27E-02
	NB-93M	16.57		9.43	6.12E+01	6.12E+01	2.15E+01	2.97E+01
	NB-94	702.63		100.00	7.19E-02	6.16E-02	1.91E-02	3.36E-02
		871.10		100.00	6.16E-02		5.01E-03	2.80E-02
	NB-95	765.79		99.81	8.45E-02	8.45E-02	4.21E-02	3.94E-02
+	NB-95M	235.69	*	25.00	1.11E+00	1.11E+00	2.30E-01	5.42E-01
	ZR-95	724.18		43.70	1.74E-01	1.27E-01	-6.43E-02	8.12E-02
		756.72		55.30	1.27E-01		3.60E-02	5.89E-02
	MO-99	181.06		6.20	2.93E+00	2.46E+00	-1.18E-01	1.41E+00
		739.58		12.80	2.46E+00		-2.74E-01	1.14E+00

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

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	6.67E+00	2.46E+00	-1.33E+00	3.07E+00
RU-103	497.08	89.00	7.00E-02	7.00E-02	1.15E-02	3.28E-02
RU-106	621.84	9.80	6.00E-01	6.00E-01	-2.91E-01	2.78E-01
AG-108M	433.93	89.90	5.29E-02	5.29E-02	-2.09E-02	2.47E-02
	614.37	90.40	7.22E-02		9.84E-03	3.38E-02
	722.95	90.50	7.33E-02		-2.87E-03	3.40E-02
CD-109	88.03	3.72	1.32E+00	1.32E+00	5.10E-01	6.46E-01
AG-110M	657.75	93.14	6.94E-02	6.94E-02	3.55E-03	3.23E-02
	677.61	10.53	5.68E-01		-1.36E-01	2.62E-01
	706.67	16.46	3.98E-01		-1.81E-01	1.85E-01
	763.93	21.98	2.93E-01		-1.75E-02	1.35E-01
	884.67	71.63	9.78E-02		4.33E-02	4.48E-02
	1384.27	23.94	3.00E-01		-9.52E-02	1.32E-01
CD-113M	263.70	0.02	2.01E+02	2.01E+02	-1.71E+01	9.61E+01
SN-113	255.12	1.93	2.52E+00	9.11E-02	-9.70E-02	1.21E+00
	391.69	64.90	9.11E-02		5.01E-02	4.33E-02
TE123M	159.00	84.10	4.83E-02	4.83E-02	-6.02E-04	2.33E-02
SB-124	602.71	97.87	6.70E-02	6.70E-02	6.67E-03	3.13E-02
	645.85	7.26	7.75E-01		-5.47E-01	3.55E-01
	722.78	11.10	6.40E-01		-2.51E-02	2.97E-01
	1691.02	49.00	1.36E-01		0.00E+00	5.76E-02
I-125	35.49	6.49	1.85E+00	1.85E+00	8.42E-02	8.95E-01
SB-125	176.33	6.89	5.78E-01	1.81E-01	-1.44E-03	2.78E-01
	427.89	29.33	1.81E-01		3.43E-02	8.53E-02
	463.38	10.35	6.52E-01		4.32E-01	3.10E-01
	600.56	17.80	3.39E-01		-1.19E-01	1.58E-01
	635.90	11.32	5.65E-01		-1.96E-01	2.63E-01
SB-126	414.70	83.30	9.16E-02	8.17E-02	4.05E-02	4.33E-02
	666.33	99.60	8.17E-02		-3.69E-02	3.77E-02
	695.00	99.60	8.72E-02		-5.35E-02	4.03E-02
	720.50	53.80	1.62E-01		5.60E-03	7.47E-02
SN-126	87.57	37.00	1.32E-01	1.32E-01	5.08E-02	6.43E-02
SB-127	473.00	25.00	6.35E-01	4.96E-01	2.74E-01	2.98E-01
	685.20	35.70	4.96E-01		5.19E-02	2.29E-01
	783.80	14.70	1.43E+00		6.83E-01	6.62E-01
I-129	29.78	57.00	3.32E-01	3.32E-01	-1.51E-01	1.61E-01
	33.60	13.20	9.54E-01		-6.40E-01	4.62E-01
	39.58	7.52	1.15E+00		-5.60E-01	5.57E-01
I-131	284.30	6.05	1.35E+00	1.06E-01	-6.10E-01	6.46E-01
	364.48	81.20	1.06E-01		-2.05E-02	5.01E-02
	636.97	7.26	1.44E+00		-1.03E+00	6.68E-01
	722.89	1.80	6.21E+00		-2.44E-01	2.88E+00
TE-132	49.72	13.10	1.61E+00	1.98E-01	-2.62E+00	7.83E-01
	228.16	88.00	1.98E-01		-6.76E-02	9.54E-02
BA-133	81.00	33.00	1.36E-01	1.07E-01	-5.19E-01	6.62E-02
	302.84	17.80	3.13E-01		9.60E-02	1.50E-01
	356.01	60.00	1.07E-01		1.38E-03	5.11E-02
I-133	529.87	86.30	8.28E+00	8.28E+00	-1.70E+00	3.87E+00
CS-134	563.23	8.38	6.35E-01	7.09E-02	-6.31E-02	2.94E-01
	569.32	15.43	3.90E-01		8.00E-03	1.82E-01
	604.70	97.60	7.09E-02		3.14E-03	3.33E-02
	795.84	85.40	8.83E-02		3.67E-02	4.11E-02
	801.93	8.73	6.79E-01		-2.58E-01	3.09E-01

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-135	268.24	16.00	3.39E-01	3.39E-01	2.77E-01	1.63E-01
I-135	1131.51	22.50	1.56E+06	1.35E+06	-7.57E+04	7.11E+05
	1260.41	28.60	1.35E+06		-5.29E+05	6.19E+05
	1678.03	9.54	1.92E+06		-1.59E+06	7.42E+05
CS-136	153.22	7.46	7.66E-01	1.00E-01	3.50E-01	3.70E-01
	163.89	4.61	1.16E+00		1.46E-02	5.60E-01
	176.55	13.56	3.99E-01		6.01E-03	1.92E-01
	273.65	12.66	5.75E-01		-3.25E-02	2.76E-01
	340.57	48.50	1.87E-01		1.72E-02	9.00E-02
	818.50	99.70	1.00E-01		3.56E-02	4.64E-02
	1048.07	79.60	1.33E-01		-1.95E-02	6.07E-02
	1235.34	19.70	7.29E-01		-1.96E-02	3.38E-01
CS-137	661.65	85.12	7.15E-02	7.15E-02	-9.26E-03	3.31E-02
LA-138	788.74	34.00	1.92E-01	9.93E-02	-5.36E-02	8.82E-02
	1435.80	66.00	9.93E-02		-6.66E-02	4.32E-02
CE-139	165.85	80.35	5.03E-02	5.03E-02	-1.20E-02	2.42E-02
BA-140	162.64	6.70	7.99E-01	3.03E-01	-9.42E-04	3.84E-01
	304.84	4.50	1.63E+00		-6.52E-02	7.82E-01
	423.70	3.20	2.31E+00		2.84E-01	1.09E+00
	437.55	2.00	3.46E+00		-6.65E-01	1.62E+00
	537.32	25.00	3.03E-01		1.78E-02	1.41E-01
LA-140	328.77	20.50	3.63E-01	1.03E-01	1.47E-01	1.73E-01
	487.03	45.50	1.71E-01		2.07E-03	8.02E-02
	815.85	23.50	3.97E-01		1.62E-02	1.83E-01
	1596.49	95.49	1.03E-01		2.03E-02	4.50E-02
CE-141	145.44	48.40	9.42E-02	9.42E-02	1.24E-02	4.55E-02
CE-143	57.36	11.80	9.46E+00	3.47E+00	-2.13E-01	4.60E+00
	293.26	42.00	3.47E+00		4.37E+00	1.68E+00
	664.55	5.20	2.59E+01		1.18E+01	1.20E+01
CE-144	133.54	10.80	3.68E-01	3.68E-01	-2.34E-01	1.78E-01
PM-144	476.78	42.00	1.21E-01	5.78E-02	-7.79E-02	5.64E-02
	618.01	98.60	5.78E-02		1.07E-02	2.68E-02
	696.49	99.49	6.58E-02		-9.26E-03	3.05E-02
PM-145	36.85	21.70	4.71E-01	2.52E-01	1.01E-01	2.28E-01
	37.36	39.70	2.52E-01		3.07E-02	1.22E-01
	42.30	15.10	5.05E-01		-1.02E-01	2.45E-01
	72.40	2.31	2.43E+00		-2.36E+00	1.19E+00
PM-146	453.90	39.94	1.35E-01	1.35E-01	-5.85E-02	6.36E-02
	735.90	14.01	5.24E-01		2.74E-01	2.45E-01
	747.13	13.10	4.45E-01		-1.11E-01	2.04E-01
ND-147	91.11	28.90	2.56E-01	2.56E-01	2.45E-02	1.25E-01
	531.02	13.10	6.43E-01		7.31E-03	3.01E-01
PM-149	285.90	3.10	1.10E+01	1.10E+01	6.14E+00	5.28E+00
EU-152	121.78	20.50	2.00E-01	2.00E-01	2.90E-02	9.69E-02
	244.69	5.40	1.08E+00		-3.39E-01	5.20E-01
	344.27	19.13	2.79E-01		7.14E-02	1.33E-01
	778.89	9.20	7.63E-01		1.07E-01	3.54E-01
	964.01	10.40	8.10E-01		-1.67E-03	3.75E-01
	1085.78	7.22	1.08E+00		6.99E-02	4.95E-01
	1112.02	9.60	8.81E-01		1.11E-01	4.04E-01
	1407.95	14.94	5.51E-01		1.67E-01	2.47E-01
GD-153	97.43	31.30	1.34E-01	1.34E-01	-7.66E-02	6.52E-02
	103.18	22.20	1.86E-01		-9.95E-02	9.01E-02

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-154	123.07		40.50	1.00E-01	1.00E-01	-4.24E-03	4.86E-02
		723.30		19.70	3.37E-01		-1.32E-02	1.56E-01
		873.19		11.50	5.07E-01		-2.75E-01	2.29E-01
		996.32		10.30	6.89E-01		9.12E-02	3.14E-01
		1004.76		17.90	4.25E-01		1.07E-01	1.94E-01
		1274.45		35.50	2.81E-01		-1.99E-01	1.29E-01
	EU-155	86.50		30.90	1.57E-01	1.57E-01	2.14E-02	7.68E-02
		105.30		20.70	2.01E-01		-2.23E-03	9.78E-02
	EU-156	811.77		10.40	7.75E-01	7.75E-01	-5.87E-01	3.53E-01
		1153.47		7.20	1.81E+00		5.01E-01	8.38E-01
		1230.71		8.90	1.57E+00		3.63E-02	7.28E-01
	HO-166M	184.41		72.60	6.90E-02	6.90E-02	8.96E-02	3.34E-02
		280.45		29.60	1.66E-01		-8.08E-02	7.92E-02
		410.94		11.10	5.10E-01		1.65E-01	2.42E-01
		711.69		54.10	1.26E-01		2.08E-02	5.86E-02
	TM-171	66.72		0.14	3.64E+01	3.64E+01	-3.83E+01	1.77E+01
	HF-172	81.75		4.52	9.87E-01	3.58E-01	4.52E-02	4.80E-01
		125.81		11.30	3.58E-01		-2.09E-01	1.73E-01
	LU-172	181.53		20.60	3.67E-01	2.27E-01	3.12E-03	1.76E-01
		810.06		16.63	6.95E-01		-5.18E-01	3.18E-01
		912.12		15.25	1.56E+00		2.79E+00	7.44E-01
		1093.66		62.50	2.27E-01		-6.15E-03	1.03E-01
	LU-173	100.72		5.24	8.02E-01	2.64E-01	3.52E-01	3.90E-01
		272.11		21.20	2.64E-01		1.15E-01	1.27E-01
	HF-175	343.40		84.00	6.85E-02	6.85E-02	1.72E-02	3.26E-02
	LU-176	88.34		13.30	3.76E-01	5.68E-02	-6.98E-02	1.83E-01
		201.83		86.00	6.06E-02		4.65E-02	2.93E-02
		306.78		94.00	5.68E-02		1.30E-02	2.72E-02
	TA-182	67.75		41.20	1.27E-01	1.27E-01	4.44E-02	6.17E-02
		1121.30		34.90	3.21E-01		2.07E-01	1.50E-01
		1189.05		16.23	6.13E-01		5.74E-02	2.83E-01
		1221.41		26.98	3.66E-01		-1.07E-01	1.69E-01
		1231.02		11.44	9.59E-01		2.30E-01	4.45E-01
	IR-192	308.46		29.68	1.81E-01	1.17E-01	3.48E-02	8.61E-02
		468.07		48.10	1.17E-01		-1.66E-01	5.48E-02
	HG-203	279.19		77.30	7.09E-02	7.09E-02	2.94E-03	3.40E-02
+	BI-207	569.67	*	97.72	1.40E-01	1.00E-01	5.69E-02	6.80E-02
		1063.62		74.90	1.00E-01		-2.65E-02	4.56E-02
+	TL-208	583.14	*	30.22	4.69E-01	9.66E-02	8.15E-01	2.28E-01
		860.37		4.48	1.79E+00		1.43E+00	8.33E-01
		2614.66	*	35.85	9.66E-02		6.48E-01	3.05E-02
	BI-210M	262.00		45.00	1.00E-01	1.00E-01	2.48E-03	4.79E-02
		300.00		23.00	2.47E-01		-6.95E-01	1.18E-01
	PB-210	46.50		4.25	1.64E+00	1.64E+00	9.28E-01	7.97E-01
	PB-211	404.84		2.90	1.82E+00	1.82E+00	4.61E-02	8.59E-01
		831.96		2.90	2.15E+00		-1.28E+00	9.82E-01
+	BI-212	727.17	*	11.80	8.23E-01	8.23E-01	4.55E-01	3.91E-01
		1620.62		2.75	1.78E+00		5.36E-01	7.19E-01
+	PB-212	238.63	*	44.60	2.03E-01	2.03E-01	7.51E-01	9.95E-02
		300.09	*	3.41	3.27E+00		1.15E+00	1.60E+00
+	BI-214	609.31	*	46.30	2.04E-01	2.04E-01	5.91E-01	9.74E-02
		1120.29	*	15.10	7.89E-01		7.32E-01	3.71E-01
		1764.49	*	15.80	5.85E-01		3.42E-01	2.61E-01

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-214	2204.22	*	4.98	9.21E-01	2.04E-01	8.67E-01	3.44E-01
+	PB-214	295.21	*	19.19	5.65E-01	2.10E-01	7.57E-01	2.77E-01
		351.92	*	37.19	2.10E-01		5.86E-01	1.02E-01
	RN-219	401.80		6.50	7.98E-01	7.98E-01	2.91E-02	3.77E-01
	RA-223	323.87		3.88	1.34E+00	1.34E+00	-2.42E-01	6.38E-01
+	RA-224	240.98	*	3.95	2.31E+00	2.31E+00	2.06E+00	1.13E+00
	RA-225	40.00		31.00	3.61E-01	3.61E-01	-1.76E-01	1.75E-01
+	RA-226	186.21	*	3.28	1.75E+00	1.75E+00	1.58E+00	8.51E-01
	TH-227	50.10		8.40	6.85E-01	6.85E-01	-1.11E+00	3.32E-01
		236.00		11.50	7.22E-01		-5.48E-02	3.53E-01
		256.20		6.30	7.58E-01		2.24E-01	3.63E-01
+	AC-228	338.32	*	11.40	6.11E-01	3.58E-01	5.16E-01	2.94E-01
		911.07	*	27.70	3.58E-01		8.80E-01	1.69E-01
		969.11	*	16.60	5.38E-01		4.16E-01	2.50E-01
	TH-230	48.44		16.90	3.89E-01	3.89E-01	3.42E-01	1.89E-01
		62.85		4.60	1.23E+00		1.04E+00	6.03E-01
		67.67		0.37	1.36E+01		4.77E+00	6.62E+00
	PA-231	283.67		1.60	3.03E+00	2.42E+00	-1.36E+00	1.45E+00
		302.67		2.30	2.42E+00		7.42E-01	1.16E+00
	TH-231	25.64		14.70	2.54E+00	7.02E-01	9.41E-01	1.23E+00
		84.21		6.40	7.02E-01		-4.64E-01	3.42E-01
	PA-233	311.98		38.60	1.50E-01	1.50E-01	3.52E-02	7.15E-02
	PA-234	131.20		20.40	2.07E-01	2.07E-01	9.36E-02	1.00E-01
		733.99		8.80	7.95E-01		4.99E-02	3.70E-01
		946.00		12.00	5.35E-01		1.73E-01	2.42E-01
	PA-234M	1001.03		0.92	8.13E+00	8.13E+00	-7.68E-01	3.72E+00
	TH-234	63.29		3.80	1.50E+00	1.50E+00	7.09E-01	7.31E-01
	U-235	143.76		10.50	3.99E-01	3.99E-01	2.16E-01	1.93E-01
		163.35		4.70	8.27E-01		1.04E-02	3.98E-01
		205.31		4.70	1.06E+00		2.99E-01	5.11E-01
	NP-237	86.50		12.60	3.85E-01	3.85E-01	5.25E-02	1.88E-01
	NP-239	106.10		22.70	1.09E+00	1.09E+00	9.35E-03	5.30E-01
		228.18		10.70	2.68E+00		-9.12E-01	1.29E+00
		277.60		14.10	2.13E+00		5.16E-01	1.02E+00
	AM-241	59.54		35.90	1.47E-01	1.47E-01	-1.45E-01	7.13E-02
	AM-243	74.67		66.00	9.88E-02	9.88E-02	1.44E-01	4.85E-02
	CM-243	209.75		3.29	1.58E+00	3.60E-01	6.31E-01	7.64E-01
		228.14		10.60	4.53E-01		-1.54E-01	2.18E-01
		277.60		14.00	3.60E-01		8.72E-02	1.73E-01

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

Analysis Report for 1411131-04

J1V1L2 SAF: RC-107

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: J1V1L2 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3617

Channel								
1:	0	0	0	0	0	0	0	0
9:	8	157	173	102	136	91	92	83
17:	79	67	57	57	60	70	81	67
25:	69	70	74	69	51	69	71	47
33:	66	58	59	77	74	66	66	69
41:	74	72	81	60	73	80	133	76
49:	67	84	76	64	84	80	70	77
57:	80	94	83	90	96	96	134	170
65:	92	104	116	101	93	93	95	93
73:	115	133	245	180	275	277	114	93
81:	85	82	87	105	111	84	124	140
89:	94	118	113	87	188	130	82	78
97:	88	73	72	85	85	74	84	63
105:	68	110	67	82	74	80	90	85
113:	71	88	72	70	57	74	68	76
121:	75	60	74	63	66	63	69	65
129:	81	81	59	66	60	64	52	51
137:	66	71	51	58	57	76	58	73
145:	51	55	50	52	44	49	61	59
153:	56	60	49	46	57	61	45	38
161:	42	48	51	43	43	45	51	48
169:	50	49	44	45	48	43	48	46
177:	40	40	39	44	37	47	39	49
185:	46	113	84	52	38	46	45	37
193:	46	44	49	48	40	48	54	43
201:	38	43	44	45	48	28	31	39
209:	46	73	38	32	36	40	34	37
217:	35	41	35	34	20	43	32	39
225:	26	34	36	33	39	27	25	32
233:	37	33	37	49	39	112	338	120
241:	58	91	64	35	23	22	27	29
249:	25	29	22	21	34	23	23	26
257:	23	24	27	23	25	23	17	22
265:	17	27	29	22	26	55	41	25
273:	27	27	22	24	33	27	29	20
281:	21	18	22	26	27	27	15	32
289:	23	20	19	27	21	26	95	94
297:	33	25	26	27	38	27	21	29
305:	27	17	18	27	24	25	14	23
313:	23	14	16	15	15	19	15	30
321:	18	22	21	21	17	22	22	21
329:	22	20	21	21	18	16	17	23
337:	20	57	60	18	16	18	29	18
345:	17	25	13	26	17	20	42	139
353:	87	22	16	13	14	14	21	19
361:	15	23	13	9	16	18	17	15

369:	17	18	14	13	19	13	24	16

Sample Title: J1V1L2 SAF: RC-107

Channel								
377:	19	14	16	17	16	20	15	16
385:	14	13	7	11	17	17	16	19
393:	16	17	22	18	16	9	11	14
401:	14	15	12	17	14	17	12	12
409:	17	28	18	13	10	14	15	11
417:	14	24	7	15	19	12	9	13
425:	12	12	16	16	11	16	7	12
433:	12	11	9	11	8	18	5	9
441:	16	12	13	8	7	14	8	14
449:	16	9	14	10	12	14	9	13
457:	12	18	15	13	16	17	24	29
465:	16	14	10	11	6	15	5	14
473:	18	9	6	9	9	7	12	14
481:	12	9	12	9	13	13	10	12
489:	13	10	17	7	8	11	9	8
497:	15	10	12	12	9	15	12	12
505:	8	12	15	14	18	33	49	44
513:	15	13	12	14	7	10	7	11
521:	7	11	12	7	11	12	9	7
529:	14	8	17	5	8	13	8	12
537:	8	8	4	10	6	14	4	6
545:	15	13	11	10	10	8	10	7
553:	7	10	9	9	11	14	12	9
561:	5	12	5	11	7	5	3	7
569:	13	23	10	8	6	15	8	7
577:	7	6	10	10	17	21	78	65
585:	18	10	12	6	14	5	8	7
593:	8	7	8	15	12	9	7	10
601:	8	8	14	7	9	9	12	24
609:	78	83	20	11	6	11	4	10
617:	10	6	8	5	9	7	6	11
625:	9	13	12	11	10	8	7	14
633:	14	11	8	5	11	9	6	10
641:	13	10	5	5	7	6	11	6
649:	1	9	6	10	7	9	10	9
657:	11	4	7	7	12	8	9	5
665:	6	10	8	2	8	11	6	10
673:	13	9	7	8	7	7	8	3
681:	8	5	7	8	7	8	5	8
689:	3	11	14	3	6	5	6	10
697:	7	14	8	8	10	16	12	6
705:	12	5	7	6	7	11	13	1
713:	10	11	7	10	7	8	9	5
721:	7	7	5	11	10	10	14	18
729:	13	5	7	7	14	8	8	9
737:	7	11	9	6	6	8	10	8
745:	6	8	5	6	3	3	4	7
753:	1	7	9	7	5	8	3	11
761:	7	7	6	8	7	5	5	15
769:	18	6	5	8	14	11	5	10
777:	8	9	3	5	6	13	7	6
785:	9	7	6	8	4	3	12	5
793:	7	9	9	6	9	15	5	5

801:	4	9	3	3	6	8	12	8

Sample Title: J1V1L2 SAF: RC-107

Channel								
809:	3	6	2	4	3	6	13	9
817:	5	3	6	8	9	7	6	7
825:	4	4	8	7	6	6	4	5
833:	7	4	5	13	2	6	4	11
841:	9	5	3	4	5	7	4	10
849:	9	5	12	1	6	9	1	4
857:	2	7	3	16	6	19	7	6
865:	6	8	2	8	4	2	8	4
873:	4	3	5	3	8	5	3	3
881:	2	5	8	6	10	6	4	4
889:	5	7	4	6	7	5	3	8
897:	7	16	5	5	7	7	9	7
905:	3	8	6	5	3	14	52	57
913:	11	5	1	7	4	7	5	7
921:	6	6	5	7	2	8	7	5
929:	8	5	5	2	8	12	4	3
937:	1	3	5	5	5	2	7	5
945:	6	6	1	4	2	7	7	11
953:	3	3	7	4	1	8	6	3
961:	2	6	9	7	14	8	8	14
969:	25	12	5	4	4	6	6	5
977:	6	6	6	7	2	4	3	7
985:	8	6	6	8	10	12	2	3
993:	4	5	4	5	7	6	4	2
1001:	10	7	4	6	6	6	6	5
1009:	3	4	7	4	4	5	8	7
1017:	7	4	5	3	4	6	5	12
1025:	8	5	10	5	7	6	10	3
1033:	6	11	4	2	8	8	5	6
1041:	4	0	7	9	4	6	6	8
1049:	5	4	5	7	12	4	1	3
1057:	6	7	8	2	5	7	6	6
1065:	3	6	7	3	5	3	6	10
1073:	8	7	3	10	7	6	4	4
1081:	7	3	4	1	4	3	9	6
1089:	10	5	5	4	4	4	6	6
1097:	3	2	4	7	4	7	4	5
1105:	7	7	5	3	8	4	4	6
1113:	5	8	7	5	8	5	16	22
1121:	16	3	6	2	3	9	5	6
1129:	4	5	7	4	1	11	6	3
1137:	8	6	6	7	8	8	12	0
1145:	2	7	3	9	8	4	2	2
1153:	8	15	12	12	5	2	9	5
1161:	4	5	4	9	4	3	5	4
1169:	3	6	0	9	11	6	4	7
1177:	4	9	6	11	4	8	0	5
1185:	7	5	9	7	5	4	6	13
1193:	5	9	4	6	4	6	6	5
1201:	8	6	2	7	4	7	10	7
1209:	3	9	6	2	3	6	4	4
1217:	4	10	0	4	6	3	15	8
1225:	12	12	7	7	11	9	7	8

1233:	8	7	3	7	11	11	9	7

Sample Title: J1V1L2 SAF: RC-107

Channel								
1241:	5	6	7	6	2	7	5	5
1249:	4	7	7	3	6	5	5	6
1257:	4	6	1	8	9	5	6	9
1265:	9	2	7	8	9	4	5	8
1273:	5	6	5	1	8	5	8	7
1281:	5	4	4	3	2	3	7	1
1289:	3	3	3	2	4	3	3	5
1297:	0	6	2	9	4	3	9	3
1305:	7	7	1	0	0	12	2	2
1313:	1	8	3	4	1	3	3	4
1321:	2	2	0	5	6	3	5	3
1329:	6	2	4	7	8	8	2	4
1337:	4	2	7	3	0	6	1	2
1345:	1	2	4	1	3	2	2	0
1353:	4	0	2	2	2	3	3	2
1361:	2	5	2	1	3	5	2	0
1369:	2	0	2	1	5	3	4	3
1377:	2	8	1	2	2	3	1	1
1385:	3	1	3	3	2	1	1	2
1393:	1	2	2	1	4	2	0	3
1401:	4	3	1	3	3	4	5	5
1409:	2	3	1	0	2	2	1	2
1417:	5	1	0	3	2	2	0	1
1425:	0	0	5	0	2	5	3	1
1433:	2	1	1	2	1	3	1	0
1441:	6	1	1	3	5	3	1	2
1449:	1	1	3	3	2	3	2	2
1457:	0	10	57	186	217	75	6	3
1465:	2	0	0	2	5	1	1	0
1473:	1	0	1	4	1	1	0	2
1481:	0	3	2	0	0	1	1	1
1489:	1	1	1	0	1	4	3	4
1497:	2	4	0	0	0	0	2	0
1505:	1	1	4	4	1	0	1	4
1513:	2	2	0	1	1	1	2	0
1521:	0	2	1	0	2	2	2	0
1529:	1	4	1	2	0	0	3	3
1537:	4	1	2	1	1	1	2	0
1545:	4	1	0	2	0	2	3	1
1553:	0	2	1	0	2	1	0	1
1561:	4	2	0	2	2	0	2	1
1569:	1	1	1	0	2	3	1	1
1577:	4	0	0	1	1	1	0	3
1585:	0	2	0	3	2	1	4	4
1593:	3	0	2	2	0	0	1	3
1601:	0	0	1	1	3	0	1	0
1609:	2	0	1	0	1	0	0	1
1617:	0	0	1	0	0	0	2	2
1625:	1	0	1	2	0	1	3	2
1633:	0	1	0	2	0	0	0	0
1641:	1	1	1	1	2	0	0	0
1649:	1	1	4	0	0	0	2	0
1657:	0	2	1	1	2	1	0	0

1665:	2	0	1	1	3	0	1	6

Sample Title: J1V1L2 SAF: RC-107

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

2097:	0	1	0	1	2	1	4	6

Sample Title: J1V1L2 SAF: RC-107

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

2529:	1	0	0	0	0	0	1	0

Sample Title: J1V1L2 SAF: RC-107

Channel								
2537:	0	0	0	0	0	0	0	0
2545:	1	0	1	0	0	0	0	0
2553:	0	0	0	1	0	0	1	0
2561:	0	0	1	1	0	0	0	0
2569:	0	0	0	2	0	0	0	1
2577:	1	0	0	0	0	0	0	0
2585:	0	0	1	0	0	0	0	0
2593:	2	0	0	0	1	0	1	1
2601:	1	0	0	0	0	0	0	0
2609:	0	0	1	8	8	19	11	4
2617:	0	0	0	0	0	0	0	1
2625:	0	0	0	2	0	0	0	0
2633:	0	0	1	0	0	0	0	0
2641:	0	1	0	0	1	0	0	1
2649:	0	1	0	0	0	0	1	0
2657:	0	0	0	0	1	2	1	0
2665:	0	0	2	0	0	0	0	0
2673:	0	0	1	0	0	0	0	0
2681:	1	0	0	0	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	1	0	1	0	1	0	0	0
2705:	0	0	0	0	0	0	0	1
2713:	0	1	0	0	0	0	0	0
2721:	0	1	0	0	2	0	0	0
2729:	0	1	2	0	0	0	1	0
2737:	0	1	1	0	0	0	1	0
2745:	1	0	0	1	0	1	0	0
2753:	0	0	2	0	0	0	0	0
2761:	0	0	0	0	0	1	0	0
2769:	0	0	0	1	0	0	0	0
2777:	0	1	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	0	1	0	0	0
2801:	1	0	0	0	1	0	0	0
2809:	0	0	0	0	1	0	0	1
2817:	0	0	0	0	0	0	0	1
2825:	0	0	0	1	0	0	0	0
2833:	0	0	0	1	0	0	0	0
2841:	0	0	1	0	0	0	0	0
2849:	0	0	0	0	0	0	0	1
2857:	0	0	1	0	0	0	0	0
2865:	0	0	1	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	2	0
2889:	0	0	0	2	0	0	0	0
2897:	0	0	0	0	1	0	0	0
2905:	1	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	1	0	0	0	1	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	1	0	1	0	0
2945:	0	0	1	0	1	1	0	1
2953:	0	0	0	0	0	0	0	0

2961:	0	1	0	0	0	0	0	0

Sample Title: J1V1L2 SAF: RC-107

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

3393:	0	1	0	0	0	0	1	0

Sample Title: J1V1L2 SAF: RC-107

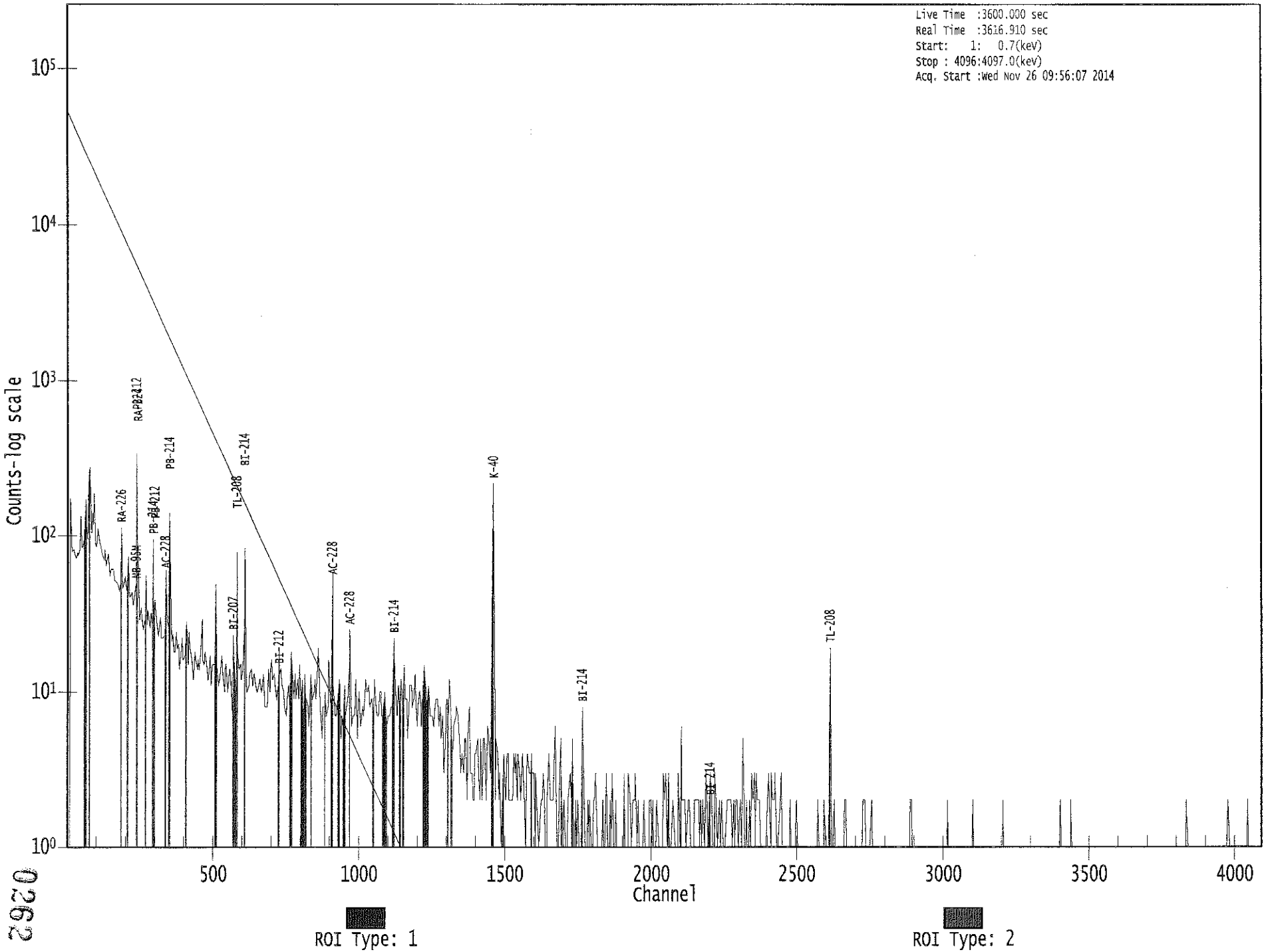
Channel								
3401:	2	0	0	0	0	0	0	0
3409:	0	1	0	0	1	0	0	0
3417:	0	1	0	0	0	0	0	0
3425:	0	0	0	0	0	0	1	0
3433:	0	0	0	1	2	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	1	0	0	0	0	0	0
3457:	0	0	0	0	0	0	1	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	1	0
3481:	0	0	0	0	0	1	0	0
3489:	0	0	0	0	1	0	0	1
3497:	0	0	0	0	0	0	0	0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

3825:	0	0	0	0	0	0	0	0

Sample Title: J1V1L2 SAF: RC-107

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

0000015632.CNF



2920

Apex-Gamma

Analysis Report for 1411131-05
J1V1L3 SAF: RC-107

C
11/26

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-05
Sample Description	: J1V1L3 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.231E+02 grams
Facility	: Countroom
Sample Taken On	: 11/20/2014 8:50:37AM
Acquisition Started	: 11/26/2014 8:54:13AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3630.8 seconds
Dead Time	: 0.85 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 11/8/2014
Efficiency Calibration Description	:
Sample Number	: 15617

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/26/14

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 9:54:45AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	75.92	75.19	0.0000	0.00
2	85.99	85.26	0.0000	0.00
3	187.00	186.32	0.0000	0.00
4	239.81	239.15	0.0000	0.00
5	294.99	294.35	0.0000	0.00
6	352.29	351.68	0.0000	0.00
7	511.71	511.17	0.0000	0.00
8	583.11	582.60	0.0000	0.00
9	603.75	603.26	0.0000	0.00
10	609.79	609.29	0.0000	0.00
11	682.66	682.20	0.0000	0.00
12	726.00	725.57	0.0000	0.00
13	757.86	757.44	0.0000	0.00
14	787.16	786.75	0.0000	0.00
15	911.46	911.12	0.0000	0.00
16	1119.90	1119.67	0.0000	0.00
17	1396.83	1396.76	0.0000	0.00
18	1407.93	1407.88	0.0000	0.00
19	1461.14	1461.11	0.0000	0.00
20	1763.74	1763.90	0.0000	0.00
21	2202.51	2202.97	0.0000	0.00
22	2614.55	2615.32	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 9:54:45AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	75.92	68 -	81	75.19	5.39E+02	130.45	1.65E+03	4.39
	2	85.99	82 -	88	85.26	6.45E+01	71.89	8.99E+02	4.49
	3	187.00	182 -	192	186.32	1.07E+02	70.01	5.88E+02	2.76
	4	239.81	232 -	246	239.15	3.85E+02	86.63	6.21E+02	2.64
	5	294.99	290 -	299	294.35	5.30E+01	54.31	3.94E+02	1.94
	6	352.29	347 -	356	351.68	1.01E+02	52.76	3.40E+02	2.09
	7	511.71	506 -	518	511.17	1.01E+02	38.64	1.22E+02	2.65
	8	583.11	577 -	590	582.60	9.19E+01	41.24	1.52E+02	2.70
M	9	603.75	601 -	627	603.26	1.35E+01	13.56	2.55E+01	2.53
m	10	609.79	601 -	627	609.29	9.70E+01	33.11	8.67E+01	3.19
	11	682.66	679 -	685	682.20	1.92E+01	20.01	5.76E+01	2.79
	12	726.00	719 -	730	725.57	5.40E+01	28.98	7.80E+01	3.06
	13	757.86	750 -	763	757.44	3.17E+01	29.66	8.26E+01	10.06
	14	787.16	782 -	791	786.75	4.06E+01	22.58	4.89E+01	5.76
	15	911.46	903 -	915	911.12	5.09E+01	31.36	9.41E+01	1.66
	16	1119.90	1116 -	1124	1119.67	2.09E+01	19.46	4.63E+01	1.99
	17	1396.83	1392 -	1402	1396.76	1.70E+01	8.25	0.00E+00	3.48
	18	1407.93	1405 -	1410	1407.88	8.00E+00	5.66	0.00E+00	2.83
	19	1461.14	1456 -	1466	1461.11	2.83E+02	36.54	2.51E+01	2.41
	20	1763.74	1758 -	1767	1763.90	1.90E+01	10.44	4.05E+00	2.91
	21	2202.51	2196 -	2208	2202.97	8.75E+00	9.50	6.50E+00	7.56
	22	2614.55	2610 -	2620	2615.32	3.10E+01	11.14	0.00E+00	1.37

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 9:54:45AM

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

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	75.92	68 -	81	5.39E+02	130.45	1.65E+03	1.00E+02
	2	85.99	82 -	88	6.45E+01	71.89	8.99E+02	5.76E+01
	3	187.00	182 -	192	1.07E+02	70.01	5.88E+02	5.50E+01
	4	239.81	232 -	246	3.85E+02	86.63	6.21E+02	6.35E+01
	5	294.99	290 -	299	5.30E+01	54.31	3.94E+02	4.30E+01
	6	352.29	347 -	356	1.01E+02	52.76	3.40E+02	4.01E+01
	7	511.71	506 -	518	1.01E+02	38.64	1.22E+02	2.71E+01
	8	583.11	577 -	590	9.19E+01	41.24	1.52E+02	3.00E+01
M	9	603.75	601 -	627	1.35E+01	13.56	2.55E+01	8.30E+00
m	10	609.79	601 -	627	9.70E+01	33.11	8.67E+01	1.53E+01
	11	682.66	679 -	685	1.92E+01	20.01	5.76E+01	1.48E+01
	12	726.00	719 -	730	5.40E+01	28.98	7.80E+01	2.05E+01
	13	757.86	750 -	763	3.17E+01	29.66	8.26E+01	2.26E+01
	14	787.16	782 -	791	4.06E+01	22.58	4.89E+01	1.53E+01
	15	911.46	903 -	915	5.09E+01	31.36	9.41E+01	2.30E+01
	16	1119.90	1116 -	1124	2.09E+01	19.46	4.63E+01	1.41E+01
	17	1396.83	1392 -	1402	1.70E+01	8.25	0.00E+00	0.00E+00
	18	1407.93	1405 -	1410	8.00E+00	5.66	0.00E+00	0.00E+00
	19	1461.14	1456 -	1466	2.83E+02	36.54	2.51E+01	1.17E+01
	20	1763.74	1758 -	1767	1.90E+01	10.44	4.05E+00	4.73E+00
	21	2202.51	2196 -	2208	8.75E+00	9.50	6.50E+00	6.11E+00
	22	2614.55	2610 -	2620	3.10E+01	11.14	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 9:54:45AM

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

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	75.92	68 -	81	75.19	5.39E+02	130.45	1.65E+03	.....
	2	85.99	82 -	88	85.26	6.45E+01	71.89	8.99E+02	EU-155
									NP-237
	3	187.00	182 -	192	186.32	1.07E+02	70.01	5.88E+02	RA-226
	4	239.81	232 -	246	239.15	3.85E+02	86.63	6.21E+02	.....
	5	294.99	290 -	299	294.35	5.30E+01	54.31	3.94E+02	PB-214
	6	352.29	347 -	356	351.68	1.01E+02	52.76	3.40E+02	PB-214
	7	511.71	506 -	518	511.17	1.01E+02	38.64	1.22E+02	.....
	8	583.11	577 -	590	582.60	9.19E+01	41.24	1.52E+02	TL-208
M	9	603.75	601 -	627	603.26	1.35E+01	13.56	2.55E+01	CS-134
m	10	609.79	601 -	627	609.29	9.70E+01	33.11	8.67E+01	BI-214
	11	682.66	679 -	685	682.20	1.92E+01	20.01	5.76E+01	.....
	12	726.00	719 -	730	725.57	5.40E+01	28.98	7.80E+01	.....
	13	757.86	750 -	763	757.44	3.17E+01	29.66	8.26E+01	.....
	14	787.16	782 -	791	786.75	4.06E+01	22.58	4.89E+01	.....
	15	911.46	903 -	915	911.12	5.09E+01	31.36	9.41E+01	AC-228
									LU-172
	16	1119.90	1116 -	1124	1119.67	2.09E+01	19.46	4.63E+01	BI-214
									SC-46
	17	1396.83	1392 -	1402	1396.76	1.70E+01	8.25	0.00E+00	.....
	18	1407.93	1405 -	1410	1407.88	8.00E+00	5.66	0.00E+00	EU-152
	19	1461.14	1456 -	1466	1461.11	2.83E+02	36.54	2.51E+01	K-40
	20	1763.74	1758 -	1767	1763.90	1.90E+01	10.44	4.05E+00	BI-214
	21	2202.51	2196 -	2208	2202.97	8.75E+00	9.50	6.50E+00	.....
	22	2614.55	2610 -	2620	2615.32	3.10E+01	11.14	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 9:54:45AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	75.92	5.39E+02	130.45	2.13E-02	1.69E-03
2	85.99	6.45E+01	71.89	1.99E-02	1.64E-03
3	187.00	1.07E+02	70.01	1.16E-02	1.15E-03
4	239.81	3.85E+02	86.63	9.38E-03	9.83E-04
5	294.99	5.30E+01	54.31	7.79E-03	8.43E-04

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	6	352.29	1.01E+02	52.76	6.60E-03	7.80E-04
	7	511.71	1.01E+02	38.64	4.60E-03	5.60E-04
	8	583.11	9.19E+01	41.24	4.05E-03	4.55E-04
M	9	603.75	1.35E+01	13.56	3.91E-03	4.25E-04
m	10	609.79	9.70E+01	33.11	3.87E-03	4.16E-04
	11	682.66	1.92E+01	20.01	3.46E-03	3.29E-04
	12	726.00	5.40E+01	28.98	3.26E-03	3.04E-04
	13	757.86	3.17E+01	29.66	3.12E-03	2.86E-04
	14	787.16	4.06E+01	22.58	3.01E-03	2.70E-04
	15	911.46	5.09E+01	31.36	2.61E-03	2.06E-04
	16	1119.90	2.09E+01	19.46	2.14E-03	1.79E-04
	17	1396.83	1.70E+01	8.25	1.75E-03	2.02E-04
	18	1407.93	8.00E+00	5.66	1.74E-03	2.00E-04
	19	1461.14	2.83E+02	36.54	1.68E-03	1.89E-04
	20	1763.74	1.90E+01	10.44	1.43E-03	1.26E-04
	21	2202.51	8.75E+00	9.50	1.21E-03	1.11E-04
	22	2614.55	3.10E+01	11.14	1.07E-03	1.11E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 9:54:45AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015029.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	75.92	5.39E+02	130.45			5.39E+02	1.30E+02
	2	85.99	6.45E+01	71.89			6.45E+01	7.19E+01
	3	187.00	1.07E+02	70.01	2.33E+01	1.20E+01	8.39E+01	7.10E+01
	4	239.81	3.85E+02	86.63			3.85E+02	8.66E+01
	5	294.99	5.30E+01	54.31			5.30E+01	5.43E+01
	6	352.29	1.01E+02	52.76	1.92E+00	3.66E+00	9.91E+01	5.29E+01
	7	511.71	1.01E+02	38.64	4.17E+01	4.41E+00	5.92E+01	3.89E+01
	8	583.11	9.19E+01	41.24			9.19E+01	4.12E+01
M	9	603.75	1.35E+01	13.56			1.35E+01	1.36E+01
m	10	609.79	9.70E+01	33.11	8.13E+00	4.40E+00	8.89E+01	3.34E+01
	11	682.66	1.92E+01	20.01			1.92E+01	2.00E+01
	12	726.00	5.40E+01	28.98			5.40E+01	2.90E+01
	13	757.86	3.17E+01	29.66			3.17E+01	2.97E+01

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
14	787.16	4.06E+01	22.58			4.06E+01	2.26E+01
15	911.46	5.09E+01	31.36			5.09E+01	3.14E+01
16	1119.90	2.09E+01	19.46			2.09E+01	1.95E+01
17	1396.83	1.70E+01	8.25			1.70E+01	8.25E+00
18	1407.93	8.00E+00	5.66			8.00E+00	5.66E+00
19	1461.14	2.83E+02	36.54	1.26E+00	1.75E+00	2.82E+02	3.66E+01
20	1763.74	1.90E+01	10.44			1.90E+01	1.04E+01
21	2202.51	8.75E+00	9.50			8.75E+00	9.50E+00
22	2614.55	3.10E+01	11.14			3.10E+01	1.11E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 9:54:45AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015029.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	75.92	5.39E+02	130.45			5.39E+02	1.30E+02
	2	85.99	6.45E+01	71.89			6.45E+01	7.19E+01
	3	187.00	1.07E+02	70.01	2.33E+01	1.20E+01	8.39E+01	7.10E+01
	4	239.81	3.85E+02	86.63			3.85E+02	8.66E+01
	5	294.99	5.30E+01	54.31			5.30E+01	5.43E+01
	6	352.29	1.01E+02	52.76	1.92E+00	3.66E+00	9.91E+01	5.29E+01
	7	511.71	1.01E+02	38.64	4.17E+01	4.41E+00	5.92E+01	3.89E+01
	8	583.11	9.19E+01	41.24			9.19E+01	4.12E+01
M	9	603.75	1.35E+01	13.56			1.35E+01	1.36E+01
m	10	609.79	9.70E+01	33.11	8.13E+00	4.40E+00	8.89E+01	3.34E+01
	11	682.66	1.92E+01	20.01			1.92E+01	2.00E+01
	12	726.00	5.40E+01	28.98			5.40E+01	2.90E+01
	13	757.86	3.17E+01	29.66			3.17E+01	2.97E+01
	14	787.16	4.06E+01	22.58			4.06E+01	2.26E+01
	15	911.46	5.09E+01	31.36			5.09E+01	3.14E+01
	16	1119.90	2.09E+01	19.46			2.09E+01	1.95E+01
	17	1396.83	1.70E+01	8.25			1.70E+01	8.25E+00
	18	1407.93	8.00E+00	5.66			8.00E+00	5.66E+00
	19	1461.14	2.83E+02	36.54	1.26E+00	1.75E+00	2.82E+02	3.66E+01

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
20	1763.74	1.90E+01	10.44			1.90E+01	1.04E+01
21	2202.51	8.75E+00	9.50			8.75E+00	9.50E+00
22	2614.55	3.10E+01	11.14			3.10E+01	1.11E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.983	1460.81	*	10.67	1.63E+01	2.82E+00
EU-155	0.356	86.50	*	30.90	1.09E-01	1.22E-01
		105.30		20.70		
TL-208	0.886	583.14	*	30.22	7.80E-01	3.61E-01
		860.37		4.48		
		2614.66	*	35.85	8.38E-01	3.13E-01
BI-214	0.895	609.31	*	46.30	5.15E-01	2.01E-01
		1120.29	*	15.10	6.69E-01	6.26E-01
		1764.49	*	15.80	8.69E-01	4.84E-01
		2204.22		4.98		
PB-214	0.983	295.21	*	19.19	3.68E-01	3.79E-01
		351.92	*	37.19	4.19E-01	2.29E-01
RA-226	0.904	186.21	*	3.28	2.30E+00	4.64E+00
NP-237	0.958	86.50	*	12.60	2.67E-01	2.99E-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 1411131-05

J1V1L3 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 9:54:45AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	75.92	1.49702E-01	12.10		
	4	239.81	1.06839E-01	11.26		
	7	511.71	1.64575E-02	32.82		
M	9	603.75	3.75292E-03	50.20	Tol.	CS-134
	11	682.66	5.33854E-03	52.05		
	12	726.00	1.50000E-02	26.84		
	13	757.86	8.80137E-03	46.81		
	14	787.16	1.12650E-02	27.84		
	15	911.46	1.41525E-02	30.78	Tol.	LU-172 AC-228
	17	1396.83	4.72222E-03	24.25		
	18	1407.93	2.22222E-03	35.36	Tol.	EU-152
	21	2202.51	2.43056E-03	54.29		

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	0.98	1460.81	*	10.67	1.63E+01	2.82E+00
EU-155	0.35	86.50	*	30.90	1.09E-01	1.22E-01
		105.30		20.70		
TL-208	0.88	583.14	*	30.22	7.80E-01	3.61E-01
		860.37		4.48		
		2614.66	*	35.85	8.38E-01	3.13E-01

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Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.89	609.31	*	46.30	5.15E-01	2.01E-01
		1120.29	*	15.10	6.69E-01	6.26E-01
		1764.49	*	15.80	8.69E-01	4.84E-01
		2204.22		4.98		
PB-214	0.98	295.21	*	19.19	3.68E-01	3.79E-01
		351.92	*	37.19	4.19E-01	2.29E-01
RA-226	0.90	186.21	*	3.28	2.30E+00	4.64E+00
NP-237	0.95	86.50	*	12.60	2.67E-01	2.99E-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	0.983	1.63E+01	2.82E+00	
?	EU-155	0.356	1.09E-01	1.22E-01	
	TL-208	0.886	8.13E-01	2.37E-01	
	BI-214	0.895	5.75E-01	1.78E-01	
	PB-214	0.983	4.05E-01	1.96E-01	
	RA-226	0.904	2.30E+00	4.64E+00	
?	NP-237	0.958	2.67E-01	2.99E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 9:54:45AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	75.92	1.49702E-01	12.10		
	4	239.81	1.06839E-01	11.26		
	7	511.71	1.64575E-02	32.82		
M	9	603.75	3.75292E-03	50.20	Tol.	CS-134
	11	682.66	5.33854E-03	52.05		
	12	726.00	1.50000E-02	26.84		
	13	757.86	8.80137E-03	46.81		
	14	787.16	1.12650E-02	27.84		
	15	911.46	1.41525E-02	30.78	Tol.	LU-172
						AC-228
	17	1396.83	4.72222E-03	24.25		
	18	1407.93	2.22222E-03	35.36	Tol.	EU-152
	21	2202.51	2.43056E-03	54.29		

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	-3.50E-01	8.80E-01	8.80E-01
+	NA-22	1274.54	99.94	6.14E-03	1.42E-01	1.42E-01
+	NA-24	1368.53	99.99	2.30E+01	2.16E+01	9.88E+01
		2754.09	99.86	0.00E+00		2.16E+01

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AL-26	1808.65		99.76	3.67E-02	1.11E-01	1.11E-01
+	K-40	1460.81	*	10.67	1.63E+01	1.53E+00	1.53E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	3.00E-03	5.94E-02	5.94E-02
		78.34		96.00	1.45E-01		7.59E-02
+	SC-46	889.25		99.98	3.04E-02	1.28E-01	1.28E-01
		1120.51		99.99	1.11E-01		1.71E-01
+	V-48	983.52		99.98	-4.74E-02	1.54E-01	1.54E-01
		1312.10		97.50	4.18E-02		2.14E-01
+	CR-51	320.08		9.83	4.02E-01	1.06E+00	1.06E+00
+	MN-54	834.83		99.97	-2.97E-02	1.20E-01	1.20E-01
+	CO-56	846.75		99.96	-3.52E-02	1.23E-01	1.23E-01
		1037.75		14.03	3.27E-01		9.83E-01
		1238.25		67.00	9.09E-02		2.81E-01
		1771.40		15.51	-3.78E-01		5.31E-01
		2598.48		16.90	1.81E-01		6.48E-01
+	CO-57	122.06		85.51	-1.23E-02	7.29E-02	7.29E-02
		136.48		10.60	9.49E-02		6.29E-01
+	CO-58	810.76		99.40	-6.63E-03	1.16E-01	1.16E-01
+	FE-59	1099.22		56.50	6.87E-03	2.80E-01	2.80E-01
		1291.56		43.20	-1.30E-01		3.37E-01
+	CO-60	1173.22		100.00	4.24E-02	1.28E-01	1.61E-01
		1332.49		100.00	5.01E-02		1.28E-01
+	ZN-65	1115.52		50.75	-5.87E-02	2.81E-01	2.81E-01
+	GA-67	93.31		35.70	3.56E-01	6.66E-01	6.66E-01
		208.95		2.24	8.85E+00		1.29E+01
		300.22		16.00	3.34E-01		1.94E+00
+	SE-75	121.11		16.70	-1.27E-01	1.12E-01	3.78E-01
		136.00		59.20	-3.90E-02		1.12E-01
		264.65		59.80	-4.20E-02		1.37E-01
		279.53		25.20	-7.18E-02		3.16E-01
		400.65		11.40	2.14E-01		8.10E-01
+	RB-82	776.52		13.00	-2.10E-02	1.07E+00	1.07E+00
+	RB-83	520.41		46.00	-4.30E-02	1.98E-01	1.98E-01
		529.64		30.30	6.39E-02		3.30E-01
		552.65		16.40	3.19E-01		7.02E-01
+	KR-85	513.99		0.43	4.18E+01	2.93E+01	2.93E+01
+	SR-85	513.99		99.27	1.95E-01	1.37E-01	1.37E-01
+	Y-88	898.02		93.40	5.17E-02	1.10E-01	1.39E-01
		1836.01		99.38	4.78E-03		1.10E-01
+	NB-93M	16.57		9.43	4.18E-01	2.93E-01	2.93E-01
+	NB-94	702.63		100.00	5.80E-02	1.19E-01	1.19E-01
		871.10		100.00	-3.64E-02		1.20E-01
+	NB-95	765.79		99.81	-1.55E-02	1.41E-01	1.41E-01
+	NB-95M	235.69		25.00	2.08E+00	1.43E+00	1.43E+00
+	ZR-95	724.18		43.70	2.03E-01	2.28E-01	3.32E-01
		756.72		55.30	7.12E-02		2.28E-01

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	MO-99	181.06	6.20	7.34E-01	4.23E+00	5.60E+00
		739.58	12.80	-5.47E-01		4.23E+00
		778.00	4.50	-4.96E+00		1.06E+01
+	RU-103	497.08	89.00	-4.67E-03	1.20E-01	1.20E-01
+	RU-106	621.84	9.80	5.73E-01	1.25E+00	1.25E+00
+	AG-108M	433.93	89.90	-4.35E-02	9.13E-02	9.13E-02
		614.37	90.40	-1.08E-01		1.42E-01
		722.95	90.50	6.02E-02		1.48E-01
+	CD-109	88.03	3.72	-3.73E-01	1.80E+00	1.80E+00
+	AG-110M	657.75	93.14	3.49E-02	1.17E-01	1.17E-01
		677.61	10.53	1.11E-01		1.06E+00
		706.67	16.46	5.55E-02		7.25E-01
		763.93	21.98	-2.73E-01		5.46E-01
		884.67	71.63	-4.54E-02		1.64E-01
		1384.27	23.94	2.76E-01		5.60E-01
+	CD-113M	263.70	0.02	-3.76E+01	3.48E+02	3.48E+02
+	SN-113	255.12	1.93	1.32E+00	1.44E-01	4.06E+00
		391.69	64.90	1.31E-03		1.44E-01
+	TE123M	159.00	84.10	1.17E-02	8.88E-02	8.88E-02
+	SB-124	602.71	97.87	-5.48E-03	1.02E-01	1.02E-01
		645.85	7.26	9.94E-01		1.52E+00
		722.78	11.10	-8.31E-01		1.16E+00
		1691.02	49.00	1.20E-01		2.88E-01
+	I-125	35.49	6.49	-2.58E-01	5.51E-01	5.51E-01
+	SB-125	176.33	6.89	4.20E-02	2.75E-01	1.11E+00
		427.89	29.33	-9.91E-02		2.75E-01
		463.38	10.35	3.69E-03		9.54E-01
		600.56	17.80	4.38E-02		5.50E-01
		635.90	11.32	-2.48E-02		9.07E-01
+	SB-126	414.70	83.30	-3.23E-02	1.49E-01	1.49E-01
		666.33	99.60	4.94E-02		1.52E-01
		695.00	99.60	1.38E-02		1.51E-01
		720.50	53.80	-1.89E-03		3.01E-01
+	SN-126	87.57	37.00	-3.70E-02	1.79E-01	1.79E-01
+	SB-127	473.00	25.00	5.78E-01	8.88E-01	1.10E+00
		685.20	35.70	-2.70E-01		8.88E-01
		783.80	14.70	2.04E-01		2.64E+00
+	I-129	29.78	57.00	-1.49E-02	5.91E-02	5.91E-02
		33.60	13.20	-1.00E-01		2.52E-01
		39.58	7.52	-3.60E-01		4.58E-01
+	I-131	284.30	6.05	-4.47E-01	1.64E-01	2.16E+00
		364.48	81.20	-5.98E-02		1.64E-01
		636.97	7.26	2.35E-01		2.37E+00
		722.89	1.80	-8.04E+00		1.12E+01
+	TE-132	49.72	13.10	-2.41E-01	3.12E-01	1.12E+00
		228.16	88.00	-1.74E-02		3.12E-01
+	BA-133	81.00	33.00	-8.74E-02	2.01E-01	2.08E-01
		302.84	17.80	7.87E-02		4.68E-01
		356.01	60.00	2.51E-02		2.01E-01

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-133	529.87	86.30	2.64E+00	1.36E+01	1.36E+01
+	CS-134	563.23	8.38	-6.56E-01	1.14E-01	1.19E+00
		569.32	15.43	-3.55E-02		6.52E-01
		604.70	97.60	-1.69E-01		1.14E-01
		795.84	85.40	-9.38E-03		1.26E-01
		801.93	8.73	-1.63E-01		1.19E+00
+	CS-135	268.24	16.00	2.38E-01	5.36E-01	5.36E-01
+	I-135	1131.51	22.50	8.45E+05	1.95E+06	2.58E+06
		1260.41	28.60	6.38E+05		1.95E+06
		1678.03	9.54	-6.77E+05		4.19E+06
+	CS-136	153.22	7.46	3.90E-01	1.57E-01	1.31E+00
		163.89	4.61	-1.13E-01		2.16E+00
		176.55	13.56	2.92E-02		7.71E-01
		273.65	12.66	5.41E-01		9.30E-01
		340.57	48.50	1.09E-01		2.59E-01
		818.50	99.70	-6.10E-02		1.57E-01
		1048.07	79.60	-7.52E-03		2.00E-01
		1235.34	19.70	-4.67E-02		1.16E+00
+	CS-137	661.65	85.12	1.02E-02	1.29E-01	1.29E-01
+	LA-138	788.74	34.00	1.68E-01	1.60E-01	3.97E-01
		1435.80	66.00	-5.70E-02		1.60E-01
+	CE-139	165.85	80.35	-2.17E-02	9.35E-02	9.35E-02
+	BA-140	162.64	6.70	-2.39E-01	5.16E-01	1.48E+00
		304.84	4.50	-6.66E-01		2.46E+00
		423.70	3.20	2.72E-01		3.73E+00
		437.55	2.00	-2.72E-01		6.28E+00
		537.32	25.00	1.12E-01		5.16E-01
+	LA-140	328.77	20.50	2.79E-02	1.45E-01	5.91E-01
		487.03	45.50	8.67E-02		2.88E-01
		815.85	23.50	-4.65E-02		6.69E-01
		1596.49	95.49	1.24E-02		1.45E-01
+	CE-141	145.44	48.40	-8.15E-02	1.55E-01	1.55E-01
+	CE-143	57.36	11.80	-6.62E+00	4.84E+00	8.26E+00
		293.26	42.00	2.93E+00		4.84E+00
		664.55	5.20	1.12E+01		4.35E+01
+	CE-144	133.54	10.80	-2.21E-01	6.04E-01	6.04E-01
+	PM-144	476.78	42.00	-1.25E-01	1.11E-01	2.04E-01
		618.01	98.60	-1.55E-02		1.19E-01
		696.49	99.49	-7.46E-03		1.11E-01
+	PM-145	36.85	21.70	-1.32E-02	8.59E-02	1.57E-01
		37.36	39.70	-2.35E-02		8.59E-02
		42.30	15.10	4.58E-02		2.46E-01
		72.40	2.31	2.45E+00		2.95E+00
+	PM-146	453.90	39.94	-1.29E-01	2.05E-01	2.05E-01
		735.90	14.01	9.05E-02		8.59E-01
		747.13	13.10	2.90E-01		8.23E-01
+	ND-147	91.11	28.90	3.37E-01	3.55E-01	3.55E-01
		531.02	13.10	2.19E-01		1.06E+00
+	PM-149	285.90	3.10	7.32E+00	1.71E+01	1.71E+01

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Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	EU-152	121.78		20.50	-5.06E-02	2.99E-01	2.99E-01
		244.69		5.40	-3.50E-01		1.69E+00
		344.27		19.13	-2.63E-01		4.46E-01
		778.89		9.20	-5.33E-01		1.14E+00
		964.01		10.40	-4.75E-01		1.37E+00
		1085.78		7.22	-9.29E-01		1.89E+00
		1112.02		9.60	-4.86E-01		1.37E+00
		1407.95		14.94	5.33E-02		7.25E-01
+	GD-153	97.43		31.30	-8.77E-02	1.98E-01	1.98E-01
		103.18		22.20	2.57E-02		2.69E-01
+	EU-154	123.07		40.50	-1.23E-02	1.55E-01	1.55E-01
		723.30		19.70	2.77E-01		6.80E-01
		873.19		11.50	-1.01E-01		1.04E+00
		996.32		10.30	-4.50E-01		1.34E+00
		1004.76		17.90	2.25E-01		7.85E-01
		1274.45		35.50	1.72E-02		4.00E-01
+	EU-155	86.50	*	30.90	1.09E-01	2.00E-01	2.00E-01
		105.30		20.70	-7.01E-02		2.84E-01
+	EU-156	811.77		10.40	1.06E-01	1.39E+00	1.39E+00
		1153.47		7.20	9.57E-01		2.99E+00
		1230.71		8.90	-1.03E+00		2.17E+00
+	HO-166M	184.41		72.60	-5.46E-03	1.11E-01	1.11E-01
		280.45		29.60	-1.64E-01		2.53E-01
		410.94		11.10	3.02E-01		8.27E-01
		711.69		54.10	9.51E-03		2.07E-01
+	TM-171	66.72		0.14	1.58E+01	4.04E+01	4.04E+01
+	HF-172	81.75		4.52	-2.81E+00	5.80E-01	1.44E+00
		125.81		11.30	3.71E-01		5.80E-01
+	LU-172	181.53		20.60	7.64E-02	4.10E-01	7.05E-01
		810.06		16.63	-6.96E-02		1.22E+00
		912.12		15.25	2.61E+00		2.18E+00
		1093.66		62.50	-1.49E-01		4.10E-01
+	LU-173	100.72		5.24	-1.17E+00	3.99E-01	1.11E+00
		272.11		21.20	-7.03E-02		3.99E-01
+	HF-175	343.40		84.00	-4.14E-02	1.10E-01	1.10E-01
+	LU-176	88.34		13.30	1.21E-01	8.26E-02	5.09E-01
		201.83		86.00	-5.29E-02		8.54E-02
		306.78		94.00	-5.77E-02		8.26E-02
+	TA-182	67.75		41.20	7.12E-03	1.41E-01	1.41E-01
		1121.30		34.90	5.15E-01		4.98E-01
		1189.05		16.23	-1.80E-01		9.08E-01
		1221.41		26.98	1.34E-02		6.70E-01
		1231.02		11.44	-6.29E-01		1.33E+00
+	IR-192	308.46		29.68	-2.74E-02	2.04E-01	2.85E-01
		468.07		48.10	2.40E-04		2.04E-01
+	HG-203	279.19		77.30	-2.47E-02	1.09E-01	1.09E-01
+	BI-207	569.67		97.72	-5.57E-03	1.02E-01	1.02E-01
		1063.62		74.90	-2.63E-02		1.86E-01
+	TL-208	583.14	*	30.22	7.80E-01	7.31E-02	5.33E-01

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TL-208	860.37		4.48	8.97E-01	7.31E-02	2.93E+00
		2614.66	*	35.85	8.38E-01		7.31E-02
+	BI-210M	262.00		45.00	-4.93E-02	1.70E-01	1.70E-01
		300.00		23.00	4.66E-02		4.15E-01
+	PB-210	46.50		4.25	-8.11E-02	9.18E-01	9.18E-01
+	PB-211	404.84		2.90	-2.54E+00	2.96E+00	2.96E+00
		831.96		2.90	-2.63E+00		3.80E+00
+	BI-212	727.17		11.80	4.07E-01	1.16E+00	1.16E+00
		1620.62		2.75	1.47E+00		4.62E+00
+	PB-212	238.63		44.60	8.04E-01	2.77E-01	2.77E-01
		300.09		3.41	3.15E-01		2.80E+00
+	BI-214	609.31	*	46.30	5.15E-01	5.57E-01	6.08E-01
		1120.29	*	15.10	6.69E-01		9.93E-01
		1764.49	*	15.80	8.69E-01		5.57E-01
		2204.22		4.98	0.00E+00		2.74E+00
+	PB-214	295.21	*	19.19	3.68E-01	3.52E-01	6.17E-01
		351.92	*	37.19	4.19E-01		3.52E-01
+	RN-219	401.80		6.50	1.30E-01	1.37E+00	1.37E+00
+	RA-223	323.87		3.88	4.82E-01	2.31E+00	2.31E+00
+	RA-224	240.98		3.95	1.04E+01	3.17E+00	3.17E+00
+	RA-225	40.00		31.00	-1.16E-01	1.48E-01	1.48E-01
+	RA-226	186.21	*	3.28	2.30E+00	3.16E+00	3.16E+00
+	TH-227	50.10		8.40	-1.05E-01	4.88E-01	4.88E-01
		236.00		11.50	1.42E+00		9.79E-01
		256.20		6.30	1.91E-02		1.18E+00
+	AC-228	338.32		11.40	7.42E-01	6.65E-01	8.22E-01
		911.07		27.70	9.19E-01		6.65E-01
		969.11		16.60	9.43E-01		1.02E+00
+	TH-230	48.44		16.90	5.85E-03	2.39E-01	2.39E-01
		62.85		4.60	6.83E-01		1.16E+00
		67.67		0.37	7.64E-01		1.51E+01
+	PA-231	283.67		1.60	-2.20E+00	3.62E+00	4.72E+00
		302.67		2.30	6.08E-01		3.62E+00
+	TH-231	25.64		14.70	8.37E-02	2.35E-01	2.35E-01
		84.21		6.40	-2.94E+00		9.57E-01
+	PA-233	311.98		38.60	4.24E-02	2.49E-01	2.49E-01
+	PA-234	131.20		20.40	-5.87E-02	3.12E-01	3.12E-01
		733.99		8.80	1.66E-01		1.33E+00
		946.00		12.00	-3.44E-02		1.04E+00
+	PA-234M	1001.03		0.92	-3.91E+00	1.50E+01	1.50E+01
+	TH-234	63.29		3.80	9.72E-01	1.43E+00	1.43E+00
+	U-235	143.76		10.50	-2.13E-01	6.31E-01	6.31E-01
		163.35		4.70	-8.03E-02		1.54E+00
		205.31		4.70	5.93E-01		1.66E+00
+	NP-237	86.50	*	12.60	2.67E-01	4.89E-01	4.89E-01
+	NP-239	106.10		22.70	-3.77E-01	1.53E+00	1.53E+00
		228.18		10.70	-9.28E-03		4.16E+00
		277.60		14.10	-4.00E-01		3.26E+00

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AM-241	59.54	35.90	8.85E-02	1.42E-01	1.42E-01
+	AM-243	74.67	66.00	3.60E-01	1.13E-01	1.13E-01
+	CM-243	209.75	3.29	1.65E+00	5.58E-01	2.46E+00
		228.14	10.60	-4.00E-02		7.19E-01
		277.60	14.00	-6.84E-02		5.58E-01

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	8.80E-01	8.80E-01	-3.50E-01	4.10E-01
	NA-22	1274.54		99.94	1.42E-01	1.42E-01	6.14E-03	6.38E-02
	NA-24	1368.53		99.99	9.88E+01	2.16E+01	2.30E+01	4.31E+01
		2754.09		99.86	2.16E+01		0.00E+00	0.00E+00
	AL-26	1808.65		99.76	1.11E-01	1.11E-01	3.67E-02	4.56E-02
+	K-40	1460.81	*	10.67	1.53E+00	1.53E+00	1.63E+01	6.88E-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	5.94E-02	5.94E-02	3.00E-03	2.90E-02
		78.34		96.00	7.59E-02		1.45E-01	3.72E-02
	SC-46	889.25		99.98	1.28E-01	1.28E-01	3.04E-02	5.86E-02
		1120.51		99.99	1.71E-01		1.11E-01	7.86E-02
	V-48	983.52		99.98	1.54E-01	1.54E-01	-4.74E-02	6.97E-02
		1312.10		97.50	2.14E-01		4.18E-02	9.67E-02
	CR-51	320.08		9.83	1.06E+00	1.06E+00	4.02E-01	5.05E-01
	MN-54	834.83		99.97	1.20E-01	1.20E-01	-2.97E-02	5.52E-02
	CO-56	846.75		99.96	1.23E-01	1.23E-01	-3.52E-02	5.60E-02
		1037.75		14.03	9.83E-01		3.27E-01	4.46E-01
		1238.25		67.00	2.81E-01		9.09E-02	1.29E-01

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-56	1771.40	15.51	5.31E-01	1.23E-01	-3.78E-01	1.99E-01
	2598.48	16.90	6.48E-01		1.81E-01	2.43E-01
CO-57	122.06	85.51	7.29E-02	7.29E-02	-1.23E-02	3.54E-02
	136.48	10.60	6.29E-01		9.49E-02	3.05E-01
CO-58	810.76	99.40	1.16E-01	1.16E-01	-6.63E-03	5.29E-02
FE-59	1099.22	56.50	2.80E-01	2.80E-01	6.87E-03	1.27E-01
	1291.56	43.20	3.37E-01		-1.30E-01	1.50E-01
CO-60	1173.22	100.00	1.61E-01	1.28E-01	4.24E-02	7.36E-02
	1332.49	100.00	1.28E-01		5.01E-02	5.62E-02
ZN-65	1115.52	50.75	2.81E-01	2.81E-01	-5.87E-02	1.27E-01
GA-67	93.31	35.70	6.66E-01	6.66E-01	3.56E-01	3.26E-01
	208.95	2.24	1.29E+01		8.85E+00	6.26E+00
	300.22	16.00	1.94E+00		3.34E-01	9.29E-01
SE-75	121.11	16.70	3.78E-01	1.12E-01	-1.27E-01	1.84E-01
	136.00	59.20	1.12E-01		-3.90E-02	5.43E-02
	264.65	59.80	1.37E-01		-4.20E-02	6.57E-02
	279.53	25.20	3.16E-01		-7.18E-02	1.51E-01
	400.65	11.40	8.10E-01		2.14E-01	3.83E-01
RB-82	776.52	13.00	1.07E+00	1.07E+00	-2.10E-02	4.92E-01
RB-83	520.41	46.00	1.98E-01	1.98E-01	-4.30E-02	9.19E-02
	529.64	30.30	3.30E-01		6.39E-02	1.54E-01
	552.65	16.40	7.02E-01		3.19E-01	3.30E-01
KR-85	513.99	0.43	2.93E+01	2.93E+01	4.18E+01	1.40E+01
SR-85	513.99	99.27	1.37E-01	1.37E-01	1.95E-01	6.51E-02
Y-88	898.02	93.40	1.39E-01	1.10E-01	5.17E-02	6.34E-02
	1836.01	99.38	1.10E-01		4.78E-03	4.46E-02
NB-93M	16.57	9.43	2.93E-01	2.93E-01	4.18E-01	1.42E-01
NB-94	702.63	100.00	1.19E-01	1.19E-01	5.80E-02	5.56E-02
	871.10	100.00	1.20E-01		-3.64E-02	5.46E-02
NB-95	765.79	99.81	1.41E-01	1.41E-01	-1.55E-02	6.54E-02
NB-95M	235.69	25.00	1.43E+00	1.43E+00	2.08E+00	6.96E-01
ZR-95	724.18	43.70	3.32E-01	2.28E-01	2.03E-01	1.55E-01
	756.72	55.30	2.28E-01		7.12E-02	1.05E-01
MO-99	181.06	6.20	5.60E+00	4.23E+00	7.34E-01	2.71E+00
	739.58	12.80	4.23E+00		-5.47E-01	1.96E+00
	778.00	4.50	1.06E+01		-4.96E+00	4.82E+00
RU-103	497.08	89.00	1.20E-01	1.20E-01	-4.67E-03	5.63E-02
RU-106	621.84	9.80	1.25E+00	1.25E+00	5.73E-01	5.87E-01
AG-108M	433.93	89.90	9.13E-02	9.13E-02	-4.35E-02	4.27E-02
	614.37	90.40	1.42E-01		-1.08E-01	6.70E-02
	722.95	90.50	1.48E-01		6.02E-02	6.92E-02
CD-109	88.03	3.72	1.80E+00	1.80E+00	-3.73E-01	8.81E-01
AG-110M	657.75	93.14	1.17E-01	1.17E-01	3.49E-02	5.44E-02
	677.61	10.53	1.06E+00		1.11E-01	4.91E-01
	706.67	16.46	7.25E-01		5.55E-02	3.37E-01
	763.93	21.98	5.46E-01		-2.73E-01	2.52E-01
	884.67	71.63	1.64E-01		-4.54E-02	7.44E-02
	1384.27	23.94	5.60E-01		2.76E-01	2.46E-01
CD-113M	263.70	0.02	3.48E+02	3.48E+02	-3.76E+01	1.67E+02
SN-113	255.12	1.93	4.06E+00	1.44E-01	1.32E+00	1.94E+00
	391.69	64.90	1.44E-01		1.31E-03	6.81E-02
TE123M	159.00	84.10	8.88E-02	8.88E-02	1.17E-02	4.31E-02
SB-124	602.71	97.87	1.02E-01	1.02E-01	-5.48E-03	4.73E-02

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-124	645.85	7.26	1.52E+00	1.02E-01	9.94E-01	7.03E-01
	722.78	11.10	1.16E+00		-8.31E-01	5.38E-01
	1691.02	49.00	2.88E-01		1.20E-01	1.23E-01
I-125	35.49	6.49	5.51E-01	5.51E-01	-2.58E-01	2.67E-01
SB-125	176.33	6.89	1.11E+00	2.75E-01	4.20E-02	5.37E-01
	427.89	29.33	2.75E-01		-9.91E-02	1.29E-01
	463.38	10.35	9.54E-01		3.69E-03	4.50E-01
	600.56	17.80	5.50E-01		4.38E-02	2.55E-01
	635.90	11.32	9.07E-01		-2.48E-02	4.20E-01
SB-126	414.70	83.30	1.49E-01	1.49E-01	-3.23E-02	7.04E-02
	666.33	99.60	1.52E-01		4.94E-02	7.03E-02
	695.00	99.60	1.51E-01		1.38E-02	6.99E-02
	720.50	53.80	3.01E-01		-1.89E-03	1.39E-01
SN-126	87.57	37.00	1.79E-01	1.79E-01	-3.70E-02	8.75E-02
SB-127	473.00	25.00	1.10E+00	8.88E-01	5.78E-01	5.14E-01
	685.20	35.70	8.88E-01		-2.70E-01	4.10E-01
	783.80	14.70	2.64E+00		2.04E-01	1.22E+00
I-129	29.78	57.00	5.91E-02	5.91E-02	-1.49E-02	2.87E-02
	33.60	13.20	2.52E-01		-1.00E-01	1.22E-01
	39.58	7.52	4.58E-01		-3.60E-01	2.22E-01
I-131	284.30	6.05	2.16E+00	1.64E-01	-4.47E-01	1.03E+00
	364.48	81.20	1.64E-01		-5.98E-02	7.74E-02
	636.97	7.26	2.37E+00		2.35E-01	1.10E+00
	722.89	1.80	1.12E+01		-8.04E+00	5.20E+00
TE-132	49.72	13.10	1.12E+00	3.12E-01	-2.41E-01	5.47E-01
	228.16	88.00	3.12E-01		-1.74E-02	1.50E-01
BA-133	81.00	33.00	2.08E-01	2.01E-01	-8.74E-02	1.02E-01
	302.84	17.80	4.68E-01		7.87E-02	2.24E-01
	356.01	60.00	2.01E-01		2.51E-02	9.71E-02
I-133	529.87	86.30	1.36E+01	1.36E+01	2.64E+00	6.37E+00
CS-134	563.23	8.38	1.19E+00	1.14E-01	-6.56E-01	5.54E-01
	569.32	15.43	6.52E-01		-3.55E-02	3.04E-01
	604.70	97.60	1.14E-01		-1.69E-01	5.33E-02
	795.84	85.40	1.26E-01		-9.38E-03	5.73E-02
	801.93	8.73	1.19E+00		-1.63E-01	5.41E-01
CS-135	268.24	16.00	5.36E-01	5.36E-01	2.38E-01	2.58E-01
I-135	1131.51	22.50	2.58E+06	1.95E+06	8.45E+05	1.18E+06
	1260.41	28.60	1.95E+06		6.38E+05	8.75E+05
	1678.03	9.54	4.19E+06		-6.77E+05	1.72E+06
CS-136	153.22	7.46	1.31E+00	1.57E-01	3.90E-01	6.38E-01
	163.89	4.61	2.16E+00		-1.13E-01	1.05E+00
	176.55	13.56	7.71E-01		2.92E-02	3.74E-01
	273.65	12.66	9.30E-01		5.41E-01	4.47E-01
	340.57	48.50	2.59E-01		1.09E-01	1.24E-01
	818.50	99.70	1.57E-01		-6.10E-02	7.17E-02
	1048.07	79.60	2.00E-01		-7.52E-03	8.94E-02
	1235.34	19.70	1.16E+00		-4.67E-02	5.30E-01
CS-137	661.65	85.12	1.29E-01	1.29E-01	1.02E-02	6.00E-02
LA-138	788.74	34.00	3.97E-01	1.60E-01	1.68E-01	1.85E-01
	1435.80	66.00	1.60E-01		-5.70E-02	6.77E-02
CE-139	165.85	80.35	9.35E-02	9.35E-02	-2.17E-02	4.53E-02
BA-140	162.64	6.70	1.48E+00	5.16E-01	-2.39E-01	7.17E-01
	304.84	4.50	2.46E+00		-6.66E-01	1.17E+00

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BA-140	423.70		3.20	3.73E+00	5.16E-01	2.72E-01	1.75E+00
		437.55		2.00	6.28E+00		-2.72E-01	2.96E+00
		537.32		25.00	5.16E-01		1.12E-01	2.40E-01
	LA-140	328.77		20.50	5.91E-01	1.45E-01	2.79E-02	2.82E-01
		487.03		45.50	2.88E-01		8.67E-02	1.35E-01
		815.85		23.50	6.69E-01		-4.65E-02	3.06E-01
		1596.49		95.49	1.45E-01		1.24E-02	5.95E-02
	CE-141	145.44		48.40	1.55E-01	1.55E-01	-8.15E-02	7.50E-02
	CE-143	57.36		11.80	8.26E+00	4.84E+00	-6.62E+00	4.03E+00
		293.26		42.00	4.84E+00		2.93E+00	2.33E+00
		664.55		5.20	4.35E+01		1.12E+01	2.02E+01
	CE-144	133.54		10.80	6.04E-01	6.04E-01	-2.21E-01	2.93E-01
	PM-144	476.78		42.00	2.04E-01	1.11E-01	-1.25E-01	9.51E-02
		618.01		98.60	1.19E-01		-1.55E-02	5.58E-02
		696.49		99.49	1.11E-01		-7.46E-03	5.11E-02
	PM-145	36.85		21.70	1.57E-01	8.59E-02	-1.32E-02	7.61E-02
		37.36		39.70	8.59E-02		-2.35E-02	4.17E-02
		42.30		15.10	2.46E-01		4.58E-02	1.19E-01
		72.40		2.31	2.95E+00		2.45E+00	1.45E+00
	PM-146	453.90		39.94	2.05E-01	2.05E-01	-1.29E-01	9.58E-02
		735.90		14.01	8.59E-01		9.05E-02	3.98E-01
		747.13		13.10	8.23E-01		2.90E-01	3.78E-01
	ND-147	91.11		28.90	3.55E-01	3.55E-01	3.37E-01	1.74E-01
		531.02		13.10	1.06E+00		2.19E-01	4.94E-01
	PM-149	285.90		3.10	1.71E+01	1.71E+01	7.32E+00	8.20E+00
	EU-152	121.78		20.50	2.99E-01	2.99E-01	-5.06E-02	1.45E-01
		244.69		5.40	1.69E+00		-3.50E-01	8.17E-01
		344.27		19.13	4.46E-01		-2.63E-01	2.12E-01
		778.89		9.20	1.14E+00		-5.33E-01	5.18E-01
		964.01		10.40	1.37E+00		-4.75E-01	6.31E-01
		1085.78		7.22	1.89E+00		-9.29E-01	8.58E-01
		1112.02		9.60	1.37E+00		-4.86E-01	6.17E-01
		1407.95		14.94	7.25E-01		5.33E-02	3.08E-01
	GD-153	97.43		31.30	1.98E-01	1.98E-01	-8.77E-02	9.64E-02
		103.18		22.20	2.69E-01		2.57E-02	1.31E-01
	EU-154	123.07		40.50	1.55E-01	1.55E-01	-1.23E-02	7.52E-02
		723.30		19.70	6.80E-01		2.77E-01	3.18E-01
		873.19		11.50	1.04E+00		-1.01E-01	4.77E-01
		996.32		10.30	1.34E+00		-4.50E-01	6.12E-01
		1004.76		17.90	7.85E-01		2.25E-01	3.60E-01
		1274.45		35.50	4.00E-01		1.72E-02	1.79E-01
+	EU-155	86.50	*	30.90	2.00E-01	2.00E-01	1.09E-01	9.76E-02
		105.30		20.70	2.84E-01		-7.01E-02	1.38E-01
	EU-156	811.77		10.40	1.39E+00	1.39E+00	1.06E-01	6.37E-01
		1153.47		7.20	2.99E+00		9.57E-01	1.37E+00
		1230.71		8.90	2.17E+00		-1.03E+00	9.79E-01
	HO-166M	184.41		72.60	1.11E-01	1.11E-01	-5.46E-03	5.40E-02
		280.45		29.60	2.53E-01		-1.64E-01	1.21E-01
		410.94		11.10	8.27E-01		3.02E-01	3.91E-01
		711.69		54.10	2.07E-01		9.51E-03	9.59E-02
	TM-171	66.72		0.14	4.04E+01	4.04E+01	1.58E+01	1.98E+01
	HF-172	81.75		4.52	1.44E+00	5.80E-01	-2.81E+00	7.06E-01
		125.81		11.30	5.80E-01		3.71E-01	2.82E-01

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	LU-172	181.53		20.60	7.05E-01	4.10E-01	7.64E-02	3.42E-01
		810.06		16.63	1.22E+00		-6.96E-02	5.55E-01
		912.12		15.25	2.18E+00		2.61E+00	1.03E+00
		1093.66		62.50	4.10E-01		-1.49E-01	1.86E-01
	LU-173	100.72		5.24	1.11E+00	3.99E-01	-1.17E+00	5.38E-01
		272.11		21.20	3.99E-01		-7.03E-02	1.91E-01
	HF-175	343.40		84.00	1.10E-01	1.10E-01	-4.14E-02	5.22E-02
	LU-176	88.34		13.30	5.09E-01	8.26E-02	1.21E-01	2.49E-01
		201.83		86.00	8.54E-02		-5.29E-02	4.12E-02
		306.78		94.00	8.26E-02		-5.77E-02	3.93E-02
	TA-182	67.75		41.20	1.41E-01	1.41E-01	7.12E-03	6.90E-02
		1121.30		34.90	4.98E-01		5.15E-01	2.30E-01
		1189.05		16.23	9.08E-01		-1.80E-01	4.10E-01
		1221.41		26.98	6.70E-01		1.34E-02	3.08E-01
		1231.02		11.44	1.33E+00		-6.29E-01	6.00E-01
	IR-192	308.46		29.68	2.85E-01	2.04E-01	-2.74E-02	1.36E-01
		468.07		48.10	2.04E-01		2.40E-04	9.58E-02
	HG-203	279.19		77.30	1.09E-01	1.09E-01	-2.47E-02	5.20E-02
	BI-207	569.67		97.72	1.02E-01	1.02E-01	-5.57E-03	4.78E-02
		1063.62		74.90	1.86E-01		-2.63E-02	8.48E-02
+	TL-208	583.14	*	30.22	5.33E-01	7.31E-02	7.80E-01	2.55E-01
		860.37		4.48	2.93E+00		8.97E-01	1.35E+00
		2614.66	*	35.85	7.31E-02		8.38E-01	0.00E+00
	BI-210M	262.00		45.00	1.70E-01	1.70E-01	-4.93E-02	8.16E-02
		300.00		23.00	4.15E-01		4.66E-02	1.99E-01
	PB-210	46.50		4.25	9.18E-01	9.18E-01	-8.11E-02	4.46E-01
	PB-211	404.84		2.90	2.96E+00	2.96E+00	-2.54E+00	1.40E+00
		831.96		2.90	3.80E+00		-2.63E+00	1.73E+00
	BI-212	727.17		11.80	1.16E+00	1.16E+00	4.07E-01	5.45E-01
		1620.62		2.75	4.62E+00		1.47E+00	1.98E+00
	PB-212	238.63		44.60	2.77E-01	2.77E-01	8.04E-01	1.35E-01
		300.09		3.41	2.80E+00		3.15E-01	1.35E+00
+	BI-214	609.31	*	46.30	6.08E-01	5.57E-01	5.15E-01	2.96E-01
		1120.29	*	15.10	9.93E-01		6.69E-01	4.53E-01
		1764.49	*	15.80	5.57E-01		8.69E-01	2.17E-01
		2204.22		4.98	2.74E+00		0.00E+00	1.14E+00
+	PB-214	295.21	*	19.19	6.17E-01	3.52E-01	3.68E-01	2.99E-01
		351.92	*	37.19	3.52E-01		4.19E-01	1.70E-01
	RN-219	401.80		6.50	1.37E+00	1.37E+00	1.30E-01	6.47E-01
	RA-223	323.87		3.88	2.31E+00	2.31E+00	4.82E-01	1.10E+00
	RA-224	240.98		3.95	3.17E+00	3.17E+00	1.04E+01	1.55E+00
	RA-225	40.00		31.00	1.48E-01	1.48E-01	-1.16E-01	7.17E-02
+	RA-226	186.21	*	3.28	3.16E+00	3.16E+00	2.30E+00	1.54E+00
	TH-227	50.10		8.40	4.88E-01	4.88E-01	-1.05E-01	2.38E-01
		236.00		11.50	9.79E-01		1.42E+00	4.77E-01
		256.20		6.30	1.18E+00		1.91E-02	5.65E-01
	AC-228	338.32		11.40	8.22E-01	6.65E-01	7.42E-01	3.93E-01
		911.07		27.70	6.65E-01		9.19E-01	3.13E-01
		969.11		16.60	1.02E+00		9.43E-01	4.77E-01
	TH-230	48.44		16.90	2.39E-01	2.39E-01	5.85E-03	1.17E-01
		62.85		4.60	1.16E+00		6.83E-01	5.68E-01
		67.67		0.37	1.51E+01		7.64E-01	7.40E+00
	PA-231	283.67		1.60	4.72E+00	3.62E+00	-2.20E+00	2.25E+00

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PA-231	302.67		2.30	3.62E+00	3.62E+00	6.08E-01	1.73E+00
	TH-231	25.64		14.70	2.35E-01	2.35E-01	8.37E-02	1.14E-01
		84.21		6.40	9.57E-01		-2.94E+00	4.68E-01
	PA-233	311.98		38.60	2.49E-01	2.49E-01	4.24E-02	1.19E-01
	PA-234	131.20		20.40	3.12E-01	3.12E-01	-5.87E-02	1.52E-01
		733.99		8.80	1.33E+00		1.66E-01	6.14E-01
		946.00		12.00	1.04E+00		-3.44E-02	4.73E-01
	PA-234M	1001.03		0.92	1.50E+01	1.50E+01	-3.91E+00	6.87E+00
	TH-234	63.29		3.80	1.43E+00	1.43E+00	9.72E-01	6.99E-01
	U-235	143.76		10.50	6.31E-01	6.31E-01	-2.13E-01	3.06E-01
		163.35		4.70	1.54E+00		-8.03E-02	7.45E-01
		205.31		4.70	1.66E+00		5.93E-01	8.04E-01
+	NP-237	86.50	*	12.60	4.89E-01	4.89E-01	2.67E-01	2.39E-01
	NP-239	106.10		22.70	1.53E+00	1.53E+00	-3.77E-01	7.45E-01
		228.18		10.70	4.16E+00		-9.28E-03	2.00E+00
		277.60		14.10	3.26E+00		-4.00E-01	1.56E+00
	AM-241	59.54		35.90	1.42E-01	1.42E-01	8.85E-02	6.94E-02
	AM-243	74.67		66.00	1.13E-01	1.13E-01	3.60E-01	5.55E-02
	CM-243	209.75		3.29	2.46E+00	5.58E-01	1.65E+00	1.19E+00
		228.14		10.60	7.19E-01		-4.00E-02	3.46E-01
		277.60		14.00	5.58E-01		-6.84E-02	2.67E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

Analysis Report for 1411131-05

J1V1L3 SAF: RC-107

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: J1V1L3 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3631

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	11	70
17:	55	59	47	41	47	52	51	52
25:	42	54	46	51	41	41	40	42
33:	41	50	40	40	34	39	37	47
41:	41	49	39	50	58	49	56	47
49:	42	36	56	53	51	51	61	59
57:	52	56	58	70	69	90	93	75
65:	60	66	74	51	78	81	75	75
73:	95	139	145	171	169	109	62	53
81:	60	51	76	70	71	90	88	68
89:	75	70	88	101	89	76	50	47
97:	47	48	51	59	47	52	37	51
105:	47	53	55	35	56	50	51	47
113:	52	43	52	42	35	41	42	38
121:	46	50	49	44	42	47	44	41
129:	56	47	32	38	32	40	36	53
137:	40	43	47	49	39	31	39	31
145:	40	35	46	41	44	39	42	43
153:	36	48	42	36	47	36	46	30
161:	44	34	32	45	37	40	41	33
169:	41	43	49	39	25	44	42	33
177:	43	51	30	36	32	29	36	39
185:	47	59	48	34	35	27	28	19
193:	29	23	34	31	36	27	32	22
201:	28	29	21	27	32	34	27	49
209:	34	34	24	29	28	27	23	30
217:	36	25	23	30	23	22	26	21
225:	25	20	26	26	29	20	28	22
233:	19	34	20	27	85	132	99	54
241:	48	53	34	26	22	20	14	12
249:	21	25	17	17	19	15	22	24
257:	19	19	21	14	21	12	18	19
265:	31	31	21	15	26	27	22	18
273:	21	16	29	19	24	16	15	13
281:	9	14	16	20	24	13	21	24
289:	22	10	24	13	23	40	54	31
297:	15	21	19	27	17	13	15	14
305:	16	15	9	16	15	19	17	18
313:	17	12	22	10	15	20	22	17
321:	24	18	15	12	12	22	18	16
329:	12	24	18	14	9	19	13	18
337:	19	24	23	15	18	13	6	16
345:	9	17	17	17	12	24	55	68
353:	33	13	17	15	19	11	17	8
361:	12	14	9	15	7	16	6	11

369:	7	11	14	7	7	12	7	10

Sample Title: J1V1L3 SAF: RC-107

Channel								
377:	10	16	12	14	14	10	6	8
385:	15	11	13	14	10	15	11	16
393:	6	16	10	12	9	18	11	15
401:	10	10	9	10	11	15	3	11
409:	16	18	16	9	6	11	6	7
417:	15	8	10	15	14	9	8	4
425:	12	6	8	10	7	9	9	6
433:	4	12	8	10	9	15	8	15
441:	9	14	9	14	8	11	8	6
449:	8	5	6	8	9	8	5	10
457:	8	13	11	12	11	15	12	14
465:	5	9	6	9	12	11	8	8
473:	3	8	8	13	6	8	4	7
481:	8	11	10	6	13	7	6	12
489:	7	7	8	10	6	6	9	10
497:	8	8	14	11	6	6	15	7
505:	5	8	6	11	19	29	31	13
513:	15	5	5	8	7	5	2	7
521:	6	9	5	8	9	7	9	8
529:	7	5	7	8	7	8	6	4
537:	7	6	11	6	7	4	6	6
545:	4	6	6	5	6	4	15	7
553:	11	15	7	13	14	7	5	5
561:	6	8	10	12	5	5	8	8
569:	11	5	3	13	6	6	5	4
577:	3	4	11	7	11	34	33	23
585:	11	6	3	10	5	7	7	9
593:	4	2	7	8	5	8	4	3
601:	3	4	9	10	3	5	10	23
609:	41	31	12	10	4	7	8	6
617:	6	9	12	8	9	9	12	7
625:	8	5	6	8	4	6	4	6
633:	12	5	4	5	8	5	4	4
641:	6	8	4	11	5	4	5	2
649:	7	4	1	2	7	6	6	6
657:	10	6	4	6	4	6	6	8
665:	7	5	7	6	3	6	2	2
673:	10	4	3	7	6	5	5	8
681:	6	11	8	8	2	5	4	3
689:	3	5	7	8	4	3	2	2
697:	8	5	10	8	5	6	9	7
705:	3	7	5	5	5	10	4	5
713:	5	5	7	7	7	2	5	6
721:	5	6	9	6	9	9	17	7
729:	12	2	4	7	4	11	9	5
737:	5	5	5	5	4	5	10	5
745:	7	5	3	6	2	2	2	6
753:	7	7	2	4	3	3	11	7
761:	6	10	3	5	6	6	4	2
769:	13	6	8	7	10	6	5	1
777:	3	3	8	4	2	4	3	5
785:	13	12	7	4	7	9	1	3
793:	5	8	5	3	6	2	3	6

801:	3	3	6	5	3	2	2	2

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Channel								
809:	7	3	2	9	4	5	3	3
817:	5	5	3	4	6	5	8	4
825:	7	4	6	4	2	2	5	5
833:	7	7	1	2	8	4	8	8
841:	4	3	6	2	3	6	4	8
849:	2	4	5	5	2	5	6	4
857:	5	5	4	8	12	3	3	4
865:	6	3	3	4	6	5	7	2
873:	2	6	3	5	2	11	3	2
881:	3	5	2	2	4	5	5	6
889:	3	4	5	4	2	3	6	2
897:	1	4	5	7	4	7	2	3
905:	2	3	7	6	6	12	25	12
913:	13	3	4	1	0	7	1	4
921:	5	3	4	1	7	7	4	2
929:	7	7	4	2	3	7	7	6
937:	8	2	3	7	2	2	8	2
945:	6	4	0	3	4	6	5	2
953:	5	2	2	2	0	3	5	6
961:	3	3	5	3	7	2	7	9
969:	19	8	3	3	7	2	3	3
977:	7	2	4	2	2	1	4	3
985:	6	3	4	5	5	3	4	4
993:	2	4	11	4	3	2	7	2
1001:	5	7	8	4	1	6	5	2
1009:	5	3	1	5	1	6	2	2
1017:	5	5	4	5	3	1	4	5
1025:	3	2	5	3	2	1	2	4
1033:	3	2	3	2	0	4	6	7
1041:	5	3	2	3	4	1	2	2
1049:	4	4	1	3	5	0	2	4
1057:	6	2	5	2	4	3	6	3
1065:	5	1	6	8	3	3	3	3
1073:	2	4	5	2	2	4	5	2
1081:	10	0	5	4	3	3	8	2
1089:	6	1	4	4	6	3	2	3
1097:	3	3	10	2	7	1	4	3
1105:	5	2	8	4	6	2	3	4
1113:	4	1	3	1	6	6	4	8
1121:	11	5	1	2	4	2	1	0
1129:	8	5	3	2	8	6	4	3
1137:	4	3	2	4	5	5	3	2
1145:	6	4	2	5	3	4	5	6
1153:	5	2	5	1	11	4	1	5
1161:	7	6	8	3	7	2	4	7
1169:	4	3	4	4	9	5	3	3
1177:	4	1	5	2	6	4	5	5
1185:	7	5	1	2	1	3	5	4
1193:	1	2	5	3	1	6	6	9
1201:	3	8	4	4	9	4	7	6
1209:	6	6	7	1	5	6	5	12
1217:	4	6	4	5	6	5	3	4
1225:	6	3	1	3	4	3	5	3

1233:	2	6	2	3	6	6	5	4

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Channel								
1241:	6	6	3	5	4	8	3	4
1249:	0	6	4	2	3	4	2	1
1257:	3	1	5	3	3	4	3	4
1265:	1	1	1	3	3	2	0	4
1273:	4	1	3	4	2	5	3	3
1281:	3	6	2	4	3	4	2	1
1289:	1	2	2	2	5	2	4	2
1297:	5	2	3	2	2	2	4	2
1305:	1	1	4	5	6	1	4	5
1313:	1	3	4	2	3	2	5	1
1321:	5	3	0	2	3	2	1	3
1329:	2	2	1	0	6	1	2	1
1337:	0	1	0	4	4	2	3	4
1345:	2	4	1	0	3	2	2	3
1353:	3	1	0	3	1	3	0	1
1361:	0	3	2	4	3	1	2	0
1369:	1	3	1	1	2	1	0	1
1377:	4	0	0	3	2	1	2	1
1385:	3	2	2	2	0	1	0	0
1393:	1	0	4	3	4	2	1	1
1401:	1	0	0	0	0	0	4	1
1409:	3	0	0	3	1	3	2	1
1417:	1	3	3	0	1	1	1	1
1425:	0	2	0	0	3	2	2	0
1433:	1	1	1	0	2	0	2	3
1441:	2	0	1	4	3	1	3	1
1449:	2	0	1	0	3	2	4	1
1457:	4	3	21	61	109	67	22	7
1465:	1	0	0	4	1	2	0	1
1473:	0	2	1	0	1	1	0	0
1481:	1	0	0	0	1	1	0	0
1489:	0	1	0	1	1	3	0	1
1497:	1	0	0	2	1	0	0	4
1505:	0	0	0	1	1	0	3	0
1513:	0	2	1	3	1	2	1	3
1521:	1	0	0	0	0	0	2	2
1529:	3	2	1	0	3	0	2	5
1537:	0	2	1	1	3	0	3	0
1545:	0	2	0	0	0	1	1	0
1553:	1	2	1	0	0	0	1	1
1561:	0	2	0	0	0	2	3	1
1569:	0	1	0	1	1	4	0	2
1577:	1	0	1	3	1	0	0	0
1585:	3	2	2	1	2	4	0	0
1593:	1	1	2	1	1	0	0	1
1601:	0	1	0	0	2	0	0	0
1609:	1	2	0	0	0	0	0	2
1617:	2	2	2	1	0	2	2	0
1625:	1	1	1	0	1	0	1	2
1633:	1	0	0	0	2	1	0	1
1641:	2	1	1	1	2	2	0	0
1649:	1	0	1	0	0	0	1	2
1657:	0	1	0	0	1	1	2	1

1665:	2	1	2	0	2	0	2	0

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

2097:	0	1	1	0	1	0	2	1

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

2529:	0	1	0	0	0	0	0	0

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Channel								
2537:	1	0	0	0	0	1	0	0
2545:	0	0	1	0	0	0	0	0
2553:	1	0	0	0	0	0	0	0
2561:	0	0	0	1	0	0	0	0
2569:	0	0	0	0	0	0	1	0
2577:	0	0	0	0	1	0	0	0
2585:	0	1	0	0	0	0	0	0
2593:	0	0	0	1	0	0	0	0
2601:	0	1	0	1	0	0	0	0
2609:	0	0	0	2	1	4	13	3
2617:	6	1	1	0	0	0	0	0
2625:	0	1	1	0	1	0	0	0
2633:	0	1	0	0	0	1	1	1
2641:	0	0	0	0	0	1	0	1
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	1	0
2665:	0	0	0	0	0	1	1	0
2673:	0	0	1	0	0	0	0	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	1	0	0	0	0	0	0	1
2705:	0	1	0	0	0	0	0	0
2713:	0	0	0	1	0	0	0	0
2721:	0	0	1	0	1	0	0	1
2729:	0	0	0	1	0	1	0	0
2737:	0	0	1	0	0	0	0	1
2745:	1	0	0	0	0	0	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	1	0	0	0	0	0	1
2769:	0	0	0	0	1	1	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	3	0	0
2793:	0	0	0	0	0	0	0	0
2801:	0	0	0	1	0	1	0	0
2809:	0	0	0	0	1	0	1	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	1	0	0	0	0	0
2833:	0	1	0	0	0	0	1	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	0	2	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	1	0	0	1	1
2873:	0	0	0	0	1	0	0	0
2881:	0	0	0	1	1	0	0	0
2889:	0	0	1	0	3	1	0	0
2897:	0	0	0	1	0	0	0	0
2905:	0	0	0	0	0	0	1	0
2913:	0	0	0	0	0	0	0	1
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	1	0	0	1	0	0	0	0
2953:	2	1	0	1	0	0	0	0

2961:	0	0	0	0	1	0	0	0

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

3393:	0	0	0	0	1	0	1	0

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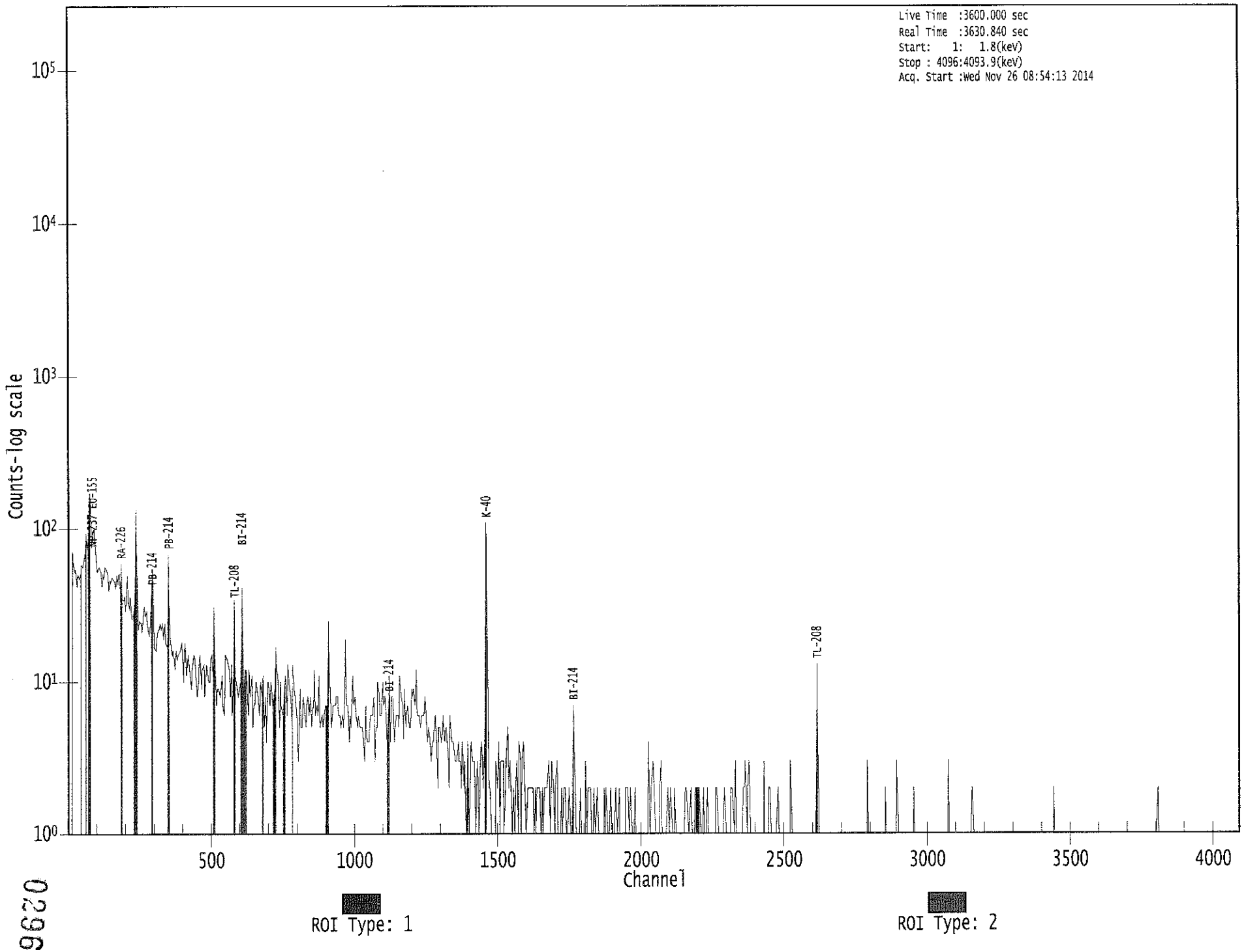
Channel								
3401:	0	0	0	1	0	0	0	0
3409:	0	0	0	1	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	1	0	0
3433:	1	1	0	0	0	0	0	0
3441:	1	0	2	0	0	0	0	0
3449:	0	1	0	0	0	0	0	0
3457:	0	0	0	0	1	0	1	0
3465:	0	0	0	0	0	0	0	0
3473:	1	1	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0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

3825:	0	0	0	1	0	0	0	0

Sample Title: J1V1L3 SAF: RC-107

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	1	0	0	0	0
3857:	0	0	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	1	1	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	1	0	0	0	1
3905:	0	1	0	0	1	0	0	1
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	1	0	0	0	0
3929:	0	1	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	1	0	0	0	0	0	0	0
3953:	0	0	0	0	0	1	0	0
3961:	0	0	0	0	0	1	0	1
3969:	0	1	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	1	0	0	0	0	0
3993:	0	0	0	0	0	1	0	0
4001:	0	0	0	0	0	0	0	0
4009:	1	0	0	0	0	0	0	0
4017:	0	0	0	0	1	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	1	0	0	0	0	0	0
4041:	1	0	0	1	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	1
4089:	0	0	0	0	0	0	0	0

0000015617.CNF



9620

Apex-Gamma

Analysis Report for 1411131-06
J1V1L8 SAF: RC-107

11/26

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-06
Sample Description	: J1V1L8 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.175E+02 grams
Facility	: Countroom
Sample Taken On	: 11/20/2014 8:51:05AM
Acquisition Started	: 11/26/2014 9:56:22AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3634.4 seconds
Dead Time	: 0.95 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 11/8/2014
Efficiency Calibration Description	:
Sample Number	: 15633

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/26/14

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 10:56:57AM
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	76.14	75.40	0.0000	0.00
2	91.68	90.95	0.0000	0.00
3	131.64	130.93	0.0000	0.00
4	186.39	185.71	0.0000	0.00
5	239.33	238.67	0.0000	0.00
6	269.01	268.36	0.0000	0.00
7	287.82	287.17	0.0000	0.00
8	295.30	294.66	0.0000	0.00
9	352.66	352.05	0.0000	0.00
10	410.64	410.05	0.0000	0.00
11	521.71	521.17	0.0000	0.00
12	551.48	550.95	0.0000	0.00
13	564.65	564.14	0.0000	0.00
14	583.47	582.97	0.0000	0.00
15	609.47	608.98	0.0000	0.00
16	615.69	615.20	0.0000	0.00
17	769.16	768.75	0.0000	0.00
18	795.11	794.71	0.0000	0.00
19	861.84	861.47	0.0000	0.00
20	911.29	910.95	0.0000	0.00
21	969.96	969.65	0.0000	0.00
22	1066.01	1065.76	0.0000	0.00
23	1279.55	1279.42	0.0000	0.00
24	1335.18	1335.08	0.0000	0.00
25	1390.99	1390.92	0.0000	0.00
26	1438.54	1438.50	0.0000	0.00
27	1447.88	1447.85	0.0000	0.00
28	1461.27	1461.25	0.0000	0.00
29	1510.14	1510.14	0.0000	0.00
30	1562.12	1562.15	0.0000	0.00
31	1598.69	1598.75	0.0000	0.00
32	1764.80	1764.96	0.0000	0.00
33	1889.92	1890.17	0.0000	0.00
34	2205.08	2205.54	0.0000	0.00
35	2614.91	2615.68	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 10:56:57AM

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	76.14	69	82	75.40	3.66E+02	134.51	1.85E+03	4.04
	2	91.68	85	96	90.95	2.16E+02	106.77	1.29E+03	3.41
	3	131.64	127	134	130.93	8.56E+01	60.76	5.55E+02	4.65
	4	186.39	181	190	185.71	1.30E+02	65.48	5.34E+02	4.36
	5	239.33	234	245	238.67	2.71E+02	81.36	6.80E+02	2.38
	6	269.01	265	273	268.36	4.20E+01	46.44	3.06E+02	4.73
M	7	287.82	284	301	287.17	3.42E+01	30.02	1.53E+02	3.24
m	8	295.30	284	301	294.66	1.29E+02	47.80	2.41E+02	3.25
	9	352.66	348	357	352.05	1.67E+02	45.66	1.97E+02	2.90
	10	410.64	406	414	410.05	2.66E+01	30.52	1.19E+02	1.85
m	11	521.71	505	524	521.17	2.16E+01	25.48	9.23E+01	3.03
	12	551.48	546	557	550.95	4.20E+01	28.98	8.40E+01	5.82
	13	564.65	561	567	564.14	1.86E+01	20.99	6.69E+01	3.37
	14	583.47	577	588	582.97	7.68E+01	37.58	1.38E+02	2.87
M	15	609.47	604	629	608.98	1.03E+02	28.77	6.08E+01	2.82
m	16	615.69	604	629	615.20	2.33E+01	25.86	8.69E+01	2.99
	17	769.16	767	770	768.75	1.05E+01	12.49	2.71E+01	1.16
	18	795.11	791	797	794.71	1.70E+01	18.75	5.00E+01	2.74
	19	861.84	855	868	861.47	3.29E+01	27.60	7.03E+01	5.58
	20	911.29	906	918	910.95	4.87E+01	29.38	8.06E+01	1.68
	21	969.96	961	983	969.65	6.23E+01	42.55	1.19E+02	5.70
	22	1066.01	1062	1070	1065.76	1.60E+01	18.93	4.61E+01	2.73
	23	1279.55	1276	1283	1279.42	1.83E+01	15.49	2.74E+01	1.04
	24	1335.18	1331	1339	1335.08	1.10E+01	12.69	1.80E+01	4.97
	25	1390.99	1384	1397	1390.92	1.75E+01	19.62	3.51E+01	9.10
	26	1438.54	1434	1443	1438.50	1.80E+01	8.49	0.00E+00	4.75
	27	1447.88	1444	1451	1447.85	1.30E+01	7.21	0.00E+00	1.24
	28	1461.27	1454	1466	1461.25	2.78E+02	35.70	1.88E+01	2.33
	29	1510.14	1505	1514	1510.14	1.25E+01	9.22	5.07E+00	4.85
	30	1562.12	1558	1564	1562.15	1.06E+01	7.76	2.83E+00	2.73
	31	1598.69	1596	1601	1598.75	5.00E+00	7.07	6.00E+00	2.25
	32	1764.80	1759	1768	1764.96	2.01E+01	10.82	5.74E+00	2.96
	33	1889.92	1886	1892	1890.17	6.00E+00	4.90	0.00E+00	1.98
	34	2205.08	2202	2209	2205.54	5.88E+00	6.93	4.25E+00	1.42
	35	2614.91	2611	2619	2615.68	2.50E+01	10.00	0.00E+00	4.11

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 10:56:57AM

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	76.14	69 -	82	3.66E+02	134.51	1.85E+03	1.06E+02
	2	91.68	85 -	96	2.16E+02	106.77	1.29E+03	8.44E+01
	3	131.64	127 -	134	8.56E+01	60.76	5.55E+02	4.76E+01
	4	186.39	181 -	190	1.30E+02	65.48	5.34E+02	5.05E+01
	5	239.33	234 -	245	2.71E+02	81.36	6.80E+02	6.12E+01
	6	269.01	265 -	273	4.20E+01	46.44	3.06E+02	3.67E+01
M	7	287.82	284 -	301	3.42E+01	30.02	1.53E+02	2.03E+01
m	8	295.30	284 -	301	1.29E+02	47.80	2.41E+02	2.55E+01
	9	352.66	348 -	357	1.67E+02	45.66	1.97E+02	3.10E+01
	10	410.64	406 -	414	2.66E+01	30.52	1.19E+02	2.36E+01
m	11	521.71	505 -	524	2.16E+01	25.48	9.23E+01	1.58E+01
	12	551.48	546 -	557	4.20E+01	28.98	8.40E+01	2.13E+01
	13	564.65	561 -	567	1.86E+01	20.99	6.69E+01	1.57E+01
	14	583.47	577 -	588	7.68E+01	37.58	1.38E+02	2.73E+01
M	15	609.47	604 -	629	1.03E+02	28.77	6.08E+01	1.28E+01
m	16	615.69	604 -	629	2.33E+01	25.86	8.69E+01	1.53E+01
	17	769.16	767 -	770	1.05E+01	12.49	2.71E+01	8.78E+00
	18	795.11	791 -	797	1.70E+01	18.75	5.00E+01	1.38E+01
	19	861.84	855 -	868	3.29E+01	27.60	7.03E+01	2.06E+01
	20	911.29	906 -	918	4.87E+01	29.38	8.06E+01	2.12E+01
	21	969.96	961 -	983	6.23E+01	42.55	1.19E+02	3.25E+01
	22	1066.01	1062 -	1070	1.60E+01	18.93	4.61E+01	1.41E+01
	23	1279.55	1276 -	1283	1.83E+01	15.49	2.74E+01	1.06E+01
	24	1335.18	1331 -	1339	1.10E+01	12.69	1.80E+01	8.89E+00
	25	1390.99	1384 -	1397	1.75E+01	19.62	3.51E+01	1.46E+01
	26	1438.54	1434 -	1443	1.80E+01	8.49	0.00E+00	0.00E+00
	27	1447.88	1444 -	1451	1.30E+01	7.21	0.00E+00	0.00E+00
	28	1461.27	1454 -	1466	2.78E+02	35.70	1.88E+01	1.05E+01
	29	1510.14	1505 -	1514	1.25E+01	9.22	5.07E+00	4.87E+00
	30	1562.12	1558 -	1564	1.06E+01	7.76	2.83E+00	3.48E+00
	31	1598.69	1596 -	1601	5.00E+00	7.07	6.00E+00	4.50E+00

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1764.80	1759 -	1768	2.01E+01	10.82	5.74E+00	4.96E+00
33	1889.92	1886 -	1892	6.00E+00	4.90	0.00E+00	0.00E+00
34	2205.08	2202 -	2209	5.88E+00	6.93	4.25E+00	4.07E+00
35	2614.91	2611 -	2619	2.50E+01	10.00	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 10:56:57AM

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	76.14	69 -	82	75.40	3.66E+02	134.51	1.85E+03	.....
	2	91.68	85 -	96	90.95	2.16E+02	106.77	1.29E+03	ND-147
	3	131.64	127 -	134	130.93	8.56E+01	60.76	5.55E+02	PA-234
	4	186.39	181 -	190	185.71	1.30E+02	65.48	5.34E+02	RA-226
	5	239.33	234 -	245	238.67	2.71E+02	81.36	6.80E+02	PB-212
	6	269.01	265 -	273	268.36	4.20E+01	46.44	3.06E+02	CS-135
M	7	287.82	284 -	301	287.17	3.42E+01	30.02	1.53E+02	.....
m	8	295.30	284 -	301	294.66	1.29E+02	47.80	2.41E+02	PB-214
	9	352.66	348 -	357	352.05	1.67E+02	45.66	1.97E+02	PB-214
	10	410.64	406 -	414	410.05	2.66E+01	30.52	1.19E+02	HO-166M
m	11	521.71	505 -	524	521.17	2.16E+01	25.48	9.23E+01	.....
	12	551.48	546 -	557	550.95	4.20E+01	28.98	8.40E+01	.....
	13	564.65	561 -	567	564.14	1.86E+01	20.99	6.69E+01	.....
	14	583.47	577 -	588	582.97	7.68E+01	37.58	1.38E+02	TL-208
M	15	609.47	604 -	629	608.98	1.03E+02	28.77	6.08E+01	BI-214
m	16	615.69	604 -	629	615.20	2.33E+01	25.86	8.69E+01	.....
	17	769.16	767 -	770	768.75	1.05E+01	12.49	2.71E+01	.....
	18	795.11	791 -	797	794.71	1.70E+01	18.75	5.00E+01	CS-134
	19	861.84	855 -	868	861.47	3.29E+01	27.60	7.03E+01	.....
	20	911.29	906 -	918	910.95	4.87E+01	29.38	8.06E+01	AC-228 LU-172
	21	969.96	961 -	983	969.65	6.23E+01	42.55	1.19E+02	AC-228

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
22	1066.01	1062 -	1070	1065.76	1.60E+01	18.93	4.61E+01	.....
23	1279.55	1276 -	1283	1279.42	1.83E+01	15.49	2.74E+01	.....
24	1335.18	1331 -	1339	1335.08	1.10E+01	12.69	1.80E+01	.....
25	1390.99	1384 -	1397	1390.92	1.75E+01	19.62	3.51E+01	.....
26	1438.54	1434 -	1443	1438.50	1.80E+01	8.49	0.00E+00	.....
27	1447.88	1444 -	1451	1447.85	1.30E+01	7.21	0.00E+00	.....
28	1461.27	1454 -	1466	1461.25	2.78E+02	35.70	1.88E+01	K-40
29	1510.14	1505 -	1514	1510.14	1.25E+01	9.22	5.07E+00	.....
30	1562.12	1558 -	1564	1562.15	1.06E+01	7.76	2.83E+00	.....
31	1598.69	1596 -	1601	1598.75	5.00E+00	7.07	6.00E+00	.....
32	1764.80	1759 -	1768	1764.96	2.01E+01	10.82	5.74E+00	BI-214
33	1889.92	1886 -	1892	1890.17	6.00E+00	4.90	0.00E+00	.....
34	2205.08	2202 -	2209	2205.54	5.88E+00	6.93	4.25E+00	BI-214
35	2614.91	2611 -	2619	2615.68	2.50E+01	10.00	0.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 10:56:57AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.14	3.66E+02	134.51	2.12E-02	1.69E-03
	2	91.68	2.16E+02	106.77	1.92E-02	1.62E-03
	3	131.64	8.56E+01	60.76	1.51E-02	1.46E-03
	4	186.39	1.30E+02	65.48	1.16E-02	1.15E-03
	5	239.33	2.71E+02	81.36	9.39E-03	9.85E-04
	6	269.01	4.20E+01	46.44	8.47E-03	8.93E-04
M	7	287.82	3.42E+01	30.02	7.97E-03	8.51E-04
m	8	295.30	1.29E+02	47.80	7.78E-03	8.43E-04
	9	352.66	1.67E+02	45.66	6.60E-03	7.79E-04
	10	410.64	2.66E+01	30.52	5.70E-03	7.08E-04
m	11	521.71	2.16E+01	25.48	4.52E-03	5.45E-04
	12	551.48	4.20E+01	28.98	4.28E-03	5.02E-04
	13	564.65	1.86E+01	20.99	4.18E-03	4.82E-04
	14	583.47	7.68E+01	37.58	4.04E-03	4.55E-04
M	15	609.47	1.03E+02	28.77	3.87E-03	4.17E-04
m	16	615.69	2.33E+01	25.86	3.84E-03	4.08E-04

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
17	769.16	1.05E+01	12.49	3.08E-03	2.80E-04
18	795.11	1.70E+01	18.75	2.98E-03	2.66E-04
19	861.84	3.29E+01	27.60	2.76E-03	2.28E-04
20	911.29	4.87E+01	29.38	2.61E-03	2.06E-04
21	969.96	6.23E+01	42.55	2.46E-03	1.99E-04
22	1066.01	1.60E+01	18.93	2.25E-03	1.86E-04
23	1279.55	1.83E+01	15.49	1.90E-03	2.01E-04
24	1335.18	1.10E+01	12.69	1.82E-03	2.15E-04
25	1390.99	1.75E+01	19.62	1.76E-03	2.04E-04
26	1438.54	1.80E+01	8.49	1.71E-03	1.94E-04
27	1447.88	1.30E+01	7.21	1.70E-03	1.92E-04
28	1461.27	2.78E+02	35.70	1.68E-03	1.89E-04
29	1510.14	1.25E+01	9.22	1.64E-03	1.79E-04
30	1562.12	1.06E+01	7.76	1.59E-03	1.68E-04
31	1598.69	5.00E+00	7.07	1.56E-03	1.60E-04
32	1764.80	2.01E+01	10.82	1.43E-03	1.26E-04
33	1889.92	6.00E+00	4.90	1.36E-03	1.11E-04
34	2205.08	5.88E+00	6.93	1.21E-03	1.11E-04
35	2614.91	2.50E+01	10.00	1.07E-03	1.11E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 10:56:57AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015428.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.14	3.66E+02	134.51	1.85E+01	4.88E+00	3.47E+02	1.35E+02
	2	91.68	2.16E+02	106.77			2.16E+02	1.07E+02
	3	131.64	8.56E+01	60.76			8.56E+01	6.08E+01
	4	186.39	1.30E+02	65.48	2.26E+01	3.07E+00	1.07E+02	6.56E+01
	5	239.33	2.71E+02	81.36	1.46E+01	5.96E+00	2.56E+02	8.16E+01
	6	269.01	4.20E+01	46.44			4.20E+01	4.64E+01
M	7	287.82	3.42E+01	30.02			3.42E+01	3.00E+01
m	8	295.30	1.29E+02	47.80			1.29E+02	4.78E+01
	9	352.66	1.67E+02	45.66	7.05E+00	5.48E+00	1.60E+02	4.60E+01
	10	410.64	2.66E+01	30.52			2.66E+01	3.05E+01
m	11	521.71	2.16E+01	25.48			2.16E+01	2.55E+01

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	12	551.48	4.20E+01	28.98			4.20E+01	2.90E+01
	13	564.65	1.86E+01	20.99			1.86E+01	2.10E+01
	14	583.47	7.68E+01	37.58			7.68E+01	3.76E+01
M	15	609.47	1.03E+02	28.77	3.60E+00	3.55E+00	9.89E+01	2.90E+01
m	16	615.69	2.33E+01	25.86			2.33E+01	2.59E+01
	17	769.16	1.05E+01	12.49			1.05E+01	1.25E+01
	18	795.11	1.70E+01	18.75			1.70E+01	1.88E+01
	19	861.84	3.29E+01	27.60			3.29E+01	2.76E+01
	20	911.29	4.87E+01	29.38			4.87E+01	2.94E+01
	21	969.96	6.23E+01	42.55			6.23E+01	4.25E+01
	22	1066.01	1.60E+01	18.93			1.60E+01	1.89E+01
	23	1279.55	1.83E+01	15.49			1.83E+01	1.55E+01
	24	1335.18	1.10E+01	12.69			1.10E+01	1.27E+01
	25	1390.99	1.75E+01	19.62			1.75E+01	1.96E+01
	26	1438.54	1.80E+01	8.49			1.80E+01	8.49E+00
	27	1447.88	1.30E+01	7.21			1.30E+01	7.21E+00
	28	1461.27	2.78E+02	35.70	2.39E+00	1.94E+00	2.75E+02	3.58E+01
	29	1510.14	1.25E+01	9.22			1.25E+01	9.22E+00
	30	1562.12	1.06E+01	7.76			1.06E+01	7.76E+00
	31	1598.69	5.00E+00	7.07			5.00E+00	7.07E+00
	32	1764.80	2.01E+01	10.82			2.01E+01	1.08E+01
	33	1889.92	6.00E+00	4.90			6.00E+00	4.90E+00
	34	2205.08	5.88E+00	6.93			5.88E+00	6.93E+00
	35	2614.91	2.50E+01	10.00			2.50E+01	1.00E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 10:56:57AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015428.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	76.14	3.66E+02	134.51	1.85E+01	4.88E+00	3.47E+02	1.35E+02
2	91.68	2.16E+02	106.77			2.16E+02	1.07E+02
3	131.64	8.56E+01	60.76			8.56E+01	6.08E+01
4	186.39	1.30E+02	65.48	2.26E+01	3.07E+00	1.07E+02	6.56E+01

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	5	239.33	2.71E+02	81.36	1.46E+01	5.96E+00	2.56E+02	8.16E+01
	6	269.01	4.20E+01	46.44			4.20E+01	4.64E+01
M	7	287.82	3.42E+01	30.02			3.42E+01	3.00E+01
m	8	295.30	1.29E+02	47.80			1.29E+02	4.78E+01
	9	352.66	1.67E+02	45.66	7.05E+00	5.48E+00	1.60E+02	4.60E+01
	10	410.64	2.66E+01	30.52			2.66E+01	3.05E+01
m	11	521.71	2.16E+01	25.48			2.16E+01	2.55E+01
	12	551.48	4.20E+01	28.98			4.20E+01	2.90E+01
	13	564.65	1.86E+01	20.99			1.86E+01	2.10E+01
	14	583.47	7.68E+01	37.58			7.68E+01	3.76E+01
M	15	609.47	1.03E+02	28.77	3.60E+00	3.55E+00	9.89E+01	2.90E+01
m	16	615.69	2.33E+01	25.86			2.33E+01	2.59E+01
	17	769.16	1.05E+01	12.49			1.05E+01	1.25E+01
	18	795.11	1.70E+01	18.75			1.70E+01	1.88E+01
	19	861.84	3.29E+01	27.60			3.29E+01	2.76E+01
	20	911.29	4.87E+01	29.38			4.87E+01	2.94E+01
	21	969.96	6.23E+01	42.55			6.23E+01	4.25E+01
	22	1066.01	1.60E+01	18.93			1.60E+01	1.89E+01
	23	1279.55	1.83E+01	15.49			1.83E+01	1.55E+01
	24	1335.18	1.10E+01	12.69			1.10E+01	1.27E+01
	25	1390.99	1.75E+01	19.62			1.75E+01	1.96E+01
	26	1438.54	1.80E+01	8.49			1.80E+01	8.49E+00
	27	1447.88	1.30E+01	7.21			1.30E+01	7.21E+00
	28	1461.27	2.78E+02	35.70	2.39E+00	1.94E+00	2.75E+02	3.58E+01
	29	1510.14	1.25E+01	9.22			1.25E+01	9.22E+00
	30	1562.12	1.06E+01	7.76			1.06E+01	7.76E+00
	31	1598.69	5.00E+00	7.07			5.00E+00	7.07E+00
	32	1764.80	2.01E+01	10.82			2.01E+01	1.08E+01
	33	1889.92	6.00E+00	4.90			6.00E+00	4.90E+00
	34	2205.08	5.88E+00	6.93			5.88E+00	6.93E+00
	35	2614.91	2.50E+01	10.00			2.50E+01	1.00E+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

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.966	1460.81	*	10.67	1.60E+01	2.77E+00
CS-135	0.909	268.24	*	16.00	3.24E-01	3.60E-01
ND-147	0.678	91.11	*	28.90	5.99E-01	3.00E-01
		531.02		13.10		
TL-208	0.874	583.14	*	30.22	6.58E-01	3.30E-01
		860.37		4.48		
		2614.66	*	35.85	6.81E-01	2.81E-01
PB-212	0.827	238.63	*	44.60	6.41E-01	2.15E-01
		300.09		3.41		
BI-214	0.731	609.31	*	46.30	5.77E-01	1.80E-01
		1120.29		15.10		
		1764.49	*	15.80	9.29E-01	5.06E-01
		2204.22	*	4.98	1.02E+00	1.21E+00
PB-214	0.944	295.21	*	19.19	9.00E-01	3.49E-01
		351.92	*	37.19	6.81E-01	2.12E-01
RA-226	0.995	186.21	*	3.28	2.95E+00	5.69E+00
AC-228	0.488	338.32		11.40		
		911.07	*	27.70	7.05E-01	4.29E-01
		969.11	*	16.60	1.60E+00	1.10E+00
PA-234	0.497	131.20	*	20.40	2.90E-01	2.08E-01
		733.99		8.80		
		946.00		12.00		

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 10:56:57AM
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	76.14	9.64019E-02	19.39		
M	7	287.82	9.50570E-03	43.86		
	10	410.64	7.40149E-03	57.26	Tol.	HO-166M
m	11	521.71	6.00304E-03	58.94		
	12	551.48	1.16667E-02	34.50		
	13	564.65	5.15491E-03	56.56	Sum	
m	16	615.69	6.46214E-03	55.57		

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
17	769.16	2.90509E-03	59.71	Sum	
18	795.11	4.72222E-03	55.16	Sum	
19	861.84	9.12990E-03	41.99		
22	1066.01	4.43376E-03	59.31		
23	1279.55	5.08247E-03	42.33		
24	1335.18	3.05556E-03	57.68		
25	1390.99	4.84921E-03	56.20		
26	1438.54	5.00000E-03	23.57		
27	1447.88	3.61111E-03	27.74		
29	1510.14	3.46296E-03	36.98		
30	1562.12	2.93981E-03	36.67		
31	1598.69	1.38889E-03	70.71		
33	1889.92	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	0.96	1460.81	*	10.67	1.60E+01	2.77E+00
CS-135	0.90	268.24	*	16.00	3.24E-01	3.60E-01
ND-147	0.67	91.11	*	28.90	5.99E-01	3.00E-01
		531.02		13.10		
TL-208	0.87	583.14	*	30.22	6.58E-01	3.30E-01
		860.37		4.48		
		2614.66	*	35.85	6.81E-01	2.81E-01
PB-212	0.82	238.63	*	44.60	6.41E-01	2.15E-01
		300.09		3.41		
BI-214	0.73	609.31	*	46.30	5.77E-01	1.80E-01
		1120.29		15.10		
		1764.49	*	15.80	9.29E-01	5.06E-01
		2204.22	*	4.98	1.02E+00	1.21E+00
PB-214	0.94	295.21	*	19.19	9.00E-01	3.49E-01
		351.92	*	37.19	6.81E-01	2.12E-01

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-226	0.99	186.21	*	3.28	2.95E+00	5.69E+00
AC-228	0.48	338.32		11.40		
		911.07	*	27.70	7.05E-01	4.29E-01
		969.11	*	16.60	1.60E+00	1.10E+00
PA-234	0.49	131.20	*	20.40	2.90E-01	2.08E-01
		733.99		8.80		
		946.00		12.00		

* = 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	0.966	1.60E+01	2.77E+00	
CS-135	0.909	3.24E-01	3.60E-01	
ND-147	0.678	5.99E-01	3.00E-01	
TL-208	0.874	6.71E-01	2.14E-01	
PB-212	0.827	6.41E-01	2.15E-01	
BI-214	0.731	6.25E-01	1.68E-01	
PB-214	0.944	7.40E-01	1.81E-01	
RA-226	0.995	2.95E+00	5.69E+00	
AC-228	0.488	8.23E-01	3.99E-01	
PA-234	0.497	2.90E-01	2.08E-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 1411131-06

J1V1L8 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 10:56:57AM
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	76.14	9.64019E-02	19.39		
M	7	287.82	9.50570E-03	43.86		
	10	410.64	7.40149E-03	57.26	Tol.	HO-166M
m	11	521.71	6.00304E-03	58.94		
	12	551.48	1.16667E-02	34.50		
	13	564.65	5.15491E-03	56.56	Sum	
m	16	615.69	6.46214E-03	55.57		
	17	769.16	2.90509E-03	59.71	Sum	
	18	795.11	4.72222E-03	55.16	Sum	
	19	861.84	9.12990E-03	41.99		
	22	1066.01	4.43376E-03	59.31		
	23	1279.55	5.08247E-03	42.33		
	24	1335.18	3.05556E-03	57.68		
	25	1390.99	4.84921E-03	56.20		
	26	1438.54	5.00000E-03	23.57		
	27	1447.88	3.61111E-03	27.74		
	29	1510.14	3.46296E-03	36.98		
	30	1562.12	2.93981E-03	36.67		
	31	1598.69	1.38889E-03	70.71		
	33	1889.92	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 1411131-06

J1V1L8 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	1.48E-01	9.30E-01	9.30E-01
+	NA-22	1274.54		99.94	2.21E-02	1.78E-01	1.78E-01
+	NA-24	1368.53		99.99	2.14E+01	6.21E+01	1.04E+02
		2754.09		99.86	5.63E+00		6.21E+01
+	AL-26	1808.65		99.76	1.24E-02	1.12E-01	1.12E-01
+	K-40	1460.81	*	10.67	1.60E+01	1.43E+00	1.43E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-5.13E-03	5.90E-02	5.90E-02
		78.34		96.00	1.42E-01		7.50E-02
+	SC-46	889.25		99.98	-4.53E-02	1.23E-01	1.23E-01
		1120.51		99.99	8.68E-02		1.88E-01
+	V-48	983.52		99.98	-4.68E-03	1.65E-01	1.76E-01
		1312.10		97.50	2.90E-02		1.65E-01
+	CR-51	320.08		9.83	-3.61E-01	9.28E-01	9.28E-01
+	MN-54	834.83		99.97	4.11E-02	1.25E-01	1.25E-01
+	CO-56	846.75		99.96	1.76E-03	1.19E-01	1.19E-01
		1037.75		14.03	4.52E-01		1.00E+00
		1238.25		67.00	-4.15E-02		2.58E-01
		1771.40		15.51	-4.48E-01		9.37E-01
		2598.48		16.90	-2.02E-02		5.64E-01
+	CO-57	122.06		85.51	-8.24E-03	7.33E-02	7.33E-02
		136.48		10.60	-7.40E-02		6.31E-01
+	CO-58	810.76		99.40	4.22E-02	1.30E-01	1.30E-01
+	FE-59	1099.22		56.50	3.91E-02	2.96E-01	2.96E-01
		1291.56		43.20	-1.03E-01		3.10E-01
+	CO-60	1173.22		100.00	-6.94E-02	1.35E-01	1.37E-01
		1332.49		100.00	-5.74E-03		1.35E-01
+	ZN-65	1115.52		50.75	-1.80E-01	3.20E-01	3.20E-01
+	GA-67	93.31		35.70	3.92E-01	6.72E-01	6.72E-01
		208.95		2.24	4.90E+00		1.26E+01
		300.22		16.00	1.35E-01		2.02E+00
+	SE-75	121.11		16.70	1.62E-01	1.15E-01	3.90E-01
		136.00		59.20	-3.85E-02		1.15E-01
		264.65		59.80	-2.97E-02		1.37E-01
		279.53		25.20	5.26E-02		3.29E-01
		400.65		11.40	-1.24E-01		7.38E-01
+	RB-82	776.52		13.00	7.23E-04	1.03E+00	1.03E+00
+	RB-83	520.41		46.00	-8.67E-02	2.14E-01	2.14E-01
		529.64		30.30	-2.52E-02		3.35E-01
		552.65		16.40	5.52E-01		6.67E-01
+	KR-85	513.99		0.43	4.29E+01	3.09E+01	3.09E+01
+	SR-85	513.99		99.27	2.00E-01	1.44E-01	1.44E-01
+	Y-88	898.02		93.40	5.44E-02	7.32E-02	1.45E-01
		1836.01		99.38	-1.31E-02		7.32E-02
+	NB-93M	16.57		9.43	7.21E-01	3.25E-01	3.25E-01
+	NB-94	702.63		100.00	6.40E-02	1.17E-01	1.23E-01
		871.10		100.00	-5.45E-02		1.17E-01

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79	99.81	-3.62E-02	1.42E-01	1.42E-01
+	NB-95M	235.69	25.00	9.91E-02	1.51E+00	1.51E+00
+	ZR-95	724.18	43.70	1.86E-01	2.12E-01	3.24E-01
		756.72	55.30	1.04E-02		2.12E-01
+	MO-99	181.06	6.20	4.34E-01	3.70E+00	5.65E+00
		739.58	12.80	-3.17E+00		3.70E+00
		778.00	4.50	1.13E+00		1.14E+01
+	RU-103	497.08	89.00	-3.57E-02	1.09E-01	1.09E-01
+	RU-106	621.84	9.80	2.46E-02	1.21E+00	1.21E+00
+	AG-108M	433.93	89.90	-9.12E-03	9.98E-02	9.98E-02
		614.37	90.40	-9.33E-02		1.48E-01
		722.95	90.50	7.18E-03		1.39E-01
+	CD-109	88.03	3.72	3.24E-01	1.79E+00	1.79E+00
+	AG-110M	657.75	93.14	4.83E-02	1.28E-01	1.28E-01
		677.61	10.53	-2.73E-01		8.64E-01
		706.67	16.46	5.20E-02		7.00E-01
		763.93	21.98	-6.18E-02		5.66E-01
		884.67	71.63	9.03E-03		1.76E-01
		1384.27	23.94	-4.47E-02		5.79E-01
+	CD-113M	263.70	0.02	-9.75E+01	3.38E+02	3.38E+02
+	SN-113	255.12	1.93	1.81E+00	1.33E-01	4.36E+00
		391.69	64.90	-4.12E-02		1.33E-01
+	TE123M	159.00	84.10	-5.19E-02	8.34E-02	8.34E-02
+	SB-124	602.71	97.87	5.67E-02	1.15E-01	1.15E-01
		645.85	7.26	-2.57E-02		1.52E+00
		722.78	11.10	-7.24E-01		1.12E+00
		1691.02	49.00	5.87E-03		2.31E-01
+	I-125	35.49	6.49	8.93E-04	5.61E-01	5.61E-01
+	SB-125	176.33	6.89	1.43E-02	3.00E-01	1.08E+00
		427.89	29.33	-1.71E-02		3.00E-01
		463.38	10.35	6.55E-01		9.99E-01
		600.56	17.80	1.50E-01		5.95E-01
		635.90	11.32	-4.10E-02		9.06E-01
+	SB-126	414.70	83.30	2.01E-02	1.41E-01	1.41E-01
		666.33	99.60	4.25E-02		1.49E-01
		695.00	99.60	-2.27E-02		1.51E-01
		720.50	53.80	-8.28E-02		3.01E-01
+	SN-126	87.57	37.00	3.22E-02	1.78E-01	1.78E-01
+	SB-127	473.00	25.00	-6.12E-01	8.59E-01	9.80E-01
		685.20	35.70	1.17E-01		8.59E-01
		783.80	14.70	-1.32E+00		2.18E+00
+	I-129	29.78	57.00	1.29E-02	6.10E-02	6.10E-02
		33.60	13.20	-1.82E-02		2.58E-01
		39.58	7.52	-7.06E-01		4.46E-01
+	I-131	284.30	6.05	-1.21E-02	1.73E-01	2.29E+00
		364.48	81.20	3.75E-02		1.73E-01
		636.97	7.26	-2.03E-01		2.40E+00
		722.89	1.80	-7.03E+00		1.09E+01

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72		13.10	7.22E-01	3.31E-01	1.18E+00
		228.16		88.00	-1.82E-01		3.31E-01
+	BA-133	81.00		33.00	3.46E-02	1.98E-01	2.07E-01
		302.84		17.80	2.49E-02		4.63E-01
		356.01		60.00	3.70E-03		1.98E-01
+	I-133	529.87		86.30	-1.08E+00	1.43E+01	1.43E+01
+	CS-134	563.23		8.38	-1.07E-01	1.23E-01	1.17E+00
		569.32		15.43	1.11E-01		6.85E-01
		604.70		97.60	2.35E-02		1.23E-01
		795.84		85.40	-6.34E-03		1.43E-01
		801.93		8.73	-5.00E-01		1.25E+00
+	CS-135	268.24	*	16.00	3.24E-01	5.87E-01	5.87E-01
+	I-135	1131.51		22.50	6.32E+05	2.22E+06	2.71E+06
		1260.41		28.60	-3.86E+05		2.22E+06
		1678.03		9.54	-6.26E+05		3.76E+06
+	CS-136	153.22		7.46	-1.29E-01	1.58E-01	1.23E+00
		163.89		4.61	4.90E-01		2.13E+00
		176.55		13.56	9.98E-03		7.50E-01
		273.65		12.66	3.43E-01		9.39E-01
		340.57		48.50	1.50E-01		2.78E-01
		818.50		99.70	1.53E-02		1.58E-01
		1048.07		79.60	3.26E-02		2.36E-01
		1235.34		19.70	-9.45E-01		1.11E+00
+	CS-137	661.65		85.12	-2.24E-02	1.26E-01	1.26E-01
+	LA-138	788.74		34.00	2.51E-02	1.98E-01	3.40E-01
		1435.80		66.00	3.09E-03		1.98E-01
+	CE-139	165.85		80.35	-4.22E-03	9.19E-02	9.19E-02
+	BA-140	162.64		6.70	2.91E-01	5.70E-01	1.47E+00
		304.84		4.50	1.03E+00		2.58E+00
		423.70		3.20	-8.45E-01		3.66E+00
		437.55		2.00	9.08E-02		6.41E+00
		537.32		25.00	1.65E-01		5.70E-01
+	LA-140	328.77		20.50	4.87E-01	1.84E-01	6.10E-01
		487.03		45.50	1.06E-01		2.96E-01
		815.85		23.50	-1.98E-01		6.52E-01
		1596.49		95.49	8.95E-03		1.84E-01
+	CE-141	145.44		48.40	-5.21E-02	1.57E-01	1.57E-01
+	CE-143	57.36		11.80	-6.65E+00	5.12E+00	8.40E+00
		293.26		42.00	4.11E+00		5.12E+00
		664.55		5.20	9.48E+00		4.44E+01
+	CE-144	133.54		10.80	-1.80E-01	6.23E-01	6.23E-01
+	PM-144	476.78		42.00	7.58E-02	1.16E-01	2.18E-01
		618.01		98.60	2.97E-02		1.27E-01
		696.49		99.49	1.35E-02		1.16E-01
+	PM-145	36.85		21.70	8.92E-04	8.47E-02	1.57E-01
		37.36		39.70	-4.04E-02		8.47E-02
		42.30		15.10	1.02E-01		2.47E-01
		72.40		2.31	2.92E+00		2.92E+00
+	PM-146	453.90		39.94	1.87E-02	2.39E-01	2.39E-01

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-146	735.90		14.01	-3.56E-02	2.39E-01	8.36E-01
		747.13		13.10	3.49E-01		8.65E-01
+	ND-147	91.11	*	28.90	5.99E-01	4.76E-01	4.76E-01
		531.02		13.10	3.57E-01		1.11E+00
+	PM-149	285.90		3.10	-1.89E+00	1.74E+01	1.74E+01
+	EU-152	121.78		20.50	-3.38E-02	3.01E-01	3.01E-01
		244.69		5.40	5.86E-02		1.66E+00
		344.27		19.13	-3.99E-01		4.65E-01
		778.89		9.20	1.20E-01		1.22E+00
		964.01		10.40	-9.67E-01		1.31E+00
		1085.78		7.22	1.86E-01		1.91E+00
		1112.02		9.60	-1.81E-01		1.68E+00
		1407.95		14.94	-2.61E-01		7.85E-01
+	GD-153	97.43		31.30	6.02E-02	1.96E-01	1.96E-01
		103.18		22.20	1.93E-01		2.73E-01
+	EU-154	123.07		40.50	-4.98E-02	1.52E-01	1.52E-01
		723.30		19.70	3.30E-02		6.40E-01
		873.19		11.50	1.50E-01		1.10E+00
		996.32		10.30	3.63E-01		1.41E+00
		1004.76		17.90	-3.17E-01		6.62E-01
		1274.45		35.50	6.20E-02		4.98E-01
+	EU-155	86.50		30.90	3.84E-02	2.07E-01	2.07E-01
		105.30		20.70	-1.98E-01		2.79E-01
+	EU-156	811.77		10.40	2.14E-01	1.49E+00	1.49E+00
		1153.47		7.20	-1.72E-02		2.67E+00
		1230.71		8.90	2.36E+00		2.94E+00
+	HO-166M	184.41		72.60	9.29E-02	1.13E-01	1.13E-01
		280.45		29.60	2.28E-02		2.66E-01
		410.94		11.10	1.72E-01		7.58E-01
		711.69		54.10	-7.56E-02		1.91E-01
+	TM-171	66.72		0.14	9.49E+00	3.99E+01	3.99E+01
+	HF-172	81.75		4.52	2.55E-01	5.56E-01	1.43E+00
		125.81		11.30	-1.79E-02		5.56E-01
+	LU-172	181.53		20.60	-5.72E-03	4.03E-01	7.11E-01
		810.06		16.63	4.45E-01		1.37E+00
		912.12		15.25	2.82E+00		2.21E+00
		1093.66		62.50	-1.07E-01		4.03E-01
+	LU-173	100.72		5.24	1.40E-01	3.99E-01	1.11E+00
		272.11		21.20	3.52E-03		3.99E-01
+	HF-175	343.40		84.00	-5.31E-02	1.18E-01	1.18E-01
+	LU-176	88.34		13.30	4.77E-01	8.56E-02	5.08E-01
		201.83		86.00	2.49E-02		8.86E-02
		306.78		94.00	-8.81E-03		8.56E-02
+	TA-182	67.75		41.20	-1.22E-02	1.40E-01	1.40E-01
		1121.30		34.90	5.04E-02		5.02E-01
		1189.05		16.23	5.50E-01		1.15E+00
		1221.41		26.98	-4.21E-01		5.65E-01
		1231.02		11.44	1.44E+00		1.80E+00
+	IR-192	308.46		29.68	-8.00E-02	1.87E-01	2.85E-01

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	IR-192	468.07		48.10	-1.46E-01	1.87E-01	1.87E-01
+	HG-203	279.19		77.30	1.81E-02	1.13E-01	1.13E-01
+	BI-207	569.67		97.72	1.75E-02	1.08E-01	1.08E-01
		1063.62		74.90	-1.86E-02		1.88E-01
+	TL-208	583.14	*	30.22	6.58E-01	7.37E-02	4.91E-01
		860.37		4.48	1.20E+00		2.98E+00
		2614.66	*	35.85	6.81E-01		7.37E-02
+	BI-210M	262.00		45.00	-1.26E-02	1.74E-01	1.74E-01
		300.00		23.00	-9.30E-04		4.20E-01
+	PB-210	46.50		4.25	2.79E-01	9.48E-01	9.48E-01
+	PB-211	404.84		2.90	3.39E-02	2.75E+00	2.75E+00
		831.96		2.90	2.58E+00		4.33E+00
+	BI-212	727.17		11.80	-5.57E-02	1.10E+00	1.10E+00
		1620.62		2.75	-2.47E-02		4.30E+00
+	PB-212	238.63	*	44.60	6.41E-01	3.15E-01	3.15E-01
		300.09		3.41	-6.28E-03		2.83E+00
+	BI-214	609.31	*	46.30	5.77E-01	5.58E-01	5.58E-01
		1120.29		15.10	5.46E-01		1.18E+00
		1764.49	*	15.80	9.29E-01		5.84E-01
		2204.22	*	4.98	1.02E+00		1.89E+00
+	PB-214	295.21	*	19.19	9.00E-01	2.81E-01	7.88E-01
		351.92	*	37.19	6.81E-01		2.81E-01
+	RN-219	401.80		6.50	-2.89E-01	1.25E+00	1.25E+00
+	RA-223	323.87		3.88	-8.41E-01	2.07E+00	2.07E+00
+	RA-224	240.98		3.95	8.08E+00	3.10E+00	3.10E+00
+	RA-225	40.00		31.00	-2.28E-01	1.44E-01	1.44E-01
+	RA-226	186.21	*	3.28	2.95E+00	2.89E+00	2.89E+00
+	TH-227	50.10		8.40	3.11E-01	5.06E-01	5.06E-01
		236.00		11.50	6.73E-02		1.03E+00
		256.20		6.30	5.65E-01		1.29E+00
+	AC-228	338.32		11.40	6.42E-01	6.54E-01	8.64E-01
		911.07	*	27.70	7.05E-01		6.54E-01
		969.11	*	16.60	1.60E+00		1.74E+00
+	TH-230	48.44		16.90	1.04E-01	2.46E-01	2.46E-01
		62.85		4.60	1.28E+00		1.17E+00
		67.67		0.37	-1.31E+00		1.50E+01
+	PA-231	283.67		1.60	-1.13E+00	3.58E+00	4.96E+00
		302.67		2.30	1.92E-01		3.58E+00
+	TH-231	25.64		14.70	-6.60E-02	2.38E-01	2.38E-01
		84.21		6.40	1.82E-01		9.54E-01
+	PA-233	311.98		38.60	-2.82E-03	2.50E-01	2.50E-01
+	PA-234	131.20	*	20.40	2.90E-01	3.32E-01	3.32E-01
		733.99		8.80	-3.44E-01		1.35E+00
		946.00		12.00	-2.98E-01		9.61E-01
+	PA-234M	1001.03		0.92	7.46E+00	1.53E+01	1.53E+01
+	TH-234	63.29		3.80	1.07E+00	1.42E+00	1.42E+00
+	U-235	143.76		10.50	2.35E-01	6.48E-01	6.48E-01

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	U-235	163.35	4.70	3.48E-01	6.48E-01	1.52E+00
		205.31	4.70	-1.02E-01		1.62E+00
+	NP-237	86.50	12.60	9.39E-02	5.07E-01	5.07E-01
+	NP-239	106.10	22.70	-1.08E+00	1.52E+00	1.52E+00
		228.18	10.70	-9.23E-01		4.62E+00
		277.60	14.10	2.31E+00		3.43E+00
+	AM-241	59.54	35.90	1.47E-02	1.39E-01	1.39E-01
+	AM-243	74.67	66.00	2.99E-01	1.09E-01	1.09E-01
+	CM-243	209.75	3.29	4.54E-01	5.79E-01	2.36E+00
		228.14	10.60	-4.15E-01		7.57E-01
		277.60	14.00	3.91E-01		5.79E-01

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	9.30E-01	9.30E-01	1.48E-01	4.35E-01
	NA-22	1274.54		99.94	1.78E-01	1.78E-01	2.21E-02	8.13E-02
	NA-24	1368.53		99.99	1.04E+02	6.21E+01	2.14E+01	4.56E+01
		2754.09		99.86	6.21E+01		5.63E+00	1.96E+01
	AL-26	1808.65		99.76	1.12E-01	1.12E-01	1.24E-02	4.59E-02
+	K-40	1460.81	*	10.67	1.43E+00	1.43E+00	1.60E+01	6.39E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	5.90E-02	5.90E-02	-5.13E-03	2.88E-02
		78.34		96.00	7.50E-02		1.42E-01	3.68E-02
	SC-46	889.25		99.98	1.23E-01	1.23E-01	-4.53E-02	5.58E-02
		1120.51		99.99	1.88E-01		8.68E-02	8.69E-02
	V-48	983.52		99.98	1.76E-01	1.65E-01	-4.68E-03	8.05E-02

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
V-48	1312.10	97.50	1.65E-01	1.65E-01	2.90E-02	7.23E-02
CR-51	320.08	9.83	9.28E-01	9.28E-01	-3.61E-01	4.41E-01
MN-54	834.83	99.97	1.25E-01	1.25E-01	4.11E-02	5.76E-02
CO-56	846.75	99.96	1.19E-01	1.19E-01	1.76E-03	5.42E-02
	1037.75	14.03	1.00E+00		4.52E-01	4.56E-01
	1238.25	67.00	2.58E-01		-4.15E-02	1.18E-01
	1771.40	15.51	9.37E-01		-4.48E-01	4.01E-01
	2598.48	16.90	5.64E-01		-2.02E-02	2.00E-01
CO-57	122.06	85.51	7.33E-02	7.33E-02	-8.24E-03	3.56E-02
	136.48	10.60	6.31E-01		-7.40E-02	3.06E-01
CO-58	810.76	99.40	1.30E-01	1.30E-01	4.22E-02	5.96E-02
FE-59	1099.22	56.50	2.96E-01	2.96E-01	3.91E-02	1.35E-01
	1291.56	43.20	3.10E-01		-1.03E-01	1.36E-01
CO-60	1173.22	100.00	1.37E-01	1.35E-01	-6.94E-02	6.17E-02
	1332.49	100.00	1.35E-01		-5.74E-03	5.97E-02
ZN-65	1115.52	50.75	3.20E-01	3.20E-01	-1.80E-01	1.47E-01
GA-67	93.31	35.70	6.72E-01	6.72E-01	3.92E-01	3.29E-01
	208.95	2.24	1.26E+01		4.90E+00	6.09E+00
	300.22	16.00	2.02E+00		1.35E-01	9.70E-01
SE-75	121.11	16.70	3.90E-01	1.15E-01	1.62E-01	1.90E-01
	136.00	59.20	1.15E-01		-3.85E-02	5.60E-02
	264.65	59.80	1.37E-01		-2.97E-02	6.55E-02
	279.53	25.20	3.29E-01		5.26E-02	1.58E-01
	400.65	11.40	7.38E-01		-1.24E-01	3.47E-01
RB-82	776.52	13.00	1.03E+00	1.03E+00	7.23E-04	4.74E-01
RB-83	520.41	46.00	2.14E-01	2.14E-01	-8.67E-02	9.97E-02
	529.64	30.30	3.35E-01		-2.52E-02	1.56E-01
	552.65	16.40	6.67E-01		5.52E-01	3.12E-01
KR-85	513.99	0.43	3.09E+01	3.09E+01	4.29E+01	1.48E+01
SR-85	513.99	99.27	1.44E-01	1.44E-01	2.00E-01	6.87E-02
Y-88	898.02	93.40	1.45E-01	7.32E-02	5.44E-02	6.64E-02
	1836.01	99.38	7.32E-02		-1.31E-02	2.59E-02
NB-93M	16.57	9.43	3.25E-01	3.25E-01	7.21E-01	1.57E-01
NB-94	702.63	100.00	1.23E-01	1.17E-01	6.40E-02	5.74E-02
	871.10	100.00	1.17E-01		-5.45E-02	5.36E-02
NB-95	765.79	99.81	1.42E-01	1.42E-01	-3.62E-02	6.59E-02
NB-95M	235.69	25.00	1.51E+00	1.51E+00	9.91E-02	7.36E-01
ZR-95	724.18	43.70	3.24E-01	2.12E-01	1.86E-01	1.51E-01
	756.72	55.30	2.12E-01		1.04E-02	9.73E-02
MO-99	181.06	6.20	5.65E+00	3.70E+00	4.34E-01	2.74E+00
	739.58	12.80	3.70E+00		-3.17E+00	1.69E+00
	778.00	4.50	1.14E+01		1.13E+00	5.24E+00
RU-103	497.08	89.00	1.09E-01	1.09E-01	-3.57E-02	5.10E-02
RU-106	621.84	9.80	1.21E+00	1.21E+00	2.46E-02	5.69E-01
AG-108M	433.93	89.90	9.98E-02	9.98E-02	-9.12E-03	4.70E-02
	614.37	90.40	1.48E-01		-9.33E-02	7.01E-02
	722.95	90.50	1.39E-01		7.18E-03	6.47E-02
CD-109	88.03	3.72	1.79E+00	1.79E+00	3.24E-01	8.75E-01
AG-110M	657.75	93.14	1.28E-01	1.28E-01	4.83E-02	5.96E-02
	677.61	10.53	8.64E-01		-2.73E-01	3.93E-01
	706.67	16.46	7.00E-01		5.20E-02	3.24E-01
	763.93	21.98	5.66E-01		-6.18E-02	2.62E-01
	884.67	71.63	1.76E-01		9.03E-03	8.03E-02

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AG-110M	1384.27		23.94	5.79E-01	1.28E-01	-4.47E-02	2.55E-01
	CD-113M	263.70		0.02	3.38E+02	3.38E+02	-9.75E+01	1.62E+02
	SN-113	255.12		1.93	4.36E+00	1.33E-01	1.81E+00	2.09E+00
		391.69		64.90	1.33E-01		-4.12E-02	6.25E-02
	TE123M	159.00		84.10	8.34E-02	8.34E-02	-5.19E-02	4.04E-02
	SB-124	602.71		97.87	1.15E-01	1.15E-01	5.67E-02	5.36E-02
		645.85		7.26	1.52E+00		-2.57E-02	7.02E-01
		722.78		11.10	1.12E+00		-7.24E-01	5.18E-01
		1691.02		49.00	2.31E-01		5.87E-03	9.49E-02
	I-125	35.49		6.49	5.61E-01	5.61E-01	8.93E-04	2.72E-01
	SB-125	176.33		6.89	1.08E+00	3.00E-01	1.43E-02	5.21E-01
		427.89		29.33	3.00E-01		-1.71E-02	1.41E-01
		463.38		10.35	9.99E-01		6.55E-01	4.72E-01
		600.56		17.80	5.95E-01		1.50E-01	2.77E-01
		635.90		11.32	9.06E-01		-4.10E-02	4.19E-01
	SB-126	414.70		83.30	1.41E-01	1.41E-01	2.01E-02	6.61E-02
		666.33		99.60	1.49E-01		4.25E-02	6.91E-02
		695.00		99.60	1.51E-01		-2.27E-02	6.98E-02
		720.50		53.80	3.01E-01		-8.28E-02	1.39E-01
	SN-126	87.57		37.00	1.78E-01	1.78E-01	3.22E-02	8.69E-02
	SB-127	473.00		25.00	9.80E-01	8.59E-01	-6.12E-01	4.56E-01
		685.20		35.70	8.59E-01		1.17E-01	3.95E-01
		783.80		14.70	2.18E+00		-1.32E+00	9.93E-01
	I-129	29.78		57.00	6.10E-02	6.10E-02	1.29E-02	2.97E-02
		33.60		13.20	2.58E-01		-1.82E-02	1.25E-01
		39.58		7.52	4.46E-01		-7.06E-01	2.16E-01
	I-131	284.30		6.05	2.29E+00	1.73E-01	-1.21E-02	1.10E+00
		364.48		81.20	1.73E-01		3.75E-02	8.18E-02
		636.97		7.26	2.40E+00		-2.03E-01	1.11E+00
		722.89		1.80	1.09E+01		-7.03E+00	5.03E+00
	TE-132	49.72		13.10	1.18E+00	3.31E-01	7.22E-01	5.73E-01
		228.16		88.00	3.31E-01		-1.82E-01	1.60E-01
	BA-133	81.00		33.00	2.07E-01	1.98E-01	3.46E-02	1.01E-01
		302.84		17.80	4.63E-01		2.49E-02	2.21E-01
		356.01		60.00	1.98E-01		3.70E-03	9.56E-02
	I-133	529.87		86.30	1.43E+01	1.43E+01	-1.08E+00	6.69E+00
	CS-134	563.23		8.38	1.17E+00	1.23E-01	-1.07E-01	5.45E-01
		569.32		15.43	6.85E-01		1.11E-01	3.20E-01
		604.70		97.60	1.23E-01		2.35E-02	5.78E-02
		795.84		85.40	1.43E-01		-6.34E-03	6.60E-02
		801.93		8.73	1.25E+00		-5.00E-01	5.69E-01
+	CS-135	268.24	*	16.00	5.87E-01	5.87E-01	3.24E-01	2.83E-01
	I-135	1131.51		22.50	2.71E+06	2.22E+06	6.32E+05	1.23E+06
		1260.41		28.60	2.22E+06		-3.86E+05	1.00E+06
		1678.03		9.54	3.76E+06		-6.26E+05	1.46E+06
	CS-136	153.22		7.46	1.23E+00	1.58E-01	-1.29E-01	5.94E-01
		163.89		4.61	2.13E+00		4.90E-01	1.03E+00
		176.55		13.56	7.50E-01		9.98E-03	3.63E-01
		273.65		12.66	9.39E-01		3.43E-01	4.51E-01
		340.57		48.50	2.78E-01		1.50E-01	1.33E-01
		818.50		99.70	1.58E-01		1.53E-02	7.24E-02
		1048.07		79.60	2.36E-01		3.26E-02	1.08E-01
		1235.34		19.70	1.11E+00		-9.45E-01	5.07E-01

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J1V1L8 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	CS-137	661.65		85.12	1.26E-01	1.26E-01	-2.24E-02	5.83E-02
	LA-138	788.74		34.00	3.40E-01	1.98E-01	2.51E-02	1.56E-01
		1435.80		66.00	1.98E-01		3.09E-03	8.63E-02
	CE-139	165.85		80.35	9.19E-02	9.19E-02	-4.22E-03	4.45E-02
	BA-140	162.64		6.70	1.47E+00	5.70E-01	2.91E-01	7.13E-01
		304.84		4.50	2.58E+00		1.03E+00	1.23E+00
		423.70		3.20	3.66E+00		-8.45E-01	1.72E+00
		437.55		2.00	6.41E+00		9.08E-02	3.02E+00
		537.32		25.00	5.70E-01		1.65E-01	2.67E-01
	LA-140	328.77		20.50	6.10E-01	1.84E-01	4.87E-01	2.91E-01
		487.03		45.50	2.96E-01		1.06E-01	1.39E-01
		815.85		23.50	6.52E-01		-1.98E-01	2.97E-01
		1596.49		95.49	1.84E-01		8.95E-03	7.87E-02
	CE-141	145.44		48.40	1.57E-01	1.57E-01	-5.21E-02	7.62E-02
	CE-143	57.36		11.80	8.40E+00	5.12E+00	-6.65E+00	4.09E+00
		293.26		42.00	5.12E+00		4.11E+00	2.47E+00
		664.55		5.20	4.44E+01		9.48E+00	2.06E+01
	CE-144	133.54		10.80	6.23E-01	6.23E-01	-1.80E-01	3.03E-01
	PM-144	476.78		42.00	2.18E-01	1.16E-01	7.58E-02	1.02E-01
		618.01		98.60	1.27E-01		2.97E-02	5.95E-02
		696.49		99.49	1.16E-01		1.35E-02	5.36E-02
	PM-145	36.85		21.70	1.57E-01	8.47E-02	8.92E-04	7.61E-02
		37.36		39.70	8.47E-02		-4.04E-02	4.11E-02
		42.30		15.10	2.47E-01		1.02E-01	1.20E-01
		72.40		2.31	2.92E+00		2.92E+00	1.43E+00
	PM-146	453.90		39.94	2.39E-01	2.39E-01	1.87E-02	1.13E-01
		735.90		14.01	8.36E-01		-3.56E-02	3.87E-01
		747.13		13.10	8.65E-01		3.49E-01	3.99E-01
+	ND-147	91.11	*	28.90	4.76E-01	4.76E-01	5.99E-01	2.34E-01
		531.02		13.10	1.11E+00		3.57E-01	5.21E-01
	PM-149	285.90		3.10	1.74E+01	1.74E+01	-1.89E+00	8.30E+00
	EU-152	121.78		20.50	3.01E-01	3.01E-01	-3.38E-02	1.46E-01
		244.69		5.40	1.66E+00		5.86E-02	8.03E-01
		344.27		19.13	4.65E-01		-3.99E-01	2.22E-01
		778.89		9.20	1.22E+00		1.20E-01	5.58E-01
		964.01		10.40	1.31E+00		-9.67E-01	5.99E-01
		1085.78		7.22	1.91E+00		1.86E-01	8.65E-01
		1112.02		9.60	1.68E+00		-1.81E-01	7.71E-01
		1407.95		14.94	7.85E-01		-2.61E-01	3.38E-01
	GD-153	97.43		31.30	1.96E-01	1.96E-01	6.02E-02	9.56E-02
		103.18		22.20	2.73E-01		1.93E-01	1.33E-01
	EU-154	123.07		40.50	1.52E-01	1.52E-01	-4.98E-02	7.38E-02
		723.30		19.70	6.40E-01		3.30E-02	2.98E-01
		873.19		11.50	1.10E+00		1.50E-01	5.05E-01
		996.32		10.30	1.41E+00		3.63E-01	6.48E-01
		1004.76		17.90	6.62E-01		-3.17E-01	2.98E-01
		1274.45		35.50	4.98E-01		6.20E-02	2.28E-01
	EU-155	86.50		30.90	2.07E-01	2.07E-01	3.84E-02	1.01E-01
		105.30		20.70	2.79E-01		-1.98E-01	1.36E-01
	EU-156	811.77		10.40	1.49E+00	1.49E+00	2.14E-01	6.85E-01
		1153.47		7.20	2.67E+00		-1.72E-02	1.21E+00
		1230.71		8.90	2.94E+00		2.36E+00	1.36E+00
	HO-166M	184.41		72.60	1.13E-01	1.13E-01	9.29E-02	5.49E-02

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	HO-166M	280.45		29.60	2.66E-01	1.13E-01	2.28E-02	1.27E-01
		410.94		11.10	7.58E-01		1.72E-01	3.57E-01
		711.69		54.10	1.91E-01		-7.56E-02	8.77E-02
	TM-171	66.72		0.14	3.99E+01	3.99E+01	9.49E+00	1.95E+01
	HF-172	81.75		4.52	1.43E+00	5.56E-01	2.55E-01	6.98E-01
		125.81		11.30	5.56E-01		-1.79E-02	2.70E-01
	LU-172	181.53		20.60	7.11E-01	4.03E-01	-5.72E-03	3.44E-01
		810.06		16.63	1.37E+00		4.45E-01	6.28E-01
		912.12		15.25	2.21E+00		2.82E+00	1.04E+00
		1093.66		62.50	4.03E-01		-1.07E-01	1.82E-01
	LU-173	100.72		5.24	1.11E+00	3.99E-01	1.40E-01	5.41E-01
		272.11		21.20	3.99E-01		3.52E-03	1.91E-01
	HF-175	343.40		84.00	1.18E-01	1.18E-01	-5.31E-02	5.65E-02
	LU-176	88.34		13.30	5.08E-01	8.56E-02	4.77E-01	2.49E-01
		201.83		86.00	8.86E-02		2.49E-02	4.28E-02
		306.78		94.00	8.56E-02		-8.81E-03	4.08E-02
	TA-182	67.75		41.20	1.40E-01	1.40E-01	-1.22E-02	6.84E-02
		1121.30		34.90	5.02E-01		5.04E-02	2.32E-01
		1189.05		16.23	1.15E+00		5.50E-01	5.32E-01
		1221.41		26.98	5.65E-01		-4.21E-01	2.55E-01
		1231.02		11.44	1.80E+00		1.44E+00	8.33E-01
	IR-192	308.46		29.68	2.85E-01	1.87E-01	-8.00E-02	1.36E-01
		468.07		48.10	1.87E-01		-1.46E-01	8.73E-02
	HG-203	279.19		77.30	1.13E-01	1.13E-01	1.81E-02	5.42E-02
	BI-207	569.67		97.72	1.08E-01	1.08E-01	1.75E-02	5.03E-02
		1063.62		74.90	1.88E-01		-1.86E-02	8.54E-02
+	TL-208	583.14	*	30.22	4.91E-01	7.37E-02	6.58E-01	2.34E-01
		860.37		4.48	2.98E+00		1.20E+00	1.38E+00
		2614.66	*	35.85	7.37E-02		6.81E-01	0.00E+00
	BI-210M	262.00		45.00	1.74E-01	1.74E-01	-1.26E-02	8.32E-02
		300.00		23.00	4.20E-01		-9.30E-04	2.02E-01
	PB-210	46.50		4.25	9.48E-01	9.48E-01	2.79E-01	4.61E-01
	PB-211	404.84		2.90	2.75E+00	2.75E+00	3.39E-02	1.29E+00
		831.96		2.90	4.33E+00		2.58E+00	2.00E+00
	BI-212	727.17		11.80	1.10E+00	1.10E+00	-5.57E-02	5.11E-01
		1620.62		2.75	4.30E+00		-2.47E-02	1.82E+00
+	PB-212	238.63	*	44.60	3.15E-01	3.15E-01	6.41E-01	1.54E-01
		300.09		3.41	2.83E+00		-6.28E-03	1.36E+00
+	BI-214	609.31	*	46.30	5.58E-01	5.58E-01	5.77E-01	2.71E-01
		1120.29		15.10	1.18E+00		5.46E-01	5.47E-01
		1764.49	*	15.80	5.84E-01		9.29E-01	2.29E-01
		2204.22	*	4.98	1.89E+00		1.02E+00	7.09E-01
+	PB-214	295.21	*	19.19	7.88E-01	2.81E-01	9.00E-01	3.85E-01
		351.92	*	37.19	2.81E-01		6.81E-01	1.35E-01
	RN-219	401.80		6.50	1.25E+00	1.25E+00	-2.89E-01	5.86E-01
	RA-223	323.87		3.88	2.07E+00	2.07E+00	-8.41E-01	9.86E-01
	RA-224	240.98		3.95	3.10E+00	3.10E+00	8.08E+00	1.51E+00
	RA-225	40.00		31.00	1.44E-01	1.44E-01	-2.28E-01	6.98E-02
+	RA-226	186.21	*	3.28	2.89E+00	2.89E+00	2.95E+00	1.41E+00
	TH-227	50.10		8.40	5.06E-01	5.06E-01	3.11E-01	2.47E-01
		236.00		11.50	1.03E+00		6.73E-02	5.00E-01
		256.20		6.30	1.29E+00		5.65E-01	6.18E-01
+	AC-228	338.32		11.40	8.64E-01	6.54E-01	6.42E-01	4.14E-01

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AC-228	911.07	*	27.70	6.54E-01	6.54E-01	7.05E-01	3.08E-01
		969.11	*	16.60	1.74E+00		1.60E+00	8.33E-01
	TH-230	48.44		16.90	2.46E-01	2.46E-01	1.04E-01	1.20E-01
		62.85		4.60	1.17E+00		1.28E+00	5.70E-01
		67.67		0.37	1.50E+01		-1.31E+00	7.34E+00
	PA-231	283.67		1.60	4.96E+00	3.58E+00	-1.13E+00	2.37E+00
		302.67		2.30	3.58E+00		1.92E-01	1.71E+00
	TH-231	25.64		14.70	2.38E-01	2.38E-01	-6.60E-02	1.16E-01
		84.21		6.40	9.54E-01		1.82E-01	4.66E-01
	PA-233	311.98		38.60	2.50E-01	2.50E-01	-2.82E-03	1.19E-01
+	PA-234	131.20	*	20.40	3.32E-01	3.32E-01	2.90E-01	1.61E-01
		733.99		8.80	1.35E+00		-3.44E-01	6.24E-01
		946.00		12.00	9.61E-01		-2.98E-01	4.34E-01
	PA-234M	1001.03		0.92	1.53E+01	1.53E+01	7.46E+00	7.02E+00
	TH-234	63.29		3.80	1.42E+00	1.42E+00	1.07E+00	6.94E-01
	U-235	143.76		10.50	6.48E-01	6.48E-01	2.35E-01	3.15E-01
		163.35		4.70	1.52E+00		3.48E-01	7.35E-01
		205.31		4.70	1.62E+00		-1.02E-01	7.83E-01
	NP-237	86.50		12.60	5.07E-01	5.07E-01	9.39E-02	2.48E-01
	NP-239	106.10		22.70	1.52E+00	1.52E+00	-1.08E+00	7.40E-01
		228.18		10.70	4.62E+00		-9.23E-01	2.23E+00
		277.60		14.10	3.43E+00		2.31E+00	1.64E+00
	AM-241	59.54		35.90	1.39E-01	1.39E-01	1.47E-02	6.77E-02
	AM-243	74.67		66.00	1.09E-01	1.09E-01	2.99E-01	5.37E-02
	CM-243	209.75		3.29	2.36E+00	5.79E-01	4.54E-01	1.14E+00
		228.14		10.60	7.57E-01		-4.15E-01	3.65E-01
		277.60		14.00	5.79E-01		3.91E-01	2.77E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

Analysis Report for 1411131-06

J1V1L8 SAF: RC-107

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: J1V1L8 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3634

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	12	63
17:	83	69	60	58	48	49	41	60
25:	45	52	48	50	49	42	42	48
33:	42	48	39	32	41	35	43	37
41:	36	37	40	55	68	55	55	37
49:	40	61	40	53	66	54	40	47
57:	50	57	52	75	72	83	94	63
65:	69	68	60	70	63	71	75	71
73:	87	127	155	155	142	95	63	64
81:	62	59	72	83	53	77	74	71
89:	76	82	87	104	100	57	42	38
97:	47	43	76	48	47	48	49	40
105:	57	43	50	36	40	50	55	49
113:	43	49	49	53	46	45	33	49
121:	37	49	51	43	32	39	36	42
129:	49	52	55	53	50	26	39	43
137:	26	52	33	53	40	45	43	42
145:	46	27	42	39	27	40	38	41
153:	36	35	39	36	28	35	47	29
161:	32	33	43	47	38	29	36	36
169:	35	38	39	34	30	38	38	38
177:	37	42	32	28	31	37	32	45
185:	56	57	37	44	35	23	26	36
193:	29	25	32	33	39	27	28	29
201:	32	32	26	26	31	21	30	26
209:	38	34	31	28	23	20	25	36
217:	27	17	26	23	31	28	22	27
225:	28	32	40	20	26	20	27	39
233:	30	35	35	31	77	128	102	48
241:	46	36	35	20	18	33	17	16
249:	20	21	19	17	23	27	20	23
257:	32	20	20	18	24	12	18	22
265:	12	32	16	24	32	32	16	18
273:	13	21	20	25	25	15	12	24
281:	17	15	13	13	21	18	25	23
289:	15	13	17	21	27	40	53	39
297:	21	13	21	23	10	13	21	20
305:	19	11	17	20	8	11	13	18
313:	14	24	18	15	13	18	10	13
321:	12	11	12	14	13	15	26	18
329:	19	16	15	19	9	12	15	12
337:	23	35	26	23	17	14	14	8
345:	21	16	15	10	14	30	60	57
353:	39	15	15	15	10	6	20	14
361:	9	12	13	18	9	11	11	10

369:	11	13	5	10	8	20	12	7

Sample Title: J1V1L8 SAF: RC-107

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

801:	2	3	6	6	4	7	6	7

Sample Title: J1V1L8 SAF: RC-107

Channel								
809:	2	5	3	3	7	5	4	2
817:	2	5	5	6	4	6	5	3
825:	3	4	3	2	6	4	6	3
833:	5	7	3	10	3	3	1	3
841:	7	2	5	2	5	1	5	9
849:	3	3	6	1	5	3	1	4
857:	7	2	2	10	6	7	5	6
865:	5	4	5	4	2	8	2	5
873:	3	2	5	9	6	6	1	5
881:	3	3	6	6	1	7	2	6
889:	2	4	6	4	2	3	2	10
897:	2	5	4	8	2	6	2	3
905:	3	2	2	6	4	14	29	13
913:	9	2	3	2	2	1	6	4
921:	4	7	2	2	4	6	5	3
929:	6	7	0	6	4	5	4	2
937:	3	6	5	4	3	5	2	2
945:	5	2	1	3	3	6	5	1
953:	7	6	5	1	4	7	2	1
961:	2	4	4	5	10	3	3	8
969:	15	11	5	7	5	4	6	3
977:	1	4	3	5	6	5	3	4
985:	7	2	3	3	5	4	3	4
993:	4	4	2	6	7	6	6	4
1001:	3	6	2	5	1	2	1	3
1009:	3	4	3	5	2	1	2	1
1017:	1	2	1	2	6	4	5	4
1025:	6	2	0	1	2	4	1	5
1033:	3	5	4	2	3	8	2	3
1041:	3	2	2	0	4	4	4	4
1049:	5	5	4	4	2	6	5	3
1057:	5	4	1	5	1	2	4	3
1065:	5	7	7	3	5	3	4	5
1073:	4	2	3	2	4	8	3	5
1081:	7	2	2	5	3	4	5	4
1089:	6	1	1	4	0	3	6	5
1097:	4	3	3	6	4	3	5	4
1105:	7	4	4	5	6	6	3	0
1113:	3	6	6	8	2	5	9	11
1121:	5	8	2	3	2	4	4	3
1129:	3	7	4	3	1	4	3	3
1137:	2	3	3	3	3	6	2	1
1145:	5	5	3	4	5	2	5	5
1153:	6	3	4	1	1	5	2	3
1161:	7	2	5	3	4	3	3	4
1169:	1	5	3	4	5	2	3	3
1177:	1	1	8	7	6	2	6	3
1185:	6	6	4	7	2	8	4	6
1193:	5	2	3	5	4	4	3	5
1201:	4	2	9	6	4	3	6	8
1209:	11	6	9	2	4	8	4	3
1217:	1	7	2	2	2	2	6	2
1225:	5	2	6	10	12	6	3	6

1233:	2	5	5	1	1	6	5	2

Sample Title: J1V1L8 SAF: RC-107

Channel								
1241:	6	5	8	4	4	2	4	2
1249:	1	7	5	5	3	3	1	4
1257:	2	3	3	6	1	1	5	3
1265:	5	2	7	2	3	5	4	5
1273:	9	2	3	1	6	5	2	10
1281:	2	5	1	2	2	3	2	0
1289:	3	1	4	2	2	1	2	3
1297:	2	4	2	3	2	4	1	5
1305:	2	2	1	1	1	5	2	3
1313:	0	5	0	0	1	1	2	4
1321:	2	3	1	5	2	4	1	2
1329:	3	1	1	2	4	0	4	3
1337:	5	1	0	2	2	1	1	2
1345:	2	3	1	1	6	1	0	1
1353:	0	1	4	2	1	2	1	0
1361:	1	1	1	0	1	0	2	3
1369:	2	4	4	0	1	3	1	1
1377:	3	4	0	2	0	2	2	0
1385:	2	3	3	5	1	2	1	4
1393:	3	3	4	4	0	3	0	1
1401:	2	3	2	1	2	1	1	2
1409:	1	0	2	3	2	3	1	1
1417:	2	0	3	3	3	3	0	2
1425:	1	2	2	3	1	1	1	3
1433:	0	0	4	0	2	1	6	0
1441:	3	2	0	0	1	0	6	2
1449:	1	3	0	0	0	1	2	1
1457:	3	2	15	42	103	72	33	12
1465:	1	0	2	1	1	1	2	2
1473:	0	1	1	1	1	2	0	1
1481:	0	1	1	0	1	1	0	0
1489:	1	0	0	0	1	1	0	0
1497:	0	0	2	1	0	0	0	1
1505:	0	0	0	3	3	3	3	2
1513:	1	0	0	2	1	0	1	0
1521:	2	0	0	1	2	0	0	0
1529:	0	0	1	2	1	1	0	3
1537:	1	0	1	0	1	1	0	1
1545:	0	0	0	0	1	0	0	1
1553:	0	1	0	0	0	0	0	0
1561:	4	2	6	0	1	0	2	1
1569:	0	0	1	0	0	1	0	1
1577:	0	0	2	0	1	1	1	3
1585:	1	0	1	2	2	1	0	3
1593:	3	1	0	1	0	2	3	2
1601:	0	1	2	0	0	0	0	1
1609:	0	2	0	0	2	1	1	0
1617:	1	1	0	0	2	1	2	1
1625:	2	1	1	3	0	2	0	2
1633:	0	1	0	0	3	3	0	3
1641:	0	1	2	0	0	0	0	0
1649:	0	1	1	1	1	0	0	0
1657:	1	1	0	0	0	0	2	0

1665:	0	0	0	0	0	1	1	1

Sample Title: J1V1L8 SAF: RC-107

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

2097:	1	0	1	0	0	1	1	1

Sample Title: J1V1L8 SAF: RC-107

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

2529:	0	0	0	0	1	3	1	0

Sample Title: J1V1L8 SAF: RC-107

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

2961:	1	0	0	1	0	0	0	0

Sample Title: J1V1L8 SAF: RC-107

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

3393:	0	0	0	0	0	0	0	0

Sample Title: J1V1L8 SAF: RC-107

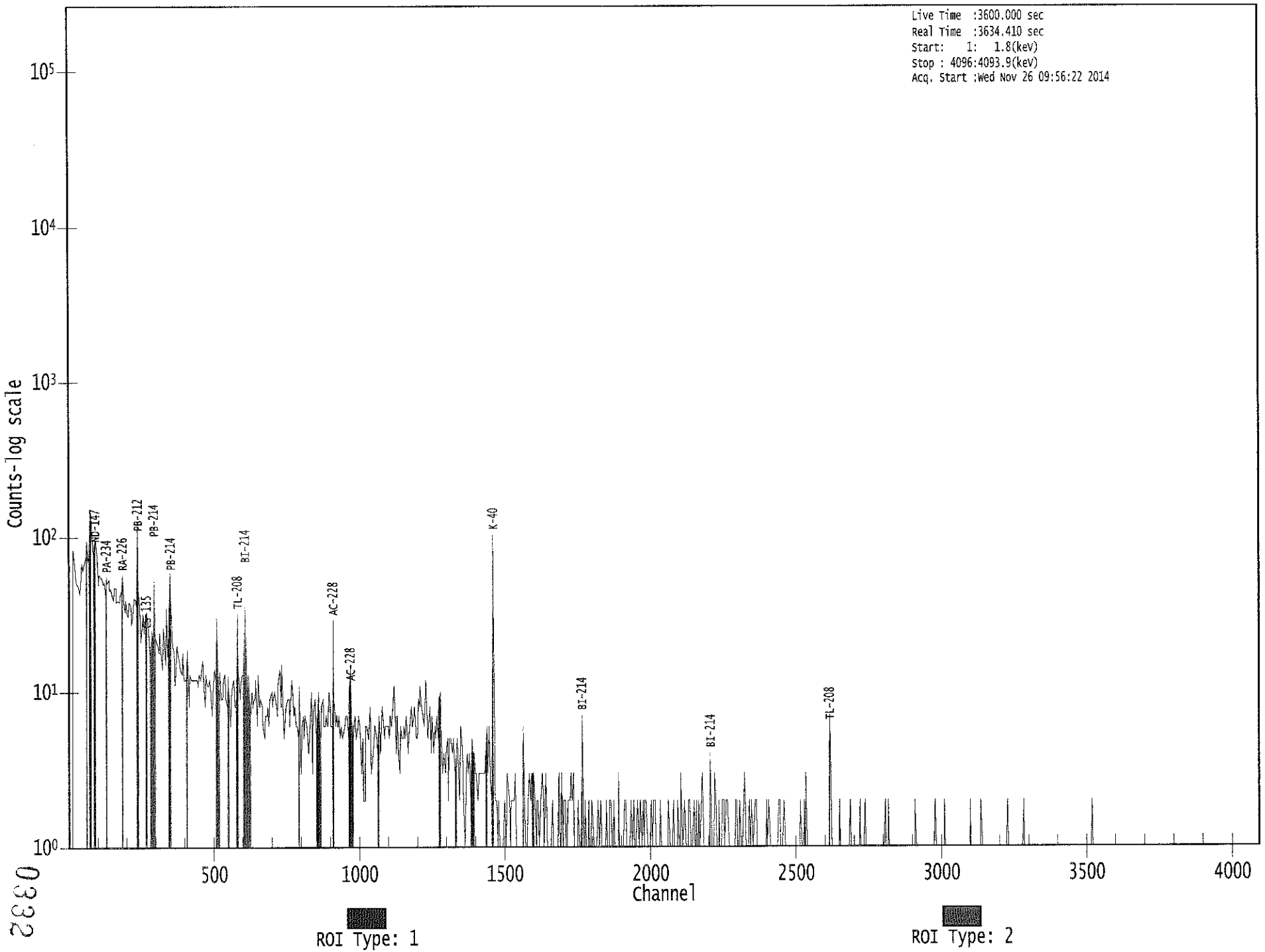
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	1
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	1	0
3441:	1	0	1	0	0	0	1	0
3449:	0	0	1	0	0	0	0	0
3457:	0	0	1	0	0	0	0	0
3465:	1	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	1	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	1	0	0	0
3505:	0	0	1	0	0	0	1	0
3513:	0	0	0	1	0	0	2	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:	0	0	0	0	1	0	0	0
3553:	0	0	0	0	0	1	0	0
3561:	0	0	0	0	1	0	0	0
3569:	0	1	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	1	0	0	0	0
3593:	0	1	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	1	0	0	0
3617:	0	0	1	1	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	1
3649:	0	0	0	0	0	0	0	0
3657:	1	1	0	1	1	0	0	0
3665:	0	0	0	0	1	1	1	0
3673:	0	0	0	0	1	1	0	0
3681:	0	0	0	1	0	0	0	0
3689:	1	0	0	0	0	0	0	1
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	1	0	0	0	0
3713:	0	0	0	1	1	0	0	0
3721:	0	0	0	0	0	0	0	1
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	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	1	1	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:	1	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	1

3825:	0	0	0	0	0	0	0	0

Sample Title: J1V1L8 SAF: RC-107

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

0000015633.CNF



0332

Apex-Gamma

Analysis Report for 1411131-07
J1V1L9 SAF: RC-107

11/26

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-07
Sample Description	: J1V1L9 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.665E+02 grams
Facility	: Countroom
Sample Taken On	: 11/20/2014 8:56:00AM
Acquisition Started	: 11/26/2014 10:18:02AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3601.2 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 19 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15638

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/26/14

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 11:18:06AM
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	43.77	44.13	0.0000	0.00
2	46.62	46.97	0.0000	0.00
3	74.93	75.27	0.0000	0.00
4	77.27	77.61	0.0000	0.00
5	87.80	88.13	0.0000	0.00
6	186.01	186.32	0.0000	0.00
7	208.52	208.81	0.0000	0.00
8	238.55	238.84	0.0000	0.00
9	241.55	241.84	0.0000	0.00
10	270.29	270.57	0.0000	0.00
11	276.42	276.69	0.0000	0.00
12	294.99	295.25	0.0000	0.00
13	300.07	300.33	0.0000	0.00
14	328.13	328.38	0.0000	0.00
15	338.07	338.32	0.0000	0.00
16	340.41	340.66	0.0000	0.00
17	347.91	348.16	0.0000	0.00
18	351.87	352.12	0.0000	0.00
19	462.04	462.25	0.0000	0.00
20	502.94	503.14	0.0000	0.00
21	510.69	510.88	0.0000	0.00
22	583.03	583.20	0.0000	0.00
23	609.12	609.29	0.0000	0.00
24	646.82	646.97	0.0000	0.00
25	770.48	770.59	0.0000	0.00
26	794.30	794.39	0.0000	0.00
27	799.08	799.17	0.0000	0.00
28	860.75	860.83	0.0000	0.00
29	911.12	911.17	0.0000	0.00
30	964.02	964.06	0.0000	0.00
31	968.48	968.52	0.0000	0.00
32	1034.02	1034.03	0.0000	0.00
33	1041.98	1041.98	0.0000	0.00
34	1119.88	1119.86	0.0000	0.00
35	1326.28	1326.19	0.0000	0.00
36	1376.53	1376.42	0.0000	0.00
37	1460.11	1459.96	0.0000	0.00
38	1587.57	1587.38	0.0000	0.00
39	1593.03	1592.84	0.0000	0.00
40	1612.40	1612.21	0.0000	0.00
41	1660.65	1660.44	0.0000	0.00
42	1728.68	1728.44	0.0000	0.00

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1763.86	1763.61	0.0000	0.00
44	1845.29	1845.00	0.0000	0.00
45	1959.41	1959.08	0.0000	0.00
46	2042.77	2042.41	0.0000	0.00
47	2059.37	2059.00	0.0000	0.00
48	2101.57	2101.18	0.0000	0.00
49	2104.41	2104.02	0.0000	0.00
50	2162.42	2162.01	0.0000	0.00
51	2175.57	2175.16	0.0000	0.00
52	2202.36	2201.94	0.0000	0.00
53	2230.06	2229.63	0.0000	0.00
54	2285.86	2285.41	0.0000	0.00
55	2446.70	2446.18	0.0000	0.00
56	2612.89	2612.30	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 11:18:06AM

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	43.77	43 -	49	44.13	3.46E+01	27.80	2.22E+02	1.39
m	2	46.62	43 -	49	46.97	1.22E+02	48.83	4.64E+02	1.40
M	3	74.93	71 -	80	75.27	3.04E+02	84.32	1.09E+03	1.77
m	4	77.27	71 -	80	77.61	4.92E+02	89.05	1.07E+03	1.69
M	5	87.80	83 -	97	88.13	1.46E+02	61.90	7.93E+02	1.48
	6	186.01	182 -	190	186.32	2.35E+02	82.50	8.99E+02	1.63
	7	208.52	204 -	214	208.81	1.21E+02	89.32	9.93E+02	2.16
M	8	238.55	234 -	246	238.84	7.29E+02	67.54	3.99E+02	1.60
m	9	241.55	234 -	246	241.84	2.17E+02	80.11	4.82E+02	2.46
	10	270.29	267 -	273	270.57	5.91E+01	50.86	4.22E+02	1.99
	11	276.42	274 -	280	276.69	5.74E+01	49.32	4.03E+02	1.67
M	12	294.99	290 -	303	295.25	2.37E+02	49.58	2.85E+02	1.91
m	13	300.07	290 -	303	300.33	5.02E+01	41.64	2.74E+02	1.91
	14	328.13	326 -	331	328.38	8.00E+01	39.09	2.44E+02	1.91
M	15	338.07	335 -	344	338.32	1.47E+02	42.47	2.47E+02	1.95
m	16	340.41	335 -	344	340.66	4.99E+01	43.13	2.28E+02	1.95
M	17	347.91	347 -	356	348.16	2.01E+01	9.72	4.36E+01	1.78
m	18	351.87	347 -	356	352.12	3.88E+02	48.85	1.89E+02	1.79
	19	462.04	459 -	466	462.25	4.94E+01	36.55	1.93E+02	1.87
M	20	502.94	499 -	521	503.14	3.34E+01	28.56	9.58E+01	2.30
m	21	510.69	499 -	521	510.88	1.70E+02	38.62	1.09E+02	2.31
	22	583.03	579 -	586	583.20	2.18E+02	44.72	1.88E+02	1.38
	23	609.12	606 -	615	609.29	2.80E+02	51.61	2.23E+02	1.97
	24	646.82	642 -	653	646.97	6.33E+01	38.78	1.57E+02	6.94
	25	770.48	765 -	778	770.59	3.57E+01	44.19	1.95E+02	1.36
M	26	794.30	792 -	800	794.39	2.88E+01	20.26	6.63E+01	2.38
m	27	799.08	792 -	800	799.17	1.10E+01	12.59	3.65E+01	3.71
	28	860.75	857 -	865	860.83	4.50E+01	30.70	1.18E+02	2.23
	29	911.12	908 -	917	911.17	1.64E+02	37.16	1.00E+02	2.25
M	30	964.02	960 -	972	964.06	4.43E+01	23.24	7.20E+01	1.88
m	31	968.48	960 -	972	968.52	8.89E+01	28.21	7.20E+01	2.13
	32	1034.02	1029 -	1039	1034.03	4.16E+01	27.96	8.07E+01	5.92
	33	1041.98	1040 -	1045	1041.98	1.36E+01	16.82	4.69E+01	2.03
	34	1119.88	1116 -	1124	1119.86	5.02E+01	36.96	1.78E+02	1.75
	35	1326.28	1324 -	1328	1326.19	9.96E+00	13.61	3.21E+01	2.28
	36	1376.53	1370 -	1381	1376.42	2.41E+01	24.00	5.97E+01	2.09
	37	1460.11	1455 -	1465	1459.96	9.08E+02	63.31	5.10E+01	2.20
	38	1587.57	1584 -	1590	1587.38	1.65E+01	13.47	2.10E+01	2.01
	39	1593.03	1591 -	1596	1592.84	9.97E+00	10.63	1.41E+01	1.38
	40	1612.40	1609 -	1615	1612.21	8.33E+00	8.51	7.33E+00	4.39

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1660.65	1657 -	1663	1660.44	7.50E+00	8.28	7.00E+00	2.99
	42	1728.68	1724 -	1731	1728.44	1.40E+01	12.33	1.60E+01	2.48
	43	1763.86	1760 -	1768	1763.61	6.40E+01	16.00	0.00E+00	2.28
	44	1845.29	1840 -	1848	1845.00	1.86E+01	11.51	8.87E+00	1.97
	45	1959.41	1956 -	1962	1959.08	6.30E+00	8.03	7.40E+00	3.93
	46	2042.77	2040 -	2044	2042.41	4.83E+00	5.50	2.33E+00	0.96
	47	2059.37	2056 -	2062	2059.00	1.00E+01	6.32	0.00E+00	1.33
M	48	2101.57	2096 -	2106	2101.18	1.55E+01	10.82	4.35E+00	3.90
m	49	2104.41	2096 -	2106	2104.02	8.40E+00	9.00	4.87E+00	3.90
	50	2162.42	2158 -	2165	2162.01	6.06E+00	6.93	3.88E+00	4.82
	51	2175.57	2170 -	2179	2175.16	1.07E+01	8.77	4.69E+00	2.04
	52	2202.36	2198 -	2205	2201.94	1.70E+01	8.25	0.00E+00	1.36
	53	2230.06	2226 -	2232	2229.63	8.00E+00	5.66	0.00E+00	1.66
	54	2285.86	2283 -	2287	2285.41	5.75E+00	6.67	4.50E+00	1.29
	55	2446.70	2443 -	2448	2446.18	6.50E+00	6.40	3.00E+00	1.98
	56	2612.89	2608 -	2618	2612.30	8.60E+01	18.55	0.00E+00	2.64

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 11:18:06AM

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	43.77	43 -	49	3.46E+01	27.80	2.22E+02	2.45E+01
m	2	46.62	43 -	49	1.22E+02	48.83	4.64E+02	3.54E+01
M	3	74.93	71 -	80	3.04E+02	84.32	1.09E+03	5.42E+01
m	4	77.27	71 -	80	4.92E+02	89.05	1.07E+03	5.37E+01
M	5	87.80	83 -	97	1.46E+02	61.90	7.93E+02	4.63E+01
	6	186.01	182 -	190	2.35E+02	82.50	8.99E+02	6.30E+01
	7	208.52	204 -	214	1.21E+02	89.32	9.93E+02	7.12E+01
M	8	238.55	234 -	246	7.29E+02	67.54	3.99E+02	3.29E+01
m	9	241.55	234 -	246	2.17E+02	80.11	4.82E+02	3.61E+01
	10	270.29	267 -	273	5.91E+01	50.86	4.22E+02	3.99E+01
	11	276.42	274 -	280	5.74E+01	49.32	4.03E+02	3.86E+01
M	12	294.99	290 -	303	2.37E+02	49.58	2.85E+02	2.77E+01

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	13	300.07	290 -	303	5.02E+01	41.64	2.74E+02	2.72E+01
	14	328.13	326 -	331	8.00E+01	39.09	2.44E+02	2.86E+01
M	15	338.07	335 -	344	1.47E+02	42.47	2.47E+02	2.58E+01
m	16	340.41	335 -	344	4.99E+01	43.13	2.28E+02	2.48E+01
M	17	347.91	347 -	356	2.01E+01	9.72	4.36E+01	1.08E+01
m	18	351.87	347 -	356	3.88E+02	48.85	1.89E+02	2.26E+01
	19	462.04	459 -	466	4.94E+01	36.55	1.93E+02	2.77E+01
M	20	502.94	499 -	521	3.34E+01	28.56	9.58E+01	1.61E+01
m	21	510.69	499 -	521	1.70E+02	38.62	1.09E+02	1.72E+01
	22	583.03	579 -	586	2.18E+02	44.72	1.88E+02	2.76E+01
	23	609.12	606 -	615	2.80E+02	51.61	2.23E+02	1.88E+01
	24	646.82	642 -	653	6.33E+01	38.78	1.57E+02	2.91E+01
	25	770.48	765 -	778	3.57E+01	44.19	1.95E+02	1.60E+01
M	26	794.30	792 -	800	2.88E+01	20.26	6.63E+01	1.34E+01
m	27	799.08	792 -	800	1.10E+01	12.59	3.65E+01	9.93E+00
	28	860.75	857 -	865	4.50E+01	30.70	1.18E+02	2.27E+01
	29	911.12	908 -	917	1.64E+02	37.16	1.00E+02	2.21E+01
M	30	964.02	960 -	972	4.43E+01	23.24	7.20E+01	1.39E+01
m	31	968.48	960 -	972	8.89E+01	28.21	7.20E+01	1.39E+01
	32	1034.02	1029 -	1039	4.16E+01	27.96	8.07E+01	2.04E+01
	33	1041.98	1040 -	1045	1.36E+01	16.82	4.69E+01	1.24E+01
	34	1119.88	1116 -	1124	5.02E+01	36.96	1.78E+02	2.81E+01
	35	1326.28	1324 -	1328	9.96E+00	13.61	3.21E+01	9.91E+00
	36	1376.53	1370 -	1381	2.41E+01	24.00	5.97E+01	1.80E+01
	37	1460.11	1455 -	1465	9.08E+02	63.31	5.10E+01	1.59E+01
	38	1587.57	1584 -	1590	1.65E+01	13.47	2.10E+01	8.83E+00
	39	1593.03	1591 -	1596	9.97E+00	10.63	1.41E+01	7.03E+00
	40	1612.40	1609 -	1615	8.33E+00	8.51	7.33E+00	5.14E+00
	41	1660.65	1657 -	1663	7.50E+00	8.28	7.00E+00	5.10E+00
	42	1728.68	1724 -	1731	1.40E+01	12.33	1.60E+01	8.05E+00
	43	1763.86	1760 -	1768	6.40E+01	16.00	0.00E+00	0.00E+00
	44	1845.29	1840 -	1848	1.86E+01	11.51	8.87E+00	6.27E+00
	45	1959.41	1956 -	1962	6.30E+00	8.03	7.40E+00	5.15E+00
	46	2042.77	2040 -	2044	4.83E+00	5.50	2.33E+00	2.72E+00
	47	2059.37	2056 -	2062	1.00E+01	6.32	0.00E+00	0.00E+00
M	48	2101.57	2096 -	2106	1.55E+01	10.82	4.35E+00	3.43E+00
m	49	2104.41	2096 -	2106	8.40E+00	9.00	4.87E+00	3.63E+00
	50	2162.42	2158 -	2165	6.06E+00	6.93	3.88E+00	4.01E+00
	51	2175.57	2170 -	2179	1.07E+01	8.77	4.69E+00	4.82E+00
	52	2202.36	2198 -	2205	1.70E+01	8.25	0.00E+00	0.00E+00
	53	2230.06	2226 -	2232	8.00E+00	5.66	0.00E+00	0.00E+00
	54	2285.86	2283 -	2287	5.75E+00	6.67	4.50E+00	3.81E+00
	55	2446.70	2443 -	2448	6.50E+00	6.40	3.00E+00	3.18E+00
	56	2612.89	2608 -	2618	8.60E+01	18.55	0.00E+00	0.00E+00

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 11:18:06AM

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	43.77	43 -	49	44.13	3.46E+01	27.80	2.22E+02	.....
m	2	46.62	43 -	49	46.97	1.22E+02	48.83	4.64E+02	PB-210
M	3	74.93	71 -	80	75.27	3.04E+02	84.32	1.09E+03	AM-243
m	4	77.27	71 -	80	77.61	4.92E+02	89.05	1.07E+03	.....
M	5	87.80	83 -	97	88.13	1.46E+02	61.90	7.93E+02	SN-126
									CD-109
									LU-176
	6	186.01	182 -	190	186.32	2.35E+02	82.50	8.99E+02	RA-226
	7	208.52	204 -	214	208.81	1.21E+02	89.32	9.93E+02	GA-67
M	8	238.55	234 -	246	238.84	7.29E+02	67.54	3.99E+02	PB-212
m	9	241.55	234 -	246	241.84	2.17E+02	80.11	4.82E+02	RA-224
	10	270.29	267 -	273	270.57	5.91E+01	50.86	4.22E+02	.....
	11	276.42	274 -	280	276.69	5.74E+01	49.32	4.03E+02	.....
M	12	294.99	290 -	303	295.25	2.37E+02	49.58	2.85E+02	PB-214
m	13	300.07	290 -	303	300.33	5.02E+01	41.64	2.74E+02	PB-212
									BI-210M
									GA-67
	14	328.13	326 -	331	328.38	8.00E+01	39.09	2.44E+02	LA-140
M	15	338.07	335 -	344	338.32	1.47E+02	42.47	2.47E+02	AC-228
m	16	340.41	335 -	344	340.66	4.99E+01	43.13	2.28E+02	CS-136
M	17	347.91	347 -	356	348.16	2.01E+01	9.72	4.36E+01	.....
m	18	351.87	347 -	356	352.12	3.88E+02	48.85	1.89E+02	PB-214
	19	462.04	459 -	466	462.25	4.94E+01	36.55	1.93E+02	.....
M	20	502.94	499 -	521	503.14	3.34E+01	28.56	9.58E+01	.....
m	21	510.69	499 -	521	510.88	1.70E+02	38.62	1.09E+02	.....
	22	583.03	579 -	586	583.20	2.18E+02	44.72	1.88E+02	TL-208
	23	609.12	606 -	615	609.29	2.80E+02	51.61	2.23E+02	BI-214
	24	646.82	642 -	653	646.97	6.33E+01	38.78	1.57E+02	SB-124
	25	770.48	765 -	778	770.59	3.57E+01	44.19	1.95E+02	.....
M	26	794.30	792 -	800	794.39	2.88E+01	20.26	6.63E+01	.....

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	27	799.08	792 -	800	799.17	1.10E+01	12.59	3.65E+01	.....
	28	860.75	857 -	865	860.83	4.50E+01	30.70	1.18E+02	TL-208
	29	911.12	908 -	917	911.17	1.64E+02	37.16	1.00E+02	AC-228
M	30	964.02	960 -	972	964.06	4.43E+01	23.24	7.20E+01	EU-152
m	31	968.48	960 -	972	968.52	8.89E+01	28.21	7.20E+01	AC-228
	32	1034.02	1029 -	1039	1034.03	4.16E+01	27.96	8.07E+01	.....
	33	1041.98	1040 -	1045	1041.98	1.36E+01	16.82	4.69E+01	.....
	34	1119.88	1116 -	1124	1119.86	5.02E+01	36.96	1.78E+02	BI-214 SC-46
	35	1326.28	1324 -	1328	1326.19	9.96E+00	13.61	3.21E+01	.....
	36	1376.53	1370 -	1381	1376.42	2.41E+01	24.00	5.97E+01	.....
	37	1460.11	1455 -	1465	1459.96	9.08E+02	63.31	5.10E+01	K-40
	38	1587.57	1584 -	1590	1587.38	1.65E+01	13.47	2.10E+01	.....
	39	1593.03	1591 -	1596	1592.84	9.97E+00	10.63	1.41E+01	.....
	40	1612.40	1609 -	1615	1612.21	8.33E+00	8.51	7.33E+00	.....
	41	1660.65	1657 -	1663	1660.44	7.50E+00	8.28	7.00E+00	.....
	42	1728.68	1724 -	1731	1728.44	1.40E+01	12.33	1.60E+01	.....
	43	1763.86	1760 -	1768	1763.61	6.40E+01	16.00	0.00E+00	BI-214
	44	1845.29	1840 -	1848	1845.00	1.86E+01	11.51	8.87E+00	.....
	45	1959.41	1956 -	1962	1959.08	6.30E+00	8.03	7.40E+00	.....
	46	2042.77	2040 -	2044	2042.41	4.83E+00	5.50	2.33E+00	.....
	47	2059.37	2056 -	2062	2059.00	1.00E+01	6.32	0.00E+00	.....
M	48	2101.57	2096 -	2106	2101.18	1.55E+01	10.82	4.35E+00	.....
m	49	2104.41	2096 -	2106	2104.02	8.40E+00	9.00	4.87E+00	.....
	50	2162.42	2158 -	2165	2162.01	6.06E+00	6.93	3.88E+00	.....
	51	2175.57	2170 -	2179	2175.16	1.07E+01	8.77	4.69E+00	.....
	52	2202.36	2198 -	2205	2201.94	1.70E+01	8.25	0.00E+00	.....
	53	2230.06	2226 -	2232	2229.63	8.00E+00	5.66	0.00E+00	.....
	54	2285.86	2283 -	2287	2285.41	5.75E+00	6.67	4.50E+00	.....
	55	2446.70	2443 -	2448	2446.18	6.50E+00	6.40	3.00E+00	.....
	56	2612.89	2608 -	2618	2612.30	8.60E+01	18.55	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 11:18:06AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

M	1	43.77	3.46E+01	27.80	1.49E-02	1.78E-03
m	2	46.62	1.22E+02	48.83	1.69E-02	1.78E-03
M	3	74.93	3.04E+02	84.32	2.75E-02	2.30E-03
m	4	77.27	4.92E+02	89.05	2.78E-02	2.38E-03
M	5	87.80	1.46E+02	61.90	2.85E-02	2.73E-03
	6	186.01	2.35E+02	82.50	2.24E-02	2.03E-03
	7	208.52	1.21E+02	89.32	2.09E-02	1.86E-03
M	8	238.55	7.29E+02	67.54	1.92E-02	1.64E-03
m	9	241.55	2.17E+02	80.11	1.91E-02	1.62E-03
	10	270.29	5.91E+01	50.86	1.77E-02	1.40E-03
	11	276.42	5.74E+01	49.32	1.74E-02	1.36E-03
M	12	294.99	2.37E+02	49.58	1.67E-02	1.31E-03
m	13	300.07	5.02E+01	41.64	1.65E-02	1.30E-03
	14	328.13	8.00E+01	39.09	1.55E-02	1.24E-03
M	15	338.07	1.47E+02	42.47	1.52E-02	1.22E-03
m	16	340.41	4.99E+01	43.13	1.51E-02	1.22E-03
M	17	347.91	2.01E+01	9.72	1.49E-02	1.20E-03
m	18	351.87	3.88E+02	48.85	1.48E-02	1.19E-03
	19	462.04	4.94E+01	36.55	1.21E-02	1.04E-03
M	20	502.94	3.34E+01	28.56	1.14E-02	9.99E-04
m	21	510.69	1.70E+02	38.62	1.12E-02	9.91E-04
	22	583.03	2.18E+02	44.72	1.02E-02	9.16E-04
	23	609.12	2.80E+02	51.61	9.83E-03	8.89E-04
	24	646.82	6.33E+01	38.78	9.38E-03	8.50E-04
	25	770.48	3.57E+01	44.19	8.17E-03	7.37E-04
M	26	794.30	2.88E+01	20.26	7.98E-03	7.15E-04
m	27	799.08	1.10E+01	12.59	7.94E-03	7.11E-04
	28	860.75	4.50E+01	30.70	7.48E-03	6.56E-04
	29	911.12	1.64E+02	37.16	7.15E-03	6.16E-04
M	30	964.02	4.43E+01	23.24	6.83E-03	5.88E-04
m	31	968.48	8.89E+01	28.21	6.81E-03	5.86E-04
	32	1034.02	4.16E+01	27.96	6.46E-03	5.52E-04
	33	1041.98	1.36E+01	16.82	6.42E-03	5.47E-04
	34	1119.88	5.02E+01	36.96	6.07E-03	5.07E-04
	35	1326.28	9.96E+00	13.61	5.33E-03	4.52E-04
	36	1376.53	2.41E+01	24.00	5.19E-03	4.40E-04
	37	1460.11	9.08E+02	63.31	4.97E-03	4.19E-04
	38	1587.57	1.65E+01	13.47	4.70E-03	3.88E-04
	39	1593.03	9.97E+00	10.63	4.69E-03	3.86E-04
	40	1612.40	8.33E+00	8.51	4.65E-03	3.81E-04
	41	1660.65	7.50E+00	8.28	4.56E-03	3.69E-04
	42	1728.68	1.40E+01	12.33	4.45E-03	3.53E-04
	43	1763.86	6.40E+01	16.00	4.40E-03	3.44E-04
	44	1845.29	1.86E+01	11.51	4.29E-03	3.26E-04
	45	1959.41	6.30E+00	8.03	4.15E-03	3.26E-04
	46	2042.77	4.83E+00	5.50	4.07E-03	3.26E-04
	47	2059.37	1.00E+01	6.32	4.06E-03	3.26E-04
M	48	2101.57	1.55E+01	10.82	4.02E-03	3.26E-04
m	49	2104.41	8.40E+00	9.00	4.02E-03	3.26E-04
	50	2162.42	6.06E+00	6.93	3.98E-03	3.26E-04
	51	2175.57	1.07E+01	8.77	3.97E-03	3.26E-04
	52	2202.36	1.70E+01	8.25	3.95E-03	3.26E-04
	53	2230.06	8.00E+00	5.66	3.93E-03	3.26E-04
	54	2285.86	5.75E+00	6.67	3.90E-03	3.26E-04
	55	2446.70	6.50E+00	6.40	3.83E-03	3.26E-04
	56	2612.89	8.60E+01	18.55	3.79E-03	3.26E-04

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 11:18:06AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015431.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	43.77	3.46E+01	27.80			3.46E+01	2.78E+01
m	2	46.62	1.22E+02	48.83	5.12E+01	8.41E+00	7.03E+01	4.95E+01
M	3	74.93	3.04E+02	84.32	2.04E+00	9.33E+00	3.02E+02	8.48E+01
m	4	77.27	4.92E+02	89.05			4.92E+02	8.91E+01
M	5	87.80	1.46E+02	61.90			1.46E+02	6.19E+01
	6	186.01	2.35E+02	82.50	5.96E+01	7.53E+00	1.75E+02	8.28E+01
	7	208.52	1.21E+02	89.32			1.21E+02	8.93E+01
M	8	238.55	7.29E+02	67.54	1.98E+01	6.26E+00	7.09E+02	6.78E+01
m	9	241.55	2.17E+02	80.11			2.17E+02	8.01E+01
	10	270.29	5.91E+01	50.86			5.91E+01	5.09E+01
	11	276.42	5.74E+01	49.32			5.74E+01	4.93E+01
M	12	294.99	2.37E+02	49.58			2.37E+02	4.96E+01
m	13	300.07	5.02E+01	41.64			5.02E+01	4.16E+01
	14	328.13	8.00E+01	39.09			8.00E+01	3.91E+01
M	15	338.07	1.47E+02	42.47			1.47E+02	4.25E+01
m	16	340.41	4.99E+01	43.13			4.99E+01	4.31E+01
M	17	347.91	2.01E+01	9.72			2.01E+01	9.72E+00
m	18	351.87	3.88E+02	48.85	5.06E+00	4.50E+00	3.83E+02	4.91E+01
	19	462.04	4.94E+01	36.55	1.17E+00	3.65E+00	4.82E+01	3.67E+01
M	20	502.94	3.34E+01	28.56			3.34E+01	2.86E+01
m	21	510.69	1.70E+02	38.62	7.51E+01	5.45E+00	9.50E+01	3.90E+01
	22	583.03	2.18E+02	44.72	1.02E+01	3.64E+00	2.08E+02	4.49E+01
	23	609.12	2.80E+02	51.61	7.39E+00	3.98E+00	2.72E+02	5.18E+01
	24	646.82	6.33E+01	38.78			6.33E+01	3.88E+01
	25	770.48	3.57E+01	44.19			3.57E+01	4.42E+01
M	26	794.30	2.88E+01	20.26			2.88E+01	2.03E+01
m	27	799.08	1.10E+01	12.59			1.10E+01	1.26E+01
	28	860.75	4.50E+01	30.70			4.50E+01	3.07E+01
	29	911.12	1.64E+02	37.16	3.68E+00	2.94E+00	1.60E+02	3.73E+01
M	30	964.02	4.43E+01	23.24			4.43E+01	2.32E+01
m	31	968.48	8.89E+01	28.21	2.19E+00	1.61E+00	8.67E+01	2.83E+01
	32	1034.02	4.16E+01	27.96			4.16E+01	2.80E+01
	33	1041.98	1.36E+01	16.82			1.36E+01	1.68E+01
	34	1119.88	5.02E+01	36.96			5.02E+01	3.70E+01
	35	1326.28	9.96E+00	13.61			9.96E+00	1.36E+01

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	36	1376.53	2.41E+01	24.00			2.41E+01	2.40E+01
	37	1460.11	9.08E+02	63.31	7.88E+00	2.38E+00	9.01E+02	6.34E+01
	38	1587.57	1.65E+01	13.47			1.65E+01	1.35E+01
	39	1593.03	9.97E+00	10.63			9.97E+00	1.06E+01
	40	1612.40	8.33E+00	8.51			8.33E+00	8.51E+00
	41	1660.65	7.50E+00	8.28			7.50E+00	8.28E+00
	42	1728.68	1.40E+01	12.33			1.40E+01	1.23E+01
	43	1763.86	6.40E+01	16.00			6.40E+01	1.60E+01
	44	1845.29	1.86E+01	11.51			1.86E+01	1.15E+01
	45	1959.41	6.30E+00	8.03			6.30E+00	8.03E+00
	46	2042.77	4.83E+00	5.50			4.83E+00	5.50E+00
	47	2059.37	1.00E+01	6.32			1.00E+01	6.32E+00
M	48	2101.57	1.55E+01	10.82			1.55E+01	1.08E+01
m	49	2104.41	8.40E+00	9.00			8.40E+00	9.00E+00
	50	2162.42	6.06E+00	6.93			6.06E+00	6.93E+00
	51	2175.57	1.07E+01	8.77			1.07E+01	8.77E+00
	52	2202.36	1.70E+01	8.25	0.00E+00	0.00E+00	1.70E+01	8.25E+00
	53	2230.06	8.00E+00	5.66			8.00E+00	5.66E+00
	54	2285.86	5.75E+00	6.67			5.75E+00	6.67E+00
	55	2446.70	6.50E+00	6.40			6.50E+00	6.40E+00
	56	2612.89	8.60E+01	18.55	4.92E+00	1.46E+00	8.11E+01	1.86E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 11:18:06AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015431.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	43.77	3.46E+01	27.80			3.46E+01	2.78E+01
m	2	46.62	1.22E+02	48.83	5.12E+01	8.41E+00	7.03E+01	4.95E+01
M	3	74.93	3.04E+02	84.32	2.04E+00	9.33E+00	3.02E+02	8.48E+01
m	4	77.27	4.92E+02	89.05			4.92E+02	8.91E+01
M	5	87.80	1.46E+02	61.90			1.46E+02	6.19E+01
	6	186.01	2.35E+02	82.50	5.96E+01	7.53E+00	1.75E+02	8.28E+01
	7	208.52	1.21E+02	89.32			1.21E+02	8.93E+01

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	8	238.55	7.29E+02	67.54	1.98E+01	6.26E+00	7.09E+02	6.78E+01
m	9	241.55	2.17E+02	80.11			2.17E+02	8.01E+01
	10	270.29	5.91E+01	50.86			5.91E+01	5.09E+01
	11	276.42	5.74E+01	49.32			5.74E+01	4.93E+01
M	12	294.99	2.37E+02	49.58			2.37E+02	4.96E+01
m	13	300.07	5.02E+01	41.64			5.02E+01	4.16E+01
	14	328.13	8.00E+01	39.09			8.00E+01	3.91E+01
M	15	338.07	1.47E+02	42.47			1.47E+02	4.25E+01
m	16	340.41	4.99E+01	43.13			4.99E+01	4.31E+01
M	17	347.91	2.01E+01	9.72			2.01E+01	9.72E+00
m	18	351.87	3.88E+02	48.85	5.06E+00	4.50E+00	3.83E+02	4.91E+01
	19	462.04	4.94E+01	36.55	1.17E+00	3.65E+00	4.82E+01	3.67E+01
M	20	502.94	3.34E+01	28.56			3.34E+01	2.86E+01
m	21	510.69	1.70E+02	38.62	7.51E+01	5.45E+00	9.50E+01	3.90E+01
	22	583.03	2.18E+02	44.72	1.02E+01	3.64E+00	2.08E+02	4.49E+01
	23	609.12	2.80E+02	51.61	7.39E+00	3.98E+00	2.72E+02	5.18E+01
	24	646.82	6.33E+01	38.78			6.33E+01	3.88E+01
	25	770.48	3.57E+01	44.19			3.57E+01	4.42E+01
M	26	794.30	2.88E+01	20.26			2.88E+01	2.03E+01
m	27	799.08	1.10E+01	12.59			1.10E+01	1.26E+01
	28	860.75	4.50E+01	30.70			4.50E+01	3.07E+01
	29	911.12	1.64E+02	37.16	3.68E+00	2.94E+00	1.60E+02	3.73E+01
M	30	964.02	4.43E+01	23.24			4.43E+01	2.32E+01
m	31	968.48	8.89E+01	28.21	2.19E+00	1.61E+00	8.67E+01	2.83E+01
	32	1034.02	4.16E+01	27.96			4.16E+01	2.80E+01
	33	1041.98	1.36E+01	16.82			1.36E+01	1.68E+01
	34	1119.88	5.02E+01	36.96			5.02E+01	3.70E+01
	35	1326.28	9.96E+00	13.61			9.96E+00	1.36E+01
	36	1376.53	2.41E+01	24.00			2.41E+01	2.40E+01
	37	1460.11	9.08E+02	63.31	7.88E+00	2.38E+00	9.01E+02	6.34E+01
	38	1587.57	1.65E+01	13.47			1.65E+01	1.35E+01
	39	1593.03	9.97E+00	10.63			9.97E+00	1.06E+01
	40	1612.40	8.33E+00	8.51			8.33E+00	8.51E+00
	41	1660.65	7.50E+00	8.28			7.50E+00	8.28E+00
	42	1728.68	1.40E+01	12.33			1.40E+01	1.23E+01
	43	1763.86	6.40E+01	16.00			6.40E+01	1.60E+01
	44	1845.29	1.86E+01	11.51			1.86E+01	1.15E+01
	45	1959.41	6.30E+00	8.03			6.30E+00	8.03E+00
	46	2042.77	4.83E+00	5.50			4.83E+00	5.50E+00
	47	2059.37	1.00E+01	6.32			1.00E+01	6.32E+00
M	48	2101.57	1.55E+01	10.82			1.55E+01	1.08E+01
m	49	2104.41	8.40E+00	9.00			8.40E+00	9.00E+00
	50	2162.42	6.06E+00	6.93			6.06E+00	6.93E+00
	51	2175.57	1.07E+01	8.77			1.07E+01	8.77E+00
	52	2202.36	1.70E+01	8.25	0.00E+00	0.00E+00	1.70E+01	8.25E+00
	53	2230.06	8.00E+00	5.66			8.00E+00	5.66E+00
	54	2285.86	5.75E+00	6.67			5.75E+00	6.67E+00
	55	2446.70	6.50E+00	6.40			6.50E+00	6.40E+00
	56	2612.89	8.60E+01	18.55	4.92E+00	1.46E+00	8.11E+01	1.86E+01

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

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	0.924	1460.81	*	10.67	1.66E+01	1.86E+00
CD-109	0.991	88.03	*	3.72	1.36E+00	5.97E-01
SN-126	0.992	87.57	*	37.00	1.36E-01	5.90E-02
TL-208	0.372	583.14	*	30.22	6.62E-01	1.55E-01
		860.37	*	4.48	1.32E+00	9.05E-01
		2614.66		35.85		
PB-210	0.998	46.50	*	4.25	9.61E-01	6.85E-01
PB-212	0.999	238.63	*	44.60	8.10E-01	1.04E-01
		300.09	*	3.41	8.74E-01	7.28E-01
BI-214	0.910	609.31	*	46.30	5.86E-01	1.23E-01
		1120.29	*	15.10	5.36E-01	3.98E-01
		1764.49	*	15.80	9.02E-01	2.36E-01
		2204.22		4.98		
PB-214	0.997	295.21	*	19.19	7.24E-01	1.62E-01
		351.92	*	37.19	6.83E-01	1.03E-01
RA-224	0.949	240.98	*	3.95	2.82E+00	1.07E+00
RA-226	0.994	186.21	*	3.28	2.34E+00	4.42E+00
AC-228	0.979	338.32	*	11.40	8.34E-01	2.49E-01
		911.07	*	27.70	7.93E-01	1.97E-01
		969.11	*	16.60	7.51E-01	2.53E-01
AM-243	0.990	74.67	*	66.00	1.63E-01	4.78E-02

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

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 11:18:06AM
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	43.77	9.59896E-03	40.23		
m	4	77.27	1.36665E-01	9.05		
	7	208.52	3.37095E-02	36.80		
	10	270.29	1.64064E-02	43.06		
	11	276.42	1.59336E-02	42.99		
	14	328.13	2.22332E-02	24.42	Tol.	LA-140
m	16	340.41	1.38726E-02	43.18	Tol.	CS-136
M	17	347.91	5.57142E-03	24.23		
	19	462.04	1.33926E-02	38.09		
M	20	502.94	9.27670E-03	42.76		
m	21	510.69	2.63868E-02	20.53		
	24	646.82	1.75880E-02	30.62	Sum	
	25	770.48	9.91959E-03	61.88		
M	26	794.30	8.00559E-03	35.15	Sum	
m	27	799.08	3.05749E-03	57.19		
M	30	964.02	1.22922E-02	26.26	Tol.	EU-152
	32	1034.02	1.15684E-02	33.57		
	33	1041.98	3.76877E-03	62.00		
	35	1326.28	2.76709E-03	68.32		
	36	1376.53	6.70782E-03	49.69		
	38	1587.57	4.58333E-03	40.82		
	39	1593.03	2.76961E-03	53.31		
	40	1612.40	2.31482E-03	51.09		
	41	1660.65	2.08333E-03	55.18		
	42	1728.68	3.88889E-03	44.03	Sum	
	44	1845.29	5.15700E-03	31.00		
	45	1959.41	1.75000E-03	63.74		
	46	2042.77	1.34259E-03	56.90	Sum	
	47	2059.37	2.77778E-03	31.62	Sum	
M	48	2101.57	4.31189E-03	34.84	Sum	
m	49	2104.41	2.33200E-03	53.60		
	50	2162.42	1.68403E-03	57.14		
	51	2175.57	2.95940E-03	41.18		
	52	2202.36	4.72222E-03	24.25		
	53	2230.06	2.22222E-03	35.36		
	54	2285.86	1.59722E-03	58.01		
	55	2446.70	1.80556E-03	49.25		
	56	2612.89	2.25216E-02	11.47		

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.92	1460.81	*	10.67	1.66E+01	1.86E+00
CD-109	0.99	88.03	*	3.72	1.36E+00	5.97E-01
SN-126	0.99	87.57	*	37.00	1.36E-01	5.90E-02
TL-208	0.37	583.14	*	30.22	6.62E-01	1.55E-01
		860.37	*	4.48	1.32E+00	9.05E-01
		2614.66		35.85		
PB-210	0.99	46.50	*	4.25	9.61E-01	6.85E-01
PB-212	0.99	238.63	*	44.60	8.10E-01	1.04E-01
		300.09	*	3.41	8.74E-01	7.28E-01
BI-214	0.91	609.31	*	46.30	5.86E-01	1.23E-01
		1120.29	*	15.10	5.36E-01	3.98E-01
		1764.49	*	15.80	9.02E-01	2.36E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	7.24E-01	1.62E-01
		351.92	*	37.19	6.83E-01	1.03E-01
RA-224	0.94	240.98	*	3.95	2.82E+00	1.07E+00
RA-226	0.99	186.21	*	3.28	2.34E+00	4.42E+00
AC-228	0.97	338.32	*	11.40	8.34E-01	2.49E-01
		911.07	*	27.70	7.93E-01	1.97E-01
		969.11	*	16.60	7.51E-01	2.53E-01
AM-243	0.99	74.67	*	66.00	1.63E-01	4.78E-02

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

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.924	1.66E+01	1.86E+00	
?	CD-109	0.991	1.36E+00	5.97E-01	
?	SN-126	0.992	1.36E-01	5.90E-02	
	TL-208	0.372	6.81E-01	1.53E-01	
	PB-210	0.998	9.61E-01	6.85E-01	
	PB-212	0.999	8.11E-01	1.03E-01	
	BI-214	0.910	6.45E-01	1.05E-01	
	PB-214	0.997	6.95E-01	8.72E-02	
	RA-224	0.949	2.82E+00	1.07E+00	
	RA-226	0.994	2.34E+00	4.42E+00	
	AC-228	0.979	7.93E-01	1.32E-01	
	AM-243	0.990	1.63E-01	4.78E-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 1411131-07

J1V1L9 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 11:18:06AM
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	43.77	9.59896E-03	40.23		
m	4	77.27	1.36665E-01	9.05		
	7	208.52	3.37095E-02	36.80		
	10	270.29	1.64064E-02	43.06		
	11	276.42	1.59336E-02	42.99		
	14	328.13	2.22332E-02	24.42	Tol.	LA-140
m	16	340.41	1.38726E-02	43.18	Tol.	CS-136
M	17	347.91	5.57142E-03	24.23		
	19	462.04	1.33926E-02	38.09		
M	20	502.94	9.27670E-03	42.76		
m	21	510.69	2.63868E-02	20.53		
	24	646.82	1.75880E-02	30.62	Sum	
	25	770.48	9.91959E-03	61.88		
M	26	794.30	8.00559E-03	35.15	Sum	
m	27	799.08	3.05749E-03	57.19		
M	30	964.02	1.22922E-02	26.26	Tol.	EU-152
	32	1034.02	1.15684E-02	33.57		
	33	1041.98	3.76877E-03	62.00		
	35	1326.28	2.76709E-03	68.32		
	36	1376.53	6.70782E-03	49.69		
	38	1587.57	4.58333E-03	40.82		
	39	1593.03	2.76961E-03	53.31		
	40	1612.40	2.31482E-03	51.09		
	41	1660.65	2.08333E-03	55.18		
	42	1728.68	3.88889E-03	44.03	Sum	
	44	1845.29	5.15700E-03	31.00		
	45	1959.41	1.75000E-03	63.74		
	46	2042.77	1.34259E-03	56.90	Sum	
	47	2059.37	2.77778E-03	31.62	Sum	
M	48	2101.57	4.31189E-03	34.84	Sum	
m	49	2104.41	2.33200E-03	53.60		
	50	2162.42	1.68403E-03	57.14		
	51	2175.57	2.95940E-03	41.18		
	52	2202.36	4.72222E-03	24.25		
	53	2230.06	2.22222E-03	35.36		

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	2285.86	1.59722E-03	58.01		
55	2446.70	1.80556E-03	49.25		
56	2612.89	2.25216E-02	11.47		

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	-8.85E-02	4.31E-01	4.31E-01
+	NA-22	1274.54		99.94	-1.08E-02	5.69E-02	5.69E-02
+	NA-24	1368.53		99.99	3.02E+00	2.63E+01	3.90E+01
		2754.09		99.86	8.77E+00		2.63E+01
+	AL-26	1808.65		99.76	-1.21E-02	3.20E-02	3.20E-02
+	K-40	1460.81	*	10.67	1.66E+01	6.66E-01	6.66E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	8.72E-03	4.57E-02	4.57E-02
		78.34		96.00	9.35E-02		5.45E-02
+	SC-46	889.25		99.98	-5.05E-03	5.21E-02	5.21E-02
		1120.51		99.99	8.57E-02		9.08E-02
+	V-48	983.52		99.98	3.41E-03	6.86E-02	7.17E-02
		1312.10		97.50	-1.76E-02		6.86E-02
+	CR-51	320.08		9.83	4.56E-02	4.37E-01	4.37E-01
+	MN-54	834.83		99.97	1.65E-03	5.50E-02	5.50E-02
+	CO-56	846.75		99.96	1.22E-04	5.12E-02	5.12E-02
		1037.75		14.03	-2.25E-01		3.92E-01
		1238.25		67.00	5.18E-02		1.28E-01
		1771.40		15.51	-3.80E-02		1.82E-01
		2598.48		16.90	3.76E-02		1.73E-01
+	CO-57	122.06		85.51	6.51E-03	3.84E-02	3.84E-02
		136.48		10.60	-1.32E-01		3.23E-01
+	CO-58	810.76		99.40	-7.01E-03	4.57E-02	4.57E-02
+	FE-59	1099.22		56.50	3.22E-02	1.12E-01	1.12E-01
		1291.56		43.20	3.09E-03		1.52E-01
+	CO-60	1173.22		100.00	4.83E-03	5.36E-02	6.40E-02

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-60	1332.49		100.00	-1.59E-03	5.36E-02	5.36E-02
+	ZN-65	1115.52		50.75	1.65E-02	1.50E-01	1.50E-01
+	GA-67	93.31		35.70	6.34E-01	4.41E-01	4.41E-01
		208.95		2.24	2.97E+00		6.55E+00
		300.22		16.00	-7.40E-01		8.82E-01
+	SE-75	121.11		16.70	7.19E-03	5.80E-02	2.01E-01
		136.00		59.20	2.73E-03		6.01E-02
		264.65		59.80	-7.46E-03		5.80E-02
		279.53		25.20	5.85E-03		1.46E-01
		400.65		11.40	-1.02E-02		3.24E-01
+	RB-82	776.52		13.00	-4.02E-02	3.90E-01	3.90E-01
+	RB-83	520.41		46.00	3.02E-03	8.67E-02	8.67E-02
		529.64		30.30	6.65E-03		1.40E-01
		552.65		16.40	3.08E-02		2.94E-01
+	KR-85	513.99		0.43	1.65E+01	1.42E+01	1.42E+01
+	SR-85	513.99		99.27	7.67E-02	6.63E-02	6.63E-02
+	Y-88	898.02		93.40	-2.26E-02	3.79E-02	5.47E-02
		1836.01		99.38	-1.79E-03		3.79E-02
+	NB-93M	16.57		9.43	5.12E+00	5.11E+01	5.11E+01
+	NB-94	702.63		100.00	-5.40E-03	4.62E-02	4.85E-02
		871.10		100.00	6.06E-04		4.62E-02
+	NB-95	765.79		99.81	-1.77E-03	6.04E-02	6.04E-02
+	NB-95M	235.69		25.00	-2.57E+00	6.13E-01	6.13E-01
+	ZR-95	724.18		43.70	6.58E-02	9.50E-02	1.35E-01
		756.72		55.30	2.71E-03		9.50E-02
+	MO-99	181.06		6.20	2.73E-01	1.77E+00	2.57E+00
		739.58		12.80	2.54E-01		1.77E+00
		778.00		4.50	3.62E-02		4.70E+00
+	RU-103	497.08		89.00	1.25E-02	4.59E-02	4.59E-02
+	RU-106	621.84		9.80	1.87E-01	4.82E-01	4.82E-01
+	AG-108M	433.93		89.90	-5.76E-03	4.44E-02	4.44E-02
		614.37		90.40	-3.31E-03		5.14E-02
		722.95		90.50	-8.02E-02		5.28E-02
+	CD-109	88.03	*	3.72	1.36E+00	2.37E+00	2.37E+00
+	AG-110M	657.75		93.14	2.10E-02	4.58E-02	4.58E-02
		677.61		10.53	2.34E-04		4.27E-01
		706.67		16.46	-9.10E-02		2.97E-01
		763.93		21.98	2.40E-02		2.26E-01
		884.67		71.63	3.64E-02		7.07E-02
		1384.27		23.94	1.90E-03		1.89E-01
+	CD-113M	263.70		0.02	4.17E+00	1.49E+02	1.49E+02
+	SN-113	255.12		1.93	-2.37E-02	5.66E-02	1.84E+00
		391.69		64.90	-1.02E-04		5.66E-02
+	TE123M	159.00		84.10	-7.40E-03	4.21E-02	4.21E-02
+	SB-124	602.71		97.87	7.82E-03	4.88E-02	4.88E-02
		645.85		7.26	5.74E-01		7.58E-01
		722.78		11.10	-7.01E-01		4.61E-01
		1691.02		49.00	-3.17E-02		5.12E-02

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-125	35.49		6.49	3.72E-01	1.61E+00	1.61E+00
+	SB-125	176.33		6.89	-3.74E-01	1.40E-01	4.77E-01
		427.89		29.33	-9.15E-03		1.40E-01
		463.38		10.35	2.58E-01		4.46E-01
		600.56		17.80	4.14E-02		2.52E-01
		635.90		11.32	2.85E-01		4.17E-01
+	SB-126	414.70		83.30	-4.54E-02	6.68E-02	6.96E-02
		666.33		99.60	3.97E-02		6.68E-02
		695.00		99.60	-2.31E-02		6.74E-02
		720.50		53.80	2.21E-02		1.21E-01
+	SN-126	87.57	*	37.00	1.36E-01	2.36E-01	2.36E-01
+	SB-127	473.00		25.00	1.10E-01	3.86E-01	5.31E-01
		685.20		35.70	-1.85E-01		3.86E-01
		783.80		14.70	3.23E-01		1.01E+00
+	I-129	29.78		57.00	-1.19E-01	3.06E-01	3.06E-01
		33.60		13.20	3.24E-01		8.68E-01
		39.58		7.52	4.79E-02		9.11E-01
+	I-131	284.30		6.05	2.95E-01	7.00E-02	9.77E-01
		364.48		81.20	-2.46E-02		7.00E-02
		636.97		7.26	7.77E-01		1.08E+00
		722.89		1.80	-6.81E+00		4.48E+00
+	TE-132	49.72		13.10	-3.69E-01	1.48E-01	1.29E+00
		228.16		88.00	-7.55E-02		1.48E-01
+	BA-133	81.00		33.00	2.69E-02	5.49E-02	1.18E-01
		302.84		17.80	4.91E-02		2.04E-01
		356.01		60.00	1.97E-03		5.49E-02
+	I-133	529.87		86.30	2.87E-01	6.04E+00	6.04E+00
+	CS-134	563.23		8.38	9.87E-02	5.65E-02	5.46E-01
		569.32		15.43	1.54E-02		2.99E-01
		604.70		97.60	8.13E-04		5.65E-02
		795.84		85.40	4.72E-02		6.30E-02
		801.93		8.73	1.05E-01		5.52E-01
+	CS-135	268.24		16.00	2.58E-01	2.44E-01	2.44E-01
+	I-135	1131.51		22.50	3.02E+05	1.00E+06	1.25E+06
		1260.41		28.60	7.45E+04		1.00E+06
		1678.03		9.54	3.28E+05		1.73E+06
+	CS-136	153.22		7.46	3.23E-01	6.19E-02	6.89E-01
		163.89		4.61	6.21E-01		1.09E+00
		176.55		13.56	-2.61E-01		3.33E-01
		273.65		12.66	-6.06E-01		3.71E-01
		340.57		48.50	8.85E-02		1.25E-01
		818.50		99.70	-1.91E-02		6.19E-02
		1048.07		79.60	2.16E-02		8.42E-02
		1235.34		19.70	9.55E-02		5.49E-01
+	CS-137	661.65		85.12	-6.25E-04	5.06E-02	5.06E-02
+	LA-138	788.74		34.00	2.98E-03	5.55E-02	1.43E-01
		1435.80		66.00	-1.92E-02		5.55E-02
+	CE-139	165.85		80.35	-1.24E-02	4.62E-02	4.62E-02
+	BA-140	162.64		6.70	2.07E-01	2.36E-01	7.49E-01

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	304.84	4.50	1.74E-02	2.36E-01	9.99E-01
		423.70	3.20	-1.09E+00		1.71E+00
		437.55	2.00	1.47E-01		2.73E+00
		537.32	25.00	-2.05E-02		2.36E-01
+	LA-140	328.77	20.50	3.44E-01	6.32E-02	2.83E-01
		487.03	45.50	3.19E-02		1.32E-01
		815.85	23.50	-1.16E-01		2.41E-01
		1596.49	95.49	0.00E+00		6.32E-02
+	CE-141	145.44	48.40	8.68E-02	8.54E-02	8.54E-02
+	CE-143	57.36	11.80	-5.56E-01	2.72E+00	8.07E+00
		293.26	42.00	6.45E+00		2.72E+00
		664.55	5.20	1.83E+00		1.86E+01
+	CE-144	133.54	10.80	2.06E-01	3.27E-01	3.27E-01
+	PM-144	476.78	42.00	-2.19E-02	4.69E-02	1.01E-01
		618.01	98.60	1.24E-02		4.69E-02
		696.49	99.49	-6.95E-03		4.81E-02
+	PM-145	36.85	21.70	1.21E-01	2.07E-01	4.00E-01
		37.36	39.70	5.44E-02		2.07E-01
		42.30	15.10	-5.64E-02		3.92E-01
		72.40	2.31	-1.93E+00		2.09E+00
+	PM-146	453.90	39.94	5.18E-02	1.02E-01	1.02E-01
		735.90	14.01	1.91E-01		3.73E-01
		747.13	13.10	-2.05E-02		3.41E-01
+	ND-147	91.11	28.90	-2.25E-01	2.27E-01	2.27E-01
		531.02	13.10	1.35E-01		4.53E-01
+	PM-149	285.90	3.10	1.35E+00	7.36E+00	7.36E+00
+	EU-152	121.78	20.50	2.67E-02	1.58E-01	1.58E-01
		244.69	5.40	-7.75E-01		6.67E-01
		344.27	19.13	-2.30E-02		1.70E-01
		778.89	9.20	-5.71E-02		4.94E-01
		964.01	10.40	-1.29E+00		6.60E-01
		1085.78	7.22	-4.07E-02		7.92E-01
		1112.02	9.60	4.88E-02		6.68E-01
		1407.95	14.94	-2.63E-02		3.22E-01
+	GD-153	97.43	31.30	2.38E-02	1.12E-01	1.12E-01
		103.18	22.20	7.33E-02		1.56E-01
+	EU-154	123.07	40.50	-3.94E-02	8.09E-02	8.09E-02
		723.30	19.70	-3.69E-01		2.43E-01
		873.19	11.50	-5.59E-02		3.83E-01
		996.32	10.30	-1.15E-01		5.41E-01
		1004.76	17.90	-1.51E-01		2.78E-01
		1274.45	35.50	-3.02E-02		1.60E-01
+	EU-155	86.50	30.90	3.82E-02	1.40E-01	1.40E-01
		105.30	20.70	8.37E-02		1.68E-01
+	EU-156	811.77	10.40	1.33E-02	5.49E-01	5.49E-01
		1153.47	7.20	5.60E-01		1.21E+00
		1230.71	8.90	-5.04E-01		1.04E+00
+	HO-166M	184.41	72.60	1.09E-01	6.19E-02	6.19E-02
		280.45	29.60	8.65E-03		1.18E-01

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	HO-166M	410.94		11.10	2.26E-01	6.19E-02	4.05E-01
		711.69		54.10	2.11E-02		8.49E-02
+	TM-171	66.72		0.14	-5.24E+01	3.14E+01	3.14E+01
+	HF-172	81.75		4.52	1.97E-01	2.95E-01	8.59E-01
		125.81		11.30	-2.54E-01		2.95E-01
+	LU-172	181.53		20.60	1.03E-01	1.58E-01	3.15E-01
		810.06		16.63	-1.88E-02		5.01E-01
		912.12		15.25	2.48E+00		1.14E+00
		1093.66		62.50	-1.05E-01		1.58E-01
+	LU-173	100.72		5.24	-4.45E-01	1.82E-01	6.36E-01
		272.11		21.20	6.64E-02		1.82E-01
+	HF-175	343.40		84.00	-5.54E-03	4.08E-02	4.08E-02
+	LU-176	88.34		13.30	4.03E-01	3.48E-02	3.34E-01
		201.83		86.00	3.19E-03		3.97E-02
		306.78		94.00	1.62E-03		3.48E-02
+	TA-182	67.75		41.20	2.07E-02	1.09E-01	1.09E-01
		1121.30		34.90	3.00E-01		2.60E-01
		1189.05		16.23	1.84E-01		4.02E-01
		1221.41		26.98	-1.18E-01		2.32E-01
		1231.02		11.44	-3.09E-01		6.38E-01
+	IR-192	308.46		29.68	-3.51E-02	9.01E-02	1.14E-01
		468.07		48.10	-2.70E-02		9.01E-02
+	HG-203	279.19		77.30	1.75E-02	5.32E-02	5.32E-02
+	BI-207	569.67		97.72	-3.47E-03	4.61E-02	4.61E-02
		1063.62		74.90	-1.44E-02		7.16E-02
+	TL-208	583.14	*	30.22	6.62E-01	1.89E-01	1.89E-01
		860.37	*	4.48	1.32E+00		1.41E+00
		2614.66		35.85	5.93E-01		3.27E-01
+	BI-210M	262.00		45.00	2.46E-02	7.82E-02	7.82E-02
		300.00		23.00	-1.41E-01		1.68E-01
+	PB-210	46.50	*	4.25	9.61E-01	1.46E+00	1.46E+00
+	PB-211	404.84		2.90	-2.28E-01	1.26E+00	1.26E+00
		831.96		2.90	-4.00E-01		1.69E+00
+	BI-212	727.17		11.80	2.70E-01	4.71E-01	4.71E-01
		1620.62		2.75	5.26E-01		1.64E+00
+	PB-212	238.63	*	44.60	8.10E-01	1.64E-01	1.64E-01
		300.09	*	3.41	8.74E-01		2.10E+00
+	BI-214	609.31	*	46.30	5.86E-01	3.82E-02	1.47E-01
		1120.29	*	15.10	5.36E-01		6.29E-01
		1764.49	*	15.80	9.02E-01		3.82E-02
		2204.22		4.98	0.00E+00		1.06E+00
+	PB-214	295.21	*	19.19	7.24E-01	1.45E-01	3.70E-01
		351.92	*	37.19	6.83E-01		1.45E-01
+	RN-219	401.80		6.50	-8.49E-02	5.39E-01	5.39E-01
+	RA-223	323.87		3.88	9.62E-02	9.09E-01	9.09E-01
+	RA-224	240.98	*	3.95	2.82E+00	1.87E+00	1.87E+00
+	RA-225	40.00		31.00	1.50E-02	2.86E-01	2.86E-01
+	RA-226	186.21	*	3.28	2.34E+00	1.76E+00	1.76E+00

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-227	50.10		8.40	-1.56E-01	4.15E-01	5.45E-01
		236.00		11.50	-1.74E+00		4.15E-01
		256.20		6.30	-1.31E-01		5.31E-01
+	AC-228	338.32	*	11.40	8.34E-01	2.36E-01	4.80E-01
		911.07	*	27.70	7.93E-01		2.36E-01
		969.11	*	16.60	7.51E-01		5.11E-01
+	TH-230	48.44		16.90	5.24E-02	3.16E-01	3.16E-01
		62.85		4.60	1.43E+00		1.06E+00
		67.67		0.37	2.23E+00		1.17E+01
+	PA-231	283.67		1.60	-3.46E-02	1.57E+00	2.13E+00
		302.67		2.30	3.80E-01		1.57E+00
+	TH-231	25.64		14.70	1.43E-01	6.32E-01	2.66E+00
		84.21		6.40	-9.58E-01		6.32E-01
+	PA-233	311.98		38.60	6.40E-03	1.01E-01	1.01E-01
+	PA-234	131.20		20.40	8.57E-02	1.74E-01	1.74E-01
		733.99		8.80	-2.03E-02		5.67E-01
		946.00		12.00	2.06E-02		4.42E-01
+	PA-234M	1001.03		0.92	2.27E+00	6.17E+00	6.17E+00
+	TH-234	63.29		3.80	1.08E+00	1.28E+00	1.28E+00
+	U-235	143.76		10.50	8.29E-02	3.40E-01	3.40E-01
		163.35		4.70	4.41E-01		7.74E-01
		205.31		4.70	-5.26E-01		7.87E-01
+	NP-237	86.50		12.60	9.34E-02	3.42E-01	3.42E-01
+	NP-239	106.10		22.70	4.56E-01	9.14E-01	9.14E-01
		228.18		10.70	-1.02E+00		2.00E+00
		277.60		14.10	6.53E-01		1.60E+00
+	AM-241	59.54		35.90	-1.12E-01	1.24E-01	1.24E-01
+	AM-243	74.67	*	66.00	1.63E-01	1.03E-01	1.03E-01
+	CM-243	209.75		3.29	1.31E+00	2.70E-01	1.22E+00
		228.14		10.60	-1.72E-01		3.38E-01
		277.60		14.00	1.10E-01		2.70E-01

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

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	4.31E-01	4.31E-01	-8.85E-02	2.04E-01
	NA-22	1274.54		99.94	5.69E-02	5.69E-02	-1.08E-02	2.60E-02
	NA-24	1368.53		99.99	3.90E+01	2.63E+01	3.02E+00	1.74E+01
		2754.09		99.86	2.63E+01		8.77E+00	1.02E+01
	AL-26	1808.65		99.76	3.20E-02	3.20E-02	-1.21E-02	1.29E-02
+	K-40	1460.81	*	10.67	6.66E-01	6.66E-01	1.66E+01	3.08E-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	4.57E-02	4.57E-02	8.72E-03	2.23E-02
		78.34		96.00	5.45E-02		9.35E-02	2.68E-02
	SC-46	889.25		99.98	5.21E-02	5.21E-02	-5.05E-03	2.42E-02
		1120.51		99.99	9.08E-02		8.57E-02	4.31E-02
	V-48	983.52		99.98	7.17E-02	6.86E-02	3.41E-03	3.33E-02
		1312.10		97.50	6.86E-02		-1.76E-02	3.10E-02
	CR-51	320.08		9.83	4.37E-01	4.37E-01	4.56E-02	2.09E-01
	MN-54	834.83		99.97	5.50E-02	5.50E-02	1.65E-03	2.57E-02
	CO-56	846.75		99.96	5.12E-02	5.12E-02	1.22E-04	2.37E-02
		1037.75		14.03	3.92E-01		-2.25E-01	1.80E-01
		1238.25		67.00	1.28E-01		5.18E-02	6.03E-02
		1771.40		15.51	1.82E-01		-3.80E-02	7.07E-02
		2598.48		16.90	1.73E-01		3.76E-02	6.49E-02
	CO-57	122.06		85.51	3.84E-02	3.84E-02	6.51E-03	1.86E-02
		136.48		10.60	3.23E-01		-1.32E-01	1.57E-01
	CO-58	810.76		99.40	4.57E-02	4.57E-02	-7.01E-03	2.10E-02
	FE-59	1099.22		56.50	1.12E-01	1.12E-01	3.22E-02	5.19E-02
		1291.56		43.20	1.52E-01		3.09E-03	6.99E-02
	CO-60	1173.22		100.00	6.40E-02	5.36E-02	4.83E-03	2.97E-02
		1332.49		100.00	5.36E-02		-1.59E-03	2.43E-02
	ZN-65	1115.52		50.75	1.50E-01	1.50E-01	1.65E-02	7.08E-02
	GA-67	93.31		35.70	4.41E-01	4.41E-01	6.34E-01	2.16E-01
		208.95		2.24	6.55E+00		2.97E+00	3.17E+00
		300.22		16.00	8.82E-01		-7.40E-01	4.23E-01
	SE-75	121.11		16.70	2.01E-01	5.80E-02	7.19E-03	9.77E-02
		136.00		59.20	6.01E-02		2.73E-03	2.92E-02
		264.65		59.80	5.80E-02		-7.46E-03	2.77E-02
		279.53		25.20	1.46E-01		5.85E-03	6.99E-02
		400.65		11.40	3.24E-01		-1.02E-02	1.53E-01
	RB-82	776.52		13.00	3.90E-01	3.90E-01	-4.02E-02	1.80E-01
	RB-83	520.41		46.00	8.67E-02	8.67E-02	3.02E-03	4.06E-02
		529.64		30.30	1.40E-01		6.65E-03	6.58E-02
		552.65		16.40	2.94E-01		3.08E-02	1.39E-01
	KR-85	513.99		0.43	1.42E+01	1.42E+01	1.65E+01	6.84E+00
	SR-85	513.99		99.27	6.63E-02	6.63E-02	7.67E-02	3.19E-02
	Y-88	898.02		93.40	5.47E-02	3.79E-02	-2.26E-02	2.53E-02
		1836.01		99.38	3.79E-02		-1.79E-03	1.57E-02
	NB-93M	16.57		9.43	5.11E+01	5.11E+01	5.12E+00	2.38E+01

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NB-94	702.63		100.00	4.85E-02	4.62E-02	-5.40E-03	2.27E-02
		871.10		100.00	4.62E-02		6.06E-04	2.13E-02
	NB-95	765.79		99.81	6.04E-02	6.04E-02	-1.77E-03	2.84E-02
	NB-95M	235.69		25.00	6.13E-01	6.13E-01	-2.57E+00	2.98E-01
	ZR-95	724.18		43.70	1.35E-01	9.50E-02	6.58E-02	6.39E-02
		756.72		55.30	9.50E-02		2.71E-03	4.44E-02
	MO-99	181.06		6.20	2.57E+00	1.77E+00	2.73E-01	1.24E+00
		739.58		12.80	1.77E+00		2.54E-01	8.28E-01
		778.00		4.50	4.70E+00		3.62E-02	2.18E+00
	RU-103	497.08		89.00	4.59E-02	4.59E-02	1.25E-02	2.15E-02
	RU-106	621.84		9.80	4.82E-01	4.82E-01	1.87E-01	2.27E-01
	AG-108M	433.93		89.90	4.44E-02	4.44E-02	-5.76E-03	2.10E-02
		614.37		90.40	5.14E-02		-3.31E-03	2.42E-02
		722.95		90.50	5.28E-02		-8.02E-02	2.47E-02
+	CD-109	88.03	*	3.72	2.37E+00	2.37E+00	1.36E+00	1.17E+00
	AG-110M	657.75		93.14	4.58E-02	4.58E-02	2.10E-02	2.13E-02
		677.61		10.53	4.27E-01		2.34E-04	1.99E-01
		706.67		16.46	2.97E-01		-9.10E-02	1.39E-01
		763.93		21.98	2.26E-01		2.40E-02	1.06E-01
		884.67		71.63	7.07E-02		3.64E-02	3.28E-02
		1384.27		23.94	1.89E-01		1.90E-03	8.38E-02
	CD-113M	263.70		0.02	1.49E+02	1.49E+02	4.17E+00	7.12E+01
	SN-113	255.12		1.93	1.84E+00	5.66E-02	-2.37E-02	8.83E-01
		391.69		64.90	5.66E-02		-1.02E-04	2.68E-02
	TE123M	159.00		84.10	4.21E-02	4.21E-02	-7.40E-03	2.04E-02
	SB-124	602.71		97.87	4.88E-02	4.88E-02	7.82E-03	2.30E-02
		645.85		7.26	7.58E-01		5.74E-01	3.58E-01
		722.78		11.10	4.61E-01		-7.01E-01	2.16E-01
		1691.02		49.00	5.12E-02		-3.17E-02	1.92E-02
	I-125	35.49		6.49	1.61E+00	1.61E+00	3.72E-01	7.78E-01
	SB-125	176.33		6.89	4.77E-01	1.40E-01	-3.74E-01	2.30E-01
		427.89		29.33	1.40E-01		-9.15E-03	6.63E-02
		463.38		10.35	4.46E-01		2.58E-01	2.12E-01
		600.56		17.80	2.52E-01		4.14E-02	1.19E-01
		635.90		11.32	4.17E-01		2.85E-01	1.96E-01
	SB-126	414.70		83.30	6.96E-02	6.68E-02	-4.54E-02	3.31E-02
		666.33		99.60	6.68E-02		3.97E-02	3.14E-02
		695.00		99.60	6.74E-02		-2.31E-02	3.16E-02
		720.50		53.80	1.21E-01		2.21E-02	5.65E-02
+	SN-126	87.57	*	37.00	2.36E-01	2.36E-01	1.36E-01	1.17E-01
	SB-127	473.00		25.00	5.31E-01	3.86E-01	1.10E-01	2.52E-01
		685.20		35.70	3.86E-01		-1.85E-01	1.80E-01
		783.80		14.70	1.01E+00		3.23E-01	4.74E-01
	I-129	29.78		57.00	3.06E-01	3.06E-01	-1.19E-01	1.48E-01
		33.60		13.20	8.68E-01		3.24E-01	4.20E-01
		39.58		7.52	9.11E-01		4.79E-02	4.40E-01
	I-131	284.30		6.05	9.77E-01	7.00E-02	2.95E-01	4.67E-01
		364.48		81.20	7.00E-02		-2.46E-02	3.31E-02
		636.97		7.26	1.08E+00		7.77E-01	5.06E-01
		722.89		1.80	4.48E+00		-6.81E+00	2.10E+00
	TE-132	49.72		13.10	1.29E+00	1.48E-01	-3.69E-01	6.24E-01
		228.16		88.00	1.48E-01		-7.55E-02	7.14E-02
	BA-133	81.00		33.00	1.18E-01	5.49E-02	2.69E-02	5.75E-02

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	2.04E-01	5.49E-02	4.91E-02	9.73E-02
	356.01	60.00	5.49E-02		1.97E-03	2.60E-02
I-133	529.87	86.30	6.04E+00	6.04E+00	2.87E-01	2.84E+00
CS-134	563.23	8.38	5.46E-01	5.65E-02	9.87E-02	2.58E-01
	569.32	15.43	2.99E-01		1.54E-02	1.41E-01
	604.70	97.60	5.65E-02		8.13E-04	2.69E-02
	795.84	85.40	6.30E-02		4.72E-02	2.96E-02
	801.93	8.73	5.52E-01		1.05E-01	2.57E-01
CS-135	268.24	16.00	2.44E-01	2.44E-01	2.58E-01	1.18E-01
I-135	1131.51	22.50	1.25E+06	1.00E+06	3.02E+05	5.82E+05
	1260.41	28.60	1.00E+06		7.45E+04	4.64E+05
	1678.03	9.54	1.73E+06		3.28E+05	7.32E+05
CS-136	153.22	7.46	6.89E-01	6.19E-02	3.23E-01	3.35E-01
	163.89	4.61	1.09E+00		6.21E-01	5.28E-01
	176.55	13.56	3.33E-01		-2.61E-01	1.61E-01
	273.65	12.66	3.71E-01		-6.06E-01	1.77E-01
	340.57	48.50	1.25E-01		8.85E-02	6.01E-02
	818.50	99.70	6.19E-02		-1.91E-02	2.86E-02
	1048.07	79.60	8.42E-02		2.16E-02	3.85E-02
	1235.34	19.70	5.49E-01		9.55E-02	2.58E-01
CS-137	661.65	85.12	5.06E-02	5.06E-02	-6.25E-04	2.36E-02
LA-138	788.74	34.00	1.43E-01	5.55E-02	2.98E-03	6.68E-02
	1435.80	66.00	5.55E-02		-1.92E-02	2.38E-02
CE-139	165.85	80.35	4.62E-02	4.62E-02	-1.24E-02	2.24E-02
BA-140	162.64	6.70	7.49E-01	2.36E-01	2.07E-01	3.63E-01
	304.84	4.50	9.99E-01		1.74E-02	4.74E-01
	423.70	3.20	1.71E+00		-1.09E+00	8.11E-01
	437.55	2.00	2.73E+00		1.47E-01	1.29E+00
	537.32	25.00	2.36E-01		-2.05E-02	1.11E-01
LA-140	328.77	20.50	2.83E-01	6.32E-02	3.44E-01	1.36E-01
	487.03	45.50	1.32E-01		3.19E-02	6.24E-02
	815.85	23.50	2.41E-01		-1.16E-01	1.11E-01
	1596.49	95.49	6.32E-02		0.00E+00	2.75E-02
CE-141	145.44	48.40	8.54E-02	8.54E-02	8.68E-02	4.15E-02
CE-143	57.36	11.80	8.07E+00	2.72E+00	-5.56E-01	3.93E+00
	293.26	42.00	2.72E+00		6.45E+00	1.32E+00
	664.55	5.20	1.86E+01		1.83E+00	8.73E+00
CE-144	133.54	10.80	3.27E-01	3.27E-01	2.06E-01	1.59E-01
PM-144	476.78	42.00	1.01E-01	4.69E-02	-2.19E-02	4.79E-02
	618.01	98.60	4.69E-02		1.24E-02	2.20E-02
	696.49	99.49	4.81E-02		-6.95E-03	2.25E-02
PM-145	36.85	21.70	4.00E-01	2.07E-01	1.21E-01	1.94E-01
	37.36	39.70	2.07E-01		5.44E-02	1.00E-01
	42.30	15.10	3.92E-01		-5.64E-02	1.89E-01
	72.40	2.31	2.09E+00		-1.93E+00	1.02E+00
PM-146	453.90	39.94	1.02E-01	1.02E-01	5.18E-02	4.81E-02
	735.90	14.01	3.73E-01		1.91E-01	1.75E-01
	747.13	13.10	3.41E-01		-2.05E-02	1.59E-01
ND-147	91.11	28.90	2.27E-01	2.27E-01	-2.25E-01	1.11E-01
	531.02	13.10	4.53E-01		1.35E-01	2.13E-01
PM-149	285.90	3.10	7.36E+00	7.36E+00	1.35E+00	3.51E+00
EU-152	121.78	20.50	1.58E-01	1.58E-01	2.67E-02	7.65E-02
	244.69	5.40	6.67E-01		-7.75E-01	3.20E-01

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	344.27		19.13	1.70E-01	1.58E-01	-2.30E-02	8.03E-02
		778.89		9.20	4.94E-01		-5.71E-02	2.29E-01
		964.01		10.40	6.60E-01		-1.29E+00	3.11E-01
		1085.78		7.22	7.92E-01		-4.07E-02	3.66E-01
		1112.02		9.60	6.68E-01		4.88E-02	3.11E-01
		1407.95		14.94	3.22E-01		-2.63E-02	1.43E-01
	GD-153	97.43		31.30	1.12E-01	1.12E-01	2.38E-02	5.44E-02
		103.18		22.20	1.56E-01		7.33E-02	7.59E-02
	EU-154	123.07		40.50	8.09E-02	8.09E-02	-3.94E-02	3.92E-02
		723.30		19.70	2.43E-01		-3.69E-01	1.14E-01
		873.19		11.50	3.83E-01		-5.59E-02	1.76E-01
		996.32		10.30	5.41E-01		-1.15E-01	2.51E-01
		1004.76		17.90	2.78E-01		-1.51E-01	1.28E-01
		1274.45		35.50	1.60E-01		-3.02E-02	7.31E-02
	EU-155	86.50		30.90	1.40E-01	1.40E-01	3.82E-02	6.84E-02
		105.30		20.70	1.68E-01		8.37E-02	8.15E-02
	EU-156	811.77		10.40	5.49E-01	5.49E-01	1.33E-02	2.53E-01
		1153.47		7.20	1.21E+00		5.60E-01	5.63E-01
		1230.71		8.90	1.04E+00		-5.04E-01	4.87E-01
	HO-166M	184.41		72.60	6.19E-02	6.19E-02	1.09E-01	3.01E-02
		280.45		29.60	1.18E-01		8.65E-03	5.62E-02
		410.94		11.10	4.05E-01		2.26E-01	1.93E-01
		711.69		54.10	8.49E-02		2.11E-02	3.96E-02
	TM-171	66.72		0.14	3.14E+01	3.14E+01	-5.24E+01	1.53E+01
	HF-172	81.75		4.52	8.59E-01	2.95E-01	1.97E-01	4.19E-01
		125.81		11.30	2.95E-01		-2.54E-01	1.43E-01
	LU-172	181.53		20.60	3.15E-01	1.58E-01	1.03E-01	1.52E-01
		810.06		16.63	5.01E-01		-1.88E-02	2.31E-01
		912.12		15.25	1.14E+00		2.48E+00	5.46E-01
		1093.66		62.50	1.58E-01		-1.05E-01	7.25E-02
	LU-173	100.72		5.24	6.36E-01	1.82E-01	-4.45E-01	3.09E-01
		272.11		21.20	1.82E-01		6.64E-02	8.76E-02
	HF-175	343.40		84.00	4.08E-02	4.08E-02	-5.54E-03	1.93E-02
	LU-176	88.34		13.30	3.34E-01	3.48E-02	4.03E-01	1.63E-01
		201.83		86.00	3.97E-02		3.19E-03	1.91E-02
		306.78		94.00	3.48E-02		1.62E-03	1.65E-02
	TA-182	67.75		41.20	1.09E-01	1.09E-01	2.07E-02	5.31E-02
		1121.30		34.90	2.60E-01		3.00E-01	1.23E-01
		1189.05		16.23	4.02E-01		1.84E-01	1.87E-01
		1221.41		26.98	2.32E-01		-1.18E-01	1.07E-01
		1231.02		11.44	6.38E-01		-3.09E-01	2.98E-01
	IR-192	308.46		29.68	1.14E-01	9.01E-02	-3.51E-02	5.41E-02
		468.07		48.10	9.01E-02		-2.70E-02	4.26E-02
	HG-203	279.19		77.30	5.32E-02	5.32E-02	1.75E-02	2.55E-02
	BI-207	569.67		97.72	4.61E-02	4.61E-02	-3.47E-03	2.17E-02
		1063.62		74.90	7.16E-02		-1.44E-02	3.30E-02
+	TL-208	583.14	*	30.22	1.89E-01	1.89E-01	6.62E-01	9.01E-02
		860.37	*	4.48	1.41E+00		1.32E+00	6.64E-01
		2614.66		35.85	3.27E-01		5.93E-01	1.54E-01
	BI-210M	262.00		45.00	7.82E-02	7.82E-02	2.46E-02	3.75E-02
		300.00		23.00	1.68E-01		-1.41E-01	8.08E-02
+	PB-210	46.50	*	4.25	1.46E+00	1.46E+00	9.61E-01	7.12E-01
	PB-211	404.84		2.90	1.26E+00	1.26E+00	-2.28E-01	5.94E-01

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

	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	1.69E+00	1.26E+00	-4.00E-01	7.85E-01
	BI-212	727.17		11.80	4.71E-01	4.71E-01	2.70E-01	2.22E-01
		1620.62		2.75	1.64E+00		5.26E-01	7.15E-01
+	PB-212	238.63	*	44.60	1.64E-01	1.64E-01	8.10E-01	8.05E-02
		300.09	*	3.41	2.10E+00		8.74E-01	1.03E+00
+	BI-214	609.31	*	46.30	1.47E-01	3.82E-02	5.86E-01	7.06E-02
		1120.29	*	15.10	6.29E-01		5.36E-01	3.00E-01
		1764.49	*	15.80	3.82E-02		9.02E-01	0.00E+00
		2204.22		4.98	1.06E+00		0.00E+00	4.63E-01
+	PB-214	295.21	*	19.19	3.70E-01	1.45E-01	7.24E-01	1.81E-01
		351.92	*	37.19	1.45E-01		6.83E-01	6.99E-02
	RN-219	401.80		6.50	5.39E-01	5.39E-01	-8.49E-02	2.54E-01
	RA-223	323.87		3.88	9.09E-01	9.09E-01	9.62E-02	4.33E-01
+	RA-224	240.98	*	3.95	1.87E+00	1.87E+00	2.82E+00	9.19E-01
	RA-225	40.00		31.00	2.86E-01	2.86E-01	1.50E-02	1.38E-01
+	RA-226	186.21	*	3.28	1.76E+00	1.76E+00	2.34E+00	8.61E-01
	TH-227	50.10		8.40	5.45E-01	4.15E-01	-1.56E-01	2.64E-01
		236.00		11.50	4.15E-01		-1.74E+00	2.02E-01
		256.20		6.30	5.31E-01		-1.31E-01	2.54E-01
+	AC-228	338.32	*	11.40	4.80E-01	2.36E-01	8.34E-01	2.32E-01
		911.07	*	27.70	2.36E-01		7.93E-01	1.11E-01
		969.11	*	16.60	5.11E-01		7.51E-01	2.44E-01
	TH-230	48.44		16.90	3.16E-01	3.16E-01	5.24E-02	1.54E-01
		62.85		4.60	1.06E+00		1.43E+00	5.20E-01
		67.67		0.37	1.17E+01		2.23E+00	5.70E+00
	PA-231	283.67		1.60	2.13E+00	1.57E+00	-3.46E-02	1.02E+00
		302.67		2.30	1.57E+00		3.80E-01	7.52E-01
	TH-231	25.64		14.70	2.66E+00	6.32E-01	1.43E-01	1.29E+00
		84.21		6.40	6.32E-01		-9.58E-01	3.09E-01
	PA-233	311.98		38.60	1.01E-01	1.01E-01	6.40E-03	4.78E-02
	PA-234	131.20		20.40	1.74E-01	1.74E-01	8.57E-02	8.46E-02
		733.99		8.80	5.67E-01		-2.03E-02	2.66E-01
		946.00		12.00	4.42E-01		2.06E-02	2.05E-01
	PA-234M	1001.03		0.92	6.17E+00	6.17E+00	2.27E+00	2.87E+00
	TH-234	63.29		3.80	1.28E+00	1.28E+00	1.08E+00	6.25E-01
	U-235	143.76		10.50	3.40E-01	3.40E-01	8.29E-02	1.65E-01
		163.35		4.70	7.74E-01		4.41E-01	3.75E-01
		205.31		4.70	7.87E-01		-5.26E-01	3.80E-01
	NP-237	86.50		12.60	3.42E-01	3.42E-01	9.34E-02	1.67E-01
	NP-239	106.10		22.70	9.14E-01	9.14E-01	4.56E-01	4.44E-01
		228.18		10.70	2.00E+00		-1.02E+00	9.64E-01
		277.60		14.10	1.60E+00		6.53E-01	7.68E-01
	AM-241	59.54		35.90	1.24E-01	1.24E-01	-1.12E-01	6.02E-02
+	AM-243	74.67	*	66.00	1.03E-01	1.03E-01	1.63E-01	5.08E-02
	CM-243	209.75		3.29	1.22E+00	2.70E-01	1.31E+00	5.92E-01
		228.14		10.60	3.38E-01		-1.72E-01	1.63E-01
		277.60		14.00	2.70E-01		1.10E-01	1.29E-01

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

Analysis Report for 1411131-07

J1V1L9 SAF: RC-107

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: J1V1L9 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	64	60	73	67	57	78
25:	70	68	61	48	68	51	48	59
33:	61	57	67	60	59	73	58	59
41:	51	52	57	79	62	85	142	78
49:	60	60	82	64	86	78	92	84
57:	79	85	108	111	97	101	148	212
65:	119	95	125	112	137	116	108	121
73:	135	141	281	246	298	351	130	96
81:	113	109	99	126	123	106	151	192
89:	121	136	139	123	233	163	100	86
97:	87	93	89	84	79	65	84	94
105:	95	86	73	88	73	84	74	70
113:	83	76	69	77	60	83	65	63
121:	69	64	95	61	69	92	68	71
129:	83	95	66	83	75	86	64	75
137:	64	78	71	72	78	80	65	98
145:	72	64	67	86	54	65	82	82
153:	75	87	79	67	61	69	62	60
161:	62	65	65	80	70	66	57	60
169:	75	59	54	59	66	55	40	56
177:	58	58	44	69	56	51	55	47
185:	90	172	103	63	61	42	52	52
193:	59	52	55	48	54	54	49	50
201:	47	43	52	45	55	64	55	55
209:	75	82	54	51	39	43	42	49
217:	49	48	43	43	54	46	41	57
225:	57	43	40	38	45	58	52	45
233:	50	41	47	50	41	209	488	115
241:	95	129	67	36	42	29	32	32
249:	30	35	39	33	45	38	29	30
257:	34	35	35	34	37	39	31	38
265:	20	39	31	32	35	58	60	32
273:	22	31	37	36	52	40	35	28
281:	33	31	32	29	31	27	39	21
289:	29	20	26	32	40	35	136	119
297:	41	32	21	53	39	36	20	25
305:	35	22	19	25	22	28	22	24
313:	26	24	22	27	29	25	23	36
321:	26	39	33	25	19	17	35	55
329:	38	37	20	24	21	30	14	17
337:	38	88	84	30	43	18	22	19
345:	17	25	19	33	24	32	80	233
353:	112	32	15	12	18	23	18	26
361:	28	17	20	16	22	23	20	24

369:	25	18	18	16	16	26	20	29

Sample Title: J1V1L9 SAF: RC-107

Channel								
377:	16	25	16	21	21	15	12	22
385:	9	28	19	20	21	22	15	15
393:	21	28	20	20	16	20	27	13
401:	15	22	22	23	20	16	21	17
409:	32	39	9	14	18	26	11	22
417:	19	18	20	26	14	14	22	13
425:	20	12	17	18	20	17	15	20
433:	15	9	16	16	20	14	17	16
441:	7	22	11	15	12	20	15	16
449:	17	16	17	17	14	12	15	17
457:	15	6	10	18	11	24	35	21
465:	13	14	17	17	13	14	16	17
473:	26	15	11	23	16	17	9	16
481:	12	15	12	16	19	15	17	15
489:	15	12	15	13	11	13	14	11
497:	12	9	4	12	14	15	24	16
505:	18	10	16	18	21	58	89	46
513:	30	12	13	10	12	10	16	11
521:	6	12	8	12	15	7	10	12
529:	10	14	12	11	14	10	14	8
537:	16	15	15	10	12	10	19	23
545:	11	10	16	13	11	17	15	18
553:	15	13	13	11	15	15	13	16
561:	9	16	14	8	19	15	12	11
569:	18	19	8	14	11	16	7	7
577:	20	10	16	8	11	42	141	52
585:	28	14	7	12	12	14	10	11
593:	11	9	9	6	17	8	14	13
601:	13	12	15	9	13	8	15	56
609:	146	99	15	10	21	12	9	14
617:	13	9	9	19	11	9	12	13
625:	14	10	8	6	9	10	11	6
633:	11	5	18	14	10	9	18	8
641:	6	6	13	13	12	13	16	15
649:	18	11	12	7	6	8	7	12
657:	11	8	10	10	5	6	6	12
665:	17	8	11	13	13	11	8	8
673:	18	7	13	12	4	9	7	13
681:	9	8	7	13	10	12	14	8
689:	13	17	14	12	12	8	6	13
697:	14	11	15	7	12	10	11	8
705:	14	15	9	12	10	7	13	15
713:	7	6	9	4	9	12	4	12
721:	12	8	10	9	11	9	38	16
729:	11	3	13	8	14	13	4	13
737:	11	15	13	9	5	7	12	8
745:	12	8	9	4	7	10	8	8
753:	8	11	10	12	12	10	9	6
761:	11	11	13	6	12	8	7	22
769:	14	8	6	13	7	3	9	7
777:	11	6	5	9	10	8	7	12
785:	14	8	9	10	7	16	9	5
793:	9	20	19	9	4	12	4	9

801:	3	14	12	9	9	8	10	6

Sample Title: J1V1L9 SAF: RC-107

Channel								
809:	6	7	4	11	6	6	7	5
817:	6	6	5	6	11	11	12	10
825:	10	6	7	10	7	5	3	10
833:	12	11	11	12	10	7	11	18
841:	6	8	9	4	8	9	6	8
849:	11	10	3	12	5	7	11	6
857:	6	9	10	21	17	12	14	8
865:	7	7	9	11	6	5	8	4
873:	7	7	3	9	7	4	5	3
881:	5	11	3	9	8	7	5	12
889:	4	8	11	7	7	9	11	9
897:	7	7	6	5	7	14	7	9
905:	10	8	6	6	12	49	72	38
913:	14	3	6	10	4	5	2	5
921:	8	7	1	6	10	8	11	8
929:	5	6	5	5	15	16	8	4
937:	7	7	8	8	7	6	10	9
945:	9	9	8	5	6	7	10	14
953:	10	10	12	5	6	8	6	6
961:	9	4	13	27	21	7	13	42
969:	48	14	3	4	8	6	9	7
977:	10	3	10	7	13	7	8	7
985:	7	8	7	8	7	3	4	8
993:	12	5	6	10	12	7	5	9
1001:	14	8	3	13	3	2	7	8
1009:	6	8	10	7	10	12	6	4
1017:	5	8	8	4	8	1	7	11
1025:	3	8	2	6	3	6	12	6
1033:	15	5	7	10	8	7	3	3
1041:	8	11	7	3	5	4	12	4
1049:	4	4	6	4	5	8	9	9
1057:	9	11	5	7	5	7	8	6
1065:	9	7	5	12	6	7	6	11
1073:	6	8	7	7	8	11	5	13
1081:	9	7	8	10	6	12	5	2
1089:	9	9	6	11	3	6	8	3
1097:	6	10	9	9	8	7	9	1
1105:	6	5	8	10	11	7	8	8
1113:	8	8	14	8	9	10	32	41
1121:	11	9	7	12	6	11	4	6
1129:	6	12	10	8	11	9	8	7
1137:	3	10	8	11	13	10	7	14
1145:	5	7	8	6	7	5	7	5
1153:	10	15	11	11	7	6	9	6
1161:	14	8	10	8	8	4	13	4
1169:	4	8	11	7	9	10	6	7
1177:	12	9	12	6	8	4	7	7
1185:	6	4	9	9	10	6	6	11
1193:	6	3	9	4	10	8	8	9
1201:	8	15	13	10	11	9	13	11
1209:	13	9	10	6	13	9	8	11
1217:	16	8	8	6	6	6	7	7
1225:	9	4	11	11	7	9	13	9

1233:	13	4	14	17	12	14	10	11

Sample Title: J1V1L9 SAF: RC-107

Channel								
1241:	11	8	14	6	6	6	7	12
1249:	4	5	8	4	10	3	10	2
1257:	8	8	5	7	2	13	11	11
1265:	6	7	3	11	5	6	5	10
1273:	5	4	7	4	4	10	4	5
1281:	6	12	7	3	10	7	8	6
1289:	7	6	9	2	6	7	6	4
1297:	4	3	4	6	5	8	1	5
1305:	1	5	6	4	4	7	7	3
1313:	2	3	4	4	7	8	4	4
1321:	4	5	5	2	6	8	8	2
1329:	4	4	5	10	4	3	2	3
1337:	6	7	3	3	4	2	6	6
1345:	5	7	3	5	0	3	6	4
1353:	5	6	6	3	5	3	2	3
1361:	2	1	2	1	2	4	2	3
1369:	4	2	5	3	2	3	1	12
1377:	13	6	2	2	3	1	3	5
1385:	5	1	2	5	1	3	1	3
1393:	2	0	5	1	3	6	5	5
1401:	5	4	3	3	2	4	5	4
1409:	1	4	3	4	4	4	7	0
1417:	1	4	1	3	2	4	4	1
1425:	2	0	0	3	0	4	2	1
1433:	2	2	1	1	2	3	1	4
1441:	3	4	0	0	4	2	3	1
1449:	3	2	5	1	5	3	0	2
1457:	6	44	227	396	207	38	6	5
1465:	3	3	2	2	2	2	2	3
1473:	1	0	2	0	0	0	1	1
1481:	2	0	3	1	2	3	0	0
1489:	1	2	1	1	0	4	2	0
1497:	1	0	0	3	1	0	2	0
1505:	2	3	2	3	3	2	2	3
1513:	2	2	2	1	0	3	2	1
1521:	1	2	0	2	2	3	2	2
1529:	0	1	3	2	1	0	0	0
1537:	3	1	0	1	0	1	5	1
1545:	0	4	1	3	1	1	2	0
1553:	0	1	3	1	0	1	1	2
1561:	3	4	3	0	3	2	1	0
1569:	3	0	1	0	1	0	1	1
1577:	1	1	2	0	2	0	2	1
1585:	2	3	9	8	2	2	1	4
1593:	8	2	1	1	1	1	1	0
1601:	2	1	1	3	0	2	0	0
1609:	0	2	1	4	1	4	0	2
1617:	1	2	5	4	1	3	0	3
1625:	0	2	3	1	5	2	2	3
1633:	1	2	0	1	3	1	1	3
1641:	0	0	0	3	1	2	1	3
1649:	1	2	0	3	1	2	1	0
1657:	1	1	1	3	2	3	0	1

1665:	0	2	2	0	0	0	0	3

Sample Title: J1V1L9 SAF: RC-107

Channel								
1673:	0	3	1	2	0	1	4	1
1681:	1	1	0	1	2	1	1	1
1689:	1	0	0	1	0	0	0	3
1697:	0	1	0	0	0	0	1	2
1705:	2	1	1	0	3	2	2	1
1713:	0	2	1	0	0	1	0	1
1721:	0	1	2	0	2	1	2	7
1729:	6	4	0	2	1	2	0	0
1737:	1	0	1	1	0	1	1	2
1745:	1	0	1	1	1	0	0	1
1753:	0	0	4	2	0	1	0	0
1761:	3	8	19	23	6	2	3	0
1769:	0	0	0	2	2	0	0	1
1777:	2	1	1	0	2	2	1	1
1785:	1	0	1	1	1	0	0	1
1793:	2	1	0	2	0	0	2	0
1801:	1	2	1	1	1	0	2	1
1809:	1	1	0	3	1	0	1	0
1817:	0	1	0	0	0	2	1	0
1825:	2	0	1	1	1	1	1	2
1833:	0	0	2	3	1	1	1	1
1841:	1	2	2	2	8	6	1	0
1849:	0	1	3	0	0	1	0	1
1857:	2	0	0	0	1	0	2	0
1865:	3	1	2	0	1	0	1	0
1873:	1	0	2	1	1	0	1	2
1881:	0	0	0	0	2	0	0	1
1889:	1	0	1	0	0	1	1	1
1897:	0	0	1	1	1	1	2	1
1905:	0	4	0	1	2	2	2	2
1913:	2	1	2	1	2	1	2	2
1921:	1	1	1	1	2	2	1	1
1929:	1	0	2	0	1	2	0	3
1937:	0	0	0	0	0	0	0	2
1945:	1	1	2	0	0	3	0	0
1953:	1	0	0	0	2	0	3	3
1961:	2	0	2	0	1	1	1	0
1969:	0	1	0	1	1	1	1	1
1977:	1	2	1	0	0	4	1	0
1985:	0	0	1	1	0	0	0	1
1993:	2	2	2	0	1	1	0	2
2001:	0	0	3	0	0	1	0	1
2009:	0	0	1	1	0	2	0	1
2017:	2	0	0	2	2	0	1	2
2025:	0	1	0	1	2	2	1	0
2033:	3	1	2	1	1	0	1	0
2041:	2	0	4	0	0	0	1	0
2049:	0	0	0	1	1	1	0	0
2057:	2	2	1	4	1	0	0	2
2065:	0	2	0	0	3	3	1	1
2073:	0	1	1	0	0	0	1	2
2081:	2	1	1	0	0	0	1	0
2089:	0	0	1	0	1	0	0	0

2097:	1	1	1	2	6	4	3	4

Sample Title: J1V1L9 SAF: RC-107

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

2529:	0	0	0	2	0	1	0	0

Sample Title: J1V1L9 SAF: RC-107

Channel								
2537:	2	0	0	1	0	0	2	0
2545:	0	0	1	0	0	0	0	0
2553:	0	0	0	0	0	0	0	0
2561:	1	0	0	1	0	0	0	1
2569:	0	0	0	0	1	1	1	0
2577:	0	1	0	0	0	0	2	0
2585:	0	0	0	1	0	0	1	0
2593:	0	1	1	0	0	0	1	0
2601:	0	0	0	0	0	0	0	0
2609:	2	2	19	30	22	5	2	3
2617:	1	0	0	0	0	0	0	0
2625:	0	0	0	0	0	0	0	0
2633:	1	0	1	2	2	1	1	0
2641:	0	0	0	0	1	0	0	0
2649:	0	1	0	0	0	0	1	1
2657:	1	0	1	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	1	0	0	1	0	0	0
2681:	1	1	0	1	0	0	0	1
2689:	0	3	1	0	0	0	0	0
2697:	0	3	2	1	0	2	1	1
2705:	1	0	0	0	0	0	1	1
2713:	0	0	0	0	1	2	0	0
2721:	0	0	2	0	0	0	0	0
2729:	1	1	0	0	1	0	0	0
2737:	0	0	0	0	1	0	0	0
2745:	1	0	0	0	1	0	0	1
2753:	0	0	0	2	0	0	0	0
2761:	0	0	0	0	0	0	0	1
2769:	0	0	0	0	0	0	1	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	1	0	0	0	0	0
2793:	0	0	0	0	0	0	0	1
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	1	0	0	0
2817:	0	0	1	2	0	0	0	0
2825:	0	0	0	1	1	0	1	0
2833:	1	0	1	1	0	0	0	0
2841:	0	1	0	0	0	0	0	0
2849:	2	1	0	0	0	1	0	0
2857:	0	0	0	0	1	0	0	0
2865:	0	0	0	1	0	1	0	1
2873:	0	1	0	0	1	0	0	0
2881:	0	1	2	0	0	0	2	0
2889:	0	0	0	0	0	1	0	1
2897:	0	0	0	0	0	1	0	0
2905:	0	0	0	0	1	1	0	1
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	1	1	0	0	0	0
2937:	2	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	1	1	0	0	0	0	0	0

Sample Title: J1V1L9 SAF: RC-107

Channel								
2969:	0	0	0	0	0	0	0	0
2977:	1	0	0	2	0	0	0	1
2985:	0	1	0	0	0	1	0	1
2993:	1	0	0	1	0	0	0	0
3001:	0	0	0	0	0	1	1	0
3009:	0	1	0	0	0	0	0	0
3017:	0	1	0	0	1	0	0	1
3025:	0	0	0	0	0	0	0	0
3033:	0	3	1	0	1	0	0	0
3041:	0	1	0	0	0	0	0	1
3049:	0	0	1	0	0	0	0	1
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	1	0	0	0	0	0	0	0
3081:	0	0	0	0	1	0	0	0
3089:	1	2	1	1	0	0	0	0
3097:	0	1	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:	1	0	0	0	0	0	0	0
3129:	0	0	1	1	0	1	1	0
3137:	0	0	1	2	0	0	0	0
3145:	0	1	0	0	1	0	0	0
3153:	0	0	0	1	0	0	0	1
3161:	0	0	1	0	0	0	0	0
3169:	0	0	0	0	0	0	0	1
3177:	0	0	1	0	0	0	1	0
3185:	0	0	1	0	0	0	0	1
3193:	0	0	0	3	1	0	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	1	0	0	0
3225:	0	0	0	0	0	1	0	0
3233:	0	1	0	2	0	0	0	1
3241:	1	0	0	0	0	0	0	0
3249:	1	0	1	2	1	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	1	0	0
3273:	1	2	0	0	0	0	2	0
3281:	0	0	0	0	0	0	0	1
3289:	0	0	0	1	1	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	1	0
3329:	0	0	1	1	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	1	0	0	0	0	0
3353:	0	0	0	1	0	0	0	0
3361:	0	0	0	1	0	0	0	0
3369:	0	0	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	0	0	1

Sample Title: J1V1L9 SAF: RC-107

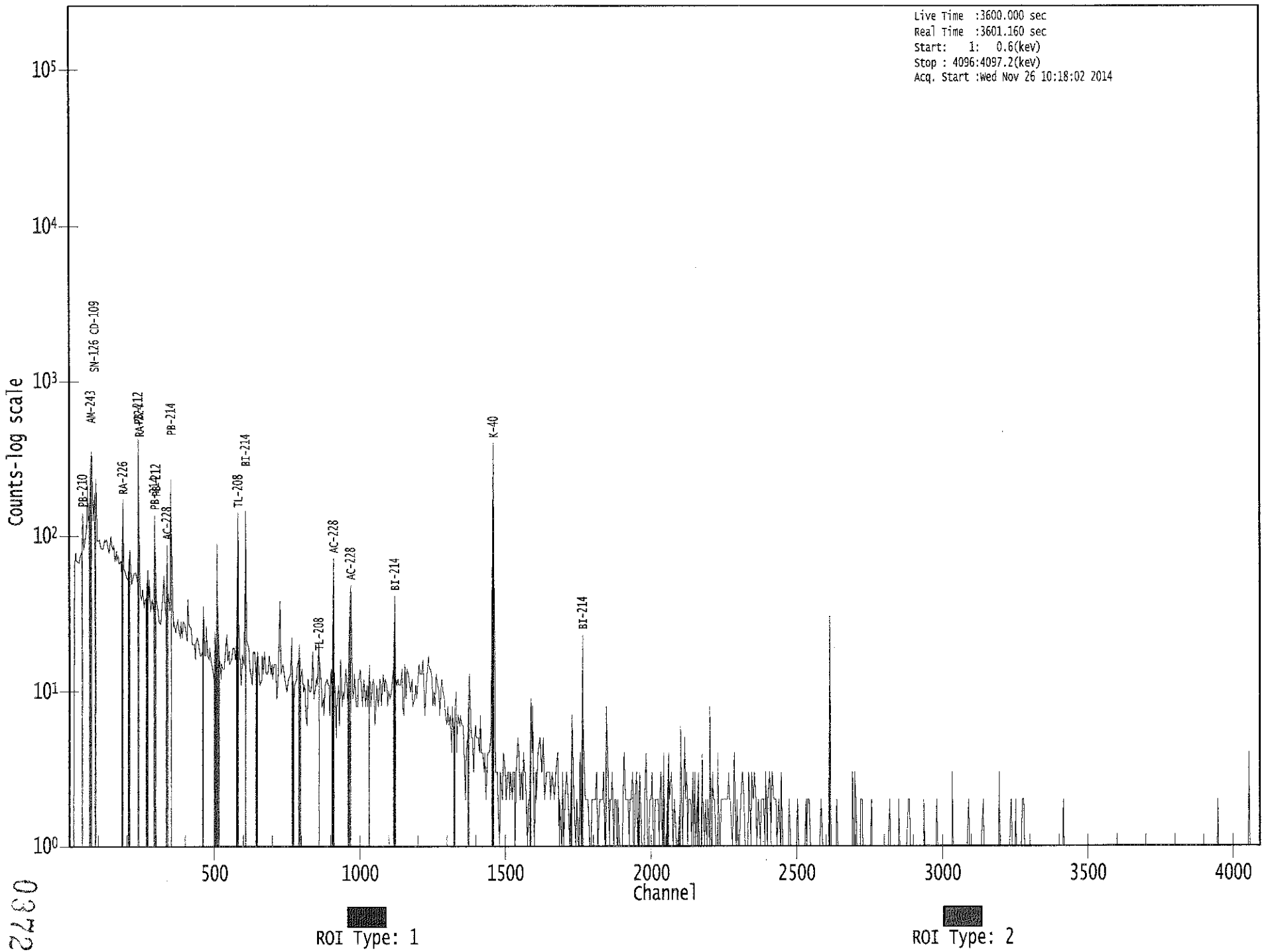
Channel								
3401:	0	0	0	1	0	0	0	0
3409:	0	0	0	0	0	0	0	2
3417:	0	0	0	0	0	0	1	0
3425:	1	0	0	0	0	0	0	0
3433:	0	0	0	1	0	0	0	0
3441:	0	0	0	0	1	0	0	0
3449:	1	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	1	0	0	1
3497:	0	0	0	0	0	0	0	0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

3825:	0	0	0	0	0	0	0	0

Sample Title: J1V1L9 SAF: RC-107

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	1	1
3857:	0	0	0	0	0	0	1	0
3865:	0	1	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	1	0
3889:	0	0	0	0	0	0	0	0
3897:	1	0	1	0	1	0	0	0
3905:	0	0	1	0	0	0	0	0
3913:	0	0	1	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	1	0	0	0	0	0	0
3937:	1	0	0	0	0	0	0	0
3945:	0	0	0	2	0	0	0	0
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	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	1	0	0
4001:	1	0	0	0	0	0	0	0
4009:	1	0	0	0	0	1	1	0
4017:	0	0	0	0	0	1	0	0
4025:	0	0	0	1	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	4	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	1	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	1
4089:	0	0	0	0	0	0	1	0

0000015638.CNF



0372

Apex-Gamma

Analysis Report for 1411131-08
J1V1M1 SAF: RC-107

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-08
Sample Description	: J1V1M1 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.128E+02 grams
Facility	: Countroom
Sample Taken On	: 11/20/2014 8:56:29AM
Acquisition Started	: 11/26/2014 9:51:47AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3601.0 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 7 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/2/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15625

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG 11/26/14

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 10:51:51AM
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	26.46	26.57	0.0000	0.00
2	75.81	75.90	0.0000	0.00
3	84.25	84.33	0.0000	0.00
4	186.20	186.22	0.0000	0.00
5	208.92	208.93	0.0000	0.00
6	238.80	238.80	0.0000	0.00
7	242.23	242.22	0.0000	0.00
8	295.14	295.11	0.0000	0.00
9	299.90	299.86	0.0000	0.00
10	327.64	327.59	0.0000	0.00
11	337.95	337.89	0.0000	0.00
12	351.89	351.82	0.0000	0.00
13	364.88	364.81	0.0000	0.00
14	373.03	372.95	0.0000	0.00
15	462.57	462.45	0.0000	0.00
16	510.71	510.57	0.0000	0.00
17	554.20	554.04	0.0000	0.00
18	583.04	582.86	0.0000	0.00
19	605.02	604.83	0.0000	0.00
20	609.25	609.06	0.0000	0.00
21	727.00	726.76	0.0000	0.00
22	794.91	794.64	0.0000	0.00
23	860.37	860.07	0.0000	0.00
24	911.07	910.75	0.0000	0.00
25	934.34	934.00	0.0000	0.00
26	964.50	964.15	0.0000	0.00
27	968.86	968.51	0.0000	0.00
28	1077.37	1076.98	0.0000	0.00
29	1120.03	1119.63	0.0000	0.00
30	1172.54	1172.12	0.0000	0.00
31	1259.39	1258.93	0.0000	0.00
32	1376.47	1375.98	0.0000	0.00
33	1460.29	1459.76	0.0000	0.00
34	1629.98	1629.41	0.0000	0.00
35	1646.68	1646.11	0.0000	0.00
36	1763.77	1763.17	0.0000	0.00
37	1977.23	1976.57	0.0000	0.00
38	2074.57	2073.90	0.0000	0.00
39	2204.73	2204.03	0.0000	0.00
40	2257.56	2256.86	0.0000	0.00
41	2502.84	2502.11	0.0000	0.00
42	2613.26	2612.52	0.0000	0.00

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 10:51:51AM

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	26.46	25 -	29	26.57	1.08E+02	77.69	1.17E+03	2.50
	2	75.81	71 -	83	75.90	5.56E+02	145.44	2.24E+03	3.57
M	3	84.25	83 -	91	84.33	5.30E+01	32.80	3.22E+02	1.33
	4	186.20	182 -	189	186.22	1.71E+02	71.22	7.29E+02	1.27
	5	208.92	206 -	212	208.93	6.56E+01	57.19	5.43E+02	1.35
M	6	238.80	234 -	246	238.80	4.94E+02	60.05	3.08E+02	1.55
m	7	242.23	234 -	246	242.22	8.33E+01	43.47	2.49E+02	1.56
M	8	295.14	291 -	302	295.11	1.74E+02	37.20	1.77E+02	1.50
m	9	299.90	291 -	302	299.86	3.18E+01	34.00	2.28E+02	1.50
	10	327.64	324 -	331	327.59	4.10E+01	44.68	3.00E+02	1.80
	11	337.95	334 -	342	337.89	1.19E+02	50.85	3.26E+02	1.64
	12	351.89	347 -	356	351.82	2.68E+02	62.26	4.02E+02	1.73
	13	364.88	360 -	370	364.81	7.94E+01	48.40	2.71E+02	8.59
	14	373.03	371 -	375	372.95	2.76E+01	26.32	1.29E+02	2.46
	15	462.57	458 -	465	462.45	3.57E+01	36.00	1.93E+02	1.18
	16	510.71	507 -	513	510.57	1.18E+02	35.53	1.44E+02	2.58
	17	554.20	550 -	557	554.04	2.68E+01	32.19	1.52E+02	1.10
	18	583.04	579 -	586	582.86	1.61E+02	40.64	1.69E+02	1.39
M	19	605.02	604 -	614	604.83	1.43E+01	11.62	3.59E+01	1.87
m	20	609.25	604 -	614	609.06	2.29E+02	36.09	8.71E+01	1.67
	21	727.00	723 -	730	726.76	3.85E+01	30.33	1.27E+02	1.93
	22	794.91	791 -	799	794.64	4.58E+01	25.46	7.04E+01	2.23
	23	860.37	855 -	863	860.07	4.06E+01	26.24	8.09E+01	1.71
	24	911.07	906 -	917	910.75	1.48E+02	37.42	9.85E+01	2.23
	25	934.34	929 -	940	934.00	5.43E+01	28.21	7.33E+01	2.73
M	26	964.50	962 -	978	964.15	2.16E+01	13.27	2.09E+01	2.16
m	27	968.86	962 -	978	968.51	9.20E+01	24.76	3.74E+01	2.05
	28	1077.37	1071 -	1086	1076.98	3.40E+01	41.67	1.60E+02	3.45
	29	1120.03	1116 -	1125	1119.63	5.27E+01	34.58	1.43E+02	2.05
	30	1172.54	1170 -	1175	1172.12	1.80E+01	16.03	3.40E+01	3.27
	31	1259.39	1256 -	1262	1258.93	2.36E+01	12.85	1.08E+01	2.94
	32	1376.47	1371 -	1380	1375.98	1.80E+01	16.79	3.00E+01	3.05
	33	1460.29	1443 -	1468	1459.76	6.96E+02	66.00	1.11E+02	2.02
	34	1629.98	1625 -	1633	1629.41	1.70E+01	8.25	0.00E+00	4.54
	35	1646.68	1642 -	1648	1646.11	5.07E+00	6.34	3.86E+00	1.69
	36	1763.77	1759 -	1767	1763.17	3.55E+01	14.16	9.00E+00	1.77
	37	1977.23	1972 -	1979	1976.57	5.88E+00	6.93	4.25E+00	2.61
	38	2074.57	2069 -	2077	2073.90	4.79E+00	6.95	4.43E+00	2.85
	39	2204.73	2199 -	2209	2204.03	2.41E+01	14.65	1.38E+01	3.94
	40	2257.56	2254 -	2259	2256.86	7.00E+00	5.29	0.00E+00	2.99

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2502.84	2498 -	2505	2502.11	4.08E+00	6.32	3.83E+00	1.16
42	2613.26	2608 -	2617	2612.52	7.10E+01	16.85	0.00E+00	2.76

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 10:51:51AM

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	26.46	25 -	29	1.08E+02	77.69	1.17E+03	6.15E+01
	2	75.81	71 -	83	5.56E+02	145.44	2.24E+03	1.13E+02
M	3	84.25	83 -	91	5.30E+01	32.80	3.22E+02	2.95E+01
	4	186.20	182 -	189	1.71E+02	71.22	7.29E+02	5.44E+01
	5	208.92	206 -	212	6.56E+01	57.19	5.43E+02	4.51E+01
M	6	238.80	234 -	246	4.94E+02	60.05	3.08E+02	2.88E+01
m	7	242.23	234 -	246	8.33E+01	43.47	2.49E+02	2.60E+01
M	8	295.14	291 -	302	1.74E+02	37.20	1.77E+02	2.19E+01
m	9	299.90	291 -	302	3.18E+01	34.00	2.28E+02	2.48E+01
	10	327.64	324 -	331	4.10E+01	44.68	3.00E+02	3.52E+01
	11	337.95	334 -	342	1.19E+02	50.85	3.26E+02	3.78E+01
	12	351.89	347 -	356	2.68E+02	62.26	4.02E+02	4.35E+01
	13	364.88	360 -	370	7.94E+01	48.40	2.71E+02	3.70E+01
	14	373.03	371 -	375	2.76E+01	26.32	1.29E+02	1.98E+01
	15	462.57	458 -	465	3.57E+01	36.00	1.93E+02	2.79E+01
	16	510.71	507 -	513	1.18E+02	35.53	1.44E+02	2.31E+01
	17	554.20	550 -	557	2.68E+01	32.19	1.52E+02	2.51E+01
	18	583.04	579 -	586	1.61E+02	40.64	1.69E+02	2.61E+01
M	19	605.02	604 -	614	1.43E+01	11.62	3.59E+01	9.85E+00
m	20	609.25	604 -	614	2.29E+02	36.09	8.71E+01	1.53E+01
	21	727.00	723 -	730	3.85E+01	30.33	1.27E+02	2.28E+01
	22	794.91	791 -	799	4.58E+01	25.46	7.04E+01	1.77E+01
	23	860.37	855 -	863	4.06E+01	26.24	8.09E+01	1.89E+01
	24	911.07	906 -	917	1.48E+02	37.42	9.85E+01	2.34E+01
	25	934.34	929 -	940	5.43E+01	28.21	7.33E+01	1.98E+01

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	26	964.50	962 -	978	2.16E+01	13.27	2.09E+01	7.52E+00
m	27	968.86	962 -	978	9.20E+01	24.76	3.74E+01	1.01E+01
	28	1077.37	1071 -	1086	3.40E+01	41.67	1.60E+02	3.29E+01
	29	1120.03	1116 -	1125	5.27E+01	34.58	1.43E+02	2.58E+01
	30	1172.54	1170 -	1175	1.80E+01	16.03	3.40E+01	1.12E+01
	31	1259.39	1256 -	1262	2.36E+01	12.85	1.08E+01	6.90E+00
	32	1376.47	1371 -	1380	1.80E+01	16.79	3.00E+01	1.19E+01
	33	1460.29	1443 -	1468	6.96E+02	66.00	1.11E+02	1.04E+01
	34	1629.98	1625 -	1633	1.70E+01	8.25	0.00E+00	0.00E+00
	35	1646.68	1642 -	1648	5.07E+00	6.34	3.86E+00	3.67E+00
	36	1763.77	1759 -	1767	3.55E+01	14.16	9.00E+00	6.29E+00
	37	1977.23	1972 -	1979	5.88E+00	6.93	4.25E+00	4.07E+00
	38	2074.57	2069 -	2077	4.79E+00	6.95	4.43E+00	4.43E+00
	39	2204.73	2199 -	2209	2.41E+01	14.65	1.38E+01	8.95E+00
	40	2257.56	2254 -	2259	7.00E+00	5.29	0.00E+00	0.00E+00
	41	2502.84	2498 -	2505	4.08E+00	6.32	3.83E+00	4.00E+00
	42	2613.26	2608 -	2617	7.10E+01	16.85	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 10:51:51AM

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	26.46	25 -	29	26.57	1.08E+02	77.69	1.17E+03	TH-231
	2	75.81	71 -	83	75.90	5.56E+02	145.44	2.24E+03	.....
M	3	84.25	83 -	91	84.33	5.30E+01	32.80	3.22E+02	TH-231
	4	186.20	182 -	189	186.22	1.71E+02	71.22	7.29E+02	RA-226
	5	208.92	206 -	212	208.93	6.56E+01	57.19	5.43E+02	GA-67
									CM-243
M	6	238.80	234 -	246	238.80	4.94E+02	60.05	3.08E+02	PB-212
m	7	242.23	234 -	246	242.22	8.33E+01	43.47	2.49E+02	.....

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	8	295.14	291 -	302	295.11	1.74E+02	37.20	1.77E+02	PB-214
m	9	299.90	291 -	302	299.86	3.18E+01	34.00	2.28E+02	BI-210M PB-212 GA-67
	10	327.64	324 -	331	327.59	4.10E+01	44.68	3.00E+02	.....
	11	337.95	334 -	342	337.89	1.19E+02	50.85	3.26E+02	AC-228
	12	351.89	347 -	356	351.82	2.68E+02	62.26	4.02E+02	PB-214
	13	364.88	360 -	370	364.81	7.94E+01	48.40	2.71E+02	I-131
	14	373.03	371 -	375	372.95	2.76E+01	26.32	1.29E+02	.....
	15	462.57	458 -	465	462.45	3.57E+01	36.00	1.93E+02	SB-125
	16	510.71	507 -	513	510.57	1.18E+02	35.53	1.44E+02	.....
	17	554.20	550 -	557	554.04	2.68E+01	32.19	1.52E+02	.....
	18	583.04	579 -	586	582.86	1.61E+02	40.64	1.69E+02	TL-208
M	19	605.02	604 -	614	604.83	1.43E+01	11.62	3.59E+01	CS-134
m	20	609.25	604 -	614	609.06	2.29E+02	36.09	8.71E+01	BI-214
	21	727.00	723 -	730	726.76	3.85E+01	30.33	1.27E+02	BI-212
	22	794.91	791 -	799	794.64	4.58E+01	25.46	7.04E+01	CS-134
	23	860.37	855 -	863	860.07	4.06E+01	26.24	8.09E+01	TL-208
	24	911.07	906 -	917	910.75	1.48E+02	37.42	9.85E+01	AC-228
	25	934.34	929 -	940	934.00	5.43E+01	28.21	7.33E+01	.....
M	26	964.50	962 -	978	964.15	2.16E+01	13.27	2.09E+01	EU-152
m	27	968.86	962 -	978	968.51	9.20E+01	24.76	3.74E+01	AC-228
	28	1077.37	1071 -	1086	1076.98	3.40E+01	41.67	1.60E+02	.....
	29	1120.03	1116 -	1125	1119.63	5.27E+01	34.58	1.43E+02	BI-214 SC-46
	30	1172.54	1170 -	1175	1172.12	1.80E+01	16.03	3.40E+01	CO-60
	31	1259.39	1256 -	1262	1258.93	2.36E+01	12.85	1.08E+01	.....
	32	1376.47	1371 -	1380	1375.98	1.80E+01	16.79	3.00E+01	.....
	33	1460.29	1443 -	1468	1459.76	6.96E+02	66.00	1.11E+02	K-40
	34	1629.98	1625 -	1633	1629.41	1.70E+01	8.25	0.00E+00	.....
	35	1646.68	1642 -	1648	1646.11	5.07E+00	6.34	3.86E+00	.....
	36	1763.77	1759 -	1767	1763.17	3.55E+01	14.16	9.00E+00	BI-214
	37	1977.23	1972 -	1979	1976.57	5.88E+00	6.93	4.25E+00	.....
	38	2074.57	2069 -	2077	2073.90	4.79E+00	6.95	4.43E+00	.....
	39	2204.73	2199 -	2209	2204.03	2.41E+01	14.65	1.38E+01	BI-214
	40	2257.56	2254 -	2259	2256.86	7.00E+00	5.29	0.00E+00	.....
	41	2502.84	2498 -	2505	2502.11	4.08E+00	6.32	3.83E+00	.....
	42	2613.26	2608 -	2617	2612.52	7.10E+01	16.85	0.00E+00	.....

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

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 10:51:51AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	26.46	1.08E+02	77.69	7.19E-04	1.68E-03
	2	75.81	5.56E+02	145.44	2.73E-02	3.29E-03
M	3	84.25	5.30E+01	32.80	2.83E-02	4.13E-03
	4	186.20	1.71E+02	71.22	2.11E-02	1.65E-03
	5	208.92	6.56E+01	57.19	1.95E-02	1.63E-03
M	6	238.80	4.94E+02	60.05	1.79E-02	1.60E-03
m	7	242.23	8.33E+01	43.47	1.77E-02	1.60E-03
M	8	295.14	1.74E+02	37.20	1.55E-02	1.48E-03
m	9	299.90	3.18E+01	34.00	1.53E-02	1.46E-03
	10	327.64	4.10E+01	44.68	1.44E-02	1.33E-03
	11	337.95	1.19E+02	50.85	1.41E-02	1.28E-03
	12	351.89	2.68E+02	62.26	1.37E-02	1.21E-03
	13	364.88	7.94E+01	48.40	1.34E-02	1.15E-03
	14	373.03	2.76E+01	26.32	1.32E-02	1.11E-03
	15	462.57	3.57E+01	36.00	1.13E-02	9.48E-04
	16	510.71	1.18E+02	35.53	1.06E-02	8.99E-04
	17	554.20	2.68E+01	32.19	9.95E-03	8.54E-04
	18	583.04	1.61E+02	40.64	9.58E-03	8.25E-04
M	19	605.02	1.43E+01	11.62	9.32E-03	8.03E-04
m	20	609.25	2.29E+02	36.09	9.27E-03	7.98E-04
	21	727.00	3.85E+01	30.33	8.09E-03	7.03E-04
	22	794.91	4.58E+01	25.46	7.53E-03	6.60E-04
	23	860.37	4.06E+01	26.24	7.07E-03	6.18E-04
	24	911.07	1.48E+02	37.42	6.75E-03	5.87E-04
	25	934.34	5.43E+01	28.21	6.61E-03	5.75E-04
M	26	964.50	2.16E+01	13.27	6.44E-03	5.59E-04
m	27	968.86	9.20E+01	24.76	6.42E-03	5.57E-04
	28	1077.37	3.40E+01	41.67	5.89E-03	5.02E-04
	29	1120.03	5.27E+01	34.58	5.70E-03	4.80E-04
	30	1172.54	1.80E+01	16.03	5.50E-03	4.53E-04
	31	1259.39	2.36E+01	12.85	5.20E-03	4.93E-04
	32	1376.47	1.80E+01	16.79	4.87E-03	5.08E-04
	33	1460.29	6.96E+02	66.00	4.67E-03	4.73E-04
	34	1629.98	1.70E+01	8.25	4.36E-03	4.03E-04
	35	1646.68	5.07E+00	6.34	4.34E-03	3.96E-04
	36	1763.77	3.55E+01	14.16	4.19E-03	3.48E-04
	37	1977.23	5.88E+00	6.93	4.01E-03	3.18E-04
	38	2074.57	4.79E+00	6.95	3.96E-03	3.18E-04
	39	2204.73	2.41E+01	14.65	3.93E-03	3.18E-04
	40	2257.56	7.00E+00	5.29	3.93E-03	3.18E-04
	41	2502.84	4.08E+00	6.32	3.99E-03	3.18E-04
	42	2613.26	7.10E+01	16.85	4.05E-03	3.18E-04

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 10:51:51AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015432.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	26.46	1.08E+02	77.69			1.08E+02	7.77E+01
	2	75.81	5.56E+02	145.44			5.56E+02	1.45E+02
M	3	84.25	5.30E+01	32.80			5.30E+01	3.28E+01
	4	186.20	1.71E+02	71.22	4.13E+01	8.14E+00	1.30E+02	7.17E+01
	5	208.92	6.56E+01	57.19			6.56E+01	5.72E+01
M	6	238.80	4.94E+02	60.05	1.44E+01	7.33E+00	4.79E+02	6.05E+01
m	7	242.23	8.33E+01	43.47			8.33E+01	4.35E+01
M	8	295.14	1.74E+02	37.20	7.91E+00	6.01E+00	1.66E+02	3.77E+01
m	9	299.90	3.18E+01	34.00			3.18E+01	3.40E+01
	10	327.64	4.10E+01	44.68			4.10E+01	4.47E+01
	11	337.95	1.19E+02	50.85	5.18E+00	5.53E+00	1.14E+02	5.12E+01
	12	351.89	2.68E+02	62.26	1.67E+01	5.51E+00	2.52E+02	6.25E+01
	13	364.88	7.94E+01	48.40			7.94E+01	4.84E+01
	14	373.03	2.76E+01	26.32			2.76E+01	2.63E+01
	15	462.57	3.57E+01	36.00			3.57E+01	3.60E+01
	16	510.71	1.18E+02	35.53	7.84E+01	5.24E+00	3.97E+01	3.59E+01
	17	554.20	2.68E+01	32.19			2.68E+01	3.22E+01
	18	583.04	1.61E+02	40.64	6.02E+00	3.90E+00	1.55E+02	4.08E+01
M	19	605.02	1.43E+01	11.62			1.43E+01	1.16E+01
m	20	609.25	2.29E+02	36.09	1.28E+01	3.94E+00	2.16E+02	3.63E+01
	21	727.00	3.85E+01	30.33			3.85E+01	3.03E+01
	22	794.91	4.58E+01	25.46			4.58E+01	2.55E+01
	23	860.37	4.06E+01	26.24			4.06E+01	2.62E+01
	24	911.07	1.48E+02	37.42	5.80E+00	2.67E+00	1.42E+02	3.75E+01
	25	934.34	5.43E+01	28.21	1.05E+00	2.87E+00	5.33E+01	2.84E+01
M	26	964.50	2.16E+01	13.27			2.16E+01	1.33E+01
m	27	968.86	9.20E+01	24.76	1.26E+00	2.25E+00	9.08E+01	2.49E+01
	28	1077.37	3.40E+01	41.67			3.40E+01	4.17E+01
	29	1120.03	5.27E+01	34.58	1.53E+00	2.85E+00	5.11E+01	3.47E+01
	30	1172.54	1.80E+01	16.03	5.76E+00	2.65E+00	1.22E+01	1.62E+01
	31	1259.39	2.36E+01	12.85			2.36E+01	1.28E+01
	32	1376.47	1.80E+01	16.79			1.80E+01	1.68E+01
	33	1460.29	6.96E+02	66.00	1.25E+01	2.44E+00	6.83E+02	6.60E+01
	34	1629.98	1.70E+01	8.25			1.70E+01	8.25E+00
	35	1646.68	5.07E+00	6.34			5.07E+00	6.34E+00

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	1763.77	3.55E+01	14.16	2.65E+00	2.14E+00	3.29E+01	1.43E+01
37	1977.23	5.88E+00	6.93			5.88E+00	6.93E+00
38	2074.57	4.79E+00	6.95			4.79E+00	6.95E+00
39	2204.73	2.41E+01	14.65			2.41E+01	1.47E+01
40	2257.56	7.00E+00	5.29			7.00E+00	5.29E+00
41	2502.84	4.08E+00	6.32			4.08E+00	6.32E+00
42	2613.26	7.10E+01	16.85	8.41E+00	1.73E+00	6.26E+01	1.69E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 10:51:51AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015432.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	26.46	1.08E+02	77.69			1.08E+02	7.77E+01
	2	75.81	5.56E+02	145.44			5.56E+02	1.45E+02
M	3	84.25	5.30E+01	32.80			5.30E+01	3.28E+01
	4	186.20	1.71E+02	71.22	4.13E+01	8.14E+00	1.30E+02	7.17E+01
	5	208.92	6.56E+01	57.19			6.56E+01	5.72E+01
M	6	238.80	4.94E+02	60.05	1.44E+01	7.33E+00	4.79E+02	6.05E+01
m	7	242.23	8.33E+01	43.47			8.33E+01	4.35E+01
M	8	295.14	1.74E+02	37.20	7.91E+00	6.01E+00	1.66E+02	3.77E+01
m	9	299.90	3.18E+01	34.00			3.18E+01	3.40E+01
	10	327.64	4.10E+01	44.68			4.10E+01	4.47E+01
	11	337.95	1.19E+02	50.85	5.18E+00	5.53E+00	1.14E+02	5.12E+01
	12	351.89	2.68E+02	62.26	1.67E+01	5.51E+00	2.52E+02	6.25E+01
	13	364.88	7.94E+01	48.40			7.94E+01	4.84E+01
	14	373.03	2.76E+01	26.32			2.76E+01	2.63E+01
	15	462.57	3.57E+01	36.00			3.57E+01	3.60E+01
	16	510.71	1.18E+02	35.53	7.84E+01	5.24E+00	3.97E+01	3.59E+01
	17	554.20	2.68E+01	32.19			2.68E+01	3.22E+01
	18	583.04	1.61E+02	40.64	6.02E+00	3.90E+00	1.55E+02	4.08E+01
M	19	605.02	1.43E+01	11.62			1.43E+01	1.16E+01
m	20	609.25	2.29E+02	36.09	1.28E+01	3.94E+00	2.16E+02	3.63E+01
	21	727.00	3.85E+01	30.33			3.85E+01	3.03E+01

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	22	794.91	4.58E+01	25.46			4.58E+01	2.55E+01
	23	860.37	4.06E+01	26.24			4.06E+01	2.62E+01
	24	911.07	1.48E+02	37.42	5.80E+00	2.67E+00	1.42E+02	3.75E+01
	25	934.34	5.43E+01	28.21	1.05E+00	2.87E+00	5.33E+01	2.84E+01
M	26	964.50	2.16E+01	13.27			2.16E+01	1.33E+01
m	27	968.86	9.20E+01	24.76	1.26E+00	2.25E+00	9.08E+01	2.49E+01
	28	1077.37	3.40E+01	41.67			3.40E+01	4.17E+01
	29	1120.03	5.27E+01	34.58	1.53E+00	2.85E+00	5.11E+01	3.47E+01
	30	1172.54	1.80E+01	16.03	5.76E+00	2.65E+00	1.22E+01	1.62E+01
	31	1259.39	2.36E+01	12.85			2.36E+01	1.28E+01
	32	1376.47	1.80E+01	16.79			1.80E+01	1.68E+01
	33	1460.29	6.96E+02	66.00	1.25E+01	2.44E+00	6.83E+02	6.60E+01
	34	1629.98	1.70E+01	8.25			1.70E+01	8.25E+00
	35	1646.68	5.07E+00	6.34			5.07E+00	6.34E+00
	36	1763.77	3.55E+01	14.16	2.65E+00	2.14E+00	3.29E+01	1.43E+01
	37	1977.23	5.88E+00	6.93			5.88E+00	6.93E+00
	38	2074.57	4.79E+00	6.95			4.79E+00	6.95E+00
	39	2204.73	2.41E+01	14.65			2.41E+01	1.47E+01
	40	2257.56	7.00E+00	5.29			7.00E+00	5.29E+00
	41	2502.84	4.08E+00	6.32			4.08E+00	6.32E+00
	42	2613.26	7.10E+01	16.85	8.41E+00	1.73E+00	6.26E+01	1.69E+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	0.957	1460.81	*	10.67	1.44E+01	2.04E+00
I-131	0.743	284.30		6.05		
		364.48	*	81.20	1.30E-01	7.99E-02
		636.97		7.26		
		722.89		1.80		
CS-134	0.690	563.23		8.38		
		569.32		15.43		
		604.70	*	97.60	1.67E-02	1.36E-02
		795.84	*	85.40	7.54E-02	4.24E-02
		801.93		8.73		

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.349	583.14	*	30.22	5.62E-01	1.56E-01
		860.37	*	4.48	1.35E+00	8.81E-01
		2614.66		35.85		
BI-212	0.762	727.17	*	11.80	4.24E-01	3.37E-01
		1620.62		2.75		
PB-212	0.995	238.63	*	44.60	6.33E-01	9.80E-02
		300.09	*	3.41	6.41E-01	6.89E-01
BI-214	0.979	609.31	*	46.30	5.29E-01	1.00E-01
		1120.29	*	15.10	6.25E-01	4.28E-01
		1764.49	*	15.80	5.23E-01	2.32E-01
		2204.22	*	4.98	1.30E+00	7.95E-01
PB-214	1.000	295.21	*	19.19	5.89E-01	1.45E-01
		351.92	*	37.19	5.19E-01	1.37E-01
RA-226	1.000	186.21	*	3.28	1.98E+00	3.79E+00
AC-228	0.992	338.32	*	11.40	7.44E-01	3.42E-01
		911.07	*	27.70	8.00E-01	2.23E-01
		969.11	*	16.60	8.98E-01	2.58E-01
TH-231	0.928	25.64	*	14.70	1.08E+01	2.64E+01
		84.21	*	6.40	3.09E-01	1.96E-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 : 11/26/2014 10:51:51AM
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	75.81	1.54362E-01	13.09		
	5	208.92	1.82142E-02	43.61	Tol.	CM-243
m	7	242.23	2.31426E-02	26.09		
	10	327.64	1.14027E-02	54.42		
	14	373.03	7.65700E-03	47.75	Sum	
	15	462.57	9.90741E-03	50.47	Tol.	SB-125
	16	510.71	1.10310E-02	45.22		
	17	554.20	7.43528E-03	60.12		
	25	934.34	1.48012E-02	26.61	Sum	

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	26	964.50	6.00106E-03	30.70	Tol.	EU-152
	28	1077.37	9.44444E-03	61.27		
	30	1172.54	3.39991E-03	66.38	Tol.	CO-60
	31	1259.39	6.56130E-03	27.19		
	32	1376.47	5.00000E-03	46.65		
	34	1629.98	4.72222E-03	24.25		
	35	1646.68	1.40873E-03	62.55	Sum	
	37	1977.23	1.63194E-03	58.96		
	38	2074.57	1.32937E-03	72.57		
	40	2257.56	1.94444E-03	37.80		
	41	2502.84	1.13426E-03	77.44		
	42	2613.26	1.73875E-02	13.53		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.95	1460.81	*	10.67	1.44E+01	2.04E+00
I-131	0.74	284.30		6.05		
		364.48	*	81.20	1.30E-01	7.99E-02
		636.97		7.26		
		722.89		1.80		
CS-134	0.69	563.23		8.38		
		569.32		15.43		
		604.70	*	97.60	1.67E-02	1.36E-02
		795.84	*	85.40	7.54E-02	4.24E-02
		801.93		8.73		
TL-208	0.34	583.14	*	30.22	5.62E-01	1.56E-01
		860.37	*	4.48	1.35E+00	8.81E-01
		2614.66		35.85		
BI-212	0.76	727.17	*	11.80	4.24E-01	3.37E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	6.33E-01	9.80E-02

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-212	0.99	300.09	*	3.41	6.41E-01	6.89E-01
BI-214	0.97	609.31	*	46.30	5.29E-01	1.00E-01
		1120.29	*	15.10	6.25E-01	4.28E-01
		1764.49	*	15.80	5.23E-01	2.32E-01
		2204.22	*	4.98	1.30E+00	7.95E-01
PB-214	1.00	295.21	*	19.19	5.89E-01	1.45E-01
		351.92	*	37.19	5.19E-01	1.37E-01
RA-226	1.00	186.21	*	3.28	1.98E+00	3.79E+00
AC-228	0.99	338.32	*	11.40	7.44E-01	3.42E-01
		911.07	*	27.70	8.00E-01	2.23E-01
		969.11	*	16.60	8.98E-01	2.58E-01
TH-231	0.92	25.64	*	14.70	1.08E+01	2.64E+01
		84.21	*	6.40	3.09E-01	1.96E-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	0.957	1.44E+01	2.04E+00	
I-131	0.743	1.30E-01	7.99E-02	
CS-134	0.690	2.21E-02	1.30E-02	
TL-208	0.349	5.86E-01	1.54E-01	
BI-212	0.762	4.24E-01	3.37E-01	
PB-212	0.995	6.34E-01	9.71E-02	
BI-214	0.979	5.42E-01	8.93E-02	
PB-214	1.000	5.52E-01	9.96E-02	
RA-226	1.000	1.98E+00	3.79E+00	
AC-228	0.992	8.23E-01	1.51E-01	
TH-231	0.928	3.09E-01	1.96E-01	

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

? = 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 1411131-08

J1V1M1 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 10:51:51AM
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	75.81	1.54362E-01	13.09		
	5	208.92	1.82142E-02	43.61	Tol.	CM-243
m	7	242.23	2.31426E-02	26.09		
	10	327.64	1.14027E-02	54.42		
	14	373.03	7.65700E-03	47.75	Sum	
	15	462.57	9.90741E-03	50.47	Tol.	SB-125
	16	510.71	1.10310E-02	45.22		
	17	554.20	7.43528E-03	60.12		
	25	934.34	1.48012E-02	26.61	Sum	
M	26	964.50	6.00106E-03	30.70	Tol.	EU-152
	28	1077.37	9.44444E-03	61.27		
	30	1172.54	3.39991E-03	66.38	Tol.	CO-60
	31	1259.39	6.56130E-03	27.19		
	32	1376.47	5.00000E-03	46.65		
	34	1629.98	4.72222E-03	24.25		
	35	1646.68	1.40873E-03	62.55	Sum	
	37	1977.23	1.63194E-03	58.96		
	38	2074.57	1.32937E-03	72.57		
	40	2257.56	1.94444E-03	37.80		
	41	2502.84	1.13426E-03	77.44		
	42	2613.26	1.73875E-02	13.53		

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 1411131-08

J1V1M1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	1.06E-01	4.11E-01	4.11E-01
+	NA-22	1274.54		99.94	1.85E-02	6.89E-02	6.89E-02
+	NA-24	1368.53		99.99	1.09E+01	2.26E+01	3.91E+01
		2754.09		99.86	-3.27E+00		2.26E+01
+	AL-26	1808.65		99.76	4.93E-03	4.44E-02	4.44E-02
+	K-40	1460.81	*	10.67	1.44E+01	1.46E+00	1.46E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	3.07E-02	3.63E-02	3.63E-02
		78.34		96.00	1.07E-01		4.37E-02
+	SC-46	889.25		99.98	2.65E-02	5.46E-02	5.46E-02
		1120.51		99.99	1.12E-01		9.83E-02
+	V-48	983.52		99.98	5.42E-02	6.69E-02	7.77E-02
		1312.10		97.50	-8.56E-03		6.69E-02
+	CR-51	320.08		9.83	-2.15E-01	4.41E-01	4.41E-01
+	MN-54	834.83		99.97	-4.49E-03	5.10E-02	5.10E-02
+	CO-56	846.75		99.96	3.18E-03	5.53E-02	5.53E-02
		1037.75		14.03	9.60E-02		4.05E-01
		1238.25		67.00	2.16E-02		1.30E-01
		1771.40		15.51	5.72E-03		2.57E-01
		2598.48		16.90	2.98E-02		1.95E-01
+	CO-57	122.06		85.51	-1.22E-02	3.84E-02	3.84E-02
		136.48		10.60	-1.19E-01		3.27E-01
+	CO-58	810.76		99.40	-1.59E-03	5.50E-02	5.50E-02
+	FE-59	1099.22		56.50	-5.29E-02	1.04E-01	1.04E-01
		1291.56		43.20	5.11E-02		1.50E-01
+	CO-60	1173.22		100.00	-3.02E-02	6.03E-02	6.03E-02
		1332.49		100.00	2.66E-02		6.23E-02
+	ZN-65	1115.52		50.75	1.51E-02	1.21E-01	1.21E-01
+	GA-67	93.31		35.70	6.61E-01	4.10E-01	4.10E-01
		208.95		2.24	6.84E+00		6.81E+00
		300.22		16.00	5.95E-01		9.31E-01
+	SE-75	121.11		16.70	-3.43E-02	6.03E-02	1.95E-01
		136.00		59.20	2.85E-02		6.03E-02
		264.65		59.80	1.05E-02		6.24E-02
		279.53		25.20	-6.03E-02		1.65E-01
		400.65		11.40	-6.85E-02		3.26E-01
+	RB-82	776.52		13.00	-9.40E-02	4.55E-01	4.55E-01
+	RB-83	520.41		46.00	-1.78E-02	8.44E-02	8.44E-02
		529.64		30.30	4.70E-02		1.42E-01
		552.65		16.40	3.76E-02		2.82E-01
+	KR-85	513.99		0.43	2.62E+00	1.09E+01	1.09E+01
+	SR-85	513.99		99.27	1.22E-02	5.10E-02	5.10E-02
+	Y-88	898.02		93.40	-1.64E-03	4.67E-02	5.71E-02
		1836.01		99.38	1.07E-02		4.67E-02
+	NB-93M	16.57		9.43	-2.94E+02	4.56E+03	4.56E+03
+	NB-94	702.63		100.00	6.26E-03	5.24E-02	5.24E-02
		871.10		100.00	1.55E-02		5.60E-02

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95	765.79		99.81	6.08E-02	7.40E-02	7.40E-02
+	NB-95M	235.69		25.00	-2.72E+00	7.10E-01	7.10E-01
+	ZR-95	724.18		43.70	-1.13E-02	9.24E-02	1.46E-01
		756.72		55.30	1.28E-02		9.24E-02
+	MO-99	181.06		6.20	-3.26E-01	1.54E+00	2.68E+00
		739.58		12.80	-6.00E-01		1.54E+00
		778.00		4.50	-7.03E-02		5.10E+00
+	RU-103	497.08		89.00	-5.55E-03	4.19E-02	4.19E-02
+	RU-106	621.84		9.80	-6.23E-02	4.47E-01	4.47E-01
+	AG-108M	433.93		89.90	5.36E-03	4.19E-02	4.19E-02
		614.37		90.40	-9.73E-05		5.34E-02
		722.95		90.50	8.40E-04		6.20E-02
+	CD-109	88.03		3.72	1.16E+00	1.15E+00	1.15E+00
+	AG-110M	657.75		93.14	-1.23E-03	5.17E-02	5.17E-02
		677.61		10.53	1.09E-01		4.86E-01
		706.67		16.46	-4.67E-02		3.12E-01
		763.93		21.98	-6.78E-02		2.64E-01
		884.67		71.63	1.64E-02		7.27E-02
		1384.27		23.94	1.39E-01		2.31E-01
+	CD-113M	263.70		0.02	1.39E+01	1.58E+02	1.58E+02
+	SN-113	255.12		1.93	1.14E+00	5.99E-02	2.00E+00
		391.69		64.90	2.45E-03		5.99E-02
+	TE123M	159.00		84.10	3.78E-02	4.42E-02	4.42E-02
+	SB-124	602.71		97.87	-1.17E-02	5.04E-02	5.04E-02
		645.85		7.26	-1.64E-02		7.35E-01
		722.78		11.10	7.34E-03		5.42E-01
		1691.02		49.00	-1.89E-02		8.55E-02
+	I-125	35.49		6.49	-3.19E-01	2.15E+00	2.15E+00
+	SB-125	176.33		6.89	-4.02E-01	1.26E-01	4.89E-01
		427.89		29.33	-5.89E-02		1.26E-01
		463.38		10.35	2.79E-01		4.33E-01
		600.56		17.80	-9.57E-02		2.46E-01
		635.90		11.32	6.69E-02		3.91E-01
+	SB-126	414.70		83.30	4.40E-02	6.93E-02	6.93E-02
		666.33		99.60	1.12E-02		7.77E-02
		695.00		99.60	1.34E-02		7.32E-02
		720.50		53.80	-4.36E-03		1.32E-01
+	SN-126	87.57		37.00	1.16E-01	1.15E-01	1.15E-01
+	SB-127	473.00		25.00	8.43E-02	4.05E-01	4.68E-01
		685.20		35.70	1.22E-02		4.05E-01
		783.80		14.70	2.08E-01		1.12E+00
+	I-129	29.78		57.00	3.73E-01	7.91E-01	7.91E-01
		33.60		13.20	-5.15E-01		1.26E+00
		39.58		7.52	-1.64E-01		1.10E+00
+	I-131	284.30		6.05	-3.42E-01	1.25E-01	1.04E+00
		364.48	*	81.20	1.30E-01		1.25E-01
		636.97		7.26	-7.49E-01		9.54E-01
		722.89		1.80	7.12E-02		5.25E+00

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE-132	49.72		13.10	7.88E-01	1.57E-01	1.24E+00
		228.16		88.00	4.34E-02		1.57E-01
+	BA-133	81.00		33.00	4.40E-02	6.45E-02	8.59E-02
		302.84		17.80	2.71E-02		2.05E-01
		356.01		60.00	-5.29E-03		6.45E-02
+	I-133	529.87		86.30	2.14E+00	5.98E+00	5.98E+00
+	CS-134	563.23		8.38	-1.78E-02	6.28E-02	4.27E-01
		569.32		15.43	2.07E-02		2.46E-01
		604.70	*	97.60	1.67E-02		6.76E-02
		795.84	*	85.40	7.54E-02		6.28E-02
		801.93		8.73	-6.29E-03		5.93E-01
+	CS-135	268.24		16.00	-1.36E-01	2.37E-01	2.37E-01
+	I-135	1131.51		22.50	-2.88E+05	8.12E+05	1.05E+06
		1260.41		28.60	1.06E+05		8.12E+05
		1678.03		9.54	8.09E+04		1.71E+06
+	CS-136	153.22		7.46	2.30E-01	6.70E-02	6.57E-01
		163.89		4.61	2.52E-01		1.01E+00
		176.55		13.56	1.22E-01		3.50E-01
		273.65		12.66	-4.49E-01		4.30E-01
		340.57		48.50	-1.03E-01		1.17E-01
		818.50		99.70	-7.24E-04		6.70E-02
		1048.07		79.60	2.91E-02		1.03E-01
		1235.34		19.70	1.20E-01		5.44E-01
+	CS-137	661.65		85.12	-3.21E-03	6.19E-02	6.19E-02
+	LA-138	788.74		34.00	-4.77E-03	5.88E-02	1.49E-01
		1435.80		66.00	1.01E-02		5.88E-02
+	CE-139	165.85		80.35	-1.86E-02	4.32E-02	4.32E-02
+	BA-140	162.64		6.70	-6.38E-01	2.07E-01	6.77E-01
		304.84		4.50	2.15E-01		1.11E+00
		423.70		3.20	-2.08E-01		1.65E+00
		437.55		2.00	-8.68E-01		2.44E+00
		537.32		25.00	1.13E-03		2.07E-01
+	LA-140	328.77		20.50	2.22E-01	7.59E-02	2.80E-01
		487.03		45.50	5.50E-03		1.18E-01
		815.85		23.50	-8.44E-02		2.89E-01
		1596.49		95.49	1.73E-02		7.59E-02
+	CE-141	145.44		48.40	3.41E-02	8.00E-02	8.00E-02
+	CE-143	57.36		11.80	-2.28E+00	2.59E+00	6.04E+00
		293.26		42.00	1.58E+00		2.59E+00
		664.55		5.20	2.93E+00		2.21E+01
+	CE-144	133.54		10.80	-5.73E-02	3.21E-01	3.21E-01
+	PM-144	476.78		42.00	2.45E-02	4.60E-02	9.51E-02
		618.01		98.60	-1.70E-02		4.60E-02
		696.49		99.49	2.38E-02		5.47E-02
+	PM-145	36.85		21.70	2.94E-01	2.72E-01	5.29E-01
		37.36		39.70	1.51E-01		2.72E-01
		42.30		15.10	-4.43E-02		4.31E-01
		72.40		2.31	-1.98E-02		1.43E+00
+	PM-146	453.90		39.94	1.67E-02	8.84E-02	8.84E-02

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-146	735.90	14.01	9.25E-02	8.84E-02	3.41E-01
		747.13	13.10	5.64E-03		3.79E-01
+	ND-147	91.11	28.90	1.20E-01	2.12E-01	2.12E-01
		531.02	13.10	2.58E-01		4.52E-01
+	PM-149	285.90	3.10	-2.58E+00	8.06E+00	8.06E+00
+	EU-152	121.78	20.50	-4.99E-02	1.58E-01	1.58E-01
		244.69	5.40	-1.16E+00		6.78E-01
		344.27	19.13	-5.99E-03		1.86E-01
		778.89	9.20	-2.60E-02		5.57E-01
		964.01	10.40	-2.00E+00		5.44E-01
		1085.78	7.22	2.36E-01		8.47E-01
		1112.02	9.60	1.50E-01		6.22E-01
		1407.95	14.94	-8.91E-03		3.38E-01
+	GD-153	97.43	31.30	-3.14E-02	1.03E-01	1.03E-01
		103.18	22.20	-1.45E-01		1.45E-01
+	EU-154	123.07	40.50	1.92E-02	8.20E-02	8.20E-02
		723.30	19.70	3.86E-03		2.85E-01
		873.19	11.50	-1.41E-02		4.68E-01
		996.32	10.30	1.56E-01		5.54E-01
		1004.76	17.90	1.13E-01		3.40E-01
		1274.45	35.50	5.19E-02		1.93E-01
+	EU-155	86.50	30.90	-4.53E-02	1.36E-01	1.36E-01
		105.30	20.70	1.43E-01		1.63E-01
+	EU-156	811.77	10.40	4.92E-02	6.54E-01	6.54E-01
		1153.47	7.20	3.81E-01		1.27E+00
		1230.71	8.90	-3.66E-01		1.01E+00
+	HO-166M	184.41	72.60	6.41E-02	6.20E-02	6.20E-02
		280.45	29.60	-4.97E-02		1.36E-01
		410.94	11.10	-1.72E-02		3.55E-01
		711.69	54.10	1.33E-02		9.10E-02
+	TM-171	66.72	0.14	-3.35E+00	2.42E+01	2.42E+01
+	HF-172	81.75	4.52	3.00E-01	3.04E-01	6.21E-01
		125.81	11.30	-1.44E-01		3.04E-01
+	LU-172	181.53	20.60	-1.05E-01	1.62E-01	3.21E-01
		810.06	16.63	-1.67E-02		5.79E-01
		912.12	15.25	2.45E+00		1.21E+00
		1093.66	62.50	8.54E-03		1.62E-01
+	LU-173	100.72	5.24	8.28E-02	2.04E-01	6.11E-01
		272.11	21.20	1.41E-01		2.04E-01
+	HF-175	343.40	84.00	-3.82E-03	4.45E-02	4.45E-02
+	LU-176	88.34	13.30	3.22E-01	3.85E-02	3.20E-01
		201.83	86.00	-2.05E-03		4.36E-02
		306.78	94.00	7.33E-03		3.85E-02
+	TA-182	67.75	41.20	7.31E-02	8.65E-02	8.65E-02
		1121.30	34.90	3.24E-01		2.79E-01
		1189.05	16.23	1.36E-01		4.80E-01
		1221.41	26.98	-8.38E-02		2.81E-01
		1231.02	11.44	-3.93E-01		6.18E-01
+	IR-192	308.46	29.68	-5.74E-02	8.23E-02	1.26E-01

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	IR-192	468.07		48.10	7.07E-03	8.23E-02	8.23E-02
+	HG-203	279.19		77.30	1.79E-02	5.96E-02	5.96E-02
+	BI-207	569.67		97.72	3.25E-03	3.86E-02	3.86E-02
		1063.62		74.90	-4.95E-03		7.94E-02
+	TL-208	583.14	*	30.22	5.62E-01	2.04E-01	2.04E-01
		860.37	*	4.48	1.35E+00		1.35E+00
		2614.66		35.85	5.15E-01		3.04E-01
+	BI-210M	262.00		45.00	-1.66E-02	8.09E-02	8.09E-02
		300.00		23.00	1.14E-01		1.79E-01
+	PB-210	46.50		4.25	1.46E+00	1.42E+00	1.42E+00
+	PB-211	404.84		2.90	-3.12E-01	1.24E+00	1.24E+00
		831.96		2.90	5.41E-01		1.71E+00
+	BI-212	727.17	*	11.80	4.24E-01	5.32E-01	5.32E-01
		1620.62		2.75	1.19E-02		1.59E+00
+	PB-212	238.63	*	44.60	6.33E-01	1.68E-01	1.68E-01
		300.09	*	3.41	6.41E-01		2.06E+00
+	BI-214	609.31	*	46.30	5.29E-01	1.52E-01	1.52E-01
		1120.29	*	15.10	6.25E-01		6.69E-01
		1764.49	*	15.80	5.23E-01		2.68E-01
		2204.22	*	4.98	1.30E+00		1.11E+00
+	PB-214	295.21	*	19.19	5.89E-01	1.88E-01	3.61E-01
		351.92	*	37.19	5.19E-01		1.88E-01
+	RN-219	401.80		6.50	-1.96E-01	5.60E-01	5.60E-01
+	RA-223	323.87		3.88	2.71E-01	9.67E-01	9.67E-01
+	RA-224	240.98		3.95	2.66E+00	1.72E+00	1.72E+00
+	RA-225	40.00		31.00	-5.08E-02	3.41E-01	3.41E-01
+	RA-226	186.21	*	3.28	1.98E+00	1.75E+00	1.75E+00
+	TH-227	50.10		8.40	3.33E-01	4.83E-01	5.24E-01
		236.00		11.50	-1.85E+00		4.83E-01
		256.20		6.30	-1.23E-02		5.80E-01
+	AC-228	338.32	*	11.40	7.44E-01	2.84E-01	5.19E-01
		911.07	*	27.70	8.00E-01		2.84E-01
		969.11	*	16.60	8.98E-01		5.47E-01
+	TH-230	48.44		16.90	-3.19E-01	2.74E-01	2.74E-01
		62.85		4.60	7.96E-01		8.29E-01
		67.67		0.37	7.86E+00		9.30E+00
+	PA-231	283.67		1.60	-7.66E-01	1.58E+00	2.33E+00
		302.67		2.30	2.10E-01		1.58E+00
+	TH-231	25.64	*	14.70	1.08E+01	8.65E-01	1.25E+01
		84.21	*	6.40	3.09E-01		8.65E-01
+	PA-233	311.98		38.60	-4.09E-02	1.12E-01	1.12E-01
+	PA-234	131.20		20.40	9.93E-02	1.77E-01	1.77E-01
		733.99		8.80	-1.62E-01		5.31E-01
		946.00		12.00	1.45E-02		4.69E-01
+	PA-234M	1001.03		0.92	-1.83E-02	6.22E+00	6.22E+00
+	TH-234	63.29		3.80	9.56E-01	9.96E-01	9.96E-01
+	U-235	143.76		10.50	-5.70E-03	3.18E-01	3.18E-01

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	U-235	163.35	4.70	-6.56E-01	3.18E-01	6.96E-01
		205.31	4.70	-5.94E-02		8.17E-01
+	NP-237	86.50	12.60	-1.11E-01	3.34E-01	3.34E-01
+	NP-239	106.10	22.70	2.07E-01	8.70E-01	8.70E-01
		228.18	10.70	5.85E-01		2.11E+00
		277.60	14.10	5.14E-01		1.78E+00
+	AM-241	59.54	35.90	1.80E-02	9.73E-02	9.73E-02
+	AM-243	74.67	66.00	-6.90E-02	6.49E-02	6.49E-02
+	CM-243	209.75	3.29	6.60E-01	3.01E-01	1.25E+00
		228.14	10.60	9.93E-02		3.59E-01
		277.60	14.00	8.70E-02		3.01E-01

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	4.11E-01	4.11E-01	1.06E-01	1.92E-01
	NA-22	1274.54		99.94	6.89E-02	6.89E-02	1.85E-02	3.17E-02
	NA-24	1368.53		99.99	3.91E+01	2.26E+01	1.09E+01	1.71E+01
		2754.09		99.86	2.26E+01		-3.27E+00	8.46E+00
	AL-26	1808.65		99.76	4.44E-02	4.44E-02	4.93E-03	1.88E-02
+	K-40	1460.81	*	10.67	1.46E+00	1.46E+00	1.44E+01	7.01E-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	3.63E-02	3.63E-02	3.07E-02	1.76E-02
		78.34		96.00	4.37E-02		1.07E-01	2.13E-02
	SC-46	889.25		99.98	5.46E-02	5.46E-02	2.65E-02	2.51E-02
		1120.51		99.99	9.83E-02		1.12E-01	4.65E-02
	V-48	983.52		99.98	7.77E-02	6.69E-02	5.42E-02	3.59E-02

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
V-48	1312.10	97.50	6.69E-02	6.69E-02	-8.56E-03	2.97E-02
CR-51	320.08	9.83	4.41E-01	4.41E-01	-2.15E-01	2.09E-01
MN-54	834.83	99.97	5.10E-02	5.10E-02	-4.49E-03	2.35E-02
CO-56	846.75	99.96	5.53E-02	5.53E-02	3.18E-03	2.55E-02
	1037.75	14.03	4.05E-01		9.60E-02	1.85E-01
	1238.25	67.00	1.30E-01		2.16E-02	6.08E-02
	1771.40	15.51	2.57E-01		5.72E-03	1.06E-01
	2598.48	16.90	1.95E-01		2.98E-02	7.57E-02
CO-57	122.06	85.51	3.84E-02	3.84E-02	-1.22E-02	1.86E-02
	136.48	10.60	3.27E-01		-1.19E-01	1.58E-01
CO-58	810.76	99.40	5.50E-02	5.50E-02	-1.59E-03	2.54E-02
FE-59	1099.22	56.50	1.04E-01	1.04E-01	-5.29E-02	4.73E-02
	1291.56	43.20	1.50E-01		5.11E-02	6.80E-02
CO-60	1173.22	100.00	6.03E-02	6.03E-02	-3.02E-02	2.75E-02
	1332.49	100.00	6.23E-02		2.66E-02	2.83E-02
ZN-65	1115.52	50.75	1.21E-01	1.21E-01	1.51E-02	5.56E-02
GA-67	93.31	35.70	4.10E-01	4.10E-01	6.61E-01	2.00E-01
	208.95	2.24	6.81E+00		6.84E+00	3.29E+00
	300.22	16.00	9.31E-01		5.95E-01	4.45E-01
SE-75	121.11	16.70	1.95E-01	6.03E-02	-3.43E-02	9.44E-02
	136.00	59.20	6.03E-02		2.85E-02	2.92E-02
	264.65	59.80	6.24E-02		1.05E-02	2.97E-02
	279.53	25.20	1.65E-01		-6.03E-02	7.88E-02
	400.65	11.40	3.26E-01		-6.85E-02	1.53E-01
RB-82	776.52	13.00	4.55E-01	4.55E-01	-9.40E-02	2.11E-01
RB-83	520.41	46.00	8.44E-02	8.44E-02	-1.78E-02	3.91E-02
	529.64	30.30	1.42E-01		4.70E-02	6.60E-02
	552.65	16.40	2.82E-01		3.76E-02	1.32E-01
KR-85	513.99	0.43	1.09E+01	1.09E+01	2.62E+00	5.16E+00
SR-85	513.99	99.27	5.10E-02	5.10E-02	1.22E-02	2.40E-02
Y-88	898.02	93.40	5.71E-02	4.67E-02	-1.64E-03	2.62E-02
	1836.01	99.38	4.67E-02		1.07E-02	1.97E-02
NB-93M	16.57	9.43	4.56E+03	4.56E+03	-2.94E+02	2.22E+03
NB-94	702.63	100.00	5.24E-02	5.24E-02	6.26E-03	2.45E-02
	871.10	100.00	5.60E-02		1.55E-02	2.60E-02
NB-95	765.79	99.81	7.40E-02	7.40E-02	6.08E-02	3.49E-02
NB-95M	235.69	25.00	7.10E-01	7.10E-01	-2.72E+00	3.45E-01
ZR-95	724.18	43.70	1.46E-01	9.24E-02	-1.13E-02	6.88E-02
	756.72	55.30	9.24E-02		1.28E-02	4.27E-02
MO-99	181.06	6.20	2.68E+00	1.54E+00	-3.26E-01	1.29E+00
	739.58	12.80	1.54E+00		-6.00E-01	7.07E-01
	778.00	4.50	5.10E+00		-7.03E-02	2.36E+00
RU-103	497.08	89.00	4.19E-02	4.19E-02	-5.55E-03	1.93E-02
RU-106	621.84	9.80	4.47E-01	4.47E-01	-6.23E-02	2.07E-01
AG-108M	433.93	89.90	4.19E-02	4.19E-02	5.36E-03	1.96E-02
	614.37	90.40	5.34E-02		-9.73E-05	2.50E-02
	722.95	90.50	6.20E-02		8.40E-04	2.91E-02
CD-109	88.03	3.72	1.15E+00	1.15E+00	1.16E+00	5.63E-01
AG-110M	657.75	93.14	5.17E-02	5.17E-02	-1.23E-03	2.41E-02
	677.61	10.53	4.86E-01		1.09E-01	2.27E-01
	706.67	16.46	3.12E-01		-4.67E-02	1.45E-01
	763.93	21.98	2.64E-01		-6.78E-02	1.24E-01
	884.67	71.63	7.27E-02		1.64E-02	3.34E-02

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AG-110M	1384.27		23.94	2.31E-01	5.17E-02	1.39E-01	1.03E-01
	CD-113M	263.70		0.02	1.58E+02	1.58E+02	1.39E+01	7.53E+01
	SN-113	255.12		1.93	2.00E+00	5.99E-02	1.14E+00	9.57E-01
		391.69		64.90	5.99E-02		2.45E-03	2.82E-02
	TE123M	159.00		84.10	4.42E-02	4.42E-02	3.78E-02	2.13E-02
	SB-124	602.71		97.87	5.04E-02	5.04E-02	-1.17E-02	2.35E-02
		645.85		7.26	7.35E-01		-1.64E-02	3.44E-01
		722.78		11.10	5.42E-01		7.34E-03	2.54E-01
		1691.02		49.00	8.55E-02		-1.89E-02	3.55E-02
	I-125	35.49		6.49	2.15E+00	2.15E+00	-3.19E-01	1.03E+00
	SB-125	176.33		6.89	4.89E-01	1.26E-01	-4.02E-01	2.35E-01
		427.89		29.33	1.26E-01		-5.89E-02	5.90E-02
		463.38		10.35	4.33E-01		2.79E-01	2.05E-01
		600.56		17.80	2.46E-01		-9.57E-02	1.14E-01
		635.90		11.32	3.91E-01		6.69E-02	1.81E-01
	SB-126	414.70		83.30	6.93E-02	6.93E-02	4.40E-02	3.27E-02
		666.33		99.60	7.77E-02		1.12E-02	3.65E-02
		695.00		99.60	7.32E-02		1.34E-02	3.42E-02
		720.50		53.80	1.32E-01		-4.36E-03	6.13E-02
	SN-126	87.57		37.00	1.15E-01	1.15E-01	1.16E-01	5.62E-02
	SB-127	473.00		25.00	4.68E-01	4.05E-01	8.43E-02	2.19E-01
		685.20		35.70	4.05E-01		1.22E-02	1.88E-01
		783.80		14.70	1.12E+00		2.08E-01	5.21E-01
	I-129	29.78		57.00	7.91E-01	7.91E-01	3.73E-01	3.81E-01
		33.60		13.20	1.26E+00		-5.15E-01	6.00E-01
		39.58		7.52	1.10E+00		-1.64E-01	5.28E-01
+	I-131	284.30		6.05	1.04E+00	1.25E-01	-3.42E-01	4.96E-01
		364.48	*	81.20	1.25E-01		1.30E-01	6.05E-02
		636.97		7.26	9.54E-01		-7.49E-01	4.40E-01
		722.89		1.80	5.25E+00		7.12E-02	2.46E+00
	TE-132	49.72		13.10	1.24E+00	1.57E-01	7.88E-01	5.95E-01
		228.16		88.00	1.57E-01		4.34E-02	7.52E-02
	BA-133	81.00		33.00	8.59E-02	6.45E-02	4.40E-02	4.14E-02
		302.84		17.80	2.05E-01		2.71E-02	9.72E-02
		356.01		60.00	6.45E-02		-5.29E-03	3.05E-02
	I-133	529.87		86.30	5.98E+00	5.98E+00	2.14E+00	2.79E+00
+	CS-134	563.23		8.38	4.27E-01	6.28E-02	-1.78E-02	1.96E-01
		569.32		15.43	2.46E-01		2.07E-02	1.13E-01
		604.70	*	97.60	6.76E-02		1.67E-02	3.22E-02
		795.84	*	85.40	6.28E-02		7.54E-02	2.92E-02
		801.93		8.73	5.93E-01		-6.29E-03	2.75E-01
	CS-135	268.24		16.00	2.37E-01	2.37E-01	-1.36E-01	1.13E-01
	I-135	1131.51		22.50	1.05E+06	8.12E+05	-2.88E+05	4.77E+05
		1260.41		28.60	8.12E+05		1.06E+05	3.66E+05
		1678.03		9.54	1.71E+06		8.09E+04	7.10E+05
	CS-136	153.22		7.46	6.57E-01	6.70E-02	2.30E-01	3.18E-01
		163.89		4.61	1.01E+00		2.52E-01	4.88E-01
		176.55		13.56	3.50E-01		1.22E-01	1.68E-01
		273.65		12.66	4.30E-01		-4.49E-01	2.06E-01
		340.57		48.50	1.17E-01		-1.03E-01	5.56E-02
		818.50		99.70	6.70E-02		-7.24E-04	3.08E-02
		1048.07		79.60	1.03E-01		2.91E-02	4.72E-02
		1235.34		19.70	5.44E-01		1.20E-01	2.53E-01

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-137	661.65	85.12	6.19E-02	6.19E-02	-3.21E-03	2.90E-02
LA-138	788.74	34.00	1.49E-01	5.88E-02	-4.77E-03	6.92E-02
	1435.80	66.00	5.88E-02		1.01E-02	2.48E-02
CE-139	165.85	80.35	4.32E-02	4.32E-02	-1.86E-02	2.08E-02
BA-140	162.64	6.70	6.77E-01	2.07E-01	-6.38E-01	3.25E-01
	304.84	4.50	1.11E+00		2.15E-01	5.24E-01
	423.70	3.20	1.65E+00		-2.08E-01	7.73E-01
	437.55	2.00	2.44E+00		-8.68E-01	1.14E+00
	537.32	25.00	2.07E-01		1.13E-03	9.55E-02
LA-140	328.77	20.50	2.80E-01	7.59E-02	2.22E-01	1.33E-01
	487.03	45.50	1.18E-01		5.50E-03	5.51E-02
	815.85	23.50	2.89E-01		-8.44E-02	1.33E-01
	1596.49	95.49	7.59E-02		1.73E-02	3.33E-02
CE-141	145.44	48.40	8.00E-02	8.00E-02	3.41E-02	3.86E-02
CE-143	57.36	11.80	6.04E+00	2.59E+00	-2.28E+00	2.90E+00
	293.26	42.00	2.59E+00		1.58E+00	1.25E+00
	664.55	5.20	2.21E+01		2.93E+00	1.04E+01
CE-144	133.54	10.80	3.21E-01	3.21E-01	-5.73E-02	1.55E-01
PM-144	476.78	42.00	9.51E-02	4.60E-02	2.45E-02	4.45E-02
	618.01	98.60	4.60E-02		-1.70E-02	2.14E-02
	696.49	99.49	5.47E-02		2.38E-02	2.56E-02
PM-145	36.85	21.70	5.29E-01	2.72E-01	2.94E-01	2.53E-01
	37.36	39.70	2.72E-01		1.51E-01	1.30E-01
	42.30	15.10	4.31E-01		-4.43E-02	2.06E-01
	72.40	2.31	1.43E+00		-1.98E-02	6.89E-01
PM-146	453.90	39.94	8.84E-02	8.84E-02	1.67E-02	4.11E-02
	735.90	14.01	3.41E-01		9.25E-02	1.58E-01
	747.13	13.10	3.79E-01		5.64E-03	1.76E-01
ND-147	91.11	28.90	2.12E-01	2.12E-01	1.20E-01	1.03E-01
	531.02	13.10	4.52E-01		2.58E-01	2.10E-01
PM-149	285.90	3.10	8.06E+00	8.06E+00	-2.58E+00	3.84E+00
EU-152	121.78	20.50	1.58E-01	1.58E-01	-4.99E-02	7.63E-02
	244.69	5.40	6.78E-01		-1.16E+00	3.24E-01
	344.27	19.13	1.86E-01		-5.99E-03	8.78E-02
	778.89	9.20	5.57E-01		-2.60E-02	2.58E-01
	964.01	10.40	5.44E-01		-2.00E+00	2.51E-01
	1085.78	7.22	8.47E-01		2.36E-01	3.90E-01
	1112.02	9.60	6.22E-01		1.50E-01	2.85E-01
	1407.95	14.94	3.38E-01		-8.91E-03	1.49E-01
GD-153	97.43	31.30	1.03E-01	1.03E-01	-3.14E-02	5.00E-02
	103.18	22.20	1.45E-01		-1.45E-01	7.01E-02
EU-154	123.07	40.50	8.20E-02	8.20E-02	1.92E-02	3.97E-02
	723.30	19.70	2.85E-01		3.86E-03	1.34E-01
	873.19	11.50	4.68E-01		-1.41E-02	2.16E-01
	996.32	10.30	5.54E-01		1.56E-01	2.55E-01
	1004.76	17.90	3.40E-01		1.13E-01	1.57E-01
	1274.45	35.50	1.93E-01		5.19E-02	8.89E-02
EU-155	86.50	30.90	1.36E-01	1.36E-01	-4.53E-02	6.66E-02
	105.30	20.70	1.63E-01		1.43E-01	7.89E-02
EU-156	811.77	10.40	6.54E-01	6.54E-01	4.92E-02	3.02E-01
	1153.47	7.20	1.27E+00		3.81E-01	5.86E-01
	1230.71	8.90	1.01E+00		-3.66E-01	4.65E-01
HO-166M	184.41	72.60	6.20E-02	6.20E-02	6.41E-02	3.01E-02

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	HO-166M	280.45		29.60	1.36E-01	6.20E-02	-4.97E-02	6.50E-02
		410.94		11.10	3.55E-01		-1.72E-02	1.67E-01
		711.69		54.10	9.10E-02		1.33E-02	4.23E-02
	TM-171	66.72		0.14	2.42E+01	2.42E+01	-3.35E+00	1.17E+01
	HF-172	81.75		4.52	6.21E-01	3.04E-01	3.00E-01	2.99E-01
		125.81		11.30	3.04E-01		-1.44E-01	1.47E-01
	LU-172	181.53		20.60	3.21E-01	1.62E-01	-1.05E-01	1.55E-01
		810.06		16.63	5.79E-01		-1.67E-02	2.68E-01
		912.12		15.25	1.21E+00		2.45E+00	5.77E-01
		1093.66		62.50	1.62E-01		8.54E-03	7.36E-02
	LU-173	100.72		5.24	6.11E-01	2.04E-01	8.28E-02	2.96E-01
		272.11		21.20	2.04E-01		1.41E-01	9.77E-02
	HF-175	343.40		84.00	4.45E-02	4.45E-02	-3.82E-03	2.09E-02
	LU-176	88.34		13.30	3.20E-01	3.85E-02	3.22E-01	1.56E-01
		201.83		86.00	4.36E-02		-2.05E-03	2.09E-02
		306.78		94.00	3.85E-02		7.33E-03	1.82E-02
	TA-182	67.75		41.20	8.65E-02	8.65E-02	7.31E-02	4.18E-02
		1121.30		34.90	2.79E-01		3.24E-01	1.32E-01
		1189.05		16.23	4.80E-01		1.36E-01	2.23E-01
		1221.41		26.98	2.81E-01		-8.38E-02	1.30E-01
		1231.02		11.44	6.18E-01		-3.93E-01	2.85E-01
	IR-192	308.46		29.68	1.26E-01	8.23E-02	-5.74E-02	5.96E-02
		468.07		48.10	8.23E-02		7.07E-03	3.83E-02
	HG-203	279.19		77.30	5.96E-02	5.96E-02	1.79E-02	2.86E-02
	BI-207	569.67		97.72	3.86E-02	3.86E-02	3.25E-03	1.78E-02
		1063.62		74.90	7.94E-02		-4.95E-03	3.65E-02
+	TL-208	583.14	*	30.22	2.04E-01	2.04E-01	5.62E-01	9.69E-02
		860.37	*	4.48	1.35E+00		1.35E+00	6.28E-01
		2614.66		35.85	3.04E-01		5.15E-01	1.42E-01
	BI-210M	262.00		45.00	8.09E-02	8.09E-02	-1.66E-02	3.85E-02
		300.00		23.00	1.79E-01		1.14E-01	8.53E-02
	PB-210	46.50		4.25	1.42E+00	1.42E+00	1.46E+00	6.85E-01
	PB-211	404.84		2.90	1.24E+00	1.24E+00	-3.12E-01	5.80E-01
		831.96		2.90	1.71E+00		5.41E-01	7.89E-01
+	BI-212	727.17	*	11.80	5.32E-01	5.32E-01	4.24E-01	2.51E-01
		1620.62		2.75	1.59E+00		1.19E-02	6.75E-01
+	PB-212	238.63	*	44.60	1.68E-01	1.68E-01	6.33E-01	8.22E-02
		300.09	*	3.41	2.06E+00		6.41E-01	1.00E+00
+	BI-214	609.31	*	46.30	1.52E-01	1.52E-01	5.29E-01	7.28E-02
		1120.29	*	15.10	6.69E-01		6.25E-01	3.18E-01
		1764.49	*	15.80	2.68E-01		5.23E-01	1.12E-01
		2204.22	*	4.98	1.11E+00		1.30E+00	4.82E-01
+	PB-214	295.21	*	19.19	3.61E-01	1.88E-01	5.89E-01	1.76E-01
		351.92	*	37.19	1.88E-01		5.19E-01	9.14E-02
	RN-219	401.80		6.50	5.60E-01	5.60E-01	-1.96E-01	2.62E-01
	RA-223	323.87		3.88	9.67E-01	9.67E-01	2.71E-01	4.58E-01
	RA-224	240.98		3.95	1.72E+00	1.72E+00	2.66E+00	8.42E-01
	RA-225	40.00		31.00	3.41E-01	3.41E-01	-5.08E-02	1.63E-01
+	RA-226	186.21	*	3.28	1.75E+00	1.75E+00	1.98E+00	8.52E-01
	TH-227	50.10		8.40	5.24E-01	4.83E-01	3.33E-01	2.51E-01
		236.00		11.50	4.83E-01		-1.85E+00	2.35E-01
		256.20		6.30	5.80E-01		-1.23E-02	2.77E-01
+	AC-228	338.32	*	11.40	5.19E-01	2.84E-01	7.44E-01	2.50E-01

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	AC-228	911.07	*	27.70	2.84E-01	2.84E-01	8.00E-01	1.34E-01
		969.11	*	16.60	5.47E-01		8.98E-01	2.60E-01
	TH-230	48.44		16.90	2.74E-01	2.74E-01	-3.19E-01	1.31E-01
		62.85		4.60	8.29E-01		7.96E-01	4.01E-01
		67.67		0.37	9.30E+00		7.86E+00	4.50E+00
	PA-231	283.67		1.60	2.33E+00	1.58E+00	-7.66E-01	1.11E+00
		302.67		2.30	1.58E+00		2.10E-01	7.51E-01
+	TH-231	25.64	*	14.70	1.25E+01	8.65E-01	1.08E+01	6.14E+00
		84.21	*	6.40	8.65E-01		3.09E-01	4.24E-01
	PA-233	311.98		38.60	1.12E-01	1.12E-01	-4.09E-02	5.31E-02
	PA-234	131.20		20.40	1.77E-01	1.77E-01	9.93E-02	8.60E-02
		733.99		8.80	5.31E-01		-1.62E-01	2.45E-01
		946.00		12.00	4.69E-01		1.45E-02	2.16E-01
	PA-234M	1001.03		0.92	6.22E+00	6.22E+00	-1.83E-02	2.86E+00
	TH-234	63.29		3.80	9.96E-01	9.96E-01	9.56E-01	4.82E-01
	U-235	143.76		10.50	3.18E-01	3.18E-01	-5.70E-03	1.54E-01
		163.35		4.70	6.96E-01		-6.56E-01	3.35E-01
		205.31		4.70	8.17E-01		-5.94E-02	3.93E-01
	NP-237	86.50		12.60	3.34E-01	3.34E-01	-1.11E-01	1.63E-01
	NP-239	106.10		22.70	8.70E-01	8.70E-01	2.07E-01	4.22E-01
		228.18		10.70	2.11E+00		5.85E-01	1.01E+00
		277.60		14.10	1.78E+00		5.14E-01	8.50E-01
	AM-241	59.54		35.90	9.73E-02	9.73E-02	1.80E-02	4.68E-02
	AM-243	74.67		66.00	6.49E-02	6.49E-02	-6.90E-02	3.16E-02
	CM-243	209.75		3.29	1.25E+00	3.01E-01	6.60E-01	6.03E-01
		228.14		10.60	3.59E-01		9.93E-02	1.72E-01
		277.60		14.00	3.01E-01		8.70E-02	1.44E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

Analysis Report for 1411131-08

J1V1M1 SAF: RC-107

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: J1V1M1 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	109	672
9:	1111	1351	1033	523	1400	620	120	147
17:	156	178	186	162	180	213	199	179
25:	163	179	140	124	89	90	61	50
33:	55	41	43	56	52	60	45	65
41:	51	55	55	51	55	77	121	54
49:	59	68	66	48	51	72	52	58
57:	66	64	81	76	71	75	111	129
65:	82	85	83	109	104	70	92	103
73:	104	116	265	152	279	184	72	72
81:	82	89	66	114	109	89	131	146
89:	90	125	82	119	144	106	73	59
97:	74	55	66	64	66	56	62	64
105:	60	88	73	52	64	55	56	63
113:	56	55	61	50	54	49	50	59
121:	59	58	50	64	72	55	62	63
129:	85	82	60	59	56	56	64	62
137:	64	52	49	69	57	44	54	58
145:	57	50	50	49	68	49	49	53
153:	63	65	49	51	53	61	61	50
161:	45	34	50	50	37	61	41	36
169:	52	45	44	56	52	41	47	42
177:	38	38	53	37	44	52	46	42
185:	71	146	62	68	49	38	42	29
193:	43	45	46	49	52	47	45	35
201:	33	57	41	50	43	41	47	46
209:	80	52	37	34	39	28	38	44
217:	46	40	36	42	31	31	38	44
225:	27	35	33	34	47	39	39	41
233:	37	35	40	35	39	244	332	67
241:	69	76	36	40	35	28	18	40
249:	33	32	27	27	29	35	34	33
257:	23	22	30	28	23	32	25	33
265:	31	18	29	21	31	50	42	33
273:	26	37	27	35	46	42	24	29
281:	34	29	30	22	27	25	28	30
289:	30	21	22	32	23	36	132	66
297:	16	27	36	45	22	20	26	22
305:	25	23	14	20	29	19	26	22
313:	27	20	25	20	29	26	13	25
321:	20	27	26	19	27	12	40	37
329:	22	22	12	20	22	11	22	24
337:	37	82	48	22	17	19	20	14
345:	19	19	18	21	19	23	106	166
353:	44	19	29	24	19	12	16	6
361:	21	24	23	21	22	16	26	18

369:	23	15	12	23	26	21	10	15

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Channel								
377:	17	19	22	20	22	12	15	17
385:	14	15	22	23	14	17	17	17
393:	18	15	18	13	15	12	17	18
401:	16	15	8	19	19	12	15	18
409:	31	19	6	13	18	20	17	16
417:	23	14	16	19	20	18	13	13
425:	17	16	12	17	16	10	19	21
433:	16	12	11	13	15	11	12	14
441:	18	16	16	16	9	13	16	6
449:	16	9	10	7	13	12	16	11
457:	10	12	11	14	15	19	35	11
465:	15	11	15	13	10	15	16	7
473:	12	20	15	12	13	15	15	6
481:	12	13	7	16	10	9	20	11
489:	15	12	15	10	8	9	11	10
497:	9	10	6	14	8	7	8	5
505:	10	13	6	15	18	57	51	36
513:	7	15	15	19	7	8	12	11
521:	9	13	10	13	10	12	10	11
529:	11	22	10	9	10	8	5	15
537:	9	14	8	11	11	5	13	13
545:	12	5	5	16	13	10	13	14
553:	11	22	10	13	10	6	7	12
561:	7	10	12	9	5	9	8	8
569:	11	12	9	8	13	13	6	9
577:	16	8	11	10	5	52	116	23
585:	13	15	8	11	4	13	10	13
593:	7	17	10	7	7	10	8	8
601:	9	8	10	8	17	7	12	46
609:	146	51	16	9	10	11	6	9
617:	11	10	5	10	10	8	14	1
625:	8	7	8	6	7	7	10	9
633:	10	7	12	8	2	10	7	2
641:	9	14	11	9	12	18	7	6
649:	8	13	6	11	14	8	5	9
657:	3	12	11	11	11	7	7	18
665:	15	16	7	9	12	6	19	8
673:	11	9	12	15	8	9	8	6
681:	8	7	7	8	9	7	9	14
689:	9	11	6	7	10	12	10	10
697:	10	10	12	6	12	10	7	10
705:	12	10	7	7	10	10	8	11
713:	4	9	8	6	6	11	5	13
721:	9	7	10	10	9	18	24	13
729:	8	10	5	10	14	3	9	3
737:	6	7	10	2	8	5	10	8
745:	7	8	6	9	8	9	8	8
753:	6	9	14	5	6	5	5	5
761:	6	7	9	11	17	9	13	21
769:	16	11	8	13	8	7	6	3
777:	8	11	10	5	9	9	6	13
785:	12	10	5	8	9	4	5	10
793:	10	17	12	7	8	8	4	3

801:	7	17	6	9	7	11	9	6

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Channel								
809:	6	7	10	6	8	9	4	5
817:	7	3	10	8	8	5	4	7
825:	5	4	4	4	5	7	5	5
833:	7	5	12	9	3	6	7	9
841:	8	10	9	12	6	4	6	3
849:	10	7	4	4	7	5	5	6
857:	3	10	8	23	14	10	2	6
865:	2	6	11	8	6	4	8	10
873:	10	9	5	4	8	7	7	4
881:	8	7	8	1	6	8	6	8
889:	2	8	5	8	5	4	5	4
897:	4	6	8	10	6	8	8	6
905:	6	4	5	12	17	50	59	22
913:	7	6	6	6	3	4	7	5
921:	8	6	10	6	5	3	5	2
929:	3	4	5	10	13	19	11	9
937:	3	3	7	4	3	6	5	7
945:	9	8	2	8	9	10	7	8
953:	4	9	4	6	6	5	10	4
961:	3	2	5	12	12	2	11	47
969:	42	10	4	7	6	8	10	4
977:	8	2	6	10	8	5	6	6
985:	10	6	3	4	7	6	3	3
993:	6	9	9	2	6	6	7	3
1001:	10	3	7	9	8	9	5	8
1009:	4	6	3	8	9	2	6	4
1017:	5	4	12	3	7	3	7	3
1025:	3	5	7	4	7	2	7	1
1033:	6	3	5	3	4	10	3	9
1041:	6	4	3	6	6	6	4	10
1049:	7	4	8	8	3	9	1	8
1057:	6	11	7	7	9	6	5	4
1065:	8	5	1	9	4	5	5	7
1073:	9	10	13	6	15	4	4	9
1081:	4	6	7	9	5	1	9	8
1089:	5	3	7	3	4	5	6	6
1097:	2	4	5	5	5	6	9	7
1105:	5	6	4	6	6	4	7	3
1113:	5	7	9	3	6	9	31	32
1121:	12	7	9	7	8	8	6	3
1129:	8	6	1	3	7	7	4	7
1137:	5	7	5	11	3	4	5	4
1145:	6	5	7	6	6	8	8	6
1153:	11	7	11	2	6	6	7	5
1161:	10	11	8	6	6	8	4	8
1169:	4	5	10	6	9	4	1	3
1177:	8	9	9	9	6	9	10	8
1185:	6	6	12	10	10	5	9	8
1193:	6	8	5	9	7	11	10	7
1201:	5	9	3	11	7	7	3	11
1209:	12	5	7	7	5	9	8	13
1217:	5	10	4	10	9	5	7	9
1225:	8	11	6	8	8	7	4	3

1233:	10	6	9	12	8	13	9	10

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Channel								
1241:	8	9	10	10	7	10	3	4
1249:	6	5	6	7	4	1	3	1
1257:	3	11	5	7	2	0	0	6
1265:	2	4	5	5	4	6	4	6
1273:	7	10	3	7	7	3	7	8
1281:	6	5	0	5	3	8	1	3
1289:	10	3	1	5	3	6	1	3
1297:	2	4	9	5	4	3	7	4
1305:	2	6	4	1	5	1	2	5
1313:	6	1	1	5	3	3	1	3
1321:	4	7	2	7	9	3	2	2
1329:	6	0	6	11	7	2	1	5
1337:	2	2	4	5	4	4	2	7
1345:	2	8	6	3	4	1	0	3
1353:	5	6	3	3	6	0	2	3
1361:	4	2	1	2	5	2	4	0
1369:	3	3	0	4	2	3	3	7
1377:	6	7	1	0	3	6	3	2
1385:	5	3	1	0	3	3	0	2
1393:	0	1	2	0	1	2	1	1
1401:	7	1	3	1	4	5	0	1
1409:	4	4	3	4	2	1	3	2
1417:	1	2	4	3	1	4	2	0
1425:	0	3	3	1	1	1	1	4
1433:	0	1	0	2	2	1	1	1
1441:	4	2	3	2	1	3	1	5
1449:	6	1	1	1	1	2	3	5
1457:	5	53	178	309	128	27	4	4
1465:	1	2	4	1	2	2	2	2
1473:	3	2	2	3	4	1	2	1
1481:	2	2	0	0	1	2	1	2
1489:	0	3	2	0	3	2	3	2
1497:	0	2	2	4	3	0	0	3
1505:	1	2	2	2	5	3	2	1
1513:	2	2	3	0	3	2	0	1
1521:	0	2	1	1	1	1	0	0
1529:	1	0	2	4	1	1	2	1
1537:	4	2	3	2	0	2	1	1
1545:	1	1	2	2	2	1	1	2
1553:	1	2	1	0	1	1	2	0
1561:	2	3	1	2	1	0	1	1
1569:	0	0	1	3	2	0	1	5
1577:	1	0	2	1	0	4	3	0
1585:	1	9	5	4	1	1	3	4
1593:	3	2	2	1	1	1	1	2
1601:	2	0	1	1	4	0	0	0
1609:	1	1	2	4	1	1	2	1
1617:	0	1	1	5	2	1	0	0
1625:	0	2	0	3	5	2	1	4
1633:	0	0	1	2	1	0	0	2
1641:	1	0	1	0	1	2	3	0
1649:	0	0	0	0	2	1	0	1
1657:	0	0	3	2	1	0	0	2

1665:	1	0	0	1	3	0	0	1

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Channel								
1673:	0	2	1	1	0	3	1	0
1681:	0	0	2	1	1	1	1	2
1689:	0	0	0	2	1	1	1	2
1697:	1	1	1	0	0	1	0	2
1705:	2	0	1	2	2	0	1	0
1713:	2	3	2	2	1	0	1	0
1721:	1	1	1	0	0	1	1	3
1729:	3	2	3	3	0	2	1	1
1737:	0	1	2	1	1	2	3	0
1745:	1	1	2	0	2	0	1	1
1753:	1	1	2	2	0	1	0	1
1761:	1	7	18	9	2	1	1	0
1769:	1	1	2	0	1	1	0	0
1777:	1	0	1	0	1	1	1	0
1785:	1	0	2	1	2	0	1	2
1793:	1	0	1	1	2	0	1	1
1801:	2	1	2	1	2	1	1	0
1809:	3	0	0	2	1	0	0	1
1817:	0	0	0	0	0	0	2	0
1825:	1	1	1	1	0	1	0	0
1833:	5	0	1	1	0	3	0	1
1841:	1	0	1	2	3	1	3	0
1849:	1	1	1	1	0	0	1	2
1857:	0	0	3	2	2	1	0	4
1865:	1	2	2	1	1	1	2	1
1873:	2	1	0	1	0	2	0	1
1881:	0	1	0	0	1	0	1	1
1889:	0	0	0	1	0	4	2	1
1897:	3	2	1	0	2	0	1	1
1905:	1	1	4	1	0	1	2	0
1913:	0	0	1	0	2	0	0	0
1921:	0	1	0	1	0	2	0	2
1929:	0	1	1	0	1	1	0	1
1937:	3	1	0	3	0	1	0	1
1945:	0	0	0	1	1	2	3	2
1953:	2	1	0	1	0	0	0	1
1961:	0	0	0	3	1	0	0	2
1969:	1	2	1	0	1	1	0	2
1977:	1	3	0	0	0	1	1	1
1985:	1	0	0	1	0	1	2	0
1993:	1	1	1	0	0	3	2	1
2001:	0	0	2	0	1	1	0	2
2009:	0	0	0	0	2	2	2	1
2017:	1	1	1	1	1	0	0	0
2025:	1	0	0	2	1	1	1	0
2033:	2	1	0	2	1	3	0	1
2041:	0	0	2	0	3	1	0	1
2049:	1	0	0	1	0	1	0	1
2057:	0	0	1	1	0	4	2	0
2065:	2	0	2	0	1	1	0	0
2073:	0	2	1	2	0	0	0	0
2081:	1	0	1	1	2	0	0	1
2089:	0	2	0	0	0	1	0	3

2097:	3	2	1	2	3	0	1	1

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

2529:	0	0	0	1	0	1	0	1

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Channel								
2537:	0	0	0	0	0	1	1	0
2545:	0	0	0	0	1	0	0	0
2553:	0	0	0	0	0	0	1	0
2561:	1	0	0	1	1	0	0	0
2569:	0	1	0	0	0	1	0	1
2577:	0	1	0	0	0	0	0	0
2585:	1	0	1	0	1	1	0	1
2593:	0	0	0	0	0	1	0	0
2601:	2	1	0	0	0	0	0	0
2609:	0	1	12	22	24	10	1	1
2617:	0	0	0	0	0	0	0	0
2625:	0	0	0	0	0	0	0	1
2633:	2	0	0	0	0	0	0	1
2641:	1	0	2	0	1	0	1	0
2649:	0	0	0	1	0	0	0	0
2657:	1	1	0	1	0	0	0	0
2665:	0	0	0	1	0	0	0	1
2673:	0	0	0	1	1	0	0	0
2681:	0	0	0	0	1	0	1	0
2689:	2	0	0	0	1	0	0	0
2697:	0	0	0	0	0	1	0	0
2705:	0	0	2	0	2	0	0	0
2713:	0	1	0	0	0	0	1	0
2721:	0	0	0	1	0	0	2	0
2729:	0	0	1	1	0	0	0	0
2737:	2	0	0	0	0	1	0	0
2745:	0	1	0	0	0	0	1	0
2753:	0	1	1	0	0	2	0	0
2761:	0	0	0	1	1	0	0	0
2769:	0	0	0	1	0	1	0	0
2777:	0	1	0	0	0	1	0	0
2785:	1	0	0	1	0	0	0	0
2793:	0	0	0	0	0	0	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	1	1	0	0
2817:	1	0	1	1	0	0	0	0
2825:	0	0	1	0	0	1	0	0
2833:	0	0	1	1	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	0	0	1	1
2857:	0	1	1	0	0	1	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	2	0	0	0
2881:	1	0	0	0	0	1	0	0
2889:	0	0	0	0	0	0	0	1
2897:	0	0	0	1	0	0	1	0
2905:	0	0	0	0	0	0	0	1
2913:	0	0	0	0	0	0	0	0
2921:	1	1	0	0	0	0	0	0
2929:	1	1	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	1
2953:	0	1	0	0	0	0	0	0

2961:	1	0	0	0	1	0	0	0

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

3393:	0	1	1	0	0	0	0	0

Sample Title: J1V1M1 SAF: RC-107

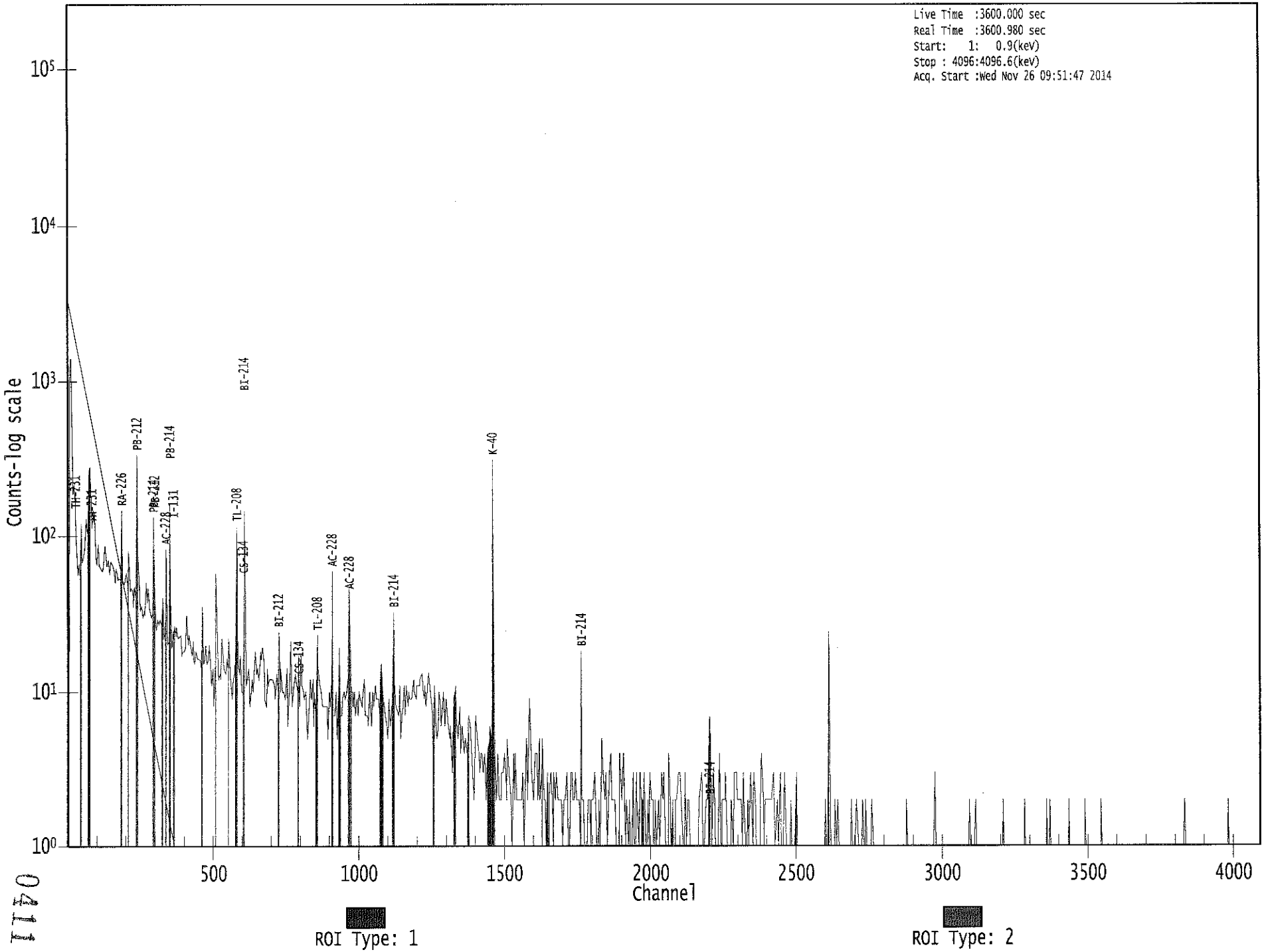
Channel								
3401:	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	1	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	1	0	2	1	0	0	0	0
3441:	1	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	1	0	0	0	1	0	0	0
3465:	0	0	0	0	0	0	1	0
3473:	0	1	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	2	1	0	1	0	0	0
3497:	0	0	0	1	0	0	0	0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

3825:	0	0	0	0	1	0	0	0

Sample Title: J1V1M1 SAF: RC-107

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

0000015625.CNF



Apex-Gamma

Analysis Report for 1411131-09
J1V1M2 SAF: RC-107

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-09
Sample Description	: J1V1M2 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.696E+02 grams
Facility	: Countroom
Sample Taken On	: 11/20/2014 8:56:57AM
Acquisition Started	: 11/26/2014 10:52:53AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3601.0 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 5 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/2/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15640

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 11:52:57AM
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	26.69	26.80	0.0000	0.00
2	63.37	63.47	0.0000	0.00
3	75.79	75.88	0.0000	0.00
4	149.21	149.25	0.0000	0.00
5	154.46	154.51	0.0000	0.00
6	185.90	185.93	0.0000	0.00
7	210.16	210.17	0.0000	0.00
8	238.73	238.73	0.0000	0.00
9	242.00	241.99	0.0000	0.00
10	269.23	269.21	0.0000	0.00
11	295.09	295.06	0.0000	0.00
12	327.88	327.82	0.0000	0.00
13	337.99	337.93	0.0000	0.00
14	351.88	351.81	0.0000	0.00
15	463.25	463.13	0.0000	0.00
16	510.62	510.47	0.0000	0.00
17	583.07	582.89	0.0000	0.00
18	609.39	609.19	0.0000	0.00
19	716.88	716.64	0.0000	0.00
20	726.87	726.62	0.0000	0.00
21	768.41	768.14	0.0000	0.00
22	772.45	772.18	0.0000	0.00
23	860.56	860.26	0.0000	0.00
24	911.03	910.70	0.0000	0.00
25	932.33	931.99	0.0000	0.00
26	967.94	967.59	0.0000	0.00
27	1120.23	1119.82	0.0000	0.00
28	1165.47	1165.04	0.0000	0.00
29	1237.67	1237.22	0.0000	0.00
30	1240.67	1240.22	0.0000	0.00
31	1375.40	1374.90	0.0000	0.00
32	1392.71	1392.21	0.0000	0.00
33	1412.61	1412.11	0.0000	0.00
34	1460.40	1459.88	0.0000	0.00
35	1546.96	1546.42	0.0000	0.00
36	1589.37	1588.81	0.0000	0.00
37	1616.05	1615.48	0.0000	0.00
38	1625.34	1624.77	0.0000	0.00
39	1728.46	1727.86	0.0000	0.00
40	1763.70	1763.09	0.0000	0.00
41	1780.34	1779.73	0.0000	0.00
42	1840.34	1839.71	0.0000	0.00

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1848.63	1848.00	0.0000	0.00
44	1906.50	1905.86	0.0000	0.00
45	1938.31	1937.66	0.0000	0.00
46	1956.24	1955.60	0.0000	0.00
47	1986.71	1986.06	0.0000	0.00
48	1993.03	1992.38	0.0000	0.00
49	2027.18	2026.52	0.0000	0.00
50	2100.08	2099.41	0.0000	0.00
51	2179.02	2178.33	0.0000	0.00
52	2203.36	2202.67	0.0000	0.00
53	2212.00	2211.31	0.0000	0.00
54	2260.62	2259.92	0.0000	0.00
55	2355.57	2354.86	0.0000	0.00
56	2379.25	2378.54	0.0000	0.00
57	2445.77	2445.04	0.0000	0.00
58	2613.20	2612.46	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 11:52:57AM

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	26.69	24 -	33	26.80	1.97E+02	128.72	1.92E+03	2.79
	2	63.37	59 -	67	63.47	1.65E+02	96.99	1.35E+03	4.19
	3	75.79	71 -	80	75.88	8.10E+02	118.68	1.55E+03	3.68
	4	149.21	147 -	151	149.25	5.14E+01	49.95	5.07E+02	2.18
	5	154.46	153 -	157	154.51	4.73E+01	50.40	5.25E+02	1.25
	6	185.90	182 -	189	185.93	1.26E+02	74.11	8.30E+02	1.33
	7	210.16	206 -	213	210.17	5.82E+01	64.37	6.52E+02	1.43
M	8	238.73	235 -	245	238.73	5.31E+02	63.86	3.87E+02	1.55
m	9	242.00	235 -	245	241.99	8.51E+01	46.37	3.54E+02	1.56
	10	269.23	265 -	273	269.21	9.56E+01	59.29	4.83E+02	1.75
	11	295.09	292 -	298	295.06	1.67E+02	52.22	3.74E+02	1.35
	12	327.88	325 -	331	327.82	4.18E+01	41.91	2.92E+02	1.59
	13	337.99	334 -	341	337.93	1.36E+02	51.96	3.57E+02	1.36
	14	351.88	348 -	356	351.81	3.16E+02	59.73	3.51E+02	1.50
	15	463.25	460 -	466	463.13	3.56E+01	32.18	1.59E+02	1.57
	16	510.62	506 -	513	510.47	1.27E+02	41.90	2.08E+02	2.60
	17	583.07	578 -	587	582.89	1.82E+02	46.13	2.00E+02	1.59
	18	609.39	603 -	616	609.19	2.82E+02	59.18	2.57E+02	1.42
	19	716.88	711 -	722	716.64	3.76E+01	36.06	1.43E+02	7.94
	20	726.87	723 -	729	726.62	5.55E+01	25.41	7.70E+01	2.37
M	21	768.41	763 -	779	768.14	2.74E+01	22.74	8.43E+01	2.02
m	22	772.45	763 -	779	772.18	1.84E+01	21.75	6.83E+01	2.03
	23	860.56	857 -	863	860.26	2.06E+01	21.94	7.08E+01	1.29
	24	911.03	906 -	914	910.70	1.49E+02	35.97	1.06E+02	1.74
	25	932.33	927 -	938	931.99	3.61E+01	31.81	1.10E+02	5.07
	26	967.94	962 -	972	967.59	1.06E+02	41.25	1.70E+02	2.12
	27	1120.23	1116 -	1123	1119.82	6.78E+01	24.98	5.64E+01	2.09
	28	1165.47	1162 -	1168	1165.04	2.30E+01	20.00	5.60E+01	3.69
M	29	1237.67	1234 -	1242	1237.22	2.89E+01	23.01	7.95E+01	2.39
m	30	1240.67	1234 -	1242	1240.22	1.57E+01	17.25	4.22E+01	2.40
	31	1375.40	1369 -	1379	1374.90	2.72E+01	17.76	2.75E+01	1.30
	32	1392.71	1389 -	1394	1392.21	9.07E+00	9.80	1.19E+01	1.06
	33	1412.61	1410 -	1415	1412.11	1.22E+01	9.33	5.60E+00	2.13
	34	1460.40	1455 -	1466	1459.88	7.18E+02	56.14	3.14E+01	2.51
	35	1546.96	1541 -	1550	1546.42	1.10E+01	10.68	1.00E+01	6.42
	36	1589.37	1584 -	1594	1588.81	1.55E+01	17.59	3.30E+01	1.19
	37	1616.05	1613 -	1619	1615.48	8.82E+00	7.50	4.36E+00	2.85
	38	1625.34	1620 -	1628	1624.77	8.82E+00	8.02	4.36E+00	1.29
	39	1728.46	1723 -	1731	1727.86	1.27E+01	8.96	4.60E+00	2.03
	40	1763.70	1758 -	1767	1763.09	4.75E+01	17.18	1.49E+01	3.10

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1780.34	1777 -	1783	1779.73	6.50E+00	8.03	7.00E+00	1.13
42	1840.34	1838 -	1842	1839.71	7.00E+00	5.29	0.00E+00	1.16
43	1848.63	1844 -	1853	1848.00	1.60E+01	8.00	0.00E+00	1.84
44	1906.50	1902 -	1909	1905.86	1.00E+01	9.38	8.00E+00	4.03
45	1938.31	1932 -	1943	1937.66	1.39E+01	10.20	6.12E+00	8.82
46	1956.24	1951 -	1959	1955.60	7.85E+00	7.76	4.30E+00	6.70
47	1986.71	1981 -	1989	1986.06	6.61E+00	7.50	4.78E+00	3.40
48	1993.03	1990 -	1995	1992.38	8.00E+00	5.66	0.00E+00	2.98
49	2027.18	2022 -	2028	2026.52	4.86E+00	6.34	4.29E+00	0.97
50	2100.08	2095 -	2105	2099.41	1.75E+01	12.35	1.10E+01	6.20
51	2179.02	2175 -	2181	2178.33	9.00E+00	6.00	0.00E+00	2.88
52	2203.36	2198 -	2208	2202.67	1.90E+01	10.87	6.00E+00	2.38
53	2212.00	2209 -	2214	2211.31	5.00E+00	7.07	6.00E+00	1.79
54	2260.62	2256 -	2264	2259.92	9.14E+00	8.02	3.73E+00	1.05
55	2355.57	2350 -	2359	2354.86	1.40E+01	7.48	0.00E+00	2.36
56	2379.25	2374 -	2382	2378.54	6.94E+00	7.50	4.11E+00	1.82
57	2445.77	2442 -	2448	2445.04	7.00E+00	8.03	6.00E+00	2.74
58	2613.20	2608 -	2617	2612.46	6.50E+01	16.12	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 : 11/26/2014 11:52:57AM

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	26.69	24 -	33	1.97E+02	128.72	1.92E+03	1.03E+02
	2	63.37	59 -	67	1.65E+02	96.99	1.35E+03	7.69E+01
	3	75.79	71 -	80	8.10E+02	118.68	1.55E+03	8.56E+01
	4	149.21	147 -	151	5.14E+01	49.95	5.07E+02	3.93E+01
	5	154.46	153 -	157	4.73E+01	50.40	5.25E+02	3.99E+01
	6	185.90	182 -	189	1.26E+02	74.11	8.30E+02	5.81E+01
	7	210.16	206 -	213	5.82E+01	64.37	6.52E+02	5.14E+01
M	8	238.73	235 -	245	5.31E+02	63.86	3.87E+02	3.23E+01
m	9	242.00	235 -	245	8.51E+01	46.37	3.54E+02	3.09E+01
	10	269.23	265 -	273	9.56E+01	59.29	4.83E+02	4.60E+01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	11	295.09	292 -	298	1.67E+02	52.22	3.74E+02	3.73E+01
	12	327.88	325 -	331	4.18E+01	41.91	2.92E+02	3.28E+01
	13	337.99	334 -	341	1.36E+02	51.96	3.57E+02	3.82E+01
	14	351.88	348 -	356	3.16E+02	59.73	3.51E+02	3.94E+01
	15	463.25	460 -	466	3.56E+01	32.18	1.59E+02	2.46E+01
	16	510.62	506 -	513	1.27E+02	41.90	2.08E+02	2.90E+01
	17	583.07	578 -	587	1.82E+02	46.13	2.00E+02	3.08E+01
	18	609.39	603 -	616	2.82E+02	59.18	2.57E+02	1.92E+01
	19	716.88	711 -	722	3.76E+01	36.06	1.43E+02	2.79E+01
	20	726.87	723 -	729	5.55E+01	25.41	7.70E+01	1.69E+01
M	21	768.41	763 -	779	2.74E+01	22.74	8.43E+01	1.51E+01
m	22	772.45	763 -	779	1.84E+01	21.75	6.83E+01	1.36E+01
	23	860.56	857 -	863	2.06E+01	21.94	7.08E+01	1.64E+01
	24	911.03	906 -	914	1.49E+02	35.97	1.06E+02	2.17E+01
	25	932.33	927 -	938	3.61E+01	31.81	1.10E+02	2.42E+01
	26	967.94	962 -	972	1.06E+02	41.25	1.70E+02	2.94E+01
	27	1120.23	1116 -	1123	6.78E+01	24.98	5.64E+01	1.54E+01
	28	1165.47	1162 -	1168	2.30E+01	20.00	5.60E+01	1.44E+01
M	29	1237.67	1234 -	1242	2.89E+01	23.01	7.95E+01	1.47E+01
m	30	1240.67	1234 -	1242	1.57E+01	17.25	4.22E+01	1.07E+01
	31	1375.40	1369 -	1379	2.72E+01	17.76	2.75E+01	1.18E+01
	32	1392.71	1389 -	1394	9.07E+00	9.80	1.19E+01	6.35E+00
	33	1412.61	1410 -	1415	1.22E+01	9.33	5.60E+00	5.08E+00
	34	1460.40	1455 -	1466	7.18E+02	56.14	3.14E+01	1.37E+01
	35	1546.96	1541 -	1550	1.10E+01	10.68	1.00E+01	6.88E+00
	36	1589.37	1584 -	1594	1.55E+01	17.59	3.30E+01	1.29E+01
	37	1616.05	1613 -	1619	8.82E+00	7.50	4.36E+00	3.76E+00
	38	1625.34	1620 -	1628	8.82E+00	8.02	4.36E+00	4.42E+00
	39	1728.46	1723 -	1731	1.27E+01	8.96	4.60E+00	4.46E+00
	40	1763.70	1758 -	1767	4.75E+01	17.18	1.49E+01	8.42E+00
	41	1780.34	1777 -	1783	6.50E+00	8.03	7.00E+00	5.10E+00
	42	1840.34	1838 -	1842	7.00E+00	5.29	0.00E+00	0.00E+00
	43	1848.63	1844 -	1853	1.60E+01	8.00	0.00E+00	0.00E+00
	44	1906.50	1902 -	1909	1.00E+01	9.38	8.00E+00	5.70E+00
	45	1938.31	1932 -	1943	1.39E+01	10.20	6.12E+00	5.71E+00
	46	1956.24	1951 -	1959	7.85E+00	7.76	4.30E+00	4.42E+00
	47	1986.71	1981 -	1989	6.61E+00	7.50	4.78E+00	4.49E+00
	48	1993.03	1990 -	1995	8.00E+00	5.66	0.00E+00	0.00E+00
	49	2027.18	2022 -	2028	4.86E+00	6.34	4.29E+00	3.75E+00
	50	2100.08	2095 -	2105	1.75E+01	12.35	1.10E+01	7.47E+00
	51	2179.02	2175 -	2181	9.00E+00	6.00	0.00E+00	0.00E+00
	52	2203.36	2198 -	2208	1.90E+01	10.87	6.00E+00	5.34E+00
	53	2212.00	2209 -	2214	5.00E+00	7.07	6.00E+00	4.50E+00
	54	2260.62	2256 -	2264	9.14E+00	8.02	3.73E+00	4.33E+00
	55	2355.57	2350 -	2359	1.40E+01	7.48	0.00E+00	0.00E+00
	56	2379.25	2374 -	2382	6.94E+00	7.50	4.11E+00	4.39E+00
	57	2445.77	2442 -	2448	7.00E+00	8.03	6.00E+00	4.97E+00
	58	2613.20	2608 -	2617	6.50E+01	16.12	0.00E+00	0.00E+00

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 11:52:57AM

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	26.69	24 -	33	26.80	1.97E+02	128.72	1.92E+03	.....
	2	63.37	59 -	67	63.47	1.65E+02	96.99	1.35E+03	TH-234
									TH-230
	3	75.79	71 -	80	75.88	8.10E+02	118.68	1.55E+03	.....
	4	149.21	147 -	151	149.25	5.14E+01	49.95	5.07E+02	.....
	5	154.46	153 -	157	154.51	4.73E+01	50.40	5.25E+02	.....
	6	185.90	182 -	189	185.93	1.26E+02	74.11	8.30E+02	RA-226
	7	210.16	206 -	213	210.17	5.82E+01	64.37	6.52E+02	CM-243
M	8	238.73	235 -	245	238.73	5.31E+02	63.86	3.87E+02	PB-212
m	9	242.00	235 -	245	241.99	8.51E+01	46.37	3.54E+02	.....
	10	269.23	265 -	273	269.21	9.56E+01	59.29	4.83E+02	CS-135
	11	295.09	292 -	298	295.06	1.67E+02	52.22	3.74E+02	PB-214
	12	327.88	325 -	331	327.82	4.18E+01	41.91	2.92E+02	LA-140
	13	337.99	334 -	341	337.93	1.36E+02	51.96	3.57E+02	AC-228
	14	351.88	348 -	356	351.81	3.16E+02	59.73	3.51E+02	PB-214
	15	463.25	460 -	466	463.13	3.56E+01	32.18	1.59E+02	SB-125
	16	510.62	506 -	513	510.47	1.27E+02	41.90	2.08E+02	.....
	17	583.07	578 -	587	582.89	1.82E+02	46.13	2.00E+02	TL-208
	18	609.39	603 -	616	609.19	2.82E+02	59.18	2.57E+02	BI-214
	19	716.88	711 -	722	716.64	3.76E+01	36.06	1.43E+02	.....
	20	726.87	723 -	729	726.62	5.55E+01	25.41	7.70E+01	BI-212
M	21	768.41	763 -	779	768.14	2.74E+01	22.74	8.43E+01	.....
m	22	772.45	763 -	779	772.18	1.84E+01	21.75	6.83E+01	.....
	23	860.56	857 -	863	860.26	2.06E+01	21.94	7.08E+01	TL-208
	24	911.03	906 -	914	910.70	1.49E+02	35.97	1.06E+02	AC-228
	25	932.33	927 -	938	931.99	3.61E+01	31.81	1.10E+02	.....
	26	967.94	962 -	972	967.59	1.06E+02	41.25	1.70E+02	.....
	27	1120.23	1116 -	1123	1119.82	6.78E+01	24.98	5.64E+01	BI-214
									SC-46
	28	1165.47	1162 -	1168	1165.04	2.30E+01	20.00	5.60E+01	.....

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	29	1237.67	1234 -	1242	1237.22	2.89E+01	23.01	7.95E+01	CO-56
m	30	1240.67	1234 -	1242	1240.22	1.57E+01	17.25	4.22E+01	.....
	31	1375.40	1369 -	1379	1374.90	2.72E+01	17.76	2.75E+01	.....
	32	1392.71	1389 -	1394	1392.21	9.07E+00	9.80	1.19E+01	.....
	33	1412.61	1410 -	1415	1412.11	1.22E+01	9.33	5.60E+00	.....
	34	1460.40	1455 -	1466	1459.88	7.18E+02	56.14	3.14E+01	K-40
	35	1546.96	1541 -	1550	1546.42	1.10E+01	10.68	1.00E+01	.....
	36	1589.37	1584 -	1594	1588.81	1.55E+01	17.59	3.30E+01	.....
	37	1616.05	1613 -	1619	1615.48	8.82E+00	7.50	4.36E+00	.....
	38	1625.34	1620 -	1628	1624.77	8.82E+00	8.02	4.36E+00	.....
	39	1728.46	1723 -	1731	1727.86	1.27E+01	8.96	4.60E+00	.....
	40	1763.70	1758 -	1767	1763.09	4.75E+01	17.18	1.49E+01	BI-214
	41	1780.34	1777 -	1783	1779.73	6.50E+00	8.03	7.00E+00	.....
	42	1840.34	1838 -	1842	1839.71	7.00E+00	5.29	0.00E+00	.....
	43	1848.63	1844 -	1853	1848.00	1.60E+01	8.00	0.00E+00	.....
	44	1906.50	1902 -	1909	1905.86	1.00E+01	9.38	8.00E+00	.....
	45	1938.31	1932 -	1943	1937.66	1.39E+01	10.20	6.12E+00	.....
	46	1956.24	1951 -	1959	1955.60	7.85E+00	7.76	4.30E+00	.....
	47	1986.71	1981 -	1989	1986.06	6.61E+00	7.50	4.78E+00	.....
	48	1993.03	1990 -	1995	1992.38	8.00E+00	5.66	0.00E+00	.....
	49	2027.18	2022 -	2028	2026.52	4.86E+00	6.34	4.29E+00	.....
	50	2100.08	2095 -	2105	2099.41	1.75E+01	12.35	1.10E+01	.....
	51	2179.02	2175 -	2181	2178.33	9.00E+00	6.00	0.00E+00	.....
	52	2203.36	2198 -	2208	2202.67	1.90E+01	10.87	6.00E+00	BI-214
	53	2212.00	2209 -	2214	2211.31	5.00E+00	7.07	6.00E+00	.....
	54	2260.62	2256 -	2264	2259.92	9.14E+00	8.02	3.73E+00	.....
	55	2355.57	2350 -	2359	2354.86	1.40E+01	7.48	0.00E+00	.....
	56	2379.25	2374 -	2382	2378.54	6.94E+00	7.50	4.11E+00	.....
	57	2445.77	2442 -	2448	2445.04	7.00E+00	8.03	6.00E+00	.....
	58	2613.20	2608 -	2617	2612.46	6.50E+01	16.12	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 11:52:57AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	26.69	1.97E+02	128.72	7.71E-04	1.68E-03
	2	63.37	1.65E+02	96.99	2.38E-02	2.06E-03
	3	75.79	8.10E+02	118.68	2.73E-02	3.29E-03
	4	149.21	5.14E+01	49.95	2.41E-02	2.17E-03
	5	154.46	4.73E+01	50.40	2.37E-02	2.02E-03
	6	185.90	1.26E+02	74.11	2.11E-02	1.65E-03
	7	210.16	5.82E+01	64.37	1.95E-02	1.63E-03
M	8	238.73	5.31E+02	63.86	1.79E-02	1.60E-03
m	9	242.00	8.51E+01	46.37	1.77E-02	1.60E-03
	10	269.23	9.56E+01	59.29	1.65E-02	1.57E-03
	11	295.09	1.67E+02	52.22	1.55E-02	1.48E-03
	12	327.88	4.18E+01	41.91	1.44E-02	1.32E-03
	13	337.99	1.36E+02	51.96	1.41E-02	1.28E-03
	14	351.88	3.16E+02	59.73	1.37E-02	1.21E-03
	15	463.25	3.56E+01	32.18	1.13E-02	9.47E-04
	16	510.62	1.27E+02	41.90	1.06E-02	8.99E-04
	17	583.07	1.82E+02	46.13	9.58E-03	8.25E-04
	18	609.39	2.82E+02	59.18	9.27E-03	7.98E-04
	19	716.88	3.76E+01	36.06	8.18E-03	7.10E-04
	20	726.87	5.55E+01	25.41	8.09E-03	7.03E-04
M	21	768.41	2.74E+01	22.74	7.74E-03	6.77E-04
m	22	772.45	1.84E+01	21.75	7.71E-03	6.74E-04
	23	860.56	2.06E+01	21.94	7.07E-03	6.17E-04
	24	911.03	1.49E+02	35.97	6.75E-03	5.87E-04
	25	932.33	3.61E+01	31.81	6.62E-03	5.76E-04
	26	967.94	1.06E+02	41.25	6.42E-03	5.58E-04
	27	1120.23	6.78E+01	24.98	5.70E-03	4.80E-04
	28	1165.47	2.30E+01	20.00	5.53E-03	4.57E-04
M	29	1237.67	2.89E+01	23.01	5.27E-03	4.83E-04
m	30	1240.67	1.57E+01	17.25	5.26E-03	4.84E-04
	31	1375.40	2.72E+01	17.76	4.87E-03	5.09E-04
	32	1392.71	9.07E+00	9.80	4.83E-03	5.01E-04
	33	1412.61	1.22E+01	9.33	4.78E-03	4.93E-04
	34	1460.40	7.18E+02	56.14	4.67E-03	4.73E-04
	35	1546.96	1.10E+01	10.68	4.50E-03	4.38E-04
	36	1589.37	1.55E+01	17.59	4.43E-03	4.20E-04
	37	1616.05	8.82E+00	7.50	4.38E-03	4.09E-04
	38	1625.34	8.82E+00	8.02	4.37E-03	4.05E-04
	39	1728.46	1.27E+01	8.96	4.23E-03	3.62E-04
	40	1763.70	4.75E+01	17.18	4.19E-03	3.48E-04
	41	1780.34	6.50E+00	8.03	4.17E-03	3.41E-04
	42	1840.34	7.00E+00	5.29	4.11E-03	3.18E-04
	43	1848.63	1.60E+01	8.00	4.10E-03	3.18E-04
	44	1906.50	1.00E+01	9.38	4.05E-03	3.18E-04
	45	1938.31	1.39E+01	10.20	4.03E-03	3.18E-04
	46	1956.24	7.85E+00	7.76	4.02E-03	3.18E-04
	47	1986.71	6.61E+00	7.50	4.00E-03	3.18E-04
	48	1993.03	8.00E+00	5.66	4.00E-03	3.18E-04
	49	2027.18	4.86E+00	6.34	3.98E-03	3.18E-04
	50	2100.08	1.75E+01	12.35	3.95E-03	3.18E-04
	51	2179.02	9.00E+00	6.00	3.93E-03	3.18E-04
	52	2203.36	1.90E+01	10.87	3.93E-03	3.18E-04
	53	2212.00	5.00E+00	7.07	3.93E-03	3.18E-04

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2260.62	9.14E+00	8.02	3.93E-03	3.18E-04
55	2355.57	1.40E+01	7.48	3.94E-03	3.18E-04
56	2379.25	6.94E+00	7.50	3.94E-03	3.18E-04
57	2445.77	7.00E+00	8.03	3.96E-03	3.18E-04
58	2613.20	6.50E+01	16.12	4.05E-03	3.18E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 11:52:57AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015432.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	26.69	1.97E+02	128.72			1.97E+02	1.29E+02
	2	63.37	1.65E+02	96.99	3.87E+01	1.14E+01	1.26E+02	9.77E+01
	3	75.79	8.10E+02	118.68			8.10E+02	1.19E+02
	4	149.21	5.14E+01	49.95			5.14E+01	4.99E+01
	5	154.46	4.73E+01	50.40			4.73E+01	5.04E+01
	6	185.90	1.26E+02	74.11	4.13E+01	8.14E+00	8.46E+01	7.46E+01
	7	210.16	5.82E+01	64.37			5.82E+01	6.44E+01
M	8	238.73	5.31E+02	63.86	1.44E+01	7.33E+00	5.17E+02	6.43E+01
m	9	242.00	8.51E+01	46.37			8.51E+01	4.64E+01
	10	269.23	9.56E+01	59.29			9.56E+01	5.93E+01
	11	295.09	1.67E+02	52.22	7.91E+00	6.01E+00	1.59E+02	5.26E+01
	12	327.88	4.18E+01	41.91			4.18E+01	4.19E+01
	13	337.99	1.36E+02	51.96	5.18E+00	5.53E+00	1.31E+02	5.23E+01
	14	351.88	3.16E+02	59.73	1.67E+01	5.51E+00	3.00E+02	6.00E+01
	15	463.25	3.56E+01	32.18			3.56E+01	3.22E+01
	16	510.62	1.27E+02	41.90	7.84E+01	5.24E+00	4.87E+01	4.22E+01
	17	583.07	1.82E+02	46.13	6.02E+00	3.90E+00	1.76E+02	4.63E+01
	18	609.39	2.82E+02	59.18	1.28E+01	3.94E+00	2.69E+02	5.93E+01
	19	716.88	3.76E+01	36.06	9.71E-01	2.99E+00	3.66E+01	3.62E+01
	20	726.87	5.55E+01	25.41			5.55E+01	2.54E+01
M	21	768.41	2.74E+01	22.74			2.74E+01	2.27E+01
m	22	772.45	1.84E+01	21.75			1.84E+01	2.17E+01
	23	860.56	2.06E+01	21.94			2.06E+01	2.19E+01
	24	911.03	1.49E+02	35.97	5.80E+00	2.67E+00	1.43E+02	3.61E+01
	25	932.33	3.61E+01	31.81			3.61E+01	3.18E+01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	26	967.94	1.06E+02	41.25	1.26E+00	2.25E+00	1.04E+02	4.13E+01
	27	1120.23	6.78E+01	24.98	1.53E+00	2.85E+00	6.63E+01	2.51E+01
	28	1165.47	2.30E+01	20.00			2.30E+01	2.00E+01
M	29	1237.67	2.89E+01	23.01			2.89E+01	2.30E+01
m	30	1240.67	1.57E+01	17.25			1.57E+01	1.72E+01
	31	1375.40	2.72E+01	17.76			2.72E+01	1.78E+01
	32	1392.71	9.07E+00	9.80			9.07E+00	9.80E+00
	33	1412.61	1.22E+01	9.33			1.22E+01	9.33E+00
	34	1460.40	7.18E+02	56.14	1.25E+01	2.44E+00	7.06E+02	5.62E+01
	35	1546.96	1.10E+01	10.68			1.10E+01	1.07E+01
	36	1589.37	1.55E+01	17.59			1.55E+01	1.76E+01
	37	1616.05	8.82E+00	7.50			8.82E+00	7.50E+00
	38	1625.34	8.82E+00	8.02			8.82E+00	8.02E+00
	39	1728.46	1.27E+01	8.96			1.27E+01	8.96E+00
	40	1763.70	4.75E+01	17.18	2.65E+00	2.14E+00	4.49E+01	1.73E+01
	41	1780.34	6.50E+00	8.03			6.50E+00	8.03E+00
	42	1840.34	7.00E+00	5.29			7.00E+00	5.29E+00
	43	1848.63	1.60E+01	8.00			1.60E+01	8.00E+00
	44	1906.50	1.00E+01	9.38			1.00E+01	9.38E+00
	45	1938.31	1.39E+01	10.20			1.39E+01	1.02E+01
	46	1956.24	7.85E+00	7.76			7.85E+00	7.76E+00
	47	1986.71	6.61E+00	7.50			6.61E+00	7.50E+00
	48	1993.03	8.00E+00	5.66			8.00E+00	5.66E+00
	49	2027.18	4.86E+00	6.34			4.86E+00	6.34E+00
	50	2100.08	1.75E+01	12.35			1.75E+01	1.23E+01
	51	2179.02	9.00E+00	6.00			9.00E+00	6.00E+00
	52	2203.36	1.90E+01	10.87	4.42E-01	1.03E+00	1.86E+01	1.09E+01
	53	2212.00	5.00E+00	7.07			5.00E+00	7.07E+00
	54	2260.62	9.14E+00	8.02			9.14E+00	8.02E+00
	55	2355.57	1.40E+01	7.48			1.40E+01	7.48E+00
	56	2379.25	6.94E+00	7.50			6.94E+00	7.50E+00
	57	2445.77	7.00E+00	8.03			7.00E+00	8.03E+00
	58	2613.20	6.50E+01	16.12	8.41E+00	1.73E+00	5.66E+01	1.62E+01

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

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 11:52:57AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015432.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	26.69	1.97E+02	128.72			1.97E+02	1.29E+02
	2	63.37	1.65E+02	96.99	3.87E+01	1.14E+01	1.26E+02	9.77E+01
	3	75.79	8.10E+02	118.68			8.10E+02	1.19E+02
	4	149.21	5.14E+01	49.95			5.14E+01	4.99E+01
	5	154.46	4.73E+01	50.40			4.73E+01	5.04E+01
	6	185.90	1.26E+02	74.11	4.13E+01	8.14E+00	8.46E+01	7.46E+01
	7	210.16	5.82E+01	64.37			5.82E+01	6.44E+01
M	8	238.73	5.31E+02	63.86	1.44E+01	7.33E+00	5.17E+02	6.43E+01
m	9	242.00	8.51E+01	46.37			8.51E+01	4.64E+01
	10	269.23	9.56E+01	59.29			9.56E+01	5.93E+01
	11	295.09	1.67E+02	52.22	7.91E+00	6.01E+00	1.59E+02	5.26E+01
	12	327.88	4.18E+01	41.91			4.18E+01	4.19E+01
	13	337.99	1.36E+02	51.96	5.18E+00	5.53E+00	1.31E+02	5.23E+01
	14	351.88	3.16E+02	59.73	1.67E+01	5.51E+00	3.00E+02	6.00E+01
	15	463.25	3.56E+01	32.18			3.56E+01	3.22E+01
	16	510.62	1.27E+02	41.90	7.84E+01	5.24E+00	4.87E+01	4.22E+01
	17	583.07	1.82E+02	46.13	6.02E+00	3.90E+00	1.76E+02	4.63E+01
	18	609.39	2.82E+02	59.18	1.28E+01	3.94E+00	2.69E+02	5.93E+01
	19	716.88	3.76E+01	36.06	9.71E-01	2.99E+00	3.66E+01	3.62E+01
	20	726.87	5.55E+01	25.41			5.55E+01	2.54E+01
M	21	768.41	2.74E+01	22.74			2.74E+01	2.27E+01
m	22	772.45	1.84E+01	21.75			1.84E+01	2.17E+01
	23	860.56	2.06E+01	21.94			2.06E+01	2.19E+01
	24	911.03	1.49E+02	35.97	5.80E+00	2.67E+00	1.43E+02	3.61E+01
	25	932.33	3.61E+01	31.81			3.61E+01	3.18E+01
	26	967.94	1.06E+02	41.25	1.26E+00	2.25E+00	1.04E+02	4.13E+01
	27	1120.23	6.78E+01	24.98	1.53E+00	2.85E+00	6.63E+01	2.51E+01
	28	1165.47	2.30E+01	20.00			2.30E+01	2.00E+01
M	29	1237.67	2.89E+01	23.01			2.89E+01	2.30E+01
m	30	1240.67	1.57E+01	17.25			1.57E+01	1.72E+01
	31	1375.40	2.72E+01	17.76			2.72E+01	1.78E+01
	32	1392.71	9.07E+00	9.80			9.07E+00	9.80E+00
	33	1412.61	1.22E+01	9.33			1.22E+01	9.33E+00
	34	1460.40	7.18E+02	56.14	1.25E+01	2.44E+00	7.06E+02	5.62E+01
	35	1546.96	1.10E+01	10.68			1.10E+01	1.07E+01
	36	1589.37	1.55E+01	17.59			1.55E+01	1.76E+01
	37	1616.05	8.82E+00	7.50			8.82E+00	7.50E+00
	38	1625.34	8.82E+00	8.02			8.82E+00	8.02E+00
	39	1728.46	1.27E+01	8.96			1.27E+01	8.96E+00
	40	1763.70	4.75E+01	17.18	2.65E+00	2.14E+00	4.49E+01	1.73E+01
	41	1780.34	6.50E+00	8.03			6.50E+00	8.03E+00

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1840.34	7.00E+00	5.29			7.00E+00	5.29E+00
43	1848.63	1.60E+01	8.00			1.60E+01	8.00E+00
44	1906.50	1.00E+01	9.38			1.00E+01	9.38E+00
45	1938.31	1.39E+01	10.20			1.39E+01	1.02E+01
46	1956.24	7.85E+00	7.76			7.85E+00	7.76E+00
47	1986.71	6.61E+00	7.50			6.61E+00	7.50E+00
48	1993.03	8.00E+00	5.66			8.00E+00	5.66E+00
49	2027.18	4.86E+00	6.34			4.86E+00	6.34E+00
50	2100.08	1.75E+01	12.35			1.75E+01	1.23E+01
51	2179.02	9.00E+00	6.00			9.00E+00	6.00E+00
52	2203.36	1.90E+01	10.87	4.42E-01	1.03E+00	1.86E+01	1.09E+01
53	2212.00	5.00E+00	7.07			5.00E+00	7.07E+00
54	2260.62	9.14E+00	8.02			9.14E+00	8.02E+00
55	2355.57	1.40E+01	7.48			1.40E+01	7.48E+00
56	2379.25	6.94E+00	7.50			6.94E+00	7.50E+00
57	2445.77	7.00E+00	8.03			7.00E+00	8.03E+00
58	2613.20	6.50E+01	16.12	8.41E+00	1.73E+00	5.66E+01	1.62E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.973	1460.81	*	10.67	1.38E+01	1.80E+00
CS-135	0.854	268.24	*	16.00	3.54E-01	2.22E-01
TL-208	0.349	583.14	*	30.22	5.92E-01	1.64E-01
		860.37	*	4.48	6.34E-01	6.78E-01
		2614.66		35.85		
BI-212	0.754	727.17	*	11.80	5.67E-01	2.64E-01
		1620.62		2.75		
PB-212	0.893	238.63	*	44.60	6.33E-01	9.70E-02
		300.09		3.41		
BI-214	0.973	609.31	*	46.30	6.11E-01	1.45E-01
		1120.29	*	15.10	7.51E-01	2.92E-01
		1764.49	*	15.80	6.62E-01	2.61E-01
		2204.22	*	4.98	9.25E-01	5.49E-01
PB-214	0.999	295.21	*	19.19	5.23E-01	1.80E-01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.999	351.92	*	37.19	5.73E-01	1.25E-01
RA-226	0.985	186.21	*	3.28	1.19E+00	2.42E+00
AC-228	0.567	338.32	*	11.40	7.97E-01	3.25E-01
		911.07	*	27.70	7.47E-01	1.99E-01
		969.11		16.60		
TH-234	0.999	63.29	*	3.80	1.36E+00	1.06E+00

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 11:52:57AM
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	26.69	5.47201E-02	32.67		
	3	75.79	2.25089E-01	7.32		
	4	149.21	1.42837E-02	48.57		
	5	154.46	1.31452E-02	53.25		
	7	210.16	1.61581E-02	55.33	Tol.	CM-243
m	9	242.00	2.36417E-02	27.24		
	12	327.88	1.15987E-02	50.19	Tol.	LA-140
	15	463.25	9.88527E-03	45.22	Tol.	SB-125
	16	510.62	1.35193E-02	43.39		
	19	716.88	1.01686E-02	49.42		
M	21	768.41	7.61197E-03	41.49	Sum	
m	22	772.45	5.10096E-03	59.22		
	25	932.33	1.00214E-02	44.09		
	26	967.94	2.90257E-02	19.77		
	28	1165.47	6.38889E-03	43.48	Sum	
M	29	1237.67	8.02425E-03	39.83	Tol.	CO-56
m	30	1240.67	4.35631E-03	54.99		
	31	1375.40	7.56436E-03	32.60		
	32	1392.71	2.51852E-03	54.03		
	33	1412.61	3.38889E-03	38.23		
	35	1546.96	3.05556E-03	48.53		
	36	1589.37	4.30556E-03	56.75		
	37	1616.05	2.44950E-03	42.53		

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
38	1625.34	2.44950E-03	45.45		
39	1728.46	3.52778E-03	35.27		
41	1780.34	1.80556E-03	61.78		
42	1840.34	1.94444E-03	37.80		
43	1848.63	4.44444E-03	25.00		
44	1906.50	2.77778E-03	46.90		
45	1938.31	3.87255E-03	36.58		
46	1956.24	2.18056E-03	49.44		
47	1986.71	1.83642E-03	56.72		
48	1993.03	2.22222E-03	35.36		
49	2027.18	1.34921E-03	65.31		
50	2100.08	4.86111E-03	35.28		
51	2179.02	2.50000E-03	33.33		
53	2212.00	1.38889E-03	70.71		
54	2260.62	2.53788E-03	43.87		
55	2355.57	3.88889E-03	26.73		
56	2379.25	1.92901E-03	54.00		
57	2445.77	1.94444E-03	57.37		
58	2613.20	1.57208E-02	14.33		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.97	1460.81	*	10.67	1.38E+01	1.80E+00
CS-135	0.85	268.24	*	16.00	3.54E-01	2.22E-01
TL-208	0.34	583.14	*	30.22	5.92E-01	1.64E-01
		860.37	*	4.48	6.34E-01	6.78E-01
		2614.66		35.85		
BI-212	0.75	727.17	*	11.80	5.67E-01	2.64E-01
		1620.62		2.75		
PB-212	0.89	238.63	*	44.60	6.33E-01	9.70E-02
		300.09		3.41		

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.97	609.31	*	46.30	6.11E-01	1.45E-01
		1120.29	*	15.10	7.51E-01	2.92E-01
		1764.49	*	15.80	6.62E-01	2.61E-01
		2204.22	*	4.98	9.25E-01	5.49E-01
PB-214	0.99	295.21	*	19.19	5.23E-01	1.80E-01
		351.92	*	37.19	5.73E-01	1.25E-01
RA-226	0.98	186.21	*	3.28	1.19E+00	2.42E+00
AC-228	0.56	338.32	*	11.40	7.97E-01	3.25E-01
		911.07	*	27.70	7.47E-01	1.99E-01
		969.11		16.60		
TH-234	0.99	63.29	*	3.80	1.36E+00	1.06E+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	0.973	1.38E+01	1.80E+00	
CS-135	0.854	3.54E-01	2.22E-01	
TL-208	0.349	5.94E-01	1.59E-01	
BI-212	0.754	5.67E-01	2.64E-01	
PB-212	0.893	6.33E-01	9.70E-02	
BI-214	0.973	6.55E-01	1.14E-01	
PB-214	0.999	5.57E-01	1.03E-01	
RA-226	0.985	1.19E+00	2.42E+00	
AC-228	0.567	7.60E-01	1.70E-01	
TH-234	0.999	1.36E+00	1.06E+00	

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

? = 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 1411131-09

J1V1M2 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 11:52:57AM
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	26.69	5.47201E-02	32.67		
	3	75.79	2.25089E-01	7.32		
	4	149.21	1.42837E-02	48.57		
	5	154.46	1.31452E-02	53.25		
	7	210.16	1.61581E-02	55.33	Tol.	CM-243
m	9	242.00	2.36417E-02	27.24		
	12	327.88	1.15987E-02	50.19	Tol.	LA-140
	15	463.25	9.88527E-03	45.22	Tol.	SB-125
	16	510.62	1.35193E-02	43.39		
	19	716.88	1.01686E-02	49.42		
M	21	768.41	7.61197E-03	41.49	Sum	
m	22	772.45	5.10096E-03	59.22		
	25	932.33	1.00214E-02	44.09		
	26	967.94	2.90257E-02	19.77		
	28	1165.47	6.38889E-03	43.48	Sum	
M	29	1237.67	8.02425E-03	39.83	Tol.	CO-56
m	30	1240.67	4.35631E-03	54.99		
	31	1375.40	7.56436E-03	32.60		
	32	1392.71	2.51852E-03	54.03		
	33	1412.61	3.38889E-03	38.23		
	35	1546.96	3.05556E-03	48.53		
	36	1589.37	4.30556E-03	56.75		
	37	1616.05	2.44950E-03	42.53		
	38	1625.34	2.44950E-03	45.45		
	39	1728.46	3.52778E-03	35.27		
	41	1780.34	1.80556E-03	61.78		
	42	1840.34	1.94444E-03	37.80		
	43	1848.63	4.44444E-03	25.00		
	44	1906.50	2.77778E-03	46.90		
	45	1938.31	3.87255E-03	36.58		
	46	1956.24	2.18056E-03	49.44		
	47	1986.71	1.83642E-03	56.72		
	48	1993.03	2.22222E-03	35.36		
	49	2027.18	1.34921E-03	65.31		
	50	2100.08	4.86111E-03	35.28		

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
51	2179.02	2.50000E-03	33.33		
53	2212.00	1.38889E-03	70.71		
54	2260.62	2.53788E-03	43.87		
55	2355.57	3.88889E-03	26.73		
56	2379.25	1.92901E-03	54.00		
57	2445.77	1.94444E-03	57.37		
58	2613.20	1.57208E-02	14.33		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	8.30E-03	3.54E-01	3.54E-01
+	NA-22	1274.54		99.94	3.12E-02	6.11E-02	6.11E-02
+	NA-24	1368.53		99.99	7.06E+00	1.50E+01	4.33E+01
		2754.09		99.86	2.04E+00		1.50E+01
+	AL-26	1808.65		99.76	-1.40E-02	3.10E-02	3.10E-02
+	K-40	1460.81	*	10.67	1.38E+01	6.42E-01	6.42E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.97E-02	3.16E-02	3.16E-02
		78.34		96.00	1.22E-01		4.31E-02
+	SC-46	889.25		99.98	2.61E-02	5.26E-02	5.26E-02
		1120.51		99.99	7.72E-02		8.43E-02
+	V-48	983.52		99.98	-1.73E-02	6.37E-02	6.37E-02
		1312.10		97.50	-2.35E-02		6.83E-02
+	CR-51	320.08		9.83	-2.59E-03	4.22E-01	4.22E-01
+	MN-54	834.83		99.97	-1.27E-02	5.17E-02	5.17E-02
+	CO-56	846.75		99.96	2.75E-02	5.91E-02	5.91E-02
		1037.75		14.03	-8.37E-03		3.84E-01
		1238.25		67.00	7.43E-02		1.15E-01
		1771.40		15.51	3.67E-02		2.52E-01
		2598.48		16.90	1.51E-02		1.40E-01
+	CO-57	122.06		85.51	-1.86E-02	3.72E-02	3.72E-02
		136.48		10.60	3.74E-02		3.13E-01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-58	810.76	99.40	-7.95E-03	5.18E-02	5.18E-02
+	FE-59	1099.22	56.50	-3.85E-02	1.05E-01	1.05E-01
		1291.56	43.20	-3.32E-02		1.24E-01
+	CO-60	1173.22	100.00	3.80E-02	5.44E-02	6.94E-02
		1332.49	100.00	1.76E-02		5.44E-02
+	ZN-65	1115.52	50.75	1.34E-03	1.10E-01	1.10E-01
+	GA-67	93.31	35.70	3.85E-01	4.11E-01	4.11E-01
		208.95	2.24	2.56E+00		6.23E+00
		300.22	16.00	8.72E-01		9.11E-01
+	SE-75	121.11	16.70	5.08E-02	5.64E-02	2.00E-01
		136.00	59.20	-1.20E-02		5.64E-02
		264.65	59.80	-1.31E-02		5.98E-02
		279.53	25.20	7.43E-03		1.50E-01
		400.65	11.40	-3.30E-02		3.26E-01
+	RB-82	776.52	13.00	-1.59E-02	4.22E-01	4.22E-01
+	RB-83	520.41	46.00	7.80E-03	8.72E-02	8.72E-02
		529.64	30.30	-1.44E-02		1.08E-01
		552.65	16.40	1.18E-01		2.69E-01
+	KR-85	513.99	0.43	-1.49E+00	9.70E+00	9.70E+00
+	SR-85	513.99	99.27	-6.96E-03	4.52E-02	4.52E-02
+	Y-88	898.02	93.40	6.37E-03	4.14E-02	5.40E-02
		1836.01	99.38	-1.32E-03		4.14E-02
+	NB-93M	16.57	9.43	-8.07E+02	4.23E+03	4.23E+03
+	NB-94	702.63	100.00	2.86E-02	4.63E-02	5.08E-02
		871.10	100.00	4.65E-03		4.63E-02
+	NB-95	765.79	99.81	3.21E-02	6.18E-02	6.18E-02
+	NB-95M	235.69	25.00	-2.65E+00	7.08E-01	7.08E-01
+	ZR-95	724.18	43.70	4.40E-02	9.74E-02	1.36E-01
		756.72	55.30	6.10E-02		9.74E-02
+	MO-99	181.06	6.20	2.93E-01	1.86E+00	2.69E+00
		739.58	12.80	4.44E-01		1.86E+00
		778.00	4.50	-7.30E-01		4.60E+00
+	RU-103	497.08	89.00	-4.58E-03	4.75E-02	4.75E-02
+	RU-106	621.84	9.80	1.10E-01	4.74E-01	4.74E-01
+	AG-108M	433.93	89.90	-8.22E-04	3.91E-02	3.91E-02
		614.37	90.40	-2.58E-01		5.22E-02
		722.95	90.50	-4.26E-02		5.63E-02
+	CD-109	88.03	3.72	1.69E+00	1.07E+00	1.07E+00
+	AG-110M	657.75	93.14	-2.11E-02	4.83E-02	4.83E-02
		677.61	10.53	7.57E-02		4.20E-01
		706.67	16.46	-6.19E-02		2.78E-01
		763.93	21.98	1.38E-02		2.18E-01
		884.67	71.63	-3.11E-02		6.73E-02
		1384.27	23.94	4.76E-02		1.77E-01
+	CD-113M	263.70	0.02	-2.32E+01	1.49E+02	1.49E+02
+	SN-113	255.12	1.93	-5.51E-01	5.45E-02	1.86E+00
		391.69	64.90	-2.72E-04		5.45E-02

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE123M	159.00		84.10	3.36E-03	4.23E-02	4.23E-02
+	SB-124	602.71		97.87	-1.81E-03	5.44E-02	5.44E-02
		645.85		7.26	-8.72E-02		6.25E-01
		722.78		11.10	-3.73E-01		4.93E-01
		1691.02		49.00	-3.75E-03		7.04E-02
+	I-125	35.49		6.49	1.20E+00	2.15E+00	2.15E+00
+	SB-125	176.33		6.89	-2.04E-01	1.23E-01	5.08E-01
		427.89		29.33	1.39E-02		1.23E-01
		463.38		10.35	3.39E-01		4.05E-01
		600.56		17.80	8.85E-02		2.81E-01
		635.90		11.32	-9.07E-02		3.96E-01
+	SB-126	414.70		83.30	1.94E-02	6.59E-02	6.59E-02
		666.33		99.60	-3.80E-03		7.01E-02
		695.00		99.60	-2.72E-02		6.66E-02
		720.50		53.80	-8.08E-02		1.15E-01
+	SN-126	87.57		37.00	1.69E-01	1.07E-01	1.07E-01
+	SB-127	473.00		25.00	-1.43E-03	4.24E-01	4.25E-01
		685.20		35.70	1.61E-01		4.24E-01
		783.80		14.70	7.29E-01		1.08E+00
+	I-129	29.78		57.00	4.10E-01	7.47E-01	7.47E-01
		33.60		13.20	-3.54E-01		1.25E+00
		39.58		7.52	5.40E-01		1.02E+00
+	I-131	284.30		6.05	-6.34E-01	7.44E-02	9.65E-01
		364.48		81.20	-1.35E-02		7.44E-02
		636.97		7.26	8.30E-02		1.08E+00
		722.89		1.80	-3.62E+00		4.79E+00
+	TE-132	49.72		13.10	-7.39E-01	1.62E-01	1.06E+00
		228.16		88.00	3.48E-02		1.62E-01
+	BA-133	81.00		33.00	-1.85E-02	5.69E-02	7.70E-02
		302.84		17.80	-1.04E-01		2.17E-01
		356.01		60.00	-1.45E-02		5.69E-02
+	I-133	529.87		86.30	-2.31E+00	4.59E+00	4.59E+00
+	CS-134	563.23		8.38	5.56E-02	6.20E-02	4.61E-01
		569.32		15.43	-1.29E-01		2.32E-01
		604.70		97.60	-2.35E-01		6.20E-02
		795.84		85.40	4.06E-02		6.23E-02
		801.93		8.73	2.82E-03		6.00E-01
+	CS-135	268.24	*	16.00	3.54E-01	3.51E-01	3.51E-01
+	I-135	1131.51		22.50	4.85E+05	8.49E+05	1.25E+06
		1260.41		28.60	-7.65E+05		8.49E+05
		1678.03		9.54	-7.71E+05		1.85E+06
+	CS-136	153.22		7.46	-2.31E-01	6.71E-02	6.27E-01
		163.89		4.61	-5.44E-01		9.99E-01
		176.55		13.56	4.02E-01		3.69E-01
		273.65		12.66	-2.77E-01		3.78E-01
		340.57		48.50	3.85E-02		1.13E-01
		818.50		99.70	2.55E-02		6.71E-02
		1048.07		79.60	-8.27E-03		1.04E-01
		1235.34		19.70	1.29E-02		5.05E-01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-137	661.65	85.12	-4.05E-02	5.18E-02	5.18E-02
+	LA-138	788.74	34.00	4.59E-02	5.67E-02	1.48E-01
		1435.80	66.00	4.97E-03		5.67E-02
+	CE-139	165.85	80.35	2.59E-02	4.40E-02	4.40E-02
+	BA-140	162.64	6.70	-3.41E-01	2.19E-01	6.84E-01
		304.84	4.50	4.52E-01		1.17E+00
		423.70	3.20	-7.21E-01		1.43E+00
		437.55	2.00	7.94E-01		2.61E+00
		537.32	25.00	5.26E-02		2.19E-01
+	LA-140	328.77	20.50	7.66E-02	6.48E-02	2.77E-01
		487.03	45.50	-2.73E-03		1.05E-01
		815.85	23.50	1.52E-01		2.94E-01
		1596.49	95.49	2.82E-03		6.48E-02
+	CE-141	145.44	48.40	3.11E-02	7.85E-02	7.85E-02
+	CE-143	57.36	11.80	4.12E-01	2.58E+00	6.09E+00
		293.26	42.00	1.57E+00		2.58E+00
		664.55	5.20	1.66E+01		2.16E+01
+	CE-144	133.54	10.80	-5.69E-02	2.98E-01	2.98E-01
+	PM-144	476.78	42.00	1.92E-03	4.57E-02	8.20E-02
		618.01	98.60	4.91E-03		4.57E-02
		696.49	99.49	-1.78E-03		5.07E-02
+	PM-145	36.85	21.70	-1.77E-02	2.48E-01	4.83E-01
		37.36	39.70	-9.07E-03		2.48E-01
		42.30	15.10	3.52E-03		3.80E-01
		72.40	2.31	-7.51E-01		1.34E+00
+	PM-146	453.90	39.94	-2.93E-02	8.92E-02	8.92E-02
		735.90	14.01	1.49E-01		3.60E-01
		747.13	13.10	-1.56E-02		3.65E-01
+	ND-147	91.11	28.90	-6.03E-03	2.07E-01	2.07E-01
		531.02	13.10	-1.60E-01		3.65E-01
+	PM-149	285.90	3.10	2.49E+00	8.22E+00	8.22E+00
+	EU-152	121.78	20.50	-7.65E-02	1.53E-01	1.53E-01
		244.69	5.40	1.23E-01		6.68E-01
		344.27	19.13	3.46E-03		1.86E-01
		778.89	9.20	-3.74E-02		4.98E-01
		964.01	10.40	-1.26E+00		6.65E-01
		1085.78	7.22	-2.23E-01		7.84E-01
		1112.02	9.60	6.04E-02		5.95E-01
		1407.95	14.94	4.61E-02		3.21E-01
+	GD-153	97.43	31.30	-3.44E-02	1.00E-01	1.00E-01
		103.18	22.20	2.33E-02		1.47E-01
+	EU-154	123.07	40.50	-2.09E-02	7.71E-02	7.71E-02
		723.30	19.70	-1.96E-01		2.59E-01
		873.19	11.50	3.47E-02		4.21E-01
		996.32	10.30	7.91E-02		5.18E-01
		1004.76	17.90	1.24E-01		3.23E-01
		1274.45	35.50	8.75E-02		1.71E-01
+	EU-155	86.50	30.90	-2.18E-01	1.20E-01	1.20E-01
		105.30	20.70	1.27E-01		1.59E-01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	EU-156	811.77		10.40	-3.58E-01	5.79E-01	5.79E-01
		1153.47		7.20	-6.74E-02		1.15E+00
		1230.71		8.90	6.29E-01		1.10E+00
+	HO-166M	184.41		72.60	2.57E-02	5.83E-02	5.83E-02
		280.45		29.60	6.12E-03		1.24E-01
		410.94		11.10	7.84E-02		3.49E-01
		711.69		54.10	1.10E-02		8.56E-02
+	TM-171	66.72		0.14	-1.40E+01	2.16E+01	2.16E+01
+	HF-172	81.75		4.52	-7.29E-01	2.89E-01	5.79E-01
		125.81		11.30	-6.47E-03		2.89E-01
+	LU-172	181.53		20.60	-8.80E-02	1.75E-01	3.17E-01
		810.06		16.63	-8.41E-02		5.48E-01
		912.12		15.25	2.24E+00		1.17E+00
		1093.66		62.50	2.78E-02		1.75E-01
+	LU-173	100.72		5.24	-1.69E-01	1.89E-01	5.98E-01
		272.11		21.20	1.52E-01		1.89E-01
+	HF-175	343.40		84.00	-1.68E-02	4.35E-02	4.35E-02
+	LU-176	88.34		13.30	4.68E-01	3.81E-02	2.97E-01
		201.83		86.00	-9.68E-03		4.10E-02
		306.78		94.00	-7.13E-03		3.81E-02
+	TA-182	67.75		41.20	4.69E-02	7.53E-02	7.53E-02
		1121.30		34.90	1.60E-01		2.37E-01
		1189.05		16.23	8.69E-02		4.01E-01
		1221.41		26.98	1.09E-01		2.71E-01
		1231.02		11.44	1.94E-01		6.57E-01
+	IR-192	308.46		29.68	1.24E-02	7.16E-02	1.26E-01
		468.07		48.10	1.20E-02		7.16E-02
+	HG-203	279.19		77.30	3.17E-02	5.51E-02	5.51E-02
+	BI-207	569.67		97.72	-2.02E-02	3.65E-02	3.65E-02
		1063.62		74.90	-3.06E-02		6.96E-02
+	TL-208	583.14	*	30.22	5.92E-01	2.19E-01	2.19E-01
		860.37	*	4.48	6.34E-01		1.10E+00
		2614.66		35.85	3.97E-01		2.66E-01
+	BI-210M	262.00		45.00	-4.21E-02	7.28E-02	7.28E-02
		300.00		23.00	1.66E-01		1.73E-01
+	PB-210	46.50		4.25	1.18E+00	1.25E+00	1.25E+00
+	PB-211	404.84		2.90	4.17E-01	1.21E+00	1.21E+00
		831.96		2.90	-4.73E-01		1.71E+00
+	BI-212	727.17	*	11.80	5.67E-01	3.74E-01	3.74E-01
		1620.62		2.75	-9.32E-01		1.47E+00
+	PB-212	238.63	*	44.60	6.33E-01	1.52E-01	1.52E-01
		300.09		3.41	1.12E+00		1.17E+00
+	BI-214	609.31	*	46.30	6.11E-01	1.91E-01	1.91E-01
		1120.29	*	15.10	7.51E-01		3.88E-01
		1764.49	*	15.80	6.62E-01		3.06E-01
		2204.22	*	4.98	9.25E-01		6.85E-01
+	PB-214	295.21	*	19.19	5.23E-01	1.59E-01	2.58E-01
		351.92	*	37.19	5.73E-01		1.59E-01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RN-219	401.80		6.50	2.29E-01	5.82E-01	5.82E-01
+	RA-223	323.87		3.88	7.65E-02	8.44E-01	8.44E-01
+	RA-224	240.98		3.95	2.93E+00	1.65E+00	1.65E+00
+	RA-225	40.00		31.00	1.67E-01	3.18E-01	3.18E-01
+	RA-226	186.21	*	3.28	1.19E+00	1.71E+00	1.71E+00
+	TH-227	50.10		8.40	-3.09E-01	4.42E-01	4.42E-01
		236.00		11.50	-1.78E+00		4.77E-01
		256.20		6.30	-1.20E-01		5.58E-01
+	AC-228	338.32	*	11.40	7.97E-01	2.46E-01	4.85E-01
		911.07	*	27.70	7.47E-01		2.46E-01
		969.11		16.60	7.40E-01		5.42E-01
+	TH-230	48.44		16.90	-2.65E-02	2.53E-01	2.53E-01
		62.85		4.60	7.11E-01		7.86E-01
		67.67		0.37	5.04E+00		8.09E+00
+	PA-231	283.67		1.60	-1.41E+00	1.67E+00	2.15E+00
		302.67		2.30	-8.01E-01		1.67E+00
+	TH-231	25.64		14.70	1.43E+01	4.46E-01	1.29E+01
		84.21		6.40	2.02E-01		4.46E-01
+	PA-233	311.98		38.60	4.65E-02	1.09E-01	1.09E-01
+	PA-234	131.20		20.40	4.98E-02	1.66E-01	1.66E-01
		733.99		8.80	4.26E-02		5.35E-01
		946.00		12.00	5.73E-02		4.21E-01
+	PA-234M	1001.03		0.92	3.23E+00	6.47E+00	6.47E+00
+	TH-234	63.29	*	3.80	1.36E+00	1.72E+00	1.72E+00
+	U-235	143.76		10.50	7.54E-02	3.21E-01	3.21E-01
		163.35		4.70	-3.50E-01		7.03E-01
		205.31		4.70	2.85E-01		7.56E-01
+	NP-237	86.50		12.60	-5.33E-01	2.95E-01	2.95E-01
+	NP-239	106.10		22.70	1.76E-01	8.58E-01	8.58E-01
		228.18		10.70	4.71E-01		2.20E+00
		277.60		14.10	7.85E-01		1.66E+00
+	AM-241	59.54		35.90	-2.62E-02	9.32E-02	9.32E-02
+	AM-243	74.67		66.00	-8.56E-02	6.31E-02	6.31E-02
+	CM-243	209.75		3.29	5.92E-01	2.77E-01	1.18E+00
		228.14		10.60	7.90E-02		3.68E-01
		277.60		14.00	1.31E-01		2.77E-01

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

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

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	3.54E-01	3.54E-01	8.30E-03	1.65E-01
	NA-22	1274.54		99.94	6.11E-02	6.11E-02	3.12E-02	2.80E-02
	NA-24	1368.53		99.99	4.33E+01	1.50E+01	7.06E+00	1.93E+01
		2754.09		99.86	1.50E+01		2.04E+00	4.74E+00
	AL-26	1808.65		99.76	3.10E-02	3.10E-02	-1.40E-02	1.23E-02
+	K-40	1460.81	*	10.67	6.42E-01	6.42E-01	1.38E+01	2.94E-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	3.16E-02	3.16E-02	1.97E-02	1.53E-02
		78.34		96.00	4.31E-02		1.22E-01	2.11E-02
	SC-46	889.25		99.98	5.26E-02	5.26E-02	2.61E-02	2.43E-02
		1120.51		99.99	8.43E-02		7.72E-02	3.97E-02
	V-48	983.52		99.98	6.37E-02	6.37E-02	-1.73E-02	2.91E-02
		1312.10		97.50	6.83E-02		-2.35E-02	3.07E-02
	CR-51	320.08		9.83	4.22E-01	4.22E-01	-2.59E-03	2.00E-01
	MN-54	834.83		99.97	5.17E-02	5.17E-02	-1.27E-02	2.40E-02
	CO-56	846.75		99.96	5.91E-02	5.91E-02	2.75E-02	2.76E-02
		1037.75		14.03	3.84E-01		-8.37E-03	1.76E-01
		1238.25		67.00	1.15E-01		7.43E-02	5.34E-02
		1771.40		15.51	2.52E-01		3.67E-02	1.05E-01
		2598.48		16.90	1.40E-01		1.51E-02	4.96E-02
	CO-57	122.06		85.51	3.72E-02	3.72E-02	-1.86E-02	1.80E-02
		136.48		10.60	3.13E-01		3.74E-02	1.51E-01
	CO-58	810.76		99.40	5.18E-02	5.18E-02	-7.95E-03	2.40E-02
	FE-59	1099.22		56.50	1.05E-01	1.05E-01	-3.85E-02	4.82E-02
		1291.56		43.20	1.24E-01		-3.32E-02	5.54E-02
	CO-60	1173.22		100.00	6.94E-02	5.44E-02	3.80E-02	3.23E-02
		1332.49		100.00	5.44E-02		1.76E-02	2.46E-02
	ZN-65	1115.52		50.75	1.10E-01	1.10E-01	1.34E-03	5.03E-02
	GA-67	93.31		35.70	4.11E-01	4.11E-01	3.85E-01	2.01E-01
		208.95		2.24	6.23E+00		2.56E+00	3.01E+00
		300.22		16.00	9.11E-01		8.72E-01	4.36E-01
	SE-75	121.11		16.70	2.00E-01	5.64E-02	5.08E-02	9.67E-02
		136.00		59.20	5.64E-02		-1.20E-02	2.73E-02
		264.65		59.80	5.98E-02		-1.31E-02	2.85E-02
		279.53		25.20	1.50E-01		7.43E-03	7.16E-02
		400.65		11.40	3.26E-01		-3.30E-02	1.53E-01
	RB-82	776.52		13.00	4.22E-01	4.22E-01	-1.59E-02	1.95E-01
	RB-83	520.41		46.00	8.72E-02	8.72E-02	7.80E-03	4.07E-02
		529.64		30.30	1.08E-01		-1.44E-02	4.95E-02
		552.65		16.40	2.69E-01		1.18E-01	1.26E-01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
KR-85	513.99	0.43	9.70E+00	9.70E+00	-1.49E+00	4.56E+00
SR-85	513.99	99.27	4.52E-02	4.52E-02	-6.96E-03	2.13E-02
Y-88	898.02	93.40	5.40E-02	4.14E-02	6.37E-03	2.48E-02
	1836.01	99.38	4.14E-02		-1.32E-03	1.73E-02
NB-93M	16.57	9.43	4.23E+03	4.23E+03	-8.07E+02	2.06E+03
NB-94	702.63	100.00	5.08E-02	4.63E-02	2.86E-02	2.38E-02
	871.10	100.00	4.63E-02		4.65E-03	2.13E-02
NB-95	765.79	99.81	6.18E-02	6.18E-02	3.21E-02	2.90E-02
NB-95M	235.69	25.00	7.08E-01	7.08E-01	-2.65E+00	3.44E-01
ZR-95	724.18	43.70	1.36E-01	9.74E-02	4.40E-02	6.41E-02
	756.72	55.30	9.74E-02		6.10E-02	4.54E-02
MO-99	181.06	6.20	2.69E+00	1.86E+00	2.93E-01	1.30E+00
	739.58	12.80	1.86E+00		4.44E-01	8.71E-01
	778.00	4.50	4.60E+00		-7.30E-01	2.12E+00
RU-103	497.08	89.00	4.75E-02	4.75E-02	-4.58E-03	2.22E-02
RU-106	621.84	9.80	4.74E-01	4.74E-01	1.10E-01	2.22E-01
AG-108M	433.93	89.90	3.91E-02	3.91E-02	-8.22E-04	1.83E-02
	614.37	90.40	5.22E-02		-2.58E-01	2.45E-02
	722.95	90.50	5.63E-02		-4.26E-02	2.64E-02
CD-109	88.03	3.72	1.07E+00	1.07E+00	1.69E+00	5.23E-01
AG-110M	657.75	93.14	4.83E-02	4.83E-02	-2.11E-02	2.25E-02
	677.61	10.53	4.20E-01		7.57E-02	1.95E-01
	706.67	16.46	2.78E-01		-6.19E-02	1.29E-01
	763.93	21.98	2.18E-01		1.38E-02	1.01E-01
	884.67	71.63	6.73E-02		-3.11E-02	3.09E-02
	1384.27	23.94	1.77E-01		4.76E-02	7.70E-02
CD-113M	263.70	0.02	1.49E+02	1.49E+02	-2.32E+01	7.09E+01
SN-113	255.12	1.93	1.86E+00	5.45E-02	-5.51E-01	8.89E-01
	391.69	64.90	5.45E-02		-2.72E-04	2.56E-02
TE123M	159.00	84.10	4.23E-02	4.23E-02	3.36E-03	2.04E-02
SB-124	602.71	97.87	5.44E-02	5.44E-02	-1.81E-03	2.57E-02
	645.85	7.26	6.25E-01		-8.72E-02	2.90E-01
	722.78	11.10	4.93E-01		-3.73E-01	2.31E-01
	1691.02	49.00	7.04E-02		-3.75E-03	2.85E-02
I-125	35.49	6.49	2.15E+00	2.15E+00	1.20E+00	1.03E+00
SB-125	176.33	6.89	5.08E-01	1.23E-01	-2.04E-01	2.45E-01
	427.89	29.33	1.23E-01		1.39E-02	5.76E-02
	463.38	10.35	4.05E-01		3.39E-01	1.91E-01
	600.56	17.80	2.81E-01		8.85E-02	1.32E-01
	635.90	11.32	3.96E-01		-9.07E-02	1.85E-01
SB-126	414.70	83.30	6.59E-02	6.59E-02	1.94E-02	3.11E-02
	666.33	99.60	7.01E-02		-3.80E-03	3.29E-02
	695.00	99.60	6.66E-02		-2.72E-02	3.11E-02
	720.50	53.80	1.15E-01		-8.08E-02	5.30E-02
SN-126	87.57	37.00	1.07E-01	1.07E-01	1.69E-01	5.22E-02
SB-127	473.00	25.00	4.25E-01	4.24E-01	-1.43E-03	1.98E-01
	685.20	35.70	4.24E-01		1.61E-01	1.99E-01
	783.80	14.70	1.08E+00		7.29E-01	5.05E-01
I-129	29.78	57.00	7.47E-01	7.47E-01	4.10E-01	3.60E-01
	33.60	13.20	1.25E+00		-3.54E-01	6.00E-01
	39.58	7.52	1.02E+00		5.40E-01	4.90E-01
I-131	284.30	6.05	9.65E-01	7.44E-02	-6.34E-01	4.59E-01
	364.48	81.20	7.44E-02		-1.35E-02	3.51E-02

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	I-131	636.97		7.26	1.08E+00	7.44E-02	8.30E-02	5.08E-01
		722.89		1.80	4.79E+00		-3.62E+00	2.24E+00
	TE-132	49.72		13.10	1.06E+00	1.62E-01	-7.39E-01	5.05E-01
		228.16		88.00	1.62E-01		3.48E-02	7.83E-02
	BA-133	81.00		33.00	7.70E-02	5.69E-02	-1.85E-02	3.70E-02
		302.84		17.80	2.17E-01		-1.04E-01	1.03E-01
		356.01		60.00	5.69E-02		-1.45E-02	2.68E-02
	I-133	529.87		86.30	4.59E+00	4.59E+00	-2.31E+00	2.10E+00
	CS-134	563.23		8.38	4.61E-01	6.20E-02	5.56E-02	2.15E-01
		569.32		15.43	2.32E-01		-1.29E-01	1.07E-01
		604.70		97.60	6.20E-02		-2.35E-01	2.96E-02
		795.84		85.40	6.23E-02		4.06E-02	2.91E-02
		801.93		8.73	6.00E-01		2.82E-03	2.80E-01
+	CS-135	268.24	*	16.00	3.51E-01	3.51E-01	3.54E-01	1.70E-01
	I-135	1131.51		22.50	1.25E+06	8.49E+05	4.85E+05	5.76E+05
		1260.41		28.60	8.49E+05		-7.65E+05	3.83E+05
		1678.03		9.54	1.85E+06		-7.71E+05	7.75E+05
	CS-136	153.22		7.46	6.27E-01	6.71E-02	-2.31E-01	3.03E-01
		163.89		4.61	9.99E-01		-5.44E-01	4.82E-01
		176.55		13.56	3.69E-01		4.02E-01	1.78E-01
		273.65		12.66	3.78E-01		-2.77E-01	1.80E-01
		340.57		48.50	1.13E-01		3.85E-02	5.36E-02
		818.50		99.70	6.71E-02		2.55E-02	3.11E-02
		1048.07		79.60	1.04E-01		-8.27E-03	4.80E-02
		1235.34		19.70	5.05E-01		1.29E-02	2.35E-01
	CS-137	661.65		85.12	5.18E-02	5.18E-02	-4.05E-02	2.41E-02
	LA-138	788.74		34.00	1.48E-01	5.67E-02	4.59E-02	6.88E-02
		1435.80		66.00	5.67E-02		4.97E-03	2.41E-02
	CE-139	165.85		80.35	4.40E-02	4.40E-02	2.59E-02	2.13E-02
	BA-140	162.64		6.70	6.84E-01	2.19E-01	-3.41E-01	3.30E-01
		304.84		4.50	1.17E+00		4.52E-01	5.58E-01
		423.70		3.20	1.43E+00		-7.21E-01	6.70E-01
		437.55		2.00	2.61E+00		7.94E-01	1.23E+00
		537.32		25.00	2.19E-01		5.26E-02	1.02E-01
	LA-140	328.77		20.50	2.77E-01	6.48E-02	7.66E-02	1.32E-01
		487.03		45.50	1.05E-01		-2.73E-03	4.88E-02
		815.85		23.50	2.94E-01		1.52E-01	1.36E-01
		1596.49		95.49	6.48E-02		2.82E-03	2.80E-02
	CE-141	145.44		48.40	7.85E-02	7.85E-02	3.11E-02	3.80E-02
	CE-143	57.36		11.80	6.09E+00	2.58E+00	4.12E-01	2.93E+00
		293.26		42.00	2.58E+00		1.57E+00	1.24E+00
		664.55		5.20	2.16E+01		1.66E+01	1.02E+01
	CE-144	133.54		10.80	2.98E-01	2.98E-01	-5.69E-02	1.44E-01
	PM-144	476.78		42.00	8.20E-02	4.57E-02	1.92E-03	3.81E-02
		618.01		98.60	4.57E-02		4.91E-03	2.14E-02
		696.49		99.49	5.07E-02		-1.78E-03	2.37E-02
	PM-145	36.85		21.70	4.83E-01	2.48E-01	-1.77E-02	2.31E-01
		37.36		39.70	2.48E-01		-9.07E-03	1.19E-01
		42.30		15.10	3.80E-01		3.52E-03	1.81E-01
		72.40		2.31	1.34E+00		-7.51E-01	6.50E-01
	PM-146	453.90		39.94	8.92E-02	8.92E-02	-2.93E-02	4.17E-02
		735.90		14.01	3.60E-01		1.49E-01	1.68E-01
		747.13		13.10	3.65E-01		-1.56E-02	1.70E-01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	ND-147	91.11		28.90	2.07E-01	2.07E-01	-6.03E-03	1.01E-01
		531.02		13.10	3.65E-01		-1.60E-01	1.68E-01
	PM-149	285.90		3.10	8.22E+00	8.22E+00	2.49E+00	3.93E+00
	EU-152	121.78		20.50	1.53E-01	1.53E-01	-7.65E-02	7.39E-02
		244.69		5.40	6.68E-01		1.23E-01	3.20E-01
		344.27		19.13	1.86E-01		3.46E-03	8.82E-02
		778.89		9.20	4.98E-01		-3.74E-02	2.30E-01
		964.01		10.40	6.65E-01		-1.26E+00	3.13E-01
		1085.78		7.22	7.84E-01		-2.23E-01	3.61E-01
		1112.02		9.60	5.95E-01		6.04E-02	2.74E-01
		1407.95		14.94	3.21E-01		4.61E-02	1.42E-01
	GD-153	97.43		31.30	1.00E-01	1.00E-01	-3.44E-02	4.85E-02
		103.18		22.20	1.47E-01		2.33E-02	7.15E-02
	EU-154	123.07		40.50	7.71E-02	7.71E-02	-2.09E-02	3.73E-02
		723.30		19.70	2.59E-01		-1.96E-01	1.21E-01
		873.19		11.50	4.21E-01		3.47E-02	1.94E-01
		996.32		10.30	5.18E-01		7.91E-02	2.39E-01
		1004.76		17.90	3.23E-01		1.24E-01	1.50E-01
		1274.45		35.50	1.71E-01		8.75E-02	7.85E-02
	EU-155	86.50		30.90	1.20E-01	1.20E-01	-2.18E-01	5.87E-02
		105.30		20.70	1.59E-01		1.27E-01	7.70E-02
	EU-156	811.77		10.40	5.79E-01	5.79E-01	-3.58E-01	2.67E-01
		1153.47		7.20	1.15E+00		-6.74E-02	5.34E-01
		1230.71		8.90	1.10E+00		6.29E-01	5.13E-01
	HO-166M	184.41		72.60	5.83E-02	5.83E-02	2.57E-02	2.83E-02
		280.45		29.60	1.24E-01		6.12E-03	5.90E-02
		410.94		11.10	3.49E-01		7.84E-02	1.65E-01
		711.69		54.10	8.56E-02		1.10E-02	3.98E-02
	TM-171	66.72		0.14	2.16E+01	2.16E+01	-1.40E+01	1.04E+01
	HF-172	81.75		4.52	5.79E-01	2.89E-01	-7.29E-01	2.79E-01
		125.81		11.30	2.89E-01		-6.47E-03	1.40E-01
	LU-172	181.53		20.60	3.17E-01	1.75E-01	-8.80E-02	1.53E-01
		810.06		16.63	5.48E-01		-8.41E-02	2.54E-01
		912.12		15.25	1.17E+00		2.24E+00	5.58E-01
		1093.66		62.50	1.75E-01		2.78E-02	8.05E-02
	LU-173	100.72		5.24	5.98E-01	1.89E-01	-1.69E-01	2.90E-01
		272.11		21.20	1.89E-01		1.52E-01	9.08E-02
	HF-175	343.40		84.00	4.35E-02	4.35E-02	-1.68E-02	2.06E-02
	LU-176	88.34		13.30	2.97E-01	3.81E-02	4.68E-01	1.45E-01
		201.83		86.00	4.10E-02		-9.68E-03	1.97E-02
		306.78		94.00	3.81E-02		-7.13E-03	1.81E-02
	TA-182	67.75		41.20	7.53E-02	7.53E-02	4.69E-02	3.63E-02
		1121.30		34.90	2.37E-01		1.60E-01	1.12E-01
		1189.05		16.23	4.01E-01		8.69E-02	1.85E-01
		1221.41		26.98	2.71E-01		1.09E-01	1.26E-01
		1231.02		11.44	6.57E-01		1.94E-01	3.06E-01
	IR-192	308.46		29.68	1.26E-01	7.16E-02	1.24E-02	5.98E-02
		468.07		48.10	7.16E-02		1.20E-02	3.32E-02
	HG-203	279.19		77.30	5.51E-02	5.51E-02	3.17E-02	2.64E-02
	BI-207	569.67		97.72	3.65E-02	3.65E-02	-2.02E-02	1.68E-02
		1063.62		74.90	6.96E-02		-3.06E-02	3.18E-02
+	TL-208	583.14	*	30.22	2.19E-01	2.19E-01	5.92E-01	1.05E-01
		860.37	*	4.48	1.10E+00		6.34E-01	5.06E-01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-208	2614.66		35.85	2.66E-01	2.19E-01	3.97E-01	1.24E-01
	BI-210M	262.00		45.00	7.28E-02	7.28E-02	-4.21E-02	3.47E-02
		300.00		23.00	1.73E-01		1.66E-01	8.28E-02
	PB-210	46.50		4.25	1.25E+00	1.25E+00	1.18E+00	6.00E-01
	PB-211	404.84		2.90	1.21E+00	1.21E+00	4.17E-01	5.69E-01
		831.96		2.90	1.71E+00		-4.73E-01	7.92E-01
+	BI-212	727.17	*	11.80	3.74E-01	3.74E-01	5.67E-01	1.73E-01
		1620.62		2.75	1.47E+00		-9.32E-01	6.25E-01
+	PB-212	238.63	*	44.60	1.52E-01	1.52E-01	6.33E-01	7.46E-02
		300.09		3.41	1.17E+00		1.12E+00	5.59E-01
+	BI-214	609.31	*	46.30	1.91E-01	1.91E-01	6.11E-01	9.24E-02
		1120.29	*	15.10	3.88E-01		7.51E-01	1.78E-01
		1764.49	*	15.80	3.06E-01		6.62E-01	1.33E-01
		2204.22	*	4.98	6.85E-01		9.25E-01	2.75E-01
+	PB-214	295.21	*	19.19	2.58E-01	1.59E-01	5.23E-01	1.25E-01
		351.92	*	37.19	1.59E-01		5.73E-01	7.70E-02
	RN-219	401.80		6.50	5.82E-01	5.82E-01	2.29E-01	2.75E-01
	RA-223	323.87		3.88	8.44E-01	8.44E-01	7.65E-02	3.99E-01
	RA-224	240.98		3.95	1.65E+00	1.65E+00	2.93E+00	8.06E-01
	RA-225	40.00		31.00	3.18E-01	3.18E-01	1.67E-01	1.52E-01
+	RA-226	186.21	*	3.28	1.71E+00	1.71E+00	1.19E+00	8.38E-01
	TH-227	50.10		8.40	4.42E-01	4.42E-01	-3.09E-01	2.11E-01
		236.00		11.50	4.77E-01		-1.78E+00	2.32E-01
		256.20		6.30	5.58E-01		-1.20E-01	2.67E-01
+	AC-228	338.32	*	11.40	4.85E-01	2.46E-01	7.97E-01	2.34E-01
		911.07	*	27.70	2.46E-01		7.47E-01	1.16E-01
		969.11		16.60	5.42E-01		7.40E-01	2.58E-01
	TH-230	48.44		16.90	2.53E-01	2.53E-01	-2.65E-02	1.21E-01
		62.85		4.60	7.86E-01		7.11E-01	3.81E-01
		67.67		0.37	8.09E+00		5.04E+00	3.90E+00
	PA-231	283.67		1.60	2.15E+00	1.67E+00	-1.41E+00	1.03E+00
		302.67		2.30	1.67E+00		-8.01E-01	8.00E-01
	TH-231	25.64		14.70	1.29E+01	4.46E-01	1.43E+01	6.30E+00
		84.21		6.40	4.46E-01		2.02E-01	2.16E-01
	PA-233	311.98		38.60	1.09E-01	1.09E-01	4.65E-02	5.20E-02
	PA-234	131.20		20.40	1.66E-01	1.66E-01	4.98E-02	8.04E-02
		733.99		8.80	5.35E-01		4.26E-02	2.49E-01
		946.00		12.00	4.21E-01		5.73E-02	1.94E-01
	PA-234M	1001.03		0.92	6.47E+00	6.47E+00	3.23E+00	3.01E+00
+	TH-234	63.29	*	3.80	1.72E+00	1.72E+00	1.36E+00	8.44E-01
	U-235	143.76		10.50	3.21E-01	3.21E-01	7.54E-02	1.55E-01
		163.35		4.70	7.03E-01		-3.50E-01	3.39E-01
		205.31		4.70	7.56E-01		2.85E-01	3.64E-01
	NP-237	86.50		12.60	2.95E-01	2.95E-01	-5.33E-01	1.44E-01
	NP-239	106.10		22.70	8.58E-01	8.58E-01	1.76E-01	4.17E-01
		228.18		10.70	2.20E+00		4.71E-01	1.06E+00
		277.60		14.10	1.66E+00		7.85E-01	7.93E-01
	AM-241	59.54		35.90	9.32E-02	9.32E-02	-2.62E-02	4.50E-02
	AM-243	74.67		66.00	6.31E-02	6.31E-02	-8.56E-02	3.08E-02
	CM-243	209.75		3.29	1.18E+00	2.77E-01	5.92E-01	5.71E-01
		228.14		10.60	3.68E-01		7.90E-02	1.77E-01
		277.60		14.00	2.77E-01		1.31E-01	1.33E-01

Analysis Report for 1411131-09

J1V1M2 SAF: RC-107

+ = 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: J1V1M2 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	1	0	117	592
9:	1078	1388	1018	530	1440	668	103	155
17:	173	155	200	186	177	183	195	181
25:	198	169	138	107	105	93	52	56
33:	56	46	60	64	52	47	53	46
41:	63	41	41	49	55	63	91	72
49:	51	58	50	65	80	70	59	63
57:	79	73	76	85	84	97	116	118
65:	84	107	71	79	110	70	89	113
73:	108	146	284	160	322	209	78	75
81:	76	76	88	131	77	91	129	136
89:	79	149	83	110	205	117	91	65
97:	66	67	69	82	65	65	71	81
105:	92	64	77	60	71	74	71	69
113:	62	76	62	70	72	65	83	69
121:	63	65	58	62	65	66	66	73
129:	73	85	68	60	62	59	60	59
137:	60	66	66	61	70	61	50	84
145:	64	54	51	62	69	74	49	50
153:	49	83	64	58	56	53	68	55
161:	57	57	46	46	52	62	64	50
169:	45	49	47	50	47	45	67	55
177:	50	45	66	35	55	51	60	49
185:	70	138	76	54	43	59	32	45
193:	46	43	38	53	42	50	52	39
201:	40	44	48	52	45	37	40	38
209:	71	56	46	49	47	34	42	55
217:	40	43	49	29	39	39	50	43
225:	37	44	41	48	54	46	48	34
233:	46	45	38	46	45	275	351	65
241:	73	88	43	31	34	35	36	28
249:	22	28	29	37	29	28	42	28
257:	28	33	38	24	29	32	26	22
265:	30	34	34	39	36	59	44	31
273:	30	25	23	32	47	41	28	26
281:	32	25	20	35	29	23	35	35
289:	33	33	27	27	23	52	144	62
297:	26	20	33	46	38	28	22	36
305:	28	30	29	22	19	23	21	28
313:	24	31	22	27	22	25	24	26
321:	27	17	25	20	15	21	34	49
329:	26	26	17	30	22	27	20	24
337:	46	113	46	19	20	21	30	14
345:	15	27	22	21	13	34	106	208
353:	49	19	23	19	17	15	23	17
361:	27	12	25	30	16	16	18	18

369:	16	17	19	14	20	13	9	17

Sample Title: J1V1M2 SAF: RC-107

Channel								
377:	16	17	18	19	21	19	15	17
385:	20	25	16	24	15	21	16	13
393:	13	18	17	16	12	16	10	20
401:	25	17	15	20	19	12	16	11
409:	20	18	20	17	24	20	21	17
417:	17	11	21	22	13	17	8	21
425:	8	13	18	17	22	9	18	12
433:	16	16	17	13	12	20	22	9
441:	16	8	13	17	14	11	11	13
449:	14	29	12	11	21	11	10	18
457:	17	12	17	11	13	22	32	15
465:	15	7	12	14	14	9	13	8
473:	16	16	13	13	16	10	8	12
481:	7	6	15	9	10	14	16	9
489:	10	9	15	11	12	22	14	12
497:	10	19	16	16	11	15	12	8
505:	15	10	13	19	28	55	60	36
513:	10	17	11	10	13	11	15	13
521:	14	14	13	14	12	6	10	5
529:	7	6	14	7	12	15	17	10
537:	16	14	11	10	11	13	9	13
545:	7	12	16	11	7	19	15	14
553:	14	13	11	14	17	12	12	9
561:	10	13	9	13	15	11	12	9
569:	10	13	6	16	13	11	7	13
577:	10	9	11	10	13	60	111	28
585:	15	16	9	12	11	10	4	9
593:	6	9	4	15	11	15	17	15
601:	12	11	13	11	10	21	17	56
609:	158	50	14	20	13	8	12	7
617:	7	11	11	9	14	12	7	10
625:	12	4	15	12	13	8	10	10
633:	7	7	10	9	16	8	11	13
641:	11	12	5	9	10	12	9	10
649:	4	7	8	8	9	11	10	11
657:	10	8	7	5	12	13	12	5
665:	16	15	14	9	8	12	10	10
673:	2	6	6	9	6	12	10	9
681:	8	9	13	9	9	12	8	18
689:	9	9	14	7	14	10	10	9
697:	5	11	15	9	13	14	10	9
705:	6	7	7	10	9	7	6	8
713:	10	11	14	13	6	5	7	13
721:	11	5	6	8	11	19	28	18
729:	4	7	6	6	10	8	10	11
737:	9	14	7	7	10	13	8	9
745:	6	10	10	6	11	8	7	8
753:	8	10	8	14	7	9	10	6
761:	3	13	4	8	9	10	9	21
769:	16	8	7	15	8	8	6	10
777:	7	9	5	3	8	9	9	7
785:	15	9	12	9	6	7	3	6
793:	7	21	14	3	5	9	8	6

801:	7	13	12	4	14	10	12	9

Sample Title: J1V1M2 SAF: RC-107

Channel								
809:	8	6	7	4	8	5	8	10
817:	6	9	10	5	5	6	4	8
825:	4	9	11	9	7	8	5	9
833:	9	7	9	9	8	6	14	9
841:	9	11	9	7	14	6	11	8
849:	13	6	3	3	7	7	2	8
857:	5	6	9	18	7	6	5	3
865:	8	4	3	7	4	6	5	7
873:	5	9	8	7	10	4	8	9
881:	8	9	7	2	7	3	8	3
889:	14	5	11	5	6	3	6	8
897:	4	5	6	7	9	4	10	6
905:	10	7	10	8	15	51	82	18
913:	8	3	4	8	7	7	3	7
921:	6	9	6	5	6	3	4	7
929:	6	10	7	7	13	13	8	6
937:	5	5	6	4	7	4	7	4
945:	6	6	6	9	7	7	5	5
953:	5	8	6	4	8	6	5	6
961:	10	4	11	16	13	11	20	43
969:	45	10	8	10	7	6	6	8
977:	4	8	3	3	5	7	7	1
985:	9	7	11	5	8	5	6	4
993:	7	7	4	7	3	11	7	5
1001:	8	10	7	10	5	7	7	5
1009:	6	5	4	9	10	2	6	5
1017:	5	6	7	10	4	7	1	7
1025:	5	10	7	9	4	4	2	9
1033:	7	4	6	5	9	6	7	2
1041:	6	2	6	7	7	5	7	8
1049:	13	7	7	14	5	10	10	6
1057:	6	10	4	6	4	6	3	12
1065:	2	6	8	8	6	5	6	5
1073:	7	3	2	6	5	10	10	6
1081:	8	5	7	7	3	5	12	6
1089:	7	10	4	4	7	7	10	5
1097:	2	9	6	8	5	5	3	10
1105:	7	8	7	7	7	4	10	8
1113:	5	5	5	6	4	7	29	31
1121:	10	8	1	3	12	7	4	9
1129:	4	10	8	3	4	10	4	5
1137:	4	8	10	11	4	10	7	7
1145:	6	8	4	9	5	9	7	8
1153:	2	10	11	4	8	8	9	7
1161:	4	4	7	10	9	10	6	5
1169:	3	6	11	8	10	7	9	10
1177:	6	8	12	4	3	8	10	5
1185:	9	7	8	11	6	5	4	7
1193:	2	8	10	5	10	9	7	6
1201:	6	7	9	7	4	7	7	8
1209:	6	9	8	10	0	5	5	7
1217:	6	13	4	8	8	12	4	10
1225:	5	7	11	13	11	7	9	7

1233:	7	8	4	8	16	11	7	11

Sample Title: J1V1M2 SAF: RC-107

Channel								
1241:	5	6	1	7	9	5	1	4
1249:	7	8	5	2	7	8	8	8
1257:	4	6	1	4	5	6	3	9
1265:	6	2	2	1	5	4	7	4
1273:	8	4	4	4	9	3	2	6
1281:	4	2	7	7	1	6	5	2
1289:	4	3	4	4	4	3	3	4
1297:	4	6	5	4	4	8	5	7
1305:	6	7	4	7	4	3	1	2
1313:	3	8	5	6	3	4	3	3
1321:	2	1	6	3	7	4	4	4
1329:	2	2	9	8	0	5	3	1
1337:	3	3	4	2	5	0	1	3
1345:	1	3	5	5	2	5	0	4
1353:	2	3	3	1	3	4	1	4
1361:	2	3	0	1	4	4	3	2
1369:	1	5	4	3	2	2	1	11
1377:	5	6	1	1	5	2	1	3
1385:	2	1	1	3	0	2	4	2
1393:	7	0	1	3	1	4	2	2
1401:	3	2	2	1	1	5	4	6
1409:	0	3	2	5	4	1	0	0
1417:	0	3	0	2	2	2	1	1
1425:	2	5	4	5	2	0	2	1
1433:	4	3	0	2	0	1	1	2
1441:	4	0	1	7	0	3	1	3
1449:	1	1	6	4	4	5	0	4
1457:	9	50	192	284	166	26	1	1
1465:	1	0	1	0	1	3	0	3
1473:	2	5	3	4	2	1	2	2
1481:	0	2	0	2	3	1	0	3
1489:	3	0	1	1	5	1	0	1
1497:	0	1	1	2	1	1	4	0
1505:	2	0	2	4	1	1	1	1
1513:	1	3	1	2	1	3	2	1
1521:	1	2	2	3	1	1	1	0
1529:	2	1	1	2	0	0	2	1
1537:	1	0	1	1	0	1	2	2
1545:	1	1	3	3	3	0	1	1
1553:	3	1	1	1	2	4	1	0
1561:	1	2	2	0	1	1	2	1
1569:	1	1	0	2	3	1	2	0
1577:	2	4	4	0	2	3	1	2
1585:	2	2	3	8	2	3	4	2
1593:	2	2	1	1	1	2	2	1
1601:	1	0	0	3	0	2	4	1
1609:	0	3	1	0	0	4	1	3
1617:	1	2	0	1	1	0	1	2
1625:	1	4	1	0	0	4	1	1
1633:	1	1	1	0	0	2	3	0
1641:	1	2	1	0	1	1	0	1
1649:	0	1	4	1	1	2	2	1
1657:	0	0	1	3	1	3	2	2

1665:	0	3	0	1	0	1	1	3

Sample Title: J1V1M2 SAF: RC-107

Channel								
1673:	0	0	1	3	0	1	2	0
1681:	2	2	1	1	2	1	0	1
1689:	0	1	1	0	0	2	0	0
1697:	0	1	1	1	1	1	0	0
1705:	2	1	1	1	0	2	0	0
1713:	2	1	1	1	0	3	0	0
1721:	0	1	0	1	1	2	1	5
1729:	4	1	0	0	1	0	0	2
1737:	1	0	0	1	0	1	0	0
1745:	1	1	2	2	3	1	2	1
1753:	1	2	0	1	1	1	0	1
1761:	5	13	16	12	5	2	0	1
1769:	0	3	0	1	1	2	0	1
1777:	0	2	1	5	1	1	0	1
1785:	3	2	0	1	0	0	1	1
1793:	0	1	3	0	0	1	0	2
1801:	1	2	1	0	1	0	0	0
1809:	0	1	2	1	0	2	1	1
1817:	0	1	1	1	0	1	0	0
1825:	3	2	1	0	1	0	0	0
1833:	0	0	2	3	0	0	4	1
1841:	2	0	0	0	2	1	5	3
1849:	1	1	2	1	0	0	0	0
1857:	1	2	1	0	0	0	1	1
1865:	4	0	2	0	0	0	0	2
1873:	0	1	2	1	0	0	2	1
1881:	1	0	2	3	1	0	1	1
1889:	0	2	2	0	0	1	0	2
1897:	0	0	1	0	1	0	1	3
1905:	1	4	3	2	0	1	1	0
1913:	0	0	1	1	0	2	0	1
1921:	0	1	0	3	1	0	1	0
1929:	2	1	0	0	0	3	2	2
1937:	1	1	2	2	1	3	0	1
1945:	1	1	0	0	2	0	0	2
1953:	1	0	0	2	2	3	0	1
1961:	1	0	1	0	1	2	1	1
1969:	1	3	1	1	0	1	1	2
1977:	0	0	1	0	1	0	0	0
1985:	2	3	1	2	0	0	2	2
1993:	3	1	0	0	0	2	1	1
2001:	2	0	0	0	0	0	1	0
2009:	0	3	1	1	0	0	0	1
2017:	0	1	0	2	1	0	0	1
2025:	1	0	5	0	0	0	1	1
2033:	0	0	1	0	1	1	1	0
2041:	3	1	1	1	2	0	0	0
2049:	0	1	1	1	2	0	1	0
2057:	0	2	3	0	0	1	1	0
2065:	2	1	0	0	0	0	0	1
2073:	1	0	1	1	0	0	1	2
2081:	1	0	0	0	0	1	0	3
2089:	1	0	1	1	0	1	0	3

2097:	1	5	2	4	3	3	1	1

Sample Title: J1V1M2 SAF: RC-107

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

2529:	1	0	1	2	1	1	1	0

Sample Title: J1V1M2 SAF: RC-107

Channel								
2537:	1	1	1	0	0	0	0	0
2545:	1	0	0	1	0	0	1	1
2553:	0	0	0	1	1	1	0	0
2561:	1	0	0	1	1	0	1	0
2569:	2	0	0	0	0	0	3	0
2577:	0	0	0	1	1	0	0	1
2585:	0	0	0	0	1	0	1	0
2593:	0	0	0	0	2	0	0	0
2601:	0	0	0	0	0	0	0	0
2609:	2	2	13	16	20	6	3	3
2617:	0	0	1	0	0	0	0	1
2625:	1	0	0	0	0	0	0	0
2633:	0	0	0	0	1	0	0	0
2641:	0	0	1	1	1	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	2	0	0	1	1	0	1	1
2665:	0	0	0	0	0	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	0	1	0	0	2	0
2689:	0	0	0	0	0	0	1	1
2697:	0	0	0	1	0	0	0	0
2705:	0	0	0	0	0	0	0	1
2713:	0	0	1	0	0	0	1	0
2721:	0	1	0	0	1	0	1	0
2729:	1	1	0	0	0	0	0	0
2737:	0	0	0	0	0	1	0	0
2745:	0	0	0	0	0	1	0	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	1	0	0	0	0	1
2769:	0	0	0	0	0	0	1	0
2777:	0	1	0	1	0	1	0	3
2785:	0	0	0	0	0	0	1	0
2793:	0	0	0	1	0	0	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	1	1	0	0	0	1	0
2817:	1	0	0	1	1	0	1	1
2825:	0	0	0	0	0	0	0	0
2833:	0	1	0	1	0	1	2	0
2841:	0	0	0	0	0	0	0	0
2849:	2	0	0	1	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	1	0	0	0	0	0	1	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	1	0	0	0	0	0
2889:	0	0	0	0	1	0	0	1
2897:	0	1	1	0	1	1	0	0
2905:	0	0	1	0	0	0	1	0
2913:	0	1	0	1	0	0	0	0
2921:	0	0	2	1	0	0	0	0
2929:	0	1	0	1	1	0	0	0
2937:	0	0	0	2	0	0	0	0
2945:	0	0	1	0	0	0	0	0
2953:	0	0	0	0	0	2	0	0

2961:	0	0	1	0	0	0	0	1

Sample Title: J1V1M2 SAF: RC-107

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

3393:	0	0	0	0	0	0	0	0

Sample Title: J1V1M2 SAF: RC-107

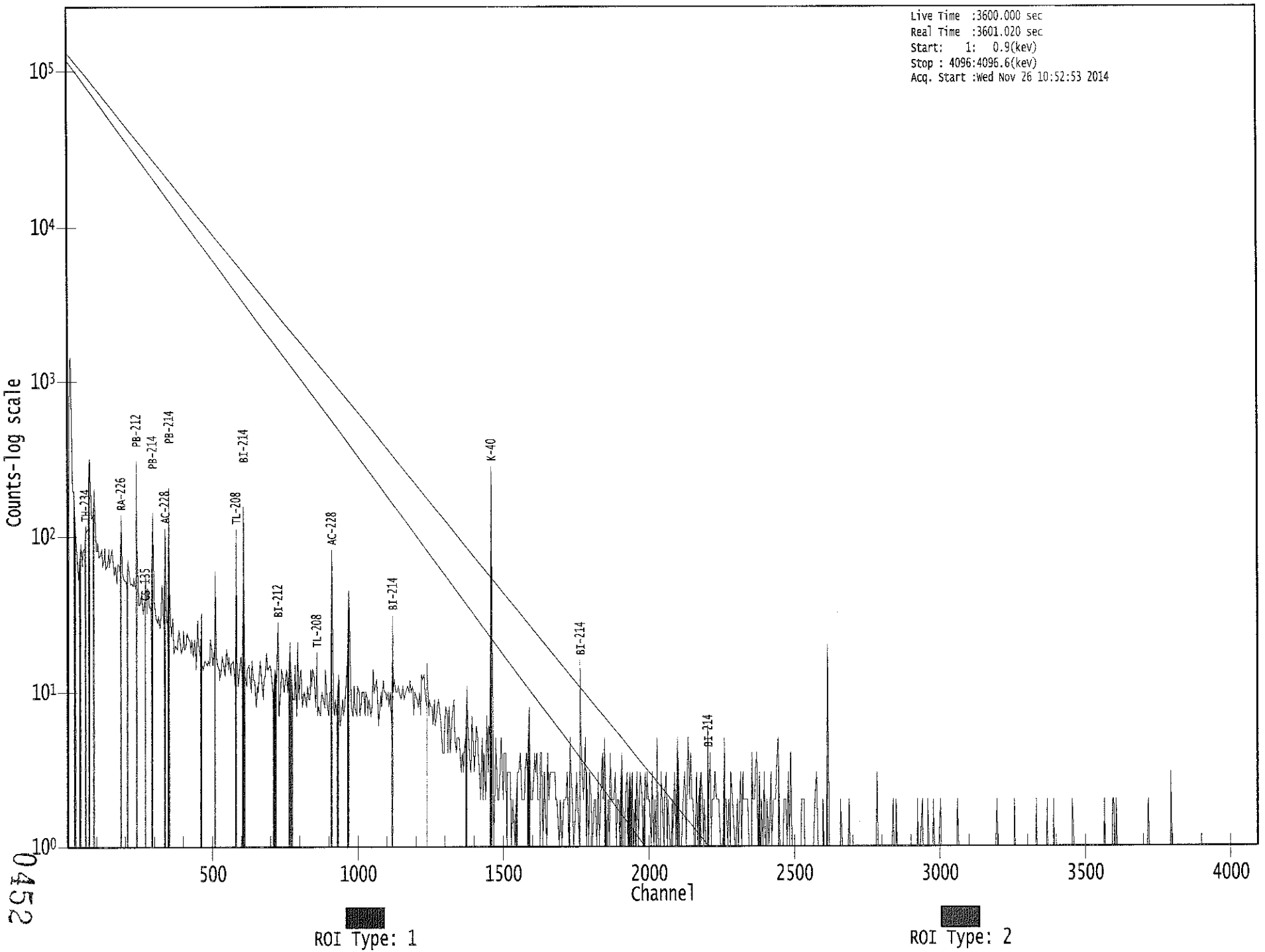
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	1	0	0	0	0	1	0
3425:	0	1	0	0	0	0	0	1
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	1	0	2	0
3457:	1	0	0	1	0	0	0	0
3465:	1	0	0	0	0	1	1	0
3473:	1	0	0	0	0	0	0	1
3481:	0	0	1	1	0	0	0	0
3489:	0	1	0	0	1	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	1	0	0	0	0	0	0	0
3513:	0	1	1	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	1	0	0	0	0	0
3537:	0	0	0	0	0	0	1	1
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	1	0	0
3561:	0	0	0	0	2	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	1	0
3585:	0	0	0	0	0	0	0	0
3593:	2	0	0	0	2	0	1	0
3601:	0	0	0	0	0	2	0	0
3609:	0	0	0	0	1	0	0	0
3617:	0	0	0	1	0	0	0	0
3625:	1	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	1	1
3641:	0	1	0	0	0	0	0	0
3649:	0	0	1	1	0	0	0	0
3657:	0	1	1	0	0	1	0	1
3665:	0	0	0	0	0	0	1	1
3673:	1	0	1	0	0	0	0	0
3681:	0	0	0	1	0	0	0	0
3689:	0	0	0	0	0	0	1	0
3697:	0	0	0	0	0	0	0	0
3705:	0	1	0	1	0	0	0	0
3713:	1	0	0	0	2	0	1	1
3721:	0	0	0	0	0	1	1	0
3729:	0	0	0	1	0	0	0	0
3737:	0	0	0	0	1	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	1	1	0	0	0	0
3761:	0	0	1	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	1	0	1	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	1	3	1	0	1	1	0	0
3801:	0	0	0	0	0	0	1	0
3809:	1	0	0	1	1	0	0	0
3817:	0	1	0	0	0	0	0	0

3825:	0	1	1	0	1	1	0	0

Sample Title: J1V1M2 SAF: RC-107

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

0000015640.CNF



0452

KB 11/26/14

Apex-Gamma

Analysis Report for 1411131-10
J1V1L0 SAF: RC-107

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-10
Sample Description	: J1V1L0 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.499E+02 grams
Facility	: Countroom
Sample Taken On	: 11/24/2014 8:57:41AM
Acquisition Started	: 11/26/2014 10:58:05AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3617.9 seconds
Dead Time	: 0.50 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 9 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15641

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG 11/26/14

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 11:58:38AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	24.10	24.35	0.0000	0.00
2	46.49	46.72	0.0000	0.00
3	76.24	76.45	0.0000	0.00
4	88.08	88.29	0.0000	0.00
5	167.86	168.02	0.0000	0.00
6	185.95	186.11	0.0000	0.00
7	209.91	210.05	0.0000	0.00
8	238.87	239.00	0.0000	0.00
9	242.05	242.17	0.0000	0.00
10	270.33	270.44	0.0000	0.00
11	277.88	277.99	0.0000	0.00
12	295.34	295.44	0.0000	0.00
13	338.68	338.75	0.0000	0.00
14	352.11	352.18	0.0000	0.00
15	358.12	358.18	0.0000	0.00
16	383.63	383.68	0.0000	0.00
17	408.98	409.03	0.0000	0.00
18	422.45	422.48	0.0000	0.00
19	463.07	463.08	0.0000	0.00
20	510.91	510.90	0.0000	0.00
21	579.63	579.58	0.0000	0.00
22	583.42	583.38	0.0000	0.00
23	609.57	609.52	0.0000	0.00
24	703.99	703.89	0.0000	0.00
25	727.25	727.14	0.0000	0.00
26	767.62	767.49	0.0000	0.00
27	860.78	860.61	0.0000	0.00
28	911.73	911.54	0.0000	0.00
29	969.30	969.08	0.0000	0.00
30	1001.80	1001.56	0.0000	0.00
31	1020.72	1020.47	0.0000	0.00
32	1120.39	1120.11	0.0000	0.00
33	1230.35	1230.02	0.0000	0.00
34	1315.54	1315.17	0.0000	0.00
35	1377.93	1377.54	0.0000	0.00
36	1461.08	1460.66	0.0000	0.00
37	1509.96	1509.52	0.0000	0.00
38	1554.76	1554.30	0.0000	0.00
39	1593.71	1593.24	0.0000	0.00
40	1661.57	1661.07	0.0000	0.00
41	1729.76	1729.25	0.0000	0.00
42	1764.40	1763.87	0.0000	0.00

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2115.77	2115.13	0.0000	0.00
44	2614.97	2614.19	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 11:58:38AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	24.10	21 -	27	24.35	8.90E+01	72.22	8.80E+02	3.80
	2	46.49	43 -	51	46.72	1.68E+02	94.05	1.26E+03	1.68
	3	76.24	71 -	80	76.45	6.84E+02	135.62	2.23E+03	3.69
	4	88.08	86 -	91	88.29	1.38E+02	84.23	1.31E+03	1.70
	5	167.86	165 -	170	168.02	4.63E+01	53.02	5.25E+02	1.02
	6	185.95	182 -	189	186.11	1.10E+02	72.03	7.90E+02	1.71
	7	209.91	207 -	213	210.05	4.87E+01	58.60	5.85E+02	1.39
M	8	238.87	235 -	246	239.00	5.58E+02	61.00	3.48E+02	1.70
m	9	242.05	235 -	246	242.17	9.89E+01	65.38	4.15E+02	1.89
M	10	270.33	267 -	283	270.44	8.79E+01	38.41	2.20E+02	2.82
m	11	277.88	267 -	283	277.99	5.74E+01	47.62	3.28E+02	2.83
	12	295.34	292 -	299	295.44	1.19E+02	53.55	4.04E+02	1.92
	13	338.68	335 -	342	338.75	6.72E+01	52.80	4.20E+02	1.47
M	14	352.11	347 -	366	352.18	2.91E+02	44.28	1.74E+02	1.90
m	15	358.12	347 -	366	358.18	3.18E+01	30.28	1.27E+02	2.01
	16	383.63	380 -	387	383.68	3.93E+01	39.60	2.33E+02	1.25
	17	408.98	406 -	412	409.03	3.01E+01	34.67	1.92E+02	1.26
	18	422.45	419 -	427	422.48	5.06E+01	39.08	2.07E+02	3.99
	19	463.07	458 -	467	463.08	4.81E+01	42.84	2.34E+02	2.08
	20	510.91	506 -	514	510.90	1.18E+02	44.33	2.29E+02	1.86
M	21	579.63	577 -	588	579.58	2.12E+01	20.85	8.55E+01	2.40
m	22	583.42	577 -	588	583.38	1.80E+02	32.78	8.78E+01	1.82
	23	609.57	604 -	615	609.52	2.00E+02	48.83	1.98E+02	2.11
	24	703.99	701 -	708	703.89	2.80E+01	25.30	8.80E+01	1.57
	25	727.25	724 -	730	727.14	5.15E+01	26.96	9.50E+01	1.69
	26	767.62	759 -	774	767.49	7.31E+01	42.57	1.52E+02	12.04
	27	860.78	858 -	865	860.61	2.99E+01	22.00	6.22E+01	2.30
	28	911.73	906 -	915	911.54	8.91E+01	34.04	1.14E+02	2.14
	29	969.30	966 -	973	969.08	5.12E+01	29.93	1.14E+02	1.48
	30	1001.80	993 -	1010	1001.56	7.34E+01	34.42	8.13E+01	13.31
	31	1020.72	1011 -	1031	1020.47	5.33E+01	42.32	1.27E+02	12.94
	32	1120.39	1115 -	1126	1120.11	5.93E+01	33.23	1.09E+02	2.26
	33	1230.35	1227 -	1232	1230.02	2.05E+01	21.68	7.71E+01	1.88
	34	1315.54	1312 -	1320	1315.17	1.75E+01	17.61	3.91E+01	5.27
	35	1377.93	1374 -	1381	1377.54	1.32E+01	14.97	2.96E+01	2.21
	36	1461.08	1457 -	1466	1460.66	5.73E+02	49.73	2.89E+01	2.19
	37	1509.96	1506 -	1512	1509.52	1.05E+01	8.97	7.00E+00	1.60
	38	1554.76	1551 -	1557	1554.30	7.58E+00	9.42	1.08E+01	1.15
	39	1593.71	1590 -	1597	1593.24	1.26E+01	15.10	2.48E+01	1.37
	40	1661.57	1657 -	1665	1661.07	1.40E+01	7.48	0.00E+00	5.66

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1729.76	1727 -	1731	1729.25	4.92E+00	5.50	2.17E+00	2.57
42	1764.40	1759 -	1766	1763.87	3.11E+01	14.14	1.38E+01	2.51
43	2115.77	2110 -	2120	2115.13	8.18E+00	8.62	5.64E+00	7.23
44	2614.97	2610 -	2620	2614.19	5.67E+01	16.44	6.70E+00	2.80

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 11:58:38AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	24.10	21 -	27	8.90E+01	72.22	8.80E+02	5.73E+01
	2	46.49	43 -	51	1.68E+02	94.05	1.26E+03	7.43E+01
	3	76.24	71 -	80	6.84E+02	135.62	2.23E+03	1.03E+02
	4	88.08	86 -	91	1.38E+02	84.23	1.31E+03	6.65E+01
	5	167.86	165 -	170	4.63E+01	53.02	5.25E+02	4.21E+01
	6	185.95	182 -	189	1.10E+02	72.03	7.90E+02	5.66E+01
	7	209.91	207 -	213	4.87E+01	58.60	5.85E+02	4.68E+01
M	8	238.87	235 -	246	5.58E+02	61.00	3.48E+02	3.07E+01
m	9	242.05	235 -	246	9.89E+01	65.38	4.15E+02	3.35E+01
M	10	270.33	267 -	283	8.79E+01	38.41	2.20E+02	2.44E+01
m	11	277.88	267 -	283	5.74E+01	47.62	3.28E+02	2.98E+01
	12	295.34	292 -	299	1.19E+02	53.55	4.04E+02	4.02E+01
	13	338.68	335 -	342	6.72E+01	52.80	4.20E+02	4.13E+01
M	14	352.11	347 -	366	2.91E+02	44.28	1.74E+02	2.17E+01
m	15	358.12	347 -	366	3.18E+01	30.28	1.27E+02	1.85E+01
	16	383.63	380 -	387	3.93E+01	39.60	2.33E+02	3.09E+01
	17	408.98	406 -	412	3.01E+01	34.67	1.92E+02	2.70E+01
	18	422.45	419 -	427	5.06E+01	39.08	2.07E+02	2.99E+01
	19	463.07	458 -	467	4.81E+01	42.84	2.34E+02	3.33E+01
	20	510.91	506 -	514	1.18E+02	44.33	2.29E+02	3.17E+01
M	21	579.63	577 -	588	2.12E+01	20.85	8.55E+01	1.52E+01
m	22	583.42	577 -	588	1.80E+02	32.78	8.78E+01	1.54E+01
	23	609.57	604 -	615	2.00E+02	48.83	1.98E+02	1.77E+01

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
24	703.99	701 -	708	2.80E+01	25.30	8.80E+01	1.89E+01
25	727.25	724 -	730	5.15E+01	26.96	9.50E+01	1.88E+01
26	767.62	759 -	774	7.31E+01	42.57	1.52E+02	3.20E+01
27	860.78	858 -	865	2.99E+01	22.00	6.22E+01	1.57E+01
28	911.73	906 -	915	8.91E+01	34.04	1.14E+02	2.33E+01
29	969.30	966 -	973	5.12E+01	29.93	1.14E+02	2.16E+01
30	1001.80	993 -	1010	7.34E+01	34.42	8.13E+01	2.45E+01
31	1020.72	1011 -	1031	5.33E+01	42.32	1.27E+02	3.27E+01
32	1120.39	1115 -	1126	5.93E+01	33.23	1.09E+02	2.42E+01
33	1230.35	1227 -	1232	2.05E+01	21.68	7.71E+01	1.62E+01
34	1315.54	1312 -	1320	1.75E+01	17.61	3.91E+01	1.27E+01
35	1377.93	1374 -	1381	1.32E+01	14.97	2.96E+01	1.08E+01
36	1461.08	1457 -	1466	5.73E+02	49.73	2.89E+01	1.11E+01
37	1509.96	1506 -	1512	1.05E+01	8.97	7.00E+00	5.10E+00
38	1554.76	1551 -	1557	7.58E+00	9.42	1.08E+01	6.28E+00
39	1593.71	1590 -	1597	1.26E+01	15.10	2.48E+01	1.10E+01
40	1661.57	1657 -	1665	1.40E+01	7.48	0.00E+00	0.00E+00
41	1729.76	1727 -	1731	4.92E+00	5.50	2.17E+00	2.67E+00
42	1764.40	1759 -	1766	3.11E+01	14.14	1.38E+01	7.15E+00
43	2115.77	2110 -	2120	8.18E+00	8.62	5.64E+00	5.30E+00
44	2614.97	2610 -	2620	5.67E+01	16.44	6.70E+00	5.43E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 11:58:38AM

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

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	24.10	21 -	27	24.35	8.90E+01	72.22	8.80E+02	.....
2	46.49	43 -	51	46.72	1.68E+02	94.05	1.26E+03	PB-210
3	76.24	71 -	80	76.45	6.84E+02	135.62	2.23E+03	.....
4	88.08	86 -	91	88.29	1.38E+02	84.23	1.31E+03	CD-109

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									LU-176
									SN-126
	5	167.86	165 -	170	168.02	4.63E+01	53.02	5.25E+02	.....
	6	185.95	182 -	189	186.11	1.10E+02	72.03	7.90E+02	RA-226
	7	209.91	207 -	213	210.05	4.87E+01	58.60	5.85E+02	CM-243
									GA-67
M	8	238.87	235 -	246	239.00	5.58E+02	61.00	3.48E+02	PB-212
m	9	242.05	235 -	246	242.17	9.89E+01	65.38	4.15E+02	.....
M	10	270.33	267 -	283	270.44	8.79E+01	38.41	2.20E+02	.....
m	11	277.88	267 -	283	277.99	5.74E+01	47.62	3.28E+02	CM-243
									NP-239
	12	295.34	292 -	299	295.44	1.19E+02	53.55	4.04E+02	PB-214
	13	338.68	335 -	342	338.75	6.72E+01	52.80	4.20E+02	AC-228
M	14	352.11	347 -	366	352.18	2.91E+02	44.28	1.74E+02	PB-214
m	15	358.12	347 -	366	358.18	3.18E+01	30.28	1.27E+02	.....
	16	383.63	380 -	387	383.68	3.93E+01	39.60	2.33E+02	.....
	17	408.98	406 -	412	409.03	3.01E+01	34.67	1.92E+02	.....
	18	422.45	419 -	427	422.48	5.06E+01	39.08	2.07E+02	.....
	19	463.07	458 -	467	463.08	4.81E+01	42.84	2.34E+02	SB-125
	20	510.91	506 -	514	510.90	1.18E+02	44.33	2.29E+02	.....
M	21	579.63	577 -	588	579.58	2.12E+01	20.85	8.55E+01	.....
m	22	583.42	577 -	588	583.38	1.80E+02	32.78	8.78E+01	TL-208
	23	609.57	604 -	615	609.52	2.00E+02	48.83	1.98E+02	BI-214
	24	703.99	701 -	708	703.89	2.80E+01	25.30	8.80E+01	.....
	25	727.25	724 -	730	727.14	5.15E+01	26.96	9.50E+01	BI-212
	26	767.62	759 -	774	767.49	7.31E+01	42.57	1.52E+02	.....
	27	860.78	858 -	865	860.61	2.99E+01	22.00	6.22E+01	TL-208
	28	911.73	906 -	915	911.54	8.91E+01	34.04	1.14E+02	LU-172
									AC-228
	29	969.30	966 -	973	969.08	5.12E+01	29.93	1.14E+02	AC-228
	30	1001.80	993 -	1010	1001.56	7.34E+01	34.42	8.13E+01	PA-234M
	31	1020.72	1011 -	1031	1020.47	5.33E+01	42.32	1.27E+02	.....
	32	1120.39	1115 -	1126	1120.11	5.93E+01	33.23	1.09E+02	BI-214
									SC-46
									TA-182
	33	1230.35	1227 -	1232	1230.02	2.05E+01	21.68	7.71E+01	EU-156
									TA-182
	34	1315.54	1312 -	1320	1315.17	1.75E+01	17.61	3.91E+01	.....
	35	1377.93	1374 -	1381	1377.54	1.32E+01	14.97	2.96E+01	.....
	36	1461.08	1457 -	1466	1460.66	5.73E+02	49.73	2.89E+01	K-40
	37	1509.96	1506 -	1512	1509.52	1.05E+01	8.97	7.00E+00	.....
	38	1554.76	1551 -	1557	1554.30	7.58E+00	9.42	1.08E+01	.....
	39	1593.71	1590 -	1597	1593.24	1.26E+01	15.10	2.48E+01	.....
	40	1661.57	1657 -	1665	1661.07	1.40E+01	7.48	0.00E+00	.....
	41	1729.76	1727 -	1731	1729.25	4.92E+00	5.50	2.17E+00	.....
	42	1764.40	1759 -	1766	1763.87	3.11E+01	14.14	1.38E+01	BI-214
	43	2115.77	2110 -	2120	2115.13	8.18E+00	8.62	5.64E+00	.....
	44	2614.97	2610 -	2620	2614.19	5.67E+01	16.44	6.70E+00	TL-208

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 11:58:38AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	24.10	8.90E+01	72.22	1.88E-03	1.58E-03
	2	46.49	1.68E+02	94.05	1.50E-02	1.58E-03
	3	76.24	6.84E+02	135.62	2.38E-02	2.14E-03
	4	88.08	1.38E+02	84.23	2.44E-02	2.52E-03
	5	167.86	4.63E+01	53.02	1.96E-02	1.50E-03
	6	185.95	1.10E+02	72.03	1.83E-02	1.42E-03
	7	209.91	4.87E+01	58.60	1.68E-02	1.31E-03
M	8	238.87	5.58E+02	61.00	1.52E-02	1.18E-03
m	9	242.05	9.89E+01	65.38	1.51E-02	1.17E-03
M	10	270.33	8.79E+01	38.41	1.38E-02	1.04E-03
m	11	277.88	5.74E+01	47.62	1.35E-02	1.00E-03
	12	295.34	1.19E+02	53.55	1.28E-02	9.74E-04
	13	338.68	6.72E+01	52.80	1.14E-02	9.12E-04
M	14	352.11	2.91E+02	44.28	1.11E-02	8.93E-04
m	15	358.12	3.18E+01	30.28	1.09E-02	8.85E-04
	16	383.63	3.93E+01	39.60	1.03E-02	8.49E-04
	17	408.98	3.01E+01	34.67	9.72E-03	8.20E-04
	18	422.45	5.06E+01	39.08	9.45E-03	8.07E-04
	19	463.07	4.81E+01	42.84	8.73E-03	7.66E-04
	20	510.91	1.18E+02	44.33	8.01E-03	7.18E-04
M	21	579.63	2.12E+01	20.85	7.18E-03	6.50E-04
m	22	583.42	1.80E+02	32.78	7.14E-03	6.46E-04
	23	609.57	2.00E+02	48.83	6.87E-03	6.20E-04
	24	703.99	2.80E+01	25.30	6.06E-03	5.33E-04
	25	727.25	5.15E+01	26.96	5.89E-03	5.14E-04
	26	767.62	7.31E+01	42.57	5.62E-03	4.81E-04
	27	860.78	2.99E+01	22.00	5.09E-03	4.05E-04
	28	911.73	8.91E+01	34.04	4.85E-03	3.72E-04
	29	969.30	5.12E+01	29.93	4.60E-03	3.61E-04
	30	1001.80	7.34E+01	34.42	4.48E-03	3.55E-04
	31	1020.72	5.33E+01	42.32	4.41E-03	3.52E-04
	32	1120.39	5.93E+01	33.23	4.08E-03	3.33E-04
	33	1230.35	2.05E+01	21.68	3.77E-03	3.11E-04
	34	1315.54	1.75E+01	17.61	3.58E-03	2.92E-04

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1377.93	1.32E+01	14.97	3.45E-03	2.82E-04
36	1461.08	5.73E+02	49.73	3.29E-03	2.69E-04
37	1509.96	1.05E+01	8.97	3.21E-03	2.62E-04
38	1554.76	7.58E+00	9.42	3.14E-03	2.55E-04
39	1593.71	1.26E+01	15.10	3.08E-03	2.49E-04
40	1661.57	1.40E+01	7.48	2.99E-03	2.39E-04
41	1729.76	4.92E+00	5.50	2.90E-03	2.29E-04
42	1764.40	3.11E+01	14.14	2.86E-03	2.24E-04
43	2115.77	8.18E+00	8.62	2.53E-03	2.13E-04
44	2614.97	5.67E+01	16.44	2.24E-03	2.13E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 11:58:38AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015433.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	24.10	8.90E+01	72.22			8.90E+01	7.22E+01
	2	46.49	1.68E+02	94.05	4.04E+01	1.12E+01	1.28E+02	9.47E+01
	3	76.24	6.84E+02	135.62			6.84E+02	1.36E+02
	4	88.08	1.38E+02	84.23	1.98E+01	3.34E+00	1.18E+02	8.43E+01
	5	167.86	4.63E+01	53.02			4.63E+01	5.30E+01
	6	185.95	1.10E+02	72.03	3.39E+01	6.73E+00	7.61E+01	7.23E+01
	7	209.91	4.87E+01	58.60			4.87E+01	5.86E+01
M	8	238.87	5.58E+02	61.00	1.24E+01	5.80E+00	5.46E+02	6.13E+01
m	9	242.05	9.89E+01	65.38			9.89E+01	6.54E+01
M	10	270.33	8.79E+01	38.41			8.79E+01	3.84E+01
m	11	277.88	5.74E+01	47.62			5.74E+01	4.76E+01
	12	295.34	1.19E+02	53.55	2.48E+00	4.46E+00	1.16E+02	5.37E+01
	13	338.68	6.72E+01	52.80	1.29E+00	4.12E+00	6.59E+01	5.30E+01
M	14	352.11	2.91E+02	44.28	4.97E+00	4.95E+00	2.86E+02	4.46E+01
m	15	358.12	3.18E+01	30.28			3.18E+01	3.03E+01
	16	383.63	3.93E+01	39.60			3.93E+01	3.96E+01
	17	408.98	3.01E+01	34.67			3.01E+01	3.47E+01
	18	422.45	5.06E+01	39.08			5.06E+01	3.91E+01
	19	463.07	4.81E+01	42.84			4.81E+01	4.28E+01
	20	510.91	1.18E+02	44.33	5.89E+01	4.93E+00	5.94E+01	4.46E+01

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	21	579.63	2.12E+01	20.85			2.12E+01	2.09E+01
m	22	583.42	1.80E+02	32.78	3.50E+00	3.61E+00	1.76E+02	3.30E+01
	23	609.57	2.00E+02	48.83	7.39E+00	3.16E+00	1.92E+02	4.89E+01
	24	703.99	2.80E+01	25.30			2.80E+01	2.53E+01
	25	727.25	5.15E+01	26.96			5.15E+01	2.70E+01
	26	767.62	7.31E+01	42.57			7.31E+01	4.26E+01
	27	860.78	2.99E+01	22.00			2.99E+01	2.20E+01
	28	911.73	8.91E+01	34.04	2.41E+00	2.60E+00	8.67E+01	3.41E+01
	29	969.30	5.12E+01	29.93			5.12E+01	2.99E+01
	30	1001.80	7.34E+01	34.42			7.34E+01	3.44E+01
	31	1020.72	5.33E+01	42.32	1.07E+00	2.32E+00	5.22E+01	4.24E+01
	32	1120.39	5.93E+01	33.23	4.52E-01	2.22E+00	5.88E+01	3.33E+01
	33	1230.35	2.05E+01	21.68			2.05E+01	2.17E+01
	34	1315.54	1.75E+01	17.61			1.75E+01	1.76E+01
	35	1377.93	1.32E+01	14.97			1.32E+01	1.50E+01
	36	1461.08	5.73E+02	49.73	2.28E+00	2.00E+00	5.70E+02	4.98E+01
	37	1509.96	1.05E+01	8.97			1.05E+01	8.97E+00
	38	1554.76	7.58E+00	9.42			7.58E+00	9.42E+00
	39	1593.71	1.26E+01	15.10			1.26E+01	1.51E+01
	40	1661.57	1.40E+01	7.48			1.40E+01	7.48E+00
	41	1729.76	4.92E+00	5.50			4.92E+00	5.50E+00
	42	1764.40	3.11E+01	14.14	1.82E+00	1.19E+00	2.93E+01	1.42E+01
	43	2115.77	8.18E+00	8.62			8.18E+00	8.62E+00
	44	2614.97	5.67E+01	16.44	1.68E+00	1.12E+00	5.50E+01	1.65E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 11:58:38AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015433.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	24.10	8.90E+01	72.22			8.90E+01	7.22E+01
2	46.49	1.68E+02	94.05	4.04E+01	1.12E+01	1.28E+02	9.47E+01
3	76.24	6.84E+02	135.62			6.84E+02	1.36E+02
4	88.08	1.38E+02	84.23	1.98E+01	3.34E+00	1.18E+02	8.43E+01

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	5	167.86	4.63E+01	53.02			4.63E+01	5.30E+01
	6	185.95	1.10E+02	72.03	3.39E+01	6.73E+00	7.61E+01	7.23E+01
	7	209.91	4.87E+01	58.60			4.87E+01	5.86E+01
M	8	238.87	5.58E+02	61.00	1.24E+01	5.80E+00	5.46E+02	6.13E+01
m	9	242.05	9.89E+01	65.38			9.89E+01	6.54E+01
M	10	270.33	8.79E+01	38.41			8.79E+01	3.84E+01
m	11	277.88	5.74E+01	47.62			5.74E+01	4.76E+01
	12	295.34	1.19E+02	53.55	2.48E+00	4.46E+00	1.16E+02	5.37E+01
	13	338.68	6.72E+01	52.80	1.29E+00	4.12E+00	6.59E+01	5.30E+01
M	14	352.11	2.91E+02	44.28	4.97E+00	4.95E+00	2.86E+02	4.46E+01
m	15	358.12	3.18E+01	30.28			3.18E+01	3.03E+01
	16	383.63	3.93E+01	39.60			3.93E+01	3.96E+01
	17	408.98	3.01E+01	34.67			3.01E+01	3.47E+01
	18	422.45	5.06E+01	39.08			5.06E+01	3.91E+01
	19	463.07	4.81E+01	42.84			4.81E+01	4.28E+01
	20	510.91	1.18E+02	44.33	5.89E+01	4.93E+00	5.94E+01	4.46E+01
M	21	579.63	2.12E+01	20.85			2.12E+01	2.09E+01
m	22	583.42	1.80E+02	32.78	3.50E+00	3.61E+00	1.76E+02	3.30E+01
	23	609.57	2.00E+02	48.83	7.39E+00	3.16E+00	1.92E+02	4.89E+01
	24	703.99	2.80E+01	25.30			2.80E+01	2.53E+01
	25	727.25	5.15E+01	26.96			5.15E+01	2.70E+01
	26	767.62	7.31E+01	42.57			7.31E+01	4.26E+01
	27	860.78	2.99E+01	22.00			2.99E+01	2.20E+01
	28	911.73	8.91E+01	34.04	2.41E+00	2.60E+00	8.67E+01	3.41E+01
	29	969.30	5.12E+01	29.93			5.12E+01	2.99E+01
	30	1001.80	7.34E+01	34.42			7.34E+01	3.44E+01
	31	1020.72	5.33E+01	42.32	1.07E+00	2.32E+00	5.22E+01	4.24E+01
	32	1120.39	5.93E+01	33.23	4.52E-01	2.22E+00	5.88E+01	3.33E+01
	33	1230.35	2.05E+01	21.68			2.05E+01	2.17E+01
	34	1315.54	1.75E+01	17.61			1.75E+01	1.76E+01
	35	1377.93	1.32E+01	14.97			1.32E+01	1.50E+01
	36	1461.08	5.73E+02	49.73	2.28E+00	2.00E+00	5.70E+02	4.98E+01
	37	1509.96	1.05E+01	8.97			1.05E+01	8.97E+00
	38	1554.76	7.58E+00	9.42			7.58E+00	9.42E+00
	39	1593.71	1.26E+01	15.10			1.26E+01	1.51E+01
	40	1661.57	1.40E+01	7.48			1.40E+01	7.48E+00
	41	1729.76	4.92E+00	5.50			4.92E+00	5.50E+00
	42	1764.40	3.11E+01	14.14	1.82E+00	1.19E+00	2.93E+01	1.42E+01
	43	2115.77	8.18E+00	8.62			8.18E+00	8.62E+00
	44	2614.97	5.67E+01	16.44	1.68E+00	1.12E+00	5.50E+01	1.65E+01

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

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

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	0.988	1460.81	*	10.67	1.63E+01	1.97E+00
CD-109	1.000	88.03	*	3.72	1.30E+00	9.45E-01
SN-126	0.960	87.57	*	37.00	1.31E-01	9.44E-02
TL-208	0.985	583.14	*	30.22	8.19E-01	1.70E-01
		860.37	*	4.48	1.31E+00	9.71E-01
		2614.66	*	35.85	6.85E-01	2.16E-01
PB-210	1.000	46.50	*	4.25	2.01E+00	1.50E+00
BI-212	0.770	727.17	*	11.80	7.42E-01	3.94E-01
		1620.62		2.75		
PB-212	0.887	238.63	*	44.60	8.05E-01	1.10E-01
		300.09		3.41		
BI-214	0.926	609.31	*	46.30	6.06E-01	1.63E-01
		1120.29	*	15.10	9.57E-01	5.47E-01
		1764.49	*	15.80	6.49E-01	3.19E-01
		2204.22		4.98		
PB-214	0.995	295.21	*	19.19	4.74E-01	2.22E-01
		351.92	*	37.19	6.96E-01	1.22E-01
RA-226	0.989	186.21	*	3.28	1.27E+00	2.62E+00
AC-228	0.960	338.32	*	11.40	5.06E-01	4.09E-01
		911.07	*	27.70	6.46E-01	2.59E-01
		969.11	*	16.60	6.71E-01	3.96E-01
PA-234M	0.910	1001.03	*	0.92	1.78E+01	8.49E+00
CM-243	0.364	209.75	*	3.29	8.83E-01	1.07E+00
		228.14		10.60		
		277.60	*	14.00	3.05E-01	2.54E-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 1411131-10

J1V1L0 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 11:58:38AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	24.10	2.47107E-02	40.59		
	3	76.24	1.89962E-01	9.92		
	5	167.86	1.28663E-02	57.23		
m	9	242.05	2.74607E-02	33.07		
M	10	270.33	2.44209E-02	21.84		
m	15	358.12	8.84284E-03	47.56		
	16	383.63	1.09206E-02	50.36	Sum	
	17	408.98	8.35869E-03	57.61		
	18	422.45	1.40602E-02	38.60		
	19	463.07	1.33636E-02	44.52	Sum	
	20	510.91	1.65079E-02	37.52		
M	21	579.63	5.87621E-03	49.28		
	24	703.99	7.77778E-03	45.18	Sum	
	26	767.62	2.02974E-02	29.13		
	31	1020.72	1.45105E-02	40.57		
	33	1230.35	5.68738E-03	52.94	Tol.	EU-156 TA-182
	34	1315.54	4.84985E-03	50.42		
	35	1377.93	3.66567E-03	56.71		
	37	1509.96	2.91667E-03	42.72		
	38	1554.76	2.10470E-03	62.17		
	39	1593.71	3.50000E-03	59.92	D-Esc	
	40	1661.57	3.88889E-03	26.73		
	41	1729.76	1.36574E-03	55.93	Sum	
	43	2115.77	2.27273E-03	52.66	Sum	

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	1.63E+01	1.97E+00
CD-109	1.00	88.03	*	3.72	1.30E+00	9.45E-01
SN-126	0.96	87.57	*	37.00	1.31E-01	9.44E-02
TL-208	0.98	583.14	*	30.22	8.19E-01	1.70E-01
		860.37	*	4.48	1.31E+00	9.71E-01
		2614.66	*	35.85	6.85E-01	2.16E-01
PB-210	1.00	46.50	*	4.25	2.01E+00	1.50E+00
BI-212	0.77	727.17	*	11.80	7.42E-01	3.94E-01
		1620.62		2.75		
PB-212	0.88	238.63	*	44.60	8.05E-01	1.10E-01
		300.09		3.41		
BI-214	0.92	609.31	*	46.30	6.06E-01	1.63E-01
		1120.29	*	15.10	9.57E-01	5.47E-01
		1764.49	*	15.80	6.49E-01	3.19E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	4.74E-01	2.22E-01
		351.92	*	37.19	6.96E-01	1.22E-01
RA-226	0.98	186.21	*	3.28	1.27E+00	2.62E+00
AC-228	0.96	338.32	*	11.40	5.06E-01	4.09E-01
		911.07	*	27.70	6.46E-01	2.59E-01
		969.11	*	16.60	6.71E-01	3.96E-01
PA-234M	0.91	1001.03	*	0.92	1.78E+01	8.49E+00
CM-243	0.36	209.75	*	3.29	8.83E-01	1.07E+00
		228.14		10.60		
		277.60	*	14.00	3.05E-01	2.54E-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

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.988	1.63E+01	1.97E+00	
?	CD-109	1.000	1.30E+00	9.45E-01	
?	SN-126	0.960	1.31E-01	9.44E-02	
	TL-208	0.985	7.78E-01	1.32E-01	
	PB-210	1.000	2.01E+00	1.50E+00	
	BI-212	0.770	7.42E-01	3.94E-01	
	PB-212	0.887	8.05E-01	1.10E-01	
	BI-214	0.926	6.37E-01	1.41E-01	
	PB-214	0.995	6.44E-01	1.07E-01	
	RA-226	0.989	1.27E+00	2.62E+00	
	AC-228	0.960	6.21E-01	1.92E-01	
	PA-234M	0.910	1.78E+01	8.49E+00	
	CM-243	0.364	3.36E-01	2.47E-01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 11:58:38AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	24.10	2.47107E-02	40.59		
	3	76.24	1.89962E-01	9.92		
	5	167.86	1.28663E-02	57.23		
m	9	242.05	2.74607E-02	33.07		
M	10	270.33	2.44209E-02	21.84		
m	15	358.12	8.84284E-03	47.56		
	16	383.63	1.09206E-02	50.36	Sum	
	17	408.98	8.35869E-03	57.61		
	18	422.45	1.40602E-02	38.60		
	19	463.07	1.33636E-02	44.52	Sum	
	20	510.91	1.65079E-02	37.52		
M	21	579.63	5.87621E-03	49.28		
	24	703.99	7.77778E-03	45.18	Sum	
	26	767.62	2.02974E-02	29.13		
	31	1020.72	1.45105E-02	40.57		
	33	1230.35	5.68738E-03	52.94	Tol.	EU-156 TA-182
	34	1315.54	4.84985E-03	50.42		
	35	1377.93	3.66567E-03	56.71		
	37	1509.96	2.91667E-03	42.72		
	38	1554.76	2.10470E-03	62.17		
	39	1593.71	3.50000E-03	59.92	D-Esc	
	40	1661.57	3.88889E-03	26.73		
	41	1729.76	1.36574E-03	55.93	Sum	
	43	2115.77	2.27273E-03	52.66	Sum	

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

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

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	9.37E-02	5.39E-01	5.39E-01
+	NA-22	1274.54		99.94	2.49E-02	9.37E-02	9.37E-02
+	NA-24	1368.53		99.99	3.21E-01	5.10E-01	7.46E-01
		2754.09		99.86	6.31E-02		5.10E-01
+	AL-26	1808.65		99.76	3.84E-03	5.96E-02	5.96E-02
+	K-40	1460.81	*	10.67	1.63E+01	7.33E-01	7.33E-01
+	AR-41	1293.64		99.16	-2.67E+06	1.93E+07	1.93E+07
+	TI-44	67.88		94.40	-9.24E-03	5.37E-02	5.37E-02
		78.34		96.00	1.10E-01		6.25E-02
+	SC-46	889.25		99.98	-8.64E-03	6.61E-02	6.61E-02
		1120.51		99.99	1.25E-01		1.16E-01
+	V-48	983.52		99.98	5.48E-04	8.10E-02	8.10E-02
		1312.10		97.50	3.40E-03		9.61E-02
+	CR-51	320.08		9.83	-8.12E-02	5.58E-01	5.58E-01
+	MN-54	834.83		99.97	-4.90E-02	6.98E-02	6.98E-02
+	CO-56	846.75		99.96	2.15E-02	6.56E-02	6.56E-02
		1037.75		14.03	-1.11E-01		5.44E-01
		1238.25		67.00	7.33E-02		1.62E-01
		1771.40		15.51	-5.87E-01		4.19E-01
		2598.48		16.90	8.06E-02		2.89E-01
+	CO-57	122.06		85.51	1.37E-02	4.84E-02	4.84E-02
		136.48		10.60	-1.04E-01		3.69E-01
+	CO-58	810.76		99.40	-3.71E-02	6.16E-02	6.16E-02
+	FE-59	1099.22		56.50	3.20E-02	1.45E-01	1.45E-01
		1291.56		43.20	-1.65E-02		2.28E-01
+	CO-60	1173.22		100.00	-4.68E-03	8.22E-02	8.39E-02
		1332.49		100.00	-2.76E-02		8.22E-02
+	ZN-65	1115.52		50.75	1.94E-02	1.61E-01	1.61E-01
+	GA-67	93.31		35.70	2.72E-01	2.18E-01	2.18E-01
		208.95		2.24	3.00E+00		3.75E+00
		300.22		16.00	7.89E-02		5.17E-01
+	SE-75	121.11		16.70	-5.83E-02	6.70E-02	2.43E-01
		136.00		59.20	-1.19E-02		6.70E-02
		264.65		59.80	4.90E-03		7.57E-02
		279.53		25.20	1.20E-01		2.20E-01
		400.65		11.40	1.76E-01		4.99E-01
+	RB-82	776.52		13.00	1.06E-01	5.63E-01	5.63E-01
+	RB-83	520.41		46.00	-6.65E-02	1.31E-01	1.31E-01
		529.64		30.30	4.35E-02		1.93E-01
		552.65		16.40	-1.74E-01		3.55E-01
+	KR-85	513.99		0.43	-1.46E+00	1.85E+01	1.85E+01
+	SR-85	513.99		99.27	-6.50E-03	8.27E-02	8.27E-02

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02		93.40	6.20E-03	6.92E-02	7.35E-02
		1836.01		99.38	2.73E-02		6.92E-02
+	NB-93M	16.57		9.43	-2.55E+01	5.82E+01	5.82E+01
+	NB-94	702.63		100.00	8.51E-04	6.54E-02	6.54E-02
		871.10		100.00	-4.92E-03		6.73E-02
+	NB-95	765.79		99.81	-1.68E-02	7.41E-02	7.41E-02
+	NB-95M	235.69		25.00	-4.11E-02	4.81E-01	4.81E-01
+	ZR-95	724.18		43.70	7.06E-03	1.08E-01	1.84E-01
		756.72		55.30	-3.57E-03		1.08E-01
+	MO-99	181.06		6.20	4.27E-01	8.30E-01	1.12E+00
		739.58		12.80	2.99E-01		8.30E-01
		778.00		4.50	-8.16E-01		2.44E+00
+	RU-103	497.08		89.00	-2.56E-02	6.00E-02	6.00E-02
+	RU-106	621.84		9.80	-2.67E-01	6.07E-01	6.07E-01
+	AG-108M	433.93		89.90	-1.88E-02	5.88E-02	5.88E-02
		614.37		90.40	1.39E-03		7.28E-02
		722.95		90.50	-3.31E-03		7.13E-02
+	CD-109	88.03	*	3.72	1.30E+00	1.51E+00	1.51E+00
+	AG-110M	657.75		93.14	3.20E-02	7.19E-02	7.19E-02
		677.61		10.53	6.51E-02		5.82E-01
		706.67		16.46	-4.59E-02		3.71E-01
		763.93		21.98	1.25E-03		3.26E-01
		884.67		71.63	3.33E-02		9.97E-02
		1384.27		23.94	1.36E-01		2.88E-01
+	CD-113M	263.70		0.02	9.46E+01	2.02E+02	2.02E+02
+	SN-113	255.12		1.93	-7.38E-02	8.41E-02	2.50E+00
		391.69		64.90	4.10E-02		8.41E-02
+	TE123M	159.00		84.10	1.46E-02	4.95E-02	4.95E-02
+	SB-124	602.71		97.87	3.40E-03	5.90E-02	5.90E-02
		645.85		7.26	5.32E-04		8.45E-01
		722.78		11.10	-2.77E-02		5.95E-01
		1691.02		49.00	-1.26E-02		1.18E-01
+	I-125	35.49		6.49	5.32E-01	1.71E+00	1.71E+00
+	SB-125	176.33		6.89	-9.21E-02	1.85E-01	5.76E-01
		427.89		29.33	2.19E-02		1.85E-01
		463.38		10.35	4.89E-01		6.12E-01
		600.56		17.80	8.20E-02		3.04E-01
		635.90		11.32	-1.15E-01		5.06E-01
+	SB-126	414.70		83.30	1.51E-02	6.51E-02	6.76E-02
		666.33		99.60	-5.16E-02		6.51E-02
		695.00		99.60	1.69E-02		7.58E-02
		720.50		53.80	-5.55E-03		1.30E-01
+	SN-126	87.57	*	37.00	1.31E-01	1.52E-01	1.52E-01
+	SB-127	473.00		25.00	4.22E-03	2.64E-01	3.18E-01
		685.20		35.70	-7.55E-02		2.64E-01
		783.80		14.70	1.84E-01		6.93E-01
+	I-129	29.78		57.00	7.47E-03	3.24E-01	3.24E-01
		33.60		13.20	3.49E-01		9.65E-01

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	1.84E-01	3.24E-01	1.11E+00
+	I-131	284.30	6.05	-1.70E-03	6.62E-02	1.02E+00
		364.48	81.20	-6.51E-03		6.62E-02
		636.97	7.26	-1.91E-01		9.46E-01
		722.89	1.80	-2.00E-01		4.29E+00
+	TE-132	49.72	13.10	-4.45E-01	9.32E-02	6.94E-01
		228.16	88.00	-4.08E-02		9.32E-02
+	BA-133	81.00	33.00	-3.28E-02	1.11E-01	1.33E-01
		302.84	17.80	7.82E-02		3.03E-01
		356.01	60.00	-4.90E-02		1.11E-01
+	I-133	529.87	86.30	8.09E-02	3.59E-01	3.59E-01
+	CS-134	563.23	8.38	-1.25E-02	6.47E-02	7.62E-01
		569.32	15.43	2.92E-01		4.43E-01
		604.70	97.60	-1.86E-03		6.47E-02
		795.84	85.40	1.79E-02		8.22E-02
		801.93	8.73	-5.38E-01		6.74E-01
+	CS-135	268.24	16.00	4.21E-02	3.22E-01	3.22E-01
+	I-135	1131.51	22.50	-2.38E+01	5.48E+01	6.55E+01
		1260.41	28.60	6.16E+00		5.48E+01
		1678.03	9.54	3.28E+01		1.28E+02
+	CS-136	153.22	7.46	2.88E-01	7.01E-02	6.32E-01
		163.89	4.61	-5.87E-02		9.03E-01
		176.55	13.56	-6.75E-02		3.28E-01
		273.65	12.66	-4.61E-01		4.52E-01
		340.57	48.50	5.36E-03		1.57E-01
		818.50	99.70	-1.59E-02		7.01E-02
		1048.07	79.60	-2.45E-02		1.11E-01
		1235.34	19.70	-1.17E-01		5.71E-01
+	CS-137	661.65	85.12	1.17E-02	7.45E-02	7.45E-02
+	LA-138	788.74	34.00	-2.29E-02	1.09E-01	1.91E-01
		1435.80	66.00	1.01E-02		1.09E-01
+	CE-139	165.85	80.35	-2.02E-02	4.78E-02	4.78E-02
+	BA-140	162.64	6.70	-6.02E-02	2.37E-01	6.25E-01
		304.84	4.50	9.07E-02		1.33E+00
		423.70	3.20	1.30E+00		2.06E+00
		437.55	2.00	4.02E-01		3.15E+00
		537.32	25.00	-4.21E-02		2.37E-01
+	LA-140	328.77	20.50	1.11E-01	9.92E-02	3.21E-01
		487.03	45.50	-3.80E-02		1.29E-01
		815.85	23.50	-1.20E-02		2.97E-01
		1596.49	95.49	9.93E-03		9.92E-02
+	CE-141	145.44	48.40	1.66E-02	8.83E-02	8.83E-02
+	CE-143	57.36	11.80	2.09E-01	4.41E-01	1.29E+00
		293.26	42.00	4.94E-02		4.41E-01
		664.55	5.20	1.64E+00		3.61E+00
+	CE-144	133.54	10.80	-1.31E-01	3.64E-01	3.64E-01
+	PM-144	476.78	42.00	1.86E-02	5.82E-02	1.31E-01
		618.01	98.60	-3.19E-02		5.82E-02
		696.49	99.49	2.96E-02		6.60E-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-145	36.85	21.70	-3.46E-01	2.32E-01	4.41E-01
		37.36	39.70	-3.11E-01		2.32E-01
		42.30	15.10	-5.20E-02		5.00E-01
		72.40	2.31	-2.71E+00		2.49E+00
+	PM-146	453.90	39.94	-1.48E-03	1.32E-01	1.32E-01
		735.90	14.01	-1.06E-01		4.24E-01
		747.13	13.10	-1.72E-01		4.60E-01
+	ND-147	91.11	28.90	9.78E-02	2.02E-01	2.02E-01
		531.02	13.10	1.06E-01		4.84E-01
+	PM-149	285.90	3.10	-1.90E-01	3.05E+00	3.05E+00
+	EU-152	121.78	20.50	5.66E-02	2.01E-01	2.01E-01
		244.69	5.40	1.06E-02		1.07E+00
		344.27	19.13	5.18E-02		2.85E-01
		778.89	9.20	-2.37E-01		6.85E-01
		964.01	10.40	3.09E-01		8.19E-01
		1085.78	7.22	7.62E-02		1.12E+00
		1112.02	9.60	4.16E-02		7.88E-01
		1407.95	14.94	-4.98E-02		5.32E-01
+	GD-153	97.43	31.30	-9.20E-02	1.30E-01	1.30E-01
		103.18	22.20	2.03E-03		1.92E-01
+	EU-154	123.07	40.50	3.33E-02	1.02E-01	1.02E-01
		723.30	19.70	-1.52E-02		3.28E-01
		873.19	11.50	-1.16E-01		5.81E-01
		996.32	10.30	-5.40E-01		6.54E-01
		1004.76	17.90	6.03E-02		4.50E-01
		1274.45	35.50	7.01E-02		2.64E-01
+	EU-155	86.50	30.90	7.06E-02	1.62E-01	1.62E-01
		105.30	20.70	8.47E-02		2.11E-01
+	EU-156	811.77	10.40	-3.49E-02	6.71E-01	6.71E-01
		1153.47	7.20	5.19E-01		1.38E+00
		1230.71	8.90	5.42E-01		1.35E+00
+	HO-166M	184.41	72.60	9.29E-02	6.88E-02	6.88E-02
		280.45	29.60	4.11E-02		1.82E-01
		410.94	11.10	3.86E-02		4.98E-01
		711.69	54.10	4.09E-02		1.26E-01
+	TM-171	66.72	0.14	-4.24E+01	3.63E+01	3.63E+01
+	HF-172	81.75	4.52	3.14E-01	3.70E-01	1.00E+00
		125.81	11.30	-1.95E-03		3.70E-01
+	LU-172	181.53	20.60	6.74E-02	1.61E-01	2.50E-01
		810.06	16.63	-2.30E-01		4.63E-01
		912.12	15.25	1.41E+00		9.28E-01
		1093.66	62.50	3.50E-02		1.61E-01
+	LU-173	100.72	5.24	-3.92E-01	2.52E-01	7.74E-01
		272.11	21.20	1.21E-01		2.52E-01
+	HF-175	343.40	84.00	1.20E-02	6.92E-02	6.92E-02
+	LU-176	88.34	13.30	8.80E-02	5.60E-02	3.89E-01
		201.83	86.00	-6.65E-03		5.69E-02
		306.78	94.00	-5.63E-03		5.60E-02
+	TA-182	67.75	41.20	-2.15E-02	1.25E-01	1.25E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TA-182	1121.30		34.90	2.88E-01	1.25E-01	3.23E-01
		1189.05		16.23	9.59E-02		5.57E-01
		1221.41		26.98	6.75E-02		3.74E-01
		1231.02		11.44	9.98E-02		9.71E-01
+	IR-192	308.46		29.68	2.67E-02	1.16E-01	1.81E-01
		468.07		48.10	3.11E-02		1.16E-01
+	HG-203	279.19		77.30	8.41E-02	7.49E-02	7.49E-02
+	BI-207	569.67		97.72	3.57E-02	6.79E-02	6.79E-02
		1063.62		74.90	1.88E-02		1.16E-01
+	TL-208	583.14	*	30.22	8.19E-01	1.81E-01	3.05E-01
		860.37	*	4.48	1.31E+00		1.50E+00
		2614.66	*	35.85	6.85E-01		1.81E-01
+	BI-210M	262.00		45.00	8.05E-02	1.08E-01	1.08E-01
		300.00		23.00	3.51E-02		2.30E-01
+	PB-210	46.50	*	4.25	2.01E+00	2.42E+00	2.42E+00
+	PB-211	404.84		2.90	3.29E-01	2.01E+00	2.01E+00
		831.96		2.90	9.66E-01		2.51E+00
+	BI-212	727.17	*	11.80	7.42E-01	5.80E-01	5.80E-01
		1620.62		2.75	2.39E-01		2.17E+00
+	PB-212	238.63	*	44.60	8.05E-01	1.89E-01	1.89E-01
		300.09		3.41	2.37E-01		1.55E+00
+	BI-214	609.31	*	46.30	6.06E-01	2.17E-01	2.17E-01
		1120.29	*	15.10	9.57E-01		8.35E-01
		1764.49	*	15.80	6.49E-01		3.95E-01
		2204.22		4.98	2.57E-01		1.59E+00
+	PB-214	295.21	*	19.19	4.74E-01	3.09E-01	3.41E-01
		351.92	*	37.19	6.96E-01		3.09E-01
+	RN-219	401.80		6.50	1.24E-01	8.70E-01	8.70E-01
+	RA-223	323.87		3.88	-1.81E+00	1.33E+00	1.33E+00
+	RA-224	240.98		3.95	1.12E+01	2.37E+00	2.37E+00
+	RA-225	40.00		31.00	4.80E-02	2.91E-01	2.91E-01
+	RA-226	186.21	*	3.28	1.27E+00	1.97E+00	1.97E+00
+	TH-227	50.10		8.40	-4.39E-01	6.84E-01	6.84E-01
		236.00		11.50	-5.97E-02		6.98E-01
		256.20		6.30	-4.18E-01		7.38E-01
+	AC-228	338.32	*	11.40	5.06E-01	3.71E-01	6.58E-01
		911.07	*	27.70	6.46E-01		3.71E-01
		969.11	*	16.60	6.71E-01		6.02E-01
+	TH-230	48.44		16.90	2.98E-01	3.80E-01	3.80E-01
		62.85		4.60	5.11E-01		1.19E+00
		67.67		0.37	-2.36E+00		1.37E+01
+	PA-231	283.67		1.60	-5.35E-03	2.35E+00	3.20E+00
		302.67		2.30	6.05E-01		2.35E+00
+	TH-231	25.64		14.70	-2.50E-01	7.05E-01	2.47E+00
		84.21		6.40	-6.24E-02		7.05E-01
+	PA-233	311.98		38.60	5.04E-02	1.43E-01	1.43E-01
+	PA-234	131.20		20.40	7.99E-03	2.03E-01	2.03E-01
		733.99		8.80	-1.43E-01		6.74E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	946.00		12.00	-1.66E-01	2.03E-01	4.44E-01
+	PA-234M	1001.03	*	0.92	1.78E+01	1.26E+01	1.26E+01
+	TH-234	63.29		3.80	9.40E-01	1.43E+00	1.43E+00
+	U-235	143.76		10.50	2.26E-01	4.01E-01	4.01E-01
		163.35		4.70	-5.14E-02		7.91E-01
		205.31		4.70	-2.98E-01		1.03E+00
+	NP-237	86.50		12.60	1.73E-01	3.97E-01	3.97E-01
+	NP-239	106.10		22.70	1.62E-01	3.60E-01	3.60E-01
		228.18		10.70	-3.99E-01		9.10E-01
		277.60		14.10	4.71E-01		7.21E-01
+	AM-241	59.54		35.90	-7.28E-02	1.44E-01	1.44E-01
+	AM-243	74.67		66.00	1.22E-01	9.81E-02	9.81E-02
+	CM-243	209.75	*	3.29	8.83E-01	4.94E-01	1.75E+00
		228.14		10.60	-2.17E-01		4.94E-01
		277.60	*	14.00	3.05E-01		7.11E-01

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	5.39E-01	5.39E-01	9.37E-02	2.54E-01
	NA-22	1274.54		99.94	9.37E-02	9.37E-02	2.49E-02	4.32E-02
	NA-24	1368.53		99.99	7.46E-01	5.10E-01	3.21E-01	3.33E-01
		2754.09		99.86	5.10E-01		6.31E-02	1.91E-01
	AL-26	1808.65		99.76	5.96E-02	5.96E-02	3.84E-03	2.49E-02
+	K-40	1460.81	*	10.67	7.33E-01	7.33E-01	1.63E+01	3.28E-01
	AR-41	1293.64		99.16	1.93E+07	1.93E+07	-2.67E+06	8.87E+06

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J1V1L0 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TI-44	67.88		94.40	5.37E-02	5.37E-02	-9.24E-03	2.62E-02
		78.34		96.00	6.25E-02		1.10E-01	3.07E-02
	SC-46	889.25		99.98	6.61E-02	6.61E-02	-8.64E-03	3.03E-02
		1120.51		99.99	1.16E-01		1.25E-01	5.49E-02
	V-48	983.52		99.98	8.10E-02	8.10E-02	5.48E-04	3.72E-02
		1312.10		97.50	9.61E-02		3.40E-03	4.38E-02
	CR-51	320.08		9.83	5.58E-01	5.58E-01	-8.12E-02	2.67E-01
	MN-54	834.83		99.97	6.98E-02	6.98E-02	-4.90E-02	3.23E-02
	CO-56	846.75		99.96	6.56E-02	6.56E-02	2.15E-02	3.01E-02
		1037.75		14.03	5.44E-01		-1.11E-01	2.49E-01
		1238.25		67.00	1.62E-01		7.33E-02	7.54E-02
		1771.40		15.51	4.19E-01		-5.87E-01	1.78E-01
		2598.48		16.90	2.89E-01		8.06E-02	1.08E-01
	CO-57	122.06		85.51	4.84E-02	4.84E-02	1.37E-02	2.35E-02
		136.48		10.60	3.69E-01		-1.04E-01	1.79E-01
	CO-58	810.76		99.40	6.16E-02	6.16E-02	-3.71E-02	2.82E-02
	FE-59	1099.22		56.50	1.45E-01	1.45E-01	3.20E-02	6.66E-02
		1291.56		43.20	2.28E-01		-1.65E-02	1.05E-01
	CO-60	1173.22		100.00	8.39E-02	8.22E-02	-4.68E-03	3.85E-02
		1332.49		100.00	8.22E-02		-2.76E-02	3.73E-02
	ZN-65	1115.52		50.75	1.61E-01	1.61E-01	1.94E-02	7.40E-02
	GA-67	93.31		35.70	2.18E-01	2.18E-01	2.72E-01	1.06E-01
		208.95		2.24	3.75E+00		3.00E+00	1.82E+00
		300.22		16.00	5.17E-01		7.89E-02	2.48E-01
	SE-75	121.11		16.70	2.43E-01	6.70E-02	-5.83E-02	1.18E-01
		136.00		59.20	6.70E-02		-1.19E-02	3.24E-02
		264.65		59.80	7.57E-02		4.90E-03	3.62E-02
		279.53		25.20	2.20E-01		1.20E-01	1.06E-01
		400.65		11.40	4.99E-01		1.76E-01	2.37E-01
	RB-82	776.52		13.00	5.63E-01	5.63E-01	1.06E-01	2.62E-01
	RB-83	520.41		46.00	1.31E-01	1.31E-01	-6.65E-02	6.16E-02
		529.64		30.30	1.93E-01		4.35E-02	9.06E-02
		552.65		16.40	3.55E-01		-1.74E-01	1.66E-01
	KR-85	513.99		0.43	1.85E+01	1.85E+01	-1.46E+00	8.86E+00
	SR-85	513.99		99.27	8.27E-02	8.27E-02	-6.50E-03	3.96E-02
	Y-88	898.02		93.40	7.35E-02	6.92E-02	6.20E-03	3.37E-02
		1836.01		99.38	6.92E-02		2.73E-02	2.96E-02
	NB-93M	16.57		9.43	5.82E+01	5.82E+01	-2.55E+01	2.83E+01
	NB-94	702.63		100.00	6.54E-02	6.54E-02	8.51E-04	3.05E-02
		871.10		100.00	6.73E-02		-4.92E-03	3.10E-02
	NB-95	765.79		99.81	7.41E-02	7.41E-02	-1.68E-02	3.45E-02
	NB-95M	235.69		25.00	4.81E-01	4.81E-01	-4.11E-02	2.35E-01
	ZR-95	724.18		43.70	1.84E-01	1.08E-01	7.06E-03	8.65E-02
		756.72		55.30	1.08E-01		-3.57E-03	4.96E-02
	MO-99	181.06		6.20	1.12E+00	8.30E-01	4.27E-01	5.40E-01
		739.58		12.80	8.30E-01		2.99E-01	3.84E-01
		778.00		4.50	2.44E+00		-8.16E-01	1.13E+00
	RU-103	497.08		89.00	6.00E-02	6.00E-02	-2.56E-02	2.81E-02
	RU-106	621.84		9.80	6.07E-01	6.07E-01	-2.67E-01	2.83E-01
	AG-108M	433.93		89.90	5.88E-02	5.88E-02	-1.88E-02	2.78E-02
		614.37		90.40	7.28E-02		1.39E-03	3.42E-02
		722.95		90.50	7.13E-02		-3.31E-03	3.31E-02
+	CD-109	88.03	*	3.72	1.51E+00	1.51E+00	1.30E+00	7.41E-01

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

	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	7.19E-02	7.19E-02	3.20E-02	3.37E-02
		677.61		10.53	5.82E-01		6.51E-02	2.70E-01
		706.67		16.46	3.71E-01		-4.59E-02	1.72E-01
		763.93		21.98	3.26E-01		1.25E-03	1.52E-01
		884.67		71.63	9.97E-02		3.33E-02	4.60E-02
		1384.27		23.94	2.88E-01		1.36E-01	1.27E-01
	CD-113M	263.70		0.02	2.02E+02	2.02E+02	9.46E+01	9.69E+01
	SN-113	255.12		1.93	2.50E+00	8.41E-02	-7.38E-02	1.20E+00
		391.69		64.90	8.41E-02		4.10E-02	3.99E-02
	TE123M	159.00		84.10	4.95E-02	4.95E-02	1.46E-02	2.39E-02
	SB-124	602.71		97.87	5.90E-02	5.90E-02	3.40E-03	2.75E-02
		645.85		7.26	8.45E-01		5.32E-04	3.93E-01
		722.78		11.10	5.95E-01		-2.77E-02	2.76E-01
		1691.02		49.00	1.18E-01		-1.26E-02	4.96E-02
	I-125	35.49		6.49	1.71E+00	1.71E+00	5.32E-01	8.28E-01
	SB-125	176.33		6.89	5.76E-01	1.85E-01	-9.21E-02	2.78E-01
		427.89		29.33	1.85E-01		2.19E-02	8.76E-02
		463.38		10.35	6.12E-01		4.89E-01	2.91E-01
		600.56		17.80	3.04E-01		8.20E-02	1.41E-01
		635.90		11.32	5.06E-01		-1.15E-01	2.35E-01
	SB-126	414.70		83.30	6.76E-02	6.51E-02	1.51E-02	3.19E-02
		666.33		99.60	6.51E-02		-5.16E-02	3.01E-02
		695.00		99.60	7.58E-02		1.69E-02	3.54E-02
		720.50		53.80	1.30E-01		-5.55E-03	6.03E-02
+	SN-126	87.57	*	37.00	1.52E-01	1.52E-01	1.31E-01	7.43E-02
	SB-127	473.00		25.00	3.18E-01	2.64E-01	4.22E-03	1.50E-01
		685.20		35.70	2.64E-01		-7.55E-02	1.23E-01
		783.80		14.70	6.93E-01		1.84E-01	3.22E-01
	I-129	29.78		57.00	3.24E-01	3.24E-01	7.47E-03	1.57E-01
		33.60		13.20	9.65E-01		3.49E-01	4.68E-01
		39.58		7.52	1.11E+00		1.84E-01	5.40E-01
	I-131	284.30		6.05	1.02E+00	6.62E-02	-1.70E-03	4.87E-01
		364.48		81.20	6.62E-02		-6.51E-03	3.12E-02
		636.97		7.26	9.46E-01		-1.91E-01	4.39E-01
		722.89		1.80	4.29E+00		-2.00E-01	2.00E+00
	TE-132	49.72		13.10	6.94E-01	9.32E-02	-4.45E-01	3.37E-01
		228.16		88.00	9.32E-02		-4.08E-02	4.51E-02
	BA-133	81.00		33.00	1.33E-01	1.11E-01	-3.28E-02	6.50E-02
		302.84		17.80	3.03E-01		7.82E-02	1.46E-01
		356.01		60.00	1.11E-01		-4.90E-02	5.33E-02
	I-133	529.87		86.30	3.59E-01	3.59E-01	8.09E-02	1.68E-01
	CS-134	563.23		8.38	7.62E-01	6.47E-02	-1.25E-02	3.59E-01
		569.32		15.43	4.43E-01		2.92E-01	2.09E-01
		604.70		97.60	6.47E-02		-1.86E-03	3.03E-02
		795.84		85.40	8.22E-02		1.79E-02	3.82E-02
		801.93		8.73	6.74E-01		-5.38E-01	3.08E-01
	CS-135	268.24		16.00	3.22E-01	3.22E-01	4.21E-02	1.55E-01
	I-135	1131.51		22.50	6.55E+01	5.48E+01	-2.38E+01	2.98E+01
		1260.41		28.60	5.48E+01		6.16E+00	2.48E+01
		1678.03		9.54	1.28E+02		3.28E+01	5.45E+01
	CS-136	153.22		7.46	6.32E-01	7.01E-02	2.88E-01	3.06E-01
		163.89		4.61	9.03E-01		-5.87E-02	4.35E-01
		176.55		13.56	3.28E-01		-6.75E-02	1.58E-01

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	273.65	12.66	4.52E-01	7.01E-02	-4.61E-01	2.17E-01
	340.57	48.50	1.57E-01		5.36E-03	7.58E-02
	818.50	99.70	7.01E-02		-1.59E-02	3.22E-02
	1048.07	79.60	1.11E-01		-2.45E-02	5.09E-02
	1235.34	19.70	5.71E-01		-1.17E-01	2.65E-01
CS-137	661.65	85.12	7.45E-02	7.45E-02	1.17E-02	3.48E-02
LA-138	788.74	34.00	1.91E-01	1.09E-01	-2.29E-02	8.82E-02
	1435.80	66.00	1.09E-01		1.01E-02	4.85E-02
CE-139	165.85	80.35	4.78E-02	4.78E-02	-2.02E-02	2.30E-02
BA-140	162.64	6.70	6.25E-01	2.37E-01	-6.02E-02	3.01E-01
	304.84	4.50	1.33E+00		9.07E-02	6.37E-01
	423.70	3.20	2.06E+00		1.30E+00	9.79E-01
	437.55	2.00	3.15E+00		4.02E-01	1.49E+00
	537.32	25.00	2.37E-01		-4.21E-02	1.11E-01
LA-140	328.77	20.50	3.21E-01	9.92E-02	1.11E-01	1.54E-01
	487.03	45.50	1.29E-01		-3.80E-02	6.03E-02
	815.85	23.50	2.97E-01		-1.20E-02	1.37E-01
	1596.49	95.49	9.92E-02		9.93E-03	4.44E-02
CE-141	145.44	48.40	8.83E-02	8.83E-02	1.66E-02	4.28E-02
CE-143	57.36	11.80	1.29E+00	4.41E-01	2.09E-01	6.30E-01
	293.26	42.00	4.41E-01		4.94E-02	2.13E-01
	664.55	5.20	3.61E+00		1.64E+00	1.69E+00
CE-144	133.54	10.80	3.64E-01	3.64E-01	-1.31E-01	1.76E-01
PM-144	476.78	42.00	1.31E-01	5.82E-02	1.86E-02	6.17E-02
	618.01	98.60	5.82E-02		-3.19E-02	2.71E-02
	696.49	99.49	6.60E-02		2.96E-02	3.07E-02
PM-145	36.85	21.70	4.41E-01	2.32E-01	-3.46E-01	2.14E-01
	37.36	39.70	2.32E-01		-3.11E-01	1.12E-01
	42.30	15.10	5.00E-01		-5.20E-02	2.43E-01
	72.40	2.31	2.49E+00		-2.71E+00	1.22E+00
PM-146	453.90	39.94	1.32E-01	1.32E-01	-1.48E-03	6.20E-02
	735.90	14.01	4.24E-01		-1.06E-01	1.96E-01
	747.13	13.10	4.60E-01		-1.72E-01	2.12E-01
ND-147	91.11	28.90	2.02E-01	2.02E-01	9.78E-02	9.89E-02
	531.02	13.10	4.84E-01		1.06E-01	2.27E-01
PM-149	285.90	3.10	3.05E+00	3.05E+00	-1.90E-01	1.46E+00
EU-152	121.78	20.50	2.01E-01	2.01E-01	5.66E-02	9.74E-02
	244.69	5.40	1.07E+00		1.06E-02	5.17E-01
	344.27	19.13	2.85E-01		5.18E-02	1.36E-01
	778.89	9.20	6.85E-01		-2.37E-01	3.16E-01
	964.01	10.40	8.19E-01		3.09E-01	3.81E-01
	1085.78	7.22	1.12E+00		7.62E-02	5.17E-01
	1112.02	9.60	7.88E-01		4.16E-02	3.60E-01
	1407.95	14.94	5.32E-01		-4.98E-02	2.39E-01
GD-153	97.43	31.30	1.30E-01	1.30E-01	-9.20E-02	6.35E-02
	103.18	22.20	1.92E-01		2.03E-03	9.34E-02
EU-154	123.07	40.50	1.02E-01	1.02E-01	3.33E-02	4.96E-02
	723.30	19.70	3.28E-01		-1.52E-02	1.52E-01
	873.19	11.50	5.81E-01		-1.16E-01	2.67E-01
	996.32	10.30	6.54E-01		-5.40E-01	2.98E-01
	1004.76	17.90	4.50E-01		6.03E-02	2.08E-01
	1274.45	35.50	2.64E-01		7.01E-02	1.21E-01
EU-155	86.50	30.90	1.62E-01	1.62E-01	7.06E-02	7.93E-02

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-155	105.30		20.70	2.11E-01	1.62E-01	8.47E-02	1.03E-01
	EU-156	811.77		10.40	6.71E-01	6.71E-01	-3.49E-02	3.09E-01
		1153.47		7.20	1.38E+00		5.19E-01	6.39E-01
		1230.71		8.90	1.35E+00		5.42E-01	6.29E-01
	HO-166M	184.41		72.60	6.88E-02	6.88E-02	9.29E-02	3.34E-02
		280.45		29.60	1.82E-01		4.11E-02	8.76E-02
		410.94		11.10	4.98E-01		3.86E-02	2.36E-01
		711.69		54.10	1.26E-01		4.09E-02	5.87E-02
	TM-171	66.72		0.14	3.63E+01	3.63E+01	-4.24E+01	1.77E+01
	HF-172	81.75		4.52	1.00E+00	3.70E-01	3.14E-01	4.88E-01
		125.81		11.30	3.70E-01		-1.95E-03	1.80E-01
	LU-172	181.53		20.60	2.50E-01	1.61E-01	6.74E-02	1.21E-01
		810.06		16.63	4.63E-01		-2.30E-01	2.13E-01
		912.12		15.25	9.28E-01		1.41E+00	4.41E-01
		1093.66		62.50	1.61E-01		3.50E-02	7.39E-02
	LU-173	100.72		5.24	7.74E-01	2.52E-01	-3.92E-01	3.76E-01
		272.11		21.20	2.52E-01		1.21E-01	1.21E-01
	HF-175	343.40		84.00	6.92E-02	6.92E-02	1.20E-02	3.32E-02
	LU-176	88.34		13.30	3.89E-01	5.60E-02	8.80E-02	1.90E-01
		201.83		86.00	5.69E-02		-6.65E-03	2.75E-02
		306.78		94.00	5.60E-02		-5.63E-03	2.68E-02
	TA-182	67.75		41.20	1.25E-01	1.25E-01	-2.15E-02	6.09E-02
		1121.30		34.90	3.23E-01		2.88E-01	1.52E-01
		1189.05		16.23	5.57E-01		9.59E-02	2.57E-01
		1221.41		26.98	3.74E-01		6.75E-02	1.74E-01
		1231.02		11.44	9.71E-01		9.98E-02	4.54E-01
	IR-192	308.46		29.68	1.81E-01	1.16E-01	2.67E-02	8.69E-02
		468.07		48.10	1.16E-01		3.11E-02	5.48E-02
	HG-203	279.19		77.30	7.49E-02	7.49E-02	8.41E-02	3.61E-02
	BI-207	569.67		97.72	6.79E-02	6.79E-02	3.57E-02	3.21E-02
		1063.62		74.90	1.16E-01		1.88E-02	5.37E-02
+	TL-208	583.14	*	30.22	3.05E-01	1.81E-01	8.19E-01	1.46E-01
		860.37	*	4.48	1.50E+00		1.31E+00	6.89E-01
		2614.66	*	35.85	1.81E-01		6.85E-01	7.37E-02
	BI-210M	262.00		45.00	1.08E-01	1.08E-01	8.05E-02	5.20E-02
		300.00		23.00	2.30E-01		3.51E-02	1.10E-01
+	PB-210	46.50	*	4.25	2.42E+00	2.42E+00	2.01E+00	1.19E+00
	PB-211	404.84		2.90	2.01E+00	2.01E+00	3.29E-01	9.55E-01
		831.96		2.90	2.51E+00		9.66E-01	1.17E+00
+	BI-212	727.17	*	11.80	5.80E-01	5.80E-01	7.42E-01	2.70E-01
		1620.62		2.75	2.17E+00		2.39E-01	9.24E-01
+	PB-212	238.63	*	44.60	1.89E-01	1.89E-01	8.05E-01	9.23E-02
		300.09		3.41	1.55E+00		2.37E-01	7.44E-01
+	BI-214	609.31	*	46.30	2.17E-01	2.17E-01	6.06E-01	1.04E-01
		1120.29	*	15.10	8.35E-01		9.57E-01	3.95E-01
		1764.49	*	15.80	3.95E-01		6.49E-01	1.67E-01
		2204.22		4.98	1.59E+00		2.57E-01	6.85E-01
+	PB-214	295.21	*	19.19	3.41E-01	3.09E-01	4.74E-01	1.65E-01
		351.92	*	37.19	3.09E-01		6.96E-01	1.51E-01
	RN-219	401.80		6.50	8.70E-01	8.70E-01	1.24E-01	4.14E-01
	RA-223	323.87		3.88	1.33E+00	1.33E+00	-1.81E+00	6.38E-01
	RA-224	240.98		3.95	2.37E+00	2.37E+00	1.12E+01	1.16E+00
	RA-225	40.00		31.00	2.91E-01	2.91E-01	4.80E-02	1.41E-01

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	RA-226	186.21	*	3.28	1.97E+00	1.97E+00	1.27E+00	9.64E-01
	TH-227	50.10		8.40	6.84E-01	6.84E-01	-4.39E-01	3.33E-01
		236.00		11.50	6.98E-01		-5.97E-02	3.41E-01
		256.20		6.30	7.38E-01		-4.18E-01	3.54E-01
+	AC-228	338.32	*	11.40	6.58E-01	3.71E-01	5.06E-01	3.19E-01
		911.07	*	27.70	3.71E-01		6.46E-01	1.75E-01
		969.11	*	16.60	6.02E-01		6.71E-01	2.83E-01
	TH-230	48.44		16.90	3.80E-01	3.80E-01	2.98E-01	1.85E-01
		62.85		4.60	1.19E+00		5.11E-01	5.80E-01
		67.67		0.37	1.37E+01		-2.36E+00	6.70E+00
	PA-231	283.67		1.60	3.20E+00	2.35E+00	-5.35E-03	1.53E+00
		302.67		2.30	2.35E+00		6.05E-01	1.13E+00
	TH-231	25.64		14.70	2.47E+00	7.05E-01	-2.50E-01	1.20E+00
		84.21		6.40	7.05E-01		-6.24E-02	3.44E-01
	PA-233	311.98		38.60	1.43E-01	1.43E-01	5.04E-02	6.86E-02
	PA-234	131.20		20.40	2.03E-01	2.03E-01	7.99E-03	9.86E-02
		733.99		8.80	6.74E-01		-1.43E-01	3.10E-01
		946.00		12.00	4.44E-01		-1.66E-01	1.98E-01
+	PA-234M	1001.03	*	0.92	1.26E+01	1.26E+01	1.78E+01	5.97E+00
	TH-234	63.29		3.80	1.43E+00	1.43E+00	9.40E-01	7.00E-01
	U-235	143.76		10.50	4.01E-01	4.01E-01	2.26E-01	1.95E-01
		163.35		4.70	7.91E-01		-5.14E-02	3.81E-01
		205.31		4.70	1.03E+00		-2.98E-01	5.00E-01
	NP-237	86.50		12.60	3.97E-01	3.97E-01	1.73E-01	1.94E-01
	NP-239	106.10		22.70	3.60E-01	3.60E-01	1.62E-01	1.75E-01
		228.18		10.70	9.10E-01		-3.99E-01	4.40E-01
		277.60		14.10	7.21E-01		4.71E-01	3.47E-01
	AM-241	59.54		35.90	1.44E-01	1.44E-01	-7.28E-02	7.01E-02
	AM-243	74.67		66.00	9.81E-02	9.81E-02	1.22E-01	4.82E-02
+	CM-243	209.75	*	3.29	1.75E+00	4.94E-01	8.83E-01	8.49E-01
		228.14		10.60	4.94E-01		-2.17E-01	2.39E-01
		277.60	*	14.00	7.11E-01		3.05E-01	3.48E-01

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

No Action Level results available for reporting purposes.

Analysis Report for 1411131-10

J1V1L0 SAF: RC-107

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: J1V1L0 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3618

Channel								
1:	0	0	0	0	0	0	0	0
9:	8	178	162	131	134	118	76	85
17:	79	71	69	63	69	71	83	78
25:	79	90	59	62	71	60	73	61
33:	69	76	86	58	57	71	61	83
41:	92	56	78	90	78	89	126	96
49:	79	88	75	70	75	82	78	105
57:	79	87	92	117	103	93	130	170
65:	108	106	108	120	124	118	127	125
73:	134	148	260	198	298	322	95	91
81:	112	97	99	124	116	91	145	178
89:	126	132	123	105	203	155	89	96
97:	71	96	84	79	100	69	87	103
105:	98	108	88	91	91	98	73	86
113:	95	81	93	85	83	77	64	72
121:	79	77	80	83	73	76	74	86
129:	75	82	79	66	71	78	62	49
137:	75	57	72	61	65	71	71	75
145:	82	53	56	61	52	62	54	65
153:	62	74	74	57	60	54	66	62
161:	56	51	44	49	38	52	57	44
169:	73	45	43	48	45	51	51	46
177:	52	42	53	54	55	47	39	60
185:	61	118	88	51	41	55	47	56
193:	49	43	56	47	42	50	43	55
201:	47	42	38	42	41	46	44	43
209:	56	75	45	46	32	47	50	51
217:	40	45	46	41	40	35	52	49
225:	43	47	29	43	33	46	53	50
233:	39	30	40	33	37	131	360	152
241:	52	84	69	39	31	29	40	28
249:	33	36	25	36	35	19	31	26
257:	29	25	25	31	37	26	26	26
265:	31	19	16	22	37	48	45	23
273:	28	18	29	31	34	45	31	32
281:	31	39	19	25	26	29	26	22
289:	28	27	23	16	22	26	90	91
297:	30	23	23	37	24	26	27	30
305:	25	26	27	27	23	23	29	25
313:	26	18	30	20	15	27	22	28
321:	25	24	23	25	24	22	16	43
329:	39	23	30	28	27	25	28	16
337:	24	51	76	27	31	24	28	21
345:	19	25	11	22	17	25	47	151
353:	112	19	18	14	18	27	18	15
361:	15	15	10	20	16	8	9	17

0481

369:	15	19	17	20	15	20	17	20

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Channel								
377:	19	15	17	15	21	18	20	33
385:	16	18	15	12	19	14	15	21
393:	23	15	16	14	14	17	17	17
401:	15	19	25	19	18	16	22	17
409:	20	29	11	11	12	19	8	21
417:	18	6	12	14	16	26	21	17
425:	22	13	13	14	13	16	15	13
433:	13	16	12	18	11	20	15	20
441:	14	11	19	13	16	14	16	16
449:	13	12	15	10	15	14	8	13
457:	14	11	15	12	15	17	32	28
465:	14	9	12	10	14	18	15	11
473:	12	13	12	8	13	13	12	18
481:	12	12	9	13	11	8	17	9
489:	4	15	19	10	13	7	13	6
497:	13	8	16	9	12	16	14	8
505:	15	12	11	15	20	40	72	40
513:	15	8	16	11	11	13	18	9
521:	15	11	12	20	16	19	12	13
529:	18	7	14	9	8	6	5	7
537:	10	15	11	12	12	13	12	8
545:	13	15	9	10	16	12	9	10
553:	10	15	7	11	11	17	17	14
561:	12	11	16	14	9	14	10	10
569:	18	18	15	17	8	9	9	8
577:	9	11	7	19	8	20	90	81
585:	15	7	12	8	10	11	7	10
593:	9	6	9	1	6	7	7	7
601:	11	8	8	8	9	10	6	28
609:	91	86	19	9	15	10	8	9
617:	12	9	12	4	6	17	11	6
625:	8	19	6	9	10	10	12	10
633:	9	4	6	8	14	10	6	9
641:	7	11	5	13	13	7	7	4
649:	12	6	11	6	10	3	11	11
657:	6	15	5	6	20	12	6	7
665:	10	8	6	12	4	7	10	9
673:	8	9	10	9	5	6	8	6
681:	14	3	11	9	8	11	13	9
689:	10	13	2	14	12	9	4	8
697:	12	9	10	8	3	12	19	8
705:	6	7	10	7	4	11	13	8
713:	12	12	7	10	4	8	11	6
721:	12	8	5	8	7	12	36	23
729:	8	5	9	8	8	7	3	8
737:	4	9	8	10	5	8	6	6
745:	5	7	6	6	6	11	10	10
753:	4	4	6	10	5	6	4	8
761:	9	15	5	13	6	5	12	12
769:	11	9	9	13	16	2	7	8
777:	6	10	10	5	5	4	14	8
785:	10	9	9	5	8	8	9	2
793:	5	9	21	8	6	7	2	7

801:	9	4	3	7	7	10	13	2

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Channel								
809:	7	7	3	6	5	10	7	4
817:	8	5	4	9	6	9	5	5
825:	8	5	10	3	10	15	5	7
833:	6	6	9	7	5	12	14	10
841:	5	5	3	6	9	7	4	3
849:	6	8	5	5	9	7	5	5
857:	5	1	8	16	14	7	5	6
865:	4	5	8	10	5	3	5	6
873:	9	7	8	6	6	8	4	6
881:	11	8	4	10	5	7	4	9
889:	2	8	6	4	8	3	6	0
897:	6	8	6	7	10	8	4	8
905:	9	8	7	4	5	15	46	42
913:	13	4	2	4	9	5	6	5
921:	5	9	8	3	6	4	5	1
929:	6	4	7	13	10	9	13	8
937:	8	6	1	6	8	4	2	2
945:	1	4	3	7	4	4	2	5
953:	8	5	5	1	4	5	4	6
961:	10	4	12	12	9	7	8	17
969:	39	18	7	5	7	6	6	5
977:	0	4	5	6	8	4	9	7
985:	3	7	9	6	7	6	9	3
993:	1	6	9	8	3	3	5	8
1001:	13	10	4	6	7	6	11	7
1009:	4	3	2	5	9	5	9	5
1017:	4	2	5	7	6	5	6	10
1025:	13	5	4	6	3	6	0	7
1033:	7	6	2	13	6	4	8	4
1041:	4	7	7	8	5	7	7	9
1049:	6	5	6	10	5	6	8	3
1057:	9	7	5	7	8	8	7	8
1065:	11	5	7	8	8	2	6	6
1073:	9	3	1	5	8	5	10	4
1081:	4	10	12	5	3	4	6	11
1089:	4	5	6	8	7	5	7	6
1097:	2	5	7	6	11	5	3	5
1105:	11	4	2	9	4	3	7	7
1113:	8	4	4	6	9	5	14	24
1121:	26	5	6	4	8	3	7	5
1129:	2	6	6	8	2	5	10	5
1137:	4	4	4	6	9	2	8	6
1145:	5	8	7	5	8	7	11	3
1153:	6	11	4	9	6	3	4	9
1161:	3	1	3	7	12	8	6	11
1169:	4	7	7	8	5	6	4	5
1177:	5	6	3	5	6	8	7	6
1185:	8	8	9	5	4	3	9	9
1193:	3	7	7	11	6	6	8	7
1201:	10	11	7	8	9	6	11	9
1209:	12	9	5	7	7	3	7	7
1217:	4	9	5	12	4	8	10	9
1225:	11	6	8	8	10	14	16	3

1233:	9	9	4	8	8	16	13	9

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Channel								
1241:	6	4	5	4	6	8	4	3
1249:	10	4	4	8	2	5	4	7
1257:	3	4	5	4	9	5	2	4
1265:	2	9	3	7	5	4	4	7
1273:	5	7	2	8	2	7	3	2
1281:	1	2	3	9	5	6	9	6
1289:	6	3	5	5	5	5	3	6
1297:	5	4	3	2	5	5	5	5
1305:	2	3	1	2	7	3	0	2
1313:	4	7	6	5	2	6	4	1
1321:	5	7	3	2	4	7	5	4
1329:	4	1	5	3	2	6	4	3
1337:	4	3	3	3	4	5	5	4
1345:	4	3	1	1	3	4	1	1
1353:	4	3	0	3	0	6	2	2
1361:	1	1	4	3	3	2	1	5
1369:	1	4	2	2	1	0	2	2
1377:	7	10	6	1	0	6	2	1
1385:	1	3	5	1	1	2	2	5
1393:	3	3	0	3	1	2	2	4
1401:	3	3	3	4	2	1	3	5
1409:	5	2	3	2	4	3	1	4
1417:	3	1	2	4	1	1	1	1
1425:	2	1	2	0	4	2	3	4
1433:	1	3	2	3	1	2	2	2
1441:	1	1	3	2	1	2	1	1
1449:	2	4	1	2	2	1	0	1
1457:	0	6	54	184	240	80	15	2
1465:	3	3	1	1	1	1	2	0
1473:	1	3	2	4	1	1	4	3
1481:	1	1	1	1	1	1	0	0
1489:	2	2	2	2	1	1	2	2
1497:	0	1	2	1	3	3	0	1
1505:	1	0	1	2	3	6	2	0
1513:	1	1	2	3	1	0	0	2
1521:	2	1	1	0	2	3	1	3
1529:	0	0	2	1	3	1	2	0
1537:	1	1	1	3	3	1	1	0
1545:	0	1	1	3	0	0	1	2
1553:	1	1	6	2	0	2	2	0
1561:	2	3	2	0	1	2	1	0
1569:	1	0	1	0	2	1	1	0
1577:	0	1	1	1	3	2	2	0
1585:	1	1	1	5	5	2	3	6
1593:	9	0	3	1	1	0	1	4
1601:	0	1	1	0	0	0	4	0
1609:	0	2	3	2	1	1	1	1
1617:	0	0	1	1	4	1	2	1
1625:	0	2	2	2	4	2	2	0
1633:	2	0	0	2	0	2	2	0
1641:	0	1	1	1	0	3	2	2
1649:	1	2	4	1	0	0	1	0
1657:	0	2	0	3	3	3	2	1

1665:	0	0	0	1	0	0	3	1

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

2097:	0	0	1	2	1	2	3	4

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

2529:	1	0	0	1	1	0	0	0

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Channel								
2537:	0	1	0	0	0	1	1	1
2545:	1	1	1	0	0	1	1	0
2553:	1	0	1	0	0	0	0	0
2561:	0	0	0	1	0	0	0	0
2569:	0	0	0	1	0	1	0	0
2577:	1	0	0	0	0	1	0	0
2585:	0	0	0	1	0	0	0	0
2593:	0	0	0	0	2	0	0	0
2601:	0	1	0	0	0	0	0	0
2609:	0	0	3	6	7	19	11	10
2617:	2	1	1	0	1	0	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	1	0	0	2	0	0	0
2641:	0	0	0	1	1	0	0	0
2649:	0	0	0	0	0	0	1	0
2657:	1	0	0	0	0	0	0	0
2665:	0	1	0	0	0	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	0	1	0	1	0	0	0
2689:	0	1	0	1	0	0	0	0
2697:	0	0	1	0	1	0	0	2
2705:	0	0	0	0	0	0	1	0
2713:	1	1	0	0	0	0	0	0
2721:	0	2	0	0	1	0	0	0
2729:	0	0	0	1	0	0	0	0
2737:	1	0	1	0	0	0	0	0
2745:	0	0	1	0	0	0	0	0
2753:	2	0	0	1	0	0	0	0
2761:	0	0	1	1	0	0	0	1
2769:	1	0	0	1	1	1	0	0
2777:	0	0	0	0	0	1	0	0
2785:	0	0	1	0	0	0	0	1
2793:	0	0	0	0	0	0	0	1
2801:	0	0	1	0	0	0	2	0
2809:	0	1	0	0	0	1	0	0
2817:	1	0	1	0	0	0	0	0
2825:	0	0	0	0	0	0	0	1
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	1	1	2	0
2857:	0	0	0	0	0	0	1	0
2865:	0	0	0	0	1	0	0	1
2873:	0	1	1	1	0	0	0	0
2881:	0	0	0	0	1	1	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	1	1	0	0	0
2913:	0	1	1	0	0	0	0	1
2921:	0	1	0	0	0	0	0	0
2929:	0	0	0	1	0	0	0	0
2937:	0	2	0	0	1	1	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	0	0	0	0	0	0	0

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

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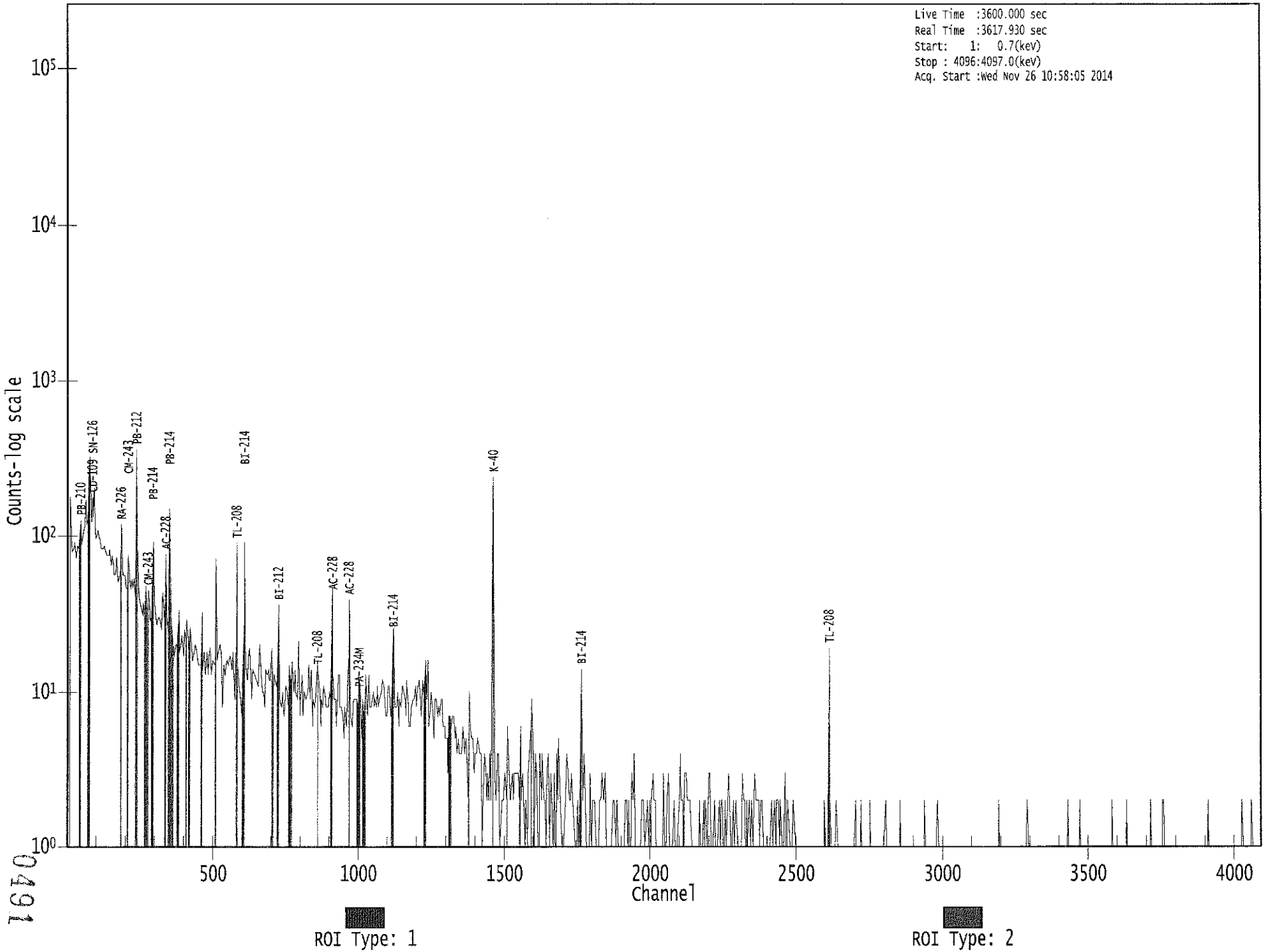
Channel								
3401:	0	0	0	0	0	0	1	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	2	0
3433:	0	0	0	0	0	0	0	1
3441:	0	0	0	0	0	0	0	1
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	2
3473:	0	0	0	0	0	0	1	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	1	0	0	0	0
3497:	0	0	0	0	0	0	0	0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

3825:	0	1	0	0	0	0	0	0

Sample Title: J1V1L0 SAF: RC-107

Channel							
3833:	0	0	0	0	0	0	0	0
3841:	1	1	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	1	0	0	0
3865:	1	0	0	0	0	0	0	0
3873:	0	1	1	0	0	0	1	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	1	0	0	0	0
3905:	0	0	0	0	0	0	2	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	1	0	0	0	0
3945:	1	0	0	0	0	0	0	0
3953:	0	0	0	0	0	1	0	1
3961:	0	0	1	0	1	0	0	0
3969:	0	0	0	0	0	1	0	0
3977:	0	0	0	1	1	0	0	0
3985:	0	1	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	1
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	2	0	0	1	0	1
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	2	0	0	0	1
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	1	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000015641.CNF



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KB 11/26/14

Apex-Gamma

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-11
Sample Description	: J1V1L1 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.836E+02 grams
Facility	: Countroom
Sample Taken On	: 11/24/2014 8:58:14AM
Acquisition Started	: 11/26/2014 10:58:17AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3603.2 seconds
Dead Time	: 0.09 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 11/8/2014
Efficiency Calibration Description	:
Sample Number	: 15642

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG 11/26/14

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 11:58:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.32	75.59	0.0000	0.00
2	85.95	85.22	0.0000	0.00
3	185.87	185.18	0.0000	0.00
4	239.44	238.78	0.0000	0.00
5	271.96	271.31	0.0000	0.00
6	295.94	295.30	0.0000	0.00
7	338.94	338.32	0.0000	0.00
8	352.59	351.97	0.0000	0.00
9	511.61	511.07	0.0000	0.00
10	583.82	583.31	0.0000	0.00
11	609.11	608.61	0.0000	0.00
12	666.20	665.73	0.0000	0.00
13	863.23	862.87	0.0000	0.00
14	912.77	912.43	0.0000	0.00
15	969.86	969.55	0.0000	0.00
16	1000.85	1000.56	0.0000	0.00
17	1120.21	1119.98	0.0000	0.00
18	1270.62	1270.48	0.0000	0.00
19	1377.24	1377.16	0.0000	0.00
20	1385.07	1385.00	0.0000	0.00
21	1461.16	1461.13	0.0000	0.00
22	1592.22	1592.27	0.0000	0.00
23	1640.67	1640.75	0.0000	0.00
24	1763.48	1763.65	0.0000	0.00
25	1855.03	1855.25	0.0000	0.00
26	2615.02	2615.79	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 11:58:21AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.32	71 -	82	75.59	4.24E+02	134.07	2.04E+03	4.08
	2	85.95	82 -	90	85.22	1.03E+02	102.54	1.57E+03	4.46
	3	185.87	180 -	191	185.18	1.20E+02	85.95	8.63E+02	3.19
	4	239.44	233 -	245	238.78	4.82E+02	84.41	5.93E+02	2.28
	5	271.96	264 -	280	271.31	1.27E+02	82.79	6.07E+02	9.87
	6	295.94	290 -	301	295.30	1.26E+02	61.81	4.16E+02	2.21
	7	338.94	334 -	342	338.32	6.88E+01	47.51	3.02E+02	2.89
	8	352.59	347 -	356	351.97	1.65E+02	52.35	2.90E+02	2.12
	9	511.61	504 -	518	511.07	1.11E+02	52.08	2.34E+02	3.08
	10	583.82	578 -	588	583.31	7.80E+01	44.07	2.10E+02	2.33
	11	609.11	603 -	613	608.61	1.08E+02	37.71	1.32E+02	2.37
	12	666.20	662 -	668	665.73	1.84E+01	20.80	6.31E+01	1.38
	13	863.23	857 -	869	862.87	2.70E+01	31.50	1.04E+02	7.49
	14	912.77	907 -	919	912.43	8.38E+01	30.67	7.04E+01	2.61
	15	969.86	966 -	972	969.55	3.33E+01	24.04	7.54E+01	2.85
	16	1000.85	998 -	1003	1000.56	1.43E+01	12.77	2.14E+01	3.07
	17	1120.21	1115 -	1124	1119.98	3.48E+01	25.10	7.03E+01	2.50
	18	1270.62	1264 -	1277	1270.48	2.42E+01	28.12	7.76E+01	6.39
M	19	1377.24	1371 -	1387	1377.16	1.63E+01	14.58	1.70E+01	4.30
m	20	1385.07	1371 -	1387	1385.00	1.38E+01	8.03	1.14E+00	4.30
	21	1461.16	1456 -	1466	1461.13	3.12E+02	36.45	1.02E+01	2.88
	22	1592.22	1587 -	1598	1592.27	9.94E+00	11.66	1.21E+01	3.90
	23	1640.67	1636 -	1644	1640.75	8.00E+00	5.66	0.00E+00	1.47
	24	1763.48	1758 -	1767	1763.65	1.70E+01	8.25	0.00E+00	2.72
	25	1855.03	1852 -	1858	1855.25	8.00E+00	5.66	0.00E+00	3.70
	26	2615.02	2611 -	2619	2615.79	3.80E+01	12.33	0.00E+00	3.51

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 1411131-11

J1V1L1 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 11:58:21AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	76.32	71 -	82	4.24E+02	134.07	2.04E+03	1.05E+02
	2	85.95	82 -	90	1.03E+02	102.54	1.57E+03	8.26E+01
	3	185.87	180 -	191	1.20E+02	85.95	8.63E+02	6.83E+01
	4	239.44	233 -	245	4.82E+02	84.41	5.93E+02	5.93E+01
	5	271.96	264 -	280	1.27E+02	82.79	6.07E+02	6.55E+01
	6	295.94	290 -	301	1.26E+02	61.81	4.16E+02	4.73E+01
	7	338.94	334 -	342	6.88E+01	47.51	3.02E+02	3.66E+01
	8	352.59	347 -	356	1.65E+02	52.35	2.90E+02	3.75E+01
	9	511.61	504 -	518	1.11E+02	52.08	2.34E+02	3.91E+01
	10	583.82	578 -	588	7.80E+01	44.07	2.10E+02	3.32E+01
	11	609.11	603 -	613	1.08E+02	37.71	1.32E+02	2.59E+01
	12	666.20	662 -	668	1.84E+01	20.80	6.31E+01	1.56E+01
	13	863.23	857 -	869	2.70E+01	31.50	1.04E+02	2.44E+01
	14	912.77	907 -	919	8.38E+01	30.67	7.04E+01	2.02E+01
	15	969.86	966 -	972	3.33E+01	24.04	7.54E+01	1.73E+01
	16	1000.85	998 -	1003	1.43E+01	12.77	2.14E+01	8.46E+00
	17	1120.21	1115 -	1124	3.48E+01	25.10	7.03E+01	1.82E+01
	18	1270.62	1264 -	1277	2.42E+01	28.12	7.76E+01	2.17E+01
M	19	1377.24	1371 -	1387	1.63E+01	14.58	1.70E+01	6.78E+00
m	20	1385.07	1371 -	1387	1.38E+01	8.03	1.14E+00	1.76E+00
	21	1461.16	1456 -	1466	3.12E+02	36.45	1.02E+01	7.39E+00
	22	1592.22	1587 -	1598	9.94E+00	11.66	1.21E+01	8.06E+00
	23	1640.67	1636 -	1644	8.00E+00	5.66	0.00E+00	0.00E+00
	24	1763.48	1758 -	1767	1.70E+01	8.25	0.00E+00	0.00E+00
	25	1855.03	1852 -	1858	8.00E+00	5.66	0.00E+00	0.00E+00
	26	2615.02	2611 -	2619	3.80E+01	12.33	0.00E+00	0.00E+00

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

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 11:58:21AM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	76.32	71 -	82	75.59	4.24E+02	134.07	2.04E+03	.....
	2	85.95	82 -	90	85.22	1.03E+02	102.54	1.57E+03	EU-155
									NP-237
	3	185.87	180 -	191	185.18	1.20E+02	85.95	8.63E+02	RA-226
	4	239.44	233 -	245	238.78	4.82E+02	84.41	5.93E+02	PB-212
	5	271.96	264 -	280	271.31	1.27E+02	82.79	6.07E+02	LU-173
	6	295.94	290 -	301	295.30	1.26E+02	61.81	4.16E+02	PB-214
	7	338.94	334 -	342	338.32	6.88E+01	47.51	3.02E+02	AC-228
	8	352.59	347 -	356	351.97	1.65E+02	52.35	2.90E+02	PB-214
	9	511.61	504 -	518	511.07	1.11E+02	52.08	2.34E+02	.....
	10	583.82	578 -	588	583.31	7.80E+01	44.07	2.10E+02	TL-208
	11	609.11	603 -	613	608.61	1.08E+02	37.71	1.32E+02	BI-214
	12	666.20	662 -	668	665.73	1.84E+01	20.80	6.31E+01	SB-126
	13	863.23	857 -	869	862.87	2.70E+01	31.50	1.04E+02	.....
	14	912.77	907 -	919	912.43	8.38E+01	30.67	7.04E+01	LU-172
	15	969.86	966 -	972	969.55	3.33E+01	24.04	7.54E+01	AC-228
	16	1000.85	998 -	1003	1000.56	1.43E+01	12.77	2.14E+01	PA-234M
	17	1120.21	1115 -	1124	1119.98	3.48E+01	25.10	7.03E+01	BI-214
									SC-46
	18	1270.62	1264 -	1277	1270.48	2.42E+01	28.12	7.76E+01	.....
M	19	1377.24	1371 -	1387	1377.16	1.63E+01	14.58	1.70E+01	.....
m	20	1385.07	1371 -	1387	1385.00	1.38E+01	8.03	1.14E+00	AG-110M
	21	1461.16	1456 -	1466	1461.13	3.12E+02	36.45	1.02E+01	K-40
	22	1592.22	1587 -	1598	1592.27	9.94E+00	11.66	1.21E+01	.....
	23	1640.67	1636 -	1644	1640.75	8.00E+00	5.66	0.00E+00	.....
	24	1763.48	1758 -	1767	1763.65	1.70E+01	8.25	0.00E+00	.....
	25	1855.03	1852 -	1858	1855.25	8.00E+00	5.66	0.00E+00	.....
	26	2615.02	2611 -	2619	2615.79	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

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 11:58:21AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.32	4.24E+02	134.07	2.12E-02	1.69E-03
	2	85.95	1.03E+02	102.54	1.99E-02	1.64E-03
	3	185.87	1.20E+02	85.95	1.16E-02	1.15E-03
	4	239.44	4.82E+02	84.41	9.39E-03	9.85E-04
	5	271.96	1.27E+02	82.79	8.39E-03	8.83E-04
	6	295.94	1.26E+02	61.81	7.77E-03	8.42E-04
	7	338.94	6.88E+01	47.51	6.85E-03	7.95E-04
	8	352.59	1.65E+02	52.35	6.60E-03	7.79E-04
	9	511.61	1.11E+02	52.08	4.60E-03	5.60E-04
	10	583.82	7.80E+01	44.07	4.04E-03	4.54E-04
	11	609.11	1.08E+02	37.71	3.88E-03	4.17E-04
	12	666.20	1.84E+01	20.80	3.55E-03	3.38E-04
	13	863.23	2.70E+01	31.50	2.75E-03	2.27E-04
	14	912.77	8.38E+01	30.67	2.61E-03	2.06E-04
	15	969.86	3.33E+01	24.04	2.46E-03	1.99E-04
	16	1000.85	1.43E+01	12.77	2.39E-03	1.95E-04
	17	1120.21	3.48E+01	25.10	2.14E-03	1.79E-04
	18	1270.62	2.42E+01	28.12	1.91E-03	1.99E-04
M	19	1377.24	1.63E+01	14.58	1.77E-03	2.06E-04
m	20	1385.07	1.38E+01	8.03	1.77E-03	2.05E-04
	21	1461.16	3.12E+02	36.45	1.68E-03	1.89E-04
	22	1592.22	9.94E+00	11.66	1.56E-03	1.62E-04
	23	1640.67	8.00E+00	5.66	1.52E-03	1.52E-04
	24	1763.48	1.70E+01	8.25	1.44E-03	1.26E-04
	25	1855.03	8.00E+00	5.66	1.38E-03	1.11E-04
	26	2615.02	3.80E+01	12.33	1.07E-03	1.11E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 11:58:21AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015428.CNF

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.32	4.24E+02	134.07	1.85E+01	4.88E+00	4.05E+02	1.34E+02
	2	85.95	1.03E+02	102.54			1.03E+02	1.03E+02
	3	185.87	1.20E+02	85.95	2.26E+01	3.07E+00	9.70E+01	8.60E+01
	4	239.44	4.82E+02	84.41	1.46E+01	5.96E+00	4.67E+02	8.46E+01
	5	271.96	1.27E+02	82.79			1.27E+02	8.28E+01
	6	295.94	1.26E+02	61.81			1.26E+02	6.18E+01
	7	338.94	6.88E+01	47.51			6.88E+01	4.75E+01
	8	352.59	1.65E+02	52.35	7.05E+00	5.48E+00	1.58E+02	5.26E+01
	9	511.61	1.11E+02	52.08	4.28E+01	5.03E+00	6.84E+01	5.23E+01
	10	583.82	7.80E+01	44.07			7.80E+01	4.41E+01
	11	609.11	1.08E+02	37.71	3.60E+00	3.55E+00	1.04E+02	3.79E+01
	12	666.20	1.84E+01	20.80			1.84E+01	2.08E+01
	13	863.23	2.70E+01	31.50			2.70E+01	3.15E+01
	14	912.77	8.38E+01	30.67			8.38E+01	3.07E+01
	15	969.86	3.33E+01	24.04			3.33E+01	2.40E+01
	16	1000.85	1.43E+01	12.77			1.43E+01	1.28E+01
	17	1120.21	3.48E+01	25.10			3.48E+01	2.51E+01
	18	1270.62	2.42E+01	28.12			2.42E+01	2.81E+01
M	19	1377.24	1.63E+01	14.58			1.63E+01	1.46E+01
m	20	1385.07	1.38E+01	8.03			1.38E+01	8.03E+00
	21	1461.16	3.12E+02	36.45	2.39E+00	1.94E+00	3.10E+02	3.65E+01
	22	1592.22	9.94E+00	11.66			9.94E+00	1.17E+01
	23	1640.67	8.00E+00	5.66			8.00E+00	5.66E+00
	24	1763.48	1.70E+01	8.25			1.70E+01	8.25E+00
	25	1855.03	8.00E+00	5.66			8.00E+00	5.66E+00
	26	2615.02	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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 11:58:21AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015428.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	76.32	4.24E+02	134.07	1.85E+01	4.88E+00	4.05E+02	1.34E+02
2	85.95	1.03E+02	102.54			1.03E+02	1.03E+02

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	3	185.87	1.20E+02	85.95	2.26E+01	3.07E+00	9.70E+01	8.60E+01
	4	239.44	4.82E+02	84.41	1.46E+01	5.96E+00	4.67E+02	8.46E+01
	5	271.96	1.27E+02	82.79			1.27E+02	8.28E+01
	6	295.94	1.26E+02	61.81			1.26E+02	6.18E+01
	7	338.94	6.88E+01	47.51			6.88E+01	4.75E+01
	8	352.59	1.65E+02	52.35	7.05E+00	5.48E+00	1.58E+02	5.26E+01
	9	511.61	1.11E+02	52.08	4.28E+01	5.03E+00	6.84E+01	5.23E+01
	10	583.82	7.80E+01	44.07			7.80E+01	4.41E+01
	11	609.11	1.08E+02	37.71	3.60E+00	3.55E+00	1.04E+02	3.79E+01
	12	666.20	1.84E+01	20.80			1.84E+01	2.08E+01
	13	863.23	2.70E+01	31.50			2.70E+01	3.15E+01
	14	912.77	8.38E+01	30.67			8.38E+01	3.07E+01
	15	969.86	3.33E+01	24.04			3.33E+01	2.40E+01
	16	1000.85	1.43E+01	12.77			1.43E+01	1.28E+01
	17	1120.21	3.48E+01	25.10			3.48E+01	2.51E+01
	18	1270.62	2.42E+01	28.12			2.42E+01	2.81E+01
M	19	1377.24	1.63E+01	14.58			1.63E+01	1.46E+01
m	20	1385.07	1.38E+01	8.03			1.38E+01	8.03E+00
	21	1461.16	3.12E+02	36.45	2.39E+00	1.94E+00	3.10E+02	3.65E+01
	22	1592.22	9.94E+00	11.66			9.94E+00	1.17E+01
	23	1640.67	8.00E+00	5.66			8.00E+00	5.66E+00
	24	1763.48	1.70E+01	8.25			1.70E+01	8.25E+00
	25	1855.03	8.00E+00	5.66			8.00E+00	5.66E+00
	26	2615.02	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	0.981	1460.81	*	10.67	1.65E+01	2.71E+00
EU-155	0.353	86.50	*	30.90	1.61E-01	1.61E-01
		105.30		20.70		
LU-173	0.571	100.72		5.24		
		272.11	*	21.20	6.89E-01	4.53E-01
TL-208	0.846	583.14	*	30.22	6.11E-01	3.52E-01
		860.37		4.48		

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TL-208	0.846	2614.66	*	35.85	9.48E-01	3.23E-01
PB-212	0.803	238.63	*	44.60	1.07E+00	2.24E-01
		300.09		3.41		
BI-214	0.713	609.31	*	46.30	5.57E-01	2.11E-01
		1120.29	*	15.10	1.03E+00	7.48E-01
		1764.49		15.80		
		2204.22		4.98		
PB-214	0.927	295.21	*	19.19	8.11E-01	4.07E-01
		351.92	*	37.19	6.16E-01	2.18E-01
RA-226	0.981	186.21	*	3.28	2.44E+00	4.96E+00
PA-234M	0.995	1001.03	*	0.92	6.23E+00	5.60E+00
NP-237	0.953	86.50	*	12.60	3.93E-01	3.93E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 11:58:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.32	1.12573E-01	16.55		
	7	338.94	1.91212E-02	34.51	Tol.	AC-228
	9	511.61	1.89886E-02	38.27	Sum	
	12	666.20	5.11944E-03	56.44	Tol.	SB-126
	13	863.23	7.50000E-03	58.33		
	14	912.77	2.32796E-02	18.30	Tol.	LU-172
	15	969.86	9.24687E-03	36.11	Tol.	AC-228
	18	1270.62	6.72178E-03	58.11		
M	19	1377.24	4.52225E-03	44.77		
m	20	1385.07	3.84177E-03	29.03	Tol.	AG-110M
	22	1592.22	2.76042E-03	58.68	D-Esc	
	23	1640.67	2.22222E-03	35.36		
	24	1763.48	4.72222E-03	24.25		
	25	1855.03	2.22222E-03	35.36		

0500

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	1.65E+01	2.71E+00
EU-155	0.35	86.50	*	30.90	1.61E-01	1.61E-01
		105.30		20.70		
LU-173	0.57	100.72		5.24		
		272.11	*	21.20	6.89E-01	4.53E-01
TL-208	0.84	583.14	*	30.22	6.11E-01	3.52E-01
		860.37		4.48		
		2614.66	*	35.85	9.48E-01	3.23E-01
PB-212	0.80	238.63	*	44.60	1.07E+00	2.24E-01
		300.09		3.41		
BI-214	0.71	609.31	*	46.30	5.57E-01	2.11E-01
		1120.29	*	15.10	1.03E+00	7.48E-01
		1764.49		15.80		
		2204.22		4.98		
PB-214	0.92	295.21	*	19.19	8.11E-01	4.07E-01
		351.92	*	37.19	6.16E-01	2.18E-01
RA-226	0.98	186.21	*	3.28	2.44E+00	4.96E+00
PA-234M	0.99	1001.03	*	0.92	6.23E+00	5.60E+00
NP-237	0.95	86.50	*	12.60	3.93E-01	3.93E-01

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

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.981	1.65E+01	2.71E+00	
?	EU-155	0.353	1.61E-01	1.61E-01	
	LU-173	0.571	6.89E-01	4.53E-01	
	TL-208	0.846	7.94E-01	2.38E-01	
	PB-212	0.803	1.07E+00	2.24E-01	
	BI-214	0.713	5.92E-01	2.03E-01	
	PB-214	0.927	6.59E-01	1.92E-01	
	RA-226	0.981	2.44E+00	4.96E+00	
	PA-234M	0.995	6.23E+00	5.60E+00	
?	NP-237	0.953	3.93E-01	3.93E-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 1411131-11

J1V1L1 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 11:58:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.32	1.12573E-01	16.55		
	7	338.94	1.91212E-02	34.51	Tol.	AC-228
	9	511.61	1.89886E-02	38.27	Sum	
	12	666.20	5.11944E-03	56.44	Tol.	SB-126
	13	863.23	7.50000E-03	58.33		
	14	912.77	2.32796E-02	18.30	Tol.	LU-172
	15	969.86	9.24687E-03	36.11	Tol.	AC-228
	18	1270.62	6.72178E-03	58.11		
M	19	1377.24	4.52225E-03	44.77		
m	20	1385.07	3.84177E-03	29.03	Tol.	AG-110M
	22	1592.22	2.76042E-03	58.68	D-Esc	
	23	1640.67	2.22222E-03	35.36		
	24	1763.48	4.72222E-03	24.25		
	25	1855.03	2.22222E-03	35.36		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-2.73E-02	8.55E-01	8.55E-01
+	NA-22	1274.54	99.94	4.85E-02	1.66E-01	1.66E-01
+	NA-24	1368.53	99.99	9.08E-02	7.02E-01	1.08E+00

0503

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	NA-24	2754.09		99.86	6.36E-02	7.02E-01	7.02E-01
+	AL-26	1808.65		99.76	-2.28E-02	6.34E-02	6.34E-02
+	K-40	1460.81	*	10.67	1.65E+01	9.96E-01	9.96E-01
+	AR-41	1293.64		99.16	6.43E+06	3.40E+07	3.40E+07
+	TI-44	67.88		94.40	-9.63E-03	6.04E-02	6.04E-02
		78.34		96.00	1.53E-01		7.66E-02
+	SC-46	889.25		99.98	-4.38E-02	1.12E-01	1.12E-01
		1120.51		99.99	1.26E-01		1.86E-01
+	V-48	983.52		99.98	-8.93E-02	1.16E-01	1.16E-01
		1312.10		97.50	2.33E-02		1.69E-01
+	CR-51	320.08		9.83	4.75E-02	8.67E-01	8.67E-01
+	MN-54	834.83		99.97	2.89E-02	1.21E-01	1.21E-01
+	CO-56	846.75		99.96	3.96E-02	1.27E-01	1.27E-01
		1037.75		14.03	4.79E-01		1.01E+00
		1238.25		67.00	7.63E-02		2.87E-01
		1771.40		15.51	-3.67E-01		6.61E-01
		2598.48		16.90	-1.79E-02		5.78E-01
+	CO-57	122.06		85.51	-5.34E-02	7.27E-02	7.27E-02
		136.48		10.60	-8.59E-02		6.38E-01
+	CO-58	810.76		99.40	-2.02E-02	1.08E-01	1.08E-01
+	FE-59	1099.22		56.50	3.83E-02	2.67E-01	2.67E-01
		1291.56		43.20	-2.20E-02		3.73E-01
+	CO-60	1173.22		100.00	2.02E-02	1.23E-01	1.48E-01
		1332.49		100.00	-6.30E-03		1.23E-01
+	ZN-65	1115.52		50.75	9.52E-03	2.93E-01	2.93E-01
+	GA-67	93.31		35.70	1.07E-01	2.90E-01	2.90E-01
		208.95		2.24	6.74E-01		5.59E+00
		300.22		16.00	8.01E-02		8.61E-01
+	SE-75	121.11		16.70	-1.62E-01	1.17E-01	3.75E-01
		136.00		59.20	6.02E-03		1.17E-01
		264.65		59.80	-6.17E-03		1.29E-01
		279.53		25.20	1.41E-02		3.34E-01
		400.65		11.40	7.94E-01		8.47E-01
+	RB-82	776.52		13.00	-2.96E-01	9.19E-01	9.19E-01
+	RB-83	520.41		46.00	-2.30E-02	1.99E-01	1.99E-01
		529.64		30.30	-4.61E-02		3.28E-01
		552.65		16.40	-1.59E-01		5.84E-01
+	KR-85	513.99		0.43	3.29E+01	3.01E+01	3.01E+01
+	SR-85	513.99		99.27	1.47E-01	1.35E-01	1.35E-01
+	Y-88	898.02		93.40	7.85E-02	1.06E-01	1.55E-01
		1836.01		99.38	2.85E-02		1.06E-01
+	NB-93M	16.57		9.43	5.26E-01	3.06E-01	3.06E-01
+	NB-94	702.63		100.00	-5.08E-02	1.06E-01	1.06E-01
		871.10		100.00	-1.16E-02		1.10E-01
+	NB-95	765.79		99.81	-3.01E-02	1.26E-01	1.26E-01
+	NB-95M	235.69		25.00	4.12E-02	7.20E-01	7.20E-01
+	ZR-95	724.18		43.70	1.12E-01	2.21E-01	2.95E-01

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	ZR-95	756.72	55.30	1.57E-02	2.21E-01	2.21E-01
+	MO-99	181.06	6.20	-4.96E-03	1.49E+00	2.08E+00
		739.58	12.80	-6.25E-01		1.49E+00
		778.00	4.50	5.50E-01		4.38E+00
+	RU-103	497.08	89.00	2.77E-03	1.09E-01	1.09E-01
+	RU-106	621.84	9.80	1.43E-01	1.01E+00	1.01E+00
+	AG-108M	433.93	89.90	-2.12E-02	9.75E-02	9.75E-02
		614.37	90.40	1.66E-03		1.28E-01
		722.95	90.50	-2.26E-02		1.33E-01
+	CD-109	88.03	3.72	1.75E+00	1.89E+00	1.89E+00
+	AG-110M	657.75	93.14	1.11E-02	1.09E-01	1.09E-01
		677.61	10.53	8.89E-02		1.01E+00
		706.67	16.46	2.12E-01		6.72E-01
		763.93	21.98	-1.41E-02		5.69E-01
		884.67	71.63	5.67E-02		1.61E-01
		1384.27	23.94	-1.52E-02		5.36E-01
+	CD-113M	263.70	0.02	3.02E+01	3.33E+02	3.33E+02
+	SN-113	255.12	1.93	6.44E-01	1.34E-01	4.25E+00
		391.69	64.90	-1.01E-02		1.34E-01
+	TE123M	159.00	84.10	5.91E-03	8.71E-02	8.71E-02
+	SB-124	602.71	97.87	9.89E-03	1.05E-01	1.05E-01
		645.85	7.26	3.85E-01		1.63E+00
		722.78	11.10	-7.71E-01		1.05E+00
		1691.02	49.00	-7.06E-03		2.02E-01
+	I-125	35.49	6.49	1.77E-01	5.60E-01	5.60E-01
+	SB-125	176.33	6.89	2.51E-02	3.13E-01	1.05E+00
		427.89	29.33	4.65E-02		3.13E-01
		463.38	10.35	5.57E-01		9.12E-01
		600.56	17.80	5.38E-04		5.43E-01
		635.90	11.32	-1.78E-01		9.31E-01
+	SB-126	414.70	83.30	6.39E-03	1.15E-01	1.20E-01
		666.33	99.60	-2.25E-02		1.15E-01
		695.00	99.60	-7.81E-02		1.17E-01
		720.50	53.80	-4.51E-02		2.47E-01
+	SN-126	87.57	37.00	1.75E-01	1.89E-01	1.89E-01
+	SB-127	473.00	25.00	-1.25E-01	4.66E-01	4.99E-01
		685.20	35.70	9.20E-02		4.66E-01
		783.80	14.70	6.96E-01		1.18E+00
+	I-129	29.78	57.00	-9.13E-03	5.98E-02	5.98E-02
		33.60	13.20	8.38E-02		2.63E-01
		39.58	7.52	-4.53E-01		4.77E-01
+	I-131	284.30	6.05	4.11E-01	1.13E-01	1.57E+00
		364.48	81.20	-5.49E-02		1.13E-01
		636.97	7.26	3.26E-01		1.83E+00
		722.89	1.80	-5.57E+00		7.61E+00
+	TE-132	49.72	13.10	1.63E-01	1.39E-01	5.09E-01
		228.16	88.00	-1.91E-02		1.39E-01
+	BA-133	81.00	33.00	-1.21E-01	1.92E-01	2.14E-01
		302.84	17.80	-5.19E-02		4.52E-01

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-133	356.01	60.00	-1.03E-02	1.92E-01	1.92E-01
+	I-133	529.87	86.30	-8.56E-02	6.09E-01	6.09E-01
+	CS-134	563.23	8.38	-4.38E-01	1.22E-01	1.15E+00
		569.32	15.43	-5.18E-04		6.92E-01
		604.70	97.60	-1.44E-03		1.22E-01
		795.84	85.40	-6.21E-03		1.31E-01
		801.93	8.73	6.42E-01		1.41E+00
+	CS-135	268.24	16.00	4.93E-01	5.28E-01	5.28E-01
+	I-135	1131.51	22.50	3.98E+01	1.13E+02	1.31E+02
		1260.41	28.60	5.54E+01		1.13E+02
		1678.03	9.54	-1.25E+01		1.76E+02
+	CS-136	153.22	7.46	1.27E-01	1.24E-01	1.04E+00
		163.89	4.61	7.11E-01		1.73E+00
		176.55	13.56	1.42E-02		5.94E-01
		273.65	12.66	3.37E-01		7.73E-01
		340.57	48.50	-3.78E-03		2.34E-01
		818.50	99.70	-7.44E-03		1.24E-01
		1048.07	79.60	1.47E-02		1.85E-01
		1235.34	19.70	7.71E-02		1.08E+00
+	CS-137	661.65	85.12	1.05E-03	1.21E-01	1.21E-01
+	LA-138	788.74	34.00	-1.95E-01	1.71E-01	3.05E-01
		1435.80	66.00	-2.67E-02		1.71E-01
+	CE-139	165.85	80.35	-4.54E-02	8.72E-02	8.72E-02
+	BA-140	162.64	6.70	6.31E-01	4.73E-01	1.20E+00
		304.84	4.50	-1.21E+00		1.90E+00
		423.70	3.20	5.75E-01		3.29E+00
		437.55	2.00	1.97E+00		5.09E+00
		537.32	25.00	2.06E-01		4.73E-01
+	LA-140	328.77	20.50	1.29E-01	1.40E-01	4.70E-01
		487.03	45.50	4.02E-05		2.18E-01
		815.85	23.50	-3.09E-01		4.75E-01
		1596.49	95.49	7.21E-03		1.40E-01
+	CE-141	145.44	48.40	2.26E-02	1.45E-01	1.45E-01
+	CE-143	57.36	11.80	-7.36E-01	6.60E-01	1.17E+00
		293.26	42.00	6.32E-01		6.60E-01
		664.55	5.20	-1.29E-01		5.89E+00
+	CE-144	133.54	10.80	5.33E-02	6.33E-01	6.33E-01
+	PM-144	476.78	42.00	1.22E-01	1.04E-01	2.17E-01
		618.01	98.60	4.65E-03		1.04E-01
		696.49	99.49	-5.71E-03		1.09E-01
+	PM-145	36.85	21.70	-2.61E-02	8.94E-02	1.62E-01
		37.36	39.70	-3.31E-03		8.94E-02
		42.30	15.10	5.76E-02		2.55E-01
		72.40	2.31	-2.47E-01		2.98E+00
+	PM-146	453.90	39.94	4.51E-02	2.29E-01	2.29E-01
		735.90	14.01	-5.28E-02		8.37E-01
		747.13	13.10	-1.28E-01		8.74E-01
+	ND-147	91.11	28.90	2.12E-01	2.81E-01	2.81E-01
		531.02	13.10	-4.68E-02		8.63E-01

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-149	285.90		3.10	5.09E-01	4.91E+00	4.91E+00
+	EU-152	121.78		20.50	-2.21E-01	3.01E-01	3.01E-01
		244.69		5.40	-1.96E-01		1.57E+00
		344.27		19.13	-1.60E-02		4.52E-01
		778.89		9.20	1.59E-01		1.26E+00
		964.01		10.40	9.63E-02		1.51E+00
		1085.78		7.22	7.42E-01		2.02E+00
		1112.02		9.60	-3.48E-01		1.40E+00
		1407.95		14.94	2.04E-01		8.67E-01
+	GD-153	97.43		31.30	-1.63E-01	1.92E-01	1.92E-01
		103.18		22.20	2.71E-02		2.66E-01
+	EU-154	123.07		40.50	-1.12E-01	1.53E-01	1.53E-01
		723.30		19.70	-1.04E-01		6.11E-01
		873.19		11.50	5.40E-02		9.02E-01
		996.32		10.30	-2.33E-01		1.11E+00
		1004.76		17.90	3.24E-02		7.32E-01
		1274.45		35.50	1.36E-01		4.66E-01
+	EU-155	86.50	*	30.90	1.61E-01	2.62E-01	2.62E-01
		105.30		20.70	-1.63E-01		2.79E-01
+	EU-156	811.77		10.40	-3.31E-01	1.08E+00	1.08E+00
		1153.47		7.20	8.24E-01		2.48E+00
		1230.71		8.90	2.59E-01		2.23E+00
+	HO-166M	184.41		72.60	7.67E-02	1.12E-01	1.12E-01
		280.45		29.60	1.96E-02		2.84E-01
		410.94		11.10	-1.96E-01		7.59E-01
		711.69		54.10	-3.13E-02		2.05E-01
+	TM-171	66.72		0.14	1.29E+01	4.10E+01	4.10E+01
+	HF-172	81.75		4.52	-3.39E+00	5.81E-01	1.49E+00
		125.81		11.30	5.71E-02		5.81E-01
+	LU-172	181.53		20.60	1.31E-02	2.92E-01	4.72E-01
		810.06		16.63	-1.47E-01		7.86E-01
		912.12		15.25	2.08E+00		1.51E+00
		1093.66		62.50	1.62E-01		2.92E-01
+	LU-173	100.72		5.24	-7.20E-01	7.23E-01	1.10E+00
		272.11	*	21.20	6.89E-01		7.23E-01
+	HF-175	343.40		84.00	-3.70E-03	1.14E-01	1.14E-01
+	LU-176	88.34		13.30	2.31E-01	8.55E-02	5.36E-01
		201.83		86.00	1.27E-03		9.24E-02
		306.78		94.00	-3.47E-02		8.55E-02
+	TA-182	67.75		41.20	-2.23E-02	1.40E-01	1.40E-01
		1121.30		34.90	3.22E-01		5.22E-01
		1189.05		16.23	-1.06E-01		1.02E+00
		1221.41		26.98	1.93E-01		6.17E-01
		1231.02		11.44	1.86E-01		1.59E+00
+	IR-192	308.46		29.68	6.46E-03	1.89E-01	2.82E-01
		468.07		48.10	-2.02E-03		1.89E-01
+	HG-203	279.19		77.30	4.68E-03	1.11E-01	1.11E-01
+	BI-207	569.67		97.72	-8.16E-05	1.09E-01	1.09E-01
		1063.62		74.90	-5.68E-02		1.78E-01

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Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TL-208	583.14	*	30.22	6.11E-01	6.75E-02	5.42E-01
		860.37		4.48	-3.46E-01		2.86E+00
		2614.66	*	35.85	9.48E-01		6.75E-02
+	BI-210M	262.00		45.00	3.69E-02	1.68E-01	1.68E-01
		300.00		23.00	1.71E-02		4.17E-01
+	PB-210	46.50		4.25	3.18E-01	9.59E-01	9.59E-01
+	PB-211	404.84		2.90	-4.53E-01	3.04E+00	3.04E+00
		831.96		2.90	-9.53E-01		4.05E+00
+	BI-212	727.17		11.80	-1.39E-01	1.05E+00	1.05E+00
		1620.62		2.75	1.02E+00		4.26E+00
+	PB-212	238.63	*	44.60	1.07E+00	2.80E-01	2.80E-01
		300.09		3.41	1.16E-01		2.82E+00
+	BI-214	609.31	*	46.30	5.57E-01	2.94E-01	2.94E-01
		1120.29	*	15.10	1.03E+00		1.16E+00
		1764.49		15.80	-1.83E-01		9.25E-01
		2204.22		4.98	-9.57E-02		2.09E+00
+	PB-214	295.21	*	19.19	8.11E-01	3.08E-01	6.26E-01
		351.92	*	37.19	6.16E-01		3.08E-01
+	RN-219	401.80		6.50	1.28E+00	1.47E+00	1.47E+00
+	RA-223	323.87		3.88	-8.81E-01	2.06E+00	2.06E+00
+	RA-224	240.98		3.95	1.10E+01	3.18E+00	3.18E+00
+	RA-225	40.00		31.00	-1.22E-01	1.28E-01	1.28E-01
+	RA-226	186.21	*	3.28	2.44E+00	3.53E+00	3.53E+00
+	TH-227	50.10		8.40	1.63E-01	5.09E-01	5.09E-01
		236.00		11.50	5.98E-02		1.05E+00
		256.20		6.30	4.91E-01		1.27E+00
+	AC-228	338.32		11.40	7.99E-01	6.55E-01	8.79E-01
		911.07		27.70	7.44E-01		6.55E-01
		969.11		16.60	1.01E+00		1.09E+00
+	TH-230	48.44		16.90	4.51E-02	2.47E-01	2.47E-01
		62.85		4.60	5.59E-01		1.18E+00
		67.67		0.37	-2.45E+00		1.54E+01
+	PA-231	283.67		1.60	4.31E-01	3.50E+00	4.96E+00
		302.67		2.30	-4.01E-01		3.50E+00
+	TH-231	25.64		14.70	3.95E-04	2.31E-01	2.31E-01
		84.21		6.40	-2.57E+00		1.02E+00
+	PA-233	311.98		38.60	6.76E-02	2.32E-01	2.32E-01
+	PA-234	131.20		20.40	1.33E-01	3.36E-01	3.36E-01
		733.99		8.80	-5.20E-01		1.32E+00
		946.00		12.00	3.85E-01		1.13E+00
+	PA-234M	1001.03	*	0.92	6.23E+00	8.57E+00	8.57E+00
+	TH-234	63.29		3.80	8.36E-04	1.42E+00	1.42E+00
+	U-235	143.76		10.50	-2.17E-02	6.32E-01	6.32E-01
		163.35		4.70	6.23E-01		1.52E+00
		205.31		4.70	2.69E-01		1.72E+00
+	NP-237	86.50	*	12.60	3.93E-01	6.43E-01	6.43E-01
+	NP-239	106.10		22.70	-2.77E-01	4.75E-01	4.75E-01

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Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	NP-239	228.18	10.70	2.70E-01	4.75E-01	1.38E+00
		277.60	14.10	-4.28E-01		1.07E+00
+	AM-241	59.54	35.90	4.86E-02	1.43E-01	1.43E-01
+	AM-243	74.67	66.00	3.27E-01	1.12E-01	1.12E-01
+	CM-243	209.75	3.29	1.00E-01	5.82E-01	2.43E+00
		228.14	10.60	-1.02E-01		7.40E-01
		277.60	14.00	-2.32E-01		5.82E-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	8.55E-01	8.55E-01	-2.73E-02	4.02E-01
	NA-22	1274.54		99.94	1.66E-01	1.66E-01	4.85E-02	7.61E-02
	NA-24	1368.53		99.99	1.08E+00	7.02E-01	9.08E-02	4.65E-01
		2754.09		99.86	7.02E-01		6.36E-02	2.22E-01
	AL-26	1808.65		99.76	6.34E-02	6.34E-02	-2.28E-02	2.25E-02
+	K-40	1460.81	*	10.67	9.96E-01	9.96E-01	1.65E+01	4.26E-01
	AR-41	1293.64		99.16	3.40E+07	3.40E+07	6.43E+06	1.56E+07
	TI-44	67.88		94.40	6.04E-02	6.04E-02	-9.63E-03	2.96E-02
		78.34		96.00	7.66E-02		1.53E-01	3.77E-02
	SC-46	889.25		99.98	1.12E-01	1.12E-01	-4.38E-02	5.09E-02
		1120.51		99.99	1.86E-01		1.26E-01	8.66E-02
	V-48	983.52		99.98	1.16E-01	1.16E-01	-8.93E-02	5.23E-02
		1312.10		97.50	1.69E-01		2.33E-02	7.65E-02
	CR-51	320.08		9.83	8.67E-01	8.67E-01	4.75E-02	4.15E-01
	MN-54	834.83		99.97	1.21E-01	1.21E-01	2.89E-02	5.57E-02
	CO-56	846.75		99.96	1.27E-01	1.27E-01	3.96E-02	5.90E-02

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-56	1037.75	14.03	1.01E+00	1.27E-01	4.79E-01	4.66E-01
	1238.25	67.00	2.87E-01		7.63E-02	1.33E-01
	1771.40	15.51	6.61E-01		-3.67E-01	2.71E-01
	2598.48	16.90	5.78E-01		-1.79E-02	2.16E-01
CO-57	122.06	85.51	7.27E-02	7.27E-02	-5.34E-02	3.54E-02
	136.48	10.60	6.38E-01		-8.59E-02	3.11E-01
CO-58	810.76	99.40	1.08E-01	1.08E-01	-2.02E-02	4.95E-02
FE-59	1099.22	56.50	2.67E-01	2.67E-01	3.83E-02	1.22E-01
	1291.56	43.20	3.73E-01		-2.20E-02	1.70E-01
CO-60	1173.22	100.00	1.48E-01	1.23E-01	2.02E-02	6.78E-02
	1332.49	100.00	1.23E-01		-6.30E-03	5.46E-02
ZN-65	1115.52	50.75	2.93E-01	2.93E-01	9.52E-03	1.35E-01
GA-67	93.31	35.70	2.90E-01	2.90E-01	1.07E-01	1.42E-01
	208.95	2.24	5.59E+00		6.74E-01	2.71E+00
	300.22	16.00	8.61E-01		8.01E-02	4.14E-01
SE-75	121.11	16.70	3.75E-01	1.17E-01	-1.62E-01	1.83E-01
	136.00	59.20	1.17E-01		6.02E-03	5.69E-02
	264.65	59.80	1.29E-01		-6.17E-03	6.18E-02
	279.53	25.20	3.34E-01		1.41E-02	1.60E-01
	400.65	11.40	8.47E-01		7.94E-01	4.04E-01
RB-82	776.52	13.00	9.19E-01	9.19E-01	-2.96E-01	4.25E-01
RB-83	520.41	46.00	1.99E-01	1.99E-01	-2.30E-02	9.30E-02
	529.64	30.30	3.28E-01		-4.61E-02	1.54E-01
	552.65	16.40	5.84E-01		-1.59E-01	2.73E-01
KR-85	513.99	0.43	3.01E+01	3.01E+01	3.29E+01	1.44E+01
SR-85	513.99	99.27	1.35E-01	1.35E-01	1.47E-01	6.44E-02
Y-88	898.02	93.40	1.55E-01	1.06E-01	7.85E-02	7.19E-02
	1836.01	99.38	1.06E-01		2.85E-02	4.33E-02
NB-93M	16.57	9.43	3.06E-01	3.06E-01	5.26E-01	1.49E-01
NB-94	702.63	100.00	1.06E-01	1.06E-01	-5.08E-02	4.91E-02
	871.10	100.00	1.10E-01		-1.16E-02	5.04E-02
NB-95	765.79	99.81	1.26E-01	1.26E-01	-3.01E-02	5.88E-02
NB-95M	235.69	25.00	7.20E-01	7.20E-01	4.12E-02	3.52E-01
ZR-95	724.18	43.70	2.95E-01	2.21E-01	1.12E-01	1.38E-01
	756.72	55.30	2.21E-01		1.57E-02	1.03E-01
MO-99	181.06	6.20	2.08E+00	1.49E+00	-4.96E-03	1.01E+00
	739.58	12.80	1.49E+00		-6.25E-01	6.92E-01
	778.00	4.50	4.38E+00		5.50E-01	2.03E+00
RU-103	497.08	89.00	1.09E-01	1.09E-01	2.77E-03	5.12E-02
RU-106	621.84	9.80	1.01E+00	1.01E+00	1.43E-01	4.69E-01
AG-108M	433.93	89.90	9.75E-02	9.75E-02	-2.12E-02	4.61E-02
	614.37	90.40	1.28E-01		1.66E-03	6.05E-02
	722.95	90.50	1.33E-01		-2.26E-02	6.20E-02
CD-109	88.03	3.72	1.89E+00	1.89E+00	1.75E+00	9.28E-01
AG-110M	657.75	93.14	1.09E-01	1.09E-01	1.11E-02	5.06E-02
	677.61	10.53	1.01E+00		8.89E-02	4.69E-01
	706.67	16.46	6.72E-01		2.12E-01	3.12E-01
	763.93	21.98	5.69E-01		-1.41E-02	2.65E-01
	884.67	71.63	1.61E-01		5.67E-02	7.37E-02
	1384.27	23.94	5.36E-01		-1.52E-02	2.37E-01
CD-113M	263.70	0.02	3.33E+02	3.33E+02	3.02E+01	1.60E+02
SN-113	255.12	1.93	4.25E+00	1.34E-01	6.44E-01	2.05E+00
	391.69	64.90	1.34E-01		-1.01E-02	6.38E-02

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TE123M	159.00	84.10	8.71E-02	8.71E-02	5.91E-03	4.23E-02
SB-124	602.71	97.87	1.05E-01	1.05E-01	9.89E-03	4.91E-02
	645.85	7.26	1.63E+00		3.85E-01	7.64E-01
	722.78	11.10	1.05E+00		-7.71E-01	4.91E-01
	1691.02	49.00	2.02E-01		-7.06E-03	8.30E-02
I-125	35.49	6.49	5.60E-01	5.60E-01	1.77E-01	2.73E-01
SB-125	176.33	6.89	1.05E+00	3.13E-01	2.51E-02	5.08E-01
	427.89	29.33	3.13E-01		4.65E-02	1.48E-01
	463.38	10.35	9.12E-01		5.57E-01	4.31E-01
	600.56	17.80	5.43E-01		5.38E-04	2.53E-01
	635.90	11.32	9.31E-01		-1.78E-01	4.34E-01
SB-126	414.70	83.30	1.20E-01	1.15E-01	6.39E-03	5.69E-02
	666.33	99.60	1.15E-01		-2.25E-02	5.36E-02
	695.00	99.60	1.17E-01		-7.81E-02	5.44E-02
	720.50	53.80	2.47E-01		-4.51E-02	1.15E-01
SN-126	87.57	37.00	1.89E-01	1.89E-01	1.75E-01	9.28E-02
SB-127	473.00	25.00	4.99E-01	4.66E-01	-1.25E-01	2.34E-01
	685.20	35.70	4.66E-01		9.20E-02	2.18E-01
	783.80	14.70	1.18E+00		6.96E-01	5.48E-01
I-129	29.78	57.00	5.98E-02	5.98E-02	-9.13E-03	2.91E-02
	33.60	13.20	2.63E-01		8.38E-02	1.28E-01
	39.58	7.52	4.77E-01		-4.53E-01	2.32E-01
I-131	284.30	6.05	1.57E+00	1.13E-01	4.11E-01	7.54E-01
	364.48	81.20	1.13E-01		-5.49E-02	5.37E-02
	636.97	7.26	1.83E+00		3.26E-01	8.59E-01
	722.89	1.80	7.61E+00		-5.57E+00	3.54E+00
TE-132	49.72	13.10	5.09E-01	1.39E-01	1.63E-01	2.49E-01
	228.16	88.00	1.39E-01		-1.91E-02	6.74E-02
BA-133	81.00	33.00	2.14E-01	1.92E-01	-1.21E-01	1.05E-01
	302.84	17.80	4.52E-01		-5.19E-02	2.17E-01
	356.01	60.00	1.92E-01		-1.03E-02	9.27E-02
I-133	529.87	86.30	6.09E-01	6.09E-01	-8.56E-02	2.86E-01
CS-134	563.23	8.38	1.15E+00	1.22E-01	-4.38E-01	5.36E-01
	569.32	15.43	6.92E-01		-5.18E-04	3.26E-01
	604.70	97.60	1.22E-01		-1.44E-03	5.77E-02
	795.84	85.40	1.31E-01		-6.21E-03	6.02E-02
	801.93	8.73	1.41E+00		6.42E-01	6.53E-01
CS-135	268.24	16.00	5.28E-01	5.28E-01	4.93E-01	2.55E-01
I-135	1131.51	22.50	1.31E+02	1.13E+02	3.98E+01	6.03E+01
	1260.41	28.60	1.13E+02		5.54E+01	5.18E+01
	1678.03	9.54	1.76E+02		-1.25E+01	6.97E+01
CS-136	153.22	7.46	1.04E+00	1.24E-01	1.27E-01	5.08E-01
	163.89	4.61	1.73E+00		7.11E-01	8.43E-01
	176.55	13.56	5.94E-01		1.42E-02	2.88E-01
	273.65	12.66	7.73E-01		3.37E-01	3.73E-01
	340.57	48.50	2.34E-01		-3.78E-03	1.13E-01
	818.50	99.70	1.24E-01		-7.44E-03	5.72E-02
	1048.07	79.60	1.85E-01		1.47E-02	8.45E-02
	1235.34	19.70	1.08E+00		7.71E-02	5.00E-01
CS-137	661.65	85.12	1.21E-01	1.21E-01	1.05E-03	5.63E-02
LA-138	788.74	34.00	3.05E-01	1.71E-01	-1.95E-01	1.40E-01
	1435.80	66.00	1.71E-01		-2.67E-02	7.39E-02
CE-139	165.85	80.35	8.72E-02	8.72E-02	-4.54E-02	4.23E-02

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	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	1.20E+00	4.73E-01	6.31E-01	5.84E-01
		304.84		4.50	1.90E+00		-1.21E+00	9.08E-01
		423.70		3.20	3.29E+00		5.75E-01	1.56E+00
		437.55		2.00	5.09E+00		1.97E+00	2.41E+00
		537.32		25.00	4.73E-01		2.06E-01	2.23E-01
	LA-140	328.77		20.50	4.70E-01	1.40E-01	1.29E-01	2.25E-01
		487.03		45.50	2.18E-01		4.02E-05	1.02E-01
		815.85		23.50	4.75E-01		-3.09E-01	2.16E-01
		1596.49		95.49	1.40E-01		7.21E-03	6.05E-02
	CE-141	145.44		48.40	1.45E-01	1.45E-01	2.26E-02	7.05E-02
	CE-143	57.36		11.80	1.17E+00	6.60E-01	-7.36E-01	5.72E-01
		293.26		42.00	6.60E-01		6.32E-01	3.19E-01
		664.55		5.20	5.89E+00		-1.29E-01	2.74E+00
	CE-144	133.54		10.80	6.33E-01	6.33E-01	5.33E-02	3.09E-01
	PM-144	476.78		42.00	2.17E-01	1.04E-01	1.22E-01	1.02E-01
		618.01		98.60	1.04E-01		4.65E-03	4.86E-02
		696.49		99.49	1.09E-01		-5.71E-03	5.09E-02
	PM-145	36.85		21.70	1.62E-01	8.94E-02	-2.61E-02	7.87E-02
		37.36		39.70	8.94E-02		-3.31E-03	4.36E-02
		42.30		15.10	2.55E-01		5.76E-02	1.24E-01
		72.40		2.31	2.98E+00		-2.47E-01	1.47E+00
	PM-146	453.90		39.94	2.29E-01	2.29E-01	4.51E-02	1.08E-01
		735.90		14.01	8.37E-01		-5.28E-02	3.90E-01
		747.13		13.10	8.74E-01		-1.28E-01	4.06E-01
	ND-147	91.11		28.90	2.81E-01	2.81E-01	2.12E-01	1.38E-01
		531.02		13.10	8.63E-01		-4.68E-02	4.06E-01
	PM-149	285.90		3.10	4.91E+00	4.91E+00	5.09E-01	2.35E+00
	EU-152	121.78		20.50	3.01E-01	3.01E-01	-2.21E-01	1.47E-01
		244.69		5.40	1.57E+00		-1.96E-01	7.59E-01
		344.27		19.13	4.52E-01		-1.60E-02	2.16E-01
		778.89		9.20	1.26E+00		1.59E-01	5.85E-01
		964.01		10.40	1.51E+00		9.63E-02	7.04E-01
		1085.78		7.22	2.02E+00		7.42E-01	9.28E-01
		1112.02		9.60	1.40E+00		-3.48E-01	6.36E-01
		1407.95		14.94	8.67E-01		2.04E-01	3.84E-01
	GD-153	97.43		31.30	1.92E-01	1.92E-01	-1.63E-01	9.39E-02
		103.18		22.20	2.66E-01		2.71E-02	1.30E-01
	EU-154	123.07		40.50	1.53E-01	1.53E-01	-1.12E-01	7.45E-02
		723.30		19.70	6.11E-01		-1.04E-01	2.85E-01
		873.19		11.50	9.02E-01		5.40E-02	4.09E-01
		996.32		10.30	1.11E+00		-2.33E-01	5.03E-01
		1004.76		17.90	7.32E-01		3.24E-02	3.36E-01
		1274.45		35.50	4.66E-01		1.36E-01	2.14E-01
+	EU-155	86.50	*	30.90	2.62E-01	2.62E-01	1.61E-01	1.29E-01
		105.30		20.70	2.79E-01		-1.63E-01	1.36E-01
	EU-156	811.77		10.40	1.08E+00	1.08E+00	-3.31E-01	4.91E-01
		1153.47		7.20	2.48E+00		8.24E-01	1.14E+00
		1230.71		8.90	2.23E+00		2.59E-01	1.03E+00
	HO-166M	184.41		72.60	1.12E-01	1.12E-01	7.67E-02	5.45E-02
		280.45		29.60	2.84E-01		1.96E-02	1.37E-01
		410.94		11.10	7.59E-01		-1.96E-01	3.59E-01
		711.69		54.10	2.05E-01		-3.13E-02	9.52E-02
	TM-171	66.72		0.14	4.10E+01	4.10E+01	1.29E+01	2.01E+01

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	HF-172	81.75		4.52	1.49E+00	5.81E-01	-3.39E+00	7.30E-01
		125.81		11.30	5.81E-01		5.71E-02	2.83E-01
	LU-172	181.53		20.60	4.72E-01	2.92E-01	1.31E-02	2.29E-01
		810.06		16.63	7.86E-01		-1.47E-01	3.60E-01
		912.12		15.25	1.51E+00		2.08E+00	7.14E-01
		1093.66		62.50	2.92E-01		1.62E-01	1.34E-01
+	LU-173	100.72		5.24	1.10E+00	7.23E-01	-7.20E-01	5.37E-01
		272.11	*	21.20	7.23E-01		6.89E-01	3.54E-01
	HF-175	343.40		84.00	1.14E-01	1.14E-01	-3.70E-03	5.46E-02
	LU-176	88.34		13.30	5.36E-01	8.55E-02	2.31E-01	2.63E-01
		201.83		86.00	9.24E-02		1.27E-03	4.48E-02
		306.78		94.00	8.55E-02		-3.47E-02	4.09E-02
	TA-182	67.75		41.20	1.40E-01	1.40E-01	-2.23E-02	6.86E-02
		1121.30		34.90	5.22E-01		3.22E-01	2.43E-01
		1189.05		16.23	1.02E+00		-1.06E-01	4.70E-01
		1221.41		26.98	6.17E-01		1.93E-01	2.84E-01
		1231.02		11.44	1.59E+00		1.86E-01	7.38E-01
	IR-192	308.46		29.68	2.82E-01	1.89E-01	6.46E-03	1.35E-01
		468.07		48.10	1.89E-01		-2.02E-03	8.93E-02
	HG-203	279.19		77.30	1.11E-01	1.11E-01	4.68E-03	5.33E-02
	BI-207	569.67		97.72	1.09E-01	1.09E-01	-8.16E-05	5.14E-02
		1063.62		74.90	1.78E-01		-5.68E-02	8.15E-02
+	TL-208	583.14	*	30.22	5.42E-01	6.75E-02	6.11E-01	2.60E-01
		860.37		4.48	2.86E+00		-3.46E-01	1.32E+00
		2614.66	*	35.85	6.75E-02		9.48E-01	0.00E+00
	BI-210M	262.00		45.00	1.68E-01	1.68E-01	3.69E-02	8.08E-02
		300.00		23.00	4.17E-01		1.71E-02	2.01E-01
	PB-210	46.50		4.25	9.59E-01	9.59E-01	3.18E-01	4.68E-01
	PB-211	404.84		2.90	3.04E+00	3.04E+00	-4.53E-01	1.44E+00
		831.96		2.90	4.05E+00		-9.53E-01	1.87E+00
	BI-212	727.17		11.80	1.05E+00	1.05E+00	-1.39E-01	4.89E-01
		1620.62		2.75	4.26E+00		1.02E+00	1.82E+00
+	PB-212	238.63	*	44.60	2.80E-01	2.80E-01	1.07E+00	1.37E-01
		300.09		3.41	2.82E+00		1.16E-01	1.36E+00
+	BI-214	609.31	*	46.30	2.94E-01	2.94E-01	5.57E-01	1.40E-01
		1120.29	*	15.10	1.16E+00		1.03E+00	5.39E-01
		1764.49		15.80	9.25E-01		-1.83E-01	4.05E-01
		2204.22		4.98	2.09E+00		-9.57E-02	8.29E-01
+	PB-214	295.21	*	19.19	6.26E-01	3.08E-01	8.11E-01	3.04E-01
		351.92	*	37.19	3.08E-01		6.16E-01	1.49E-01
	RN-219	401.80		6.50	1.47E+00	1.47E+00	1.28E+00	6.99E-01
	RA-223	323.87		3.88	2.06E+00	2.06E+00	-8.81E-01	9.85E-01
	RA-224	240.98		3.95	3.18E+00	3.18E+00	1.10E+01	1.55E+00
	RA-225	40.00		31.00	1.28E-01	1.28E-01	-1.22E-01	6.23E-02
+	RA-226	186.21	*	3.28	3.53E+00	3.53E+00	2.44E+00	1.73E+00
	TH-227	50.10		8.40	5.09E-01	5.09E-01	1.63E-01	2.49E-01
		236.00		11.50	1.05E+00		5.98E-02	5.11E-01
		256.20		6.30	1.27E+00		4.91E-01	6.13E-01
	AC-228	338.32		11.40	8.79E-01	6.55E-01	7.99E-01	4.23E-01
		911.07		27.70	6.55E-01		7.44E-01	3.10E-01
		969.11		16.60	1.09E+00		1.01E+00	5.12E-01
	TH-230	48.44		16.90	2.47E-01	2.47E-01	4.51E-02	1.21E-01
		62.85		4.60	1.18E+00		5.59E-01	5.79E-01

Analysis Report for 1411131-11

J1V1L1 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-230	67.67		0.37	1.54E+01	2.47E-01	-2.45E+00	7.54E+00
	PA-231	283.67		1.60	4.96E+00	3.50E+00	4.31E-01	2.38E+00
		302.67		2.30	3.50E+00		-4.01E-01	1.68E+00
	TH-231	25.64		14.70	2.31E-01	2.31E-01	3.95E-04	1.13E-01
		84.21		6.40	1.02E+00		-2.57E+00	5.01E-01
	PA-233	311.98		38.60	2.32E-01	2.32E-01	6.76E-02	1.11E-01
	PA-234	131.20		20.40	3.36E-01	3.36E-01	1.33E-01	1.64E-01
		733.99		8.80	1.32E+00		-5.20E-01	6.13E-01
		946.00		12.00	1.13E+00		3.85E-01	5.22E-01
+	PA-234M	1001.03	*	0.92	8.57E+00	8.57E+00	6.23E+00	3.69E+00
	TH-234	63.29		3.80	1.42E+00	1.42E+00	8.36E-04	6.97E-01
	U-235	143.76		10.50	6.32E-01	6.32E-01	-2.17E-02	3.07E-01
		163.35		4.70	1.52E+00		6.23E-01	7.38E-01
		205.31		4.70	1.72E+00		2.69E-01	8.32E-01
+	NP-237	86.50	*	12.60	6.43E-01	6.43E-01	3.93E-01	3.16E-01
	NP-239	106.10		22.70	4.75E-01	4.75E-01	-2.77E-01	2.32E-01
		228.18		10.70	1.38E+00		2.70E-01	6.68E-01
		277.60		14.10	1.07E+00		-4.28E-01	5.16E-01
	AM-241	59.54		35.90	1.43E-01	1.43E-01	4.86E-02	7.02E-02
	AM-243	74.67		66.00	1.12E-01	1.12E-01	3.27E-01	5.50E-02
	CM-243	209.75		3.29	2.43E+00	5.82E-01	1.00E-01	1.18E+00
		228.14		10.60	7.40E-01		-1.02E-01	3.57E-01
		277.60		14.00	5.82E-01		-2.32E-01	2.80E-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 1411131-11

J1V1L1 SAF: RC-107

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: J1V1L1 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3603

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	15	82
17:	82	64	69	55	63	61	66	50
25:	57	44	59	49	49	42	63	45
33:	73	45	59	52	48	51	50	43
41:	53	63	50	53	81	76	67	52
49:	52	57	60	65	66	63	63	64
57:	87	91	64	78	73	104	107	82
65:	87	93	77	82	101	83	84	94
73:	112	162	175	203	177	131	77	79
81:	75	74	98	109	92	119	113	96
89:	96	90	105	123	96	69	70	52
97:	58	65	73	56	47	50	52	65
105:	51	65	50	57	57	60	72	46
113:	62	64	66	39	53	56	45	54
121:	60	52	60	51	33	50	71	67
129:	56	55	58	57	51	51	62	46
137:	60	54	48	40	57	50	48	51
145:	47	44	37	42	48	38	41	53
153:	59	49	52	32	52	48	56	45
161:	50	47	41	40	51	32	40	30
169:	38	45	45	42	38	44	44	38
177:	42	41	41	32	38	49	45	58
185:	62	67	47	34	46	38	35	36
193:	44	45	39	44	41	50	32	38
201:	29	48	46	32	37	39	28	42
209:	52	40	28	39	29	32	36	30
217:	39	31	26	37	26	33	25	34
225:	30	33	25	35	29	30	36	34
233:	27	35	33	37	86	188	153	61
241:	47	43	29	17	22	12	38	18
249:	22	27	35	20	26	31	27	21
257:	27	28	28	27	21	19	16	16
265:	18	22	35	24	33	45	26	22
273:	19	23	16	39	27	22	24	20
281:	19	29	19	20	21	22	16	23
289:	15	18	17	19	27	38	61	44
297:	26	20	29	17	18	18	21	19
305:	14	17	14	15	25	25	19	26
313:	20	14	24	15	23	20	14	11
321:	17	12	21	14	11	20	30	15
329:	26	18	18	17	21	17	13	20
337:	38	33	47	22	17	13	17	17
345:	14	20	19	17	17	31	61	79
353:	34	27	16	9	12	14	14	9
361:	13	18	14	11	14	9	10	11

369:	22	13	13	18	13	15	11	11

Sample Title: J1V1L1 SAF: RC-107

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

801:	2	8	7	8	6	6	4	4

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

1233:	8	4	6	6	5	11	7	8

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Channel								
1241:	5	7	7	2	3	3	5	3
1249:	5	4	2	3	4	1	3	11
1257:	5	3	5	3	4	5	3	2
1265:	4	3	6	3	7	10	5	5
1273:	5	1	8	2	2	4	1	5
1281:	2	4	4	5	4	2	3	4
1289:	4	5	2	6	2	6	4	1
1297:	9	4	4	6	1	3	8	1
1305:	3	5	5	2	4	3	2	7
1313:	2	5	3	4	4	0	2	4
1321:	0	1	1	3	2	4	6	2
1329:	4	3	2	2	1	3	2	1
1337:	1	2	1	2	2	1	1	4
1345:	5	3	1	4	3	0	2	3
1353:	1	3	1	2	3	2	3	2
1361:	3	2	2	0	3	1	2	2
1369:	2	2	0	1	1	0	4	3
1377:	6	5	2	3	1	3	3	1
1385:	4	5	0	0	0	1	2	0
1393:	1	0	1	1	1	1	2	2
1401:	4	2	1	2	0	3	4	2
1409:	3	2	3	1	1	1	1	1
1417:	1	0	2	0	0	3	4	1
1425:	3	1	1	0	0	1	3	2
1433:	2	1	2	1	1	2	1	2
1441:	1	4	2	2	0	3	2	2
1449:	2	0	0	2	3	4	1	1
1457:	5	5	21	62	99	88	26	9
1465:	1	0	0	2	0	1	2	1
1473:	1	0	1	1	2	1	2	2
1481:	1	0	0	0	1	1	1	1
1489:	0	1	0	2	0	0	0	1
1497:	1	0	2	1	1	4	1	1
1505:	2	1	0	2	1	4	3	1
1513:	0	1	2	1	1	1	0	1
1521:	1	0	1	3	0	2	2	1
1529:	2	1	2	0	2	0	0	1
1537:	2	0	2	0	4	1	1	1
1545:	1	0	0	0	2	0	1	0
1553:	1	1	2	1	0	1	0	2
1561:	3	0	0	0	1	0	0	2
1569:	1	0	0	1	2	0	0	1
1577:	0	3	1	0	2	1	2	1
1585:	1	0	0	1	1	1	1	2
1593:	3	2	3	1	1	0	2	0
1601:	1	1	1	0	0	0	0	2
1609:	0	0	0	0	2	0	2	0
1617:	1	0	1	2	1	3	1	2
1625:	1	0	2	1	2	1	2	3
1633:	0	0	0	0	1	0	1	0
1641:	2	4	0	0	0	1	0	2
1649:	0	1	1	2	0	0	1	0
1657:	3	0	1	0	3	0	1	1

1665:	0	1	0	1	1	3	1	0

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

2097:	0	0	1	0	1	0	2	0

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

2529:	0	1	1	1	0	0	0	0

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

2961:	0	0	0	0	0	0	0	0

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

3393:	0	0	1	0	0	0	0	0

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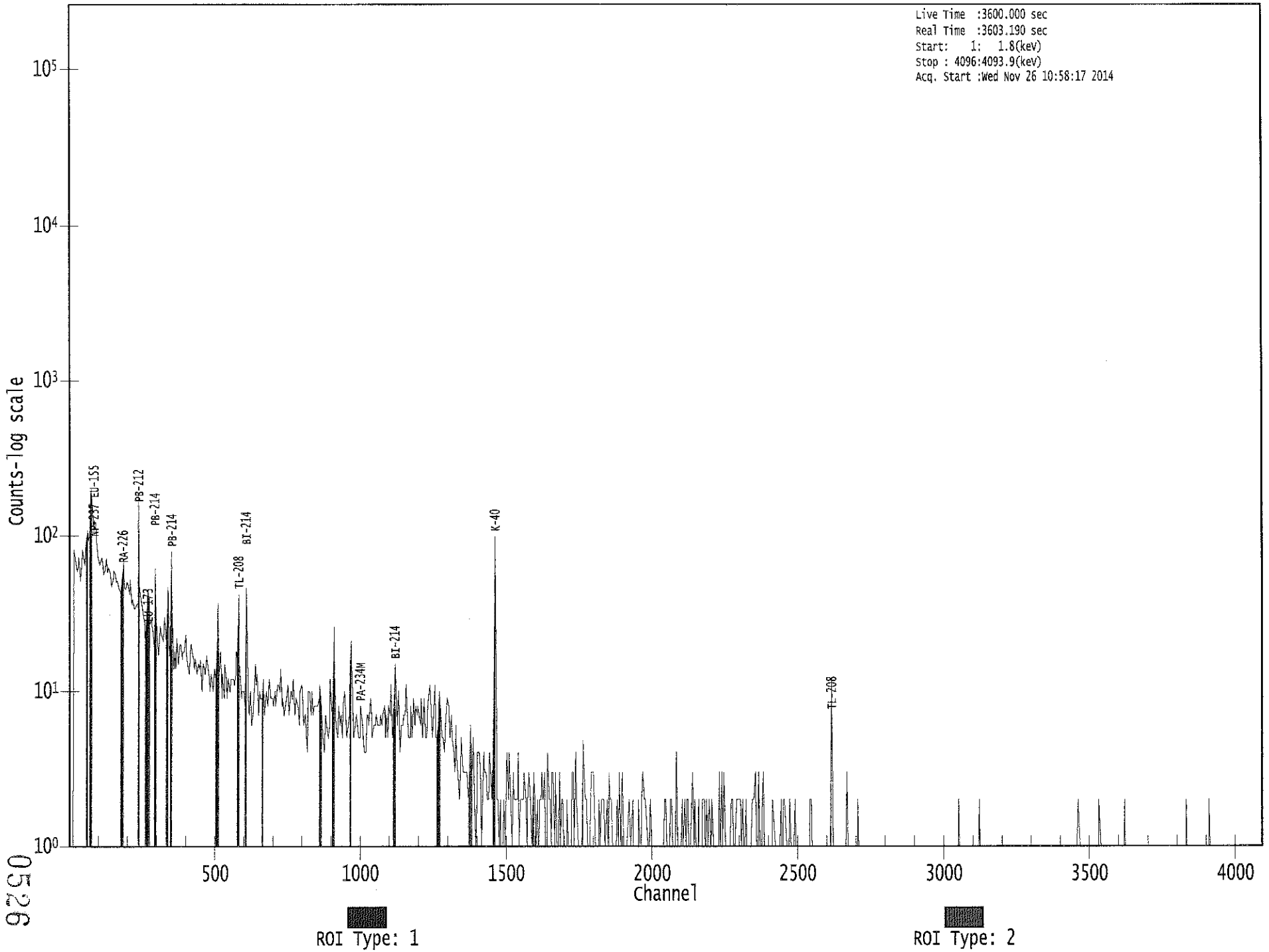
Channel								
3401:	0	0	0	0	0	1	0	1
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	1
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	1	0	0	0	2	0	0
3465:	0	0	1	1	0	1	0	0
3473:	0	0	0	0	0	0	1	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	1	0	1	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	1	0	0	0	0
3513:	0	1	0	0	0	0	0	0
3521:	0	0	0	0	0	1	0	0
3529:	0	0	0	0	2	0	0	0
3537:	1	1	0	1	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	1
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	1	0	0	0	1
3593:	0	0	0	0	0	0	0	0
3601:	0	1	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	2	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:	1	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	1	0	0	0	0	0
3689:	0	0	0	0	0	1	1	0
3697:	0	1	0	0	0	0	0	0
3705:	0	0	1	0	0	0	0	0
3713:	1	0	0	0	0	1	0	0
3721:	0	0	0	0	0	0	0	1
3729:	0	1	0	0	0	0	0	0
3737:	0	0	0	0	0	0	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:	1	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	1	1	0
3809:	0	1	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	2	0

Sample Title: J1V1L1 SAF: RC-107

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	1	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	1
3865:	1	0	0	0	0	0	0	1
3873:	0	0	1	0	0	1	0	0
3881:	0	0	0	0	0	0	0	0
3889:	1	0	0	0	1	1	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	2	0	1
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	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	1	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	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	1	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	1	0	0	0
4089:	0	0	0	0	0	0	0	0

0000015642.CNF



9250 0526

Apex-Gamma

Analysis Report for 1411131-12
J1V1L4 SAF: RC-107

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-12
Sample Description	: J1V1L4 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.787E+02 grams
Facility	: Countroom
Sample Taken On	: 11/24/2014 8:58:42AM
Acquisition Started	: 11/26/2014 11:19:04AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1402
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)	: 19 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15643

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/26/14

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 12:19:08PM
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	76.34	76.68	0.0000	0.00
2	87.80	88.13	0.0000	0.00
3	123.99	124.31	0.0000	0.00
4	130.17	130.49	0.0000	0.00
5	186.06	186.36	0.0000	0.00
6	229.69	229.98	0.0000	0.00
7	238.64	238.92	0.0000	0.00
8	241.83	242.12	0.0000	0.00
9	269.78	270.06	0.0000	0.00
10	274.88	275.16	0.0000	0.00
11	277.88	278.16	0.0000	0.00
12	295.13	295.40	0.0000	0.00
13	300.57	300.84	0.0000	0.00
14	317.00	317.26	0.0000	0.00
15	329.00	329.26	0.0000	0.00
16	338.69	338.94	0.0000	0.00
17	351.84	352.08	0.0000	0.00
18	510.63	510.83	0.0000	0.00
19	513.63	513.83	0.0000	0.00
20	583.01	583.18	0.0000	0.00
21	609.09	609.25	0.0000	0.00
22	665.72	665.87	0.0000	0.00
23	718.88	719.00	0.0000	0.00
24	726.93	727.05	0.0000	0.00
25	767.41	767.52	0.0000	0.00
26	786.31	786.41	0.0000	0.00
27	794.67	794.76	0.0000	0.00
28	804.83	804.93	0.0000	0.00
29	910.88	910.94	0.0000	0.00
30	930.01	930.06	0.0000	0.00
31	934.61	934.65	0.0000	0.00
32	968.74	968.77	0.0000	0.00
33	1000.21	1000.23	0.0000	0.00
34	1119.74	1119.73	0.0000	0.00
35	1135.02	1135.00	0.0000	0.00
36	1156.70	1156.67	0.0000	0.00
37	1401.45	1401.33	0.0000	0.00
38	1408.62	1408.50	0.0000	0.00
39	1460.13	1459.99	0.0000	0.00
40	1472.31	1472.16	0.0000	0.00
41	1480.27	1480.12	0.0000	0.00
42	1486.50	1486.34	0.0000	0.00

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1494.87	1494.71	0.0000	0.00
44	1500.92	1500.76	0.0000	0.00
45	1517.08	1516.92	0.0000	0.00
46	1589.14	1588.95	0.0000	0.00
47	1628.61	1628.41	0.0000	0.00
48	1680.49	1680.27	0.0000	0.00
49	1763.25	1762.99	0.0000	0.00
50	1802.41	1802.14	0.0000	0.00
51	1845.65	1845.37	0.0000	0.00
52	1890.52	1890.21	0.0000	0.00
53	2013.44	2013.09	0.0000	0.00
54	2184.22	2183.80	0.0000	0.00
55	2202.42	2202.00	0.0000	0.00
56	2401.84	2401.34	0.0000	0.00
57	2612.93	2612.35	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 12:19:08PM

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	76.34	72	81	76.68	6.94E+02	134.38	2.17E+03	3.82
M	2	87.80	82	97	88.13	1.35E+02	59.60	7.63E+02	1.48
	3	123.99	122	127	124.31	5.84E+01	63.97	7.77E+02	1.87
	4	130.17	128	133	130.49	7.54E+01	64.68	7.71E+02	3.93
	5	186.06	183	189	186.36	1.53E+02	64.29	6.40E+02	1.74
	6	229.69	227	233	229.98	5.65E+01	55.43	5.17E+02	4.18
M	7	238.64	234	246	238.92	6.71E+02	65.51	3.45E+02	1.68
m	8	241.83	234	246	242.12	1.14E+02	50.08	3.18E+02	1.68
	9	269.78	267	274	270.06	5.14E+01	55.03	4.75E+02	2.11
M	10	274.88	274	281	275.16	3.52E+01	18.76	9.32E+01	1.40
m	11	277.88	274	281	278.16	4.71E+01	36.28	2.43E+02	1.72
	12	295.13	291	298	295.40	1.60E+02	61.94	5.27E+02	1.74
	13	300.57	299	304	300.84	6.10E+01	44.52	3.38E+02	2.75
	14	317.00	310	324	317.26	9.55E+01	75.20	5.55E+02	10.89
	15	329.00	325	334	329.26	8.58E+01	53.82	3.64E+02	2.91
	16	338.69	335	344	338.94	1.54E+02	55.34	3.48E+02	2.02
	17	351.84	348	355	352.08	3.09E+02	58.45	3.61E+02	1.32
M	18	510.63	506	518	510.83	1.41E+02	36.69	1.38E+02	1.91
m	19	513.63	506	518	513.83	2.78E+01	34.21	1.30E+02	1.91
	20	583.01	579	587	583.18	2.07E+02	44.70	1.80E+02	1.52
	21	609.09	605	612	609.25	2.70E+02	44.63	1.52E+02	1.65
	22	665.72	661	669	665.87	2.55E+01	31.23	1.33E+02	2.39
M	23	718.88	715	731	719.00	2.39E+01	23.73	9.45E+01	1.86
m	24	726.93	715	731	727.05	4.67E+01	25.20	9.17E+01	1.88
	25	767.41	765	771	767.52	2.83E+01	24.46	8.94E+01	2.99
	26	786.31	783	790	786.41	2.79E+01	26.98	9.22E+01	3.52
	27	794.67	791	799	794.76	5.13E+01	25.45	6.94E+01	2.51
	28	804.83	800	811	804.93	5.46E+01	33.65	1.15E+02	5.67
	29	910.88	908	915	910.94	1.49E+02	33.65	9.29E+01	1.67
M	30	930.01	928	940	930.06	1.55E+01	10.83	1.59E+01	3.05
m	31	934.61	928	940	934.65	2.88E+01	22.63	5.36E+01	2.62
	32	968.74	965	974	968.77	6.52E+01	41.36	1.88E+02	1.98
	33	1000.21	998	1002	1000.23	2.15E+01	16.25	3.90E+01	1.56
M	34	1119.74	1116	1146	1119.73	5.80E+01	28.07	9.10E+01	2.74
m	35	1135.02	1116	1146	1135.00	1.33E+01	18.68	5.92E+01	2.06
	36	1156.70	1153	1161	1156.67	2.40E+01	27.74	1.04E+02	3.67
	37	1401.45	1399	1404	1401.33	1.07E+01	11.96	1.86E+01	1.12
	38	1408.62	1405	1412	1408.50	1.60E+01	12.65	1.60E+01	2.32
	39	1460.13	1453	1466	1459.99	8.55E+02	63.16	6.30E+01	2.31
	40	1472.31	1469	1476	1472.16	7.70E+00	7.48	4.60E+00	1.41

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1480.27	1477 -	1489	1480.12	1.05E+01	7.23	5.20E+00	2.93
m	42	1486.50	1477 -	1489	1486.34	1.12E+01	7.50	1.55E+00	2.94
	43	1494.87	1491 -	1498	1494.71	1.01E+01	11.66	1.59E+01	3.07
	44	1500.92	1498 -	1503	1500.76	8.54E+00	9.38	8.92E+00	2.72
	45	1517.08	1514 -	1520	1516.92	1.15E+01	9.19	7.00E+00	3.38
	46	1589.14	1583 -	1596	1588.95	2.93E+01	19.08	2.54E+01	7.14
	47	1628.61	1623 -	1632	1628.41	8.30E+00	11.62	1.34E+01	6.11
	48	1680.49	1676 -	1684	1680.27	9.71E+00	8.26	4.58E+00	5.64
	49	1763.25	1756 -	1770	1762.99	5.16E+01	20.51	2.28E+01	2.74
	50	1802.41	1798 -	1806	1802.14	1.07E+01	8.50	4.69E+00	2.79
	51	1845.65	1841 -	1849	1845.37	8.50E+00	9.62	9.00E+00	2.96
	52	1890.52	1886 -	1894	1890.21	9.50E+00	9.82	9.00E+00	5.40
	53	2013.44	2010 -	2015	2013.09	5.57E+00	6.08	2.86E+00	1.52
	54	2184.22	2181 -	2185	2183.80	5.00E+00	4.47	0.00E+00	1.16
	55	2202.42	2198 -	2205	2202.00	1.60E+01	8.00	0.00E+00	3.19
	56	2401.84	2397 -	2404	2401.34	7.95E+00	7.48	4.10E+00	3.37
	57	2612.93	2608 -	2616	2612.35	9.20E+01	19.18	0.00E+00	2.35

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 12:19:08PM

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	76.34	72 -	81	6.94E+02	134.38	2.17E+03	1.02E+02
M	2	87.80	82 -	97	1.35E+02	59.60	7.63E+02	4.54E+01
	3	123.99	122 -	127	5.84E+01	63.97	7.77E+02	5.11E+01
	4	130.17	128 -	133	7.54E+01	64.68	7.71E+02	5.12E+01
	5	186.06	183 -	189	1.53E+02	64.29	6.40E+02	4.88E+01
	6	229.69	227 -	233	5.65E+01	55.43	5.17E+02	4.39E+01
M	7	238.64	234 -	246	6.71E+02	65.51	3.45E+02	3.05E+01
m	8	241.83	234 -	246	1.14E+02	50.08	3.18E+02	2.93E+01
	9	269.78	267 -	274	5.14E+01	55.03	4.75E+02	4.37E+01
M	10	274.88	274 -	281	3.52E+01	18.76	9.32E+01	1.59E+01
m	11	277.88	274 -	281	4.71E+01	36.28	2.43E+02	2.56E+01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	12	295.13	291 -	298	1.60E+02	61.94	5.27E+02	5.86E+01
	13	300.57	299 -	304	6.10E+01	44.52	3.38E+02	3.43E+01
	14	317.00	310 -	324	9.55E+01	75.20	5.55E+02	5.97E+01
	15	329.00	325 -	334	8.58E+01	53.82	3.64E+02	4.15E+01
	16	338.69	335 -	344	1.54E+02	55.34	3.48E+02	4.07E+01
	17	351.84	348 -	355	3.09E+02	58.45	3.61E+02	3.84E+01
M	18	510.63	506 -	518	1.41E+02	36.69	1.38E+02	1.93E+01
m	19	513.63	506 -	518	2.78E+01	34.21	1.30E+02	1.88E+01
	20	583.01	579 -	587	2.07E+02	44.70	1.80E+02	2.81E+01
	21	609.09	605 -	612	2.70E+02	44.63	1.52E+02	2.48E+01
	22	665.72	661 -	669	2.55E+01	31.23	1.33E+02	2.43E+01
M	23	718.88	715 -	731	2.39E+01	23.73	9.45E+01	1.60E+01
m	24	726.93	715 -	731	4.67E+01	25.20	9.17E+01	1.57E+01
	25	767.41	765 -	771	2.83E+01	24.46	8.94E+01	1.81E+01
	26	786.31	783 -	790	2.79E+01	26.98	9.22E+01	2.04E+01
	27	794.67	791 -	799	5.13E+01	25.45	6.94E+01	1.73E+01
	28	804.83	800 -	811	5.46E+01	33.65	1.15E+02	2.48E+01
	29	910.88	908 -	915	1.49E+02	33.65	9.29E+01	1.91E+01
M	30	930.01	928 -	940	1.55E+01	10.83	1.59E+01	6.56E+00
m	31	934.61	928 -	940	2.88E+01	22.63	5.36E+01	1.20E+01
	32	968.74	965 -	974	6.52E+01	41.36	1.88E+02	3.13E+01
	33	1000.21	998 -	1002	2.15E+01	16.25	3.90E+01	1.10E+01
M	34	1119.74	1116 -	1146	5.80E+01	28.07	9.10E+01	1.57E+01
m	35	1135.02	1116 -	1146	1.33E+01	18.68	5.92E+01	1.27E+01
	36	1156.70	1153 -	1161	2.40E+01	27.74	1.04E+02	2.13E+01
	37	1401.45	1399 -	1404	1.07E+01	11.96	1.86E+01	8.23E+00
	38	1408.62	1405 -	1412	1.60E+01	12.65	1.60E+01	8.05E+00
	39	1460.13	1453 -	1466	8.55E+02	63.16	6.30E+01	1.96E+01
	40	1472.31	1469 -	1476	7.70E+00	7.48	4.60E+00	4.13E+00
M	41	1480.27	1477 -	1489	1.05E+01	7.23	5.20E+00	3.75E+00
m	42	1486.50	1477 -	1489	1.12E+01	7.50	1.55E+00	2.05E+00
	43	1494.87	1491 -	1498	1.01E+01	11.66	1.59E+01	8.04E+00
	44	1500.92	1498 -	1503	8.54E+00	9.38	8.92E+00	6.03E+00
	45	1517.08	1514 -	1520	1.15E+01	9.19	7.00E+00	5.10E+00
	46	1589.14	1583 -	1596	2.93E+01	19.08	2.54E+01	1.29E+01
	47	1628.61	1623 -	1632	8.30E+00	11.62	1.34E+01	8.29E+00
	48	1680.49	1676 -	1684	9.71E+00	8.26	4.58E+00	4.46E+00
	49	1763.25	1756 -	1770	5.16E+01	20.51	2.28E+01	1.20E+01
	50	1802.41	1798 -	1806	1.07E+01	8.50	4.69E+00	4.47E+00
	51	1845.65	1841 -	1849	8.50E+00	9.62	9.00E+00	6.29E+00
	52	1890.52	1886 -	1894	9.50E+00	9.82	9.00E+00	6.29E+00
	53	2013.44	2010 -	2015	5.57E+00	6.08	2.86E+00	3.15E+00
	54	2184.22	2181 -	2185	5.00E+00	4.47	0.00E+00	0.00E+00
	55	2202.42	2198 -	2205	1.60E+01	8.00	0.00E+00	0.00E+00
	56	2401.84	2397 -	2404	7.95E+00	7.48	4.10E+00	4.04E+00
	57	2612.93	2608 -	2616	9.20E+01	19.18	0.00E+00	0.00E+00

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 12:19:08PM

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	76.34	72 -	81	76.68	6.94E+02	134.38	2.17E+03	.....
M	2	87.80	82 -	97	88.13	1.35E+02	59.60	7.63E+02	SN-126
									CD-109
									LU-176
	3	123.99	122 -	127	124.31	5.84E+01	63.97	7.77E+02	EU-154
	4	130.17	128 -	133	130.49	7.54E+01	64.68	7.71E+02	.....
	5	186.06	183 -	189	186.36	1.53E+02	64.29	6.40E+02	RA-226
	6	229.69	227 -	233	229.98	5.65E+01	55.43	5.17E+02	.....
M	7	238.64	234 -	246	238.92	6.71E+02	65.51	3.45E+02	PB-212
m	8	241.83	234 -	246	242.12	1.14E+02	50.08	3.18E+02	RA-224
	9	269.78	267 -	274	270.06	5.14E+01	55.03	4.75E+02	.....
M	10	274.88	274 -	281	275.16	3.52E+01	18.76	9.32E+01	.....
m	11	277.88	274 -	281	278.16	4.71E+01	36.28	2.43E+02	CM-243
									NP-239
	12	295.13	291 -	298	295.40	1.60E+02	61.94	5.27E+02	PB-214
	13	300.57	299 -	304	300.84	6.10E+01	44.52	3.38E+02	GA-67
									PB-212
									BI-210M
	14	317.00	310 -	324	317.26	9.55E+01	75.20	5.55E+02	.....
	15	329.00	325 -	334	329.26	8.58E+01	53.82	3.64E+02	LA-140
	16	338.69	335 -	344	338.94	1.54E+02	55.34	3.48E+02	AC-228
	17	351.84	348 -	355	352.08	3.09E+02	58.45	3.61E+02	PB-214
M	18	510.63	506 -	518	510.83	1.41E+02	36.69	1.38E+02	.....
m	19	513.63	506 -	518	513.83	2.78E+01	34.21	1.30E+02	KR-85
									SR-85
	20	583.01	579 -	587	583.18	2.07E+02	44.70	1.80E+02	TL-208
	21	609.09	605 -	612	609.25	2.70E+02	44.63	1.52E+02	BI-214
	22	665.72	661 -	669	665.87	2.55E+01	31.23	1.33E+02	SB-126
M	23	718.88	715 -	731	719.00	2.39E+01	23.73	9.45E+01	.....
m	24	726.93	715 -	731	727.05	4.67E+01	25.20	9.17E+01	BI-212

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	25	767.41	765 -	771	767.52	2.83E+01	24.46	8.94E+01	.....
	26	786.31	783 -	790	786.41	2.79E+01	26.98	9.22E+01	.....
	27	794.67	791 -	799	794.76	5.13E+01	25.45	6.94E+01	.....
	28	804.83	800 -	811	804.93	5.46E+01	33.65	1.15E+02	.....
	29	910.88	908 -	915	910.94	1.49E+02	33.65	9.29E+01	AC-228
M	30	930.01	928 -	940	930.06	1.55E+01	10.83	1.59E+01	.....
m	31	934.61	928 -	940	934.65	2.88E+01	22.63	5.36E+01	.....
	32	968.74	965 -	974	968.77	6.52E+01	41.36	1.88E+02	AC-228
	33	1000.21	998 -	1002	1000.23	2.15E+01	16.25	3.90E+01	PA-234M
M	34	1119.74	1116 -	1146	1119.73	5.80E+01	28.07	9.10E+01	BI-214 SC-46
m	35	1135.02	1116 -	1146	1135.00	1.33E+01	18.68	5.92E+01	.....
	36	1156.70	1153 -	1161	1156.67	2.40E+01	27.74	1.04E+02	.....
	37	1401.45	1399 -	1404	1401.33	1.07E+01	11.96	1.86E+01	.....
	38	1408.62	1405 -	1412	1408.50	1.60E+01	12.65	1.60E+01	EU-152
	39	1460.13	1453 -	1466	1459.99	8.55E+02	63.16	6.30E+01	K-40
	40	1472.31	1469 -	1476	1472.16	7.70E+00	7.48	4.60E+00	.....
M	41	1480.27	1477 -	1489	1480.12	1.05E+01	7.23	5.20E+00	.....
m	42	1486.50	1477 -	1489	1486.34	1.12E+01	7.50	1.55E+00	.....
	43	1494.87	1491 -	1498	1494.71	1.01E+01	11.66	1.59E+01	.....
	44	1500.92	1498 -	1503	1500.76	8.54E+00	9.38	8.92E+00	.....
	45	1517.08	1514 -	1520	1516.92	1.15E+01	9.19	7.00E+00	.....
	46	1589.14	1583 -	1596	1588.95	2.93E+01	19.08	2.54E+01	.....
	47	1628.61	1623 -	1632	1628.41	8.30E+00	11.62	1.34E+01	.....
	48	1680.49	1676 -	1684	1680.27	9.71E+00	8.26	4.58E+00	.....
	49	1763.25	1756 -	1770	1762.99	5.16E+01	20.51	2.28E+01	.....
	50	1802.41	1798 -	1806	1802.14	1.07E+01	8.50	4.69E+00	.....
	51	1845.65	1841 -	1849	1845.37	8.50E+00	9.62	9.00E+00	.....
	52	1890.52	1886 -	1894	1890.21	9.50E+00	9.82	9.00E+00	.....
	53	2013.44	2010 -	2015	2013.09	5.57E+00	6.08	2.86E+00	.....
	54	2184.22	2181 -	2185	2183.80	5.00E+00	4.47	0.00E+00	.....
	55	2202.42	2198 -	2205	2202.00	1.60E+01	8.00	0.00E+00	.....
	56	2401.84	2397 -	2404	2401.34	7.95E+00	7.48	4.10E+00	.....
	57	2612.93	2608 -	2616	2612.35	9.20E+01	19.18	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 12:19:08PM

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.34	6.94E+02	134.38	2.77E-02	2.35E-03
M	2	87.80	1.35E+02	59.60	2.85E-02	2.73E-03
	3	123.99	5.84E+01	63.97	2.71E-02	2.07E-03
	4	130.17	7.54E+01	64.68	2.66E-02	2.09E-03
	5	186.06	1.53E+02	64.29	2.24E-02	2.03E-03
	6	229.69	5.65E+01	55.43	1.97E-02	1.70E-03
M	7	238.64	6.71E+02	65.51	1.92E-02	1.64E-03
m	8	241.83	1.14E+02	50.08	1.91E-02	1.61E-03
	9	269.78	5.14E+01	55.03	1.77E-02	1.41E-03
M	10	274.88	3.52E+01	18.76	1.75E-02	1.37E-03
m	11	277.88	4.71E+01	36.28	1.74E-02	1.35E-03
	12	295.13	1.60E+02	61.94	1.67E-02	1.31E-03
	13	300.57	6.10E+01	44.52	1.65E-02	1.30E-03
	14	317.00	9.55E+01	75.20	1.59E-02	1.26E-03
	15	329.00	8.58E+01	53.82	1.55E-02	1.24E-03
	16	338.69	1.54E+02	55.34	1.52E-02	1.22E-03
	17	351.84	3.09E+02	58.45	1.48E-02	1.19E-03
M	18	510.63	1.41E+02	36.69	1.12E-02	9.91E-04
m	19	513.63	2.78E+01	34.21	1.12E-02	9.88E-04
	20	583.01	2.07E+02	44.70	1.02E-02	9.16E-04
	21	609.09	2.70E+02	44.63	9.83E-03	8.89E-04
	22	665.72	2.55E+01	31.23	9.17E-03	8.31E-04
M	23	718.88	2.39E+01	23.73	8.63E-03	7.83E-04
m	24	726.93	4.67E+01	25.20	8.56E-03	7.76E-04
	25	767.41	2.83E+01	24.46	8.20E-03	7.39E-04
	26	786.31	2.79E+01	26.98	8.04E-03	7.22E-04
	27	794.67	5.13E+01	25.45	7.97E-03	7.15E-04
	28	804.83	5.46E+01	33.65	7.89E-03	7.06E-04
	29	910.88	1.49E+02	33.65	7.15E-03	6.16E-04
M	30	930.01	1.55E+01	10.83	7.03E-03	6.06E-04
m	31	934.61	2.88E+01	22.63	7.00E-03	6.03E-04
	32	968.74	6.52E+01	41.36	6.81E-03	5.86E-04
	33	1000.21	2.15E+01	16.25	6.64E-03	5.69E-04
M	34	1119.74	5.80E+01	28.07	6.07E-03	5.07E-04
m	35	1135.02	1.33E+01	18.68	6.00E-03	4.99E-04
	36	1156.70	2.40E+01	27.74	5.92E-03	4.88E-04
	37	1401.45	1.07E+01	11.96	5.12E-03	4.34E-04
	38	1408.62	1.60E+01	12.65	5.10E-03	4.32E-04
	39	1460.13	8.55E+02	63.16	4.97E-03	4.19E-04
	40	1472.31	7.70E+00	7.48	4.94E-03	4.16E-04
M	41	1480.27	1.05E+01	7.23	4.92E-03	4.14E-04
m	42	1486.50	1.12E+01	7.50	4.91E-03	4.13E-04
	43	1494.87	1.01E+01	11.66	4.89E-03	4.11E-04
	44	1500.92	8.54E+00	9.38	4.88E-03	4.09E-04
	45	1517.08	1.15E+01	9.19	4.84E-03	4.05E-04
	46	1589.14	2.93E+01	19.08	4.69E-03	3.87E-04
	47	1628.61	8.30E+00	11.62	4.62E-03	3.77E-04
	48	1680.49	9.71E+00	8.26	4.53E-03	3.65E-04
	49	1763.25	5.16E+01	20.51	4.40E-03	3.44E-04
	50	1802.41	1.07E+01	8.50	4.34E-03	3.34E-04
	51	1845.65	8.50E+00	9.62	4.28E-03	3.26E-04
	52	1890.52	9.50E+00	9.82	4.23E-03	3.26E-04
	53	2013.44	5.57E+00	6.08	4.10E-03	3.26E-04

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2184.22	5.00E+00	4.47	3.96E-03	3.26E-04
55	2202.42	1.60E+01	8.00	3.95E-03	3.26E-04
56	2401.84	7.95E+00	7.48	3.85E-03	3.26E-04
57	2612.93	9.20E+01	19.18	3.79E-03	3.26E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 12:19:08PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015431.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.34	6.94E+02	134.38			6.94E+02	1.34E+02
M	2	87.80	1.35E+02	59.60			1.35E+02	5.96E+01
	3	123.99	5.84E+01	63.97			5.84E+01	6.40E+01
	4	130.17	7.54E+01	64.68			7.54E+01	6.47E+01
	5	186.06	1.53E+02	64.29	5.96E+01	7.53E+00	9.33E+01	6.47E+01
	6	229.69	5.65E+01	55.43			5.65E+01	5.54E+01
M	7	238.64	6.71E+02	65.51	1.98E+01	6.26E+00	6.51E+02	6.58E+01
m	8	241.83	1.14E+02	50.08			1.14E+02	5.01E+01
	9	269.78	5.14E+01	55.03			5.14E+01	5.50E+01
M	10	274.88	3.52E+01	18.76			3.52E+01	1.88E+01
m	11	277.88	4.71E+01	36.28			4.71E+01	3.63E+01
	12	295.13	1.60E+02	61.94			1.60E+02	6.19E+01
	13	300.57	6.10E+01	44.52			6.10E+01	4.45E+01
	14	317.00	9.55E+01	75.20			9.55E+01	7.52E+01
	15	329.00	8.58E+01	53.82			8.58E+01	5.38E+01
	16	338.69	1.54E+02	55.34			1.54E+02	5.53E+01
	17	351.84	3.09E+02	58.45	5.06E+00	4.50E+00	3.04E+02	5.86E+01
M	18	510.63	1.41E+02	36.69	7.51E+01	5.45E+00	6.56E+01	3.71E+01
m	19	513.63	2.78E+01	34.21			2.78E+01	3.42E+01
	20	583.01	2.07E+02	44.70	1.02E+01	3.64E+00	1.97E+02	4.48E+01
	21	609.09	2.70E+02	44.63	7.39E+00	3.98E+00	2.63E+02	4.48E+01
	22	665.72	2.55E+01	31.23			2.55E+01	3.12E+01
M	23	718.88	2.39E+01	23.73			2.39E+01	2.37E+01
m	24	726.93	4.67E+01	25.20			4.67E+01	2.52E+01
	25	767.41	2.83E+01	24.46			2.83E+01	2.45E+01
	26	786.31	2.79E+01	26.98	2.99E+00	2.56E+00	2.49E+01	2.71E+01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	27	794.67	5.13E+01	25.45			5.13E+01	2.55E+01
	28	804.83	5.46E+01	33.65			5.46E+01	3.36E+01
	29	910.88	1.49E+02	33.65	3.68E+00	2.94E+00	1.45E+02	3.38E+01
M	30	930.01	1.55E+01	10.83			1.55E+01	1.08E+01
m	31	934.61	2.88E+01	22.63			2.88E+01	2.26E+01
	32	968.74	6.52E+01	41.36	2.19E+00	1.61E+00	6.30E+01	4.14E+01
	33	1000.21	2.15E+01	16.25	3.86E+00	2.82E+00	1.76E+01	1.65E+01
M	34	1119.74	5.80E+01	28.07			5.80E+01	2.81E+01
m	35	1135.02	1.33E+01	18.68			1.33E+01	1.87E+01
	36	1156.70	2.40E+01	27.74			2.40E+01	2.77E+01
	37	1401.45	1.07E+01	11.96			1.07E+01	1.20E+01
	38	1408.62	1.60E+01	12.65			1.60E+01	1.26E+01
	39	1460.13	8.55E+02	63.16	7.88E+00	2.38E+00	8.48E+02	6.32E+01
	40	1472.31	7.70E+00	7.48			7.70E+00	7.48E+00
M	41	1480.27	1.05E+01	7.23			1.05E+01	7.23E+00
m	42	1486.50	1.12E+01	7.50			1.12E+01	7.50E+00
	43	1494.87	1.01E+01	11.66			1.01E+01	1.17E+01
	44	1500.92	8.54E+00	9.38			8.54E+00	9.38E+00
	45	1517.08	1.15E+01	9.19			1.15E+01	9.19E+00
	46	1589.14	2.93E+01	19.08			2.93E+01	1.91E+01
	47	1628.61	8.30E+00	11.62			8.30E+00	1.16E+01
	48	1680.49	9.71E+00	8.26			9.71E+00	8.26E+00
	49	1763.25	5.16E+01	20.51			5.16E+01	2.05E+01
	50	1802.41	1.07E+01	8.50			1.07E+01	8.50E+00
	51	1845.65	8.50E+00	9.62			8.50E+00	9.62E+00
	52	1890.52	9.50E+00	9.82			9.50E+00	9.82E+00
	53	2013.44	5.57E+00	6.08			5.57E+00	6.08E+00
	54	2184.22	5.00E+00	4.47			5.00E+00	4.47E+00
	55	2202.42	1.60E+01	8.00	0.00E+00	0.00E+00	1.60E+01	8.00E+00
	56	2401.84	7.95E+00	7.48			7.95E+00	7.48E+00
	57	2612.93	9.20E+01	19.18	4.92E+00	1.46E+00	8.71E+01	1.92E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 12:19:08PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015431.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	76.34	6.94E+02	134.38			6.94E+02	1.34E+02
M	2	87.80	1.35E+02	59.60			1.35E+02	5.96E+01
	3	123.99	5.84E+01	63.97			5.84E+01	6.40E+01
	4	130.17	7.54E+01	64.68			7.54E+01	6.47E+01
	5	186.06	1.53E+02	64.29	5.96E+01	7.53E+00	9.33E+01	6.47E+01
	6	229.69	5.65E+01	55.43			5.65E+01	5.54E+01
M	7	238.64	6.71E+02	65.51	1.98E+01	6.26E+00	6.51E+02	6.58E+01
m	8	241.83	1.14E+02	50.08			1.14E+02	5.01E+01
	9	269.78	5.14E+01	55.03			5.14E+01	5.50E+01
M	10	274.88	3.52E+01	18.76			3.52E+01	1.88E+01
m	11	277.88	4.71E+01	36.28			4.71E+01	3.63E+01
	12	295.13	1.60E+02	61.94			1.60E+02	6.19E+01
	13	300.57	6.10E+01	44.52			6.10E+01	4.45E+01
	14	317.00	9.55E+01	75.20			9.55E+01	7.52E+01
	15	329.00	8.58E+01	53.82			8.58E+01	5.38E+01
	16	338.69	1.54E+02	55.34			1.54E+02	5.53E+01
	17	351.84	3.09E+02	58.45	5.06E+00	4.50E+00	3.04E+02	5.86E+01
M	18	510.63	1.41E+02	36.69	7.51E+01	5.45E+00	6.56E+01	3.71E+01
m	19	513.63	2.78E+01	34.21			2.78E+01	3.42E+01
	20	583.01	2.07E+02	44.70	1.02E+01	3.64E+00	1.97E+02	4.48E+01
	21	609.09	2.70E+02	44.63	7.39E+00	3.98E+00	2.63E+02	4.48E+01
	22	665.72	2.55E+01	31.23			2.55E+01	3.12E+01
M	23	718.88	2.39E+01	23.73			2.39E+01	2.37E+01
m	24	726.93	4.67E+01	25.20			4.67E+01	2.52E+01
	25	767.41	2.83E+01	24.46			2.83E+01	2.45E+01
	26	786.31	2.79E+01	26.98	2.99E+00	2.56E+00	2.49E+01	2.71E+01
	27	794.67	5.13E+01	25.45			5.13E+01	2.55E+01
	28	804.83	5.46E+01	33.65			5.46E+01	3.36E+01
	29	910.88	1.49E+02	33.65	3.68E+00	2.94E+00	1.45E+02	3.38E+01
M	30	930.01	1.55E+01	10.83			1.55E+01	1.08E+01
m	31	934.61	2.88E+01	22.63			2.88E+01	2.26E+01
	32	968.74	6.52E+01	41.36	2.19E+00	1.61E+00	6.30E+01	4.14E+01
	33	1000.21	2.15E+01	16.25	3.86E+00	2.82E+00	1.76E+01	1.65E+01
M	34	1119.74	5.80E+01	28.07			5.80E+01	2.81E+01
m	35	1135.02	1.33E+01	18.68			1.33E+01	1.87E+01
	36	1156.70	2.40E+01	27.74			2.40E+01	2.77E+01
	37	1401.45	1.07E+01	11.96			1.07E+01	1.20E+01
	38	1408.62	1.60E+01	12.65			1.60E+01	1.26E+01
	39	1460.13	8.55E+02	63.16	7.88E+00	2.38E+00	8.48E+02	6.32E+01
	40	1472.31	7.70E+00	7.48			7.70E+00	7.48E+00
M	41	1480.27	1.05E+01	7.23			1.05E+01	7.23E+00
m	42	1486.50	1.12E+01	7.50			1.12E+01	7.50E+00
	43	1494.87	1.01E+01	11.66			1.01E+01	1.17E+01
	44	1500.92	8.54E+00	9.38			8.54E+00	9.38E+00
	45	1517.08	1.15E+01	9.19			1.15E+01	9.19E+00
	46	1589.14	2.93E+01	19.08			2.93E+01	1.91E+01
	47	1628.61	8.30E+00	11.62			8.30E+00	1.16E+01
	48	1680.49	9.71E+00	8.26			9.71E+00	8.26E+00
	49	1763.25	5.16E+01	20.51			5.16E+01	2.05E+01
	50	1802.41	1.07E+01	8.50			1.07E+01	8.50E+00
	51	1845.65	8.50E+00	9.62			8.50E+00	9.62E+00
	52	1890.52	9.50E+00	9.82			9.50E+00	9.82E+00
	53	2013.44	5.57E+00	6.08			5.57E+00	6.08E+00
	54	2184.22	5.00E+00	4.47			5.00E+00	4.47E+00

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2202.42	1.60E+01	8.00	0.00E+00	0.00E+00	1.60E+01	8.00E+00
56	2401.84	7.95E+00	7.48			7.95E+00	7.48E+00
57	2612.93	9.20E+01	19.18	4.92E+00	1.46E+00	8.71E+01	1.92E+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	0.929	1460.81	*	10.67	1.54E+01	1.76E+00
KR-85	0.980	513.99	*	0.43	5.51E+00	6.81E+00
SR-85	0.980	513.99	*	99.27	2.46E-02	3.04E-02
CD-109	0.991	88.03	*	3.72	1.23E+00	5.61E-01
SN-126	0.992	87.57	*	37.00	1.23E-01	5.58E-02
BI-212	0.758	727.17	*	11.80	4.46E-01	2.44E-01
		1620.62		2.75		
PB-212	0.997	238.63	*	44.60	7.32E-01	9.68E-02
		300.09	*	3.41	1.05E+00	7.68E-01
BI-214	0.681	609.31	*	46.30	5.57E-01	1.07E-01
		1120.29	*	15.10	6.10E-01	3.00E-01
		1764.49		15.80		
		2204.22		4.98		
PB-214	0.999	295.21	*	19.19	4.80E-01	1.90E-01
		351.92	*	37.19	5.34E-01	1.12E-01
RA-224	0.891	240.98	*	3.95	1.45E+00	6.53E-01
RA-226	0.996	186.21	*	3.28	1.23E+00	2.40E+00
AC-228	0.986	338.32	*	11.40	8.57E-01	3.16E-01
		911.07	*	27.70	7.05E-01	1.75E-01
		969.11	*	16.60	5.38E-01	3.56E-01
PA-234M	0.898	1001.03	*	0.92	2.79E+00	2.62E+00

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 12:19:08PM
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	76.34	1.92835E-01	9.68		
	3	123.99	1.62323E-02	54.73	Tol.	EU-154
	4	130.17	2.09514E-02	42.88		
	6	229.69	1.57033E-02	49.03		
	9	269.78	1.42681E-02	53.56		
M	10	274.88	9.78353E-03	26.63		
m	11	277.88	1.30722E-02	38.54	Tol.	NP-239 CM-243
	14	317.00	2.65278E-02	39.37		
	15	329.00	2.38324E-02	31.37	Sum	
M	18	510.63	1.82295E-02	28.26		
	20	583.01	5.46677E-02	11.39	Tol.	TL-208
	22	665.72	7.08333E-03	61.24	Tol.	SB-126
M	23	718.88	6.65247E-03	49.54		
	25	767.41	7.86530E-03	43.19		
	26	786.31	6.92190E-03	54.38		
	27	794.67	1.42523E-02	24.80	Sum	
	28	804.83	1.51625E-02	30.82		
M	30	930.01	4.31845E-03	34.83		
m	31	934.61	8.00621E-03	39.25		
m	35	1135.02	3.69311E-03	70.26		
	36	1156.70	6.66118E-03	57.85		
	37	1401.45	2.97222E-03	55.88		
	38	1408.62	4.44444E-03	39.53	Tol.	EU-152
	40	1472.31	2.13889E-03	48.59	Sum	
M	41	1480.27	2.92626E-03	34.31		
m	42	1486.50	3.10254E-03	33.57		
	43	1494.87	2.79321E-03	57.99		
	44	1500.92	2.37180E-03	54.93		
	45	1517.08	3.19444E-03	39.97		
	46	1589.14	8.14153E-03	32.55		
	47	1628.61	2.30556E-03	69.99		
	48	1680.49	2.69676E-03	42.55		
	49	1763.25	1.43320E-02	19.88		

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
50	1802.41	2.95940E-03	39.89		
51	1845.65	2.36111E-03	56.57		
52	1890.52	2.63889E-03	51.70		
53	2013.44	1.54762E-03	54.59		
54	2184.22	1.38889E-03	44.72		
55	2202.42	4.44444E-03	25.00		
56	2401.84	2.20833E-03	47.06		
57	2612.93	2.41883E-02	11.05		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.92	1460.81	*	10.67	1.54E+01	1.76E+00
KR-85	0.98	513.99	*	0.43	5.51E+00	6.81E+00
SR-85	0.98	513.99	*	99.27	2.46E-02	3.04E-02
CD-109	0.99	88.03	*	3.72	1.23E+00	5.61E-01
SN-126	0.99	87.57	*	37.00	1.23E-01	5.58E-02
BI-212	0.75	727.17	*	11.80	4.46E-01	2.44E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	7.32E-01	9.68E-02
		300.09	*	3.41	1.05E+00	7.68E-01
BI-214	0.68	609.31	*	46.30	5.57E-01	1.07E-01
		1120.29	*	15.10	6.10E-01	3.00E-01
		1764.49		15.80		
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	4.80E-01	1.90E-01
		351.92	*	37.19	5.34E-01	1.12E-01
RA-224	0.89	240.98	*	3.95	1.45E+00	6.53E-01
RA-226	0.99	186.21	*	3.28	1.23E+00	2.40E+00
AC-228	0.98	338.32	*	11.40	8.57E-01	3.16E-01
		911.07	*	27.70	7.05E-01	1.75E-01
		969.11	*	16.60	5.38E-01	3.56E-01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PA-234M	0.89	1001.03	*	0.92	2.79E+00	2.62E+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	0.929	1.54E+01	1.76E+00	
?	KR-85	0.980	5.51E+00	6.81E+00	
?	SR-85	0.980	2.46E-02	3.04E-02	
?	CD-109	0.991	1.23E+00	5.61E-01	
?	SN-126	0.992	1.23E-01	5.58E-02	
	BI-212	0.758	4.46E-01	2.44E-01	
	PB-212	0.997	7.37E-01	9.60E-02	
	BI-214	0.681	5.63E-01	1.01E-01	
	PB-214	0.999	5.20E-01	9.62E-02	
	RA-224	0.891	1.45E+00	6.53E-01	
	RA-226	0.996	1.23E+00	2.40E+00	
	AC-228	0.986	7.09E-01	1.41E-01	
	PA-234M	0.898	2.79E+00	2.62E+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 1411131-12

J1V1L4 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 12:19:08PM
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	76.34	1.92835E-01	9.68		
	3	123.99	1.62323E-02	54.73	Tol.	EU-154
	4	130.17	2.09514E-02	42.88		
	6	229.69	1.57033E-02	49.03		
	9	269.78	1.42681E-02	53.56		
M	10	274.88	9.78353E-03	26.63		
m	11	277.88	1.30722E-02	38.54	Tol.	NP-239
						CM-243
	14	317.00	2.65278E-02	39.37		
	15	329.00	2.38324E-02	31.37	Sum	
M	18	510.63	1.82295E-02	28.26		
	20	583.01	5.46677E-02	11.39	Tol.	TL-208
	22	665.72	7.08333E-03	61.24	Tol.	SB-126
M	23	718.88	6.65247E-03	49.54		
	25	767.41	7.86530E-03	43.19		
	26	786.31	6.92190E-03	54.38		
	27	794.67	1.42523E-02	24.80	Sum	
	28	804.83	1.51625E-02	30.82		
M	30	930.01	4.31845E-03	34.83		
m	31	934.61	8.00621E-03	39.25		
m	35	1135.02	3.69311E-03	70.26		
	36	1156.70	6.66118E-03	57.85		
	37	1401.45	2.97222E-03	55.88		
	38	1408.62	4.44444E-03	39.53	Tol.	EU-152
	40	1472.31	2.13889E-03	48.59	Sum	
M	41	1480.27	2.92626E-03	34.31		
m	42	1486.50	3.10254E-03	33.57		
	43	1494.87	2.79321E-03	57.99		
	44	1500.92	2.37180E-03	54.93		
	45	1517.08	3.19444E-03	39.97		
	46	1589.14	8.14153E-03	32.55		
	47	1628.61	2.30556E-03	69.99		
	48	1680.49	2.69676E-03	42.55		
	49	1763.25	1.43320E-02	19.88		
	50	1802.41	2.95940E-03	39.89		

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
51	1845.65	2.36111E-03	56.57		
52	1890.52	2.63889E-03	51.70		
53	2013.44	1.54762E-03	54.59		
54	2184.22	1.38889E-03	44.72		
55	2202.42	4.44444E-03	25.00		
56	2401.84	2.20833E-03	47.06		
57	2612.93	2.41883E-02	11.05		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-9.34E-03	4.05E-01	4.05E-01
+	NA-22	1274.54		99.94	-2.32E-02	5.45E-02	5.45E-02
+	NA-24	1368.53		99.99	-1.29E-02	2.48E-01	3.65E-01
		2754.09		99.86	-1.34E-02		2.48E-01
+	AL-26	1808.65		99.76	1.00E-02	3.54E-02	3.54E-02
+	K-40	1460.81	*	10.67	1.54E+01	7.84E-01	7.84E-01
+	AR-41	1293.64		99.16	-3.81E+06	1.12E+07	1.12E+07
+	TI-44	67.88		94.40	-2.33E-02	4.45E-02	4.45E-02
		78.34		96.00	1.00E-01		5.19E-02
+	SC-46	889.25		99.98	-3.79E-02	3.96E-02	3.96E-02
		1120.51		99.99	1.05E-01		8.37E-02
+	V-48	983.52		99.98	1.53E-03	4.69E-02	4.69E-02
		1312.10		97.50	-1.29E-02		6.10E-02
+	CR-51	320.08		9.83	1.47E-01	3.69E-01	3.69E-01
+	MN-54	834.83		99.97	-2.87E-02	4.82E-02	4.82E-02
+	CO-56	846.75		99.96	1.08E-02	4.94E-02	4.94E-02
		1037.75		14.03	-5.66E-02		3.53E-01
		1238.25		67.00	1.20E-01		1.23E-01
		1771.40		15.51	0.00E+00		1.89E-01
		2598.48		16.90	1.02E-02		2.16E-01
+	CO-57	122.06		85.51	-7.07E-03	3.65E-02	3.65E-02
		136.48		10.60	-2.15E-02		3.05E-01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-58	810.76		99.40	-1.98E-03	4.58E-02	4.58E-02
+	FE-59	1099.22		56.50	1.79E-02	1.04E-01	1.04E-01
		1291.56		43.20	-1.09E-02		1.16E-01
+	CO-60	1173.22		100.00	2.88E-02	5.70E-02	6.24E-02
		1332.49		100.00	1.49E-02		5.70E-02
+	ZN-65	1115.52		50.75	3.15E-02	1.34E-01	1.34E-01
+	GA-67	93.31		35.70	2.83E-01	1.85E-01	1.85E-01
		208.95		2.24	8.17E-01		2.56E+00
		300.22		16.00	-1.22E-01		3.95E-01
+	SE-75	121.11		16.70	-9.31E-03	5.51E-02	1.83E-01
		136.00		59.20	2.25E-02		5.51E-02
		264.65		59.80	7.98E-03		5.54E-02
		279.53		25.20	2.65E-02		1.40E-01
		400.65		11.40	1.23E-01		3.15E-01
+	RB-82	776.52		13.00	-1.10E-01	3.66E-01	3.66E-01
+	RB-83	520.41		46.00	1.89E-02	8.91E-02	8.91E-02
		529.64		30.30	3.81E-02		1.33E-01
		552.65		16.40	4.02E-03		2.29E-01
+	KR-85	513.99	*	0.43	5.51E+00	1.59E+01	1.59E+01
+	SR-85	513.99	*	99.27	2.46E-02	7.09E-02	7.09E-02
+	Y-88	898.02		93.40	-1.66E-02	3.44E-02	5.06E-02
		1836.01		99.38	8.01E-03		3.44E-02
+	NB-93M	16.57		9.43	-5.79E+01	4.40E+01	4.40E+01
+	NB-94	702.63		100.00	-2.54E-02	4.18E-02	4.18E-02
		871.10		100.00	6.16E-03		4.72E-02
+	NB-95	765.79		99.81	-2.64E-03	5.31E-02	5.31E-02
+	NB-95M	235.69		25.00	-1.22E+00	2.67E-01	2.67E-01
+	ZR-95	724.18		43.70	-3.81E-02	8.84E-02	1.21E-01
		756.72		55.30	3.23E-03		8.84E-02
+	MO-99	181.06		6.20	3.13E-01	6.50E-01	9.25E-01
		739.58		12.80	2.21E-01		6.50E-01
		778.00		4.50	-2.94E-01		1.77E+00
+	RU-103	497.08		89.00	1.57E-02	4.78E-02	4.78E-02
+	RU-106	621.84		9.80	-1.90E-01	4.68E-01	4.68E-01
+	AG-108M	433.93		89.90	8.36E-03	4.35E-02	4.35E-02
		614.37		90.40	-1.24E-02		4.67E-02
		722.95		90.50	-9.55E-02		5.02E-02
+	CD-109	88.03	*	3.72	1.23E+00	2.43E+00	2.43E+00
+	AG-110M	657.75		93.14	-1.10E-02	4.29E-02	4.29E-02
		677.61		10.53	-2.16E-02		4.12E-01
		706.67		16.46	1.16E-02		2.57E-01
		763.93		21.98	-5.36E-03		2.16E-01
		884.67		71.63	2.30E-02		6.46E-02
		1384.27		23.94	3.29E-02		1.88E-01
+	CD-113M	263.70		0.02	-7.42E-01	1.42E+02	1.42E+02
+	SN-113	255.12		1.93	6.58E-01	5.47E-02	1.79E+00
		391.69		64.90	6.78E-03		5.47E-02

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE123M	159.00		84.10	-2.43E-02	3.84E-02	3.84E-02
+	SB-124	602.71		97.87	-6.44E-03	3.29E-02	4.77E-02
		645.85		7.26	1.15E-01		5.95E-01
		722.78		11.10	-7.98E-01		4.19E-01
		1691.02		49.00	-2.91E-02		3.29E-02
+	I-125	35.49		6.49	1.21E-01	1.40E+00	1.40E+00
+	SB-125	176.33		6.89	1.80E-02	1.21E-01	4.89E-01
		427.89		29.33	-6.88E-02		1.21E-01
		463.38		10.35	1.19E-01		4.33E-01
		600.56		17.80	-3.63E-02		2.58E-01
		635.90		11.32	-1.36E-01		3.45E-01
+	SB-126	414.70		83.30	-1.88E-02	4.84E-02	4.84E-02
		666.33		99.60	8.44E-03		5.11E-02
		695.00		99.60	1.56E-02		5.73E-02
		720.50		53.80	-1.81E-02		9.87E-02
+	SN-126	87.57	*	37.00	1.23E-01	2.44E-01	2.44E-01
+	SB-127	473.00		25.00	-4.77E-02	1.65E-01	2.32E-01
		685.20		35.70	1.28E-02		1.65E-01
		783.80		14.70	1.58E-02		5.15E-01
+	I-129	29.78		57.00	-1.03E-01	3.08E-01	3.08E-01
		33.60		13.20	2.92E-01		8.29E-01
		39.58		7.52	-1.43E-01		8.88E-01
+	I-131	284.30		6.05	3.01E-01	4.73E-02	6.65E-01
		364.48		81.20	7.57E-03		4.73E-02
		636.97		7.26	-7.37E-02		6.61E-01
		722.89		1.80	-5.77E+00		3.03E+00
+	TE-132	49.72		13.10	-6.40E-01	6.27E-02	5.68E-01
		228.16		88.00	-1.23E-02		6.27E-02
+	BA-133	81.00		33.00	-4.97E-01	5.70E-02	1.14E-01
		302.84		17.80	-2.41E-02		2.03E-01
		356.01		60.00	9.27E-03		5.70E-02
+	I-133	529.87		86.30	7.15E-02	2.49E-01	2.49E-01
+	CS-134	563.23		8.38	-1.02E-01	5.24E-02	4.98E-01
		569.32		15.43	-7.63E-02		2.68E-01
		604.70		97.60	-4.51E-03		5.24E-02
		795.84		85.40	2.91E-02		6.07E-02
		801.93		8.73	6.44E-02		5.66E-01
+	CS-135	268.24		16.00	1.67E-01	2.33E-01	2.33E-01
+	I-135	1131.51		22.50	-4.62E+01	3.95E+01	4.88E+01
		1260.41		28.60	-5.19E+00		3.95E+01
		1678.03		9.54	-6.58E-01		6.92E+01
+	CS-136	153.22		7.46	2.50E-01	5.17E-02	5.06E-01
		163.89		4.61	2.60E-01		8.05E-01
		176.55		13.56	1.02E-02		2.78E-01
		273.65		12.66	-3.17E-01		3.02E-01
		340.57		48.50	4.85E-02		9.35E-02
		818.50		99.70	5.16E-03		5.17E-02
		1048.07		79.60	-2.86E-02		6.40E-02
		1235.34		19.70	6.64E-02		4.53E-01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-137	661.65	85.12	-4.16E-03	4.87E-02	4.87E-02
+	LA-138	788.74	34.00	-9.91E-02	6.35E-02	1.32E-01
		1435.80	66.00	-2.62E-02		6.35E-02
+	CE-139	165.85	80.35	-8.10E-03	4.12E-02	4.12E-02
+	BA-140	162.64	6.70	4.69E-01	1.79E-01	5.58E-01
		304.84	4.50	1.47E-02		8.24E-01
		423.70	3.20	3.62E-01		1.31E+00
		437.55	2.00	9.15E-01		2.23E+00
		537.32	25.00	3.31E-02		1.79E-01
+	LA-140	328.77	20.50	1.40E-01	4.22E-02	2.08E-01
		487.03	45.50	1.67E-02		1.00E-01
		815.85	23.50	-2.65E-02		2.10E-01
		1596.49	95.49	1.09E-02		4.22E-02
+	CE-141	145.44	48.40	3.47E-02	7.40E-02	7.40E-02
+	CE-143	57.36	11.80	-3.21E-01	3.48E-01	1.03E+00
		293.26	42.00	6.94E-01		3.48E-01
		664.55	5.20	1.59E+00		2.59E+00
+	CE-144	133.54	10.80	1.10E-02	3.01E-01	3.01E-01
+	PM-144	476.78	42.00	-1.75E-02	4.83E-02	9.63E-02
		618.01	98.60	2.15E-02		4.83E-02
		696.49	99.49	7.87E-03		5.01E-02
+	PM-145	36.85	21.70	-1.25E-01	1.89E-01	3.59E-01
		37.36	39.70	-1.22E-01		1.89E-01
		42.30	15.10	-2.44E-01		3.90E-01
		72.40	2.31	-2.24E-01		2.04E+00
+	PM-146	453.90	39.94	7.01E-02	1.07E-01	1.07E-01
		735.90	14.01	-2.22E-02		3.12E-01
		747.13	13.10	4.61E-02		3.46E-01
+	ND-147	91.11	28.90	-1.65E-01	1.70E-01	1.70E-01
		531.02	13.10	1.24E-02		3.37E-01
+	PM-149	285.90	3.10	2.46E-01	2.07E+00	2.07E+00
+	EU-152	121.78	20.50	-2.93E-02	1.51E-01	1.51E-01
		244.69	5.40	-5.82E-01		6.38E-01
		344.27	19.13	-7.78E-03		1.72E-01
		778.89	9.20	1.17E-01		5.17E-01
		964.01	10.40	6.57E-02		6.12E-01
		1085.78	7.22	3.99E-01		8.19E-01
		1112.02	9.60	2.20E-01		6.13E-01
		1407.95	14.94	1.49E-01		3.10E-01
+	GD-153	97.43	31.30	1.76E-02	1.09E-01	1.09E-01
		103.18	22.20	-5.56E-02		1.41E-01
+	EU-154	123.07	40.50	8.14E-03	7.94E-02	7.94E-02
		723.30	19.70	-4.39E-01		2.31E-01
		873.19	11.50	6.18E-02		3.92E-01
		996.32	10.30	-8.62E-02		4.77E-01
		1004.76	17.90	-6.08E-02		2.65E-01
		1274.45	35.50	-6.53E-02		1.53E-01
+	EU-155	86.50	30.90	-2.98E-02	1.30E-01	1.30E-01
		105.30	20.70	-3.38E-02		1.52E-01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	EU-156	811.77		10.40	4.26E-02	4.55E-01	4.55E-01
		1153.47		7.20	1.24E-02		9.18E-01
		1230.71		8.90	-2.68E-01		8.87E-01
+	HO-166M	184.41		72.60	7.85E-02	5.53E-02	5.53E-02
		280.45		29.60	-5.46E-03		1.10E-01
		410.94		11.10	1.22E-01		3.61E-01
		711.69		54.10	-1.41E-02		7.81E-02
+	TM-171	66.72		0.14	-3.60E+01	3.08E+01	3.08E+01
+	HF-172	81.75		4.52	-3.53E-01	2.98E-01	8.33E-01
		125.81		11.30	-2.02E-02		2.98E-01
+	LU-172	181.53		20.60	4.11E-02	1.02E-01	2.00E-01
		810.06		16.63	1.84E-02		3.36E-01
		912.12		15.25	1.49E+00		7.40E-01
		1093.66		62.50	2.33E-03		1.02E-01
+	LU-173	100.72		5.24	1.67E-01	1.72E-01	6.26E-01
		272.11		21.20	1.01E-01		1.72E-01
+	HF-175	343.40		84.00	-1.75E-03	3.88E-02	3.88E-02
+	LU-176	88.34		13.30	4.90E-01	3.40E-02	3.17E-01
		201.83		86.00	-6.29E-03		3.73E-02
		306.78		94.00	8.27E-03		3.40E-02
+	TA-182	67.75		41.20	-5.42E-02	1.03E-01	1.03E-01
		1121.30		34.90	2.76E-01		2.40E-01
		1189.05		16.23	-2.45E-02		3.77E-01
		1221.41		26.98	-2.20E-02		2.43E-01
		1231.02		11.44	-1.92E-01		6.34E-01
+	IR-192	308.46		29.68	9.94E-03	8.92E-02	1.02E-01
		468.07		48.10	-2.90E-02		8.92E-02
+	HG-203	279.19		77.30	1.72E-02	4.79E-02	4.79E-02
+	BI-207	569.67		97.72	3.67E-03	4.37E-02	4.37E-02
		1063.62		74.90	1.35E-02		7.12E-02
+	TL-208	583.14		30.22	6.34E-01	2.49E-01	2.49E-01
		860.37		4.48	9.04E-01		1.34E+00
		2614.66		35.85	0.00E+00		3.34E-01
+	BI-210M	262.00		45.00	5.05E-02	7.76E-02	7.76E-02
		300.00		23.00	-5.42E-02		1.75E-01
+	PB-210	46.50		4.25	1.03E+00	1.31E+00	1.31E+00
+	PB-211	404.84		2.90	-2.48E-01	1.19E+00	1.19E+00
		831.96		2.90	1.80E-01		1.66E+00
+	BI-212	727.17	*	11.80	4.46E-01	7.99E-01	7.99E-01
		1620.62		2.75	0.00E+00		1.37E+00
+	PB-212	238.63	*	44.60	7.32E-01	1.52E-01	1.52E-01
		300.09	*	3.41	1.05E+00		1.22E+00
+	BI-214	609.31	*	46.30	5.57E-01	1.14E-01	1.14E-01
		1120.29	*	15.10	6.10E-01		1.28E+00
		1764.49		15.80	5.46E-01		4.99E-01
		2204.22		4.98	0.00E+00		1.05E+00
+	PB-214	295.21	*	19.19	4.80E-01	1.41E-01	3.61E-01
		351.92	*	37.19	5.34E-01		1.41E-01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RN-219	401.80		6.50	1.09E-01	5.51E-01	5.51E-01
+	RA-223	323.87		3.88	-6.66E-01	8.42E-01	8.42E-01
+	RA-224	240.98	*	3.95	1.45E+00	1.71E+00	1.71E+00
+	RA-225	40.00		31.00	-3.72E-02	2.31E-01	2.31E-01
+	RA-226	186.21	*	3.28	1.23E+00	1.37E+00	1.37E+00
+	TH-227	50.10		8.40	-6.28E-01	3.86E-01	5.58E-01
		236.00		11.50	-1.76E+00		3.86E-01
		256.20		6.30	-4.36E-02		5.33E-01
+	AC-228	338.32	*	11.40	8.57E-01	2.03E-01	4.69E-01
		911.07	*	27.70	7.05E-01		2.03E-01
		969.11	*	16.60	5.38E-01		5.60E-01
+	TH-230	48.44		16.90	1.42E-01	3.13E-01	3.13E-01
		62.85		4.60	1.39E+00		1.03E+00
		67.67		0.37	-5.97E+00		1.14E+01
+	PA-231	283.67		1.60	1.26E-02	1.57E+00	2.03E+00
		302.67		2.30	-1.87E-01		1.57E+00
+	TH-231	25.64		14.70	2.73E-01	6.01E-01	2.56E+00
		84.21		6.40	-7.89E-01		6.01E-01
+	PA-233	311.98		38.60	-2.11E-02	8.67E-02	8.67E-02
+	PA-234	131.20		20.40	2.55E-02	1.63E-01	1.63E-01
		733.99		8.80	-1.84E-01		4.68E-01
		946.00		12.00	-1.39E-01		4.05E-01
+	PA-234M	1001.03	*	0.92	2.79E+00	4.11E+00	4.11E+00
+	TH-234	63.29		3.80	1.26E+00	1.25E+00	1.25E+00
+	U-235	143.76		10.50	-3.68E-02	3.24E-01	3.24E-01
		163.35		4.70	2.28E-01		7.05E-01
		205.31		4.70	-4.86E-01		7.04E-01
+	NP-237	86.50		12.60	-7.30E-02	3.19E-01	3.19E-01
+	NP-239	106.10		22.70	-5.76E-02	2.59E-01	2.59E-01
		228.18		10.70	-1.21E-01		6.13E-01
		277.60		14.10	2.95E-01		4.76E-01
+	AM-241	59.54		35.90	-7.44E-02	1.19E-01	1.19E-01
+	AM-243	74.67		66.00	-5.76E-02	8.04E-02	8.04E-02
+	CM-243	209.75		3.29	9.08E-01	2.57E-01	1.13E+00
		228.14		10.60	-6.53E-02		3.32E-01
		277.60		14.00	1.59E-01		2.57E-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 1411131-12

J1V1L4 SAF: RC-107

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	4.05E-01	4.05E-01	-9.34E-03	1.92E-01
	NA-22	1274.54		99.94	5.45E-02	5.45E-02	-2.32E-02	2.49E-02
	NA-24	1368.53		99.99	3.65E-01	2.48E-01	-1.29E-02	1.56E-01
		2754.09		99.86	2.48E-01		-1.34E-02	8.79E-02
	AL-26	1808.65		99.76	3.54E-02	3.54E-02	1.00E-02	1.47E-02
+	K-40	1460.81	*	10.67	7.84E-01	7.84E-01	1.54E+01	3.67E-01
	AR-41	1293.64		99.16	1.12E+07	1.12E+07	-3.81E+06	5.03E+06
	TI-44	67.88		94.40	4.45E-02	4.45E-02	-2.33E-02	2.17E-02
		78.34		96.00	5.19E-02		1.00E-01	2.54E-02
	SC-46	889.25		99.98	3.96E-02	3.96E-02	-3.79E-02	1.80E-02
		1120.51		99.99	8.37E-02		1.05E-01	3.97E-02
	V-48	983.52		99.98	4.69E-02	4.69E-02	1.53E-03	2.13E-02
		1312.10		97.50	6.10E-02		-1.29E-02	2.78E-02
	CR-51	320.08		9.83	3.69E-01	3.69E-01	1.47E-01	1.76E-01
	MN-54	834.83		99.97	4.82E-02	4.82E-02	-2.87E-02	2.24E-02
	CO-56	846.75		99.96	4.94E-02	4.94E-02	1.08E-02	2.30E-02
		1037.75		14.03	3.53E-01		-5.66E-02	1.62E-01
		1238.25		67.00	1.23E-01		1.20E-01	5.80E-02
		1771.40		15.51	1.89E-01		0.00E+00	7.51E-02
		2598.48		16.90	2.16E-01		1.02E-02	8.72E-02
	CO-57	122.06		85.51	3.65E-02	3.65E-02	-7.07E-03	1.77E-02
		136.48		10.60	3.05E-01		-2.15E-02	1.48E-01
	CO-58	810.76		99.40	4.58E-02	4.58E-02	-1.98E-03	2.12E-02
	FE-59	1099.22		56.50	1.04E-01	1.04E-01	1.79E-02	4.80E-02
		1291.56		43.20	1.16E-01		-1.09E-02	5.22E-02
	CO-60	1173.22		100.00	6.24E-02	5.70E-02	2.88E-02	2.90E-02
		1332.49		100.00	5.70E-02		1.49E-02	2.60E-02
	ZN-65	1115.52		50.75	1.34E-01	1.34E-01	3.15E-02	6.28E-02
	GA-67	93.31		35.70	1.85E-01	1.85E-01	2.83E-01	9.04E-02
		208.95		2.24	2.56E+00		8.17E-01	1.24E+00
		300.22		16.00	3.95E-01		-1.22E-01	1.90E-01
	SE-75	121.11		16.70	1.83E-01	5.51E-02	-9.31E-03	8.88E-02
		136.00		59.20	5.51E-02		2.25E-02	2.67E-02
		264.65		59.80	5.54E-02		7.98E-03	2.65E-02
		279.53		25.20	1.40E-01		2.65E-02	6.68E-02
		400.65		11.40	3.15E-01		1.23E-01	1.49E-01
	RB-82	776.52		13.00	3.66E-01	3.66E-01	-1.10E-01	1.70E-01
	RB-83	520.41		46.00	8.91E-02	8.91E-02	1.89E-02	4.20E-02
		529.64		30.30	1.33E-01		3.81E-02	6.23E-02
		552.65		16.40	2.29E-01		4.02E-03	1.07E-01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	KR-85	513.99	*	0.43	1.59E+01	1.59E+01	5.51E+00	7.66E+00
+	SR-85	513.99	*	99.27	7.09E-02	7.09E-02	2.46E-02	3.43E-02
	Y-88	898.02		93.40	5.06E-02	3.44E-02	-1.66E-02	2.33E-02
		1836.01		99.38	3.44E-02		8.01E-03	1.41E-02
	NB-93M	16.57		9.43	4.40E+01	4.40E+01	-5.79E+01	2.03E+01
	NB-94	702.63		100.00	4.18E-02	4.18E-02	-2.54E-02	1.94E-02
		871.10		100.00	4.72E-02		6.16E-03	2.18E-02
	NB-95	765.79		99.81	5.31E-02	5.31E-02	-2.64E-03	2.49E-02
	NB-95M	235.69		25.00	2.67E-01	2.67E-01	-1.22E+00	1.29E-01
	ZR-95	724.18		43.70	1.21E-01	8.84E-02	-3.81E-02	5.71E-02
		756.72		55.30	8.84E-02		3.23E-03	4.13E-02
	MO-99	181.06		6.20	9.25E-01	6.50E-01	3.13E-01	4.47E-01
		739.58		12.80	6.50E-01		2.21E-01	3.04E-01
		778.00		4.50	1.77E+00		-2.94E-01	8.25E-01
	RU-103	497.08		89.00	4.78E-02	4.78E-02	1.57E-02	2.26E-02
	RU-106	621.84		9.80	4.68E-01	4.68E-01	-1.90E-01	2.20E-01
	AG-108M	433.93		89.90	4.35E-02	4.35E-02	8.36E-03	2.06E-02
		614.37		90.40	4.67E-02		-1.24E-02	2.19E-02
		722.95		90.50	5.02E-02		-9.55E-02	2.34E-02
+	CD-109	88.03	*	3.72	2.43E+00	2.43E+00	1.23E+00	1.20E+00
	AG-110M	657.75		93.14	4.29E-02	4.29E-02	-1.10E-02	1.99E-02
		677.61		10.53	4.12E-01		-2.16E-02	1.92E-01
		706.67		16.46	2.57E-01		1.16E-02	1.19E-01
		763.93		21.98	2.16E-01		-5.36E-03	1.01E-01
		884.67		71.63	6.46E-02		2.30E-02	2.98E-02
		1384.27		23.94	1.88E-01		3.29E-02	8.36E-02
	CD-113M	263.70		0.02	1.42E+02	1.42E+02	-7.42E-01	6.79E+01
	SN-113	255.12		1.93	1.79E+00	5.47E-02	6.58E-01	8.56E-01
		391.69		64.90	5.47E-02		6.78E-03	2.58E-02
	TE123M	159.00		84.10	3.84E-02	3.84E-02	-2.43E-02	1.86E-02
	SB-124	602.71		97.87	4.77E-02	3.29E-02	-6.44E-03	2.25E-02
		645.85		7.26	5.95E-01		1.15E-01	2.78E-01
		722.78		11.10	4.19E-01		-7.98E-01	1.96E-01
		1691.02		49.00	3.29E-02		-2.91E-02	1.04E-02
	I-125	35.49		6.49	1.40E+00	1.40E+00	1.21E-01	6.75E-01
	SB-125	176.33		6.89	4.89E-01	1.21E-01	1.80E-02	2.36E-01
		427.89		29.33	1.21E-01		-6.88E-02	5.73E-02
		463.38		10.35	4.33E-01		1.19E-01	2.06E-01
		600.56		17.80	2.58E-01		-3.63E-02	1.22E-01
		635.90		11.32	3.45E-01		-1.36E-01	1.60E-01
	SB-126	414.70		83.30	4.84E-02	4.84E-02	-1.88E-02	2.29E-02
		666.33		99.60	5.11E-02		8.44E-03	2.40E-02
		695.00		99.60	5.73E-02		1.56E-02	2.70E-02
		720.50		53.80	9.87E-02		-1.81E-02	4.62E-02
+	SN-126	87.57	*	37.00	2.44E-01	2.44E-01	1.23E-01	1.21E-01
	SB-127	473.00		25.00	2.32E-01	1.65E-01	-4.77E-02	1.10E-01
		685.20		35.70	1.65E-01		1.28E-02	7.68E-02
		783.80		14.70	5.15E-01		1.58E-02	2.42E-01
	I-129	29.78		57.00	3.08E-01	3.08E-01	-1.03E-01	1.49E-01
		33.60		13.20	8.29E-01		2.92E-01	4.01E-01
		39.58		7.52	8.88E-01		-1.43E-01	4.29E-01
	I-131	284.30		6.05	6.65E-01	4.73E-02	3.01E-01	3.17E-01
		364.48		81.20	4.73E-02		7.57E-03	2.23E-02

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	636.97	7.26	6.61E-01	4.73E-02	-7.37E-02	3.08E-01
	722.89	1.80	3.03E+00		-5.77E+00	1.41E+00
TE-132	49.72	13.10	5.68E-01	6.27E-02	-6.40E-01	2.76E-01
	228.16	88.00	6.27E-02		-1.23E-02	3.02E-02
BA-133	81.00	33.00	1.14E-01	5.70E-02	-4.97E-01	5.55E-02
	302.84	17.80	2.03E-01		-2.41E-02	9.69E-02
	356.01	60.00	5.70E-02		9.27E-03	2.70E-02
I-133	529.87	86.30	2.49E-01	2.49E-01	7.15E-02	1.17E-01
CS-134	563.23	8.38	4.98E-01	5.24E-02	-1.02E-01	2.34E-01
	569.32	15.43	2.68E-01		-7.63E-02	1.26E-01
	604.70	97.60	5.24E-02		-4.51E-03	2.49E-02
	795.84	85.40	6.07E-02		2.91E-02	2.84E-02
	801.93	8.73	5.66E-01		6.44E-02	2.64E-01
CS-135	268.24	16.00	2.33E-01	2.33E-01	1.67E-01	1.12E-01
I-135	1131.51	22.50	4.88E+01	3.95E+01	-4.62E+01	2.24E+01
	1260.41	28.60	3.95E+01		-5.19E+00	1.80E+01
	1678.03	9.54	6.92E+01		-6.58E-01	2.84E+01
CS-136	153.22	7.46	5.06E-01	5.17E-02	2.50E-01	2.45E-01
	163.89	4.61	8.05E-01		2.60E-01	3.89E-01
	176.55	13.56	2.78E-01		1.02E-02	1.34E-01
	273.65	12.66	3.02E-01		-3.17E-01	1.44E-01
	340.57	48.50	9.35E-02		4.85E-02	4.47E-02
	818.50	99.70	5.17E-02		5.16E-03	2.40E-02
	1048.07	79.60	6.40E-02		-2.86E-02	2.91E-02
	1235.34	19.70	4.53E-01		6.64E-02	2.14E-01
CS-137	661.65	85.12	4.87E-02	4.87E-02	-4.16E-03	2.27E-02
LA-138	788.74	34.00	1.32E-01	6.35E-02	-9.91E-02	6.10E-02
	1435.80	66.00	6.35E-02		-2.62E-02	2.78E-02
CE-139	165.85	80.35	4.12E-02	4.12E-02	-8.10E-03	1.99E-02
BA-140	162.64	6.70	5.58E-01	1.79E-01	4.69E-01	2.70E-01
	304.84	4.50	8.24E-01		1.47E-02	3.92E-01
	423.70	3.20	1.31E+00		3.62E-01	6.21E-01
	437.55	2.00	2.23E+00		9.15E-01	1.05E+00
	537.32	25.00	1.79E-01		3.31E-02	8.42E-02
LA-140	328.77	20.50	2.08E-01	4.22E-02	1.40E-01	9.93E-02
	487.03	45.50	1.00E-01		1.67E-02	4.74E-02
	815.85	23.50	2.10E-01		-2.65E-02	9.69E-02
	1596.49	95.49	4.22E-02		1.09E-02	1.78E-02
CE-141	145.44	48.40	7.40E-02	7.40E-02	3.47E-02	3.59E-02
CE-143	57.36	11.80	1.03E+00	3.48E-01	-3.21E-01	5.03E-01
	293.26	42.00	3.48E-01		6.94E-01	1.69E-01
	664.55	5.20	2.59E+00		1.59E+00	1.21E+00
CE-144	133.54	10.80	3.01E-01	3.01E-01	1.10E-02	1.46E-01
PM-144	476.78	42.00	9.63E-02	4.83E-02	-1.75E-02	4.55E-02
	618.01	98.60	4.83E-02		2.15E-02	2.28E-02
	696.49	99.49	5.01E-02		7.87E-03	2.36E-02
PM-145	36.85	21.70	3.59E-01	1.89E-01	-1.25E-01	1.73E-01
	37.36	39.70	1.89E-01		-1.22E-01	9.13E-02
	42.30	15.10	3.90E-01		-2.44E-01	1.89E-01
	72.40	2.31	2.04E+00		-2.24E-01	9.98E-01
PM-146	453.90	39.94	1.07E-01	1.07E-01	7.01E-02	5.07E-02
	735.90	14.01	3.12E-01		-2.22E-02	1.45E-01
	747.13	13.10	3.46E-01		4.61E-02	1.61E-01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
ND-147	91.11	28.90	1.70E-01	1.70E-01	-1.65E-01	8.34E-02
	531.02	13.10	3.37E-01		1.24E-02	1.58E-01
PM-149	285.90	3.10	2.07E+00	2.07E+00	2.46E-01	9.85E-01
EU-152	121.78	20.50	1.51E-01	1.51E-01	-2.93E-02	7.34E-02
	244.69	5.40	6.38E-01		-5.82E-01	3.06E-01
	344.27	19.13	1.72E-01		-7.78E-03	8.13E-02
	778.89	9.20	5.17E-01		1.17E-01	2.41E-01
	964.01	10.40	6.12E-01		6.57E-02	2.88E-01
	1085.78	7.22	8.19E-01		3.99E-01	3.81E-01
	1112.02	9.60	6.13E-01		2.20E-01	2.84E-01
	1407.95	14.94	3.10E-01		1.49E-01	1.38E-01
GD-153	97.43	31.30	1.09E-01	1.09E-01	1.76E-02	5.33E-02
	103.18	22.20	1.41E-01		-5.56E-02	6.82E-02
EU-154	123.07	40.50	7.94E-02	7.94E-02	8.14E-03	3.85E-02
	723.30	19.70	2.31E-01		-4.39E-01	1.08E-01
	873.19	11.50	3.92E-01		6.18E-02	1.81E-01
	996.32	10.30	4.77E-01		-8.62E-02	2.20E-01
	1004.76	17.90	2.65E-01		-6.08E-02	1.21E-01
	1274.45	35.50	1.53E-01		-6.53E-02	7.00E-02
EU-155	86.50	30.90	1.30E-01	1.30E-01	-2.98E-02	6.37E-02
	105.30	20.70	1.52E-01		-3.38E-02	7.39E-02
EU-156	811.77	10.40	4.55E-01	4.55E-01	4.26E-02	2.10E-01
	1153.47	7.20	9.18E-01		1.24E-02	4.25E-01
	1230.71	8.90	8.87E-01		-2.68E-01	4.15E-01
HO-166M	184.41	72.60	5.53E-02	5.53E-02	7.85E-02	2.69E-02
	280.45	29.60	1.10E-01		-5.46E-03	5.24E-02
	410.94	11.10	3.61E-01		1.22E-01	1.72E-01
	711.69	54.10	7.81E-02		-1.41E-02	3.63E-02
TM-171	66.72	0.14	3.08E+01	3.08E+01	-3.60E+01	1.51E+01
HF-172	81.75	4.52	8.33E-01	2.98E-01	-3.53E-01	4.06E-01
	125.81	11.30	2.98E-01		-2.02E-02	1.45E-01
LU-172	181.53	20.60	2.00E-01	1.02E-01	4.11E-02	9.65E-02
	810.06	16.63	3.36E-01		1.84E-02	1.56E-01
	912.12	15.25	7.40E-01		1.49E+00	3.55E-01
	1093.66	62.50	1.02E-01		2.33E-03	4.68E-02
LU-173	100.72	5.24	6.26E-01	1.72E-01	1.67E-01	3.04E-01
	272.11	21.20	1.72E-01		1.01E-01	8.27E-02
HF-175	343.40	84.00	3.88E-02	3.88E-02	-1.75E-03	1.83E-02
LU-176	88.34	13.30	3.17E-01	3.40E-02	4.90E-01	1.55E-01
	201.83	86.00	3.73E-02		-6.29E-03	1.80E-02
	306.78	94.00	3.40E-02		8.27E-03	1.61E-02
TA-182	67.75	41.20	1.03E-01	1.03E-01	-5.42E-02	5.04E-02
	1121.30	34.90	2.40E-01		2.76E-01	1.14E-01
	1189.05	16.23	3.77E-01		-2.45E-02	1.74E-01
	1221.41	26.98	2.43E-01		-2.20E-02	1.13E-01
	1231.02	11.44	6.34E-01		-1.92E-01	2.97E-01
IR-192	308.46	29.68	1.02E-01	8.92E-02	9.94E-03	4.81E-02
	468.07	48.10	8.92E-02		-2.90E-02	4.23E-02
HG-203	279.19	77.30	4.79E-02	4.79E-02	1.72E-02	2.29E-02
BI-207	569.67	97.72	4.37E-02	4.37E-02	3.67E-03	2.06E-02
	1063.62	74.90	7.12E-02		1.35E-02	3.28E-02
TL-208	583.14	30.22	2.49E-01	2.49E-01	6.34E-01	1.20E-01
	860.37	4.48	1.34E+00		9.04E-01	6.31E-01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-208	2614.66		35.85	3.34E-01	2.49E-01	0.00E+00	1.57E-01
	BI-210M	262.00		45.00	7.76E-02	7.76E-02	5.05E-02	3.72E-02
		300.00		23.00	1.75E-01		-5.42E-02	8.42E-02
	PB-210	46.50		4.25	1.31E+00	1.31E+00	1.03E+00	6.39E-01
	PB-211	404.84		2.90	1.19E+00	1.19E+00	-2.48E-01	5.61E-01
		831.96		2.90	1.66E+00		1.80E-01	7.73E-01
+	BI-212	727.17	*	11.80	7.99E-01	7.99E-01	4.46E-01	3.87E-01
		1620.62		2.75	1.37E+00		0.00E+00	5.84E-01
+	PB-212	238.63	*	44.60	1.52E-01	1.52E-01	7.32E-01	7.46E-02
		300.09	*	3.41	1.22E+00		1.05E+00	5.88E-01
+	BI-214	609.31	*	46.30	1.14E-01	1.14E-01	5.57E-01	5.39E-02
		1120.29	*	15.10	1.28E+00		6.10E-01	6.26E-01
		1764.49		15.80	4.99E-01		5.46E-01	2.31E-01
		2204.22		4.98	1.05E+00		0.00E+00	4.56E-01
+	PB-214	295.21	*	19.19	3.61E-01	1.41E-01	4.80E-01	1.76E-01
		351.92	*	37.19	1.41E-01		5.34E-01	6.80E-02
	RN-219	401.80		6.50	5.51E-01	5.51E-01	1.09E-01	2.61E-01
	RA-223	323.87		3.88	8.42E-01	8.42E-01	-6.66E-01	3.99E-01
+	RA-224	240.98	*	3.95	1.71E+00	1.71E+00	1.45E+00	8.39E-01
	RA-225	40.00		31.00	2.31E-01	2.31E-01	-3.72E-02	1.12E-01
+	RA-226	186.21	*	3.28	1.37E+00	1.37E+00	1.23E+00	6.67E-01
	TH-227	50.10		8.40	5.58E-01	3.86E-01	-6.28E-01	2.71E-01
		236.00		11.50	3.86E-01		-1.76E+00	1.87E-01
		256.20		6.30	5.33E-01		-4.36E-02	2.55E-01
+	AC-228	338.32	*	11.40	4.69E-01	2.03E-01	8.57E-01	2.27E-01
		911.07	*	27.70	2.03E-01		7.05E-01	9.48E-02
		969.11	*	16.60	5.60E-01		5.38E-01	2.68E-01
	TH-230	48.44		16.90	3.13E-01	3.13E-01	1.42E-01	1.52E-01
		62.85		4.60	1.03E+00		1.39E+00	5.06E-01
		67.67		0.37	1.14E+01		-5.97E+00	5.55E+00
	PA-231	283.67		1.60	2.03E+00	1.57E+00	1.26E-02	9.67E-01
		302.67		2.30	1.57E+00		-1.87E-01	7.50E-01
	TH-231	25.64		14.70	2.56E+00	6.01E-01	2.73E-01	1.24E+00
		84.21		6.40	6.01E-01		-7.89E-01	2.93E-01
	PA-233	311.98		38.60	8.67E-02	8.67E-02	-2.11E-02	4.11E-02
	PA-234	131.20		20.40	1.63E-01	1.63E-01	2.55E-02	7.93E-02
		733.99		8.80	4.68E-01		-1.84E-01	2.16E-01
		946.00		12.00	4.05E-01		-1.39E-01	1.87E-01
+	PA-234M	1001.03	*	0.92	4.11E+00	4.11E+00	2.79E+00	1.84E+00
	TH-234	63.29		3.80	1.25E+00	1.25E+00	1.26E+00	6.10E-01
	U-235	143.76		10.50	3.24E-01	3.24E-01	-3.68E-02	1.57E-01
		163.35		4.70	7.05E-01		2.28E-01	3.41E-01
		205.31		4.70	7.04E-01		-4.86E-01	3.39E-01
	NP-237	86.50		12.60	3.19E-01	3.19E-01	-7.30E-02	1.56E-01
	NP-239	106.10		22.70	2.59E-01	2.59E-01	-5.76E-02	1.26E-01
		228.18		10.70	6.13E-01		-1.21E-01	2.95E-01
		277.60		14.10	4.76E-01		2.95E-01	2.28E-01
	AM-241	59.54		35.90	1.19E-01	1.19E-01	-7.44E-02	5.77E-02
	AM-243	74.67		66.00	8.04E-02	8.04E-02	-5.76E-02	3.95E-02
	CM-243	209.75		3.29	1.13E+00	2.57E-01	9.08E-01	5.44E-01
		228.14		10.60	3.32E-01		-6.53E-02	1.60E-01
		277.60		14.00	2.57E-01		1.59E-01	1.23E-01

Analysis Report for 1411131-12

J1V1L4 SAF: RC-107

+	=	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: J1V1L4 SAF: RC-107

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	48	94	81	74	64	65
25:	57	66	60	63	58	61	44	62
33:	65	51	60	48	56	54	44	62
41:	65	62	63	62	57	79	129	79
49:	69	71	79	75	73	78	84	77
57:	78	95	79	98	97	107	130	207
65:	119	100	115	133	122	101	131	111
73:	130	131	272	210	272	326	120	107
81:	98	98	104	123	112	81	142	173
89:	114	135	121	109	241	165	84	88
97:	88	94	87	87	82	78	72	65
105:	60	87	78	81	83	78	70	78
113:	60	73	80	73	62	54	68	69
121:	50	68	63	84	92	70	70	68
129:	87	83	78	84	61	61	61	72
137:	65	73	58	71	74	62	65	73
145:	73	81	72	56	61	62	57	60
153:	53	69	84	62	57	69	56	53
161:	46	69	61	63	61	41	58	60
169:	59	59	57	43	51	50	58	59
177:	48	56	59	59	61	46	46	49
185:	53	134	101	54	36	55	48	43
193:	66	52	56	42	41	51	45	46
201:	38	47	36	49	46	41	49	40
209:	67	67	48	55	38	52	48	41
217:	39	42	50	46	43	52	43	53
225:	43	37	38	45	51	52	48	46
233:	35	38	38	47	39	184	452	140
241:	79	99	58	40	34	25	37	32
249:	31	35	28	37	39	30	34	38
257:	38	33	27	41	37	31	35	38
265:	31	22	31	23	46	58	44	41
273:	27	19	45	32	32	53	34	28
281:	29	21	31	29	25	34	30	25
289:	23	33	32	34	32	30	130	105
297:	31	29	40	52	44	38	28	28
305:	21	33	21	24	22	15	20	26
313:	33	22	36	20	23	25	33	23
321:	22	30	28	17	20	22	29	45
329:	24	32	27	24	25	20	16	18
337:	28	80	66	30	33	19	23	15
345:	19	26	25	26	28	28	63	218
353:	76	35	16	24	18	19	15	13
361:	18	25	20	18	17	22	17	15

369:	14	16	24	20	20	24	21	13

Sample Title: J1V1L4 SAF: RC-107

Channel								
377:	17	16	19	12	16	18	18	15
385:	20	21	27	20	24	16	20	21
393:	21	24	14	20	17	14	14	23
401:	20	19	25	16	18	25	10	20
409:	23	21	16	18	14	14	14	14
417:	10	14	15	16	16	16	16	14
425:	13	12	17	9	13	12	16	22
433:	15	12	18	14	13	10	21	18
441:	18	9	16	14	30	9	18	12
449:	9	11	15	21	28	22	12	13
457:	12	15	13	12	13	23	33	18
465:	14	10	21	14	25	9	21	13
473:	13	13	13	17	9	16	13	20
481:	17	19	15	21	11	15	12	14
489:	13	14	12	9	15	12	18	16
497:	16	8	12	16	11	12	14	20
505:	10	15	13	19	18	56	86	39
513:	15	26	12	11	12	7	14	13
521:	17	11	11	15	12	15	12	9
529:	12	12	12	13	12	8	6	12
537:	10	17	12	11	14	6	16	18
545:	12	12	14	9	12	11	13	8
553:	5	8	11	10	10	7	13	12
561:	14	12	10	8	16	11	15	16
569:	9	10	13	6	17	11	10	10
577:	8	12	8	13	11	40	130	60
585:	11	7	17	3	20	7	13	11
593:	18	6	8	11	19	15	14	18
601:	9	15	8	13	12	15	14	37
609:	156	85	21	6	7	11	14	11
617:	15	10	15	11	18	12	11	6
625:	13	18	15	13	4	5	10	9
633:	4	7	12	12	7	9	8	7
641:	16	7	12	11	9	8	7	9
649:	12	6	7	9	12	12	11	10
657:	6	9	5	8	9	8	9	9
665:	15	16	11	11	4	9	12	7
673:	12	12	6	9	12	12	13	5
681:	9	6	10	10	10	5	7	8
689:	8	8	16	12	12	10	15	12
697:	14	14	11	9	13	8	7	5
705:	5	11	13	9	5	10	6	11
713:	10	9	7	10	14	8	20	9
721:	10	5	12	8	6	16	30	22
729:	7	8	8	7	7	7	9	4
737:	10	14	8	9	11	10	12	9
745:	11	6	9	9	11	7	6	6
753:	13	11	16	9	8	6	9	9
761:	7	12	11	5	6	12	12	18
769:	12	6	7	7	12	6	7	3
777:	15	5	13	8	11	9	12	6
785:	13	15	10	9	7	2	4	8
793:	10	16	19	9	6	12	2	7

801:	10	6	16	9	16	10	7	11

Sample Title: J1V1L4 SAF: RC-107

Channel								
809:	7	10	3	7	8	6	7	9
817:	3	6	11	11	9	6	7	9
825:	9	7	5	6	9	12	9	5
833:	5	7	12	12	7	10	12	13
841:	9	8	5	10	7	8	7	15
849:	5	6	9	6	9	12	9	8
857:	9	9	8	25	19	13	6	9
865:	7	4	13	9	7	6	10	6
873:	5	9	4	7	6	3	9	5
881:	12	9	7	6	12	4	4	6
889:	2	4	6	7	8	9	6	7
897:	5	5	9	7	9	10	7	6
905:	11	6	5	3	12	38	83	35
913:	8	7	9	5	15	8	8	8
921:	10	3	5	11	11	10	3	2
929:	7	13	2	6	9	17	13	10
937:	10	9	6	3	5	5	6	2
945:	3	9	11	5	12	11	14	6
953:	11	6	9	9	12	8	9	7
961:	7	5	15	17	15	8	16	38
969:	42	14	6	7	7	6	5	4
977:	6	4	9	1	6	4	6	2
985:	5	4	7	6	3	8	10	6
993:	4	6	7	10	4	5	9	10
1001:	15	2	5	2	7	7	11	7
1009:	7	7	4	7	10	9	4	4
1017:	3	5	5	7	7	5	10	4
1025:	9	11	6	8	4	3	7	6
1033:	5	6	5	3	10	7	3	5
1041:	8	10	5	5	5	3	4	8
1049:	6	3	6	9	8	6	5	9
1057:	5	9	9	10	7	6	12	6
1065:	4	7	6	3	4	11	11	9
1073:	5	6	5	5	4	10	7	9
1081:	8	5	8	8	7	11	9	9
1089:	6	4	6	11	1	9	3	5
1097:	7	3	10	14	8	5	5	9
1105:	9	12	6	7	7	9	7	5
1113:	12	5	10	2	9	16	20	33
1121:	15	11	7	10	4	13	16	9
1129:	7	5	10	5	2	5	11	6
1137:	11	11	6	5	5	9	10	9
1145:	7	2	7	4	9	7	5	7
1153:	4	8	10	13	10	11	6	9
1161:	5	7	5	11	4	8	5	8
1169:	5	9	4	10	9	11	6	8
1177:	5	5	5	1	6	12	5	6
1185:	9	5	9	5	8	6	10	9
1193:	7	9	5	9	9	9	8	5
1201:	9	8	6	8	5	4	5	8
1209:	7	7	11	10	6	7	14	11
1217:	10	7	6	15	7	5	12	6
1225:	7	8	9	9	9	11	13	13

1233:	7	9	15	14	14	17	11	12

Sample Title: J1V1L4 SAF: RC-107

Channel								
1241:	8	6	5	13	12	6	9	5
1249:	7	6	13	3	8	16	3	4
1257:	4	4	7	3	5	5	10	8
1265:	9	7	8	6	9	7	4	4
1273:	7	7	4	5	6	6	7	9
1281:	9	8	7	3	8	7	4	3
1289:	4	6	4	3	3	5	4	3
1297:	4	5	5	3	2	4	5	7
1305:	5	4	4	9	2	8	7	4
1313:	5	6	3	5	6	4	5	4
1321:	7	3	3	3	1	2	6	4
1329:	0	6	9	3	6	7	7	4
1337:	3	3	4	1	1	7	5	6
1345:	2	2	2	3	1	2	3	3
1353:	2	3	2	6	3	5	2	3
1361:	0	5	1	2	1	2	3	1
1369:	4	1	0	1	3	5	2	6
1377:	4	6	3	3	4	2	3	4
1385:	3	3	2	1	3	3	4	1
1393:	3	2	3	3	5	3	2	3
1401:	9	2	3	1	1	3	3	6
1409:	4	3	2	2	0	5	1	3
1417:	2	4	2	4	1	2	4	1
1425:	1	2	4	2	4	1	2	1
1433:	1	4	4	0	1	5	2	6
1441:	5	1	4	1	2	2	2	4
1449:	2	3	2	3	1	2	2	4
1457:	5	37	210	366	213	34	6	2
1465:	2	3	2	0	0	0	2	5
1473:	1	1	1	0	1	0	0	5
1481:	2	1	1	1	1	5	2	1
1489:	0	0	1	0	2	5	2	4
1497:	2	2	1	5	2	3	0	0
1505:	1	0	1	2	2	0	1	4
1513:	1	0	2	5	2	4	2	0
1521:	1	0	0	2	5	2	4	1
1529:	1	2	0	3	2	1	0	2
1537:	1	3	2	3	2	2	1	2
1545:	1	1	1	0	2	2	4	1
1553:	3	5	0	2	1	1	3	1
1561:	4	2	2	1	1	2	4	1
1569:	1	2	3	0	0	5	2	2
1577:	3	3	1	4	4	2	1	1
1585:	3	7	6	3	5	4	2	6
1593:	1	2	1	0	1	4	1	0
1601:	1	2	2	4	2	3	2	1
1609:	2	1	1	1	3	0	1	2
1617:	0	0	3	3	2	1	2	1
1625:	3	0	0	2	1	4	2	0
1633:	0	2	1	1	0	4	1	0
1641:	1	1	1	1	0	0	1	3
1649:	1	3	1	0	3	0	1	2
1657:	0	2	5	3	4	1	0	2

1665:	0	2	1	0	3	0	0	0

Sample Title: J1V1L4 SAF: RC-107

Channel								
1673:	0	0	0	0	2	1	0	2
1681:	2	4	1	0	1	2	1	0
1689:	0	0	0	0	1	0	0	0
1697:	0	1	1	0	0	2	0	1
1705:	0	0	0	0	2	1	2	0
1713:	1	0	3	0	0	0	0	2
1721:	1	0	0	3	2	1	4	4
1729:	2	3	2	1	1	3	1	0
1737:	2	1	2	1	0	0	1	0
1745:	0	0	1	1	1	0	0	0
1753:	2	1	0	1	1	1	2	2
1761:	4	10	14	17	4	1	1	2
1769:	1	2	0	0	0	0	2	0
1777:	0	1	1	4	1	0	1	1
1785:	0	2	0	2	0	0	0	1
1793:	0	0	1	0	0	0	1	2
1801:	0	4	2	3	1	0	1	2
1809:	0	3	1	1	0	0	1	1
1817:	2	1	2	1	0	0	0	0
1825:	1	1	1	0	2	1	1	0
1833:	0	0	3	0	1	1	2	0
1841:	1	0	2	1	3	1	4	1
1849:	0	1	0	0	2	0	0	1
1857:	1	1	0	0	2	3	0	0
1865:	0	0	0	0	3	1	0	3
1873:	0	1	0	1	2	0	0	1
1881:	0	0	0	0	0	0	2	0
1889:	1	4	2	3	2	0	2	1
1897:	3	0	0	0	1	0	2	3
1905:	0	0	0	0	0	2	0	2
1913:	1	4	1	1	1	1	2	0
1921:	2	3	0	0	0	0	0	2
1929:	1	1	1	1	1	1	1	1
1937:	1	2	0	1	2	1	2	0
1945:	2	1	1	0	1	0	1	1
1953:	1	3	0	3	0	0	1	1
1961:	1	0	0	0	1	1	1	0
1969:	1	0	0	2	2	1	0	1
1977:	1	0	1	1	0	1	0	0
1985:	1	1	0	2	3	0	3	0
1993:	0	0	0	0	0	0	0	1
2001:	0	0	1	1	1	3	0	1
2009:	0	0	0	1	4	2	0	1
2017:	2	0	0	0	2	0	1	0
2025:	1	0	0	1	0	0	1	1
2033:	1	2	2	2	1	1	0	0
2041:	2	0	0	2	4	1	0	1
2049:	2	2	1	0	1	0	2	1
2057:	1	0	2	1	1	1	1	0
2065:	0	1	1	0	0	0	0	1
2073:	0	0	3	1	1	0	0	0
2081:	0	0	1	1	1	1	0	0
2089:	2	0	1	1	1	1	1	1

2097:	1	1	2	4	1	3	4	2

Sample Title: J1V1L4 SAF: RC-107

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

2529:	1	1	0	0	0	0	0	0

Sample Title: J1V1L4 SAF: RC-107

Channel								
2537:	0	2	0	0	0	1	0	1
2545:	0	1	0	2	0	2	0	1
2553:	0	0	1	0	1	0	0	0
2561:	1	0	0	0	2	1	0	2
2569:	0	0	0	2	0	0	0	0
2577:	0	0	0	0	0	0	0	1
2585:	0	1	1	0	0	0	0	0
2593:	0	1	1	1	0	0	1	1
2601:	0	1	1	0	2	1	0	0
2609:	1	7	10	32	28	11	3	0
2617:	0	0	1	0	0	0	0	0
2625:	0	0	1	0	0	0	0	0
2633:	0	0	1	0	0	0	0	0
2641:	0	0	1	0	0	0	0	1
2649:	1	0	0	0	0	0	0	1
2657:	0	0	0	1	0	0	0	0
2665:	2	0	0	0	0	1	0	0
2673:	1	1	1	0	0	0	0	0
2681:	0	1	0	0	0	1	1	0
2689:	0	1	0	1	0	1	0	0
2697:	1	1	1	0	0	2	0	0
2705:	0	0	0	1	0	0	0	1
2713:	0	1	0	0	0	1	0	0
2721:	0	0	0	0	1	0	0	0
2729:	1	0	0	1	1	0	0	0
2737:	0	0	1	0	0	1	0	0
2745:	0	0	0	0	0	1	1	0
2753:	0	0	0	0	0	0	1	0
2761:	0	0	1	0	3	0	1	0
2769:	2	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	1	1	0	0	0
2793:	1	0	0	0	0	0	0	0
2801:	0	0	0	0	0	0	2	0
2809:	1	0	0	0	0	1	1	0
2817:	0	0	0	1	0	1	0	0
2825:	0	0	1	1	0	0	1	0
2833:	0	0	0	0	1	0	0	0
2841:	0	1	0	0	1	0	0	0
2849:	0	0	0	1	0	0	0	1
2857:	0	0	0	0	0	0	1	0
2865:	0	1	0	1	1	0	0	0
2873:	0	0	0	1	0	0	0	0
2881:	0	0	1	0	0	1	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	1	1	1	0	0
2905:	0	0	1	0	0	0	0	0
2913:	1	0	1	0	0	0	0	1
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	1	0	0	2	0	0	0	0
2945:	0	0	0	0	0	0	1	0
2953:	0	1	0	0	0	1	0	0

2961:	0	0	0	1	1	0	0	0

Sample Title: J1V1L4 SAF: RC-107

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

3393:	0	0	0	0	0	0	0	1

Sample Title: J1V1L4 SAF: RC-107

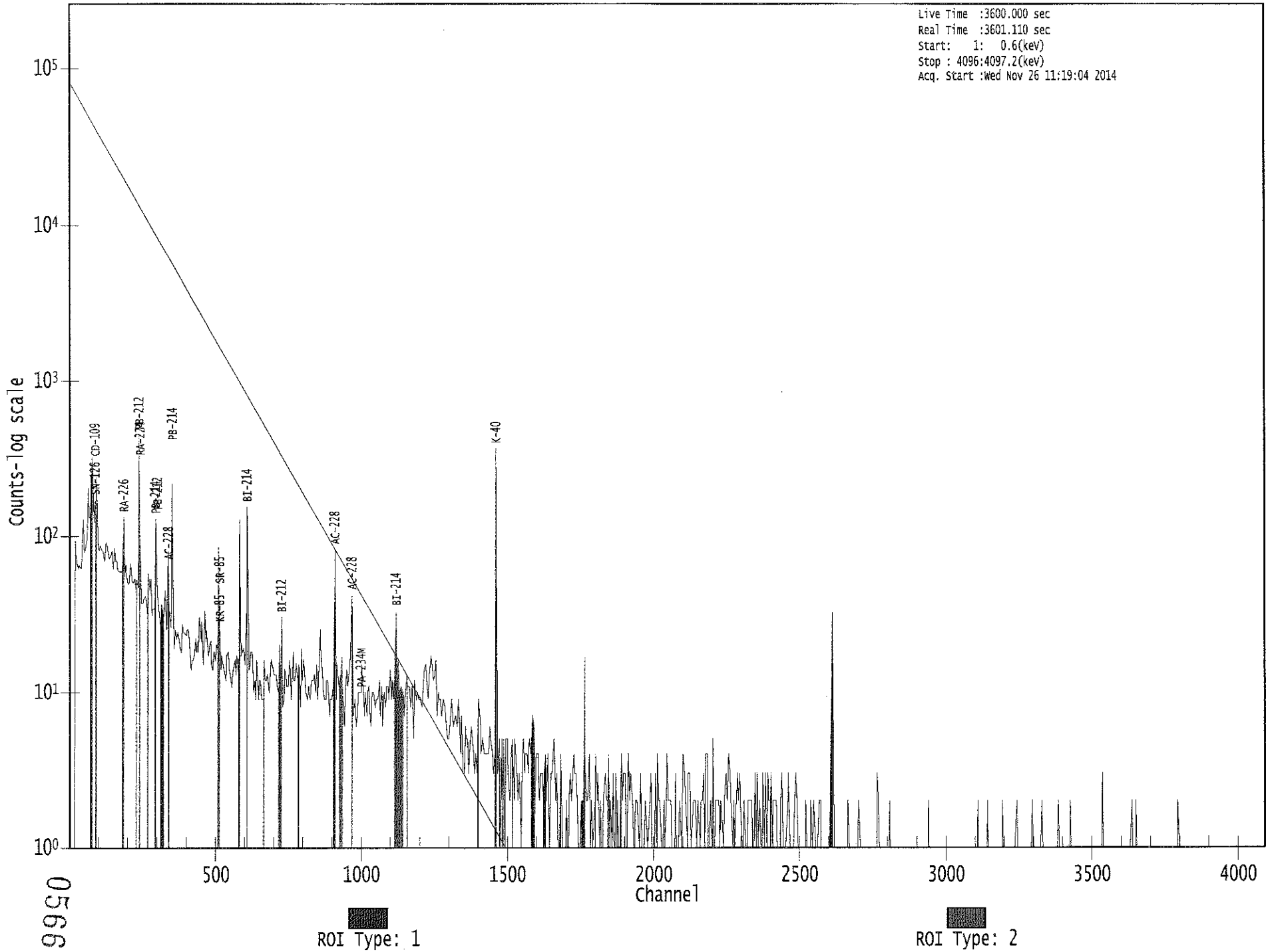
Channel								
3401:	1	0	0	0	0	0	0	0
3409:	0	0	1	0	1	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	2	0	0	0	0	0	0
3433:	0	0	1	1	0	0	0	0
3441:	0	0	0	0	0	1	0	0
3449:	0	0	0	0	0	1	0	0
3457:	0	0	0	0	0	1	0	0
3465:	0	0	0	0	0	0	0	0
3473:	1	1	0	1	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	1	0	0	0	0	1	0
3497:	0	1	1	0	0	0	0	1
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	1	0	0	0	1	0
3529:	0	0	0	0	0	0	0	3
3537:	0	0	0	0	0	0	0	1
3545:	0	0	0	0	1	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	1	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	1	0	0	0	0	0
3585:	1	1	1	0	0	0	0	1
3593:	0	0	1	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	1	0	0	1	0	1	0
3617:	1	1	1	1	0	0	0	1
3625:	0	0	0	0	0	1	0	0
3633:	1	1	0	2	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	2	0	0	0	0	0	0
3657:	1	0	0	0	0	0	0	0
3665:	0	0	0	1	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	1	0	0	0	0
3705:	0	0	1	0	0	0	0	0
3713:	0	0	1	0	0	1	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	1	0	0	1	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	1	0	0	0	0	0
3753:	0	0	0	0	0	0	0	1
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	1	0
3785:	0	0	0	0	0	0	0	0
3793:	2	0	0	0	0	0	1	0
3801:	0	0	1	0	0	0	1	0
3809:	0	0	1	0	0	0	0	0
3817:	0	0	0	0	0	1	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: J1V1L4 SAF: RC-107

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	1	0	0	0	0	0	0	0
3849:	0	1	0	0	0	0	0	0
3857:	0	0	1	0	1	0	0	0
3865:	1	0	0	0	0	0	0	0
3873:	1	0	0	0	0	0	1	0
3881:	0	0	1	0	0	0	0	1
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	1	0	0	0	0
3929:	0	0	0	0	0	1	0	1
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	1	0	0	0	0
3953:	0	0	0	0	1	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	1	1	0	0	1	1	1
3977:	0	0	0	1	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	1	0	0
4001:	0	1	0	0	0	0	1	1
4009:	1	0	1	0	0	0	0	0
4017:	0	1	1	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	1	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	1	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

0000015643.CNF



9960 056

RB 11/26/14

Apex-Gamma

Analysis Report for 1411131-13
J1V1L5 SAF: RC-107

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-13
Sample Description	: J1V1L5 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.020E+02 grams
Facility	: Countroom
Sample Taken On	: 11/24/2014 8:59:12AM
Acquisition Started	: 11/26/2014 11:54:27AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1402
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)	: 7 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/2/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15645

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG 11/26/14

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 12:54:32PM
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	76.02	76.10	0.0000	0.00
2	85.13	85.21	0.0000	0.00
3	89.82	89.90	0.0000	0.00
4	92.95	93.03	0.0000	0.00
5	122.45	122.51	0.0000	0.00
6	128.80	128.86	0.0000	0.00
7	154.40	154.45	0.0000	0.00
8	186.66	186.69	0.0000	0.00
9	209.26	209.28	0.0000	0.00
10	239.15	239.14	0.0000	0.00
11	269.55	269.53	0.0000	0.00
12	277.48	277.45	0.0000	0.00
13	295.23	295.19	0.0000	0.00
14	327.90	327.85	0.0000	0.00
15	338.13	338.08	0.0000	0.00
16	351.86	351.79	0.0000	0.00
17	439.88	439.77	0.0000	0.00
18	476.96	476.83	0.0000	0.00
19	510.45	510.31	0.0000	0.00
20	519.51	519.36	0.0000	0.00
21	565.98	565.81	0.0000	0.00
22	582.97	582.79	0.0000	0.00
23	598.03	597.84	0.0000	0.00
24	601.36	601.17	0.0000	0.00
25	609.14	608.95	0.0000	0.00
26	616.14	615.94	0.0000	0.00
27	628.93	628.73	0.0000	0.00
28	727.23	726.98	0.0000	0.00
29	767.87	767.60	0.0000	0.00
30	849.18	848.88	0.0000	0.00
31	856.47	856.17	0.0000	0.00
32	860.29	859.98	0.0000	0.00
33	867.65	867.34	0.0000	0.00
34	910.98	910.65	0.0000	0.00
35	964.76	964.42	0.0000	0.00
36	968.86	968.51	0.0000	0.00
37	1069.70	1069.31	0.0000	0.00
38	1119.97	1119.56	0.0000	0.00
39	1124.62	1124.21	0.0000	0.00
40	1237.14	1236.69	0.0000	0.00
41	1377.07	1376.57	0.0000	0.00
42	1401.81	1401.30	0.0000	0.00

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1407.56	1407.06	0.0000	0.00
44	1426.15	1425.64	0.0000	0.00
45	1460.33	1459.80	0.0000	0.00
46	1521.56	1521.02	0.0000	0.00
47	1587.71	1587.15	0.0000	0.00
48	1763.91	1763.30	0.0000	0.00
49	1846.04	1845.42	0.0000	0.00
50	2102.76	2102.09	0.0000	0.00
51	2117.59	2116.91	0.0000	0.00
52	2203.54	2202.85	0.0000	0.00
53	2336.60	2335.89	0.0000	0.00
54	2358.10	2357.38	0.0000	0.00
55	2410.52	2409.80	0.0000	0.00
56	2612.92	2612.18	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 12:54:32PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.02	71 -	80	76.10	7.88E+02	125.36	1.79E+03	3.74
M	2	85.13	82 -	95	85.21	4.85E+01	52.92	6.77E+02	1.21
m	3	89.82	82 -	95	89.90	7.84E+01	47.22	4.58E+02	1.11
m	4	92.95	82 -	95	93.03	1.68E+02	56.85	5.66E+02	1.23
	5	122.45	120 -	125	122.51	5.22E+01	61.57	7.16E+02	2.95
	6	128.80	126 -	132	128.86	8.48E+01	68.38	7.84E+02	1.89
	7	154.40	151 -	158	154.45	7.60E+01	73.35	8.42E+02	2.77
	8	186.66	183 -	191	186.69	2.18E+02	78.60	8.09E+02	1.49
	9	209.26	206 -	212	209.28	6.21E+01	60.60	6.16E+02	1.59
	10	239.15	234 -	243	239.14	8.26E+02	92.47	7.48E+02	1.76
	11	269.55	265 -	272	269.53	8.81E+01	54.92	4.44E+02	1.51
	12	277.48	274 -	280	277.45	5.44E+01	48.24	3.81E+02	1.96
	13	295.23	292 -	298	295.19	1.44E+02	53.64	4.21E+02	1.43
	14	327.90	324 -	331	327.85	5.28E+01	47.50	3.42E+02	1.13
M	15	338.13	334 -	358	338.08	1.34E+02	39.82	2.19E+02	2.07
m	16	351.86	334 -	358	351.79	3.24E+02	44.73	1.52E+02	1.52
	17	439.88	435 -	445	439.77	4.05E+01	45.84	2.59E+02	3.13
	18	476.96	473 -	481	476.83	3.89E+01	36.85	1.86E+02	5.09
	19	510.45	507 -	515	510.31	1.49E+02	44.18	2.12E+02	2.92
	20	519.51	515 -	524	519.36	4.55E+01	37.95	1.79E+02	7.31
	21	565.98	561 -	570	565.81	3.95E+01	36.07	1.59E+02	5.99
	22	582.97	579 -	585	582.79	2.14E+02	41.27	1.54E+02	1.60
M	23	598.03	596 -	604	597.84	2.53E+01	19.49	7.49E+01	1.86
m	24	601.36	596 -	604	601.17	4.03E+01	28.67	1.31E+02	1.86
	25	609.14	605 -	613	608.95	2.50E+02	46.76	1.78E+02	1.50
	26	616.14	614 -	618	615.94	2.37E+01	19.46	6.07E+01	2.01
	27	628.93	626 -	631	628.73	1.86E+01	23.58	9.69E+01	3.39
	28	727.23	723 -	729	726.98	2.84E+01	28.73	1.29E+02	1.55
	29	767.87	761 -	775	767.60	8.24E+01	43.61	1.67E+02	8.67
	30	849.18	845 -	854	848.88	2.49E+01	26.94	8.81E+01	4.87
M	31	856.47	854 -	863	856.17	1.90E+01	15.82	4.39E+01	2.31
m	32	860.29	854 -	863	859.98	3.75E+01	22.37	5.81E+01	2.31
	33	867.65	864 -	871	867.34	3.50E+01	22.89	6.40E+01	5.69
	34	910.98	906 -	915	910.65	1.50E+02	37.51	1.16E+02	1.98
M	35	964.76	961 -	973	964.42	2.26E+01	25.19	9.89E+01	2.41
m	36	968.86	961 -	973	968.51	7.95E+01	27.46	7.59E+01	2.14
	37	1069.70	1067 -	1071	1069.31	1.80E+01	15.42	3.61E+01	1.99
M	38	1119.97	1116 -	1132	1119.56	5.29E+01	26.66	8.49E+01	2.32
m	39	1124.62	1116 -	1132	1124.21	1.80E+01	24.14	9.53E+01	2.31
	40	1237.14	1234 -	1241	1236.69	2.53E+01	30.33	1.37E+02	1.24

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1377.07	1372 -	1380	1376.57	1.82E+01	16.67	3.17E+01	2.34
M	42	1401.81	1398 -	1409	1401.30	1.62E+01	9.00	4.69E+00	4.03
m	43	1407.56	1398 -	1409	1407.06	1.80E+01	9.64	1.54E+00	2.60
	44	1426.15	1418 -	1432	1425.64	1.94E+01	19.00	2.91E+01	12.52
	45	1460.33	1454 -	1465	1459.80	7.83E+02	60.10	6.00E+01	2.11
	46	1521.56	1516 -	1523	1521.02	9.86E+00	9.38	8.29E+00	1.05
	47	1587.71	1584 -	1590	1587.15	1.55E+01	11.70	1.30E+01	1.64
	48	1763.91	1759 -	1766	1763.30	4.30E+01	17.78	2.40E+01	2.07
	49	1846.04	1839 -	1850	1845.42	1.32E+01	14.00	1.76E+01	6.68
	50	2102.76	2098 -	2107	2102.09	2.30E+01	9.59	0.00E+00	2.16
	51	2117.59	2112 -	2120	2116.91	1.10E+01	6.63	0.00E+00	2.94
	52	2203.54	2199 -	2206	2202.85	1.20E+01	9.80	8.00E+00	2.00
	53	2336.60	2333 -	2339	2335.89	5.57E+00	6.34	2.86E+00	1.78
	54	2358.10	2355 -	2360	2357.38	5.00E+00	7.07	6.00E+00	1.62
	55	2410.52	2405 -	2414	2409.80	8.68E+00	8.31	4.64E+00	3.32
	56	2612.92	2607 -	2617	2612.18	7.40E+01	17.20	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 : 11/26/2014 12:54:32PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	76.02	71 -	80	7.88E+02	125.36	1.79E+03	9.21E+01
M	2	85.13	82 -	95	4.85E+01	52.92	6.77E+02	4.28E+01
m	3	89.82	82 -	95	7.84E+01	47.22	4.58E+02	3.52E+01
m	4	92.95	82 -	95	1.68E+02	56.85	5.66E+02	3.91E+01
	5	122.45	120 -	125	5.22E+01	61.57	7.16E+02	4.92E+01
	6	128.80	126 -	132	8.48E+01	68.38	7.84E+02	5.41E+01
	7	154.40	151 -	158	7.60E+01	73.35	8.42E+02	5.86E+01
	8	186.66	183 -	191	2.18E+02	78.60	8.09E+02	5.99E+01
	9	209.26	206 -	212	6.21E+01	60.60	6.16E+02	4.81E+01
	10	239.15	234 -	243	8.26E+02	92.47	7.48E+02	5.95E+01
	11	269.55	265 -	272	8.81E+01	54.92	4.44E+02	4.24E+01
	12	277.48	274 -	280	5.44E+01	48.24	3.81E+02	3.78E+01

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	13	295.23	292 -	298	1.44E+02	53.64	4.21E+02	3.94E+01
	14	327.90	324 -	331	5.28E+01	47.50	3.42E+02	3.72E+01
M	15	338.13	334 -	358	1.34E+02	39.82	2.19E+02	2.43E+01
m	16	351.86	334 -	358	3.24E+02	44.73	1.52E+02	2.03E+01
	17	439.88	435 -	445	4.05E+01	45.84	2.59E+02	3.62E+01
	18	476.96	473 -	481	3.89E+01	36.85	1.86E+02	2.85E+01
	19	510.45	507 -	515	1.49E+02	44.18	2.12E+02	3.03E+01
	20	519.51	515 -	524	4.55E+01	37.95	1.79E+02	2.92E+01
	21	565.98	561 -	570	3.95E+01	36.07	1.59E+02	2.78E+01
	22	582.97	579 -	585	2.14E+02	41.27	1.54E+02	2.39E+01
M	23	598.03	596 -	604	2.53E+01	19.49	7.49E+01	1.42E+01
m	24	601.36	596 -	604	4.03E+01	28.67	1.31E+02	1.88E+01
	25	609.14	605 -	613	2.50E+02	46.76	1.78E+02	2.83E+01
	26	616.14	614 -	618	2.37E+01	19.46	6.07E+01	1.38E+01
	27	628.93	626 -	631	1.86E+01	23.58	9.69E+01	1.80E+01
	28	727.23	723 -	729	2.84E+01	28.73	1.29E+02	2.19E+01
	29	767.87	761 -	775	8.24E+01	43.61	1.67E+02	3.26E+01
	30	849.18	845 -	854	2.49E+01	26.94	8.81E+01	2.06E+01
M	31	856.47	854 -	863	1.90E+01	15.82	4.39E+01	1.09E+01
m	32	860.29	854 -	863	3.75E+01	22.37	5.81E+01	1.25E+01
	33	867.65	864 -	871	3.50E+01	22.89	6.40E+01	1.61E+01
	34	910.98	906 -	915	1.50E+02	37.51	1.16E+02	2.33E+01
M	35	964.76	961 -	973	2.26E+01	25.19	9.89E+01	1.63E+01
m	36	968.86	961 -	973	7.95E+01	27.46	7.59E+01	1.43E+01
	37	1069.70	1067 -	1071	1.80E+01	15.42	3.61E+01	1.06E+01
M	38	1119.97	1116 -	1132	5.29E+01	26.66	8.49E+01	1.51E+01
m	39	1124.62	1116 -	1132	1.80E+01	24.14	9.53E+01	1.60E+01
	40	1237.14	1234 -	1241	2.53E+01	30.33	1.37E+02	2.35E+01
	41	1377.07	1372 -	1380	1.82E+01	16.67	3.17E+01	1.18E+01
M	42	1401.81	1398 -	1409	1.62E+01	9.00	4.69E+00	3.56E+00
m	43	1407.56	1398 -	1409	1.80E+01	9.64	1.54E+00	2.04E+00
	44	1426.15	1418 -	1432	1.94E+01	19.00	2.91E+01	1.38E+01
	45	1460.33	1454 -	1465	7.83E+02	60.10	6.00E+01	1.80E+01
	46	1521.56	1516 -	1523	9.86E+00	9.38	8.29E+00	5.73E+00
	47	1587.71	1584 -	1590	1.55E+01	11.70	1.30E+01	7.12E+00
	48	1763.91	1759 -	1766	4.30E+01	17.78	2.40E+01	9.86E+00
	49	1846.04	1839 -	1850	1.32E+01	14.00	1.76E+01	9.84E+00
	50	2102.76	2098 -	2107	2.30E+01	9.59	0.00E+00	0.00E+00
	51	2117.59	2112 -	2120	1.10E+01	6.63	0.00E+00	0.00E+00
	52	2203.54	2199 -	2206	1.20E+01	9.80	8.00E+00	5.70E+00
	53	2336.60	2333 -	2339	5.57E+00	6.34	2.86E+00	3.48E+00
	54	2358.10	2355 -	2360	5.00E+00	7.07	6.00E+00	4.50E+00
	55	2410.52	2405 -	2414	8.68E+00	8.31	4.64E+00	4.81E+00
	56	2612.92	2607 -	2617	7.40E+01	17.20	0.00E+00	0.00E+00

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 12:54:32PM

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
	1	76.02	71 -	80	76.10	7.88E+02	125.36	1.79E+03	.....
M	2	85.13	82 -	95	85.21	4.85E+01	52.92	6.77E+02	TH-231
m	3	89.82	82 -	95	89.90	7.84E+01	47.22	4.58E+02	.....
m	4	92.95	82 -	95	93.03	1.68E+02	56.85	5.66E+02	GA-67
	5	122.45	120 -	125	122.51	5.22E+01	61.57	7.16E+02	CO-57 EU-154 EU-152
	6	128.80	126 -	132	128.86	8.48E+01	68.38	7.84E+02	.....
	7	154.40	151 -	158	154.45	7.60E+01	73.35	8.42E+02	.....
	8	186.66	183 -	191	186.69	2.18E+02	78.60	8.09E+02	RA-226
	9	209.26	206 -	212	209.28	6.21E+01	60.60	6.16E+02	GA-67 CM-243
	10	239.15	234 -	243	239.14	8.26E+02	92.47	7.48E+02	PB-212
	11	269.55	265 -	272	269.53	8.81E+01	54.92	4.44E+02	.....
	12	277.48	274 -	280	277.45	5.44E+01	48.24	3.81E+02	CM-243 NP-239
	13	295.23	292 -	298	295.19	1.44E+02	53.64	4.21E+02	PB-214
	14	327.90	324 -	331	327.85	5.28E+01	47.50	3.42E+02	LA-140
M	15	338.13	334 -	358	338.08	1.34E+02	39.82	2.19E+02	AC-228
m	16	351.86	334 -	358	351.79	3.24E+02	44.73	1.52E+02	PB-214
	17	439.88	435 -	445	439.77	4.05E+01	45.84	2.59E+02	.....
	18	476.96	473 -	481	476.83	3.89E+01	36.85	1.86E+02	PM-144 BE-7
	19	510.45	507 -	515	510.31	1.49E+02	44.18	2.12E+02	.....
	20	519.51	515 -	524	519.36	4.55E+01	37.95	1.79E+02	RB-83
	21	565.98	561 -	570	565.81	3.95E+01	36.07	1.59E+02	.....
	22	582.97	579 -	585	582.79	2.14E+02	41.27	1.54E+02	TL-208
M	23	598.03	596 -	604	597.84	2.53E+01	19.49	7.49E+01	.....
m	24	601.36	596 -	604	601.17	4.03E+01	28.67	1.31E+02	SB-125
	25	609.14	605 -	613	608.95	2.50E+02	46.76	1.78E+02	BI-214

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	26	616.14	614 -	618	615.94	2.37E+01	19.46	6.07E+01	.....
	27	628.93	626 -	631	628.73	1.86E+01	23.58	9.69E+01	.....
	28	727.23	723 -	729	726.98	2.84E+01	28.73	1.29E+02	BI-212
	29	767.87	761 -	775	767.60	8.24E+01	43.61	1.67E+02	.....
	30	849.18	845 -	854	848.88	2.49E+01	26.94	8.81E+01	.....
M	31	856.47	854 -	863	856.17	1.90E+01	15.82	4.39E+01	.....
m	32	860.29	854 -	863	859.98	3.75E+01	22.37	5.81E+01	TL-208
	33	867.65	864 -	871	867.34	3.50E+01	22.89	6.40E+01	.....
	34	910.98	906 -	915	910.65	1.50E+02	37.51	1.16E+02	AC-228
M	35	964.76	961 -	973	964.42	2.26E+01	25.19	9.89E+01	EU-152
m	36	968.86	961 -	973	968.51	7.95E+01	27.46	7.59E+01	AC-228
	37	1069.70	1067 -	1071	1069.31	1.80E+01	15.42	3.61E+01	.....
M	38	1119.97	1116 -	1132	1119.56	5.29E+01	26.66	8.49E+01	BI-214 SC-46
m	39	1124.62	1116 -	1132	1124.21	1.80E+01	24.14	9.53E+01	.....
	40	1237.14	1234 -	1241	1236.69	2.53E+01	30.33	1.37E+02	.....
	41	1377.07	1372 -	1380	1376.57	1.82E+01	16.67	3.17E+01	.....
M	42	1401.81	1398 -	1409	1401.30	1.62E+01	9.00	4.69E+00	.....
m	43	1407.56	1398 -	1409	1407.06	1.80E+01	9.64	1.54E+00	EU-152
	44	1426.15	1418 -	1432	1425.64	1.94E+01	19.00	2.91E+01	.....
	45	1460.33	1454 -	1465	1459.80	7.83E+02	60.10	6.00E+01	K-40
	46	1521.56	1516 -	1523	1521.02	9.86E+00	9.38	8.29E+00	.....
	47	1587.71	1584 -	1590	1587.15	1.55E+01	11.70	1.30E+01	.....
	48	1763.91	1759 -	1766	1763.30	4.30E+01	17.78	2.40E+01	BI-214
	49	1846.04	1839 -	1850	1845.42	1.32E+01	14.00	1.76E+01	.....
	50	2102.76	2098 -	2107	2102.09	2.30E+01	9.59	0.00E+00	.....
	51	2117.59	2112 -	2120	2116.91	1.10E+01	6.63	0.00E+00	.....
	52	2203.54	2199 -	2206	2202.85	1.20E+01	9.80	8.00E+00	BI-214
	53	2336.60	2333 -	2339	2335.89	5.57E+00	6.34	2.86E+00	.....
	54	2358.10	2355 -	2360	2357.38	5.00E+00	7.07	6.00E+00	.....
	55	2410.52	2405 -	2414	2409.80	8.68E+00	8.31	4.64E+00	.....
	56	2612.92	2607 -	2617	2612.18	7.40E+01	17.20	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 12:54:32PM

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.02	7.88E+02	125.36	2.73E-02	3.31E-03
M	2	85.13	4.85E+01	52.92	2.83E-02	4.22E-03
m	3	89.82	7.84E+01	47.22	2.85E-02	4.42E-03
m	4	92.95	1.68E+02	56.85	2.85E-02	4.29E-03
	5	122.45	5.22E+01	61.57	2.66E-02	2.98E-03
	6	128.80	8.48E+01	68.38	2.60E-02	2.79E-03
	7	154.40	7.60E+01	73.35	2.37E-02	2.02E-03
	8	186.66	2.18E+02	78.60	2.10E-02	1.65E-03
	9	209.26	6.21E+01	60.60	1.95E-02	1.63E-03
	10	239.15	8.26E+02	92.47	1.78E-02	1.60E-03
	11	269.55	8.81E+01	54.92	1.65E-02	1.57E-03
	12	277.48	5.44E+01	48.24	1.61E-02	1.56E-03
	13	295.23	1.44E+02	53.64	1.55E-02	1.48E-03
	14	327.90	5.28E+01	47.50	1.44E-02	1.32E-03
M	15	338.13	1.34E+02	39.82	1.41E-02	1.28E-03
m	16	351.86	3.24E+02	44.73	1.37E-02	1.21E-03
	17	439.88	4.05E+01	45.84	1.18E-02	9.71E-04
	18	476.96	3.89E+01	36.85	1.11E-02	9.33E-04
	19	510.45	1.49E+02	44.18	1.06E-02	8.99E-04
	20	519.51	4.55E+01	37.95	1.04E-02	8.90E-04
	21	565.98	3.95E+01	36.07	9.80E-03	8.42E-04
	22	582.97	2.14E+02	41.27	9.58E-03	8.25E-04
M	23	598.03	2.53E+01	19.49	9.40E-03	8.10E-04
m	24	601.36	4.03E+01	28.67	9.36E-03	8.06E-04
	25	609.14	2.50E+02	46.76	9.27E-03	7.99E-04
	26	616.14	2.37E+01	19.46	9.19E-03	7.91E-04
	27	628.93	1.86E+01	23.58	9.05E-03	7.78E-04
	28	727.23	2.84E+01	28.73	8.09E-03	7.03E-04
	29	767.87	8.24E+01	43.61	7.75E-03	6.77E-04
	30	849.18	2.49E+01	26.94	7.14E-03	6.25E-04
M	31	856.47	1.90E+01	15.82	7.09E-03	6.20E-04
m	32	860.29	3.75E+01	22.37	7.07E-03	6.18E-04
	33	867.65	3.50E+01	22.89	7.02E-03	6.13E-04
	34	910.98	1.50E+02	37.51	6.75E-03	5.87E-04
M	35	964.76	2.26E+01	25.19	6.44E-03	5.59E-04
m	36	968.86	7.95E+01	27.46	6.42E-03	5.57E-04
	37	1069.70	1.80E+01	15.42	5.92E-03	5.06E-04
M	38	1119.97	5.29E+01	26.66	5.70E-03	4.80E-04
m	39	1124.62	1.80E+01	24.14	5.69E-03	4.78E-04
	40	1237.14	2.53E+01	30.33	5.27E-03	4.82E-04
	41	1377.07	1.82E+01	16.67	4.87E-03	5.08E-04
M	42	1401.81	1.62E+01	9.00	4.81E-03	4.98E-04
m	43	1407.56	1.80E+01	9.64	4.79E-03	4.95E-04
	44	1426.15	1.94E+01	19.00	4.75E-03	4.88E-04
	45	1460.33	7.83E+02	60.10	4.67E-03	4.73E-04
	46	1521.56	9.86E+00	9.38	4.55E-03	4.48E-04
	47	1587.71	1.55E+01	11.70	4.43E-03	4.21E-04
	48	1763.91	4.30E+01	17.78	4.19E-03	3.48E-04
	49	1846.04	1.32E+01	14.00	4.10E-03	3.18E-04
	50	2102.76	2.30E+01	9.59	3.95E-03	3.18E-04
	51	2117.59	1.10E+01	6.63	3.95E-03	3.18E-04
	52	2203.54	1.20E+01	9.80	3.93E-03	3.18E-04
	53	2336.60	5.57E+00	6.34	3.94E-03	3.18E-04

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2358.10	5.00E+00	7.07	3.94E-03	3.18E-04
55	2410.52	8.68E+00	8.31	3.95E-03	3.18E-04
56	2612.92	7.40E+01	17.20	4.05E-03	3.18E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 12:54:32PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015432.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.02	7.88E+02	125.36			7.88E+02	1.25E+02
M	2	85.13	4.85E+01	52.92			4.85E+01	5.29E+01
m	3	89.82	7.84E+01	47.22			7.84E+01	4.72E+01
m	4	92.95	1.68E+02	56.85	5.01E+01	1.49E+01	1.18E+02	5.88E+01
	5	122.45	5.22E+01	61.57			5.22E+01	6.16E+01
	6	128.80	8.48E+01	68.38			8.48E+01	6.84E+01
	7	154.40	7.60E+01	73.35			7.60E+01	7.33E+01
	8	186.66	2.18E+02	78.60	4.13E+01	8.14E+00	1.77E+02	7.90E+01
	9	209.26	6.21E+01	60.60			6.21E+01	6.06E+01
	10	239.15	8.26E+02	92.47	1.44E+01	7.33E+00	8.12E+02	9.28E+01
	11	269.55	8.81E+01	54.92			8.81E+01	5.49E+01
	12	277.48	5.44E+01	48.24			5.44E+01	4.82E+01
	13	295.23	1.44E+02	53.64	7.91E+00	6.01E+00	1.36E+02	5.40E+01
	14	327.90	5.28E+01	47.50			5.28E+01	4.75E+01
M	15	338.13	1.34E+02	39.82	5.18E+00	5.53E+00	1.29E+02	4.02E+01
m	16	351.86	3.24E+02	44.73	1.67E+01	5.51E+00	3.07E+02	4.51E+01
	17	439.88	4.05E+01	45.84			4.05E+01	4.58E+01
	18	476.96	3.89E+01	36.85			3.89E+01	3.69E+01
	19	510.45	1.49E+02	44.18	7.84E+01	5.24E+00	7.04E+01	4.45E+01
	20	519.51	4.55E+01	37.95			4.55E+01	3.79E+01
	21	565.98	3.95E+01	36.07			3.95E+01	3.61E+01
	22	582.97	2.14E+02	41.27	6.02E+00	3.90E+00	2.08E+02	4.15E+01
M	23	598.03	2.53E+01	19.49			2.53E+01	1.95E+01
m	24	601.36	4.03E+01	28.67			4.03E+01	2.87E+01
	25	609.14	2.50E+02	46.76	1.28E+01	3.94E+00	2.37E+02	4.69E+01
	26	616.14	2.37E+01	19.46			2.37E+01	1.95E+01
	27	628.93	1.86E+01	23.58			1.86E+01	2.36E+01

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	28	727.23	2.84E+01	28.73			2.84E+01	2.87E+01
	29	767.87	8.24E+01	43.61			8.24E+01	4.36E+01
	30	849.18	2.49E+01	26.94			2.49E+01	2.69E+01
M	31	856.47	1.90E+01	15.82			1.90E+01	1.58E+01
m	32	860.29	3.75E+01	22.37			3.75E+01	2.24E+01
	33	867.65	3.50E+01	22.89			3.50E+01	2.29E+01
	34	910.98	1.50E+02	37.51	5.80E+00	2.67E+00	1.44E+02	3.76E+01
M	35	964.76	2.26E+01	25.19			2.26E+01	2.52E+01
m	36	968.86	7.95E+01	27.46	1.26E+00	2.25E+00	7.83E+01	2.76E+01
	37	1069.70	1.80E+01	15.42			1.80E+01	1.54E+01
M	38	1119.97	5.29E+01	26.66	1.53E+00	2.85E+00	5.14E+01	2.68E+01
m	39	1124.62	1.80E+01	24.14			1.80E+01	2.41E+01
	40	1237.14	2.53E+01	30.33			2.53E+01	3.03E+01
	41	1377.07	1.82E+01	16.67	0.00E+00	0.00E+00	1.82E+01	1.67E+01
M	42	1401.81	1.62E+01	9.00			1.62E+01	9.00E+00
m	43	1407.56	1.80E+01	9.64			1.80E+01	9.64E+00
	44	1426.15	1.94E+01	19.00			1.94E+01	1.90E+01
	45	1460.33	7.83E+02	60.10	1.25E+01	2.44E+00	7.71E+02	6.01E+01
	46	1521.56	9.86E+00	9.38			9.86E+00	9.38E+00
	47	1587.71	1.55E+01	11.70			1.55E+01	1.17E+01
	48	1763.91	4.30E+01	17.78	2.65E+00	2.14E+00	4.04E+01	1.79E+01
	49	1846.04	1.32E+01	14.00			1.32E+01	1.40E+01
	50	2102.76	2.30E+01	9.59			2.30E+01	9.59E+00
	51	2117.59	1.10E+01	6.63			1.10E+01	6.63E+00
	52	2203.54	1.20E+01	9.80	4.42E-01	1.03E+00	1.16E+01	9.85E+00
	53	2336.60	5.57E+00	6.34			5.57E+00	6.34E+00
	54	2358.10	5.00E+00	7.07			5.00E+00	7.07E+00
	55	2410.52	8.68E+00	8.31			8.68E+00	8.31E+00
	56	2612.92	7.40E+01	17.20	8.41E+00	1.73E+00	6.56E+01	1.73E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 12:54:32PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015432.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	76.02	7.88E+02	125.36			7.88E+02	1.25E+02
M	2	85.13	4.85E+01	52.92			4.85E+01	5.29E+01
m	3	89.82	7.84E+01	47.22			7.84E+01	4.72E+01
m	4	92.95	1.68E+02	56.85	5.01E+01	1.49E+01	1.18E+02	5.88E+01
	5	122.45	5.22E+01	61.57			5.22E+01	6.16E+01
	6	128.80	8.48E+01	68.38			8.48E+01	6.84E+01
	7	154.40	7.60E+01	73.35			7.60E+01	7.33E+01
	8	186.66	2.18E+02	78.60	4.13E+01	8.14E+00	1.77E+02	7.90E+01
	9	209.26	6.21E+01	60.60			6.21E+01	6.06E+01
	10	239.15	8.26E+02	92.47	1.44E+01	7.33E+00	8.12E+02	9.28E+01
	11	269.55	8.81E+01	54.92			8.81E+01	5.49E+01
	12	277.48	5.44E+01	48.24			5.44E+01	4.82E+01
	13	295.23	1.44E+02	53.64	7.91E+00	6.01E+00	1.36E+02	5.40E+01
	14	327.90	5.28E+01	47.50			5.28E+01	4.75E+01
M	15	338.13	1.34E+02	39.82	5.18E+00	5.53E+00	1.29E+02	4.02E+01
m	16	351.86	3.24E+02	44.73	1.67E+01	5.51E+00	3.07E+02	4.51E+01
	17	439.88	4.05E+01	45.84			4.05E+01	4.58E+01
	18	476.96	3.89E+01	36.85			3.89E+01	3.69E+01
	19	510.45	1.49E+02	44.18	7.84E+01	5.24E+00	7.04E+01	4.45E+01
	20	519.51	4.55E+01	37.95			4.55E+01	3.79E+01
	21	565.98	3.95E+01	36.07			3.95E+01	3.61E+01
	22	582.97	2.14E+02	41.27	6.02E+00	3.90E+00	2.08E+02	4.15E+01
M	23	598.03	2.53E+01	19.49			2.53E+01	1.95E+01
m	24	601.36	4.03E+01	28.67			4.03E+01	2.87E+01
	25	609.14	2.50E+02	46.76	1.28E+01	3.94E+00	2.37E+02	4.69E+01
	26	616.14	2.37E+01	19.46			2.37E+01	1.95E+01
	27	628.93	1.86E+01	23.58			1.86E+01	2.36E+01
	28	727.23	2.84E+01	28.73			2.84E+01	2.87E+01
	29	767.87	8.24E+01	43.61			8.24E+01	4.36E+01
	30	849.18	2.49E+01	26.94			2.49E+01	2.69E+01
M	31	856.47	1.90E+01	15.82			1.90E+01	1.58E+01
m	32	860.29	3.75E+01	22.37			3.75E+01	2.24E+01
	33	867.65	3.50E+01	22.89			3.50E+01	2.29E+01
	34	910.98	1.50E+02	37.51	5.80E+00	2.67E+00	1.44E+02	3.76E+01
M	35	964.76	2.26E+01	25.19			2.26E+01	2.52E+01
m	36	968.86	7.95E+01	27.46	1.26E+00	2.25E+00	7.83E+01	2.76E+01
	37	1069.70	1.80E+01	15.42			1.80E+01	1.54E+01
M	38	1119.97	5.29E+01	26.66	1.53E+00	2.85E+00	5.14E+01	2.68E+01
m	39	1124.62	1.80E+01	24.14			1.80E+01	2.41E+01
	40	1237.14	2.53E+01	30.33			2.53E+01	3.03E+01
	41	1377.07	1.82E+01	16.67	0.00E+00	0.00E+00	1.82E+01	1.67E+01
M	42	1401.81	1.62E+01	9.00			1.62E+01	9.00E+00
m	43	1407.56	1.80E+01	9.64			1.80E+01	9.64E+00
	44	1426.15	1.94E+01	19.00			1.94E+01	1.90E+01
	45	1460.33	7.83E+02	60.10	1.25E+01	2.44E+00	7.71E+02	6.01E+01
	46	1521.56	9.86E+00	9.38			9.86E+00	9.38E+00
	47	1587.71	1.55E+01	11.70			1.55E+01	1.17E+01
	48	1763.91	4.30E+01	17.78	2.65E+00	2.14E+00	4.04E+01	1.79E+01
	49	1846.04	1.32E+01	14.00			1.32E+01	1.40E+01
	50	2102.76	2.30E+01	9.59			2.30E+01	9.59E+00
	51	2117.59	1.10E+01	6.63			1.10E+01	6.63E+00
	52	2203.54	1.20E+01	9.80	4.42E-01	1.03E+00	1.16E+01	9.85E+00
	53	2336.60	5.57E+00	6.34			5.57E+00	6.34E+00
	54	2358.10	5.00E+00	7.07			5.00E+00	7.07E+00

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2410.52	8.68E+00	8.31			8.68E+00	8.31E+00
56	2612.92	7.40E+01	17.20	8.41E+00	1.73E+00	6.56E+01	1.73E+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	0.938	477.59	*	10.42	3.70E-01	3.52E-01
K-40	0.963	1460.81	*	10.67	1.65E+01	2.14E+00
CO-57	0.807	122.06	*	85.51	2.47E-02	2.92E-02
		136.48		10.60		
GA-67	0.604	93.31	*	35.70	1.95E-01	2.47E-01
		208.95	*	2.24	2.39E+00	2.44E+00
		300.22		16.00		
TL-208	0.348	583.14	*	30.22	7.68E-01	1.67E-01
		860.37	*	4.48	1.27E+00	7.63E-01
		2614.66		35.85		
BI-212	0.765	727.17	*	11.80	3.18E-01	3.23E-01
		1620.62		2.75		
PB-212	0.856	238.63	*	44.60	1.09E+00	1.58E-01
		300.09		3.41		
BI-214	0.979	609.31	*	46.30	5.90E-01	1.27E-01
		1120.29	*	15.10	6.38E-01	3.37E-01
		1764.49	*	15.80	6.53E-01	2.95E-01
		2204.22	*	4.98	6.31E-01	5.41E-01
PB-214	1.000	295.21	*	19.19	4.91E-01	2.00E-01
		351.92	*	37.19	6.44E-01	1.10E-01
RA-226	0.968	186.21	*	3.28	2.74E+00	5.17E+00
AC-228	0.995	338.32	*	11.40	8.58E-01	2.78E-01
		911.07	*	27.70	8.26E-01	2.27E-01
		969.11	*	16.60	7.86E-01	2.85E-01
TH-231	0.572	25.64		14.70		
		84.21	*	6.40	2.86E-01	3.15E-01
CM-243	0.368	209.75	*	3.29	1.03E+00	1.01E+00
		228.14		10.60		
		277.60	*	14.00	2.57E-01	2.30E-01

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 12:54:32PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.02	2.18918E-01	7.95		
m	3	89.82	2.17702E-02	30.13		
	6	128.80	2.35575E-02	40.32		
	7	154.40	2.11161E-02	48.24		
	11	269.55	2.44785E-02	31.16		
	14	327.90	1.46788E-02	44.94	Tol.	LA-140
	17	439.88	1.12410E-02	56.64		
	19	510.45	1.95577E-02	31.59		
	20	519.51	1.26379E-02	41.70	Tol.	RB-83
	21	565.98	1.09687E-02	45.67		
M	23	598.03	7.02709E-03	38.53		
m	24	601.36	1.11832E-02	35.61	Tol.	SB-125
	26	616.14	6.57407E-03	41.10	Sum	
	27	628.93	5.15340E-03	63.55	Sum	
	29	767.87	2.28999E-02	26.45		
	30	849.18	6.92432E-03	54.05	Sum	
M	31	856.47	5.29117E-03	41.52		
	33	867.65	9.72222E-03	32.70		
M	35	964.76	6.26868E-03	55.81	Tol.	EU-152
	37	1069.70	4.98843E-03	42.93	Sum	
m	39	1124.62	4.98891E-03	67.19		
	40	1237.14	7.02128E-03	60.00		
	41	1377.07	5.04493E-03	45.88		
M	42	1401.81	4.50220E-03	27.76		
m	43	1407.56	5.01309E-03	26.72	Tol.	EU-152
	44	1426.15	5.40033E-03	48.87		
	46	1521.56	2.73810E-03	47.58		
	47	1587.71	4.30556E-03	37.76	Sum	
	49	1846.04	3.66162E-03	53.10		
	50	2102.76	6.38889E-03	20.85	Sum	
	51	2117.59	3.05556E-03	30.15		
	53	2336.60	1.54762E-03	56.94		
	54	2358.10	1.38889E-03	70.71		
	55	2410.52	2.41162E-03	47.84		

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	2612.92	1.82208E-02	13.18		

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	0.93	477.59	*	10.42	3.70E-01	3.52E-01
K-40	0.96	1460.81	*	10.67	1.65E+01	2.14E+00
CO-57	0.80	122.06	*	85.51	2.47E-02	2.92E-02
		136.48		10.60		
GA-67	0.60	93.31	*	35.70	1.95E-01	2.47E-01
		208.95	*	2.24	2.39E+00	2.44E+00
		300.22		16.00		
TL-208	0.34	583.14	*	30.22	7.68E-01	1.67E-01
		860.37	*	4.48	1.27E+00	7.63E-01
		2614.66		35.85		
BI-212	0.76	727.17	*	11.80	3.18E-01	3.23E-01
		1620.62		2.75		
PB-212	0.85	238.63	*	44.60	1.09E+00	1.58E-01
		300.09		3.41		
BI-214	0.97	609.31	*	46.30	5.90E-01	1.27E-01
		1120.29	*	15.10	6.38E-01	3.37E-01
		1764.49	*	15.80	6.53E-01	2.95E-01
		2204.22	*	4.98	6.31E-01	5.41E-01
PB-214	1.00	295.21	*	19.19	4.91E-01	2.00E-01
		351.92	*	37.19	6.44E-01	1.10E-01
RA-226	0.96	186.21	*	3.28	2.74E+00	5.17E+00
AC-228	0.99	338.32	*	11.40	8.58E-01	2.78E-01
		911.07	*	27.70	8.26E-01	2.27E-01
		969.11	*	16.60	7.86E-01	2.85E-01
TH-231	0.57	25.64		14.70		
		84.21	*	6.40	2.86E-01	3.15E-01
CM-243	0.36	209.75	*	3.29	1.03E+00	1.01E+00

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CM-243	0.36	228.14		10.60		
		277.60	*	14.00	2.57E-01	2.30E-01

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

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BE-7	0.938	3.70E-01	3.52E-01	
K-40	0.963	1.65E+01	2.14E+00	
CO-57	0.807	2.47E-02	2.92E-02	
GA-67	0.604	1.98E-01	1.16E-01	
TL-208	0.348	7.90E-01	1.63E-01	
BI-212	0.765	3.18E-01	3.23E-01	
PB-212	0.856	1.09E+00	1.58E-01	
BI-214	0.979	6.05E-01	1.08E-01	
PB-214	1.000	6.09E-01	9.65E-02	
RA-226	0.968	2.74E+00	5.17E+00	
AC-228	0.995	8.24E-01	1.50E-01	
TH-231	0.572	2.86E-01	3.15E-01	
CM-243	0.368	2.91E-01	2.24E-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 1411131-13

J1V1L5 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 12:54:32PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.02	2.18918E-01	7.95		
m	3	89.82	2.17702E-02	30.13		
	6	128.80	2.35575E-02	40.32		
	7	154.40	2.11161E-02	48.24		
	11	269.55	2.44785E-02	31.16		
	14	327.90	1.46788E-02	44.94	Tol.	LA-140
	17	439.88	1.12410E-02	56.64		
	19	510.45	1.95577E-02	31.59		
	20	519.51	1.26379E-02	41.70	Tol.	RB-83
	21	565.98	1.09687E-02	45.67		
M	23	598.03	7.02709E-03	38.53		
m	24	601.36	1.11832E-02	35.61	Tol.	SB-125
	26	616.14	6.57407E-03	41.10	Sum	
	27	628.93	5.15340E-03	63.55	Sum	
	29	767.87	2.28999E-02	26.45		
	30	849.18	6.92432E-03	54.05	Sum	
M	31	856.47	5.29117E-03	41.52		
	33	867.65	9.72222E-03	32.70		
M	35	964.76	6.26868E-03	55.81	Tol.	EU-152
	37	1069.70	4.98843E-03	42.93	Sum	
m	39	1124.62	4.98891E-03	67.19		
	40	1237.14	7.02128E-03	60.00		
	41	1377.07	5.04493E-03	45.88		
M	42	1401.81	4.50220E-03	27.76		
m	43	1407.56	5.01309E-03	26.72	Tol.	EU-152
	44	1426.15	5.40033E-03	48.87		
	46	1521.56	2.73810E-03	47.58		
	47	1587.71	4.30556E-03	37.76	Sum	
	49	1846.04	3.66162E-03	53.10		
	50	2102.76	6.38889E-03	20.85	Sum	
	51	2117.59	3.05556E-03	30.15		
	53	2336.60	1.54762E-03	56.94		
	54	2358.10	1.38889E-03	70.71		
	55	2410.52	2.41162E-03	47.84		
	56	2612.92	1.82208E-02	13.18		

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	*	10.42	3.70E-01	5.68E-01	5.68E-01
+	NA-22	1274.54		99.94	1.68E-02	6.68E-02	6.68E-02
+	NA-24	1368.53		99.99	-1.18E-02	2.04E-01	5.15E-01
		2754.09		99.86	-1.94E-01		2.04E-01
+	AL-26	1808.65		99.76	-1.87E-03	3.65E-02	3.65E-02
+	K-40	1460.81	*	10.67	1.65E+01	8.75E-01	8.75E-01
+	AR-41	1293.64		99.16	5.50E+06	2.05E+07	2.05E+07
+	TI-44	67.88		94.40	5.43E-03	3.60E-02	3.60E-02
		78.34		96.00	1.58E-01		4.99E-02
+	SC-46	889.25		99.98	-3.63E-02	5.03E-02	5.03E-02
		1120.51		99.99	7.62E-02		9.44E-02
+	V-48	983.52		99.98	2.42E-03	6.02E-02	6.02E-02
		1312.10		97.50	-1.49E-02		6.08E-02
+	CR-51	320.08		9.83	2.48E-02	4.11E-01	4.11E-01
+	MN-54	834.83		99.97	2.32E-02	5.79E-02	5.79E-02
+	CO-56	846.75		99.96	-6.95E-03	5.37E-02	5.37E-02
		1037.75		14.03	6.40E-03		4.30E-01
		1238.25		67.00	1.03E-01		1.41E-01
		1771.40		15.51	-8.69E-02		2.80E-01
		2598.48		16.90	2.66E-03		1.48E-01
+	CO-57	122.06	*	85.51	2.47E-02	4.78E-02	4.78E-02
		136.48		10.60	2.15E-01		3.53E-01
+	CO-58	810.76		99.40	-3.70E-02	5.03E-02	5.03E-02
+	FE-59	1099.22		56.50	-2.87E-02	1.06E-01	1.06E-01
		1291.56		43.20	-8.52E-02		1.54E-01
+	CO-60	1173.22		100.00	5.00E-02	5.26E-02	7.00E-02
		1332.49		100.00	-2.04E-02		5.26E-02
+	ZN-65	1115.52		50.75	3.80E-02	1.42E-01	1.42E-01
+	GA-67	93.31	*	35.70	1.95E-01	3.59E-01	3.59E-01
		208.95	*	2.24	2.39E+00		3.82E+00
		300.22		16.00	2.42E-01		4.46E-01
+	SE-75	121.11		16.70	7.10E-02	6.12E-02	2.16E-01

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-3.91E-02	6.12E-02	6.12E-02
		264.65	59.80	-4.71E-04		6.49E-02
		279.53	25.20	-3.02E-02		1.67E-01
		400.65	11.40	-1.36E-01		3.53E-01
+	RB-82	776.52	13.00	-1.72E-02	4.19E-01	4.19E-01
+	RB-83	520.41	46.00	-3.34E-03	9.45E-02	9.45E-02
		529.64	30.30	3.12E-02		1.51E-01
		552.65	16.40	1.17E-01		2.73E-01
+	KR-85	513.99	0.43	-1.40E+01	1.09E+01	1.09E+01
+	SR-85	513.99	99.27	-6.26E-02	4.88E-02	4.88E-02
+	Y-88	898.02	93.40	-5.37E-02	4.21E-02	5.40E-02
		1836.01	99.38	4.75E-03		4.21E-02
+	NB-93M	16.57	9.43	4.36E+02	4.74E+03	4.74E+03
+	NB-94	702.63	100.00	-1.82E-02	4.95E-02	4.95E-02
		871.10	100.00	-8.30E-03		5.29E-02
+	NB-95	765.79	99.81	5.18E-02	6.96E-02	6.96E-02
+	NB-95M	235.69	25.00	-1.77E+00	3.66E-01	3.66E-01
+	ZR-95	724.18	43.70	-5.15E-04	9.63E-02	1.45E-01
		756.72	55.30	3.94E-02		9.63E-02
+	MO-99	181.06	6.20	1.31E-01	6.63E-01	1.11E+00
		739.58	12.80	9.75E-02		6.63E-01
		778.00	4.50	8.29E-01		2.05E+00
+	RU-103	497.08	89.00	-8.82E-03	4.24E-02	4.24E-02
+	RU-106	621.84	9.80	4.72E-02	4.86E-01	4.86E-01
+	AG-108M	433.93	89.90	2.14E-03	4.17E-02	4.17E-02
		614.37	90.40	-3.39E-01		5.72E-02
		722.95	90.50	2.34E-03		6.02E-02
+	CD-109	88.03	3.72	2.14E+00	1.24E+00	1.24E+00
+	AG-110M	657.75	93.14	1.10E-02	5.68E-02	5.68E-02
		677.61	10.53	3.35E-02		4.98E-01
		706.67	16.46	-7.52E-02		3.04E-01
		763.93	21.98	6.46E-03		2.72E-01
		884.67	71.63	8.57E-03		7.14E-02
		1384.27	23.94	-4.54E-02		1.92E-01
+	CD-113M	263.70	0.02	1.33E+01	1.66E+02	1.66E+02
+	SN-113	255.12	1.93	2.31E-01	6.07E-02	2.05E+00
		391.69	64.90	-1.15E-02		6.07E-02
+	TE123M	159.00	84.10	1.13E-02	4.43E-02	4.43E-02
+	SB-124	602.71	97.87	-1.08E-01	6.35E-02	6.35E-02
		645.85	7.26	-6.00E-02		6.85E-01
		722.78	11.10	1.96E-02		5.03E-01
		1691.02	49.00	2.51E-02		9.85E-02
+	I-125	35.49	6.49	1.07E-01	2.15E+00	2.15E+00
+	SB-125	176.33	6.89	4.10E-02	1.37E-01	5.42E-01
		427.89	29.33	-9.79E-03		1.37E-01
		463.38	10.35	3.14E-01		4.50E-01
		600.56	17.80	3.14E-01		3.50E-01
		635.90	11.32	3.62E-03		4.21E-01

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-1.41E-02	5.11E-02	5.11E-02
		666.33	99.60	-1.26E-02		5.62E-02
		695.00	99.60	3.54E-02		6.29E-02
		720.50	53.80	-2.51E-02		1.01E-01
+	SN-126	87.57	37.00	2.14E-01	1.24E-01	1.24E-01
+	SB-127	473.00	25.00	-3.30E-02	2.08E-01	2.22E-01
		685.20	35.70	1.35E-02		2.08E-01
		783.80	14.70	-9.83E-02		5.57E-01
+	I-129	29.78	57.00	3.72E-01	8.35E-01	8.35E-01
		33.60	13.20	-6.21E-01		1.33E+00
		39.58	7.52	2.75E-01		1.15E+00
+	I-131	284.30	6.05	3.18E-01	6.06E-02	7.82E-01
		364.48	81.20	2.59E-02		6.06E-02
		636.97	7.26	1.77E-01		8.18E-01
		722.89	1.80	1.42E-01		3.64E+00
+	TE-132	49.72	13.10	-2.80E-01	6.85E-02	5.18E-01
		228.16	88.00	1.59E-02		6.85E-02
+	BA-133	81.00	33.00	1.11E-03	6.33E-02	9.02E-02
		302.84	17.80	-1.30E-01		2.24E-01
		356.01	60.00	-4.43E-02		6.33E-02
+	I-133	529.87	86.30	1.50E-01	3.01E-01	3.01E-01
+	CS-134	563.23	8.38	-1.42E-01	6.94E-02	5.04E-01
		569.32	15.43	-1.01E-01		2.60E-01
		604.70	97.60	-2.99E-01		6.94E-02
		795.84	85.40	4.29E-02		7.26E-02
		801.93	8.73	-3.34E-01		6.16E-01
+	CS-135	268.24	16.00	1.07E-01	2.85E-01	2.85E-01
+	I-135	1131.51	22.50	8.36E+00	4.10E+01	6.75E+01
		1260.41	28.60	-1.41E+01		4.10E+01
		1678.03	9.54	-1.72E+01		6.17E+01
+	CS-136	153.22	7.46	8.41E-02	6.22E-02	5.85E-01
		163.89	4.61	-2.26E-01		8.87E-01
		176.55	13.56	-2.10E-01		3.08E-01
		273.65	12.66	-4.41E-01		3.43E-01
		340.57	48.50	-1.63E-01		1.01E-01
		818.50	99.70	8.97E-03		6.22E-02
		1048.07	79.60	4.26E-02		8.65E-02
		1235.34	19.70	-7.27E-03		5.31E-01
+	CS-137	661.65	85.12	1.43E-02	6.51E-02	6.51E-02
+	LA-138	788.74	34.00	3.76E-02	7.10E-02	1.72E-01
		1435.80	66.00	5.60E-03		7.10E-02
+	CE-139	165.85	80.35	1.01E-02	4.77E-02	4.77E-02
+	BA-140	162.64	6.70	-3.90E-02	1.99E-01	6.16E-01
		304.84	4.50	2.80E-01		9.65E-01
		423.70	3.20	-7.31E-01		1.37E+00
		437.55	2.00	-1.26E+00		2.15E+00
		537.32	25.00	-4.52E-03		1.99E-01
+	LA-140	328.77	20.50	1.90E-01	5.90E-02	2.43E-01
		487.03	45.50	-1.26E-02		9.28E-02

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	815.85	23.50	1.12E-01	5.90E-02	2.68E-01
		1596.49	95.49	7.12E-03		5.90E-02
+	CE-141	145.44	48.40	2.69E-02	8.12E-02	8.12E-02
+	CE-143	57.36	11.80	-2.80E-01	3.64E-01	9.38E-01
		293.26	42.00	1.40E-01		3.64E-01
		664.55	5.20	8.57E-02		3.04E+00
+	CE-144	133.54	10.80	6.50E-02	3.17E-01	3.17E-01
+	PM-144	476.78	42.00	1.03E-02	5.01E-02	9.96E-02
		618.01	98.60	-1.19E-03		5.01E-02
		696.49	99.49	1.80E-02		5.62E-02
+	PM-145	36.85	21.70	5.04E-02	2.74E-01	5.34E-01
		37.36	39.70	2.59E-02		2.74E-01
		42.30	15.10	-9.98E-02		4.27E-01
		72.40	2.31	-1.70E-01		1.52E+00
+	PM-146	453.90	39.94	-3.15E-02	9.64E-02	9.64E-02
		735.90	14.01	7.98E-02		3.49E-01
		747.13	13.10	-1.57E-01		3.67E-01
+	ND-147	91.11	28.90	-9.81E-02	1.74E-01	1.74E-01
		531.02	13.10	1.86E-01		4.22E-01
+	PM-149	285.90	3.10	-2.51E-01	2.36E+00	2.36E+00
+	EU-152	121.78	20.50	8.90E-02	1.76E-01	1.76E-01
		244.69	5.40	-1.82E-01		7.10E-01
		344.27	19.13	-1.81E-02		2.19E-01
		778.89	9.20	3.64E-01		6.06E-01
		964.01	10.40	-1.26E+00		7.04E-01
		1085.78	7.22	3.17E-04		8.14E-01
		1112.02	9.60	3.02E-01		7.23E-01
		1407.95	14.94	-2.13E-02		3.59E-01
+	GD-153	97.43	31.30	1.05E-01	1.12E-01	1.12E-01
		103.18	22.20	-8.15E-02		1.55E-01
+	EU-154	123.07	40.50	6.15E-02	8.96E-02	8.96E-02
		723.30	19.70	1.08E-02		2.77E-01
		873.19	11.50	-1.71E-02		4.18E-01
		996.32	10.30	-1.24E-01		5.79E-01
		1004.76	17.90	-3.17E-01		2.98E-01
		1274.45	35.50	4.71E-02		1.88E-01
+	EU-155	86.50	30.90	5.11E-02	1.47E-01	1.47E-01
		105.30	20.70	9.92E-03		1.66E-01
+	EU-156	811.77	10.40	-1.97E-01	5.40E-01	5.40E-01
		1153.47	7.20	1.84E-02		1.06E+00
		1230.71	8.90	-1.46E-01		9.39E-01
+	HO-166M	184.41	72.60	5.22E-02	6.51E-02	6.51E-02
		280.45	29.60	-2.54E-02		1.40E-01
		410.94	11.10	1.64E-01		3.81E-01
		711.69	54.10	-7.39E-03		9.38E-02
+	TM-171	66.72	0.14	1.15E+01	2.50E+01	2.50E+01
+	HF-172	81.75	4.52	-1.57E-01	3.19E-01	6.58E-01
		125.81	11.30	-3.51E-01		3.19E-01
+	LU-172	181.53	20.60	1.08E-01	1.23E-01	2.44E-01

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-172	810.06		16.63	-2.70E-01	1.23E-01	3.67E-01
		912.12		15.25	1.79E+00		8.72E-01
		1093.66		62.50	4.11E-02		1.23E-01
+	LU-173	100.72		5.24	-4.93E-01	2.11E-01	6.37E-01
		272.11		21.20	6.83E-02		2.11E-01
+	HF-175	343.40		84.00	-5.91E-03	5.06E-02	5.06E-02
+	LU-176	88.34		13.30	5.96E-01	4.00E-02	3.46E-01
		201.83		86.00	7.64E-03		4.77E-02
		306.78		94.00	-2.81E-02		4.00E-02
+	TA-182	67.75		41.20	1.26E-02	8.38E-02	8.38E-02
		1121.30		34.90	3.34E-01		2.79E-01
		1189.05		16.23	-2.17E-01		4.20E-01
		1221.41		26.98	-3.35E-02		2.71E-01
		1231.02		11.44	-8.89E-02		6.77E-01
+	IR-192	308.46		29.68	-1.83E-03	8.34E-02	1.34E-01
		468.07		48.10	-6.28E-04		8.34E-02
+	HG-203	279.19		77.30	2.82E-02	5.79E-02	5.79E-02
+	BI-207	569.67		97.72	-1.59E-02	4.11E-02	4.11E-02
		1063.62		74.90	1.30E-02		7.80E-02
+	TL-208	583.14	*	30.22	7.68E-01	1.91E-01	1.91E-01
		860.37	*	4.48	1.27E+00		1.38E+00
		2614.66		35.85	4.76E-01		3.07E-01
+	BI-210M	262.00		45.00	-1.26E-02	8.43E-02	8.43E-02
		300.00		23.00	1.07E-01		1.97E-01
+	PB-210	46.50		4.25	1.13E+00	1.39E+00	1.39E+00
+	PB-211	404.84		2.90	2.85E-01	1.38E+00	1.38E+00
		831.96		2.90	-2.21E-01		1.94E+00
+	BI-212	727.17	*	11.80	3.18E-01	5.22E-01	5.22E-01
		1620.62		2.75	7.55E-01		2.18E+00
+	PB-212	238.63	*	44.60	1.09E+00	1.65E-01	1.65E-01
		300.09		3.41	7.19E-01		1.33E+00
+	BI-214	609.31	*	46.30	5.90E-01	1.52E-01	1.52E-01
		1120.29	*	15.10	6.38E-01		9.61E-01
		1764.49	*	15.80	6.53E-01		3.79E-01
		2204.22	*	4.98	6.31E-01		7.89E-01
+	PB-214	295.21	*	19.19	4.91E-01	2.98E-01	2.98E-01
		351.92	*	37.19	6.44E-01		3.62E-01
+	RN-219	401.80		6.50	3.01E-01	6.34E-01	6.34E-01
+	RA-223	323.87		3.88	-1.21E-01	9.86E-01	9.86E-01
+	RA-224	240.98		3.95	5.69E+00	1.98E+00	1.98E+00
+	RA-225	40.00		31.00	7.07E-02	2.97E-01	2.97E-01
+	RA-226	186.21	*	3.28	2.74E+00	1.94E+00	1.94E+00
+	TH-227	50.10		8.40	-2.72E-01	5.03E-01	5.03E-01
		236.00		11.50	-2.56E+00		5.28E-01
		256.20		6.30	-6.93E-02		6.23E-01
+	AC-228	338.32	*	11.40	8.58E-01	2.88E-01	1.16E+00
		911.07	*	27.70	8.26E-01		2.88E-01
		969.11	*	16.60	7.86E-01		6.14E-01

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-230	48.44		16.90	-2.85E-01	2.62E-01	2.62E-01
		62.85		4.60	6.58E-01		8.51E-01
		67.67		0.37	1.39E+00		9.22E+00
+	PA-231	283.67		1.60	9.99E-01	1.73E+00	2.45E+00
		302.67		2.30	-1.01E+00		1.73E+00
+	TH-231	25.64		14.70	1.32E+01	1.27E+00	1.46E+01
		84.21	*	6.40	2.86E-01		1.27E+00
+	PA-233	311.98		38.60	5.47E-02	1.07E-01	1.07E-01
+	PA-234	131.20		20.40	3.45E-02	1.78E-01	1.78E-01
		733.99		8.80	-1.21E-01		5.54E-01
		946.00		12.00	-1.43E-01		5.11E-01
+	PA-234M	1001.03		0.92	2.07E+00	6.56E+00	6.56E+00
+	TH-234	63.29		3.80	7.91E-01	1.02E+00	1.02E+00
+	U-235	143.76		10.50	-4.55E-02	3.57E-01	3.57E-01
		163.35		4.70	-4.96E-02		7.85E-01
		205.31		4.70	1.49E-01		8.98E-01
+	NP-237	86.50		12.60	1.25E-01	3.61E-01	3.61E-01
+	NP-239	106.10		22.70	7.94E-02	2.87E-01	2.87E-01
		228.18		10.70	1.56E-01		6.71E-01
		277.60		14.10	3.35E-01		5.81E-01
+	AM-241	59.54		35.90	4.89E-02	1.07E-01	1.07E-01
+	AM-243	74.67		66.00	-1.26E-01	6.93E-02	6.93E-02
+	CM-243	209.75	*	3.29	1.03E+00	3.61E-01	1.65E+00
		228.14		10.60	8.36E-02		3.61E-01
		277.60	*	14.00	2.57E-01		3.71E-01

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

NUCLIDE MDA REPORT

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

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	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	5.68E-01	5.68E-01	3.70E-01	2.71E-01
	NA-22	1274.54		99.94	6.68E-02	6.68E-02	1.68E-02	3.06E-02
	NA-24	1368.53		99.99	5.15E-01	2.04E-01	-1.18E-02	2.26E-01
		2754.09		99.86	2.04E-01		-1.94E-01	6.44E-02
	AL-26	1808.65		99.76	3.65E-02	3.65E-02	-1.87E-03	1.48E-02
+	K-40	1460.81	*	10.67	8.75E-01	8.75E-01	1.65E+01	4.08E-01
	AR-41	1293.64		99.16	2.05E+07	2.05E+07	5.50E+06	9.41E+06
	TI-44	67.88		94.40	3.60E-02	3.60E-02	5.43E-03	1.74E-02
		78.34		96.00	4.99E-02		1.58E-01	2.44E-02
	SC-46	889.25		99.98	5.03E-02	5.03E-02	-3.63E-02	2.30E-02
		1120.51		99.99	9.44E-02		7.62E-02	4.46E-02
	V-48	983.52		99.98	6.02E-02	6.02E-02	2.42E-03	2.76E-02
		1312.10		97.50	6.08E-02		-1.49E-02	2.72E-02
	CR-51	320.08		9.83	4.11E-01	4.11E-01	2.48E-02	1.95E-01
	MN-54	834.83		99.97	5.79E-02	5.79E-02	2.32E-02	2.70E-02
	CO-56	846.75		99.96	5.37E-02	5.37E-02	-6.95E-03	2.48E-02
		1037.75		14.03	4.30E-01		6.40E-03	1.98E-01
		1238.25		67.00	1.41E-01		1.03E-01	6.62E-02
		1771.40		15.51	2.80E-01		-8.69E-02	1.17E-01
		2598.48		16.90	1.48E-01		2.66E-03	5.25E-02
+	CO-57	122.06	*	85.51	4.78E-02	4.78E-02	2.47E-02	2.32E-02
		136.48		10.60	3.53E-01		2.15E-01	1.71E-01
	CO-58	810.76		99.40	5.03E-02	5.03E-02	-3.70E-02	2.31E-02
	FE-59	1099.22		56.50	1.06E-01	1.06E-01	-2.87E-02	4.85E-02
		1291.56		43.20	1.54E-01		-8.52E-02	7.00E-02
	CO-60	1173.22		100.00	7.00E-02	5.26E-02	5.00E-02	3.23E-02
		1332.49		100.00	5.26E-02		-2.04E-02	2.34E-02
	ZN-65	1115.52		50.75	1.42E-01	1.42E-01	3.80E-02	6.62E-02
+	GA-67	93.31	*	35.70	3.59E-01	3.59E-01	1.95E-01	1.77E-01
		208.95	*	2.24	3.82E+00		2.39E+00	1.86E+00
		300.22		16.00	4.46E-01		2.42E-01	2.14E-01
	SE-75	121.11		16.70	2.16E-01	6.12E-02	7.10E-02	1.05E-01
		136.00		59.20	6.12E-02		-3.91E-02	2.96E-02
		264.65		59.80	6.49E-02		-4.71E-04	3.10E-02
		279.53		25.20	1.67E-01		-3.02E-02	7.97E-02
		400.65		11.40	3.53E-01		-1.36E-01	1.66E-01
	RB-82	776.52		13.00	4.19E-01	4.19E-01	-1.72E-02	1.94E-01
	RB-83	520.41		46.00	9.45E-02	9.45E-02	-3.34E-03	4.42E-02
		529.64		30.30	1.51E-01		3.12E-02	7.08E-02
		552.65		16.40	2.73E-01		1.17E-01	1.28E-01
	KR-85	513.99		0.43	1.09E+01	1.09E+01	-1.40E+01	5.14E+00
	SR-85	513.99		99.27	4.88E-02	4.88E-02	-6.26E-02	2.30E-02
	Y-88	898.02		93.40	5.40E-02	4.21E-02	-5.37E-02	2.47E-02
		1836.01		99.38	4.21E-02		4.75E-03	1.75E-02
	NB-93M	16.57		9.43	4.74E+03	4.74E+03	4.36E+02	2.31E+03
	NB-94	702.63		100.00	4.95E-02	4.95E-02	-1.82E-02	2.30E-02
		871.10		100.00	5.29E-02		-8.30E-03	2.44E-02
	NB-95	765.79		99.81	6.96E-02	6.96E-02	5.18E-02	3.28E-02
	NB-95M	235.69		25.00	3.66E-01	3.66E-01	-1.77E+00	1.78E-01
	ZR-95	724.18		43.70	1.45E-01	9.63E-02	-5.15E-04	6.81E-02
		756.72		55.30	9.63E-02		3.94E-02	4.48E-02
	MO-99	181.06		6.20	1.11E+00	6.63E-01	1.31E-01	5.34E-01
		739.58		12.80	6.63E-01		9.75E-02	3.07E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	778.00	4.50	2.05E+00	6.63E-01	8.29E-01	9.51E-01
RU-103	497.08	89.00	4.24E-02	4.24E-02	-8.82E-03	1.96E-02
RU-106	621.84	9.80	4.86E-01	4.86E-01	4.72E-02	2.27E-01
AG-108M	433.93	89.90	4.17E-02	4.17E-02	2.14E-03	1.95E-02
	614.37	90.40	5.72E-02		-3.39E-01	2.69E-02
	722.95	90.50	6.02E-02		2.34E-03	2.81E-02
CD-109	88.03	3.72	1.24E+00	1.24E+00	2.14E+00	6.07E-01
AG-110M	657.75	93.14	5.68E-02	5.68E-02	1.10E-02	2.66E-02
	677.61	10.53	4.98E-01		3.35E-02	2.33E-01
	706.67	16.46	3.04E-01		-7.52E-02	1.41E-01
	763.93	21.98	2.72E-01		6.46E-03	1.28E-01
	884.67	71.63	7.14E-02		8.57E-03	3.28E-02
	1384.27	23.94	1.92E-01		-4.54E-02	8.35E-02
CD-113M	263.70	0.02	1.66E+02	1.66E+02	1.33E+01	7.93E+01
SN-113	255.12	1.93	2.05E+00	6.07E-02	2.31E-01	9.82E-01
	391.69	64.90	6.07E-02		-1.15E-02	2.86E-02
TE123M	159.00	84.10	4.43E-02	4.43E-02	1.13E-02	2.14E-02
SB-124	602.71	97.87	6.35E-02	6.35E-02	-1.08E-01	3.01E-02
	645.85	7.26	6.85E-01		-6.00E-02	3.19E-01
	722.78	11.10	5.03E-01		1.96E-02	2.35E-01
	1691.02	49.00	9.85E-02		2.51E-02	4.22E-02
I-125	35.49	6.49	2.15E+00	2.15E+00	1.07E-01	1.03E+00
SB-125	176.33	6.89	5.42E-01	1.37E-01	4.10E-02	2.62E-01
	427.89	29.33	1.37E-01		-9.79E-03	6.42E-02
	463.38	10.35	4.50E-01		3.14E-01	2.12E-01
	600.56	17.80	3.50E-01		3.14E-01	1.66E-01
	635.90	11.32	4.21E-01		3.62E-03	1.96E-01
SB-126	414.70	83.30	5.11E-02	5.11E-02	-1.41E-02	2.40E-02
	666.33	99.60	5.62E-02		-1.26E-02	2.62E-02
	695.00	99.60	6.29E-02		3.54E-02	2.95E-02
	720.50	53.80	1.01E-01		-2.51E-02	4.70E-02
SN-126	87.57	37.00	1.24E-01	1.24E-01	2.14E-01	6.09E-02
SB-127	473.00	25.00	2.22E-01	2.08E-01	-3.30E-02	1.03E-01
	685.20	35.70	2.08E-01		1.35E-02	9.68E-02
	783.80	14.70	5.57E-01		-9.83E-02	2.59E-01
I-129	29.78	57.00	8.35E-01	8.35E-01	3.72E-01	4.03E-01
	33.60	13.20	1.33E+00		-6.21E-01	6.33E-01
	39.58	7.52	1.15E+00		2.75E-01	5.52E-01
I-131	284.30	6.05	7.82E-01	6.06E-02	3.18E-01	3.73E-01
	364.48	81.20	6.06E-02		2.59E-02	2.87E-02
	636.97	7.26	8.18E-01		1.77E-01	3.82E-01
	722.89	1.80	3.64E+00		1.42E-01	1.70E+00
TE-132	49.72	13.10	5.18E-01	6.85E-02	-2.80E-01	2.48E-01
	228.16	88.00	6.85E-02		1.59E-02	3.28E-02
BA-133	81.00	33.00	9.02E-02	6.33E-02	1.11E-03	4.35E-02
	302.84	17.80	2.24E-01		-1.30E-01	1.06E-01
	356.01	60.00	6.33E-02		-4.43E-02	2.99E-02
I-133	529.87	86.30	3.01E-01	3.01E-01	1.50E-01	1.42E-01
CS-134	563.23	8.38	5.04E-01	6.94E-02	-1.42E-01	2.34E-01
	569.32	15.43	2.60E-01		-1.01E-01	1.21E-01
	604.70	97.60	6.94E-02		-2.99E-01	3.31E-02
	795.84	85.40	7.26E-02		4.29E-02	3.40E-02
	801.93	8.73	6.16E-01		-3.34E-01	2.86E-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-135	268.24	16.00	2.85E-01	2.85E-01	1.07E-01	1.37E-01
I-135	1131.51	22.50	6.75E+01	4.10E+01	8.36E+00	3.12E+01
	1260.41	28.60	4.10E+01		-1.41E+01	1.84E+01
	1678.03	9.54	6.17E+01		-1.72E+01	2.31E+01
CS-136	153.22	7.46	5.85E-01	6.22E-02	8.41E-02	2.83E-01
	163.89	4.61	8.87E-01		-2.26E-01	4.28E-01
	176.55	13.56	3.08E-01		-2.10E-01	1.49E-01
	273.65	12.66	3.43E-01		-4.41E-01	1.64E-01
	340.57	48.50	1.01E-01		-1.63E-01	4.82E-02
	818.50	99.70	6.22E-02		8.97E-03	2.89E-02
	1048.07	79.60	8.65E-02		4.26E-02	3.99E-02
	1235.34	19.70	5.31E-01		-7.27E-03	2.50E-01
CS-137	661.65	85.12	6.51E-02	6.51E-02	1.43E-02	3.06E-02
LA-138	788.74	34.00	1.72E-01	7.10E-02	3.76E-02	8.02E-02
	1435.80	66.00	7.10E-02		5.60E-03	3.09E-02
CE-139	165.85	80.35	4.77E-02	4.77E-02	1.01E-02	2.30E-02
BA-140	162.64	6.70	6.16E-01	1.99E-01	-3.90E-02	2.98E-01
	304.84	4.50	9.65E-01		2.80E-01	4.59E-01
	423.70	3.20	1.37E+00		-7.31E-01	6.43E-01
	437.55	2.00	2.15E+00		-1.26E+00	1.00E+00
	537.32	25.00	1.99E-01		-4.52E-03	9.32E-02
LA-140	328.77	20.50	2.43E-01	5.90E-02	1.90E-01	1.16E-01
	487.03	45.50	9.28E-02		-1.26E-02	4.31E-02
	815.85	23.50	2.68E-01		1.12E-01	1.25E-01
	1596.49	95.49	5.90E-02		7.12E-03	2.57E-02
CE-141	145.44	48.40	8.12E-02	8.12E-02	2.69E-02	3.93E-02
CE-143	57.36	11.80	9.38E-01	3.64E-01	-2.80E-01	4.52E-01
	293.26	42.00	3.64E-01		1.40E-01	1.76E-01
	664.55	5.20	3.04E+00		8.57E-02	1.43E+00
CE-144	133.54	10.80	3.17E-01	3.17E-01	6.50E-02	1.53E-01
PM-144	476.78	42.00	9.96E-02	5.01E-02	1.03E-02	4.67E-02
	618.01	98.60	5.01E-02		-1.19E-03	2.34E-02
	696.49	99.49	5.62E-02		1.80E-02	2.63E-02
PM-145	36.85	21.70	5.34E-01	2.74E-01	5.04E-02	2.55E-01
	37.36	39.70	2.74E-01		2.59E-02	1.31E-01
	42.30	15.10	4.27E-01		-9.98E-02	2.04E-01
	72.40	2.31	1.52E+00		-1.70E-01	7.35E-01
PM-146	453.90	39.94	9.64E-02	9.64E-02	-3.15E-02	4.50E-02
	735.90	14.01	3.49E-01		7.98E-02	1.61E-01
	747.13	13.10	3.67E-01		-1.57E-01	1.70E-01
ND-147	91.11	28.90	1.74E-01	1.74E-01	-9.81E-02	8.52E-02
	531.02	13.10	4.22E-01		1.86E-01	1.99E-01
PM-149	285.90	3.10	2.36E+00	2.36E+00	-2.51E-01	1.12E+00
EU-152	121.78	20.50	1.76E-01	1.76E-01	8.90E-02	8.52E-02
	244.69	5.40	7.10E-01		-1.82E-01	3.40E-01
	344.27	19.13	2.19E-01		-1.81E-02	1.04E-01
	778.89	9.20	6.06E-01		3.64E-01	2.83E-01
	964.01	10.40	7.04E-01		-1.26E+00	3.30E-01
	1085.78	7.22	8.14E-01		3.17E-04	3.73E-01
	1112.02	9.60	7.23E-01		3.02E-01	3.35E-01
	1407.95	14.94	3.59E-01		-2.13E-02	1.59E-01
GD-153	97.43	31.30	1.12E-01	1.12E-01	1.05E-01	5.45E-02
	103.18	22.20	1.55E-01		-8.15E-02	7.53E-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)
	EU-154	123.07		40.50	8.96E-02	8.96E-02	6.15E-02	4.34E-02
		723.30		19.70	2.77E-01		1.08E-02	1.29E-01
		873.19		11.50	4.18E-01		-1.71E-02	1.91E-01
		996.32		10.30	5.79E-01		-1.24E-01	2.67E-01
		1004.76		17.90	2.98E-01		-3.17E-01	1.36E-01
		1274.45		35.50	1.88E-01		4.71E-02	8.60E-02
	EU-155	86.50		30.90	1.47E-01	1.47E-01	5.11E-02	7.19E-02
		105.30		20.70	1.66E-01		9.92E-03	8.06E-02
	EU-156	811.77		10.40	5.40E-01	5.40E-01	-1.97E-01	2.49E-01
		1153.47		7.20	1.06E+00		1.84E-02	4.88E-01
		1230.71		8.90	9.39E-01		-1.46E-01	4.36E-01
	HO-166M	184.41		72.60	6.51E-02	6.51E-02	5.22E-02	3.16E-02
		280.45		29.60	1.40E-01		-2.54E-02	6.72E-02
		410.94		11.10	3.81E-01		1.64E-01	1.80E-01
		711.69		54.10	9.38E-02		-7.39E-03	4.37E-02
	TM-171	66.72		0.14	2.50E+01	2.50E+01	1.15E+01	1.21E+01
	HF-172	81.75		4.52	6.58E-01	3.19E-01	-1.57E-01	3.18E-01
		125.81		11.30	3.19E-01		-3.51E-01	1.55E-01
	LU-172	181.53		20.60	2.44E-01	1.23E-01	1.08E-01	1.18E-01
		810.06		16.63	3.67E-01		-2.70E-01	1.69E-01
		912.12		15.25	8.72E-01		1.79E+00	4.19E-01
		1093.66		62.50	1.23E-01		4.11E-02	5.67E-02
	LU-173	100.72		5.24	6.37E-01	2.11E-01	-4.93E-01	3.09E-01
		272.11		21.20	2.11E-01		6.83E-02	1.02E-01
	HF-175	343.40		84.00	5.06E-02	5.06E-02	-5.91E-03	2.40E-02
	LU-176	88.34		13.30	3.46E-01	4.00E-02	5.96E-01	1.69E-01
		201.83		86.00	4.77E-02		7.64E-03	2.30E-02
		306.78		94.00	4.00E-02		-2.81E-02	1.90E-02
	TA-182	67.75		41.20	8.38E-02	8.38E-02	1.26E-02	4.05E-02
		1121.30		34.90	2.79E-01		3.34E-01	1.32E-01
		1189.05		16.23	4.20E-01		-2.17E-01	1.94E-01
		1221.41		26.98	2.71E-01		-3.35E-02	1.25E-01
		1231.02		11.44	6.77E-01		-8.89E-02	3.14E-01
	IR-192	308.46		29.68	1.34E-01	8.34E-02	-1.83E-03	6.39E-02
		468.07		48.10	8.34E-02		-6.28E-04	3.90E-02
	HG-203	279.19		77.30	5.79E-02	5.79E-02	2.82E-02	2.77E-02
	BI-207	569.67		97.72	4.11E-02	4.11E-02	-1.59E-02	1.90E-02
		1063.62		74.90	7.80E-02		1.30E-02	3.58E-02
+	TL-208	583.14	*	30.22	1.91E-01	1.91E-01	7.68E-01	9.04E-02
		860.37	*	4.48	1.38E+00		1.27E+00	6.46E-01
		2614.66		35.85	3.07E-01		4.76E-01	1.43E-01
	BI-210M	262.00		45.00	8.43E-02	8.43E-02	-1.26E-02	4.02E-02
		300.00		23.00	1.97E-01		1.07E-01	9.43E-02
	PB-210	46.50		4.25	1.39E+00	1.39E+00	1.13E+00	6.68E-01
	PB-211	404.84		2.90	1.38E+00	1.38E+00	2.85E-01	6.50E-01
		831.96		2.90	1.94E+00		-2.21E-01	9.00E-01
+	BI-212	727.17	*	11.80	5.22E-01	5.22E-01	3.18E-01	2.46E-01
		1620.62		2.75	2.18E+00		7.55E-01	9.69E-01
+	PB-212	238.63	*	44.60	1.65E-01	1.65E-01	1.09E+00	8.09E-02
		300.09		3.41	1.33E+00		7.19E-01	6.36E-01
+	BI-214	609.31	*	46.30	1.52E-01	1.52E-01	5.90E-01	7.25E-02
		1120.29	*	15.10	9.61E-01		6.38E-01	4.64E-01
		1764.49	*	15.80	3.79E-01		6.53E-01	1.68E-01

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-214	2204.22	*	4.98	7.89E-01	1.52E-01	6.31E-01	3.20E-01
+	PB-214	295.21	*	19.19	2.98E-01	2.98E-01	4.91E-01	1.44E-01
		351.92	*	37.19	3.62E-01		6.44E-01	1.78E-01
	RN-219	401.80		6.50	6.34E-01	6.34E-01	3.01E-01	2.99E-01
	RA-223	323.87		3.88	9.86E-01	9.86E-01	-1.21E-01	4.67E-01
	RA-224	240.98		3.95	1.98E+00	1.98E+00	5.69E+00	9.67E-01
	RA-225	40.00		31.00	2.97E-01	2.97E-01	7.07E-02	1.42E-01
+	RA-226	186.21	*	3.28	1.94E+00	1.94E+00	2.74E+00	9.49E-01
	TH-227	50.10		8.40	5.03E-01	5.03E-01	-2.72E-01	2.41E-01
		236.00		11.50	5.28E-01		-2.56E+00	2.57E-01
		256.20		6.30	6.23E-01		-6.93E-02	2.98E-01
+	AC-228	338.32	*	11.40	1.16E+00	2.88E-01	8.58E-01	5.69E-01
		911.07	*	27.70	2.88E-01		8.26E-01	1.36E-01
		969.11	*	16.60	6.14E-01		7.86E-01	2.93E-01
	TH-230	48.44		16.90	2.62E-01	2.62E-01	-2.85E-01	1.25E-01
		62.85		4.60	8.51E-01		6.58E-01	4.12E-01
		67.67		0.37	9.22E+00		1.39E+00	4.46E+00
	PA-231	283.67		1.60	2.45E+00	1.73E+00	9.99E-01	1.17E+00
		302.67		2.30	1.73E+00		-1.01E+00	8.23E-01
+	TH-231	25.64		14.70	1.46E+01	1.27E+00	1.32E+01	7.14E+00
		84.21	*	6.40	1.27E+00		2.86E-01	6.26E-01
	PA-233	311.98		38.60	1.07E-01	1.07E-01	5.47E-02	5.07E-02
	PA-234	131.20		20.40	1.78E-01	1.78E-01	3.45E-02	8.65E-02
		733.99		8.80	5.54E-01		-1.21E-01	2.56E-01
		946.00		12.00	5.11E-01		-1.43E-01	2.37E-01
	PA-234M	1001.03		0.92	6.56E+00	6.56E+00	2.07E+00	3.03E+00
	TH-234	63.29		3.80	1.02E+00	1.02E+00	7.91E-01	4.95E-01
	U-235	143.76		10.50	3.57E-01	3.57E-01	-4.55E-02	1.73E-01
		163.35		4.70	7.85E-01		-4.96E-02	3.79E-01
		205.31		4.70	8.98E-01		1.49E-01	4.34E-01
	NP-237	86.50		12.60	3.61E-01	3.61E-01	1.25E-01	1.76E-01
	NP-239	106.10		22.70	2.87E-01	2.87E-01	7.94E-02	1.39E-01
		228.18		10.70	6.71E-01		1.56E-01	3.22E-01
		277.60		14.10	5.81E-01		3.35E-01	2.79E-01
	AM-241	59.54		35.90	1.07E-01	1.07E-01	4.89E-02	5.16E-02
	AM-243	74.67		66.00	6.93E-02	6.93E-02	-1.26E-01	3.38E-02
+	CM-243	209.75	*	3.29	1.65E+00	3.61E-01	1.03E+00	8.02E-01
		228.14		10.60	3.61E-01		8.36E-02	1.73E-01
		277.60	*	14.00	3.71E-01		2.57E-01	1.79E-01

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

Analysis Report for 1411131-13

J1V1L5 SAF: RC-107

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: J1V1L5 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	0	104	642
9:	1083	1444	934	527	1455	600	127	150
17:	172	183	186	171	183	206	186	208
25:	187	183	169	117	113	87	60	60
33:	55	45	50	59	51	56	55	65
41:	51	50	52	51	64	85	92	56
49:	55	49	68	76	65	72	68	78
57:	73	79	92	103	74	77	120	125
65:	92	85	112	91	79	92	90	109
73:	131	126	324	142	339	247	94	83
81:	94	84	83	98	115	92	188	157
89:	90	135	74	112	195	115	61	73
97:	82	73	50	96	55	76	59	86
105:	77	68	62	65	71	62	62	81
113:	63	66	77	58	52	52	64	57
121:	69	81	73	71	59	59	66	85
129:	98	61	68	40	68	52	65	62
137:	68	65	77	60	67	71	59	52
145:	69	73	67	49	51	67	45	57
153:	82	72	69	59	61	52	48	54
161:	61	45	51	51	60	55	53	59
169:	53	64	48	49	51	47	53	51
177:	34	64	47	69	63	49	49	50
185:	91	144	60	64	54	63	48	36
193:	55	65	41	51	36	64	47	42
201:	49	49	57	56	49	50	50	41
209:	82	67	38	42	38	49	58	45
217:	46	48	36	40	41	45	43	42
225:	36	29	44	25	36	50	32	33
233:	49	35	43	45	55	279	420	86
241:	100	94	43	23	34	35	33	30
249:	22	31	27	26	35	38	31	32
257:	29	35	34	32	26	31	34	26
265:	30	29	31	39	41	72	44	24
273:	31	28	33	31	45	52	32	24
281:	27	29	37	28	25	24	22	29
289:	20	21	30	20	29	40	126	73
297:	30	37	32	48	38	23	21	29
305:	23	25	27	21	21	32	27	23
313:	25	16	18	17	29	28	22	18
321:	26	20	18	21	25	28	22	48
329:	27	23	30	16	20	18	19	26
337:	43	84	49	27	24	21	18	30
345:	30	25	27	23	18	15	115	203
353:	49	15	25	21	18	17	11	24
361:	18	23	19	20	21	26	17	16

369:	19	17	13	18	21	13	21	20

Sample Title: J1V1L5 SAF: RC-107

Channel								
377:	14	20	17	18	16	22	11	21
385:	17	18	22	25	23	19	12	25
393:	17	15	17	24	19	22	14	24
401:	22	9	20	21	15	16	17	20
409:	22	21	18	19	18	15	12	13
417:	18	15	19	15	26	19	15	14
425:	17	14	20	21	13	14	19	17
433:	18	9	14	12	13	20	13	27
441:	20	11	14	15	11	13	12	15
449:	17	18	15	15	14	15	11	14
457:	18	15	19	9	9	29	25	17
465:	20	12	13	14	16	14	12	9
473:	10	16	15	24	13	14	10	22
481:	8	14	14	17	11	10	13	15
489:	10	12	10	12	12	9	13	10
497:	11	15	4	16	10	11	12	16
505:	9	13	7	21	38	62	58	35
513:	15	13	6	20	15	17	8	15
521:	12	18	14	10	7	8	11	13
529:	20	15	17	18	18	10	19	9
537:	11	16	17	12	18	10	14	10
545:	15	13	13	15	8	9	17	11
553:	17	14	10	8	9	6	16	10
561:	11	15	12	5	17	12	18	12
569:	11	6	6	16	10	10	16	17
577:	14	10	14	10	18	67	132	42
585:	8	12	13	12	12	9	8	11
593:	12	15	11	6	13	24	10	12
601:	34	15	16	10	15	15	11	64
609:	153	51	14	10	6	10	11	17
617:	13	3	7	14	7	10	11	9
625:	8	7	12	13	13	16	6	11
633:	10	8	11	9	10	11	5	15
641:	4	10	12	8	9	13	12	6
649:	5	14	9	10	9	6	9	8
657:	7	6	18	15	12	14	9	9
665:	15	10	8	6	8	9	9	9
673:	12	10	12	13	9	8	9	9
681:	12	6	17	7	8	6	9	11
689:	9	6	9	6	11	13	10	15
697:	10	12	6	9	11	8	7	6
705:	12	14	6	5	9	13	7	11
713:	10	6	10	7	5	6	7	9
721:	8	10	9	10	7	16	30	17
729:	4	14	9	8	5	9	6	7
737:	9	6	11	5	4	12	9	4
745:	11	12	3	7	6	7	10	7
753:	12	7	9	9	5	10	6	5
761:	4	9	9	13	9	14	18	19
769:	14	10	11	16	8	8	4	9
777:	9	8	8	12	9	9	5	6
785:	11	13	10	11	9	5	10	11
793:	10	12	14	5	15	13	8	6

801:	4	8	9	10	11	9	7	6

Sample Title: J1V1L5 SAF: RC-107

Channel								
809:	7	9	7	5	4	11	9	10
817:	2	12	12	9	4	6	9	2
825:	7	8	9	11	5	8	8	12
833:	9	8	8	9	7	8	5	6
841:	8	7	5	3	7	5	11	10
849:	8	4	8	7	6	3	5	14
857:	9	5	15	23	10	10	1	7
865:	11	7	9	10	13	9	1	7
873:	3	4	7	7	6	7	7	1
881:	5	9	2	7	9	5	5	4
889:	9	6	6	4	10	9	8	4
897:	4	6	6	5	6	12	9	3
905:	8	2	10	4	11	71	62	17
913:	14	12	5	8	8	6	6	4
921:	5	13	8	7	3	1	8	6
929:	10	3	5	7	13	13	6	10
937:	8	11	7	9	9	11	5	9
945:	6	9	4	8	15	7	11	8
953:	8	5	5	6	10	9	6	7
961:	8	6	7	18	14	11	15	41
969:	36	13	4	4	5	6	5	4
977:	6	8	7	3	8	3	7	6
985:	6	8	2	6	6	9	7	5
993:	6	5	7	9	8	5	8	12
1001:	7	9	6	2	4	3	6	14
1009:	6	3	8	8	4	6	3	9
1017:	6	3	6	5	4	10	9	5
1025:	4	3	7	7	5	4	3	12
1033:	5	6	7	6	5	8	6	6
1041:	5	4	7	4	6	12	5	7
1049:	5	7	5	1	6	4	7	7
1057:	5	4	5	8	4	5	7	5
1065:	7	5	4	7	11	12	2	4
1073:	8	9	10	3	13	12	10	4
1081:	9	4	6	6	2	8	7	7
1089:	3	7	7	8	10	3	4	5
1097:	6	3	7	8	5	4	8	10
1105:	4	11	5	4	9	5	6	11
1113:	9	10	5	6	7	11	22	33
1121:	11	8	9	15	7	7	9	4
1129:	8	10	8	6	9	8	5	7
1137:	9	8	11	3	3	4	6	6
1145:	4	9	1	2	8	10	3	5
1153:	6	12	8	7	6	12	6	6
1161:	3	7	6	10	2	7	10	6
1169:	3	10	3	9	10	5	8	6
1177:	5	1	4	6	5	12	7	6
1185:	8	8	8	5	5	10	4	6
1193:	7	14	7	2	5	4	4	8
1201:	12	8	8	11	5	11	12	7
1209:	6	9	6	5	8	3	7	7
1217:	10	8	8	4	7	12	7	5
1225:	8	7	8	4	7	9	9	12

1233:	7	9	11	13	25	10	8	10

Sample Title: J1V1L5 SAF: RC-107

Channel								
1241:	8	10	4	6	8	4	6	8
1249:	5	1	10	3	6	9	6	3
1257:	7	4	3	6	1	3	1	3
1265:	7	3	2	4	7	5	12	2
1273:	2	3	6	10	5	6	1	9
1281:	6	9	5	4	7	8	6	6
1289:	4	8	5	1	3	9	6	10
1297:	3	6	7	5	4	2	6	3
1305:	2	5	7	0	5	2	2	3
1313:	3	5	4	6	4	8	4	2
1321:	3	2	2	3	3	4	6	3
1329:	2	3	5	2	3	5	2	2
1337:	7	2	2	6	3	6	4	7
1345:	2	2	3	4	7	3	4	2
1353:	1	1	1	7	2	4	5	5
1361:	2	2	2	3	2	2	2	6
1369:	3	1	1	2	3	2	2	6
1377:	9	6	3	1	3	1	1	3
1385:	3	2	2	2	5	1	1	1
1393:	1	3	2	0	1	0	3	2
1401:	6	3	4	1	1	7	3	9
1409:	0	0	3	3	1	1	1	3
1417:	3	0	4	3	2	1	1	4
1425:	4	4	1	1	1	3	5	0
1433:	1	3	3	3	2	3	3	1
1441:	3	4	6	1	3	2	2	1
1449:	1	7	1	1	2	3	4	1
1457:	10	58	215	342	141	32	4	1
1465:	2	3	2	1	2	2	2	2
1473:	1	5	3	4	3	1	1	0
1481:	1	1	3	4	1	0	2	3
1489:	2	1	2	2	0	1	4	2
1497:	2	0	3	0	1	4	1	3
1505:	3	2	1	3	2	2	6	1
1513:	1	1	1	1	1	1	2	2
1521:	1	6	0	0	3	1	3	1
1529:	2	1	0	1	2	1	0	4
1537:	0	1	2	1	0	1	3	3
1545:	0	1	2	2	5	0	0	0
1553:	0	1	2	0	1	3	1	1
1561:	0	0	0	2	0	0	2	0
1569:	1	2	2	2	0	1	1	0
1577:	0	2	3	1	3	2	2	1
1585:	0	5	10	4	2	0	1	4
1593:	0	1	2	2	2	1	1	2
1601:	3	1	2	3	1	1	1	4
1609:	2	2	1	2	0	1	2	4
1617:	2	1	4	4	2	1	2	2
1625:	3	0	2	2	5	3	3	1
1633:	1	1	1	1	1	1	0	0
1641:	2	3	2	1	0	0	1	2
1649:	2	2	2	1	2	2	1	2
1657:	4	0	1	1	1	1	3	2

1665:	0	1	0	0	1	1	3	1

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Channel								
1673:	1	0	0	0	1	1	0	0
1681:	0	0	0	0	1	2	1	1
1689:	1	2	3	1	0	1	0	2
1697:	1	0	2	0	1	1	3	1
1705:	0	1	0	0	1	4	1	3
1713:	1	0	2	1	1	1	0	2
1721:	3	2	2	2	0	2	3	4
1729:	4	3	4	2	0	2	0	1
1737:	0	1	1	4	1	0	1	2
1745:	1	0	1	0	2	0	0	2
1753:	0	1	0	2	2	1	2	3
1761:	1	6	21	15	7	0	3	1
1769:	0	0	1	2	1	0	1	0
1777:	1	1	0	0	0	0	1	0
1785:	2	1	1	0	2	1	1	1
1793:	0	1	0	0	0	0	1	0
1801:	1	1	1	1	1	2	0	2
1809:	0	0	0	0	0	0	2	2
1817:	1	2	0	0	2	0	1	0
1825:	0	0	3	0	2	1	3	1
1833:	0	0	2	1	0	1	0	1
1841:	1	1	4	0	3	4	3	2
1849:	3	0	2	0	0	2	1	0
1857:	1	1	1	2	1	1	2	2
1865:	1	0	0	0	1	0	0	0
1873:	0	0	1	0	1	4	0	1
1881:	1	0	0	3	0	1	1	4
1889:	1	1	2	0	0	1	3	0
1897:	2	1	0	1	2	0	1	1
1905:	1	1	3	1	1	0	2	2
1913:	1	2	1	1	2	0	1	0
1921:	2	4	1	1	1	1	0	2
1929:	0	1	0	0	0	1	1	1
1937:	2	3	0	0	1	0	0	1
1945:	0	0	1	2	2	0	2	0
1953:	1	0	0	1	0	1	1	0
1961:	0	0	0	1	0	0	0	0
1969:	1	0	1	2	1	3	0	2
1977:	1	1	1	1	1	3	2	0
1985:	0	0	1	1	0	0	1	0
1993:	3	1	1	1	1	2	0	2
2001:	0	1	1	0	0	1	0	1
2009:	0	0	0	1	1	0	0	0
2017:	1	1	1	0	0	0	1	1
2025:	0	0	2	0	1	0	1	1
2033:	0	0	0	3	1	1	1	2
2041:	4	0	2	2	2	1	0	1
2049:	2	1	1	1	1	0	1	1
2057:	1	1	2	0	1	0	3	1
2065:	1	1	1	0	1	1	1	1
2073:	0	1	0	0	0	1	1	1
2081:	0	2	0	0	0	3	1	1
2089:	1	1	1	2	0	0	1	0

2097:	0	0	3	2	2	7	4	3

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

2529:	0	1	1	0	1	1	0	0

Sample Title: J1V1L5 SAF: RC-107

Channel								
2537:	1	0	1	0	0	2	1	1
2545:	0	0	0	0	1	0	1	0
2553:	0	0	0	0	1	0	0	0
2561:	0	0	0	0	0	0	0	0
2569:	0	3	1	0	1	2	1	0
2577:	1	0	0	1	0	0	0	0
2585:	0	1	0	0	1	0	1	0
2593:	0	0	0	0	0	1	0	0
2601:	1	0	0	0	0	0	0	1
2609:	3	7	13	15	23	7	4	1
2617:	0	0	0	0	1	1	0	1
2625:	2	1	0	2	0	0	0	2
2633:	0	0	0	0	1	1	0	2
2641:	0	1	0	0	0	0	0	0
2649:	2	0	0	0	0	0	0	0
2657:	1	0	0	0	0	0	1	0
2665:	0	0	0	1	0	0	1	0
2673:	0	0	0	0	0	1	0	0
2681:	0	1	1	0	0	2	1	0
2689:	1	0	0	1	0	0	0	0
2697:	1	0	0	0	0	1	0	1
2705:	0	0	0	0	0	0	0	1
2713:	0	0	0	0	0	1	0	0
2721:	0	1	1	0	1	0	0	0
2729:	0	1	0	0	0	0	0	1
2737:	0	0	1	0	0	1	0	1
2745:	0	1	2	0	0	0	0	0
2753:	0	0	0	0	1	0	0	0
2761:	1	1	0	0	1	0	0	0
2769:	0	1	0	0	1	0	1	0
2777:	1	0	0	0	1	0	1	0
2785:	0	1	0	0	0	0	0	1
2793:	0	0	0	2	0	0	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	1	0	0	0	0
2817:	0	1	1	0	0	0	0	0
2825:	1	0	1	0	0	0	0	1
2833:	0	0	0	0	0	1	1	0
2841:	0	1	0	0	1	0	0	1
2849:	0	0	2	0	0	0	1	0
2857:	2	0	0	1	2	0	0	0
2865:	0	0	2	0	0	0	0	0
2873:	0	0	0	1	0	0	0	0
2881:	0	0	0	0	0	1	0	1
2889:	0	0	0	0	0	0	1	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	1	0	1	1	0	1
2913:	0	0	0	0	0	0	0	1
2921:	0	0	0	0	0	0	0	0
2929:	0	0	1	0	0	0	0	0
2937:	0	0	0	1	0	0	0	0
2945:	0	0	0	0	0	1	0	0
2953:	0	0	0	0	0	0	0	0

2961:	0	1	0	0	0	1	0	0

Sample Title: J1V1L5 SAF: RC-107

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

3393:	0	0	1	0	0	0	0	0

Sample Title: J1V1L5 SAF: RC-107

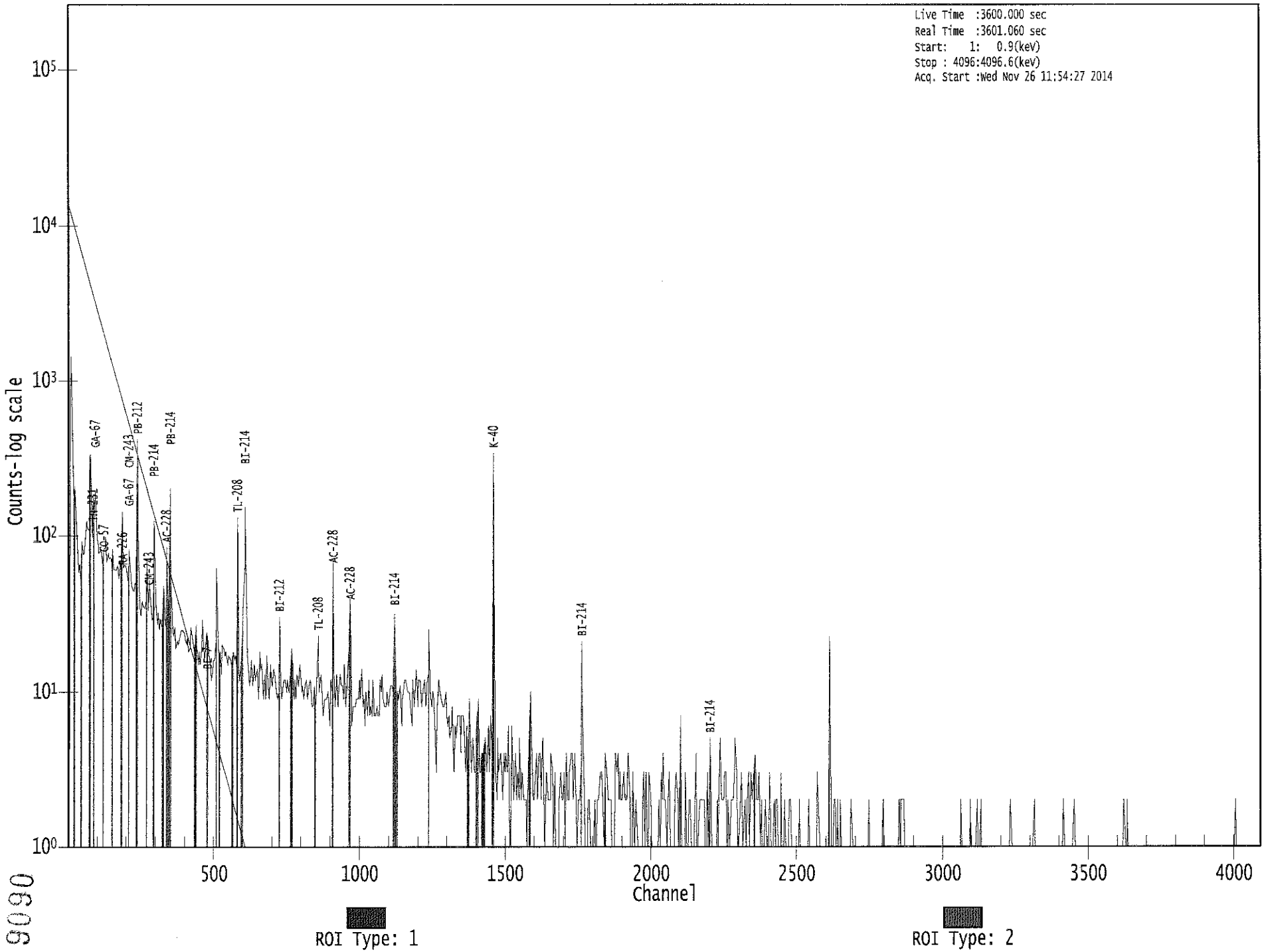
Channel								
3401:	0	0	1	0	0	0	0	0
3409:	0	0	0	1	0	0	0	2
3417:	0	0	0	1	0	1	1	1
3425:	1	1	0	0	0	0	0	0
3433:	1	1	0	0	0	0	0	0
3441:	0	0	0	0	0	1	0	0
3449:	1	0	0	2	0	0	0	1
3457:	0	1	0	0	0	1	0	0
3465:	1	0	0	1	0	0	0	0
3473:	0	0	1	0	0	0	0	0
3481:	0	0	1	0	1	1	0	0
3489:	0	0	0	0	0	0	0	0
3497:	1	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	1	0	0	0	0	0	1
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	1	0	0	0	0	1	1	1
3561:	1	0	0	0	0	0	0	1
3569:	0	0	0	1	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	1	1	0	0	0	0
3593:	0	0	0	0	0	0	1	0
3601:	0	0	0	1	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	1	0	0	2	0	0	0
3625:	0	0	0	1	0	0	0	0
3633:	2	1	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	1	1	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	1	0	0	0	1	0
3673:	0	0	0	1	0	0	0	0
3681:	0	1	1	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	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	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	0	0	0
3769:	0	0	0	0	1	0	1	0
3777:	1	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:	1	0	0	0	0	0	0	0
3809:	1	0	0	0	0	0	0	0
3817:	0	0	0	0	1	0	0	0

3825:	0	0	0	0	0	1	1	0

Sample Title: J1V1L5 SAF: RC-107

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

0000015645.CNF



9090

Apex-Gamma

Analysis Report for 1411131-14
J1V1L6 SAF: RC-107

11/26

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-14
Sample Description	: J1V1L6 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.674E+02 grams
Facility	: Countroom
Sample Taken On	: 11/24/2014 8:59:41AM
Acquisition Started	: 11/26/2014 11:59:53AM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3616.7 seconds
Dead Time	: 0.46 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 9 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15646

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/26/14

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 1:00:20PM
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	76.44	76.66	0.0000	0.00
2	87.32	87.53	0.0000	0.00
3	93.14	93.35	0.0000	0.00
4	105.32	105.52	0.0000	0.00
5	120.81	121.00	0.0000	0.00
6	129.94	130.12	0.0000	0.00
7	238.79	238.91	0.0000	0.00
8	242.05	242.17	0.0000	0.00
9	270.99	271.11	0.0000	0.00
10	277.01	277.12	0.0000	0.00
11	295.43	295.53	0.0000	0.00
12	328.11	328.20	0.0000	0.00
13	338.75	338.83	0.0000	0.00
14	352.19	352.26	0.0000	0.00
15	395.50	395.55	0.0000	0.00
16	452.53	452.55	0.0000	0.00
17	510.85	510.84	0.0000	0.00
18	530.01	529.99	0.0000	0.00
19	583.27	583.22	0.0000	0.00
20	605.70	605.64	0.0000	0.00
21	609.68	609.63	0.0000	0.00
22	727.99	727.88	0.0000	0.00
23	794.66	794.51	0.0000	0.00
24	859.76	859.59	0.0000	0.00
25	907.41	907.22	0.0000	0.00
26	911.41	911.22	0.0000	0.00
27	968.26	968.04	0.0000	0.00
28	988.52	988.29	0.0000	0.00
29	1120.72	1120.44	0.0000	0.00
30	1237.94	1237.61	0.0000	0.00
31	1245.77	1245.43	0.0000	0.00
32	1270.54	1270.20	0.0000	0.00
33	1299.69	1299.33	0.0000	0.00
34	1359.03	1358.65	0.0000	0.00
35	1461.03	1460.61	0.0000	0.00
36	1565.13	1564.67	0.0000	0.00
37	1764.88	1764.35	0.0000	0.00
38	1847.96	1847.40	0.0000	0.00
39	1932.42	1931.83	0.0000	0.00
40	2118.47	2117.83	0.0000	0.00
41	2204.00	2203.33	0.0000	0.00
42	2448.57	2447.83	0.0000	0.00

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2614.98	2614.20	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 1:00:20PM

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	76.44	71 -	81	76.66	7.65E+02	145.03	2.39E+03	3.94
	2	87.32	86 -	90	87.53	8.33E+01	73.55	1.14E+03	1.55
	3	93.14	90 -	96	93.35	2.06E+02	92.55	1.38E+03	1.94
	4	105.32	103 -	108	105.52	6.55E+01	69.30	9.11E+02	2.83
	5	120.81	117 -	124	121.00	7.95E+01	82.24	1.06E+03	3.99
	6	129.94	126 -	133	130.12	8.08E+01	83.21	1.10E+03	2.06
M	7	238.79	233 -	246	238.91	6.37E+02	67.36	4.28E+02	1.89
m	8	242.05	233 -	246	242.17	9.47E+01	66.23	4.15E+02	1.89
M	9	270.99	268 -	279	271.11	4.82E+01	41.86	3.28E+02	1.92
m	10	277.01	268 -	279	277.12	3.60E+01	40.00	2.86E+02	1.93
	11	295.43	292 -	301	295.53	1.60E+02	63.76	4.99E+02	1.89
	12	328.11	324 -	332	328.20	5.07E+01	53.32	4.09E+02	2.03
	13	338.75	335 -	342	338.83	8.44E+01	46.00	2.97E+02	1.30
	14	352.19	349 -	355	352.26	2.79E+02	51.54	2.79E+02	1.63
	15	395.50	393 -	398	395.55	3.19E+01	30.77	1.62E+02	2.89
	16	452.53	449 -	456	452.55	3.03E+01	32.06	1.49E+02	1.82
	17	510.85	506 -	514	510.84	1.38E+02	42.17	1.89E+02	2.64
	18	530.01	527 -	534	529.99	2.35E+01	28.71	1.17E+02	3.17
	19	583.27	577 -	586	583.22	1.52E+02	44.40	1.94E+02	2.11
M	20	605.70	604 -	614	605.64	1.75E+01	12.37	3.53E+01	2.44
m	21	609.68	604 -	614	609.63	2.23E+02	35.96	6.94E+01	2.28
	22	727.99	725 -	732	727.88	4.33E+01	29.12	1.13E+02	1.19
	23	794.66	790 -	799	794.51	3.88E+01	28.69	9.64E+01	2.23
	24	859.76	855 -	864	859.59	2.36E+01	29.43	1.11E+02	2.43
M	25	907.41	906 -	915	907.22	1.24E+01	11.08	2.72E+01	2.38
m	26	911.41	906 -	915	911.22	1.24E+02	29.06	6.70E+01	2.26
	27	968.26	962 -	973	968.04	6.90E+01	36.50	1.32E+02	2.13
	28	988.52	985 -	992	988.29	1.80E+01	20.20	5.60E+01	1.88
	29	1120.72	1117 -	1123	1120.44	3.68E+01	21.35	5.64E+01	1.44
M	30	1237.94	1233 -	1248	1237.61	2.30E+01	25.94	9.92E+01	3.09
m	31	1245.77	1233 -	1248	1245.43	1.84E+01	19.62	3.79E+01	3.10
	32	1270.54	1267 -	1273	1270.20	1.35E+01	17.41	4.50E+01	2.18
	33	1299.69	1295 -	1304	1299.33	3.60E+01	16.85	2.00E+01	7.20
	34	1359.03	1355 -	1362	1358.65	9.47E+00	11.49	1.51E+01	2.54
	35	1461.03	1455 -	1465	1460.61	5.35E+02	46.71	5.59E+00	2.33
	36	1565.13	1562 -	1568	1564.67	6.50E+00	8.03	7.00E+00	1.01
	37	1764.88	1760 -	1768	1764.35	4.39E+01	14.29	4.28E+00	3.22
	38	1847.96	1845 -	1850	1847.40	7.83E+00	6.71	2.33E+00	2.73
	39	1932.42	1929 -	1934	1931.83	6.00E+00	4.90	0.00E+00	2.74
	40	2118.47	2115 -	2120	2117.83	6.44E+00	6.40	3.13E+00	2.95

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2204.00	2199 -	2206	2203.33	6.00E+00	8.49	8.00E+00	1.45
42	2448.57	2444 -	2450	2447.83	4.42E+00	6.02	3.17E+00	1.07
43	2614.98	2610 -	2619	2614.20	5.90E+01	15.36	0.00E+00	3.12

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 1:00:20PM

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	76.44	71 -	81	7.65E+02	145.03	2.39E+03	1.10E+02
	2	87.32	86 -	90	8.33E+01	73.55	1.14E+03	5.86E+01
	3	93.14	90 -	96	2.06E+02	92.55	1.38E+03	7.23E+01
	4	105.32	103 -	108	6.55E+01	69.30	9.11E+02	5.54E+01
	5	120.81	117 -	124	7.95E+01	82.24	1.06E+03	6.60E+01
	6	129.94	126 -	133	8.08E+01	83.21	1.10E+03	6.68E+01
M	7	238.79	233 -	246	6.37E+02	67.36	4.28E+02	3.40E+01
m	8	242.05	233 -	246	9.47E+01	66.23	4.15E+02	3.35E+01
M	9	270.99	268 -	279	4.82E+01	41.86	3.28E+02	2.98E+01
m	10	277.01	268 -	279	3.60E+01	40.00	2.86E+02	2.78E+01
	11	295.43	292 -	301	1.60E+02	63.76	4.99E+02	4.81E+01
	12	328.11	324 -	332	5.07E+01	53.32	4.09E+02	4.22E+01
	13	338.75	335 -	342	8.44E+01	46.00	2.97E+02	3.47E+01
	14	352.19	349 -	355	2.79E+02	51.54	2.79E+02	3.22E+01
	15	395.50	393 -	398	3.19E+01	30.77	1.62E+02	2.35E+01
	16	452.53	449 -	456	3.03E+01	32.06	1.49E+02	2.48E+01
	17	510.85	506 -	514	1.38E+02	42.17	1.89E+02	2.88E+01
	18	530.01	527 -	534	2.35E+01	28.71	1.17E+02	2.22E+01
	19	583.27	577 -	586	1.52E+02	44.40	1.94E+02	3.04E+01
M	20	605.70	604 -	614	1.75E+01	12.37	3.53E+01	9.77E+00
m	21	609.68	604 -	614	2.23E+02	35.96	6.94E+01	1.37E+01
	22	727.99	725 -	732	4.33E+01	29.12	1.13E+02	2.14E+01
	23	794.66	790 -	799	3.88E+01	28.69	9.64E+01	2.12E+01
	24	859.76	855 -	864	2.36E+01	29.43	1.11E+02	2.28E+01

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	25	907.41	906 -	915	1.24E+01	11.08	2.72E+01	8.58E+00
m	26	911.41	906 -	915	1.24E+02	29.06	6.70E+01	1.35E+01
	27	968.26	962 -	973	6.90E+01	36.50	1.32E+02	2.67E+01
	28	988.52	985 -	992	1.80E+01	20.20	5.60E+01	1.51E+01
	29	1120.72	1117 -	1123	3.68E+01	21.35	5.64E+01	1.44E+01
M	30	1237.94	1233 -	1248	2.30E+01	25.94	9.92E+01	1.64E+01
m	31	1245.77	1233 -	1248	1.84E+01	19.62	3.79E+01	1.01E+01
	32	1270.54	1267 -	1273	1.35E+01	17.41	4.50E+01	1.30E+01
	33	1299.69	1295 -	1304	3.60E+01	16.85	2.00E+01	9.73E+00
	34	1359.03	1355 -	1362	9.47E+00	11.49	1.51E+01	7.97E+00
	35	1461.03	1455 -	1465	5.35E+02	46.71	5.59E+00	5.29E+00
	36	1565.13	1562 -	1568	6.50E+00	8.03	7.00E+00	5.10E+00
	37	1764.88	1760 -	1768	4.39E+01	14.29	4.28E+00	4.41E+00
	38	1847.96	1845 -	1850	7.83E+00	6.71	2.33E+00	3.04E+00
	39	1932.42	1929 -	1934	6.00E+00	4.90	0.00E+00	0.00E+00
	40	2118.47	2115 -	2120	6.44E+00	6.40	3.13E+00	3.21E+00
	41	2204.00	2199 -	2206	6.00E+00	8.49	8.00E+00	5.70E+00
	42	2448.57	2444 -	2450	4.42E+00	6.02	3.17E+00	3.54E+00
	43	2614.98	2610 -	2619	5.90E+01	15.36	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 1:00:20PM

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	76.44	71 -	81	76.66	7.65E+02	145.03	2.39E+03	.....
2	87.32	86 -	90	87.53	8.33E+01	73.55	1.14E+03	SN-126 CD-109 NP-237 EU-155
3	93.14	90 -	96	93.35	2.06E+02	92.55	1.38E+03	GA-67

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	4	105.32	103 -	108	105.52	6.55E+01	69.30	9.11E+02	EU-155
									NP-239
	5	120.81	117 -	124	121.00	7.95E+01	82.24	1.06E+03	SE-75
									EU-152
	6	129.94	126 -	133	130.12	8.08E+01	83.21	1.10E+03	.....
M	7	238.79	233 -	246	238.91	6.37E+02	67.36	4.28E+02	PB-212
m	8	242.05	233 -	246	242.17	9.47E+01	66.23	4.15E+02	.....
M	9	270.99	268 -	279	271.11	4.82E+01	41.86	3.28E+02	.....
m	10	277.01	268 -	279	277.12	3.60E+01	40.00	2.86E+02	CM-243
									NP-239
	11	295.43	292 -	301	295.53	1.60E+02	63.76	4.99E+02	PB-214
	12	328.11	324 -	332	328.20	5.07E+01	53.32	4.09E+02	LA-140
	13	338.75	335 -	342	338.83	8.44E+01	46.00	2.97E+02	AC-228
	14	352.19	349 -	355	352.26	2.79E+02	51.54	2.79E+02	PB-214
	15	395.50	393 -	398	395.55	3.19E+01	30.77	1.62E+02	.....
	16	452.53	449 -	456	452.55	3.03E+01	32.06	1.49E+02	.....
	17	510.85	506 -	514	510.84	1.38E+02	42.17	1.89E+02	.....
	18	530.01	527 -	534	529.99	2.35E+01	28.71	1.17E+02	I-133
									RB-83
	19	583.27	577 -	586	583.22	1.52E+02	44.40	1.94E+02	TL-208
M	20	605.70	604 -	614	605.64	1.75E+01	12.37	3.53E+01	CS-134
m	21	609.68	604 -	614	609.63	2.23E+02	35.96	6.94E+01	BI-214
	22	727.99	725 -	732	727.88	4.33E+01	29.12	1.13E+02	BI-212
	23	794.66	790 -	799	794.51	3.88E+01	28.69	9.64E+01	.....
	24	859.76	855 -	864	859.59	2.36E+01	29.43	1.11E+02	TL-208
M	25	907.41	906 -	915	907.22	1.24E+01	11.08	2.72E+01	.....
m	26	911.41	906 -	915	911.22	1.24E+02	29.06	6.70E+01	AC-228
									LU-172
	27	968.26	962 -	973	968.04	6.90E+01	36.50	1.32E+02	AC-228
	28	988.52	985 -	992	988.29	1.80E+01	20.20	5.60E+01	.....
	29	1120.72	1117 -	1123	1120.44	3.68E+01	21.35	5.64E+01	SC-46
									BI-214
									TA-182
M	30	1237.94	1233 -	1248	1237.61	2.30E+01	25.94	9.92E+01	CO-56
m	31	1245.77	1233 -	1248	1245.43	1.84E+01	19.62	3.79E+01	.....
	32	1270.54	1267 -	1273	1270.20	1.35E+01	17.41	4.50E+01	.....
	33	1299.69	1295 -	1304	1299.33	3.60E+01	16.85	2.00E+01	.....
	34	1359.03	1355 -	1362	1358.65	9.47E+00	11.49	1.51E+01	.....
	35	1461.03	1455 -	1465	1460.61	5.35E+02	46.71	5.59E+00	K-40
	36	1565.13	1562 -	1568	1564.67	6.50E+00	8.03	7.00E+00	.....
	37	1764.88	1760 -	1768	1764.35	4.39E+01	14.29	4.28E+00	BI-214
	38	1847.96	1845 -	1850	1847.40	7.83E+00	6.71	2.33E+00	.....
	39	1932.42	1929 -	1934	1931.83	6.00E+00	4.90	0.00E+00	.....
	40	2118.47	2115 -	2120	2117.83	6.44E+00	6.40	3.13E+00	.....
	41	2204.00	2199 -	2206	2203.33	6.00E+00	8.49	8.00E+00	BI-214
	42	2448.57	2444 -	2450	2447.83	4.42E+00	6.02	3.17E+00	.....
	43	2614.98	2610 -	2619	2614.20	5.90E+01	15.36	0.00E+00	TL-208

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 1:00:20PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.44	7.65E+02	145.03	2.38E-02	2.14E-03
	2	87.32	8.33E+01	73.55	2.44E-02	2.50E-03
	3	93.14	2.06E+02	92.55	2.44E-02	2.41E-03
	4	105.32	6.55E+01	69.30	2.41E-02	2.12E-03
	5	120.81	7.95E+01	82.24	2.31E-02	1.76E-03
	6	129.94	8.08E+01	83.21	2.25E-02	1.69E-03
M	7	238.79	6.37E+02	67.36	1.52E-02	1.18E-03
m	8	242.05	9.47E+01	66.23	1.51E-02	1.17E-03
M	9	270.99	4.82E+01	41.86	1.38E-02	1.03E-03
m	10	277.01	3.60E+01	40.00	1.35E-02	1.01E-03
	11	295.43	1.60E+02	63.76	1.28E-02	9.74E-04
	12	328.11	5.07E+01	53.32	1.17E-02	9.27E-04
	13	338.75	8.44E+01	46.00	1.14E-02	9.12E-04
	14	352.19	2.79E+02	51.54	1.11E-02	8.93E-04
	15	395.50	3.19E+01	30.77	1.00E-02	8.33E-04
	16	452.53	3.03E+01	32.06	8.91E-03	7.77E-04
	17	510.85	1.38E+02	42.17	8.01E-03	7.18E-04
	18	530.01	2.35E+01	28.71	7.76E-03	6.99E-04
	19	583.27	1.52E+02	44.40	7.14E-03	6.46E-04
M	20	605.70	1.75E+01	12.37	6.91E-03	6.24E-04
m	21	609.68	2.23E+02	35.96	6.87E-03	6.20E-04
	22	727.99	4.33E+01	29.12	5.89E-03	5.14E-04
	23	794.66	3.88E+01	28.69	5.46E-03	4.59E-04
	24	859.76	2.36E+01	29.43	5.10E-03	4.06E-04
M	25	907.41	1.24E+01	11.08	4.87E-03	3.73E-04
m	26	911.41	1.24E+02	29.06	4.85E-03	3.72E-04
	27	968.26	6.90E+01	36.50	4.61E-03	3.62E-04
	28	988.52	1.80E+01	20.20	4.53E-03	3.58E-04
	29	1120.72	3.68E+01	21.35	4.08E-03	3.33E-04
M	30	1237.94	2.30E+01	25.94	3.76E-03	3.09E-04
m	31	1245.77	1.84E+01	19.62	3.74E-03	3.08E-04
	32	1270.54	1.35E+01	17.41	3.68E-03	3.02E-04
	33	1299.69	3.60E+01	16.85	3.61E-03	2.96E-04
	34	1359.03	9.47E+00	11.49	3.48E-03	2.85E-04

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1461.03	5.35E+02	46.71	3.29E-03	2.69E-04
36	1565.13	6.50E+00	8.03	3.12E-03	2.54E-04
37	1764.88	4.39E+01	14.29	2.86E-03	2.24E-04
38	1847.96	7.83E+00	6.71	2.77E-03	2.13E-04
39	1932.42	6.00E+00	4.90	2.68E-03	2.13E-04
40	2118.47	6.44E+00	6.40	2.52E-03	2.13E-04
41	2204.00	6.00E+00	8.49	2.46E-03	2.13E-04
42	2448.57	4.42E+00	6.02	2.32E-03	2.13E-04
43	2614.98	5.90E+01	15.36	2.24E-03	2.13E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 1:00:20PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015433.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.44	7.65E+02	145.03			7.65E+02	1.45E+02
	2	87.32	8.33E+01	73.55	1.98E+01	3.34E+00	6.35E+01	7.36E+01
	3	93.14	2.06E+02	92.55	8.14E+01	5.24E+00	1.25E+02	9.27E+01
	4	105.32	6.55E+01	69.30			6.55E+01	6.93E+01
	5	120.81	7.95E+01	82.24			7.95E+01	8.22E+01
	6	129.94	8.08E+01	83.21			8.08E+01	8.32E+01
M	7	238.79	6.37E+02	67.36	1.24E+01	5.80E+00	6.25E+02	6.76E+01
m	8	242.05	9.47E+01	66.23			9.47E+01	6.62E+01
M	9	270.99	4.82E+01	41.86			4.82E+01	4.19E+01
m	10	277.01	3.60E+01	40.00			3.60E+01	4.00E+01
	11	295.43	1.60E+02	63.76	2.48E+00	4.46E+00	1.58E+02	6.39E+01
	12	328.11	5.07E+01	53.32			5.07E+01	5.33E+01
	13	338.75	8.44E+01	46.00	1.29E+00	4.12E+00	8.31E+01	4.62E+01
	14	352.19	2.79E+02	51.54	4.97E+00	4.95E+00	2.74E+02	5.18E+01
	15	395.50	3.19E+01	30.77			3.19E+01	3.08E+01
	16	452.53	3.03E+01	32.06			3.03E+01	3.21E+01
	17	510.85	1.38E+02	42.17	5.89E+01	4.93E+00	7.87E+01	4.25E+01
	18	530.01	2.35E+01	28.71			2.35E+01	2.87E+01
	19	583.27	1.52E+02	44.40	3.50E+00	3.61E+00	1.48E+02	4.45E+01
M	20	605.70	1.75E+01	12.37			1.75E+01	1.24E+01
m	21	609.68	2.23E+02	35.96	7.39E+00	3.16E+00	2.15E+02	3.61E+01

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	22	727.99	4.33E+01	29.12			4.33E+01	2.91E+01
	23	794.66	3.88E+01	28.69			3.88E+01	2.87E+01
	24	859.76	2.36E+01	29.43			2.36E+01	2.94E+01
M	25	907.41	1.24E+01	11.08			1.24E+01	1.11E+01
m	26	911.41	1.24E+02	29.06	2.41E+00	2.60E+00	1.22E+02	2.92E+01
	27	968.26	6.90E+01	36.50			6.90E+01	3.65E+01
	28	988.52	1.80E+01	20.20			1.80E+01	2.02E+01
	29	1120.72	3.68E+01	21.35	4.52E-01	2.22E+00	3.64E+01	2.15E+01
M	30	1237.94	2.30E+01	25.94			2.30E+01	2.59E+01
m	31	1245.77	1.84E+01	19.62			1.84E+01	1.96E+01
	32	1270.54	1.35E+01	17.41			1.35E+01	1.74E+01
	33	1299.69	3.60E+01	16.85			3.60E+01	1.69E+01
	34	1359.03	9.47E+00	11.49			9.47E+00	1.15E+01
	35	1461.03	5.35E+02	46.71	2.28E+00	2.00E+00	5.33E+02	4.68E+01
	36	1565.13	6.50E+00	8.03			6.50E+00	8.03E+00
	37	1764.88	4.39E+01	14.29	1.82E+00	1.19E+00	4.20E+01	1.43E+01
	38	1847.96	7.83E+00	6.71			7.83E+00	6.71E+00
	39	1932.42	6.00E+00	4.90			6.00E+00	4.90E+00
	40	2118.47	6.44E+00	6.40			6.44E+00	6.40E+00
	41	2204.00	6.00E+00	8.49			6.00E+00	8.49E+00
	42	2448.57	4.42E+00	6.02			4.42E+00	6.02E+00
	43	2614.98	5.90E+01	15.36	1.68E+00	1.12E+00	5.73E+01	1.54E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 1:00:20PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015433.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	76.44	7.65E+02	145.03			7.65E+02	1.45E+02
2	87.32	8.33E+01	73.55	1.98E+01	3.34E+00	6.35E+01	7.36E+01
3	93.14	2.06E+02	92.55	8.14E+01	5.24E+00	1.25E+02	9.27E+01
4	105.32	6.55E+01	69.30			6.55E+01	6.93E+01
5	120.81	7.95E+01	82.24			7.95E+01	8.22E+01
6	129.94	8.08E+01	83.21			8.08E+01	8.32E+01

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	7	238.79	6.37E+02	67.36	1.24E+01	5.80E+00	6.25E+02	6.76E+01
m	8	242.05	9.47E+01	66.23			9.47E+01	6.62E+01
M	9	270.99	4.82E+01	41.86			4.82E+01	4.19E+01
m	10	277.01	3.60E+01	40.00			3.60E+01	4.00E+01
	11	295.43	1.60E+02	63.76	2.48E+00	4.46E+00	1.58E+02	6.39E+01
	12	328.11	5.07E+01	53.32			5.07E+01	5.33E+01
	13	338.75	8.44E+01	46.00	1.29E+00	4.12E+00	8.31E+01	4.62E+01
	14	352.19	2.79E+02	51.54	4.97E+00	4.95E+00	2.74E+02	5.18E+01
	15	395.50	3.19E+01	30.77			3.19E+01	3.08E+01
	16	452.53	3.03E+01	32.06			3.03E+01	3.21E+01
	17	510.85	1.38E+02	42.17	5.89E+01	4.93E+00	7.87E+01	4.25E+01
	18	530.01	2.35E+01	28.71			2.35E+01	2.87E+01
	19	583.27	1.52E+02	44.40	3.50E+00	3.61E+00	1.48E+02	4.45E+01
M	20	605.70	1.75E+01	12.37			1.75E+01	1.24E+01
m	21	609.68	2.23E+02	35.96	7.39E+00	3.16E+00	2.15E+02	3.61E+01
	22	727.99	4.33E+01	29.12			4.33E+01	2.91E+01
	23	794.66	3.88E+01	28.69			3.88E+01	2.87E+01
	24	859.76	2.36E+01	29.43			2.36E+01	2.94E+01
M	25	907.41	1.24E+01	11.08			1.24E+01	1.11E+01
m	26	911.41	1.24E+02	29.06	2.41E+00	2.60E+00	1.22E+02	2.92E+01
	27	968.26	6.90E+01	36.50			6.90E+01	3.65E+01
	28	988.52	1.80E+01	20.20			1.80E+01	2.02E+01
	29	1120.72	3.68E+01	21.35	4.52E-01	2.22E+00	3.64E+01	2.15E+01
M	30	1237.94	2.30E+01	25.94			2.30E+01	2.59E+01
m	31	1245.77	1.84E+01	19.62			1.84E+01	1.96E+01
	32	1270.54	1.35E+01	17.41			1.35E+01	1.74E+01
	33	1299.69	3.60E+01	16.85			3.60E+01	1.69E+01
	34	1359.03	9.47E+00	11.49			9.47E+00	1.15E+01
	35	1461.03	5.35E+02	46.71	2.28E+00	2.00E+00	5.33E+02	4.68E+01
	36	1565.13	6.50E+00	8.03			6.50E+00	8.03E+00
	37	1764.88	4.39E+01	14.29	1.82E+00	1.19E+00	4.20E+01	1.43E+01
	38	1847.96	7.83E+00	6.71			7.83E+00	6.71E+00
	39	1932.42	6.00E+00	4.90			6.00E+00	4.90E+00
	40	2118.47	6.44E+00	6.40			6.44E+00	6.40E+00
	41	2204.00	6.00E+00	8.49			6.00E+00	8.49E+00
	42	2448.57	4.42E+00	6.02			4.42E+00	6.02E+00
	43	2614.98	5.90E+01	15.36	1.68E+00	1.12E+00	5.73E+01	1.54E+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 1411131-14

J1V1L6 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.992	1460.81	*	10.67	1.48E+01	1.81E+00
GA-67	0.560	93.31	*	35.70	2.21E-01	3.05E-01
		208.95		2.24		
		300.22		16.00		
CD-109	0.923	88.03	*	3.72	6.87E-01	8.00E-01
SN-126	0.990	87.57	*	37.00	6.88E-02	8.01E-02
I-133	0.967	529.87	*	86.30	1.91E-01	2.34E-01
TL-208	0.987	583.14	*	30.22	6.73E-01	2.11E-01
		860.37	*	4.48	1.01E+00	1.26E+00
		2614.66	*	35.85	6.99E-01	1.99E-01
BI-212	0.687	727.17	*	11.80	6.10E-01	4.14E-01
		1620.62		2.75		
PB-212	0.892	238.63	*	44.60	9.01E-01	1.20E-01
		300.09		3.41		
BI-214	0.977	609.31	*	46.30	6.62E-01	1.26E-01
		1120.29	*	15.10	5.78E-01	3.45E-01
		1764.49	*	15.80	9.11E-01	3.19E-01
		2204.22	*	4.98	4.79E-01	6.78E-01
PB-214	0.990	295.21	*	19.19	6.28E-01	2.59E-01
		351.92	*	37.19	6.53E-01	1.34E-01
AC-228	0.951	338.32	*	11.40	6.24E-01	3.50E-01
		911.07	*	27.70	8.86E-01	2.23E-01
		969.11	*	16.60	8.83E-01	4.72E-01
NP-237	0.898	86.50	*	12.60	2.02E-01	2.35E-01
NP-239	0.606	106.10	*	22.70	2.21E-01	2.34E-01
		228.18		10.70		
		277.60	*	14.10	3.48E-01	3.87E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 1:00:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.44	2.12471E-01	9.48		
	5	120.81	2.20749E-02	51.75	Tol.	EU-152
	6	129.94	2.24428E-02	51.50		
m	8	242.05	2.62940E-02	34.98		
M	9	270.99	1.33755E-02	43.46		
	12	328.11	1.40964E-02	52.53	Tol.	LA-140
	15	395.50	8.86554E-03	48.21		
	16	452.53	8.42593E-03	52.85		
	17	510.85	2.18508E-02	26.99		
M	20	605.70	4.84819E-03	35.44	Tol.	CS-134
	23	794.66	1.07807E-02	36.96		
M	25	907.41	3.44451E-03	44.67		
	28	988.52	5.00000E-03	56.11		
M	30	1237.94	6.40004E-03	56.29	Tol.	CO-56
m	31	1245.77	5.11539E-03	53.26	Sum	
	32	1270.54	3.75386E-03	64.43		
	33	1299.69	1.00000E-02	23.41		
	34	1359.03	2.63072E-03	60.66	Sum	
	36	1565.13	1.80556E-03	61.78		
	38	1847.96	2.17593E-03	42.82	Sum	
	39	1932.42	1.66667E-03	40.82		
	40	2118.47	1.78819E-03	49.73		
	42	2448.57	1.22685E-03	68.16		

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

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	1.48E+01	1.81E+00
GA-67	0.56	93.31	*	35.70	2.21E-01	3.05E-01
		208.95		2.24		
		300.22		16.00		

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CD-109	0.92	88.03	*	3.72	6.87E-01	8.00E-01
SN-126	0.99	87.57	*	37.00	6.88E-02	8.01E-02
I-133	0.96	529.87	*	86.30	1.91E-01	2.34E-01
TL-208	0.98	583.14	*	30.22	6.73E-01	2.11E-01
		860.37	*	4.48	1.01E+00	1.26E+00
		2614.66	*	35.85	6.99E-01	1.99E-01
BI-212	0.68	727.17	*	11.80	6.10E-01	4.14E-01
		1620.62		2.75		
PB-212	0.89	238.63	*	44.60	9.01E-01	1.20E-01
		300.09		3.41		
BI-214	0.97	609.31	*	46.30	6.62E-01	1.26E-01
		1120.29	*	15.10	5.78E-01	3.45E-01
		1764.49	*	15.80	9.11E-01	3.19E-01
		2204.22	*	4.98	4.79E-01	6.78E-01
PB-214	0.99	295.21	*	19.19	6.28E-01	2.59E-01
		351.92	*	37.19	6.53E-01	1.34E-01
AC-228	0.95	338.32	*	11.40	6.24E-01	3.50E-01
		911.07	*	27.70	8.86E-01	2.23E-01
		969.11	*	16.60	8.83E-01	4.72E-01
NP-237	0.89	86.50	*	12.60	2.02E-01	2.35E-01
NP-239	0.60	106.10	*	22.70	2.21E-01	2.34E-01
		228.18		10.70		
		277.60	*	14.10	3.48E-01	3.87E-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	0.992	1.48E+01	1.81E+00	
	GA-67	0.560	2.21E-01	3.05E-01	
?	CD-109	0.923	6.87E-01	8.00E-01	
?	SN-126	0.990	6.88E-02	8.01E-02	

0620

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	I-133	0.967	1.91E-01	2.34E-01	
X	EU-155	0.937			
	TL-208	0.987	6.90E-01	1.44E-01	
	BI-212	0.687	6.10E-01	4.14E-01	
	PB-212	0.892	9.01E-01	1.20E-01	
	BI-214	0.977	6.78E-01	1.10E-01	
	PB-214	0.990	6.48E-01	1.19E-01	
	AC-228	0.951	8.20E-01	1.75E-01	
?	NP-237	0.898	2.02E-01	2.35E-01	
	NP-239	0.606	2.55E-01	2.00E-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 1411131-14

J1V1L6 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 1:00:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.44	2.12471E-01	9.48		
	5	120.81	2.20749E-02	51.75	Tol.	EU-152
	6	129.94	2.24428E-02	51.50		
m	8	242.05	2.62940E-02	34.98		
M	9	270.99	1.33755E-02	43.46		
	12	328.11	1.40964E-02	52.53	Tol.	LA-140
	15	395.50	8.86554E-03	48.21		
	16	452.53	8.42593E-03	52.85		
	17	510.85	2.18508E-02	26.99		
M	20	605.70	4.84819E-03	35.44	Tol.	CS-134
	23	794.66	1.07807E-02	36.96		
M	25	907.41	3.44451E-03	44.67		
	28	988.52	5.00000E-03	56.11		
M	30	1237.94	6.40004E-03	56.29	Tol.	CO-56
m	31	1245.77	5.11539E-03	53.26	Sum	
	32	1270.54	3.75386E-03	64.43		
	33	1299.69	1.00000E-02	23.41		
	34	1359.03	2.63072E-03	60.66	Sum	
	36	1565.13	1.80556E-03	61.78		
	38	1847.96	2.17593E-03	42.82	Sum	
	39	1932.42	1.66667E-03	40.82		
	40	2118.47	1.78819E-03	49.73		
	42	2448.57	1.22685E-03	68.16		

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 1411131-14

J1V1L6 SAF: RC-107

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	-3.74E-02	5.24E-01	5.24E-01
+	NA-22	1274.54		99.94	-1.82E-04	9.07E-02	9.07E-02
+	NA-24	1368.53		99.99	-5.47E-02	3.57E-01	6.68E-01
		2754.09		99.86	-9.69E-02		3.57E-01
+	AL-26	1808.65		99.76	2.32E-02	5.82E-02	5.82E-02
+	K-40	1460.81	*	10.67	1.48E+01	4.14E-01	4.14E-01
+	AR-41	1293.64		99.16	8.29E+05	2.37E+07	2.37E+07
+	TI-44	67.88		94.40	1.79E-02	5.28E-02	5.28E-02
		78.34		96.00	1.20E-01		6.31E-02
+	SC-46	889.25		99.98	7.25E-03	6.31E-02	6.31E-02
		1120.51		99.99	9.04E-02		9.83E-02
+	V-48	983.52		99.98	1.94E-02	7.41E-02	7.41E-02
		1312.10		97.50	-1.38E-02		9.41E-02
+	CR-51	320.08		9.83	-6.98E-02	5.06E-01	5.06E-01
+	MN-54	834.83		99.97	-8.57E-03	6.69E-02	6.69E-02
+	CO-56	846.75		99.96	0.00E+00	6.20E-02	6.20E-02
		1037.75		14.03	-5.11E-02		5.66E-01
		1238.25		67.00	6.29E-02		1.54E-01
		1771.40		15.51	-1.46E-01		3.39E-01
		2598.48		16.90	-3.15E-02		3.44E-01
+	CO-57	122.06		85.51	1.72E-02	4.73E-02	4.73E-02
		136.48		10.60	3.62E-02		3.80E-01
+	CO-58	810.76		99.40	-2.85E-02	6.74E-02	6.74E-02
+	FE-59	1099.22		56.50	3.00E-02	1.58E-01	1.58E-01
		1291.56		43.20	-2.72E-02		1.71E-01
+	CO-60	1173.22		100.00	-1.25E-02	7.24E-02	7.24E-02
		1332.49		100.00	6.10E-03		7.44E-02
+	ZN-65	1115.52		50.75	-1.12E-02	1.36E-01	1.36E-01
+	GA-67	93.31	*	35.70	2.21E-01	2.67E-01	2.67E-01
		208.95		2.24	1.04E+00		3.46E+00
		300.22		16.00	-1.42E-02		5.20E-01
+	SE-75	121.11		16.70	2.73E-01	6.90E-02	2.53E-01
		136.00		59.20	8.95E-03		6.90E-02
		264.65		59.80	8.51E-03		8.11E-02
		279.53		25.20	3.98E-02		2.01E-01
		400.65		11.40	-2.44E-01		4.40E-01
+	RB-82	776.52		13.00	-1.12E-01	5.06E-01	5.06E-01
+	RB-83	520.41		46.00	1.59E-02	1.29E-01	1.29E-01
		529.64		30.30	8.70E-02		1.85E-01
		552.65		16.40	6.08E-02		3.62E-01
+	KR-85	513.99		0.43	-1.00E+00	1.83E+01	1.83E+01
+	SR-85	513.99		99.27	-4.47E-03	8.20E-02	8.20E-02

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02		93.40	6.01E-04	6.26E-02	7.33E-02
		1836.01		99.38	1.20E-02		6.26E-02
+	NB-93M	16.57		9.43	-9.05E+00	5.90E+01	5.90E+01
+	NB-94	702.63		100.00	1.36E-02	6.16E-02	6.67E-02
		871.10		100.00	-2.15E-02		6.16E-02
+	NB-95	765.79		99.81	4.23E-02	8.09E-02	8.09E-02
+	NB-95M	235.69		25.00	1.21E+00	4.93E-01	4.93E-01
+	ZR-95	724.18		43.70	-4.70E-03	1.24E-01	1.55E-01
		756.72		55.30	4.45E-02		1.24E-01
+	MO-99	181.06		6.20	1.94E-01	7.59E-01	1.14E+00
		739.58		12.80	2.03E-01		7.59E-01
		778.00		4.50	5.91E-01		2.39E+00
+	RU-103	497.08		89.00	-1.22E-02	5.79E-02	5.79E-02
+	RU-106	621.84		9.80	2.20E-01	5.84E-01	5.84E-01
+	AG-108M	433.93		89.90	1.06E-02	5.94E-02	5.94E-02
		614.37		90.40	-1.03E-02		6.69E-02
		722.95		90.50	-6.32E-03		7.07E-02
+	CD-109	88.03	*	3.72	6.87E-01	1.31E+00	1.31E+00
+	AG-110M	657.75		93.14	-1.09E-02	6.71E-02	6.71E-02
		677.61		10.53	3.55E-02		5.74E-01
		706.67		16.46	2.56E-01		4.20E-01
		763.93		21.98	-4.21E-01		2.95E-01
		884.67		71.63	-1.44E-02		8.67E-02
		1384.27		23.94	1.80E-02		3.05E-01
+	CD-113M	263.70		0.02	1.50E+01	2.09E+02	2.09E+02
+	SN-113	255.12		1.93	-2.64E-01	8.22E-02	2.46E+00
		391.69		64.90	-9.69E-03		8.22E-02
+	TE123M	159.00		84.10	-2.46E-02	4.65E-02	4.65E-02
+	SB-124	602.71		97.87	-3.79E-05	5.98E-02	5.98E-02
		645.85		7.26	2.75E-01		8.44E-01
		722.78		11.10	-5.28E-02		5.91E-01
		1691.02		49.00	2.08E-02		9.79E-02
+	I-125	35.49		6.49	-1.09E+00	1.60E+00	1.60E+00
+	SB-125	176.33		6.89	-1.62E-01	1.82E-01	5.55E-01
		427.89		29.33	-1.48E-02		1.82E-01
		463.38		10.35	3.52E-01		6.20E-01
		600.56		17.80	7.39E-03		3.18E-01
		635.90		11.32	-8.64E-03		5.03E-01
+	SB-126	414.70		83.30	-3.05E-02	6.36E-02	6.36E-02
		666.33		99.60	-4.64E-02		7.16E-02
		695.00		99.60	-2.60E-03		7.42E-02
		720.50		53.80	9.72E-03		1.31E-01
+	SN-126	87.57	*	37.00	6.88E-02	1.31E-01	1.31E-01
+	SB-127	473.00		25.00	-1.40E-01	2.42E-01	3.21E-01
		685.20		35.70	-1.33E-01		2.42E-01
		783.80		14.70	3.65E-01		6.66E-01
+	I-129	29.78		57.00	2.70E-02	3.32E-01	3.32E-01
		33.60		13.20	-3.24E-01		8.79E-01

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58		7.52	3.40E-01	3.32E-01	1.11E+00
+	I-131	284.30		6.05	3.60E-01	7.47E-02	9.73E-01
		364.48		81.20	5.41E-03		7.47E-02
		636.97		7.26	3.55E-01		9.65E-01
		722.89		1.80	-3.82E-01		4.28E+00
+	TE-132	49.72		13.10	-4.94E-01	8.80E-02	7.01E-01
		228.16		88.00	-2.89E-03		8.80E-02
+	BA-133	81.00		33.00	-6.21E-02	1.11E-01	1.39E-01
		302.84		17.80	-6.30E-02		2.81E-01
		356.01		60.00	2.68E-02		1.11E-01
+	I-133	529.87	*	86.30	1.91E-01	3.83E-01	3.83E-01
+	CS-134	563.23		8.38	1.83E-01	6.28E-02	7.56E-01
		569.32		15.43	2.46E-01		4.12E-01
		604.70		97.60	8.41E-04		6.28E-02
		795.84		85.40	1.81E-02		8.53E-02
		801.93		8.73	1.67E-01		7.85E-01
+	CS-135	268.24		16.00	1.95E-02	3.25E-01	3.25E-01
+	I-135	1131.51		22.50	1.20E+01	5.22E+01	8.16E+01
		1260.41		28.60	6.14E+00		5.22E+01
		1678.03		9.54	1.92E+01		1.15E+02
+	CS-136	153.22		7.46	4.00E-01	7.42E-02	6.37E-01
		163.89		4.61	-3.80E-01		9.29E-01
		176.55		13.56	-1.76E-01		3.20E-01
		273.65		12.66	2.31E-01		4.64E-01
		340.57		48.50	-2.81E-03		1.42E-01
		818.50		99.70	-2.68E-02		7.42E-02
		1048.07		79.60	3.63E-02		9.53E-02
		1235.34		19.70	-7.00E-03		5.59E-01
+	CS-137	661.65		85.12	-5.44E-03	7.58E-02	7.58E-02
+	LA-138	788.74		34.00	4.12E-03	9.21E-02	1.85E-01
		1435.80		66.00	-8.35E-02		9.21E-02
+	CE-139	165.85		80.35	-1.24E-02	4.86E-02	4.86E-02
+	BA-140	162.64		6.70	-3.78E-02	2.32E-01	6.47E-01
		304.84		4.50	8.46E-02		1.20E+00
		423.70		3.20	8.30E-01		1.87E+00
		437.55		2.00	-2.24E-01		2.87E+00
		537.32		25.00	1.13E-01		2.32E-01
+	LA-140	328.77		20.50	2.40E-01	8.60E-02	3.25E-01
		487.03		45.50	-3.72E-02		1.17E-01
		815.85		23.50	1.58E-01		3.29E-01
		1596.49		95.49	3.00E-02		8.60E-02
+	CE-141	145.44		48.40	3.19E-02	8.72E-02	8.72E-02
+	CE-143	57.36		11.80	-3.94E-01	4.43E-01	1.32E+00
		293.26		42.00	-1.66E-02		4.43E-01
		664.55		5.20	1.62E+00		3.77E+00
+	CE-144	133.54		10.80	1.58E-02	3.83E-01	3.83E-01
+	PM-144	476.78		42.00	-1.56E-02	5.55E-02	1.27E-01
		618.01		98.60	4.37E-03		5.55E-02
		696.49		99.49	6.68E-03		6.72E-02

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-145	36.85		21.70	-8.20E-02	2.37E-01	4.31E-01
		37.36		39.70	1.15E-01		2.37E-01
		42.30		15.10	-2.95E-01		4.75E-01
		72.40		2.31	-2.98E+00		2.40E+00
+	PM-146	453.90		39.94	-1.44E-02	1.31E-01	1.31E-01
		735.90		14.01	-3.29E-01		3.58E-01
		747.13		13.10	-7.79E-02		4.31E-01
+	ND-147	91.11		28.90	-1.37E-01	1.93E-01	1.93E-01
		531.02		13.10	1.74E-01		4.69E-01
+	PM-149	285.90		3.10	5.53E-01	3.02E+00	3.02E+00
+	EU-152	121.78		20.50	7.12E-02	1.96E-01	1.96E-01
		244.69		5.40	-2.89E-02		1.04E+00
		344.27		19.13	1.52E-02		2.70E-01
		778.89		9.20	9.52E-02		6.57E-01
		964.01		10.40	-9.81E-01		7.70E-01
		1085.78		7.22	4.02E-01		1.14E+00
		1112.02		9.60	2.85E-01		8.08E-01
		1407.95		14.94	1.34E-01		5.28E-01
+	GD-153	97.43		31.30	5.43E-02	1.33E-01	1.33E-01
		103.18		22.20	-4.31E-02		1.77E-01
+	EU-154	123.07		40.50	-3.60E-02	9.52E-02	9.52E-02
		723.30		19.70	-2.91E-02		3.25E-01
		873.19		11.50	3.97E-03		5.97E-01
		996.32		10.30	-4.24E-01		6.13E-01
		1004.76		17.90	-1.78E-01		4.11E-01
		1274.45		35.50	-5.12E-04		2.55E-01
+	EU-155	86.50	*	30.90	8.25E-02	1.57E-01	1.57E-01
		105.30	*	20.70	1.29E-01		2.23E-01
+	EU-156	811.77		10.40	4.59E-02	7.08E-01	7.08E-01
		1153.47		7.20	5.44E-01		1.40E+00
		1230.71		8.90	4.89E-01		1.23E+00
+	HO-166M	184.41		72.60	4.68E-02	6.31E-02	6.31E-02
		280.45		29.60	-2.45E-02		1.61E-01
		410.94		11.10	8.58E-02		4.87E-01
		711.69		54.10	1.05E-02		1.24E-01
+	TM-171	66.72		0.14	-3.71E+01	3.58E+01	3.58E+01
+	HF-172	81.75		4.52	7.09E-02	3.36E-01	1.01E+00
		125.81		11.30	-3.76E-01		3.36E-01
+	LU-172	181.53		20.60	-2.26E-01	1.46E-01	2.48E-01
		810.06		16.63	-3.44E-01		4.74E-01
		912.12		15.25	1.44E+00		9.86E-01
		1093.66		62.50	-1.14E-01		1.46E-01
+	LU-173	100.72		5.24	2.92E-01	2.45E-01	7.69E-01
		272.11		21.20	-1.96E-03		2.45E-01
+	HF-175	343.40		84.00	-3.38E-02	6.04E-02	6.04E-02
+	LU-176	88.34		13.30	2.00E-02	4.86E-02	3.73E-01
		201.83		86.00	-1.53E-02		5.57E-02
		306.78		94.00	-5.72E-03		4.86E-02
+	TA-182	67.75		41.20	4.16E-02	1.23E-01	1.23E-01

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TA-182	1121.30		34.90	1.94E-01	1.23E-01	2.80E-01
		1189.05		16.23	-2.31E-01		4.63E-01
		1221.41		26.98	5.89E-02		3.41E-01
		1231.02		11.44	1.10E-01		8.25E-01
+	IR-192	308.46		29.68	-1.01E-01	1.21E-01	1.52E-01
		468.07		48.10	-1.20E-01		1.21E-01
+	HG-203	279.19		77.30	1.71E-02	6.72E-02	6.72E-02
+	BI-207	569.67		97.72	4.45E-03	6.37E-02	6.37E-02
		1063.62		74.90	2.13E-02		1.03E-01
+	TL-208	583.14	*	30.22	6.73E-01	8.96E-02	2.91E-01
		860.37	*	4.48	1.01E+00		2.07E+00
		2614.66	*	35.85	6.99E-01		8.96E-02
+	BI-210M	262.00		45.00	4.96E-03	1.06E-01	1.06E-01
		300.00		23.00	-6.24E-03		2.29E-01
+	PB-210	46.50		4.25	1.50E+00	1.60E+00	1.60E+00
+	PB-211	404.84		2.90	2.05E-02	1.92E+00	1.92E+00
		831.96		2.90	5.45E-01		2.35E+00
+	BI-212	727.17	*	11.80	6.10E-01	6.40E-01	6.40E-01
		1620.62		2.75	1.26E+00		2.69E+00
+	PB-212	238.63	*	44.60	9.01E-01	2.15E-01	2.15E-01
		300.09		3.41	-4.21E-02		1.55E+00
+	BI-214	609.31	*	46.30	6.62E-01	1.50E-01	1.50E-01
		1120.29	*	15.10	5.78E-01		5.07E-01
		1764.49	*	15.80	9.11E-01		2.77E-01
		2204.22	*	4.98	4.79E-01		1.12E+00
+	PB-214	295.21	*	19.19	6.28E-01	1.62E-01	3.95E-01
		351.92	*	37.19	6.53E-01		1.62E-01
+	RN-219	401.80		6.50	-4.35E-01	7.92E-01	7.92E-01
+	RA-223	323.87		3.88	2.94E-01	1.32E+00	1.32E+00
+	RA-224	240.98		3.95	1.01E+01	2.33E+00	2.33E+00
+	RA-225	40.00		31.00	8.91E-02	2.91E-01	2.91E-01
+	RA-226	186.21		3.28	1.60E+00	1.40E+00	1.40E+00
+	TH-227	50.10		8.40	-4.83E-01	6.85E-01	6.85E-01
		236.00		11.50	1.74E+00		7.11E-01
		256.20		6.30	-2.35E-01		7.36E-01
+	AC-228	338.32	*	11.40	6.24E-01	3.19E-01	5.45E-01
		911.07	*	27.70	8.86E-01		3.19E-01
		969.11	*	16.60	8.83E-01		7.18E-01
+	TH-230	48.44		16.90	2.83E-01	3.80E-01	3.80E-01
		62.85		4.60	5.26E-01		1.21E+00
		67.67		0.37	4.57E+00		1.35E+01
+	PA-231	283.67		1.60	1.13E+00	2.18E+00	3.05E+00
		302.67		2.30	-4.88E-01		2.18E+00
+	TH-231	25.64		14.70	3.66E-01	7.00E-01	2.49E+00
		84.21		6.40	-2.04E-01		7.00E-01
+	PA-233	311.98		38.60	-7.85E-03	1.28E-01	1.28E-01
+	PA-234	131.20		20.40	1.35E-01	2.09E-01	2.09E-01
		733.99		8.80	-8.40E-02		5.97E-01

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	946.00		12.00	-2.17E-01	2.09E-01	5.38E-01
+	PA-234M	1001.03		0.92	3.45E+00	8.61E+00	8.61E+00
+	TH-234	63.29		3.80	4.19E-01	1.45E+00	1.45E+00
+	U-235	143.76		10.50	-5.61E-02	3.75E-01	3.75E-01
		163.35		4.70	-3.32E-01		8.12E-01
		205.31		4.70	-1.15E+00		9.99E-01
+	NP-237	86.50	*	12.60	2.02E-01	3.85E-01	3.85E-01
+	NP-239	106.10	*	22.70	2.21E-01	3.83E-01	3.83E-01
		228.18		10.70	-2.83E-02		8.62E-01
		277.60	*	14.10	3.48E-01		1.07E+00
+	AM-241	59.54		35.90	-1.27E-01	1.48E-01	1.48E-01
+	AM-243	74.67		66.00	1.35E-01	9.70E-02	9.70E-02
+	CM-243	209.75		3.29	-4.26E-02	3.57E-01	1.47E+00
		228.14		10.60	-1.52E-02		4.63E-01
		277.60		14.00	4.80E-02		3.57E-01

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	5.24E-01	5.24E-01	-3.74E-02	2.47E-01
	NA-22	1274.54		99.94	9.07E-02	9.07E-02	-1.82E-04	4.17E-02
	NA-24	1368.53		99.99	6.68E-01	3.57E-01	-5.47E-02	2.93E-01
		2754.09		99.86	3.57E-01		-9.69E-02	1.13E-01
	AL-26	1808.65		99.76	5.82E-02	5.82E-02	2.32E-02	2.44E-02
+	K-40	1460.81	*	10.67	4.14E-01	4.14E-01	1.48E+01	1.69E-01
	AR-41	1293.64		99.16	2.37E+07	2.37E+07	8.29E+05	1.07E+07

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TI-44	67.88		94.40	5.28E-02	5.28E-02	1.79E-02	2.58E-02
		78.34		96.00	6.31E-02		1.20E-01	3.10E-02
	SC-46	889.25		99.98	6.31E-02	6.31E-02	7.25E-03	2.88E-02
		1120.51		99.99	9.83E-02		9.04E-02	4.58E-02
	V-48	983.52		99.98	7.41E-02	7.41E-02	1.94E-02	3.39E-02
		1312.10		97.50	9.41E-02		-1.38E-02	4.29E-02
	CR-51	320.08		9.83	5.06E-01	5.06E-01	-6.98E-02	2.41E-01
	MN-54	834.83		99.97	6.69E-02	6.69E-02	-8.57E-03	3.09E-02
	CO-56	846.75		99.96	6.20E-02	6.20E-02	0.00E+00	2.84E-02
		1037.75		14.03	5.66E-01		-5.11E-02	2.61E-01
		1238.25		67.00	1.54E-01		6.29E-02	7.14E-02
		1771.40		15.51	3.39E-01		-1.46E-01	1.39E-01
		2598.48		16.90	3.44E-01		-3.15E-02	1.37E-01
	CO-57	122.06		85.51	4.73E-02	4.73E-02	1.72E-02	2.30E-02
		136.48		10.60	3.80E-01		3.62E-02	1.84E-01
	CO-58	810.76		99.40	6.74E-02	6.74E-02	-2.85E-02	3.11E-02
	FE-59	1099.22		56.50	1.58E-01	1.58E-01	3.00E-02	7.32E-02
		1291.56		43.20	1.71E-01		-2.72E-02	7.65E-02
	CO-60	1173.22		100.00	7.24E-02	7.24E-02	-1.25E-02	3.28E-02
		1332.49		100.00	7.44E-02		6.10E-03	3.34E-02
	ZN-65	1115.52		50.75	1.36E-01	1.36E-01	-1.12E-02	6.14E-02
+	GA-67	93.31	*	35.70	2.67E-01	2.67E-01	2.21E-01	1.31E-01
		208.95		2.24	3.46E+00		1.04E+00	1.68E+00
		300.22		16.00	5.20E-01		-1.42E-02	2.50E-01
	SE-75	121.11		16.70	2.53E-01	6.90E-02	2.73E-01	1.23E-01
		136.00		59.20	6.90E-02		8.95E-03	3.35E-02
		264.65		59.80	8.11E-02		8.51E-03	3.90E-02
		279.53		25.20	2.01E-01		3.98E-02	9.67E-02
		400.65		11.40	4.40E-01		-2.44E-01	2.08E-01
	RB-82	776.52		13.00	5.06E-01	5.06E-01	-1.12E-01	2.33E-01
	RB-83	520.41		46.00	1.29E-01	1.29E-01	1.59E-02	6.09E-02
		529.64		30.30	1.85E-01		8.70E-02	8.69E-02
		552.65		16.40	3.62E-01		6.08E-02	1.70E-01
	KR-85	513.99		0.43	1.83E+01	1.83E+01	-1.00E+00	8.78E+00
	SR-85	513.99		99.27	8.20E-02	8.20E-02	-4.47E-03	3.93E-02
	Y-88	898.02		93.40	7.33E-02	6.26E-02	6.01E-04	3.37E-02
		1836.01		99.38	6.26E-02		1.20E-02	2.64E-02
	NB-93M	16.57		9.43	5.90E+01	5.90E+01	-9.05E+00	2.87E+01
	NB-94	702.63		100.00	6.67E-02	6.16E-02	1.36E-02	3.11E-02
		871.10		100.00	6.16E-02		-2.15E-02	2.82E-02
	NB-95	765.79		99.81	8.09E-02	8.09E-02	4.23E-02	3.80E-02
	NB-95M	235.69		25.00	4.93E-01	4.93E-01	1.21E+00	2.41E-01
	ZR-95	724.18		43.70	1.55E-01	1.24E-01	-4.70E-03	7.21E-02
		756.72		55.30	1.24E-01		4.45E-02	5.78E-02
	MO-99	181.06		6.20	1.14E+00	7.59E-01	1.94E-01	5.48E-01
		739.58		12.80	7.59E-01		2.03E-01	3.49E-01
		778.00		4.50	2.39E+00		5.91E-01	1.11E+00
	RU-103	497.08		89.00	5.79E-02	5.79E-02	-1.22E-02	2.71E-02
	RU-106	621.84		9.80	5.84E-01	5.84E-01	2.20E-01	2.72E-01
	AG-108M	433.93		89.90	5.94E-02	5.94E-02	1.06E-02	2.81E-02
		614.37		90.40	6.69E-02		-1.03E-02	3.13E-02
		722.95		90.50	7.07E-02		-6.32E-03	3.29E-02
+	CD-109	88.03	*	3.72	1.31E+00	1.31E+00	6.87E-01	6.39E-01

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	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	6.71E-02	6.71E-02	-1.09E-02	3.13E-02
		677.61		10.53	5.74E-01		3.55E-02	2.67E-01
		706.67		16.46	4.20E-01		2.56E-01	1.97E-01
		763.93		21.98	2.95E-01		-4.21E-01	1.37E-01
		884.67		71.63	8.67E-02		-1.44E-02	3.96E-02
		1384.27		23.94	3.05E-01		1.80E-02	1.36E-01
	CD-113M	263.70		0.02	2.09E+02	2.09E+02	1.50E+01	1.00E+02
	SN-113	255.12		1.93	2.46E+00	8.22E-02	-2.64E-01	1.18E+00
		391.69		64.90	8.22E-02		-9.69E-03	3.90E-02
	TE123M	159.00		84.10	4.65E-02	4.65E-02	-2.46E-02	2.25E-02
	SB-124	602.71		97.87	5.98E-02	5.98E-02	-3.79E-05	2.79E-02
		645.85		7.26	8.44E-01		2.75E-01	3.94E-01
		722.78		11.10	5.91E-01		-5.28E-02	2.75E-01
		1691.02		49.00	9.79E-02		2.08E-02	3.96E-02
	I-125	35.49		6.49	1.60E+00	1.60E+00	-1.09E+00	7.74E-01
	SB-125	176.33		6.89	5.55E-01	1.82E-01	-1.62E-01	2.68E-01
		427.89		29.33	1.82E-01		-1.48E-02	8.64E-02
		463.38		10.35	6.20E-01		3.52E-01	2.95E-01
		600.56		17.80	3.18E-01		7.39E-03	1.48E-01
		635.90		11.32	5.03E-01		-8.64E-03	2.34E-01
	SB-126	414.70		83.30	6.36E-02	6.36E-02	-3.05E-02	2.99E-02
		666.33		99.60	7.16E-02		-4.64E-02	3.34E-02
		695.00		99.60	7.42E-02		-2.60E-03	3.47E-02
		720.50		53.80	1.31E-01		9.72E-03	6.06E-02
+	SN-126	87.57	*	37.00	1.31E-01	1.31E-01	6.88E-02	6.41E-02
	SB-127	473.00		25.00	3.21E-01	2.42E-01	-1.40E-01	1.52E-01
		685.20		35.70	2.42E-01		-1.33E-01	1.12E-01
		783.80		14.70	6.66E-01		3.65E-01	3.09E-01
	I-129	29.78		57.00	3.32E-01	3.32E-01	2.70E-02	1.61E-01
		33.60		13.20	8.79E-01		-3.24E-01	4.25E-01
		39.58		7.52	1.11E+00		3.40E-01	5.40E-01
	I-131	284.30		6.05	9.73E-01	7.47E-02	3.60E-01	4.67E-01
		364.48		81.20	7.47E-02		5.41E-03	3.55E-02
		636.97		7.26	9.65E-01		3.55E-01	4.49E-01
		722.89		1.80	4.28E+00		-3.82E-01	1.99E+00
	TE-132	49.72		13.10	7.01E-01	8.80E-02	-4.94E-01	3.41E-01
		228.16		88.00	8.80E-02		-2.89E-03	4.25E-02
	BA-133	81.00		33.00	1.39E-01	1.11E-01	-6.21E-02	6.77E-02
		302.84		17.80	2.81E-01		-6.30E-02	1.35E-01
		356.01		60.00	1.11E-01		2.68E-02	5.37E-02
+	I-133	529.87	*	86.30	3.83E-01	3.83E-01	1.91E-01	1.81E-01
	CS-134	563.23		8.38	7.56E-01	6.28E-02	1.83E-01	3.57E-01
		569.32		15.43	4.12E-01		2.46E-01	1.94E-01
		604.70		97.60	6.28E-02		8.41E-04	2.94E-02
		795.84		85.40	8.53E-02		1.81E-02	3.98E-02
		801.93		8.73	7.85E-01		1.67E-01	3.64E-01
	CS-135	268.24		16.00	3.25E-01	3.25E-01	1.95E-02	1.57E-01
	I-135	1131.51		22.50	8.16E+01	5.22E+01	1.20E+01	3.76E+01
		1260.41		28.60	5.22E+01		6.14E+00	2.33E+01
		1678.03		9.54	1.15E+02		1.92E+01	4.72E+01
	CS-136	153.22		7.46	6.37E-01	7.42E-02	4.00E-01	3.09E-01
		163.89		4.61	9.29E-01		-3.80E-01	4.48E-01
		176.55		13.56	3.20E-01		-1.76E-01	1.54E-01

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	273.65		12.66	4.64E-01	7.42E-02	2.31E-01	2.23E-01
	340.57		48.50	1.42E-01		-2.81E-03	6.85E-02
	818.50		99.70	7.42E-02		-2.68E-02	3.43E-02
	1048.07		79.60	9.53E-02		3.63E-02	4.33E-02
	1235.34		19.70	5.59E-01		-7.00E-03	2.60E-01
CS-137	661.65		85.12	7.58E-02	7.58E-02	-5.44E-03	3.55E-02
LA-138	788.74		34.00	1.85E-01	9.21E-02	4.12E-03	8.53E-02
	1435.80		66.00	9.21E-02		-8.35E-02	4.00E-02
CE-139	165.85		80.35	4.86E-02	4.86E-02	-1.24E-02	2.35E-02
BA-140	162.64		6.70	6.47E-01	2.32E-01	-3.78E-02	3.13E-01
	304.84		4.50	1.20E+00		8.46E-02	5.72E-01
	423.70		3.20	1.87E+00		8.30E-01	8.85E-01
	437.55		2.00	2.87E+00		-2.24E-01	1.35E+00
	537.32		25.00	2.32E-01		1.13E-01	1.08E-01
LA-140	328.77		20.50	3.25E-01	8.60E-02	2.40E-01	1.56E-01
	487.03		45.50	1.17E-01		-3.72E-02	5.46E-02
	815.85		23.50	3.29E-01		1.58E-01	1.53E-01
	1596.49		95.49	8.60E-02		3.00E-02	3.79E-02
CE-141	145.44		48.40	8.72E-02	8.72E-02	3.19E-02	4.22E-02
CE-143	57.36		11.80	1.32E+00	4.43E-01	-3.94E-01	6.43E-01
	293.26		42.00	4.43E-01		-1.66E-02	2.14E-01
	664.55		5.20	3.77E+00		1.62E+00	1.77E+00
CE-144	133.54		10.80	3.83E-01	3.83E-01	1.58E-02	1.86E-01
PM-144	476.78		42.00	1.27E-01	5.55E-02	-1.56E-02	6.00E-02
	618.01		98.60	5.55E-02		4.37E-03	2.58E-02
	696.49		99.49	6.72E-02		6.68E-03	3.14E-02
PM-145	36.85		21.70	4.31E-01	2.37E-01	-8.20E-02	2.09E-01
	37.36		39.70	2.37E-01		1.15E-01	1.15E-01
	42.30		15.10	4.75E-01		-2.95E-01	2.31E-01
	72.40		2.31	2.40E+00		-2.98E+00	1.17E+00
PM-146	453.90		39.94	1.31E-01	1.31E-01	-1.44E-02	6.19E-02
	735.90		14.01	3.58E-01		-3.29E-01	1.63E-01
	747.13		13.10	4.31E-01		-7.79E-02	1.98E-01
ND-147	91.11		28.90	1.93E-01	1.93E-01	-1.37E-01	9.42E-02
	531.02		13.10	4.69E-01		1.74E-01	2.19E-01
PM-149	285.90		3.10	3.02E+00	3.02E+00	5.53E-01	1.45E+00
EU-152	121.78		20.50	1.96E-01	1.96E-01	7.12E-02	9.52E-02
	244.69		5.40	1.04E+00		-2.89E-02	5.05E-01
	344.27		19.13	2.70E-01		1.52E-02	1.29E-01
	778.89		9.20	6.57E-01		9.52E-02	3.02E-01
	964.01		10.40	7.70E-01		-9.81E-01	3.57E-01
	1085.78		7.22	1.14E+00		4.02E-01	5.27E-01
	1112.02		9.60	8.08E-01		2.85E-01	3.70E-01
	1407.95		14.94	5.28E-01		1.34E-01	2.38E-01
GD-153	97.43		31.30	1.33E-01	1.33E-01	5.43E-02	6.49E-02
	103.18		22.20	1.77E-01		-4.31E-02	8.62E-02
EU-154	123.07		40.50	9.52E-02	9.52E-02	-3.60E-02	4.62E-02
	723.30		19.70	3.25E-01		-2.91E-02	1.51E-01
	873.19		11.50	5.97E-01		3.97E-03	2.75E-01
	996.32		10.30	6.13E-01		-4.24E-01	2.78E-01
	1004.76		17.90	4.11E-01		-1.78E-01	1.89E-01
	1274.45		35.50	2.55E-01		-5.12E-04	1.17E-01
EU-155	86.50	*	30.90	1.57E-01	1.57E-01	8.25E-02	7.68E-02

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-155	105.30	*	20.70	2.23E-01	1.57E-01	1.29E-01	1.09E-01
	EU-156	811.77		10.40	7.08E-01	7.08E-01	4.59E-02	3.28E-01
		1153.47		7.20	1.40E+00		5.44E-01	6.50E-01
		1230.71		8.90	1.23E+00		4.89E-01	5.69E-01
	HO-166M	184.41		72.60	6.31E-02	6.31E-02	4.68E-02	3.05E-02
		280.45		29.60	1.61E-01		-2.45E-02	7.69E-02
		410.94		11.10	4.87E-01		8.58E-02	2.31E-01
		711.69		54.10	1.24E-01		1.05E-02	5.78E-02
	TM-171	66.72		0.14	3.58E+01	3.58E+01	-3.71E+01	1.75E+01
	HF-172	81.75		4.52	1.01E+00	3.36E-01	7.09E-02	4.94E-01
		125.81		11.30	3.36E-01		-3.76E-01	1.63E-01
	LU-172	181.53		20.60	2.48E-01	1.46E-01	-2.26E-01	1.20E-01
		810.06		16.63	4.74E-01		-3.44E-01	2.18E-01
		912.12		15.25	9.86E-01		1.44E+00	4.71E-01
		1093.66		62.50	1.46E-01		-1.14E-01	6.65E-02
	LU-173	100.72		5.24	7.69E-01	2.45E-01	2.92E-01	3.74E-01
		272.11		21.20	2.45E-01		-1.96E-03	1.18E-01
	HF-175	343.40		84.00	6.04E-02	6.04E-02	-3.38E-02	2.88E-02
	LU-176	88.34		13.30	3.73E-01	4.86E-02	2.00E-02	1.83E-01
		201.83		86.00	5.57E-02		-1.53E-02	2.69E-02
		306.78		94.00	4.86E-02		-5.72E-03	2.32E-02
	TA-182	67.75		41.20	1.23E-01	1.23E-01	4.16E-02	5.99E-02
		1121.30		34.90	2.80E-01		1.94E-01	1.31E-01
		1189.05		16.23	4.63E-01		-2.31E-01	2.10E-01
		1221.41		26.98	3.41E-01		5.89E-02	1.58E-01
		1231.02		11.44	8.25E-01		1.10E-01	3.81E-01
	IR-192	308.46		29.68	1.52E-01	1.21E-01	-1.01E-01	7.24E-02
		468.07		48.10	1.21E-01		-1.20E-01	5.75E-02
	HG-203	279.19		77.30	6.72E-02	6.72E-02	1.71E-02	3.23E-02
	BI-207	569.67		97.72	6.37E-02	6.37E-02	4.45E-03	3.00E-02
		1063.62		74.90	1.03E-01		2.13E-02	4.74E-02
+	TL-208	583.14	*	30.22	2.91E-01	8.96E-02	6.73E-01	1.39E-01
		860.37	*	4.48	2.07E+00		1.01E+00	9.78E-01
		2614.66	*	35.85	8.96E-02		6.99E-01	2.83E-02
	BI-210M	262.00		45.00	1.06E-01	1.06E-01	4.96E-03	5.10E-02
		300.00		23.00	2.29E-01		-6.24E-03	1.10E-01
	PB-210	46.50		4.25	1.60E+00	1.60E+00	1.50E+00	7.79E-01
	PB-211	404.84		2.90	1.92E+00	1.92E+00	2.05E-02	9.16E-01
		831.96		2.90	2.35E+00		5.45E-01	1.09E+00
+	BI-212	727.17	*	11.80	6.40E-01	6.40E-01	6.10E-01	3.01E-01
		1620.62		2.75	2.69E+00		1.26E+00	1.19E+00
+	PB-212	238.63	*	44.60	2.15E-01	2.15E-01	9.01E-01	1.05E-01
		300.09		3.41	1.55E+00		-4.21E-02	7.43E-01
+	BI-214	609.31	*	46.30	1.50E-01	1.50E-01	6.62E-01	7.08E-02
		1120.29	*	15.10	5.07E-01		5.78E-01	2.32E-01
		1764.49	*	15.80	2.77E-01		9.11E-01	1.09E-01
		2204.22	*	4.98	1.12E+00		4.79E-01	4.55E-01
+	PB-214	295.21	*	19.19	3.95E-01	1.62E-01	6.28E-01	1.92E-01
		351.92	*	37.19	1.62E-01		6.53E-01	7.79E-02
	RN-219	401.80		6.50	7.92E-01	7.92E-01	-4.35E-01	3.75E-01
	RA-223	323.87		3.88	1.32E+00	1.32E+00	2.94E-01	6.29E-01
	RA-224	240.98		3.95	2.33E+00	2.33E+00	1.01E+01	1.14E+00
	RA-225	40.00		31.00	2.91E-01	2.91E-01	8.91E-02	1.41E-01

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	RA-226	186.21		3.28	1.40E+00	1.40E+00	1.60E+00	6.79E-01
	TH-227	50.10		8.40	6.85E-01	6.85E-01	-4.83E-01	3.33E-01
		236.00		11.50	7.11E-01		1.74E+00	3.48E-01
		256.20		6.30	7.36E-01		-2.35E-01	3.53E-01
+	AC-228	338.32	*	11.40	5.45E-01	3.19E-01	6.24E-01	2.62E-01
		911.07	*	27.70	3.19E-01		8.86E-01	1.50E-01
		969.11	*	16.60	7.18E-01		8.83E-01	3.42E-01
	TH-230	48.44		16.90	3.80E-01	3.80E-01	2.83E-01	1.85E-01
		62.85		4.60	1.21E+00		5.26E-01	5.93E-01
		67.67		0.37	1.35E+01		4.57E+00	6.59E+00
	PA-231	283.67		1.60	3.05E+00	2.18E+00	1.13E+00	1.46E+00
		302.67		2.30	2.18E+00		-4.88E-01	1.04E+00
	TH-231	25.64		14.70	2.49E+00	7.00E-01	3.66E-01	1.21E+00
		84.21		6.40	7.00E-01		-2.04E-01	3.42E-01
	PA-233	311.98		38.60	1.28E-01	1.28E-01	-7.85E-03	6.08E-02
	PA-234	131.20		20.40	2.09E-01	2.09E-01	1.35E-01	1.02E-01
		733.99		8.80	5.97E-01		-8.40E-02	2.73E-01
		946.00		12.00	5.38E-01		-2.17E-01	2.45E-01
	PA-234M	1001.03		0.92	8.61E+00	8.61E+00	3.45E+00	3.98E+00
	TH-234	63.29		3.80	1.45E+00	1.45E+00	4.19E-01	7.11E-01
	U-235	143.76		10.50	3.75E-01	3.75E-01	-5.61E-02	1.82E-01
		163.35		4.70	8.12E-01		-3.32E-01	3.92E-01
		205.31		4.70	9.99E-01		-1.15E+00	4.83E-01
+	NP-237	86.50	*	12.60	3.85E-01	3.85E-01	2.02E-01	1.88E-01
+	NP-239	106.10	*	22.70	3.83E-01	3.83E-01	2.21E-01	1.87E-01
		228.18		10.70	8.62E-01		-2.83E-02	4.16E-01
		277.60	*	14.10	1.07E+00		3.48E-01	5.22E-01
	AM-241	59.54		35.90	1.48E-01	1.48E-01	-1.27E-01	7.21E-02
	AM-243	74.67		66.00	9.70E-02	9.70E-02	1.35E-01	4.77E-02
	CM-243	209.75		3.29	1.47E+00	3.57E-01	-4.26E-02	7.11E-01
		228.14		10.60	4.63E-01		-1.52E-02	2.23E-01
		277.60		14.00	3.57E-01		4.80E-02	1.71E-01

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

No Action Level results available for reporting purposes.

Analysis Report for 1411131-14

J1V1L6 SAF: RC-107

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: J1V1L6 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3617

Channel								
1:	0	0	0	0	0	0	0	0
9:	9	158	180	127	118	108	85	87
17:	80	80	77	70	65	77	72	78
25:	71	95	73	75	78	77	68	62
33:	69	65	46	61	66	80	80	74
41:	76	70	73	71	82	94	131	85
49:	85	79	106	74	79	99	76	92
57:	104	90	96	120	129	110	146	168
65:	109	123	121	108	113	119	109	113
73:	124	154	272	209	305	313	134	111
81:	117	91	109	134	125	86	172	157
89:	112	124	114	112	189	165	103	91
97:	79	85	115	96	77	71	75	84
105:	100	98	91	73	83	100	72	85
113:	80	78	77	83	67	70	83	104
121:	73	76	87	51	69	68	69	80
129:	86	97	73	82	76	62	73	86
137:	61	76	56	69	68	64	57	85
145:	63	53	65	67	55	65	66	63
153:	72	68	80	55	60	68	44	47
161:	56	58	64	48	41	48	71	53
169:	49	56	60	56	61	42	52	47
177:	50	44	49	44	76	52	41	48
185:	55	102	75	40	40	46	42	50
193:	46	44	49	36	47	55	39	55
201:	54	40	42	42	37	50	40	38
209:	51	59	39	33	38	45	40	40
217:	51	39	46	37	52	39	41	41
225:	33	30	44	40	39	45	38	38
233:	36	40	41	50	52	120	389	142
241:	62	86	60	38	38	35	33	30
249:	33	30	31	39	21	30	29	32
257:	30	23	33	27	30	26	35	24
265:	28	29	31	28	26	38	53	30
273:	29	23	26	25	43	32	17	28
281:	31	27	23	21	26	34	24	24
289:	23	18	20	16	23	27	90	105
297:	29	30	28	30	32	29	20	30
305:	18	16	29	16	13	19	19	19
313:	23	25	25	20	19	19	16	16
321:	25	23	22	17	23	24	28	43
329:	46	24	28	22	29	22	12	17
337:	20	39	79	24	21	21	19	17
345:	18	18	35	23	18	19	40	192
353:	114	20	16	23	27	21	19	22
361:	14	17	21	16	24	15	13	22

0635

369:	19	16	13	21	15	12	25	20

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Channel								
377:	18	21	18	13	13	15	16	12
385:	11	12	19	19	16	21	17	13
393:	17	19	20	24	21	12	13	18
401:	12	22	10	17	20	25	21	16
409:	20	23	21	12	16	11	12	10
417:	16	10	13	9	13	9	16	19
425:	15	19	18	15	12	13	16	18
433:	12	20	17	15	7	12	17	14
441:	12	9	16	10	17	12	10	11
449:	10	13	15	15	21	14	11	6
457:	11	14	17	18	15	13	35	25
465:	14	17	13	16	18	12	16	14
473:	19	12	14	7	17	15	10	13
481:	11	11	11	8	3	10	13	13
489:	11	8	10	13	10	5	12	5
497:	9	14	10	15	8	14	9	12
505:	9	10	12	13	24	38	59	43
513:	23	10	13	16	14	15	15	11
521:	9	10	17	8	13	10	9	12
529:	16	13	13	6	9	4	8	7
537:	15	10	9	13	6	9	13	7
545:	8	14	11	7	14	11	14	11
553:	9	8	18	10	15	6	15	11
561:	13	16	20	7	10	16	17	8
569:	13	18	10	10	12	7	16	8
577:	11	9	10	8	15	28	77	65
585:	20	6	14	7	11	12	9	8
593:	11	9	4	12	11	11	11	7
601:	13	11	8	4	14	9	13	17
609:	89	90	36	8	6	3	5	9
617:	5	12	9	8	9	10	11	10
625:	5	6	5	9	6	5	15	5
633:	8	10	5	14	9	7	6	11
641:	4	10	12	6	11	7	7	11
649:	10	9	6	12	8	4	11	6
657:	11	11	8	9	11	13	15	6
665:	10	11	10	8	8	13	16	5
673:	6	9	6	13	7	11	7	8
681:	7	11	6	7	9	10	4	8
689:	15	11	10	7	13	8	11	13
697:	10	6	9	10	10	10	8	13
705:	9	9	7	12	12	11	8	2
713:	12	13	10	9	9	10	6	8
721:	9	7	8	9	4	15	12	32
729:	10	13	6	8	7	6	4	1
737:	6	4	6	7	13	7	7	3
745:	5	10	3	7	12	3	9	5
753:	6	13	3	13	12	5	8	7
761:	6	9	12	9	11	2	6	21
769:	20	7	11	7	12	2	8	7
777:	5	9	6	3	12	4	6	7
785:	10	6	11	8	3	4	8	9
793:	6	8	16	15	8	8	5	7

801:	9	6	10	10	10	10	6	9

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Channel								
809:	10	6	4	5	7	10	11	10
817:	4	10	4	7	5	8	11	12
825:	7	10	3	5	5	13	9	4
833:	6	11	5	8	8	8	8	2
841:	11	7	5	7	5	5	4	7
849:	7	5	5	6	7	2	8	2
857:	4	10	9	15	14	9	5	3
865:	9	6	4	5	3	4	7	11
873:	4	5	11	7	14	5	5	3
881:	8	6	4	6	5	5	4	4
889:	11	7	5	2	4	5	3	9
897:	6	6	8	4	9	8	8	8
905:	5	4	10	6	4	26	58	40
913:	15	4	3	7	12	3	7	3
921:	5	6	6	8	7	3	8	6
929:	7	3	4	7	10	8	7	4
937:	5	7	3	5	7	5	3	5
945:	7	6	3	7	6	11	5	3
953:	9	5	1	5	11	7	4	4
961:	6	5	5	10	12	8	11	22
969:	30	14	6	5	7	4	10	9
977:	3	3	7	7	7	5	7	4
985:	3	5	6	9	12	4	4	3
993:	4	5	4	5	4	6	4	9
1001:	12	9	9	3	5	7	4	7
1009:	8	6	10	13	4	9	6	7
1017:	7	7	5	5	4	4	7	2
1025:	6	7	5	6	8	5	5	7
1033:	12	7	4	9	6	5	3	10
1041:	10	5	5	2	3	7	5	3
1049:	3	6	7	5	1	12	5	10
1057:	4	5	5	4	9	9	5	4
1065:	8	5	9	2	7	4	6	8
1073:	5	7	6	6	5	6	8	9
1081:	6	5	7	9	3	5	7	9
1089:	9	3	7	3	5	6	6	7
1097:	7	10	8	7	7	7	3	11
1105:	5	3	7	4	11	5	6	5
1113:	4	5	5	3	4	5	6	22
1121:	12	11	5	4	4	9	1	4
1129:	10	6	5	8	8	5	6	7
1137:	8	7	8	6	8	8	5	8
1145:	5	6	7	3	3	11	8	7
1153:	9	8	7	5	8	7	2	12
1161:	11	4	3	6	7	2	7	9
1169:	6	4	2	6	6	6	4	4
1177:	4	3	2	2	2	4	4	8
1185:	5	5	7	5	4	4	5	3
1193:	9	5	10	8	6	4	5	6
1201:	4	3	12	8	5	8	5	6
1209:	8	8	7	5	4	2	5	5
1217:	9	8	7	5	7	10	6	6
1225:	6	5	11	6	8	8	10	7

1233:	8	4	8	8	15	7	10	5

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Channel								
1241:	7	8	5	4	5	10	5	1
1249:	3	4	4	4	7	7	3	3
1257:	5	6	7	1	3	1	1	4
1265:	2	4	3	5	5	9	7	5
1273:	2	4	5	4	6	3	2	8
1281:	8	2	4	6	6	3	3	3
1289:	2	4	3	5	4	1	1	5
1297:	6	5	9	5	5	3	6	1
1305:	1	4	5	4	3	4	6	2
1313:	3	5	3	6	2	7	2	2
1321:	4	1	4	3	2	1	4	2
1329:	2	3	3	6	2	2	0	7
1337:	3	3	4	2	3	6	3	1
1345:	4	1	5	5	2	2	0	4
1353:	1	2	1	0	5	3	3	2
1361:	2	1	0	3	1	1	2	1
1369:	3	2	0	4	1	6	2	3
1377:	4	3	2	3	2	6	1	0
1385:	6	3	1	2	2	3	2	1
1393:	3	0	0	1	1	6	0	1
1401:	2	0	3	1	4	0	6	9
1409:	1	3	2	2	3	3	1	2
1417:	3	1	4	6	1	3	3	0
1425:	4	0	2	0	1	5	3	0
1433:	2	1	1	0	2	4	2	4
1441:	5	1	2	1	3	3	1	3
1449:	1	3	4	2	2	0	1	4
1457:	4	4	47	186	200	75	12	5
1465:	0	0	3	2	1	2	1	2
1473:	1	2	2	0	0	2	3	1
1481:	0	1	3	2	3	1	2	0
1489:	3	2	3	4	4	1	4	1
1497:	3	1	2	0	2	1	2	0
1505:	2	2	1	1	2	2	1	0
1513:	1	2	0	3	1	2	1	0
1521:	1	3	2	0	0	1	1	2
1529:	2	1	0	1	1	1	2	2
1537:	2	3	2	1	2	1	3	1
1545:	0	1	4	1	2	0	1	2
1553:	2	1	0	2	3	2	1	2
1561:	1	0	0	6	1	1	1	1
1569:	0	3	2	0	1	1	1	1
1577:	0	0	1	0	2	2	3	2
1585:	3	3	2	7	4	0	3	3
1593:	4	0	0	3	2	2	3	2
1601:	1	1	2	0	2	0	2	2
1609:	1	0	1	2	3	1	0	0
1617:	0	1	3	2	5	3	2	3
1625:	2	1	0	0	4	3	4	4
1633:	1	4	0	0	2	0	2	2
1641:	0	3	0	0	0	1	1	2
1649:	1	3	2	0	1	0	0	1
1657:	0	1	1	1	1	4	0	0

1665:	1	1	1	2	0	2	0	1

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

2097:	1	2	0	0	1	0	5	0

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

2529:	0	1	0	0	1	0	0	0

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Channel								
2537:	0	0	0	0	0	1	0	0
2545:	0	0	0	0	1	0	0	1
2553:	1	1	0	0	0	0	0	0
2561:	0	0	0	1	2	0	0	0
2569:	0	0	0	0	0	0	0	0
2577:	0	1	0	0	0	0	0	0
2585:	1	0	1	2	0	0	0	1
2593:	2	0	2	0	0	0	0	0
2601:	2	1	0	1	0	0	0	0
2609:	0	0	0	6	13	15	18	4
2617:	1	2	0	0	0	1	0	0
2625:	0	1	0	0	1	0	0	0
2633:	0	1	0	0	0	0	0	0
2641:	1	1	0	0	0	0	0	0
2649:	0	0	0	2	0	2	0	0
2657:	1	0	1	0	0	0	0	0
2665:	0	0	0	1	0	0	0	0
2673:	0	0	0	0	0	0	1	0
2681:	0	0	0	0	0	1	0	0
2689:	1	0	1	1	0	0	1	0
2697:	0	1	0	0	0	0	0	0
2705:	0	0	0	0	0	1	0	1
2713:	1	0	1	1	0	0	0	0
2721:	0	1	0	0	0	0	2	0
2729:	0	0	0	0	1	1	1	1
2737:	0	0	0	0	0	0	0	0
2745:	1	0	0	1	0	0	0	0
2753:	0	0	1	0	0	1	0	0
2761:	0	0	0	1	0	0	0	0
2769:	1	0	0	0	1	0	0	1
2777:	0	0	0	0	0	0	0	0
2785:	0	0	2	0	0	0	1	0
2793:	0	0	0	0	0	0	1	0
2801:	1	0	0	0	0	2	0	0
2809:	0	0	0	1	0	0	0	0
2817:	0	0	0	1	0	0	0	0
2825:	2	1	0	0	0	0	0	0
2833:	1	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:	1	0	0	0	0	1	0	0
2865:	0	0	0	1	1	0	0	0
2873:	0	1	1	0	0	0	1	0
2881:	0	0	0	0	0	0	1	0
2889:	0	1	0	0	0	1	0	0
2897:	1	0	0	1	0	1	0	0
2905:	0	0	0	0	0	1	1	1
2913:	0	0	0	0	0	0	0	0
2921:	0	0	1	1	0	0	0	0
2929:	1	1	0	0	0	0	1	0
2937:	0	0	0	0	0	0	1	1
2945:	2	0	0	1	0	0	0	1
2953:	0	1	0	0	0	0	0	2

2961:	0	1	0	1	1	0	0	0

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

3393:	0	1	0	0	0	0	0	0

Sample Title: J1V1L6 SAF: RC-107

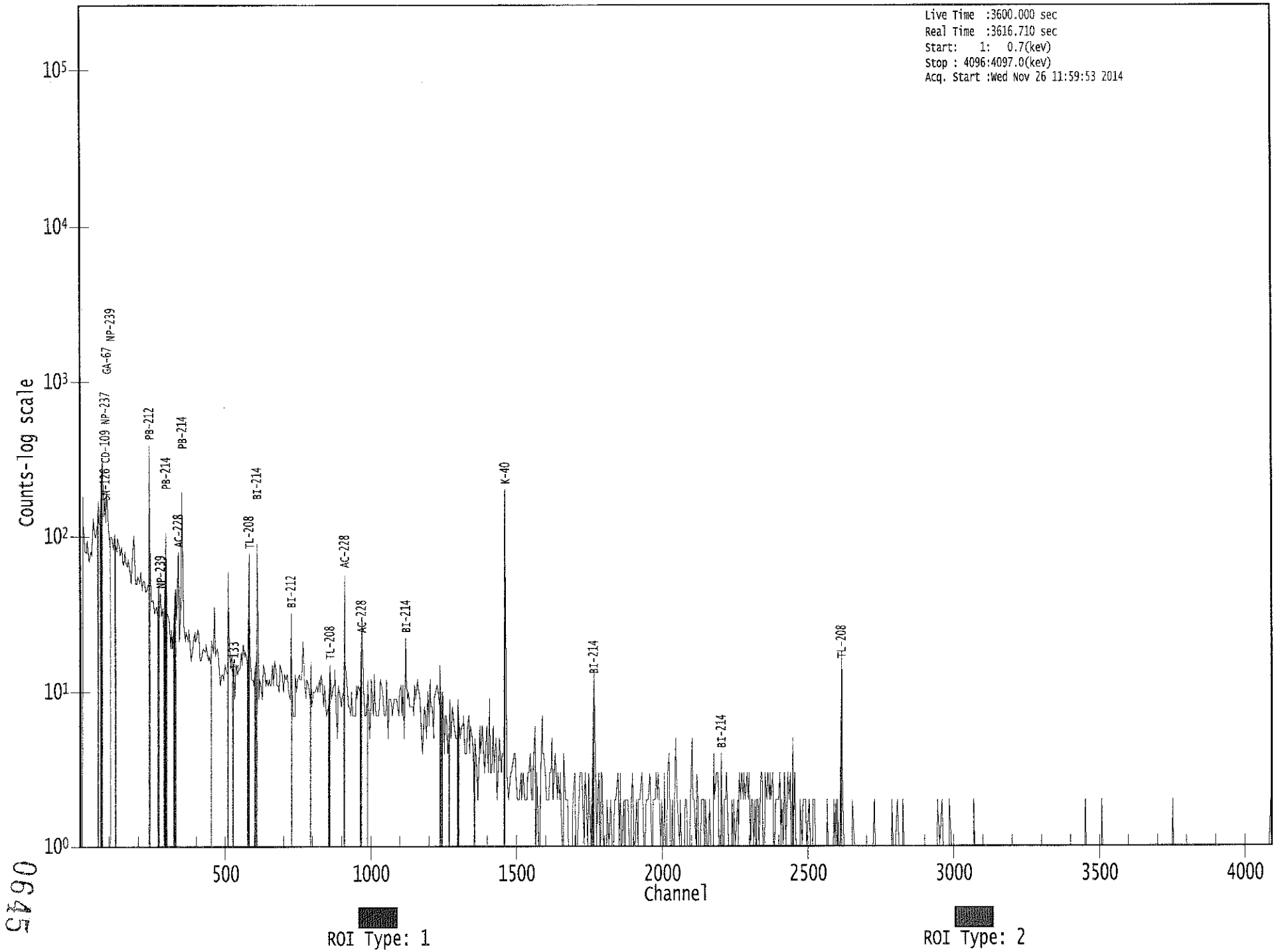
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	1	0	0	0
3417:	0	0	0	0	1	0	0	0
3425:	1	0	0	0	0	0	0	0
3433:	0	0	0	1	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	1	0	2	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	1	1	1	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0
3481:	1	0	0	0	0	0	0	0
3489:	0	0	1	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0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

3825:	0	0	0	0	0	0	1	0

Sample Title: J1V1L6 SAF: RC-107

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

0000015646.CNF



0645

Apex-Gamma

Analysis Report for 1411131-15
J1V1L7 SAF: RC-107

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-15
Sample Description	: J1V1L7 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.419E+02 grams
Facility	: Countroom
Sample Taken On	: 11/24/2014 9:00:14AM
Acquisition Started	: 11/26/2014 12:55:05PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1402
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)	: 6 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/2/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15653

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/26/14

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 1:55:09PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	25.75	25.87	0.0000	0.00
2	75.83	75.92	0.0000	0.00
3	87.41	87.50	0.0000	0.00
4	185.84	185.87	0.0000	0.00
5	238.73	238.73	0.0000	0.00
6	241.77	241.77	0.0000	0.00
7	269.62	269.60	0.0000	0.00
8	295.03	295.00	0.0000	0.00
9	338.48	338.42	0.0000	0.00
10	351.85	351.78	0.0000	0.00
11	409.55	409.45	0.0000	0.00
12	462.74	462.62	0.0000	0.00
13	478.36	478.23	0.0000	0.00
14	510.51	510.37	0.0000	0.00
15	566.19	566.02	0.0000	0.00
16	583.06	582.88	0.0000	0.00
17	609.28	609.09	0.0000	0.00
18	624.33	624.13	0.0000	0.00
19	726.97	726.73	0.0000	0.00
20	765.39	765.12	0.0000	0.00
21	768.28	768.02	0.0000	0.00
22	784.92	784.65	0.0000	0.00
23	794.08	793.80	0.0000	0.00
24	860.36	860.06	0.0000	0.00
25	911.19	910.87	0.0000	0.00
26	933.84	933.50	0.0000	0.00
27	963.93	963.58	0.0000	0.00
28	968.52	968.17	0.0000	0.00
29	1120.31	1119.91	0.0000	0.00
30	1238.65	1238.20	0.0000	0.00
31	1400.64	1400.14	0.0000	0.00
32	1407.79	1407.28	0.0000	0.00
33	1460.36	1459.84	0.0000	0.00
34	1513.83	1513.29	0.0000	0.00
35	1519.12	1518.58	0.0000	0.00
36	1554.61	1554.06	0.0000	0.00
37	1580.54	1579.99	0.0000	0.00
38	1591.56	1591.00	0.0000	0.00
39	1619.67	1619.11	0.0000	0.00
40	1629.56	1628.99	0.0000	0.00
41	1663.81	1663.23	0.0000	0.00
42	1729.61	1729.02	0.0000	0.00

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1740.12	1739.52	0.0000	0.00
44	1745.58	1744.98	0.0000	0.00
45	1764.34	1763.73	0.0000	0.00
46	1788.47	1787.86	0.0000	0.00
47	1866.55	1865.92	0.0000	0.00
48	1877.61	1876.98	0.0000	0.00
49	1899.24	1898.60	0.0000	0.00
50	1995.66	1995.00	0.0000	0.00
51	2103.20	2102.52	0.0000	0.00
52	2202.14	2201.44	0.0000	0.00
53	2346.97	2346.25	0.0000	0.00
54	2613.28	2612.54	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 1:55:09PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	25.75	22 -	33	25.87	3.37E+02	152.24	2.38E+03	3.06
	2	75.83	71 -	83	75.92	7.04E+02	153.34	2.45E+03	3.56
	3	87.41	83 -	91	87.50	1.94E+02	107.07	1.65E+03	3.71
	4	185.84	182 -	189	185.87	1.43E+02	71.33	7.53E+02	1.70
M	5	238.73	234 -	245	238.73	5.03E+02	63.80	3.77E+02	1.55
m	6	241.77	234 -	245	241.77	1.02E+02	58.88	3.30E+02	1.56
	7	269.62	266 -	272	269.60	5.56E+01	48.54	3.87E+02	2.24
	8	295.03	292 -	298	295.00	1.55E+02	55.82	4.58E+02	1.18
	9	338.48	334 -	342	338.42	1.07E+02	54.46	3.88E+02	1.48
	10	351.85	348 -	356	351.78	3.33E+02	59.45	3.42E+02	1.74
	11	409.55	405 -	413	409.45	5.65E+01	42.35	2.37E+02	3.33
	12	462.74	459 -	466	462.62	6.10E+01	37.09	1.90E+02	1.42
	13	478.36	475 -	481	478.23	2.95E+01	33.18	1.79E+02	1.19
	14	510.51	505 -	514	510.37	1.76E+02	47.76	2.25E+02	2.38
	15	566.19	559 -	573	566.02	6.27E+01	50.16	2.33E+02	10.24
	16	583.06	579 -	587	582.88	1.97E+02	45.51	1.97E+02	1.42
M	17	609.28	604 -	627	609.09	2.42E+02	37.31	1.01E+02	1.71
m	18	624.33	604 -	627	624.13	2.22E+01	31.56	1.26E+02	2.76
	19	726.97	723 -	730	726.73	3.04E+01	34.29	1.75E+02	1.28
M	20	765.39	763 -	774	765.12	1.38E+01	18.77	6.73E+01	2.22
m	21	768.28	763 -	774	768.02	3.39E+01	26.65	8.77E+01	2.22
	22	784.92	782 -	787	784.65	2.76E+01	23.07	8.49E+01	2.55
	23	794.08	789 -	798	793.80	4.20E+01	34.31	1.42E+02	1.86
	24	860.36	855 -	865	860.06	4.99E+01	33.25	1.20E+02	2.13
	25	911.19	906 -	916	910.87	1.58E+02	39.70	1.24E+02	2.06
	26	933.84	931 -	937	933.50	1.71E+01	20.71	6.39E+01	1.35
M	27	963.93	957 -	973	963.58	4.26E+01	22.44	4.60E+01	2.41
m	28	968.52	957 -	973	968.17	6.68E+01	25.45	5.16E+01	2.41
	29	1120.31	1115 -	1126	1119.91	6.18E+01	33.88	1.08E+02	2.24
	30	1238.65	1235 -	1241	1238.20	3.17E+01	25.27	9.05E+01	2.79
M	31	1400.64	1395 -	1410	1400.14	1.74E+01	16.67	3.74E+01	3.33
m	32	1407.79	1395 -	1410	1407.28	1.79E+01	14.28	1.52E+01	3.34
	33	1460.36	1453 -	1466	1459.84	7.84E+02	60.33	5.60E+01	2.23
	34	1513.83	1510 -	1516	1513.29	8.50E+00	11.01	1.30E+01	3.41
	35	1519.12	1517 -	1521	1518.58	7.33E+00	6.50	3.33E+00	1.93
	36	1554.61	1550 -	1559	1554.06	1.71E+01	10.25	5.75E+00	4.90
M	37	1580.54	1574 -	1598	1579.99	1.04E+01	10.22	1.49E+01	2.88
m	38	1591.56	1574 -	1598	1591.00	1.46E+01	11.51	4.60E+00	2.39
	39	1619.67	1615 -	1621	1619.11	6.56E+00	6.65	2.88E+00	1.39
	40	1629.56	1625 -	1632	1628.99	1.40E+01	8.94	3.94E+00	1.83

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1663.81	1660 -	1666	1663.23	1.19E+01	10.04	8.25E+00	3.86
	42	1729.61	1725 -	1733	1729.02	9.56E+00	11.17	1.29E+01	2.28
M	43	1740.12	1736 -	1747	1739.52	7.70E+00	6.00	0.00E+00	2.99
m	44	1745.58	1736 -	1747	1744.98	7.55E+00	4.90	0.00E+00	3.62
	45	1764.34	1759 -	1770	1763.73	5.47E+01	16.25	4.67E+00	2.32
	46	1788.47	1786 -	1790	1787.86	6.50E+00	6.96	5.00E+00	2.99
	47	1866.55	1863 -	1869	1865.92	6.20E+00	8.03	7.60E+00	2.76
	48	1877.61	1874 -	1880	1876.98	8.05E+00	7.23	3.90E+00	1.60
	49	1899.24	1895 -	1901	1898.60	5.00E+00	4.47	0.00E+00	1.24
	50	1995.66	1991 -	2001	1995.00	7.50E+00	10.61	1.10E+01	2.38
	51	2103.20	2097 -	2107	2102.52	2.70E+01	10.39	0.00E+00	4.06
	52	2202.14	2197 -	2205	2201.44	8.69E+00	9.62	8.62E+00	2.00
	53	2346.97	2341 -	2350	2346.25	7.50E+00	8.06	5.00E+00	6.83
	54	2613.28	2608 -	2618	2612.54	8.70E+01	18.65	0.00E+00	2.96

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 1:55:09PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	25.75	22 -	33	3.37E+02	152.24	2.38E+03	1.21E+02
	2	75.83	71 -	83	7.04E+02	153.34	2.45E+03	1.18E+02
	3	87.41	83 -	91	1.94E+02	107.07	1.65E+03	8.50E+01
	4	185.84	182 -	189	1.43E+02	71.33	7.53E+02	5.52E+01
M	5	238.73	234 -	245	5.03E+02	63.80	3.77E+02	3.19E+01
m	6	241.77	234 -	245	1.02E+02	58.88	3.30E+02	2.99E+01
	7	269.62	266 -	272	5.56E+01	48.54	3.87E+02	3.80E+01
	8	295.03	292 -	298	1.55E+02	55.82	4.58E+02	4.11E+01
	9	338.48	334 -	342	1.07E+02	54.46	3.88E+02	4.14E+01
	10	351.85	348 -	356	3.33E+02	59.45	3.42E+02	3.86E+01
	11	409.55	405 -	413	5.65E+01	42.35	2.37E+02	3.25E+01
	12	462.74	459 -	466	6.10E+01	37.09	1.90E+02	2.77E+01
	13	478.36	475 -	481	2.95E+01	33.18	1.79E+02	2.58E+01
	14	510.51	505 -	514	1.76E+02	47.76	2.25E+02	3.26E+01

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	15	566.19	559 -	573	6.27E+01	50.16	2.33E+02	3.91E+01
	16	583.06	579 -	587	1.97E+02	45.51	1.97E+02	2.95E+01
M	17	609.28	604 -	627	2.42E+02	37.31	1.01E+02	1.65E+01
m	18	624.33	604 -	627	2.22E+01	31.56	1.26E+02	1.85E+01
	19	726.97	723 -	730	3.04E+01	34.29	1.75E+02	2.67E+01
M	20	765.39	763 -	774	1.38E+01	18.77	6.73E+01	1.35E+01
m	21	768.28	763 -	774	3.39E+01	26.65	8.77E+01	1.54E+01
	22	784.92	782 -	787	2.76E+01	23.07	8.49E+01	1.69E+01
	23	794.08	789 -	798	4.20E+01	34.31	1.42E+02	2.61E+01
	24	860.36	855 -	865	4.99E+01	33.25	1.20E+02	2.47E+01
	25	911.19	906 -	916	1.58E+02	39.70	1.24E+02	2.53E+01
	26	933.84	931 -	937	1.71E+01	20.71	6.39E+01	1.56E+01
M	27	963.93	957 -	973	4.26E+01	22.44	4.60E+01	1.11E+01
m	28	968.52	957 -	973	6.68E+01	25.45	5.16E+01	1.18E+01
	29	1120.31	1115 -	1126	6.18E+01	33.88	1.08E+02	2.47E+01
	30	1238.65	1235 -	1241	3.17E+01	25.27	9.05E+01	1.86E+01
M	31	1400.64	1395 -	1410	1.74E+01	16.67	3.74E+01	1.00E+01
m	32	1407.79	1395 -	1410	1.79E+01	14.28	1.52E+01	6.41E+00
	33	1460.36	1453 -	1466	7.84E+02	60.33	5.60E+01	1.85E+01
	34	1513.83	1510 -	1516	8.50E+00	11.01	1.30E+01	7.68E+00
	35	1519.12	1517 -	1521	7.33E+00	6.50	3.33E+00	2.95E+00
	36	1554.61	1550 -	1559	1.71E+01	10.25	5.75E+00	4.97E+00
M	37	1580.54	1574 -	1598	1.04E+01	10.22	1.49E+01	6.34E+00
m	38	1591.56	1574 -	1598	1.46E+01	11.51	4.60E+00	3.52E+00
	39	1619.67	1615 -	1621	6.56E+00	6.65	2.88E+00	3.49E+00
	40	1629.56	1625 -	1632	1.40E+01	8.94	3.94E+00	4.02E+00
	41	1663.81	1660 -	1666	1.19E+01	10.04	8.25E+00	6.00E+00
	42	1729.61	1725 -	1733	9.56E+00	11.17	1.29E+01	7.65E+00
M	43	1740.12	1736 -	1747	7.70E+00	6.00	0.00E+00	0.00E+00
m	44	1745.58	1736 -	1747	7.55E+00	4.90	0.00E+00	0.00E+00
	45	1764.34	1759 -	1770	5.47E+01	16.25	4.67E+00	5.53E+00
	46	1788.47	1786 -	1790	6.50E+00	6.96	5.00E+00	3.90E+00
	47	1866.55	1863 -	1869	6.20E+00	8.03	7.60E+00	5.18E+00
	48	1877.61	1874 -	1880	8.05E+00	7.23	3.90E+00	3.68E+00
	49	1899.24	1895 -	1901	5.00E+00	4.47	0.00E+00	0.00E+00
	50	1995.66	1991 -	2001	7.50E+00	10.61	1.10E+01	7.47E+00
	51	2103.20	2097 -	2107	2.70E+01	10.39	0.00E+00	0.00E+00
	52	2202.14	2197 -	2205	8.69E+00	9.62	8.62E+00	6.25E+00
	53	2346.97	2341 -	2350	7.50E+00	8.06	5.00E+00	4.86E+00
	54	2613.28	2608 -	2618	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

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 1:55:09PM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	25.75	22 -	33	25.87	3.37E+02	152.24	2.38E+03	TH-231
	2	75.83	71 -	83	75.92	7.04E+02	153.34	2.45E+03	.....
	3	87.41	83 -	91	87.50	1.94E+02	107.07	1.65E+03	SN-126
									CD-109
									NP-237
									EU-155
									LU-176
	4	185.84	182 -	189	185.87	1.43E+02	71.33	7.53E+02	RA-226
M	5	238.73	234 -	245	238.73	5.03E+02	63.80	3.77E+02	PB-212
m	6	241.77	234 -	245	241.77	1.02E+02	58.88	3.30E+02	RA-224
	7	269.62	266 -	272	269.60	5.56E+01	48.54	3.87E+02	.....
	8	295.03	292 -	298	295.00	1.55E+02	55.82	4.58E+02	PB-214
	9	338.48	334 -	342	338.42	1.07E+02	54.46	3.88E+02	AC-228
	10	351.85	348 -	356	351.78	3.33E+02	59.45	3.42E+02	PB-214
	11	409.55	405 -	413	409.45	5.65E+01	42.35	2.37E+02	.....
	12	462.74	459 -	466	462.62	6.10E+01	37.09	1.90E+02	SB-125
	13	478.36	475 -	481	478.23	2.95E+01	33.18	1.79E+02	BE-7
	14	510.51	505 -	514	510.37	1.76E+02	47.76	2.25E+02	.....
	15	566.19	559 -	573	566.02	6.27E+01	50.16	2.33E+02	.....
	16	583.06	579 -	587	582.88	1.97E+02	45.51	1.97E+02	TL-208
M	17	609.28	604 -	627	609.09	2.42E+02	37.31	1.01E+02	BI-214
m	18	624.33	604 -	627	624.13	2.22E+01	31.56	1.26E+02	.....
	19	726.97	723 -	730	726.73	3.04E+01	34.29	1.75E+02	BI-212
M	20	765.39	763 -	774	765.12	1.38E+01	18.77	6.73E+01	NB-95
m	21	768.28	763 -	774	768.02	3.39E+01	26.65	8.77E+01	.....
	22	784.92	782 -	787	784.65	2.76E+01	23.07	8.49E+01	.....
	23	794.08	789 -	798	793.80	4.20E+01	34.31	1.42E+02	.....
	24	860.36	855 -	865	860.06	4.99E+01	33.25	1.20E+02	TL-208
	25	911.19	906 -	916	910.87	1.58E+02	39.70	1.24E+02	AC-228
									LU-172
	26	933.84	931 -	937	933.50	1.71E+01	20.71	6.39E+01	.....
M	27	963.93	957 -	973	963.58	4.26E+01	22.44	4.60E+01	EU-152
m	28	968.52	957 -	973	968.17	6.68E+01	25.45	5.16E+01	AC-228
	29	1120.31	1115 -	1126	1119.91	6.18E+01	33.88	1.08E+02	BI-214
									SC-46
									TA-182
	30	1238.65	1235 -	1241	1238.20	3.17E+01	25.27	9.05E+01	CO-56
M	31	1400.64	1395 -	1410	1400.14	1.74E+01	16.67	3.74E+01	.....
m	32	1407.79	1395 -	1410	1407.28	1.79E+01	14.28	1.52E+01	EU-152
	33	1460.36	1453 -	1466	1459.84	7.84E+02	60.33	5.60E+01	K-40
	34	1513.83	1510 -	1516	1513.29	8.50E+00	11.01	1.30E+01	.....

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	35	1519.12	1517 -	1521	1518.58	7.33E+00	6.50	3.33E+00	.....
	36	1554.61	1550 -	1559	1554.06	1.71E+01	10.25	5.75E+00	.....
M	37	1580.54	1574 -	1598	1579.99	1.04E+01	10.22	1.49E+01	.....
m	38	1591.56	1574 -	1598	1591.00	1.46E+01	11.51	4.60E+00	.....
	39	1619.67	1615 -	1621	1619.11	6.56E+00	6.65	2.88E+00	BI-212
	40	1629.56	1625 -	1632	1628.99	1.40E+01	8.94	3.94E+00	.....
	41	1663.81	1660 -	1666	1663.23	1.19E+01	10.04	8.25E+00	.....
	42	1729.61	1725 -	1733	1729.02	9.56E+00	11.17	1.29E+01	.....
M	43	1740.12	1736 -	1747	1739.52	7.70E+00	6.00	0.00E+00	.....
m	44	1745.58	1736 -	1747	1744.98	7.55E+00	4.90	0.00E+00	.....
	45	1764.34	1759 -	1770	1763.73	5.47E+01	16.25	4.67E+00	BI-214
	46	1788.47	1786 -	1790	1787.86	6.50E+00	6.96	5.00E+00	.....
	47	1866.55	1863 -	1869	1865.92	6.20E+00	8.03	7.60E+00	.....
	48	1877.61	1874 -	1880	1876.98	8.05E+00	7.23	3.90E+00	.....
	49	1899.24	1895 -	1901	1898.60	5.00E+00	4.47	0.00E+00	.....
	50	1995.66	1991 -	2001	1995.00	7.50E+00	10.61	1.10E+01	.....
	51	2103.20	2097 -	2107	2102.52	2.70E+01	10.39	0.00E+00	.....
	52	2202.14	2197 -	2205	2201.44	8.69E+00	9.62	8.62E+00	.....
	53	2346.97	2341 -	2350	2346.25	7.50E+00	8.06	5.00E+00	.....
	54	2613.28	2608 -	2618	2612.54	8.70E+01	18.65	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 1:55:09PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	25.75	3.37E+02	152.24	5.72E-04	1.68E-03
	2	75.83	7.04E+02	153.34	2.73E-02	3.30E-03
	3	87.41	1.94E+02	107.07	2.84E-02	4.44E-03
	4	185.84	1.43E+02	71.33	2.11E-02	1.65E-03
M	5	238.73	5.03E+02	63.80	1.79E-02	1.60E-03
m	6	241.77	1.02E+02	58.88	1.77E-02	1.60E-03
	7	269.62	5.56E+01	48.54	1.65E-02	1.57E-03
	8	295.03	1.55E+02	55.82	1.55E-02	1.48E-03
	9	338.48	1.07E+02	54.46	1.41E-02	1.27E-03
	10	351.85	3.33E+02	59.45	1.37E-02	1.21E-03

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	11	409.55	5.65E+01	42.35	1.24E-02	1.00E-03
	12	462.74	6.10E+01	37.09	1.13E-02	9.47E-04
	13	478.36	2.95E+01	33.18	1.11E-02	9.31E-04
	14	510.51	1.76E+02	47.76	1.06E-02	8.99E-04
	15	566.19	6.27E+01	50.16	9.80E-03	8.42E-04
	16	583.06	1.97E+02	45.51	9.58E-03	8.25E-04
M	17	609.28	2.42E+02	37.31	9.27E-03	7.98E-04
m	18	624.33	2.22E+01	31.56	9.10E-03	7.83E-04
	19	726.97	3.04E+01	34.29	8.09E-03	7.03E-04
M	20	765.39	1.38E+01	18.77	7.77E-03	6.79E-04
m	21	768.28	3.39E+01	26.65	7.74E-03	6.77E-04
	22	784.92	2.76E+01	23.07	7.61E-03	6.66E-04
	23	794.08	4.20E+01	34.31	7.54E-03	6.60E-04
	24	860.36	4.99E+01	33.25	7.07E-03	6.18E-04
	25	911.19	1.58E+02	39.70	6.75E-03	5.87E-04
	26	933.84	1.71E+01	20.71	6.61E-03	5.75E-04
M	27	963.93	4.26E+01	22.44	6.44E-03	5.60E-04
m	28	968.52	6.68E+01	25.45	6.42E-03	5.57E-04
	29	1120.31	6.18E+01	33.88	5.70E-03	4.80E-04
	30	1238.65	3.17E+01	25.27	5.27E-03	4.83E-04
M	31	1400.64	1.74E+01	16.67	4.81E-03	4.98E-04
m	32	1407.79	1.79E+01	14.28	4.79E-03	4.95E-04
	33	1460.36	7.84E+02	60.33	4.67E-03	4.73E-04
	34	1513.83	8.50E+00	11.01	4.56E-03	4.51E-04
	35	1519.12	7.33E+00	6.50	4.55E-03	4.49E-04
	36	1554.61	1.71E+01	10.25	4.49E-03	4.34E-04
M	37	1580.54	1.04E+01	10.22	4.44E-03	4.24E-04
m	38	1591.56	1.46E+01	11.51	4.42E-03	4.19E-04
	39	1619.67	6.56E+00	6.65	4.38E-03	4.07E-04
	40	1629.56	1.40E+01	8.94	4.36E-03	4.03E-04
	41	1663.81	1.19E+01	10.04	4.31E-03	3.89E-04
	42	1729.61	9.56E+00	11.17	4.23E-03	3.62E-04
M	43	1740.12	7.70E+00	6.00	4.21E-03	3.58E-04
m	44	1745.58	7.55E+00	4.90	4.21E-03	3.55E-04
	45	1764.34	5.47E+01	16.25	4.19E-03	3.48E-04
	46	1788.47	6.50E+00	6.96	4.16E-03	3.38E-04
	47	1866.55	6.20E+00	8.03	4.09E-03	3.18E-04
	48	1877.61	8.05E+00	7.23	4.08E-03	3.18E-04
	49	1899.24	5.00E+00	4.47	4.06E-03	3.18E-04
	50	1995.66	7.50E+00	10.61	4.00E-03	3.18E-04
	51	2103.20	2.70E+01	10.39	3.95E-03	3.18E-04
	52	2202.14	8.69E+00	9.62	3.93E-03	3.18E-04
	53	2346.97	7.50E+00	8.06	3.94E-03	3.18E-04
	54	2613.28	8.70E+01	18.65	4.05E-03	3.18E-04

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

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 1:55:09PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015432.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	25.75	3.37E+02	152.24			3.37E+02	1.52E+02
	2	75.83	7.04E+02	153.34			7.04E+02	1.53E+02
	3	87.41	1.94E+02	107.07	7.51E+00	3.86E+00	1.87E+02	1.07E+02
	4	185.84	1.43E+02	71.33	4.13E+01	8.14E+00	1.02E+02	7.18E+01
M	5	238.73	5.03E+02	63.80	1.44E+01	7.33E+00	4.89E+02	6.42E+01
m	6	241.77	1.02E+02	58.88			1.02E+02	5.89E+01
	7	269.62	5.56E+01	48.54			5.56E+01	4.85E+01
	8	295.03	1.55E+02	55.82	7.91E+00	6.01E+00	1.47E+02	5.61E+01
	9	338.48	1.07E+02	54.46	5.18E+00	5.53E+00	1.02E+02	5.47E+01
	10	351.85	3.33E+02	59.45	1.67E+01	5.51E+00	3.17E+02	5.97E+01
	11	409.55	5.65E+01	42.35			5.65E+01	4.23E+01
	12	462.74	6.10E+01	37.09			6.10E+01	3.71E+01
	13	478.36	2.95E+01	33.18			2.95E+01	3.32E+01
	14	510.51	1.76E+02	47.76	7.84E+01	5.24E+00	9.81E+01	4.80E+01
	15	566.19	6.27E+01	50.16			6.27E+01	5.02E+01
	16	583.06	1.97E+02	45.51	6.02E+00	3.90E+00	1.91E+02	4.57E+01
M	17	609.28	2.42E+02	37.31	1.28E+01	3.94E+00	2.29E+02	3.75E+01
m	18	624.33	2.22E+01	31.56			2.22E+01	3.16E+01
	19	726.97	3.04E+01	34.29			3.04E+01	3.43E+01
M	20	765.39	1.38E+01	18.77			1.38E+01	1.88E+01
m	21	768.28	3.39E+01	26.65			3.39E+01	2.67E+01
	22	784.92	2.76E+01	23.07			2.76E+01	2.31E+01
	23	794.08	4.20E+01	34.31			4.20E+01	3.43E+01
	24	860.36	4.99E+01	33.25			4.99E+01	3.32E+01
	25	911.19	1.58E+02	39.70	5.80E+00	2.67E+00	1.52E+02	3.98E+01
	26	933.84	1.71E+01	20.71	1.05E+00	2.87E+00	1.60E+01	2.09E+01
M	27	963.93	4.26E+01	22.44			4.26E+01	2.24E+01
m	28	968.52	6.68E+01	25.45	1.26E+00	2.25E+00	6.55E+01	2.55E+01
	29	1120.31	6.18E+01	33.88	1.53E+00	2.85E+00	6.03E+01	3.40E+01
	30	1238.65	3.17E+01	25.27			3.17E+01	2.53E+01
M	31	1400.64	1.74E+01	16.67			1.74E+01	1.67E+01
m	32	1407.79	1.79E+01	14.28			1.79E+01	1.43E+01
	33	1460.36	7.84E+02	60.33	1.25E+01	2.44E+00	7.72E+02	6.04E+01
	34	1513.83	8.50E+00	11.01			8.50E+00	1.10E+01
	35	1519.12	7.33E+00	6.50			7.33E+00	6.50E+00
	36	1554.61	1.71E+01	10.25			1.71E+01	1.02E+01
M	37	1580.54	1.04E+01	10.22			1.04E+01	1.02E+01
m	38	1591.56	1.46E+01	11.51			1.46E+01	1.15E+01
	39	1619.67	6.56E+00	6.65			6.56E+00	6.65E+00
	40	1629.56	1.40E+01	8.94			1.40E+01	8.94E+00
	41	1663.81	1.19E+01	10.04			1.19E+01	1.00E+01
	42	1729.61	9.56E+00	11.17			9.56E+00	1.12E+01
M	43	1740.12	7.70E+00	6.00			7.70E+00	6.00E+00
m	44	1745.58	7.55E+00	4.90			7.55E+00	4.90E+00

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1764.34	5.47E+01	16.25	2.65E+00	2.14E+00	5.20E+01	1.64E+01
46	1788.47	6.50E+00	6.96			6.50E+00	6.96E+00
47	1866.55	6.20E+00	8.03			6.20E+00	8.03E+00
48	1877.61	8.05E+00	7.23			8.05E+00	7.23E+00
49	1899.24	5.00E+00	4.47			5.00E+00	4.47E+00
50	1995.66	7.50E+00	10.61			7.50E+00	1.06E+01
51	2103.20	2.70E+01	10.39			2.70E+01	1.04E+01
52	2202.14	8.69E+00	9.62			8.69E+00	9.62E+00
53	2346.97	7.50E+00	8.06			7.50E+00	8.06E+00
54	2613.28	8.70E+01	18.65	8.41E+00	1.73E+00	7.86E+01	1.87E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 1:55:09PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015432.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	25.75	3.37E+02	152.24			3.37E+02	1.52E+02
	2	75.83	7.04E+02	153.34			7.04E+02	1.53E+02
	3	87.41	1.94E+02	107.07	7.51E+00	3.86E+00	1.87E+02	1.07E+02
	4	185.84	1.43E+02	71.33	4.13E+01	8.14E+00	1.02E+02	7.18E+01
M	5	238.73	5.03E+02	63.80	1.44E+01	7.33E+00	4.89E+02	6.42E+01
m	6	241.77	1.02E+02	58.88			1.02E+02	5.89E+01
	7	269.62	5.56E+01	48.54			5.56E+01	4.85E+01
	8	295.03	1.55E+02	55.82	7.91E+00	6.01E+00	1.47E+02	5.61E+01
	9	338.48	1.07E+02	54.46	5.18E+00	5.53E+00	1.02E+02	5.47E+01
	10	351.85	3.33E+02	59.45	1.67E+01	5.51E+00	3.17E+02	5.97E+01
	11	409.55	5.65E+01	42.35			5.65E+01	4.23E+01
	12	462.74	6.10E+01	37.09			6.10E+01	3.71E+01
	13	478.36	2.95E+01	33.18			2.95E+01	3.32E+01
	14	510.51	1.76E+02	47.76	7.84E+01	5.24E+00	9.81E+01	4.80E+01
	15	566.19	6.27E+01	50.16			6.27E+01	5.02E+01
	16	583.06	1.97E+02	45.51	6.02E+00	3.90E+00	1.91E+02	4.57E+01
M	17	609.28	2.42E+02	37.31	1.28E+01	3.94E+00	2.29E+02	3.75E+01
m	18	624.33	2.22E+01	31.56			2.22E+01	3.16E+01

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	19	726.97	3.04E+01	34.29			3.04E+01	3.43E+01
M	20	765.39	1.38E+01	18.77			1.38E+01	1.88E+01
m	21	768.28	3.39E+01	26.65			3.39E+01	2.67E+01
	22	784.92	2.76E+01	23.07			2.76E+01	2.31E+01
	23	794.08	4.20E+01	34.31			4.20E+01	3.43E+01
	24	860.36	4.99E+01	33.25			4.99E+01	3.32E+01
	25	911.19	1.58E+02	39.70	5.80E+00	2.67E+00	1.52E+02	3.98E+01
	26	933.84	1.71E+01	20.71	1.05E+00	2.87E+00	1.60E+01	2.09E+01
M	27	963.93	4.26E+01	22.44			4.26E+01	2.24E+01
m	28	968.52	6.68E+01	25.45	1.26E+00	2.25E+00	6.55E+01	2.55E+01
	29	1120.31	6.18E+01	33.88	1.53E+00	2.85E+00	6.03E+01	3.40E+01
	30	1238.65	3.17E+01	25.27			3.17E+01	2.53E+01
M	31	1400.64	1.74E+01	16.67			1.74E+01	1.67E+01
m	32	1407.79	1.79E+01	14.28			1.79E+01	1.43E+01
	33	1460.36	7.84E+02	60.33	1.25E+01	2.44E+00	7.72E+02	6.04E+01
	34	1513.83	8.50E+00	11.01			8.50E+00	1.10E+01
	35	1519.12	7.33E+00	6.50			7.33E+00	6.50E+00
	36	1554.61	1.71E+01	10.25			1.71E+01	1.02E+01
M	37	1580.54	1.04E+01	10.22			1.04E+01	1.02E+01
m	38	1591.56	1.46E+01	11.51			1.46E+01	1.15E+01
	39	1619.67	6.56E+00	6.65			6.56E+00	6.65E+00
	40	1629.56	1.40E+01	8.94			1.40E+01	8.94E+00
	41	1663.81	1.19E+01	10.04			1.19E+01	1.00E+01
	42	1729.61	9.56E+00	11.17			9.56E+00	1.12E+01
M	43	1740.12	7.70E+00	6.00			7.70E+00	6.00E+00
m	44	1745.58	7.55E+00	4.90			7.55E+00	4.90E+00
	45	1764.34	5.47E+01	16.25	2.65E+00	2.14E+00	5.20E+01	1.64E+01
	46	1788.47	6.50E+00	6.96			6.50E+00	6.96E+00
	47	1866.55	6.20E+00	8.03			6.20E+00	8.03E+00
	48	1877.61	8.05E+00	7.23			8.05E+00	7.23E+00
	49	1899.24	5.00E+00	4.47			5.00E+00	4.47E+00
	50	1995.66	7.50E+00	10.61			7.50E+00	1.06E+01
	51	2103.20	2.70E+01	10.39			2.70E+01	1.04E+01
	52	2202.14	8.69E+00	9.62			8.69E+00	9.62E+00
	53	2346.97	7.50E+00	8.06			7.50E+00	8.06E+00
	54	2613.28	8.70E+01	18.65	8.41E+00	1.73E+00	7.86E+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

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BE-7	0.909	477.59	*	10.42	2.66E-01	3.00E-01
K-40	0.968	1460.81	*	10.67	1.57E+01	2.03E+00
NB-95	0.974	765.79	*	99.81	1.89E-02	2.56E-02
CD-109	0.941	88.03	*	3.72	1.79E+00	1.07E+00
SN-126	0.996	87.57	*	37.00	1.80E-01	1.07E-01
TL-208	0.350	583.14	*	30.22	6.66E-01	1.70E-01
		860.37	*	4.48	1.60E+00	1.07E+00
		2614.66		35.85		
BI-212	0.968	727.17	*	11.80	3.22E-01	3.65E-01
		1620.62	*	2.75	5.52E-01	5.61E-01
PB-212	0.893	238.63	*	44.60	6.20E-01	9.87E-02
		300.09		3.41		
BI-214	0.927	609.31	*	46.30	5.39E-01	9.99E-02
		1120.29	*	15.10	7.08E-01	4.04E-01
		1764.49	*	15.80	7.96E-01	2.59E-01
		2204.22		4.98		
PB-214	0.998	295.21	*	19.19	5.01E-01	1.97E-01
		351.92	*	37.19	6.28E-01	1.31E-01
RA-224	0.905	240.98	*	3.95	1.48E+00	8.62E-01
RA-226	0.979	186.21	*	3.28	1.49E+00	2.93E+00
AC-228	0.981	338.32	*	11.40	6.40E-01	3.50E-01
		911.07	*	27.70	8.23E-01	2.27E-01
		969.11	*	16.60	6.22E-01	2.49E-01
NP-237	0.876	86.50	*	12.60	5.28E-01	3.14E-01

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

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 1:55:09PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	25.75	9.35118E-02	22.61	Tol.	TH-231
2	75.83	1.95555E-01	10.89		

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	7	269.62	1.54328E-02	43.68		
	11	409.55	1.56984E-02	37.47		
	12	462.74	1.69551E-02	30.39	Tol.	SB-125
	14	510.51	2.72426E-02	24.49		
	15	566.19	1.74224E-02	39.99	Sum	
m	18	624.33	6.16554E-03	71.09		
m	21	768.28	9.42415E-03	39.28	Sum	
	22	784.92	7.65476E-03	41.85		
	23	794.08	1.16679E-02	40.84		
	26	933.84	4.44599E-03	65.30		
M	27	963.93	1.18245E-02	26.36	Tol.	EU-152
	30	1238.65	8.81313E-03	39.83	Tol.	CO-56
M	31	1400.64	4.82859E-03	47.96		
m	32	1407.79	4.98265E-03	39.81	Tol.	EU-152
	34	1513.83	2.36111E-03	64.77		
	35	1519.12	2.03704E-03	44.32		
	36	1554.61	4.75694E-03	29.92		
M	37	1580.54	2.89322E-03	49.07		
m	38	1591.56	4.04493E-03	39.52		
	40	1629.56	3.89757E-03	31.87		
	41	1663.81	3.29861E-03	42.26		
	42	1729.61	2.65625E-03	58.40	Sum	
M	43	1740.12	2.13781E-03	38.98		
m	44	1745.58	2.09803E-03	32.43		
	46	1788.47	1.80556E-03	53.57		
	47	1866.55	1.72222E-03	64.77		
	48	1877.61	2.23611E-03	44.90		
	49	1899.24	1.38889E-03	44.72		
	50	1995.66	2.08333E-03	70.71		
	51	2103.20	7.50000E-03	19.25	Sum	
	52	2202.14	2.41453E-03	55.32	Sum	
	53	2346.97	2.08333E-03	53.75	Sum	
	54	2613.28	2.18319E-02	11.92		

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 1411131-15

J1V1L7 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BE-7	0.90	477.59	*	10.42	2.66E-01	3.00E-01
K-40	0.96	1460.81	*	10.67	1.57E+01	2.03E+00
NB-95	0.97	765.79	*	99.81	1.89E-02	2.56E-02
CD-109	0.94	88.03	*	3.72	1.79E+00	1.07E+00
SN-126	0.99	87.57	*	37.00	1.80E-01	1.07E-01
TL-208	0.35	583.14	*	30.22	6.66E-01	1.70E-01
		860.37	*	4.48	1.60E+00	1.07E+00
		2614.66		35.85		
BI-212	0.96	727.17	*	11.80	3.22E-01	3.65E-01
		1620.62	*	2.75	5.52E-01	5.61E-01
PB-212	0.89	238.63	*	44.60	6.20E-01	9.87E-02
		300.09		3.41		
BI-214	0.92	609.31	*	46.30	5.39E-01	9.99E-02
		1120.29	*	15.10	7.08E-01	4.04E-01
		1764.49	*	15.80	7.96E-01	2.59E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	5.01E-01	1.97E-01
		351.92	*	37.19	6.28E-01	1.31E-01
RA-224	0.90	240.98	*	3.95	1.48E+00	8.62E-01
RA-226	0.97	186.21	*	3.28	1.49E+00	2.93E+00
AC-228	0.98	338.32	*	11.40	6.40E-01	3.50E-01
		911.07	*	27.70	8.23E-01	2.27E-01
		969.11	*	16.60	6.22E-01	2.49E-01
NP-237	0.87	86.50	*	12.60	5.28E-01	3.14E-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
BE-7	0.909	2.66E-01	3.00E-01	
K-40	0.968	1.57E+01	2.03E+00	
NB-95	0.974	1.89E-02	2.56E-02	

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
?	CD-109	0.941	1.79E+00	1.07E+00	
?	SN-126	0.996	1.80E-01	1.07E-01	
	TL-208	0.350	6.89E-01	1.67E-01	
	BI-212	0.968	3.90E-01	3.06E-01	
	PB-212	0.893	6.20E-01	9.87E-02	
	BI-214	0.927	5.79E-01	9.08E-02	
	PB-214	0.998	5.89E-01	1.09E-01	
	RA-224	0.905	1.48E+00	8.62E-01	
	RA-226	0.979	1.49E+00	2.93E+00	
	AC-228	0.981	7.15E-01	1.51E-01	
?	NP-237	0.876	5.28E-01	3.14E-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 1411131-15

J1V1L7 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 1:55:09PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	25.75	9.35118E-02	22.61	Tol.	TH-231
	2	75.83	1.95555E-01	10.89		
	7	269.62	1.54328E-02	43.68		
	11	409.55	1.56984E-02	37.47		
	12	462.74	1.69551E-02	30.39	Tol.	SB-125
	14	510.51	2.72426E-02	24.49		
	15	566.19	1.74224E-02	39.99	Sum	
m	18	624.33	6.16554E-03	71.09		
m	21	768.28	9.42415E-03	39.28	Sum	
	22	784.92	7.65476E-03	41.85		
	23	794.08	1.16679E-02	40.84		
	26	933.84	4.44599E-03	65.30		
M	27	963.93	1.18245E-02	26.36	Tol.	EU-152
	30	1238.65	8.81313E-03	39.83	Tol.	CO-56
M	31	1400.64	4.82859E-03	47.96		
m	32	1407.79	4.98265E-03	39.81	Tol.	EU-152
	34	1513.83	2.36111E-03	64.77		
	35	1519.12	2.03704E-03	44.32		
	36	1554.61	4.75694E-03	29.92		
M	37	1580.54	2.89322E-03	49.07		
m	38	1591.56	4.04493E-03	39.52		
	40	1629.56	3.89757E-03	31.87		
	41	1663.81	3.29861E-03	42.26		
	42	1729.61	2.65625E-03	58.40	Sum	
M	43	1740.12	2.13781E-03	38.98		
m	44	1745.58	2.09803E-03	32.43		
	46	1788.47	1.80556E-03	53.57		
	47	1866.55	1.72222E-03	64.77		
	48	1877.61	2.23611E-03	44.90		
	49	1899.24	1.38889E-03	44.72		
	50	1995.66	2.08333E-03	70.71		
	51	2103.20	7.50000E-03	19.25	Sum	
	52	2202.14	2.41453E-03	55.32	Sum	
	53	2346.97	2.08333E-03	53.75	Sum	
	54	2613.28	2.18319E-02	11.92		

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

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	2.66E-01	4.90E-01	4.90E-01
+	NA-22	1274.54		99.94	5.40E-03	6.10E-02	6.10E-02
+	NA-24	1368.53		99.99	-1.60E-01	2.95E-01	4.39E-01
		2754.09		99.86	8.23E-02		2.95E-01
+	AL-26	1808.65		99.76	-2.45E-03	3.89E-02	3.89E-02
+	K-40	1460.81	*	10.67	1.57E+01	8.45E-01	8.45E-01
+	AR-41	1293.64		99.16	-1.72E+06	2.35E+07	2.35E+07
+	TI-44	67.88		94.40	1.28E-02	3.49E-02	3.49E-02
		78.34		96.00	1.21E-01		4.62E-02
+	SC-46	889.25		99.98	-7.49E-04	5.08E-02	5.08E-02
		1120.51		99.99	9.35E-02		8.51E-02
+	V-48	983.52		99.98	-1.68E-02	6.37E-02	6.37E-02
		1312.10		97.50	-1.32E-02		6.38E-02
+	CR-51	320.08		9.83	-1.71E-01	3.84E-01	3.84E-01
+	MN-54	834.83		99.97	-9.87E-03	5.48E-02	5.48E-02
+	CO-56	846.75		99.96	2.10E-02	5.41E-02	5.41E-02
		1037.75		14.03	-1.15E-01		3.94E-01
		1238.25		67.00	5.77E-02		1.27E-01
		1771.40		15.51	3.98E-02		2.77E-01
		2598.48		16.90	-4.03E-02		1.40E-01
+	CO-57	122.06		85.51	-3.71E-03	3.85E-02	3.85E-02
		136.48		10.60	3.03E-02		3.27E-01
+	CO-58	810.76		99.40	-2.29E-02	4.99E-02	4.99E-02
+	FE-59	1099.22		56.50	1.05E-02	1.06E-01	1.06E-01
		1291.56		43.20	-2.11E-02		1.30E-01
+	CO-60	1173.22		100.00	-1.50E-02	4.67E-02	6.74E-02
		1332.49		100.00	-4.44E-03		4.67E-02
+	ZN-65	1115.52		50.75	1.75E-03	1.24E-01	1.24E-01
+	GA-67	93.31		35.70	2.90E-01	1.83E-01	1.83E-01
		208.95		2.24	-1.47E-01		2.86E+00
		300.22		16.00	1.79E-01		4.27E-01
+	SE-75	121.11		16.70	-3.53E-03	5.94E-02	2.00E-01

0663

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	2.59E-02	5.94E-02	5.94E-02
		264.65		59.80	2.53E-02		6.00E-02
		279.53		25.20	4.18E-03		1.49E-01
		400.65		11.40	-8.01E-02		3.27E-01
+	RB-82	776.52		13.00	1.46E-01	4.33E-01	4.33E-01
+	RB-83	520.41		46.00	3.38E-02	9.06E-02	9.06E-02
		529.64		30.30	-9.91E-03		1.30E-01
		552.65		16.40	-9.78E-02		2.26E-01
+	KR-85	513.99		0.43	-6.23E-01	1.05E+01	1.05E+01
+	SR-85	513.99		99.27	-2.79E-03	4.70E-02	4.70E-02
+	Y-88	898.02		93.40	1.85E-02	3.29E-02	6.29E-02
		1836.01		99.38	-5.86E-03		3.29E-02
+	NB-93M	16.57		9.43	1.80E+03	4.52E+03	4.52E+03
+	NB-94	702.63		100.00	8.68E-03	5.00E-02	5.00E-02
		871.10		100.00	-1.35E-02		5.15E-02
+	NB-95	765.79	*	99.81	1.89E-02	7.58E-02	7.58E-02
+	NB-95M	235.69		25.00	-1.23E+00	3.45E-01	3.45E-01
+	ZR-95	724.18		43.70	8.51E-03	9.19E-02	1.50E-01
		756.72		55.30	-1.24E-02		9.19E-02
+	MO-99	181.06		6.20	5.15E-01	7.48E-01	1.02E+00
		739.58		12.80	-1.33E-01		7.48E-01
		778.00		4.50	7.93E-02		1.96E+00
+	RU-103	497.08		89.00	-3.00E-03	4.15E-02	4.15E-02
+	RU-106	621.84		9.80	2.48E-01	4.97E-01	4.97E-01
+	AG-108M	433.93		89.90	-1.00E-02	3.98E-02	3.98E-02
		614.37		90.40	-2.44E-01		5.26E-02
		722.95		90.50	1.64E-02		6.45E-02
+	CD-109	88.03	*	3.72	1.79E+00	1.66E+00	1.66E+00
+	AG-110M	657.75		93.14	2.55E-03	5.10E-02	5.10E-02
		677.61		10.53	-1.96E-01		4.42E-01
		706.67		16.46	2.82E-02		3.01E-01
		763.93		21.98	3.90E-02		2.43E-01
		884.67		71.63	-7.61E-03		7.52E-02
		1384.27		23.94	9.13E-02		2.28E-01
+	CD-113M	263.70		0.02	3.76E+01	1.53E+02	1.53E+02
+	SN-113	255.12		1.93	6.37E-01	5.53E-02	1.93E+00
		391.69		64.90	-2.79E-02		5.53E-02
+	TE123M	159.00		84.10	4.93E-02	4.54E-02	4.54E-02
+	SB-124	602.71		97.87	-6.13E-03	4.97E-02	4.97E-02
		645.85		7.26	-3.07E-02		6.44E-01
		722.78		11.10	1.37E-01		5.39E-01
		1691.02		49.00	2.72E-02		8.63E-02
+	I-125	35.49		6.49	1.52E+00	2.10E+00	2.10E+00
+	SB-125	176.33		6.89	1.74E-01	1.24E-01	5.46E-01
		427.89		29.33	2.49E-02		1.24E-01
		463.38		10.35	5.08E-01		4.66E-01
		600.56		17.80	1.25E-02		2.75E-01
		635.90		11.32	2.82E-02		4.18E-01

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70		83.30	6.74E-03	4.79E-02	4.79E-02
		666.33		99.60	-1.50E-02		5.41E-02
		695.00		99.60	2.50E-02		6.14E-02
		720.50		53.80	6.97E-03		1.10E-01
+	SN-126	87.57	*	37.00	1.80E-01	1.67E-01	1.67E-01
+	SB-127	473.00		25.00	-6.15E-02	2.05E-01	2.05E-01
		685.20		35.70	1.10E-01		2.06E-01
		783.80		14.70	1.49E-01		5.72E-01
+	I-129	29.78		57.00	2.30E-01	7.64E-01	7.64E-01
		33.60		13.20	-6.61E-01		1.31E+00
		39.58		7.52	7.71E-01		1.17E+00
+	I-131	284.30		6.05	-5.24E-03	5.04E-02	7.12E-01
		364.48		81.20	-5.29E-03		5.04E-02
		636.97		7.26	3.23E-01		8.02E-01
		722.89		1.80	9.96E-01		3.91E+00
+	TE-132	49.72		13.10	-6.89E-02	6.76E-02	5.19E-01
		228.16		88.00	-2.79E-02		6.76E-02
+	BA-133	81.00		33.00	3.19E-02	6.57E-02	8.80E-02
		302.84		17.80	3.72E-02		2.27E-01
		356.01		60.00	3.60E-03		6.57E-02
+	I-133	529.87		86.30	-4.89E-02	2.55E-01	2.55E-01
+	CS-134	563.23		8.38	4.73E-02	5.84E-02	4.91E-01
		569.32		15.43	2.43E-01		2.82E-01
		604.70		97.60	-2.57E-03		5.84E-02
		795.84		85.40	1.22E-02		6.99E-02
		801.93		8.73	-9.57E-02		6.11E-01
+	CS-135	268.24		16.00	3.45E-02	2.55E-01	2.55E-01
+	I-135	1131.51		22.50	1.70E+01	5.27E+01	6.83E+01
		1260.41		28.60	7.10E+00		5.27E+01
		1678.03		9.54	2.41E+01		1.17E+02
+	CS-136	153.22		7.46	1.84E-01	5.14E-02	5.27E-01
		163.89		4.61	-6.13E-01		8.51E-01
		176.55		13.56	-5.83E-02		3.09E-01
		273.65		12.66	9.57E-02		3.23E-01
		340.57		48.50	-1.06E-01		9.63E-02
		818.50		99.70	-2.97E-02		5.14E-02
		1048.07		79.60	3.08E-02		8.82E-02
		1235.34		19.70	3.76E-02		4.69E-01
+	CS-137	661.65		85.12	3.77E-02	5.95E-02	5.95E-02
+	LA-138	788.74		34.00	5.63E-02	5.88E-02	1.74E-01
		1435.80		66.00	-2.33E-02		5.88E-02
+	CE-139	165.85		80.35	1.90E-02	4.57E-02	4.57E-02
+	BA-140	162.64		6.70	-2.86E-02	1.68E-01	5.94E-01
		304.84		4.50	-3.39E-01		9.39E-01
		423.70		3.20	-1.44E-01		1.24E+00
		437.55		2.00	5.62E-01		2.19E+00
		537.32		25.00	-4.48E-03		1.68E-01
+	LA-140	328.77		20.50	4.80E-02	5.60E-02	2.23E-01
		487.03		45.50	4.63E-03		9.34E-02

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	815.85	23.50	1.25E-01	5.60E-02	2.42E-01
		1596.49	95.49	-2.70E-03		5.60E-02
+	CE-141	145.44	48.40	-1.17E-02	7.55E-02	7.55E-02
+	CE-143	57.36	11.80	-8.32E-03	3.82E-01	8.75E-01
		293.26	42.00	5.64E-01		3.82E-01
		664.55	5.20	1.14E+00		2.94E+00
+	CE-144	133.54	10.80	-8.31E-02	3.14E-01	3.14E-01
+	PM-144	476.78	42.00	3.58E-02	4.22E-02	9.99E-02
		618.01	98.60	-2.91E-02		4.22E-02
		696.49	99.49	1.16E-02		5.32E-02
+	PM-145	36.85	21.70	-1.37E-01	2.53E-01	4.93E-01
		37.36	39.70	-7.04E-02		2.53E-01
		42.30	15.10	-1.15E-01		4.31E-01
		72.40	2.31	-5.58E-01		1.47E+00
+	PM-146	453.90	39.94	1.30E-02	9.18E-02	9.18E-02
		735.90	14.01	1.10E-01		3.93E-01
		747.13	13.10	-1.53E-01		3.75E-01
+	ND-147	91.11	28.90	8.69E-02	1.68E-01	1.68E-01
		531.02	13.10	-1.77E-02		3.37E-01
+	PM-149	285.90	3.10	-8.06E-02	2.32E+00	2.32E+00
+	EU-152	121.78	20.50	-1.54E-02	1.59E-01	1.59E-01
		244.69	5.40	2.93E-02		6.74E-01
		344.27	19.13	3.09E-02		1.88E-01
		778.89	9.20	1.51E-01		5.65E-01
		964.01	10.40	-8.57E-01		7.11E-01
		1085.78	7.22	3.02E-01		8.69E-01
		1112.02	9.60	2.44E-01		6.72E-01
		1407.95	14.94	2.33E-01		3.67E-01
+	GD-153	97.43	31.30	1.16E-02	1.05E-01	1.05E-01
		103.18	22.20	-1.41E-01		1.42E-01
+	EU-154	123.07	40.50	-2.09E-02	8.05E-02	8.05E-02
		723.30	19.70	7.54E-02		2.96E-01
		873.19	11.50	-2.68E-01		4.45E-01
		996.32	10.30	-6.91E-02		5.26E-01
		1004.76	17.90	7.08E-02		2.95E-01
		1274.45	35.50	1.52E-02		1.72E-01
+	EU-155	86.50	30.90	-1.04E-01	1.34E-01	1.34E-01
		105.30	20.70	-2.67E-02		1.59E-01
+	EU-156	811.77	10.40	-2.88E-01	5.17E-01	5.17E-01
		1153.47	7.20	-3.17E-01		1.01E+00
		1230.71	8.90	-1.30E-01		8.52E-01
+	HO-166M	184.41	72.60	1.74E-02	5.88E-02	5.88E-02
		280.45	29.60	3.52E-03		1.26E-01
		410.94	11.10	6.60E-02		3.68E-01
		711.69	54.10	1.10E-02		9.47E-02
+	TM-171	66.72	0.14	1.68E+01	2.43E+01	2.43E+01
+	HF-172	81.75	4.52	9.06E-02	2.96E-01	6.16E-01
		125.81	11.30	-1.26E-01		2.96E-01
+	LU-172	181.53	20.60	7.47E-02	1.29E-01	2.20E-01

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Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-172	810.06		16.63	-1.68E-01	1.29E-01	3.66E-01
		912.12		15.25	1.76E+00		8.25E-01
		1093.66		62.50	1.81E-02		1.29E-01
+	LU-173	100.72		5.24	-4.33E-02	1.90E-01	6.10E-01
		272.11		21.20	2.56E-02		1.90E-01
+	HF-175	343.40		84.00	-2.73E-02	4.30E-02	4.30E-02
+	LU-176	88.34		13.30	4.58E-01	4.10E-02	3.21E-01
		201.83		86.00	-1.50E-02		4.30E-02
		306.78		94.00	1.37E-03		4.10E-02
+	TA-182	67.75		41.20	2.97E-02	8.12E-02	8.12E-02
		1121.30		34.90	2.83E-01		2.40E-01
		1189.05		16.23	-2.40E-01		4.02E-01
		1221.41		26.98	-5.23E-02		2.54E-01
		1231.02		11.44	-4.75E-02		6.40E-01
+	IR-192	308.46		29.68	-6.95E-03	8.16E-02	1.29E-01
		468.07		48.10	2.82E-02		8.16E-02
+	HG-203	279.19		77.30	-6.21E-03	4.89E-02	4.89E-02
+	BI-207	569.67		97.72	3.83E-02	4.45E-02	4.45E-02
		1063.62		74.90	1.48E-02		8.02E-02
+	TL-208	583.14	*	30.22	6.66E-01	2.19E-01	2.19E-01
		860.37	*	4.48	1.60E+00		1.67E+00
		2614.66		35.85	5.65E-01		3.18E-01
+	BI-210M	262.00		45.00	-4.67E-02	7.98E-02	7.98E-02
		300.00		23.00	7.83E-02		1.87E-01
+	PB-210	46.50		4.25	1.47E+00	1.42E+00	1.42E+00
+	PB-211	404.84		2.90	-3.63E-01	1.20E+00	1.20E+00
		831.96		2.90	-6.52E-01		1.79E+00
+	BI-212	727.17	*	11.80	3.22E-01	5.95E-01	5.95E-01
		1620.62	*	2.75	5.52E-01		8.14E-01
+	PB-212	238.63	*	44.60	6.20E-01	1.67E-01	1.67E-01
		300.09		3.41	5.28E-01		1.26E+00
+	BI-214	609.31	*	46.30	5.39E-01	2.37E-01	3.04E-01
		1120.29	*	15.10	7.08E-01		6.17E-01
		1764.49	*	15.80	7.96E-01		2.37E-01
		2204.22		4.98	-5.17E-02		1.01E+00
+	PB-214	295.21	*	19.19	5.01E-01	1.62E-01	2.93E-01
		351.92	*	37.19	6.28E-01		1.62E-01
+	RN-219	401.80		6.50	-2.49E-02	5.61E-01	5.61E-01
+	RA-223	323.87		3.88	5.35E-01	1.05E+00	1.05E+00
+	RA-224	240.98	*	3.95	1.48E+00	1.87E+00	1.87E+00
+	RA-225	40.00		31.00	1.99E-01	3.01E-01	3.01E-01
+	RA-226	186.21	*	3.28	1.49E+00	1.70E+00	1.70E+00
+	TH-227	50.10		8.40	-6.64E-02	4.94E-01	4.99E-01
		236.00		11.50	-1.77E+00		4.94E-01
		256.20		6.30	-3.30E-01		5.72E-01
+	AC-228	338.32	*	11.40	6.40E-01	2.93E-01	5.44E-01
		911.07	*	27.70	8.23E-01		2.93E-01
		969.11	*	16.60	6.22E-01		5.50E-01

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-230	48.44		16.90	-2.45E-01	2.65E-01	2.65E-01
		62.85		4.60	8.08E-01		8.21E-01
		67.67		0.37	3.26E+00		8.93E+00
+	PA-231	283.67		1.60	-1.64E-02	1.76E+00	2.23E+00
		302.67		2.30	2.88E-01		1.76E+00
+	TH-231	25.64		14.70	1.21E+01	4.65E-01	1.33E+01
		84.21		6.40	1.56E-01		4.65E-01
+	PA-233	311.98		38.60	-1.06E-01	9.79E-02	9.79E-02
+	PA-234	131.20		20.40	4.08E-02	1.72E-01	1.72E-01
		733.99		8.80	-1.86E-01		5.88E-01
		946.00		12.00	1.76E-03		4.33E-01
+	PA-234M	1001.03		0.92	6.86E-01	5.91E+00	5.91E+00
+	TH-234	63.29		3.80	9.71E-01	9.86E-01	9.86E-01
+	U-235	143.76		10.50	1.17E-01	3.39E-01	3.39E-01
		163.35		4.70	-3.63E-02		7.54E-01
		205.31		4.70	-8.61E-02		8.37E-01
+	NP-237	86.50	*	12.60	5.28E-01	4.89E-01	4.89E-01
+	NP-239	106.10		22.70	-1.24E-01	2.80E-01	2.80E-01
		228.18		10.70	-2.75E-01		6.64E-01
		277.60		14.10	1.03E-01		4.97E-01
+	AM-241	59.54		35.90	7.20E-03	1.01E-01	1.01E-01
+	AM-243	74.67		66.00	-1.24E-01	6.47E-02	6.47E-02
+	CM-243	209.75		3.29	9.29E-01	2.63E-01	1.24E+00
		228.14		10.60	-1.46E-01		3.53E-01
		277.60		14.00	5.46E-02		2.63E-01

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

NUCLIDE MDA REPORT

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

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	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	4.90E-01	4.90E-01	2.66E-01	2.33E-01
	NA-22	1274.54		99.94	6.10E-02	6.10E-02	5.40E-03	2.78E-02
	NA-24	1368.53		99.99	4.39E-01	2.95E-01	-1.60E-01	1.88E-01
		2754.09		99.86	2.95E-01		8.23E-02	1.10E-01
	AL-26	1808.65		99.76	3.89E-02	3.89E-02	-2.45E-03	1.61E-02
+	K-40	1460.81	*	10.67	8.45E-01	8.45E-01	1.57E+01	3.95E-01
	AR-41	1293.64		99.16	2.35E+07	2.35E+07	-1.72E+06	1.06E+07
	TI-44	67.88		94.40	3.49E-02	3.49E-02	1.28E-02	1.69E-02
		78.34		96.00	4.62E-02		1.21E-01	2.26E-02
	SC-46	889.25		99.98	5.08E-02	5.08E-02	-7.49E-04	2.34E-02
		1120.51		99.99	8.51E-02		9.35E-02	4.01E-02
	V-48	983.52		99.98	6.37E-02	6.37E-02	-1.68E-02	2.95E-02
		1312.10		97.50	6.38E-02		-1.32E-02	2.88E-02
	CR-51	320.08		9.83	3.84E-01	3.84E-01	-1.71E-01	1.82E-01
	MN-54	834.83		99.97	5.48E-02	5.48E-02	-9.87E-03	2.55E-02
	CO-56	846.75		99.96	5.41E-02	5.41E-02	2.10E-02	2.51E-02
		1037.75		14.03	3.94E-01		-1.15E-01	1.81E-01
		1238.25		67.00	1.27E-01		5.77E-02	5.96E-02
		1771.40		15.51	2.77E-01		3.98E-02	1.17E-01
		2598.48		16.90	1.40E-01		-4.03E-02	4.97E-02
	CO-57	122.06		85.51	3.85E-02	3.85E-02	-3.71E-03	1.86E-02
		136.48		10.60	3.27E-01		3.03E-02	1.59E-01
	CO-58	810.76		99.40	4.99E-02	4.99E-02	-2.29E-02	2.31E-02
	FE-59	1099.22		56.50	1.06E-01	1.06E-01	1.05E-02	4.88E-02
		1291.56		43.20	1.30E-01		-2.11E-02	5.84E-02
	CO-60	1173.22		100.00	6.74E-02	4.67E-02	-1.50E-02	3.12E-02
		1332.49		100.00	4.67E-02		-4.44E-03	2.06E-02
	ZN-65	1115.52		50.75	1.24E-01	1.24E-01	1.75E-03	5.71E-02
	GA-67	93.31		35.70	1.83E-01	1.83E-01	2.90E-01	8.95E-02
		208.95		2.24	2.86E+00		-1.47E-01	1.38E+00
		300.22		16.00	4.27E-01		1.79E-01	2.05E-01
	SE-75	121.11		16.70	2.00E-01	5.94E-02	-3.53E-03	9.71E-02
		136.00		59.20	5.94E-02		2.59E-02	2.88E-02
		264.65		59.80	6.00E-02		2.53E-02	2.86E-02
		279.53		25.20	1.49E-01		4.18E-03	7.12E-02
		400.65		11.40	3.27E-01		-8.01E-02	1.54E-01
	RB-82	776.52		13.00	4.33E-01	4.33E-01	1.46E-01	2.02E-01
	RB-83	520.41		46.00	9.06E-02	9.06E-02	3.38E-02	4.24E-02
		529.64		30.30	1.30E-01		-9.91E-03	6.05E-02
		552.65		16.40	2.26E-01		-9.78E-02	1.05E-01
	KR-85	513.99		0.43	1.05E+01	1.05E+01	-6.23E-01	4.95E+00
	SR-85	513.99		99.27	4.70E-02	4.70E-02	-2.79E-03	2.21E-02
	Y-88	898.02		93.40	6.29E-02	3.29E-02	1.85E-02	2.93E-02
		1836.01		99.38	3.29E-02		-5.86E-03	1.31E-02
	NB-93M	16.57		9.43	4.52E+03	4.52E+03	1.80E+03	2.20E+03
	NB-94	702.63		100.00	5.00E-02	5.00E-02	8.68E-03	2.34E-02
		871.10		100.00	5.15E-02		-1.35E-02	2.38E-02
+	NB-95	765.79	*	99.81	7.58E-02	7.58E-02	1.89E-02	3.61E-02
	NB-95M	235.69		25.00	3.45E-01	3.45E-01	-1.23E+00	1.68E-01
	ZR-95	724.18		43.70	1.50E-01	9.19E-02	8.51E-03	7.10E-02
		756.72		55.30	9.19E-02		-1.24E-02	4.27E-02
	MO-99	181.06		6.20	1.02E+00	7.48E-01	5.15E-01	4.93E-01
		739.58		12.80	7.48E-01		-1.33E-01	3.51E-01

Analysis Report for 1411131-15

J1V1L7 SAF: RC-107

	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	1.96E+00	7.48E-01	7.93E-02	9.09E-01
	RU-103	497.08		89.00	4.15E-02	4.15E-02	-3.00E-03	1.93E-02
	RU-106	621.84		9.80	4.97E-01	4.97E-01	2.48E-01	2.33E-01
	AG-108M	433.93		89.90	3.98E-02	3.98E-02	-1.00E-02	1.86E-02
		614.37		90.40	5.26E-02		-2.44E-01	2.46E-02
		722.95		90.50	6.45E-02		1.64E-02	3.04E-02
+	CD-109	88.03	*	3.72	1.66E+00	1.66E+00	1.79E+00	8.18E-01
	AG-110M	657.75		93.14	5.10E-02	5.10E-02	2.55E-03	2.38E-02
		677.61		10.53	4.42E-01		-1.96E-01	2.06E-01
		706.67		16.46	3.01E-01		2.82E-02	1.40E-01
		763.93		21.98	2.43E-01		3.90E-02	1.13E-01
		884.67		71.63	7.52E-02		-7.61E-03	3.48E-02
		1384.27		23.94	2.28E-01		9.13E-02	1.02E-01
	CD-113M	263.70		0.02	1.53E+02	1.53E+02	3.76E+01	7.28E+01
	SN-113	255.12		1.93	1.93E+00	5.53E-02	6.37E-01	9.24E-01
		391.69		64.90	5.53E-02		-2.79E-02	2.60E-02
	TE123M	159.00		84.10	4.54E-02	4.54E-02	4.93E-02	2.20E-02
	SB-124	602.71		97.87	4.97E-02	4.97E-02	-6.13E-03	2.33E-02
		645.85		7.26	6.44E-01		-3.07E-02	3.00E-01
		722.78		11.10	5.39E-01		1.37E-01	2.54E-01
		1691.02		49.00	8.63E-02		2.72E-02	3.64E-02
	I-125	35.49		6.49	2.10E+00	2.10E+00	1.52E+00	1.01E+00
	SB-125	176.33		6.89	5.46E-01	1.24E-01	1.74E-01	2.64E-01
		427.89		29.33	1.24E-01		2.49E-02	5.81E-02
		463.38		10.35	4.66E-01		5.08E-01	2.21E-01
		600.56		17.80	2.75E-01		1.25E-02	1.30E-01
		635.90		11.32	4.18E-01		2.82E-02	1.96E-01
	SB-126	414.70		83.30	4.79E-02	4.79E-02	6.74E-03	2.24E-02
		666.33		99.60	5.41E-02		-1.50E-02	2.52E-02
		695.00		99.60	6.14E-02		2.50E-02	2.89E-02
		720.50		53.80	1.10E-01		6.97E-03	5.15E-02
+	SN-126	87.57	*	37.00	1.67E-01	1.67E-01	1.80E-01	8.20E-02
	SB-127	473.00		25.00	2.05E-01	2.05E-01	-6.15E-02	9.52E-02
		685.20		35.70	2.06E-01		1.10E-01	9.65E-02
		783.80		14.70	5.72E-01		1.49E-01	2.68E-01
	I-129	29.78		57.00	7.64E-01	7.64E-01	2.30E-01	3.68E-01
		33.60		13.20	1.31E+00		-6.61E-01	6.28E-01
		39.58		7.52	1.17E+00		7.71E-01	5.61E-01
	I-131	284.30		6.05	7.12E-01	5.04E-02	-5.24E-03	3.39E-01
		364.48		81.20	5.04E-02		-5.29E-03	2.37E-02
		636.97		7.26	8.02E-01		3.23E-01	3.76E-01
		722.89		1.80	3.91E+00		9.96E-01	1.84E+00
	TE-132	49.72		13.10	5.19E-01	6.76E-02	-6.89E-02	2.49E-01
		228.16		88.00	6.76E-02		-2.79E-02	3.24E-02
	BA-133	81.00		33.00	8.80E-02	6.57E-02	3.19E-02	4.25E-02
		302.84		17.80	2.27E-01		3.72E-02	1.09E-01
		356.01		60.00	6.57E-02		3.60E-03	3.12E-02
	I-133	529.87		86.30	2.55E-01	2.55E-01	-4.89E-02	1.19E-01
	CS-134	563.23		8.38	4.91E-01	5.84E-02	4.73E-02	2.29E-01
		569.32		15.43	2.82E-01		2.43E-01	1.32E-01
		604.70		97.60	5.84E-02		-2.57E-03	2.77E-02
		795.84		85.40	6.99E-02		1.22E-02	3.28E-02
		801.93		8.73	6.11E-01		-9.57E-02	2.84E-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-135	268.24	16.00	2.55E-01	2.55E-01	3.45E-02	1.23E-01
I-135	1131.51	22.50	6.83E+01	5.27E+01	1.70E+01	3.15E+01
	1260.41	28.60	5.27E+01		7.10E+00	2.41E+01
	1678.03	9.54	1.17E+02		2.41E+01	5.05E+01
CS-136	153.22	7.46	5.27E-01	5.14E-02	1.84E-01	2.55E-01
	163.89	4.61	8.51E-01		-6.13E-01	4.11E-01
	176.55	13.56	3.09E-01		-5.83E-02	1.49E-01
	273.65	12.66	3.23E-01		9.57E-02	1.54E-01
	340.57	48.50	9.63E-02		-1.06E-01	4.59E-02
	818.50	99.70	5.14E-02		-2.97E-02	2.36E-02
	1048.07	79.60	8.82E-02		3.08E-02	4.09E-02
	1235.34	19.70	4.69E-01		3.76E-02	2.20E-01
CS-137	661.65	85.12	5.95E-02	5.95E-02	3.77E-02	2.79E-02
LA-138	788.74	34.00	1.74E-01	5.88E-02	5.63E-02	8.17E-02
	1435.80	66.00	5.88E-02		-2.33E-02	2.50E-02
CE-139	165.85	80.35	4.57E-02	4.57E-02	1.90E-02	2.21E-02
BA-140	162.64	6.70	5.94E-01	1.68E-01	-2.86E-02	2.87E-01
	304.84	4.50	9.39E-01		-3.39E-01	4.47E-01
	423.70	3.20	1.24E+00		-1.44E-01	5.82E-01
	437.55	2.00	2.19E+00		5.62E-01	1.03E+00
	537.32	25.00	1.68E-01		-4.48E-03	7.79E-02
LA-140	328.77	20.50	2.23E-01	5.60E-02	4.80E-02	1.06E-01
	487.03	45.50	9.34E-02		4.63E-03	4.36E-02
	815.85	23.50	2.42E-01		1.25E-01	1.12E-01
	1596.49	95.49	5.60E-02		-2.70E-03	2.43E-02
CE-141	145.44	48.40	7.55E-02	7.55E-02	-1.17E-02	3.65E-02
CE-143	57.36	11.80	8.75E-01	3.82E-01	-8.32E-03	4.21E-01
	293.26	42.00	3.82E-01		5.64E-01	1.85E-01
	664.55	5.20	2.94E+00		1.14E+00	1.38E+00
CE-144	133.54	10.80	3.14E-01	3.14E-01	-8.31E-02	1.52E-01
PM-144	476.78	42.00	9.99E-02	4.22E-02	3.58E-02	4.70E-02
	618.01	98.60	4.22E-02		-2.91E-02	1.96E-02
	696.49	99.49	5.32E-02		1.16E-02	2.49E-02
PM-145	36.85	21.70	4.93E-01	2.53E-01	-1.37E-01	2.36E-01
	37.36	39.70	2.53E-01		-7.04E-02	1.21E-01
	42.30	15.10	4.31E-01		-1.15E-01	2.06E-01
	72.40	2.31	1.47E+00		-5.58E-01	7.12E-01
PM-146	453.90	39.94	9.18E-02	9.18E-02	1.30E-02	4.29E-02
	735.90	14.01	3.93E-01		1.10E-01	1.84E-01
	747.13	13.10	3.75E-01		-1.53E-01	1.75E-01
ND-147	91.11	28.90	1.68E-01	1.68E-01	8.69E-02	8.19E-02
	531.02	13.10	3.37E-01		-1.77E-02	1.57E-01
PM-149	285.90	3.10	2.32E+00	2.32E+00	-8.06E-02	1.10E+00
EU-152	121.78	20.50	1.59E-01	1.59E-01	-1.54E-02	7.72E-02
	244.69	5.40	6.74E-01		2.93E-02	3.23E-01
	344.27	19.13	1.88E-01		3.09E-02	8.88E-02
	778.89	9.20	5.65E-01		1.51E-01	2.63E-01
	964.01	10.40	7.11E-01		-8.57E-01	3.35E-01
	1085.78	7.22	8.69E-01		3.02E-01	4.02E-01
	1112.02	9.60	6.72E-01		2.44E-01	3.11E-01
	1407.95	14.94	3.67E-01		2.33E-01	1.64E-01
GD-153	97.43	31.30	1.05E-01	1.05E-01	1.16E-02	5.09E-02
	103.18	22.20	1.42E-01		-1.41E-01	6.89E-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)
	EU-154	123.07		40.50	8.05E-02	8.05E-02	-2.09E-02	3.90E-02
		723.30		19.70	2.96E-01		7.54E-02	1.40E-01
		873.19		11.50	4.45E-01		-2.68E-01	2.05E-01
		996.32		10.30	5.26E-01		-6.91E-02	2.42E-01
		1004.76		17.90	2.95E-01		7.08E-02	1.35E-01
		1274.45		35.50	1.72E-01		1.52E-02	7.83E-02
	EU-155	86.50		30.90	1.34E-01	1.34E-01	-1.04E-01	6.52E-02
		105.30		20.70	1.59E-01		-2.67E-02	7.70E-02
	EU-156	811.77		10.40	5.17E-01	5.17E-01	-2.88E-01	2.39E-01
		1153.47		7.20	1.01E+00		-3.17E-01	4.67E-01
		1230.71		8.90	8.52E-01		-1.30E-01	3.94E-01
	HO-166M	184.41		72.60	5.88E-02	5.88E-02	1.74E-02	2.85E-02
		280.45		29.60	1.26E-01		3.52E-03	6.00E-02
		410.94		11.10	3.68E-01		6.60E-02	1.74E-01
		711.69		54.10	9.47E-02		1.10E-02	4.43E-02
	TM-171	66.72		0.14	2.43E+01	2.43E+01	1.68E+01	1.18E+01
	HF-172	81.75		4.52	6.16E-01	2.96E-01	9.06E-02	2.97E-01
		125.81		11.30	2.96E-01		-1.26E-01	1.43E-01
	LU-172	181.53		20.60	2.20E-01	1.29E-01	7.47E-02	1.06E-01
		810.06		16.63	3.66E-01		-1.68E-01	1.69E-01
		912.12		15.25	8.25E-01		1.76E+00	3.96E-01
		1093.66		62.50	1.29E-01		1.81E-02	5.97E-02
	LU-173	100.72		5.24	6.10E-01	1.90E-01	-4.33E-02	2.96E-01
		272.11		21.20	1.90E-01		2.56E-02	9.11E-02
	HF-175	343.40		84.00	4.30E-02	4.30E-02	-2.73E-02	2.03E-02
	LU-176	88.34		13.30	3.21E-01	4.10E-02	4.58E-01	1.57E-01
		201.83		86.00	4.30E-02		-1.50E-02	2.07E-02
		306.78		94.00	4.10E-02		1.37E-03	1.95E-02
	TA-182	67.75		41.20	8.12E-02	8.12E-02	2.97E-02	3.93E-02
		1121.30		34.90	2.40E-01		2.83E-01	1.13E-01
		1189.05		16.23	4.02E-01		-2.40E-01	1.85E-01
		1221.41		26.98	2.54E-01		-5.23E-02	1.17E-01
		1231.02		11.44	6.40E-01		-4.75E-02	2.97E-01
	IR-192	308.46		29.68	1.29E-01	8.16E-02	-6.95E-03	6.15E-02
		468.07		48.10	8.16E-02		2.82E-02	3.82E-02
	HG-203	279.19		77.30	4.89E-02	4.89E-02	-6.21E-03	2.33E-02
	BI-207	569.67		97.72	4.45E-02	4.45E-02	3.83E-02	2.08E-02
		1063.62		74.90	8.02E-02		1.48E-02	3.70E-02
+	TL-208	583.14	*	30.22	2.19E-01	2.19E-01	6.66E-01	1.05E-01
		860.37	*	4.48	1.67E+00		1.60E+00	7.91E-01
		2614.66		35.85	3.18E-01		5.65E-01	1.49E-01
	BI-210M	262.00		45.00	7.98E-02	7.98E-02	-4.67E-02	3.81E-02
		300.00		23.00	1.87E-01		7.83E-02	8.95E-02
	PB-210	46.50		4.25	1.42E+00	1.42E+00	1.47E+00	6.86E-01
	PB-211	404.84		2.90	1.20E+00	1.20E+00	-3.63E-01	5.64E-01
		831.96		2.90	1.79E+00		-6.52E-01	8.29E-01
+	BI-212	727.17	*	11.80	5.95E-01	5.95E-01	3.22E-01	2.83E-01
		1620.62	*	2.75	8.14E-01		5.52E-01	2.93E-01
+	PB-212	238.63	*	44.60	1.67E-01	1.67E-01	6.20E-01	8.20E-02
		300.09		3.41	1.26E+00		5.28E-01	6.04E-01
+	BI-214	609.31	*	46.30	3.04E-01	2.37E-01	5.39E-01	1.49E-01
		1120.29	*	15.10	6.17E-01		7.08E-01	2.92E-01
		1764.49	*	15.80	2.37E-01		7.96E-01	9.79E-02

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-214	2204.22		4.98	1.01E+00	2.37E-01	-5.17E-02	4.34E-01
+	PB-214	295.21	*	19.19	2.93E-01	1.62E-01	5.01E-01	1.42E-01
		351.92	*	37.19	1.62E-01		6.28E-01	7.82E-02
	RN-219	401.80		6.50	5.61E-01	5.61E-01	-2.49E-02	2.63E-01
	RA-223	323.87		3.88	1.05E+00	1.05E+00	5.35E-01	5.03E-01
+	RA-224	240.98	*	3.95	1.87E+00	1.87E+00	1.48E+00	9.18E-01
	RA-225	40.00		31.00	3.01E-01	3.01E-01	1.99E-01	1.45E-01
+	RA-226	186.21	*	3.28	1.70E+00	1.70E+00	1.49E+00	8.29E-01
	TH-227	50.10		8.40	4.99E-01	4.94E-01	-6.64E-02	2.40E-01
		236.00		11.50	4.94E-01		-1.77E+00	2.40E-01
		256.20		6.30	5.72E-01		-3.30E-01	2.73E-01
+	AC-228	338.32	*	11.40	5.44E-01	2.93E-01	6.40E-01	2.64E-01
		911.07	*	27.70	2.93E-01		8.23E-01	1.39E-01
		969.11	*	16.60	5.50E-01		6.22E-01	2.62E-01
	TH-230	48.44		16.90	2.65E-01	2.65E-01	-2.45E-01	1.27E-01
		62.85		4.60	8.21E-01		8.08E-01	3.98E-01
		67.67		0.37	8.93E+00		3.26E+00	4.32E+00
	PA-231	283.67		1.60	2.23E+00	1.76E+00	-1.64E-02	1.06E+00
		302.67		2.30	1.76E+00		2.88E-01	8.40E-01
	TH-231	25.64		14.70	1.33E+01	4.65E-01	1.21E+01	6.49E+00
		84.21		6.40	4.65E-01		1.56E-01	2.25E-01
	PA-233	311.98		38.60	9.79E-02	9.79E-02	-1.06E-01	4.64E-02
	PA-234	131.20		20.40	1.72E-01	1.72E-01	4.08E-02	8.33E-02
		733.99		8.80	5.88E-01		-1.86E-01	2.75E-01
		946.00		12.00	4.33E-01		1.76E-03	1.99E-01
	PA-234M	1001.03		0.92	5.91E+00	5.91E+00	6.86E-01	2.72E+00
	TH-234	63.29		3.80	9.86E-01	9.86E-01	9.71E-01	4.78E-01
	U-235	143.76		10.50	3.39E-01	3.39E-01	1.17E-01	1.64E-01
		163.35		4.70	7.54E-01		-3.63E-02	3.64E-01
		205.31		4.70	8.37E-01		-8.61E-02	4.04E-01
+	NP-237	86.50	*	12.60	4.89E-01	4.89E-01	5.28E-01	2.41E-01
	NP-239	106.10		22.70	2.80E-01	2.80E-01	-1.24E-01	1.36E-01
		228.18		10.70	6.64E-01		-2.75E-01	3.19E-01
		277.60		14.10	4.97E-01		1.03E-01	2.37E-01
	AM-241	59.54		35.90	1.01E-01	1.01E-01	7.20E-03	4.90E-02
	AM-243	74.67		66.00	6.47E-02	6.47E-02	-1.24E-01	3.16E-02
	CM-243	209.75		3.29	1.24E+00	2.63E-01	9.29E-01	5.97E-01
		228.14		10.60	3.53E-01		-1.46E-01	1.69E-01
		277.60		14.00	2.63E-01		5.46E-02	1.26E-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 1411131-15

J1V1L7 SAF: RC-107

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: J1V1L7 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3601

Channel								
1:	0	0	0	0	0	2	120	664
9:	1087	1394	962	577	1447	575	113	153
17:	184	176	180	187	187	176	183	194
25:	181	198	119	109	101	84	58	60
33:	65	46	54	66	52	40	60	78
41:	59	56	60	57	66	101	114	59
49:	63	62	65	70	82	78	67	69
57:	66	79	74	110	86	93	117	125
65:	81	92	98	115	83	87	91	125
73:	130	150	275	151	333	223	95	100
81:	80	98	77	119	103	86	151	154
89:	95	148	85	105	189	131	80	78
97:	63	81	70	73	65	72	64	63
105:	66	90	76	77	96	56	81	81
113:	81	74	85	66	69	69	74	66
121:	68	70	53	65	61	69	62	69
129:	86	78	63	62	58	63	67	66
137:	71	61	58	63	69	71	62	65
145:	70	58	53	60	61	61	56	49
153:	69	70	48	47	71	62	70	61
161:	62	46	57	59	53	53	67	54
169:	46	58	51	48	49	57	58	53
177:	69	46	53	60	52	40	53	46
185:	82	126	77	46	50	46	40	45
193:	53	52	38	50	43	49	55	55
201:	33	38	49	54	48	53	50	62
209:	69	47	33	53	36	46	55	33
217:	52	43	47	38	43	44	33	45
225:	37	46	36	40	39	36	50	46
233:	45	40	42	52	44	269	341	82
241:	85	95	34	35	28	34	38	37
249:	40	33	23	26	38	34	31	31
257:	29	30	38	34	32	25	25	33
265:	36	22	27	35	50	55	36	24
273:	29	35	29	28	27	36	32	22
281:	25	31	30	25	25	20	27	37
289:	25	18	26	31	27	47	159	57
297:	30	33	39	42	39	26	28	29
305:	34	21	20	33	30	26	21	27
313:	21	20	37	38	28	16	29	25
321:	19	22	26	38	31	28	26	36
329:	31	21	26	24	24	23	23	25
337:	25	85	52	21	27	20	20	21
345:	10	30	17	17	28	18	126	195
353:	44	24	28	24	17	24	17	24
361:	21	16	14	22	18	12	15	27

369:	29	21	25	26	32	18	22	17

Sample Title: J1V1L7 SAF: RC-107

Channel								
377:	28	17	24	21	22	15	19	19
385:	10	17	19	22	23	11	16	19
393:	21	14	19	18	15	27	17	22
401:	18	20	8	15	17	16	19	21
409:	29	25	21	18	9	13	23	12
417:	17	21	10	21	16	18	11	17
425:	14	12	14	13	18	18	8	15
433:	14	12	17	13	19	18	17	14
441:	17	14	11	16	11	10	16	14
449:	8	18	10	11	17	13	15	14
457:	13	11	10	13	15	27	50	18
465:	11	12	14	21	8	19	8	16
473:	9	12	13	16	16	27	14	17
481:	16	10	15	6	15	12	17	12
489:	11	10	19	17	11	9	12	20
497:	8	4	13	12	14	13	8	14
505:	9	18	18	13	28	72	65	35
513:	21	10	12	14	14	14	15	17
521:	13	13	9	10	12	14	14	13
529:	12	13	10	13	13	14	10	11
537:	15	9	11	11	9	12	15	14
545:	11	15	17	16	6	14	10	11
553:	9	7	8	21	13	8	12	10
561:	15	18	18	6	7	10	15	12
569:	17	15	12	7	5	7	6	9
577:	9	12	11	5	16	58	138	37
585:	11	12	7	14	7	17	16	8
593:	8	12	11	13	10	17	12	13
601:	11	8	13	11	12	10	16	44
609:	154	54	19	10	13	8	13	8
617:	5	6	6	10	8	11	14	19
625:	10	17	4	11	6	13	10	14
633:	8	14	11	6	6	18	8	11
641:	5	7	11	7	6	10	14	8
649:	8	13	11	10	8	9	12	7
657:	5	8	7	12	16	10	10	14
665:	8	8	11	9	7	7	13	13
673:	10	6	14	9	13	6	8	5
681:	11	11	9	11	8	13	10	8
689:	4	8	9	15	6	14	18	10
697:	14	5	10	9	7	6	13	10
705:	13	8	8	7	6	12	8	12
713:	18	7	10	11	7	5	11	15
721:	11	12	11	7	14	20	34	10
729:	10	12	9	6	16	9	11	7
737:	10	12	12	10	11	15	11	17
745:	6	9	7	11	6	3	13	6
753:	12	13	9	6	10	4	5	8
761:	10	8	6	5	14	11	13	24
769:	16	8	15	11	12	5	6	7
777:	13	10	12	7	4	9	7	16
785:	18	14	6	9	8	14	11	7
793:	9	20	23	7	9	5	7	14

801:	8	11	8	9	5	15	8	2

Sample Title: J1V1L7 SAF: RC-107

Channel								
809:	8	9	6	4	13	8	10	7
817:	6	8	2	5	5	11	5	4
825:	10	7	10	5	5	15	7	3
833:	7	10	8	18	5	10	7	10
841:	6	10	10	4	10	10	9	9
849:	4	4	5	4	11	9	3	11
857:	11	6	9	22	18	10	5	9
865:	6	4	6	10	12	5	7	0
873:	10	6	9	12	9	9	11	9
881:	11	7	11	7	6	4	7	5
889:	9	6	5	9	7	6	12	4
897:	7	11	10	9	8	6	9	9
905:	8	5	12	9	10	51	71	29
913:	11	10	8	4	6	5	6	5
921:	12	5	6	4	9	7	4	12
929:	9	6	5	8	9	15	5	4
937:	3	5	7	3	7	3	12	5
945:	7	3	6	5	6	8	6	4
953:	6	15	2	3	3	4	8	11
961:	6	7	20	24	7	8	19	36
969:	27	11	11	8	5	3	3	11
977:	5	10	7	8	11	6	7	4
985:	10	6	9	9	2	4	7	5
993:	6	8	8	7	5	5	5	8
1001:	7	5	5	9	2	9	4	3
1009:	4	2	6	5	10	7	8	5
1017:	6	8	6	3	7	3	5	3
1025:	8	4	8	9	3	5	5	8
1033:	7	4	9	2	10	6	3	7
1041:	10	4	5	7	7	6	7	6
1049:	7	7	15	4	8	8	7	9
1057:	4	7	4	5	6	11	8	4
1065:	11	4	4	9	8	8	9	6
1073:	3	5	4	6	8	6	9	5
1081:	5	13	6	10	5	3	8	7
1089:	8	4	6	9	9	10	8	8
1097:	9	4	6	3	6	7	3	4
1105:	5	3	7	3	13	7	8	8
1113:	5	8	4	9	8	7	22	27
1121:	14	7	6	6	4	2	5	4
1129:	5	5	11	5	10	9	9	7
1137:	6	6	5	5	6	4	2	9
1145:	8	5	6	9	8	1	15	4
1153:	6	12	10	4	14	5	7	7
1161:	9	9	13	9	7	8	11	8
1169:	5	9	11	7	10	5	7	4
1177:	10	10	7	1	5	9	10	12
1185:	10	5	8	3	8	7	8	8
1193:	7	10	3	12	8	7	7	9
1201:	13	8	4	4	12	5	16	6
1209:	7	7	11	7	7	10	8	10
1217:	8	7	5	6	12	2	8	10
1225:	5	10	6	4	16	4	7	5

1233:	9	12	5	13	11	20	12	13

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Channel								
1241:	3	7	6	5	9	5	8	6
1249:	8	2	8	4	1	8	5	7
1257:	4	5	3	6	10	4	7	4
1265:	4	4	11	5	6	5	8	7
1273:	4	2	4	7	5	6	3	10
1281:	9	4	4	2	8	6	5	3
1289:	5	7	2	1	6	4	2	6
1297:	5	4	4	5	7	2	4	6
1305:	3	3	6	1	7	3	6	6
1313:	3	1	4	6	6	6	2	5
1321:	4	5	4	9	2	6	4	5
1329:	6	2	4	4	2	1	0	4
1337:	1	3	3	4	5	2	2	2
1345:	6	3	3	0	1	3	2	4
1353:	3	2	3	4	3	3	5	2
1361:	4	1	4	2	1	3	2	2
1369:	1	2	1	2	3	2	0	8
1377:	7	3	2	4	5	3	5	4
1385:	1	3	4	2	1	3	2	6
1393:	0	2	3	2	2	2	5	5
1401:	9	1	2	1	3	4	8	4
1409:	5	0	1	1	1	1	0	6
1417:	0	2	5	1	2	0	1	2
1425:	5	3	2	2	1	2	2	3
1433:	1	1	2	1	0	3	3	3
1441:	2	1	3	2	2	2	3	2
1449:	0	3	2	2	2	2	2	3
1457:	4	55	227	331	147	25	5	3
1465:	3	3	1	4	1	1	2	6
1473:	0	0	0	0	3	1	3	0
1481:	1	0	1	2	1	1	0	2
1489:	0	0	2	0	2	1	2	2
1497:	2	1	1	1	2	4	2	2
1505:	1	3	3	2	3	2	1	5
1513:	2	3	2	0	0	4	4	1
1521:	0	1	2	1	2	0	1	4
1529:	2	2	3	2	1	2	2	4
1537:	3	1	1	0	2	3	2	4
1545:	2	3	1	0	0	0	2	2
1553:	5	2	3	2	3	1	0	1
1561:	2	2	1	1	0	1	2	0
1569:	2	2	2	0	1	1	0	2
1577:	0	2	2	5	1	1	1	2
1585:	2	3	4	5	4	2	6	4
1593:	2	4	2	1	1	0	0	1
1601:	2	1	2	2	0	0	1	0
1609:	0	2	0	0	3	0	0	0
1617:	1	1	2	4	0	1	1	0
1625:	0	1	1	1	7	5	1	0
1633:	1	2	2	0	1	1	1	0
1641:	0	1	2	0	3	0	2	1
1649:	0	0	0	1	0	0	1	2
1657:	2	4	1	2	2	3	3	3

1665:	3	0	0	1	1	0	1	1

Sample Title: J1V1L7 SAF: RC-107

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

2097:	0	2	1	1	5	3	4	7

Sample Title: J1V1L7 SAF: RC-107

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

2529:	0	0	0	0	0	0	0	0

Sample Title: J1V1L7 SAF: RC-107

Channel								
2537:	1	0	0	0	0	0	0	0
2545:	0	0	0	0	1	1	0	2
2553:	0	0	0	0	0	1	0	0
2561:	2	0	0	0	1	0	0	0
2569:	1	1	0	0	0	0	1	0
2577:	0	1	0	0	0	1	1	1
2585:	0	0	3	0	0	1	1	0
2593:	0	0	0	0	1	0	1	0
2601:	0	0	1	0	1	0	0	0
2609:	2	4	12	28	19	15	5	1
2617:	1	0	0	0	1	2	0	1
2625:	0	1	0	1	0	0	1	0
2633:	0	0	0	1	0	0	2	1
2641:	1	1	1	1	0	1	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	1	0	0	0	1	0	0
2665:	0	1	0	0	0	0	0	0
2673:	0	1	0	0	0	0	1	0
2681:	0	0	0	0	0	1	0	0
2689:	1	0	1	0	0	0	0	0
2697:	0	0	0	0	0	0	0	0
2705:	1	0	0	0	0	0	0	0
2713:	0	0	1	0	0	0	0	0
2721:	0	0	0	0	0	1	0	0
2729:	1	0	0	0	1	0	0	0
2737:	1	0	1	2	2	0	0	0
2745:	0	0	0	0	1	0	0	0
2753:	0	0	0	1	1	0	0	0
2761:	0	0	1	0	0	0	1	0
2769:	0	1	0	0	0	1	0	2
2777:	1	0	0	0	0	0	0	1
2785:	0	0	0	0	1	0	0	0
2793:	0	0	0	0	1	1	0	0
2801:	0	0	0	1	1	0	0	0
2809:	0	1	0	0	0	0	2	0
2817:	0	0	1	0	0	0	1	0
2825:	0	0	1	0	0	0	0	0
2833:	0	0	1	0	0	1	0	1
2841:	1	0	0	1	0	0	1	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	1	0	0	3	0	1
2865:	0	0	0	1	2	1	0	0
2873:	0	0	0	0	0	0	0	0
2881:	1	0	1	0	0	0	0	0
2889:	1	0	0	0	0	0	0	0
2897:	0	0	0	0	1	0	0	3
2905:	1	0	0	0	0	0	1	0
2913:	0	0	0	1	0	1	0	1
2921:	0	0	0	0	0	0	0	1
2929:	0	0	0	0	0	0	0	0
2937:	0	0	1	0	0	0	0	0
2945:	0	0	0	0	1	2	0	1
2953:	0	0	0	0	0	0	1	0

2961:	1	1	0	0	0	0	0	2

Sample Title: J1V1L7 SAF: RC-107

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

3393:	0	0	0	0	1	0	0	0

Sample Title: J1V1L7 SAF: RC-107

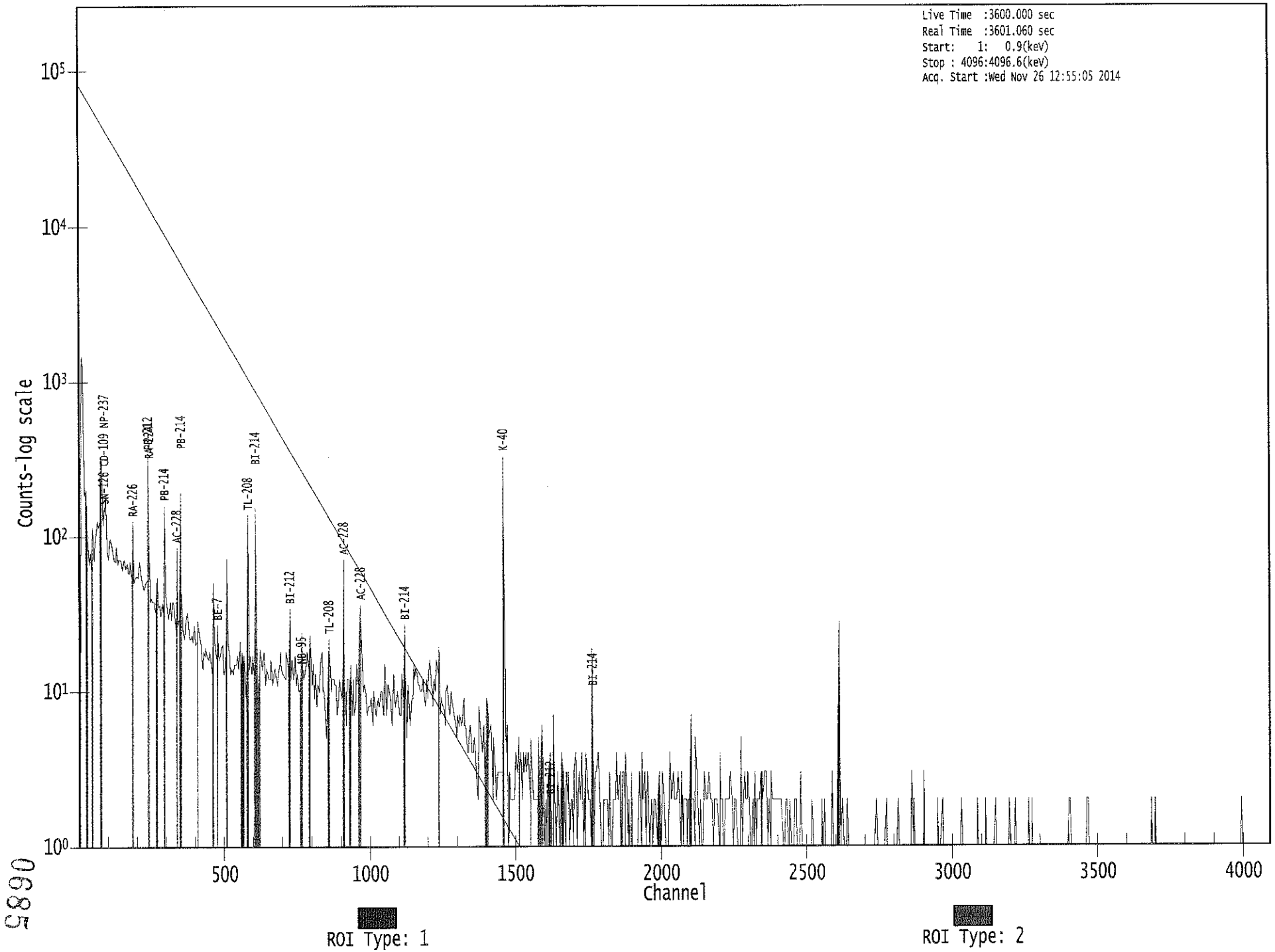
Channel								
3401:	2	0	0	1	2	0	0	0
3409:	1	0	0	0	0	0	1	0
3417:	0	0	0	0	0	1	0	0
3425:	0	0	0	0	0	0	0	1
3433:	0	1	0	0	0	0	1	0
3441:	0	0	0	0	0	0	0	0
3449:	0	1	0	0	0	0	0	0
3457:	0	0	0	1	0	0	2	0
3465:	0	1	2	0	0	1	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	1	0	0	0	0	0	0	1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

3825:	0	0	0	0	0	0	0	0

Sample Title: J1V1L7 SAF: RC-107

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	1
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	1	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	1	0	0	0	0	0
3913:	0	1	0	0	0	0	0	0
3921:	0	0	1	1	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	1	0	0	0	0	0	0
3953:	0	0	0	0	0	0	1	0
3961:	0	0	0	0	1	0	0	1
3969:	0	0	0	1	0	0	0	0
3977:	1	0	1	0	0	0	0	1
3985:	0	0	1	0	0	0	1	0
3993:	0	0	2	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	0	0	0	1
4025:	0	1	0	1	0	0	0	1
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	1	0	1	0	0
4073:	0	0	0	0	0	0	1	1
4081:	0	0	0	0	0	0	0	1
4089:	0	0	0	0	0	0	0	0

0000015653.CNF



9890

Apex-Gamma

Analysis Report for 1411131-16
J1V1M0 SAF: RC-107

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1411131-16
Sample Description	: J1V1M0 SAF: RC-107
Sample Type	: SOIL
Sample Size	: 7.105E+02 grams
Facility	: Countroom
Sample Taken On	: 11/24/2014 9:00:45AM
Acquisition Started	: 11/26/2014 1:00:42PM
Procedure	: GAS-1402 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1402
Live Time	: 3600.0 seconds
Real Time	: 3615.9 seconds
Dead Time	: 0.44 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 9 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 15655

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG 11/26/14

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

PEAK LOCATE REPORT

Peak Locate Performed on : 11/26/2014 2:00:59PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	23.88	24.13	0.0000	0.00
2	76.27	76.48	0.0000	0.00
3	88.30	88.51	0.0000	0.00
4	92.77	92.97	0.0000	0.00
5	186.12	186.27	0.0000	0.00
6	209.90	210.05	0.0000	0.00
7	238.92	239.05	0.0000	0.00
8	241.84	241.97	0.0000	0.00
9	259.57	259.69	0.0000	0.00
10	270.16	270.27	0.0000	0.00
11	295.66	295.76	0.0000	0.00
12	300.56	300.66	0.0000	0.00
13	338.92	338.99	0.0000	0.00
14	352.16	352.23	0.0000	0.00
15	486.19	486.20	0.0000	0.00
16	510.81	510.81	0.0000	0.00
17	583.53	583.49	0.0000	0.00
18	598.49	598.44	0.0000	0.00
19	609.52	609.46	0.0000	0.00
20	727.84	727.73	0.0000	0.00
21	744.61	744.49	0.0000	0.00
22	768.18	768.05	0.0000	0.00
23	795.80	795.66	0.0000	0.00
24	851.23	851.07	0.0000	0.00
25	911.17	910.98	0.0000	0.00
26	934.88	934.67	0.0000	0.00
27	965.09	964.87	0.0000	0.00
28	969.51	969.28	0.0000	0.00
29	1120.91	1120.63	0.0000	0.00
30	1183.34	1183.03	0.0000	0.00
31	1189.54	1189.23	0.0000	0.00
32	1377.68	1377.29	0.0000	0.00
33	1444.25	1443.83	0.0000	0.00
34	1461.10	1460.68	0.0000	0.00
35	1572.34	1571.87	0.0000	0.00
36	1592.72	1592.25	0.0000	0.00
37	1692.30	1691.79	0.0000	0.00
38	1704.37	1703.86	0.0000	0.00
39	1765.42	1764.88	0.0000	0.00
40	2004.30	2003.69	0.0000	0.00
41	2090.44	2089.80	0.0000	0.00
42	2217.50	2216.83	0.0000	0.00

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2375.95	2375.23	0.0000	0.00
44	2614.51	2613.74	0.0000	0.00
45	2701.00	2700.20	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 2:00:59PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	23.88	21 -	28	24.13	9.61E+01	77.43	9.42E+02	4.42
	2	76.27	71 -	81	76.48	6.07E+02	144.79	2.46E+03	3.95
M	3	88.30	83 -	97	88.51	1.68E+02	79.62	1.10E+03	2.04
m	4	92.77	83 -	97	92.97	2.36E+02	81.17	1.02E+03	2.05
	5	186.12	182 -	190	186.27	1.15E+02	79.08	8.92E+02	1.66
	6	209.90	206 -	213	210.05	7.67E+01	62.26	5.93E+02	3.92
M	7	238.92	234 -	245	239.05	5.76E+02	59.87	3.30E+02	1.79
m	8	241.84	234 -	245	241.97	1.15E+02	64.34	3.57E+02	2.08
	9	259.57	256 -	263	259.69	4.78E+01	47.71	3.46E+02	2.99
	10	270.16	265 -	274	270.27	6.24E+01	58.33	4.51E+02	1.40
M	11	295.66	291 -	303	295.76	1.56E+02	40.87	2.55E+02	1.79
m	12	300.56	291 -	303	300.66	3.01E+01	39.69	2.69E+02	2.15
	13	338.92	334 -	344	338.99	1.16E+02	56.77	3.67E+02	2.06
	14	352.16	348 -	354	352.23	2.22E+02	45.47	2.15E+02	1.88
	15	486.19	480 -	493	486.20	5.48E+01	48.52	2.34E+02	10.15
	16	510.81	505 -	517	510.81	1.18E+02	54.88	2.99E+02	2.36
	17	583.53	578 -	588	583.49	1.70E+02	47.22	2.00E+02	1.96
	18	598.49	593 -	604	598.44	3.90E+01	39.40	1.76E+02	6.48
	19	609.52	605 -	614	609.46	1.74E+02	43.85	1.76E+02	1.89
	20	727.84	723 -	733	727.73	4.14E+01	34.47	1.33E+02	2.05
	21	744.61	740 -	748	744.49	3.20E+01	24.33	7.01E+01	4.76
	22	768.18	763 -	771	768.05	2.97E+01	29.64	1.17E+02	2.15
	23	795.80	792 -	799	795.66	2.29E+01	23.32	7.43E+01	2.86
	24	851.23	849 -	854	851.07	1.52E+01	16.94	4.56E+01	2.94
	25	911.17	905 -	915	910.98	1.10E+02	38.87	1.43E+02	1.88
	26	934.88	932 -	937	934.67	1.90E+01	15.33	2.99E+01	2.43
M	27	965.09	960 -	974	964.87	2.78E+01	23.83	6.02E+01	2.66
m	28	969.51	960 -	974	969.28	7.13E+01	27.13	6.61E+01	2.54
	29	1120.91	1116 -	1125	1120.63	5.07E+01	29.44	9.46E+01	1.74
	30	1183.34	1181 -	1186	1183.03	1.58E+01	18.17	5.24E+01	2.11
	31	1189.54	1187 -	1192	1189.23	1.93E+01	18.71	5.53E+01	3.40
	32	1377.68	1373 -	1381	1377.29	1.32E+01	16.05	3.17E+01	1.86
	33	1444.25	1440 -	1450	1443.83	1.21E+01	14.73	2.38E+01	2.90
	34	1461.10	1456 -	1466	1460.68	5.62E+02	52.26	6.07E+01	2.27
	35	1572.34	1567 -	1574	1571.87	7.70E+00	7.48	4.60E+00	1.39
	36	1592.72	1587 -	1596	1592.25	1.85E+01	13.38	1.50E+01	3.45
	37	1692.30	1688 -	1694	1691.79	9.41E+00	7.50	3.18E+00	1.98
	38	1704.37	1697 -	1709	1703.86	9.50E+00	12.19	1.30E+01	3.28
	39	1765.42	1761 -	1770	1764.88	2.61E+01	11.70	3.86E+00	2.25
	40	2004.30	2001 -	2006	2003.69	4.67E+00	5.74	2.67E+00	1.89

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2090.44	2086 -	2092	2089.80	5.00E+00	4.47	0.00E+00	2.41
42	2217.50	2214 -	2219	2216.83	6.44E+00	6.40	3.13E+00	2.95
43	2375.95	2370 -	2380	2375.23	1.30E+01	7.21	0.00E+00	7.66
44	2614.51	2608 -	2617	2613.74	7.20E+01	16.97	0.00E+00	3.25
45	2701.00	2697 -	2702	2700.20	5.00E+00	4.47	0.00E+00	2.75

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2014 2:00:59PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	23.88	21 -	28	9.61E+01	77.43	9.42E+02	6.16E+01
	2	76.27	71 -	81	6.07E+02	144.79	2.46E+03	5.63E+01
M	3	88.30	83 -	97	1.68E+02	79.62	1.10E+03	5.46E+01
m	4	92.77	83 -	97	2.36E+02	81.17	1.02E+03	5.25E+01
	5	186.12	182 -	190	1.15E+02	79.08	8.92E+02	6.26E+01
	6	209.90	206 -	213	7.67E+01	62.26	5.93E+02	4.91E+01
M	7	238.92	234 -	245	5.76E+02	59.87	3.30E+02	2.98E+01
m	8	241.84	234 -	245	1.15E+02	64.34	3.57E+02	3.10E+01
	9	259.57	256 -	263	4.78E+01	47.71	3.46E+02	3.75E+01
	10	270.16	265 -	274	6.24E+01	58.33	4.51E+02	4.62E+01
M	11	295.66	291 -	303	1.56E+02	40.87	2.55E+02	2.63E+01
m	12	300.56	291 -	303	3.01E+01	39.69	2.69E+02	2.70E+01
	13	338.92	334 -	344	1.16E+02	56.77	3.67E+02	4.32E+01
	14	352.16	348 -	354	2.22E+02	45.47	2.15E+02	2.82E+01
	15	486.19	480 -	493	5.48E+01	48.52	2.34E+02	3.80E+01
	16	510.81	505 -	517	1.18E+02	54.88	2.99E+02	4.14E+01
	17	583.53	578 -	588	1.70E+02	47.22	2.00E+02	3.24E+01
	18	598.49	593 -	604	3.90E+01	39.40	1.76E+02	3.07E+01
	19	609.52	605 -	614	1.74E+02	43.85	1.76E+02	2.88E+01
	20	727.84	723 -	733	4.14E+01	34.47	1.33E+02	2.63E+01
	21	744.61	740 -	748	3.20E+01	24.33	7.01E+01	1.77E+01
	22	768.18	763 -	771	2.97E+01	29.64	1.17E+02	2.27E+01

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	23	795.80	792 -	799	2.29E+01	23.32	7.43E+01	1.75E+01
	24	851.23	849 -	854	1.52E+01	16.94	4.56E+01	1.24E+01
	25	911.17	905 -	915	1.10E+02	38.87	1.43E+02	2.69E+01
	26	934.88	932 -	937	1.90E+01	15.33	2.99E+01	1.04E+01
M	27	965.09	960 -	974	2.78E+01	23.83	6.02E+01	1.28E+01
m	28	969.51	960 -	974	7.13E+01	27.13	6.61E+01	1.34E+01
	29	1120.91	1116 -	1125	5.07E+01	29.44	9.46E+01	2.12E+01
	30	1183.34	1181 -	1186	1.58E+01	18.17	5.24E+01	1.34E+01
	31	1189.54	1187 -	1192	1.93E+01	18.71	5.53E+01	1.36E+01
	32	1377.68	1373 -	1381	1.32E+01	16.05	3.17E+01	1.18E+01
	33	1444.25	1440 -	1450	1.21E+01	14.73	2.38E+01	1.07E+01
	34	1461.10	1456 -	1466	5.62E+02	52.26	6.07E+01	1.81E+01
	35	1572.34	1567 -	1574	7.70E+00	7.48	4.60E+00	4.13E+00
	36	1592.72	1587 -	1596	1.85E+01	13.38	1.50E+01	8.42E+00
	37	1692.30	1688 -	1694	9.41E+00	7.50	3.18E+00	3.55E+00
	38	1704.37	1697 -	1709	9.50E+00	12.19	1.30E+01	8.64E+00
	39	1765.42	1761 -	1770	2.61E+01	11.70	3.86E+00	4.70E+00
	40	2004.30	2001 -	2006	4.67E+00	5.74	2.67E+00	3.11E+00
	41	2090.44	2086 -	2092	5.00E+00	4.47	0.00E+00	0.00E+00
	42	2217.50	2214 -	2219	6.44E+00	6.40	3.13E+00	3.21E+00
	43	2375.95	2370 -	2380	1.30E+01	7.21	0.00E+00	0.00E+00
	44	2614.51	2608 -	2617	7.20E+01	16.97	0.00E+00	0.00E+00
	45	2701.00	2697 -	2702	5.00E+00	4.47	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/26/2014 2:00:59PM

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

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	23.88	21 -	28	24.13	9.61E+01	77.43	9.42E+02	.....
2	76.27	71 -	81	76.48	6.07E+02	144.79	2.46E+03	.....

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	3	88.30	83 -	97	88.51	1.68E+02	79.62	1.10E+03	LU-176 CD-109 SN-126
m	4	92.77	83 -	97	92.97	2.36E+02	81.17	1.02E+03	GA-67
	5	186.12	182 -	190	186.27	1.15E+02	79.08	8.92E+02	RA-226
	6	209.90	206 -	213	210.05	7.67E+01	62.26	5.93E+02	CM-243 GA-67
M	7	238.92	234 -	245	239.05	5.76E+02	59.87	3.30E+02	PB-212
m	8	241.84	234 -	245	241.97	1.15E+02	64.34	3.57E+02	RA-224
	9	259.57	256 -	263	259.69	4.78E+01	47.71	3.46E+02	.....
	10	270.16	265 -	274	270.27	6.24E+01	58.33	4.51E+02	.....
M	11	295.66	291 -	303	295.76	1.56E+02	40.87	2.55E+02	PB-214
m	12	300.56	291 -	303	300.66	3.01E+01	39.69	2.69E+02	GA-67 PB-212 BI-210M
	13	338.92	334 -	344	338.99	1.16E+02	56.77	3.67E+02	AC-228
	14	352.16	348 -	354	352.23	2.22E+02	45.47	2.15E+02	PB-214
	15	486.19	480 -	493	486.20	5.48E+01	48.52	2.34E+02	LA-140
	16	510.81	505 -	517	510.81	1.18E+02	54.88	2.99E+02	.....
	17	583.53	578 -	588	583.49	1.70E+02	47.22	2.00E+02	TL-208
	18	598.49	593 -	604	598.44	3.90E+01	39.40	1.76E+02	.....
	19	609.52	605 -	614	609.46	1.74E+02	43.85	1.76E+02	BI-214
	20	727.84	723 -	733	727.73	4.14E+01	34.47	1.33E+02	BI-212
	21	744.61	740 -	748	744.49	3.20E+01	24.33	7.01E+01	.....
	22	768.18	763 -	771	768.05	2.97E+01	29.64	1.17E+02	.....
	23	795.80	792 -	799	795.66	2.29E+01	23.32	7.43E+01	CS-134
	24	851.23	849 -	854	851.07	1.52E+01	16.94	4.56E+01	.....
	25	911.17	905 -	915	910.98	1.10E+02	38.87	1.43E+02	AC-228 LU-172
	26	934.88	932 -	937	934.67	1.90E+01	15.33	2.99E+01	.....
M	27	965.09	960 -	974	964.87	2.78E+01	23.83	6.02E+01	.....
m	28	969.51	960 -	974	969.28	7.13E+01	27.13	6.61E+01	AC-228
	29	1120.91	1116 -	1125	1120.63	5.07E+01	29.44	9.46E+01	TA-182 SC-46 BI-214
	30	1183.34	1181 -	1186	1183.03	1.58E+01	18.17	5.24E+01	.....
	31	1189.54	1187 -	1192	1189.23	1.93E+01	18.71	5.53E+01	TA-182
	32	1377.68	1373 -	1381	1377.29	1.32E+01	16.05	3.17E+01	.....
	33	1444.25	1440 -	1450	1443.83	1.21E+01	14.73	2.38E+01	.....
	34	1461.10	1456 -	1466	1460.68	5.62E+02	52.26	6.07E+01	K-40
	35	1572.34	1567 -	1574	1571.87	7.70E+00	7.48	4.60E+00	.....
	36	1592.72	1587 -	1596	1592.25	1.85E+01	13.38	1.50E+01	.....
	37	1692.30	1688 -	1694	1691.79	9.41E+00	7.50	3.18E+00	.....
	38	1704.37	1697 -	1709	1703.86	9.50E+00	12.19	1.30E+01	.....
	39	1765.42	1761 -	1770	1764.88	2.61E+01	11.70	3.86E+00	BI-214
	40	2004.30	2001 -	2006	2003.69	4.67E+00	5.74	2.67E+00	.....
	41	2090.44	2086 -	2092	2089.80	5.00E+00	4.47	0.00E+00	.....
	42	2217.50	2214 -	2219	2216.83	6.44E+00	6.40	3.13E+00	.....
	43	2375.95	2370 -	2380	2375.23	1.30E+01	7.21	0.00E+00	.....
	44	2614.51	2608 -	2617	2613.74	7.20E+01	16.97	0.00E+00	TL-208
	45	2701.00	2697 -	2702	2700.20	5.00E+00	4.47	0.00E+00	.....

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/26/2014 2:00:59PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	23.88	9.61E+01	77.43	1.80E-03	1.58E-03
	2	76.27	6.07E+02	144.79	2.38E-02	2.14E-03
M	3	88.30	1.68E+02	79.62	2.44E-02	2.52E-03
m	4	92.77	2.36E+02	81.17	2.44E-02	2.41E-03
	5	186.12	1.15E+02	79.08	1.83E-02	1.42E-03
	6	209.90	7.67E+01	62.26	1.68E-02	1.31E-03
M	7	238.92	5.76E+02	59.87	1.52E-02	1.18E-03
m	8	241.84	1.15E+02	64.34	1.51E-02	1.17E-03
	9	259.57	4.78E+01	47.71	1.42E-02	1.09E-03
	10	270.16	6.24E+01	58.33	1.38E-02	1.04E-03
M	11	295.66	1.56E+02	40.87	1.28E-02	9.73E-04
m	12	300.56	3.01E+01	39.69	1.26E-02	9.66E-04
	13	338.92	1.16E+02	56.77	1.14E-02	9.12E-04
	14	352.16	2.22E+02	45.47	1.11E-02	8.93E-04
	15	486.19	5.48E+01	48.52	8.37E-03	7.43E-04
	16	510.81	1.18E+02	54.88	8.01E-03	7.18E-04
	17	583.53	1.70E+02	47.22	7.14E-03	6.46E-04
	18	598.49	3.90E+01	39.40	6.98E-03	6.31E-04
	19	609.52	1.74E+02	43.85	6.87E-03	6.20E-04
	20	727.84	4.14E+01	34.47	5.89E-03	5.14E-04
	21	744.61	3.20E+01	24.33	5.77E-03	5.00E-04
	22	768.18	2.97E+01	29.64	5.62E-03	4.81E-04
	23	795.80	2.29E+01	23.32	5.45E-03	4.58E-04
	24	851.23	1.52E+01	16.94	5.14E-03	4.13E-04
	25	911.17	1.10E+02	38.87	4.85E-03	3.72E-04
	26	934.88	1.90E+01	15.33	4.75E-03	3.68E-04
M	27	965.09	2.78E+01	23.83	4.62E-03	3.62E-04
m	28	969.51	7.13E+01	27.13	4.60E-03	3.61E-04
	29	1120.91	5.07E+01	29.44	4.08E-03	3.33E-04
	30	1183.34	1.58E+01	18.17	3.90E-03	3.21E-04
	31	1189.54	1.93E+01	18.71	3.88E-03	3.20E-04
	32	1377.68	1.32E+01	16.05	3.45E-03	2.82E-04
	33	1444.25	1.21E+01	14.73	3.32E-03	2.72E-04
	34	1461.10	5.62E+02	52.26	3.29E-03	2.69E-04

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1572.34	7.70E+00	7.48	3.11E-03	2.53E-04
36	1592.72	1.85E+01	13.38	3.08E-03	2.50E-04
37	1692.30	9.41E+00	7.50	2.95E-03	2.35E-04
38	1704.37	9.50E+00	12.19	2.93E-03	2.33E-04
39	1765.42	2.61E+01	11.70	2.86E-03	2.24E-04
40	2004.30	4.67E+00	5.74	2.62E-03	2.13E-04
41	2090.44	5.00E+00	4.47	2.55E-03	2.13E-04
42	2217.50	6.44E+00	6.40	2.45E-03	2.13E-04
43	2375.95	1.30E+01	7.21	2.36E-03	2.13E-04
44	2614.51	7.20E+01	16.97	2.24E-03	2.13E-04
45	2701.00	5.00E+00	4.47	2.20E-03	2.13E-04

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2014 2:00:59PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015433.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	23.88	9.61E+01	77.43			9.61E+01	7.74E+01
	2	76.27	6.07E+02	144.79			6.07E+02	1.45E+02
M	3	88.30	1.68E+02	79.62	1.98E+01	3.34E+00	1.48E+02	7.97E+01
m	4	92.77	2.36E+02	81.17	8.14E+01	5.24E+00	1.55E+02	8.13E+01
	5	186.12	1.15E+02	79.08	3.39E+01	6.73E+00	8.12E+01	7.94E+01
	6	209.90	7.67E+01	62.26			7.67E+01	6.23E+01
M	7	238.92	5.76E+02	59.87	1.24E+01	5.80E+00	5.64E+02	6.01E+01
m	8	241.84	1.15E+02	64.34			1.15E+02	6.43E+01
	9	259.57	4.78E+01	47.71			4.78E+01	4.77E+01
	10	270.16	6.24E+01	58.33			6.24E+01	5.83E+01
M	11	295.66	1.56E+02	40.87	2.48E+00	4.46E+00	1.53E+02	4.11E+01
m	12	300.56	3.01E+01	39.69			3.01E+01	3.97E+01
	13	338.92	1.16E+02	56.77	1.29E+00	4.12E+00	1.14E+02	5.69E+01
	14	352.16	2.22E+02	45.47	4.97E+00	4.95E+00	2.17E+02	4.57E+01
	15	486.19	5.48E+01	48.52			5.48E+01	4.85E+01
	16	510.81	1.18E+02	54.88	5.89E+01	4.93E+00	5.86E+01	5.51E+01
	17	583.53	1.70E+02	47.22	3.50E+00	3.61E+00	1.66E+02	4.74E+01
	18	598.49	3.90E+01	39.40			3.90E+01	3.94E+01
	19	609.52	1.74E+02	43.85	7.39E+00	3.16E+00	1.67E+02	4.40E+01

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	20	727.84	4.14E+01	34.47			4.14E+01	3.45E+01
	21	744.61	3.20E+01	24.33			3.20E+01	2.43E+01
	22	768.18	2.97E+01	29.64			2.97E+01	2.96E+01
	23	795.80	2.29E+01	23.32			2.29E+01	2.33E+01
	24	851.23	1.52E+01	16.94			1.52E+01	1.69E+01
	25	911.17	1.10E+02	38.87	2.41E+00	2.60E+00	1.07E+02	3.90E+01
	26	934.88	1.90E+01	15.33			1.90E+01	1.53E+01
M	27	965.09	2.78E+01	23.83			2.78E+01	2.38E+01
m	28	969.51	7.13E+01	27.13			7.13E+01	2.71E+01
	29	1120.91	5.07E+01	29.44	4.52E-01	2.22E+00	5.02E+01	2.95E+01
	30	1183.34	1.58E+01	18.17			1.58E+01	1.82E+01
	31	1189.54	1.93E+01	18.71			1.93E+01	1.87E+01
	32	1377.68	1.32E+01	16.05			1.32E+01	1.61E+01
	33	1444.25	1.21E+01	14.73			1.21E+01	1.47E+01
	34	1461.10	5.62E+02	52.26	2.28E+00	2.00E+00	5.59E+02	5.23E+01
	35	1572.34	7.70E+00	7.48			7.70E+00	7.48E+00
	36	1592.72	1.85E+01	13.38			1.85E+01	1.34E+01
	37	1692.30	9.41E+00	7.50			9.41E+00	7.50E+00
	38	1704.37	9.50E+00	12.19			9.50E+00	1.22E+01
	39	1765.42	2.61E+01	11.70	1.82E+00	1.19E+00	2.43E+01	1.18E+01
	40	2004.30	4.67E+00	5.74			4.67E+00	5.74E+00
	41	2090.44	5.00E+00	4.47			5.00E+00	4.47E+00
	42	2217.50	6.44E+00	6.40			6.44E+00	6.40E+00
	43	2375.95	1.30E+01	7.21			1.30E+01	7.21E+00
	44	2614.51	7.20E+01	16.97			7.20E+01	1.70E+01
	45	2701.00	5.00E+00	4.47			5.00E+00	4.47E+00

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/26/2014 2:00:59PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000015433.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	23.88	9.61E+01	77.43			9.61E+01	7.74E+01
2	76.27	6.07E+02	144.79			6.07E+02	1.45E+02

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	3	88.30	1.68E+02	79.62	1.98E+01	3.34E+00	1.48E+02	7.97E+01
m	4	92.77	2.36E+02	81.17	8.14E+01	5.24E+00	1.55E+02	8.13E+01
	5	186.12	1.15E+02	79.08	3.39E+01	6.73E+00	8.12E+01	7.94E+01
	6	209.90	7.67E+01	62.26			7.67E+01	6.23E+01
M	7	238.92	5.76E+02	59.87	1.24E+01	5.80E+00	5.64E+02	6.01E+01
m	8	241.84	1.15E+02	64.34			1.15E+02	6.43E+01
	9	259.57	4.78E+01	47.71			4.78E+01	4.77E+01
	10	270.16	6.24E+01	58.33			6.24E+01	5.83E+01
M	11	295.66	1.56E+02	40.87	2.48E+00	4.46E+00	1.53E+02	4.11E+01
m	12	300.56	3.01E+01	39.69			3.01E+01	3.97E+01
	13	338.92	1.16E+02	56.77	1.29E+00	4.12E+00	1.14E+02	5.69E+01
	14	352.16	2.22E+02	45.47	4.97E+00	4.95E+00	2.17E+02	4.57E+01
	15	486.19	5.48E+01	48.52			5.48E+01	4.85E+01
	16	510.81	1.18E+02	54.88	5.89E+01	4.93E+00	5.86E+01	5.51E+01
	17	583.53	1.70E+02	47.22	3.50E+00	3.61E+00	1.66E+02	4.74E+01
	18	598.49	3.90E+01	39.40			3.90E+01	3.94E+01
	19	609.52	1.74E+02	43.85	7.39E+00	3.16E+00	1.67E+02	4.40E+01
	20	727.84	4.14E+01	34.47			4.14E+01	3.45E+01
	21	744.61	3.20E+01	24.33			3.20E+01	2.43E+01
	22	768.18	2.97E+01	29.64			2.97E+01	2.96E+01
	23	795.80	2.29E+01	23.32			2.29E+01	2.33E+01
	24	851.23	1.52E+01	16.94			1.52E+01	1.69E+01
	25	911.17	1.10E+02	38.87	2.41E+00	2.60E+00	1.07E+02	3.90E+01
	26	934.88	1.90E+01	15.33			1.90E+01	1.53E+01
M	27	965.09	2.78E+01	23.83			2.78E+01	2.38E+01
m	28	969.51	7.13E+01	27.13			7.13E+01	2.71E+01
	29	1120.91	5.07E+01	29.44	4.52E-01	2.22E+00	5.02E+01	2.95E+01
	30	1183.34	1.58E+01	18.17			1.58E+01	1.82E+01
	31	1189.54	1.93E+01	18.71			1.93E+01	1.87E+01
	32	1377.68	1.32E+01	16.05			1.32E+01	1.61E+01
	33	1444.25	1.21E+01	14.73			1.21E+01	1.47E+01
	34	1461.10	5.62E+02	52.26	2.28E+00	2.00E+00	5.59E+02	5.23E+01
	35	1572.34	7.70E+00	7.48			7.70E+00	7.48E+00
	36	1592.72	1.85E+01	13.38			1.85E+01	1.34E+01
	37	1692.30	9.41E+00	7.50			9.41E+00	7.50E+00
	38	1704.37	9.50E+00	12.19			9.50E+00	1.22E+01
	39	1765.42	2.61E+01	11.70	1.82E+00	1.19E+00	2.43E+01	1.18E+01
	40	2004.30	4.67E+00	5.74			4.67E+00	5.74E+00
	41	2090.44	5.00E+00	4.47			5.00E+00	4.47E+00
	42	2217.50	6.44E+00	6.40			6.44E+00	6.40E+00
	43	2375.95	1.30E+01	7.21			1.30E+01	7.21E+00
	44	2614.51	7.20E+01	16.97			7.20E+01	1.70E+01
	45	2701.00	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 1411131-16

J1V1M0 SAF: RC-107

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	0.987	1460.81	*	10.67	1.68E+01	2.12E+00
GA-67	0.956	93.31	*	35.70	2.99E-01	3.81E-01
		208.95	*	2.24	3.43E+00	2.96E+00
		300.22	*	16.00	2.51E-01	4.41E-01
CD-109	0.989	88.03	*	3.72	1.73E+00	9.53E-01
SN-126	0.919	87.57	*	37.00	1.73E-01	9.49E-02
TL-208	0.876	583.14	*	30.22	8.16E-01	2.44E-01
		860.37		4.48		
		2614.66	*	35.85	9.48E-01	2.41E-01
BI-212	0.714	727.17	*	11.80	6.29E-01	5.27E-01
		1620.62		2.75		
PB-212	0.985	238.63	*	44.60	8.78E-01	1.16E-01
		300.09	*	3.41	7.40E-01	9.75E-01
BI-214	0.892	609.31	*	46.30	5.54E-01	1.54E-01
		1120.29	*	15.10	8.63E-01	5.12E-01
		1764.49	*	15.80	5.68E-01	2.79E-01
		2204.22		4.98		
PB-214	0.983	295.21	*	19.19	6.58E-01	1.84E-01
		351.92	*	37.19	5.59E-01	1.26E-01
RA-224	0.889	240.98	*	3.95	2.05E+00	1.15E+00
RA-226	0.999	186.21	*	3.28	1.43E+00	2.97E+00
AC-228	0.980	338.32	*	11.40	9.28E-01	4.68E-01
		911.07	*	27.70	8.42E-01	3.13E-01
		969.11	*	16.60	9.87E-01	3.83E-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 1411131-16

J1V1M0 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 2:00:59PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	23.88	2.67078E-02	40.27		
	2	76.27	1.68513E-01	11.93		
	9	259.57	1.32686E-02	49.94		
	10	270.16	1.73380E-02	46.72		
	15	486.19	1.52099E-02	44.30	Sum	
	16	510.81	1.62665E-02	47.04	Sum	
	18	598.49	1.08213E-02	50.56		
	21	744.61	8.88060E-03	38.05		
	22	768.18	8.25442E-03	49.87		
	23	795.80	6.35417E-03	50.98	Sum	
	24	851.23	4.21784E-03	55.79	Sum	
	26	934.88	5.29003E-03	40.25	Sum	
M	27	965.09	7.72071E-03	42.87		
	30	1183.34	4.38492E-03	57.54		
	31	1189.54	5.37234E-03	48.37	Tol.	TA-182
	32	1377.68	3.65900E-03	60.94		
	33	1444.25	3.35648E-03	60.96		
	35	1572.34	2.13889E-03	48.59		
	36	1592.72	5.14423E-03	36.12	D-Esc	
	37	1692.30	2.61364E-03	39.86		
	38	1704.37	2.63889E-03	64.14	Sum	
	40	2004.30	1.29630E-03	61.55	Sum	
	41	2090.44	1.38889E-03	44.72	Sum	
	42	2217.50	1.78819E-03	49.73		
	43	2375.95	3.61111E-03	27.74		
	45	2701.00	1.38889E-03	44.72		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	1.68E+01	2.12E+00
GA-67	0.95	93.31	*	35.70	2.99E-01	3.81E-01
		208.95	*	2.24	3.43E+00	2.96E+00
		300.22	*	16.00	2.51E-01	4.41E-01
CD-109	0.98	88.03	*	3.72	1.73E+00	9.53E-01
SN-126	0.91	87.57	*	37.00	1.73E-01	9.49E-02
TL-208	0.87	583.14	*	30.22	8.16E-01	2.44E-01
		860.37		4.48		
		2614.66	*	35.85	9.48E-01	2.41E-01
BI-212	0.71	727.17	*	11.80	6.29E-01	5.27E-01
		1620.62		2.75		
PB-212	0.98	238.63	*	44.60	8.78E-01	1.16E-01
		300.09	*	3.41	7.40E-01	9.75E-01
BI-214	0.89	609.31	*	46.30	5.54E-01	1.54E-01
		1120.29	*	15.10	8.63E-01	5.12E-01
		1764.49	*	15.80	5.68E-01	2.79E-01
		2204.22		4.98		
PB-214	0.98	295.21	*	19.19	6.58E-01	1.84E-01
		351.92	*	37.19	5.59E-01	1.26E-01
RA-224	0.88	240.98	*	3.95	2.05E+00	1.15E+00
RA-226	0.99	186.21	*	3.28	1.43E+00	2.97E+00
AC-228	0.98	338.32	*	11.40	9.28E-01	4.68E-01
		911.07	*	27.70	8.42E-01	3.13E-01
		969.11	*	16.60	9.87E-01	3.83E-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	0.987	1.68E+01	2.12E+00	

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	GA-67	0.956	2.43E-01	1.59E-01	
?	CD-109	0.989	1.73E+00	9.53E-01	
?	SN-126	0.919	1.73E-01	9.49E-02	
	TL-208	0.876	8.82E-01	1.71E-01	
	BI-212	0.714	6.29E-01	5.27E-01	
	PB-212	0.985	8.66E-01	1.15E-01	
	BI-214	0.892	5.77E-01	1.31E-01	
	PB-214	0.983	5.91E-01	1.04E-01	
	RA-224	0.889	2.05E+00	1.15E+00	
	RA-226	0.999	1.43E+00	2.97E+00	
	AC-228	0.980	9.06E-01	2.15E-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

0700

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2014 2:00:59PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	23.88	2.67078E-02	40.27		
	2	76.27	1.68513E-01	11.93		
	9	259.57	1.32686E-02	49.94		
	10	270.16	1.73380E-02	46.72		
	15	486.19	1.52099E-02	44.30	Sum	
	16	510.81	1.62665E-02	47.04	Sum	
	18	598.49	1.08213E-02	50.56		
	21	744.61	8.88060E-03	38.05		
	22	768.18	8.25442E-03	49.87		
	23	795.80	6.35417E-03	50.98	Sum	
	24	851.23	4.21784E-03	55.79	Sum	
	26	934.88	5.29003E-03	40.25	Sum	
M	27	965.09	7.72071E-03	42.87		
	30	1183.34	4.38492E-03	57.54		
	31	1189.54	5.37234E-03	48.37	Tol.	TA-182
	32	1377.68	3.65900E-03	60.94		
	33	1444.25	3.35648E-03	60.96		
	35	1572.34	2.13889E-03	48.59		
	36	1592.72	5.14423E-03	36.12	D-Esc	
	37	1692.30	2.61364E-03	39.86		
	38	1704.37	2.63889E-03	64.14	Sum	
	40	2004.30	1.29630E-03	61.55	Sum	
	41	2090.44	1.38889E-03	44.72	Sum	
	42	2217.50	1.78819E-03	49.73		
	43	2375.95	3.61111E-03	27.74		
	45	2701.00	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 1411131-16

J1V1M0 SAF: RC-107

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	2.02E-02	5.28E-01	5.28E-01
+	NA-22	1274.54		99.94	3.37E-02	8.95E-02	8.95E-02
+	NA-24	1368.53		99.99	1.56E-01	5.09E-01	7.36E-01
		2754.09		99.86	9.13E-03		5.09E-01
+	AL-26	1808.65		99.76	6.65E-03	7.59E-02	7.59E-02
+	K-40	1460.81	*	10.67	1.68E+01	1.19E+00	1.19E+00
+	AR-41	1293.64		99.16	-2.96E+07	3.63E+07	3.63E+07
+	TI-44	67.88		94.40	3.65E-03	5.61E-02	5.61E-02
		78.34		96.00	5.65E-02		6.37E-02
+	SC-46	889.25		99.98	4.24E-02	7.37E-02	7.37E-02
		1120.51		99.99	1.14E-01		1.18E-01
+	V-48	983.52		99.98	3.12E-02	8.49E-02	8.49E-02
		1312.10		97.50	-5.14E-03		1.12E-01
+	CR-51	320.08		9.83	-9.96E-02	5.56E-01	5.56E-01
+	MN-54	834.83		99.97	-2.23E-02	6.89E-02	6.89E-02
+	CO-56	846.75		99.96	-1.19E-02	6.93E-02	6.93E-02
		1037.75		14.03	3.14E-01		5.81E-01
		1238.25		67.00	3.38E-02		1.44E-01
		1771.40		15.51	-2.44E-02		3.87E-01
		2598.48		16.90	-3.78E-02		2.09E-01
+	CO-57	122.06		85.51	-2.49E-02	4.67E-02	4.67E-02
		136.48		10.60	-1.45E-01		3.89E-01
+	CO-58	810.76		99.40	8.91E-03	6.87E-02	6.87E-02
+	FE-59	1099.22		56.50	-6.94E-02	1.23E-01	1.23E-01
		1291.56		43.20	-5.44E-02		2.11E-01
+	CO-60	1173.22		100.00	1.77E-02	9.38E-02	1.01E-01
		1332.49		100.00	3.92E-02		9.38E-02
+	ZN-65	1115.52		50.75	2.48E-02	1.57E-01	1.57E-01
+	GA-67	93.31	*	35.70	2.99E-01	4.80E-01	4.80E-01
		208.95	*	2.24	3.43E+00		4.52E+00
		300.22	*	16.00	2.51E-01		9.63E-01
+	SE-75	121.11		16.70	-2.55E-02	6.94E-02	2.46E-01
		136.00		59.20	-3.21E-02		6.94E-02
		264.65		59.80	-5.44E-02		8.02E-02
		279.53		25.20	3.60E-02		2.12E-01
		400.65		11.40	-1.17E-01		4.67E-01
+	RB-82	776.52		13.00	1.41E-01	5.67E-01	5.67E-01
+	RB-83	520.41		46.00	-3.80E-02	1.19E-01	1.19E-01
		529.64		30.30	-1.54E-01		1.86E-01
		552.65		16.40	-1.80E-02		3.47E-01
+	KR-85	513.99		0.43	1.51E+01	1.86E+01	1.86E+01
+	SR-85	513.99		99.27	6.75E-02	8.34E-02	8.34E-02

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02		93.40	5.01E-02	7.04E-02	8.47E-02
		1836.01		99.38	-3.88E-03		7.04E-02
+	NB-93M	16.57		9.43	2.02E+01	6.29E+01	6.29E+01
+	NB-94	702.63		100.00	1.20E-02	6.85E-02	6.85E-02
		871.10		100.00	1.79E-02		7.67E-02
+	NB-95	765.79		99.81	7.56E-02	8.54E-02	8.54E-02
+	NB-95M	235.69		25.00	9.70E-01	5.06E-01	5.06E-01
+	ZR-95	724.18		43.70	-4.19E-03	1.18E-01	1.76E-01
		756.72		55.30	2.01E-02		1.18E-01
+	MO-99	181.06		6.20	7.94E-03	8.79E-01	1.19E+00
		739.58		12.80	3.07E-01		8.79E-01
		778.00		4.50	-9.51E-01		2.64E+00
+	RU-103	497.08		89.00	-2.38E-02	6.22E-02	6.22E-02
+	RU-106	621.84		9.80	1.03E-01	6.72E-01	6.72E-01
+	AG-108M	433.93		89.90	-8.52E-03	6.56E-02	6.56E-02
		614.37		90.40	9.31E-03		7.13E-02
		722.95		90.50	-1.00E-02		7.21E-02
+	CD-109	88.03	*	3.72	1.73E+00	2.90E+00	2.90E+00
+	AG-110M	657.75		93.14	-1.37E-02	6.99E-02	6.99E-02
		677.61		10.53	4.91E-02		6.53E-01
		706.67		16.46	6.42E-02		4.14E-01
		763.93		21.98	-2.18E-02		3.05E-01
		884.67		71.63	2.13E-03		9.80E-02
		1384.27		23.94	-5.82E-02		3.04E-01
+	CD-113M	263.70		0.02	-1.34E+02	2.08E+02	2.08E+02
+	SN-113	255.12		1.93	5.08E-01	9.08E-02	2.57E+00
		391.69		64.90	-2.60E-04		9.08E-02
+	TE123M	159.00		84.10	8.60E-03	5.09E-02	5.09E-02
+	SB-124	602.71		97.87	-4.22E-02	6.78E-02	6.78E-02
		645.85		7.26	1.84E-01		8.65E-01
		722.78		11.10	-8.36E-02		6.03E-01
		1691.02		49.00	5.77E-02		1.41E-01
+	I-125	35.49		6.49	-5.07E-01	1.81E+00	1.81E+00
+	SB-125	176.33		6.89	-1.30E-01	2.14E-01	5.80E-01
		427.89		29.33	-4.31E-03		2.14E-01
		463.38		10.35	2.50E-01		6.41E-01
		600.56		17.80	2.71E-02		3.74E-01
		635.90		11.32	1.22E-01		5.80E-01
+	SB-126	414.70		83.30	-4.48E-02	6.88E-02	6.88E-02
		666.33		99.60	6.71E-03		7.25E-02
		695.00		99.60	1.48E-02		7.46E-02
		720.50		53.80	-4.90E-03		1.45E-01
+	SN-126	87.57	*	37.00	1.73E-01	2.91E-01	2.91E-01
+	SB-127	473.00		25.00	-2.24E-01	2.78E-01	3.11E-01
		685.20		35.70	-2.42E-02		2.78E-01
		783.80		14.70	2.99E-01		7.54E-01
+	I-129	29.78		57.00	-1.74E-01	3.37E-01	3.37E-01
		33.60		13.20	1.55E-01		1.03E+00

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	2.71E-01	3.37E-01	1.17E+00
+	I-131	284.30	6.05	-5.51E-02	8.25E-02	9.85E-01
		364.48	81.20	2.49E-02		8.25E-02
		636.97	7.26	1.42E-01		1.07E+00
		722.89	1.80	-6.07E-01		4.38E+00
+	TE-132	49.72	13.10	-7.19E-01	9.79E-02	7.29E-01
		228.16	88.00	2.92E-02		9.79E-02
+	BA-133	81.00	33.00	-3.81E-01	1.11E-01	1.48E-01
		302.84	17.80	6.64E-02		3.07E-01
		356.01	60.00	-1.16E-01		1.11E-01
+	I-133	529.87	86.30	-3.07E-01	3.70E-01	3.70E-01
+	CS-134	563.23	8.38	2.99E-01	6.74E-02	7.65E-01
		569.32	15.43	1.78E-01		4.15E-01
		604.70	97.60	-4.17E-01		6.74E-02
		795.84	85.40	5.92E-02		8.39E-02
		801.93	8.73	-1.43E-01		6.77E-01
+	CS-135	268.24	16.00	1.76E-01	3.34E-01	3.34E-01
+	I-135	1131.51	22.50	5.78E+00	7.23E+01	9.49E+01
		1260.41	28.60	-9.67E-01		7.23E+01
		1678.03	9.54	-5.79E+01		1.20E+02
+	CS-136	153.22	7.46	-2.73E-01	7.58E-02	6.37E-01
		163.89	4.61	1.96E-01		9.94E-01
		176.55	13.56	-3.19E-02		3.35E-01
		273.65	12.66	-2.60E-02		4.86E-01
		340.57	48.50	2.02E-01		1.54E-01
		818.50	99.70	-1.16E-02		7.58E-02
		1048.07	79.60	-2.65E-02		1.03E-01
		1235.34	19.70	2.27E-01		5.95E-01
+	CS-137	661.65	85.12	8.47E-03	8.03E-02	8.03E-02
+	LA-138	788.74	34.00	2.79E-02	8.36E-02	1.98E-01
		1435.80	66.00	-2.66E-02		8.36E-02
+	CE-139	165.85	80.35	1.09E-02	5.14E-02	5.14E-02
+	BA-140	162.64	6.70	-3.22E-02	2.85E-01	6.78E-01
		304.84	4.50	8.72E-03		1.23E+00
		423.70	3.20	8.58E-01		2.18E+00
		437.55	2.00	-1.28E+00		3.27E+00
		537.32	25.00	-1.28E-02		2.85E-01
+	LA-140	328.77	20.50	1.39E-01	1.03E-01	3.09E-01
		487.03	45.50	-3.78E-02		1.45E-01
		815.85	23.50	7.12E-02		3.25E-01
		1596.49	95.49	1.22E-02		1.03E-01
+	CE-141	145.44	48.40	-1.76E-02	9.34E-02	9.34E-02
+	CE-143	57.36	11.80	-8.36E-02	4.96E-01	1.48E+00
		293.26	42.00	7.83E-01		4.96E-01
		664.55	5.20	1.94E+00		4.00E+00
+	CE-144	133.54	10.80	-3.31E-02	3.82E-01	3.82E-01
+	PM-144	476.78	42.00	2.76E-02	6.54E-02	1.29E-01
		618.01	98.60	8.14E-03		6.60E-02
		696.49	99.49	1.14E-03		6.54E-02

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-145	36.85	21.70	9.49E-02	2.56E-01	4.83E-01
		37.36	39.70	-8.41E-02		2.56E-01
		42.30	15.10	-3.26E-01		5.04E-01
		72.40	2.31	-4.79E-01		2.62E+00
+	PM-146	453.90	39.94	-3.95E-02	1.46E-01	1.46E-01
		735.90	14.01	4.28E-02		4.39E-01
		747.13	13.10	-5.96E-02		4.81E-01
+	ND-147	91.11	28.90	-9.64E-02	2.14E-01	2.14E-01
		531.02	13.10	-3.63E-02		5.20E-01
+	PM-149	285.90	3.10	-1.62E+00	3.13E+00	3.13E+00
+	EU-152	121.78	20.50	-1.03E-01	1.94E-01	1.94E-01
		244.69	5.40	1.13E-01		1.06E+00
		344.27	19.13	1.51E-02		2.74E-01
		778.89	9.20	4.45E-01		8.02E-01
		964.01	10.40	-1.01E+00		8.71E-01
		1085.78	7.22	3.96E-01		1.21E+00
		1112.02	9.60	5.13E-01		9.10E-01
		1407.95	14.94	1.57E-01		5.02E-01
+	GD-153	97.43	31.30	6.06E-02	1.43E-01	1.43E-01
		103.18	22.20	-1.42E-01		1.85E-01
+	EU-154	123.07	40.50	-6.29E-02	9.84E-02	9.84E-02
		723.30	19.70	-4.60E-02		3.32E-01
		873.19	11.50	-6.27E-03		6.57E-01
		996.32	10.30	-3.10E-01		7.08E-01
		1004.76	17.90	2.75E-02		4.20E-01
		1274.45	35.50	9.48E-02		2.52E-01
+	EU-155	86.50	30.90	4.45E-02	1.70E-01	1.70E-01
		105.30	20.70	3.48E-02		2.04E-01
+	EU-156	811.77	10.40	-2.69E-01	6.96E-01	6.96E-01
		1153.47	7.20	7.83E-01		1.44E+00
		1230.71	8.90	4.59E-02		1.30E+00
+	HO-166M	184.41	72.60	9.31E-02	7.24E-02	7.24E-02
		280.45	29.60	4.08E-02		1.78E-01
		410.94	11.10	1.39E-01		5.11E-01
		711.69	54.10	-6.48E-02		1.22E-01
+	TM-171	66.72	0.14	-8.28E+01	3.77E+01	3.77E+01
+	HF-172	81.75	4.52	-1.61E+00	3.74E-01	1.08E+00
		125.81	11.30	-1.79E-01		3.74E-01
+	LU-172	181.53	20.60	-1.55E-02	1.66E-01	2.61E-01
		810.06	16.63	-1.86E-02		5.19E-01
		912.12	15.25	2.12E+00		1.08E+00
		1093.66	62.50	5.08E-02		1.66E-01
+	LU-173	100.72	5.24	1.98E-02	2.59E-01	8.14E-01
		272.11	21.20	8.02E-02		2.59E-01
+	HF-175	343.40	84.00	-2.41E-04	6.53E-02	6.53E-02
+	LU-176	88.34	13.30	1.82E-01	5.28E-02	4.12E-01
		201.83	86.00	2.13E-02		6.06E-02
		306.78	94.00	-4.68E-03		5.28E-02
+	TA-182	67.75	41.20	8.48E-03	1.30E-01	1.30E-01

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TA-182	1121.30		34.90	4.31E-01	1.30E-01	3.45E-01
		1189.05		16.23	7.65E-02		6.05E-01
		1221.41		26.98	-2.04E-01		3.43E-01
		1231.02		11.44	7.05E-02		8.91E-01
+	IR-192	308.46		29.68	-6.11E-02	1.25E-01	1.72E-01
		468.07		48.10	-5.65E-02		1.25E-01
+	HG-203	279.19		77.30	4.27E-02	7.22E-02	7.22E-02
+	BI-207	569.67		97.72	-1.52E-02	6.22E-02	6.22E-02
		1063.62		74.90	2.01E-02		1.00E-01
+	TL-208	583.14	*	30.22	8.16E-01	3.56E-02	3.33E-01
		860.37		4.48	8.66E-01		1.81E+00
		2614.66	*	35.85	9.48E-01		3.56E-02
+	BI-210M	262.00		45.00	3.45E-02	1.11E-01	1.11E-01
		300.00		23.00	-5.80E-01		2.41E-01
+	PB-210	46.50		4.25	1.42E+00	1.64E+00	1.64E+00
+	PB-211	404.84		2.90	-7.11E-01	1.92E+00	1.92E+00
		831.96		2.90	4.91E-01		2.38E+00
+	BI-212	727.17	*	11.80	6.29E-01	8.41E-01	8.41E-01
		1620.62		2.75	1.90E-01		2.00E+00
+	PB-212	238.63	*	44.60	8.78E-01	1.92E-01	1.92E-01
		300.09	*	3.41	7.40E-01		2.84E+00
+	BI-214	609.31	*	46.30	5.54E-01	2.03E-01	2.03E-01
		1120.29	*	15.10	8.63E-01		7.78E-01
		1764.49	*	15.80	5.68E-01		3.11E-01
		2204.22		4.98	0.00E+00		1.62E+00
+	PB-214	295.21	*	19.19	6.58E-01	1.55E-01	4.98E-01
		351.92	*	37.19	5.59E-01		1.55E-01
+	RN-219	401.80		6.50	-3.18E-01	8.11E-01	8.11E-01
+	RA-223	323.87		3.88	-1.63E+00	1.32E+00	1.32E+00
+	RA-224	240.98	*	3.95	2.05E+00	2.18E+00	2.18E+00
+	RA-225	40.00		31.00	7.11E-02	3.08E-01	3.08E-01
+	RA-226	186.21	*	3.28	1.43E+00	2.29E+00	2.29E+00
+	TH-227	50.10		8.40	-6.97E-01	7.07E-01	7.07E-01
		236.00		11.50	1.39E+00		7.24E-01
		256.20		6.30	7.42E-02		7.98E-01
+	AC-228	338.32	*	11.40	9.28E-01	4.48E-01	7.26E-01
		911.07	*	27.70	8.42E-01		4.48E-01
		969.11	*	16.60	9.87E-01		7.68E-01
+	TH-230	48.44		16.90	-1.55E-01	3.79E-01	3.79E-01
		62.85		4.60	1.15E+00		1.28E+00
		67.67		0.37	9.32E-01		1.43E+01
+	PA-231	283.67		1.60	-1.72E-01	2.38E+00	3.08E+00
		302.67		2.30	5.14E-01		2.38E+00
+	TH-231	25.64		14.70	3.46E-01	7.45E-01	2.59E+00
		84.21		6.40	-1.16E+00		7.45E-01
+	PA-233	311.98		38.60	6.50E-02	1.45E-01	1.45E-01
+	PA-234	131.20		20.40	7.46E-02	2.13E-01	2.13E-01
		733.99		8.80	-1.95E-01		6.68E-01

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	946.00	12.00	9.12E-02	2.13E-01	6.36E-01
+	PA-234M	1001.03	0.92	8.01E-01	8.70E+00	8.70E+00
+	TH-234	63.29	3.80	1.20E+00	1.52E+00	1.52E+00
+	U-235	143.76	10.50	8.56E-02	4.13E-01	4.13E-01
		163.35	4.70	1.71E-01		8.67E-01
		205.31	4.70	-9.83E-02		1.05E+00
+	NP-237	86.50	12.60	1.09E-01	4.18E-01	4.18E-01
+	NP-239	106.10	22.70	-7.18E-02	3.52E-01	3.52E-01
		228.18	10.70	2.87E-01		9.63E-01
		277.60	14.10	2.83E-01		7.18E-01
+	AM-241	59.54	35.90	-4.87E-02	1.56E-01	1.56E-01
+	AM-243	74.67	66.00	1.43E-01	1.01E-01	1.01E-01
+	CM-243	209.75	3.29	1.00E+00	3.80E-01	1.66E+00
		228.14	10.60	1.52E-01		5.11E-01
		277.60	14.00	1.50E-01		3.80E-01

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	5.28E-01	5.28E-01	2.02E-02	2.47E-01
	NA-22	1274.54		99.94	8.95E-02	8.95E-02	3.37E-02	4.09E-02
	NA-24	1368.53		99.99	7.36E-01	5.09E-01	1.56E-01	3.21E-01
		2754.09		99.86	5.09E-01		9.13E-03	1.80E-01
	AL-26	1808.65		99.76	7.59E-02	7.59E-02	6.65E-03	3.28E-02
+	K-40	1460.81	*	10.67	1.19E+00	1.19E+00	1.68E+01	5.52E-01
	AR-41	1293.64		99.16	3.63E+07	3.63E+07	-2.96E+07	1.64E+07

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Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TI-44	67.88		94.40	5.61E-02	5.61E-02	3.65E-03	2.74E-02
		78.34		96.00	6.37E-02		5.65E-02	3.12E-02
	SC-46	889.25		99.98	7.37E-02	7.37E-02	4.24E-02	3.39E-02
		1120.51		99.99	1.18E-01		1.14E-01	5.56E-02
	V-48	983.52		99.98	8.49E-02	8.49E-02	3.12E-02	3.90E-02
		1312.10		97.50	1.12E-01		-5.14E-03	5.13E-02
	CR-51	320.08		9.83	5.56E-01	5.56E-01	-9.96E-02	2.65E-01
	MN-54	834.83		99.97	6.89E-02	6.89E-02	-2.23E-02	3.17E-02
	CO-56	846.75		99.96	6.93E-02	6.93E-02	-1.19E-02	3.18E-02
		1037.75		14.03	5.81E-01		3.14E-01	2.66E-01
		1238.25		67.00	1.44E-01		3.38E-02	6.61E-02
		1771.40		15.51	3.87E-01		-2.44E-02	1.60E-01
		2598.48		16.90	2.09E-01		-3.78E-02	6.60E-02
	CO-57	122.06		85.51	4.67E-02	4.67E-02	-2.49E-02	2.26E-02
		136.48		10.60	3.89E-01		-1.45E-01	1.88E-01
	CO-58	810.76		99.40	6.87E-02	6.87E-02	8.91E-03	3.16E-02
	FE-59	1099.22		56.50	1.23E-01	1.23E-01	-6.94E-02	5.54E-02
		1291.56		43.20	2.11E-01		-5.44E-02	9.60E-02
	CO-60	1173.22		100.00	1.01E-01	9.38E-02	1.77E-02	4.69E-02
		1332.49		100.00	9.38E-02		3.92E-02	4.28E-02
	ZN-65	1115.52		50.75	1.57E-01	1.57E-01	2.48E-02	7.15E-02
+	GA-67	93.31	*	35.70	4.80E-01	4.80E-01	2.99E-01	2.38E-01
		208.95	*	2.24	4.52E+00		3.43E+00	2.20E+00
		300.22	*	16.00	9.63E-01		2.51E-01	4.70E-01
	SE-75	121.11		16.70	2.46E-01	6.94E-02	-2.55E-02	1.19E-01
		136.00		59.20	6.94E-02		-3.21E-02	3.36E-02
		264.65		59.80	8.02E-02		-5.44E-02	3.84E-02
		279.53		25.20	2.12E-01		3.60E-02	1.02E-01
		400.65		11.40	4.67E-01		-1.17E-01	2.21E-01
	RB-82	776.52		13.00	5.67E-01	5.67E-01	1.41E-01	2.62E-01
	RB-83	520.41		46.00	1.19E-01	1.19E-01	-3.80E-02	5.56E-02
		529.64		30.30	1.86E-01		-1.54E-01	8.70E-02
		552.65		16.40	3.47E-01		-1.80E-02	1.62E-01
	KR-85	513.99		0.43	1.86E+01	1.86E+01	1.51E+01	8.91E+00
	SR-85	513.99		99.27	8.34E-02	8.34E-02	6.75E-02	3.99E-02
	Y-88	898.02		93.40	8.47E-02	7.04E-02	5.01E-02	3.92E-02
		1836.01		99.38	7.04E-02		-3.88E-03	3.00E-02
	NB-93M	16.57		9.43	6.29E+01	6.29E+01	2.02E+01	3.05E+01
	NB-94	702.63		100.00	6.85E-02	6.85E-02	1.20E-02	3.19E-02
		871.10		100.00	7.67E-02		1.79E-02	3.55E-02
	NB-95	765.79		99.81	8.54E-02	8.54E-02	7.56E-02	4.01E-02
	NB-95M	235.69		25.00	5.06E-01	5.06E-01	9.70E-01	2.48E-01
	ZR-95	724.18		43.70	1.76E-01	1.18E-01	-4.19E-03	8.21E-02
		756.72		55.30	1.18E-01		2.01E-02	5.42E-02
	MO-99	181.06		6.20	1.19E+00	8.79E-01	7.94E-03	5.75E-01
		739.58		12.80	8.79E-01		3.07E-01	4.06E-01
		778.00		4.50	2.64E+00		-9.51E-01	1.22E+00
	RU-103	497.08		89.00	6.22E-02	6.22E-02	-2.38E-02	2.91E-02
	RU-106	621.84		9.80	6.72E-01	6.72E-01	1.03E-01	3.14E-01
	AG-108M	433.93		89.90	6.56E-02	6.56E-02	-8.52E-03	3.11E-02
		614.37		90.40	7.13E-02		9.31E-03	3.34E-02
		722.95		90.50	7.21E-02		-1.00E-02	3.34E-02
+	CD-109	88.03	*	3.72	2.90E+00	2.90E+00	1.73E+00	1.43E+00

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Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	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	6.99E-02	6.99E-02	-1.37E-02	3.25E-02
		677.61		10.53	6.53E-01		4.91E-02	3.05E-01
		706.67		16.46	4.14E-01		6.42E-02	1.93E-01
		763.93		21.98	3.05E-01		-2.18E-02	1.41E-01
		884.67		71.63	9.80E-02		2.13E-03	4.50E-02
		1384.27		23.94	3.04E-01		-5.82E-02	1.35E-01
	CD-113M	263.70		0.02	2.08E+02	2.08E+02	-1.34E+02	9.97E+01
	SN-113	255.12		1.93	2.57E+00	9.08E-02	5.08E-01	1.24E+00
		391.69		64.90	9.08E-02		-2.60E-04	4.32E-02
	TE123M	159.00		84.10	5.09E-02	5.09E-02	8.60E-03	2.46E-02
	SB-124	602.71		97.87	6.78E-02	6.78E-02	-4.22E-02	3.17E-02
		645.85		7.26	8.65E-01		1.84E-01	4.01E-01
		722.78		11.10	6.03E-01		-8.36E-02	2.79E-01
		1691.02		49.00	1.41E-01		5.77E-02	6.05E-02
	I-125	35.49		6.49	1.81E+00	1.81E+00	-5.07E-01	8.79E-01
	SB-125	176.33		6.89	5.80E-01	2.14E-01	-1.30E-01	2.79E-01
		427.89		29.33	2.14E-01		-4.31E-03	1.02E-01
		463.38		10.35	6.41E-01		2.50E-01	3.05E-01
		600.56		17.80	3.74E-01		2.71E-02	1.76E-01
		635.90		11.32	5.80E-01		1.22E-01	2.71E-01
	SB-126	414.70		83.30	6.88E-02	6.88E-02	-4.48E-02	3.24E-02
		666.33		99.60	7.25E-02		6.71E-03	3.37E-02
		695.00		99.60	7.46E-02		1.48E-02	3.47E-02
		720.50		53.80	1.45E-01		-4.90E-03	6.73E-02
+	SN-126	87.57	*	37.00	2.91E-01	2.91E-01	1.73E-01	1.44E-01
	SB-127	473.00		25.00	3.11E-01	2.78E-01	-2.24E-01	1.45E-01
		685.20		35.70	2.78E-01		-2.42E-02	1.30E-01
		783.80		14.70	7.54E-01		2.99E-01	3.51E-01
	I-129	29.78		57.00	3.37E-01	3.37E-01	-1.74E-01	1.63E-01
		33.60		13.20	1.03E+00		1.55E-01	4.97E-01
		39.58		7.52	1.17E+00		2.71E-01	5.70E-01
	I-131	284.30		6.05	9.85E-01	8.25E-02	-5.51E-02	4.71E-01
		364.48		81.20	8.25E-02		2.49E-02	3.93E-02
		636.97		7.26	1.07E+00		1.42E-01	4.99E-01
		722.89		1.80	4.38E+00		-6.07E-01	2.03E+00
	TE-132	49.72		13.10	7.29E-01	9.79E-02	-7.19E-01	3.54E-01
		228.16		88.00	9.79E-02		2.92E-02	4.73E-02
	BA-133	81.00		33.00	1.48E-01	1.11E-01	-3.81E-01	7.24E-02
		302.84		17.80	3.07E-01		6.64E-02	1.47E-01
		356.01		60.00	1.11E-01		-1.16E-01	5.33E-02
	I-133	529.87		86.30	3.70E-01	3.70E-01	-3.07E-01	1.73E-01
	CS-134	563.23		8.38	7.65E-01	6.74E-02	2.99E-01	3.59E-01
		569.32		15.43	4.15E-01		1.78E-01	1.95E-01
		604.70		97.60	6.74E-02		-4.17E-01	3.16E-02
		795.84		85.40	8.39E-02		5.92E-02	3.89E-02
		801.93		8.73	6.77E-01		-1.43E-01	3.08E-01
	CS-135	268.24		16.00	3.34E-01	3.34E-01	1.76E-01	1.61E-01
	I-135	1131.51		22.50	9.49E+01	7.23E+01	5.78E+00	4.36E+01
		1260.41		28.60	7.23E+01		-9.67E-01	3.28E+01
		1678.03		9.54	1.20E+02		-5.79E+01	4.78E+01
	CS-136	153.22		7.46	6.37E-01	7.58E-02	-2.73E-01	3.08E-01
		163.89		4.61	9.94E-01		1.96E-01	4.79E-01
		176.55		13.56	3.35E-01		-3.19E-02	1.61E-01

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	273.65	12.66	4.86E-01	7.58E-02	-2.60E-02	2.34E-01
	340.57	48.50	1.54E-01		2.02E-01	7.42E-02
	818.50	99.70	7.58E-02		-1.16E-02	3.49E-02
	1048.07	79.60	1.03E-01		-2.65E-02	4.69E-02
	1235.34	19.70	5.95E-01		2.27E-01	2.76E-01
CS-137	661.65	85.12	8.03E-02	8.03E-02	8.47E-03	3.75E-02
LA-138	788.74	34.00	1.98E-01	8.36E-02	2.79E-02	9.12E-02
	1435.80	66.00	8.36E-02		-2.66E-02	3.53E-02
CE-139	165.85	80.35	5.14E-02	5.14E-02	1.09E-02	2.48E-02
BA-140	162.64	6.70	6.78E-01	2.85E-01	-3.22E-02	3.27E-01
	304.84	4.50	1.23E+00		8.72E-03	5.87E-01
	423.70	3.20	2.18E+00		8.58E-01	1.04E+00
	437.55	2.00	3.27E+00		-1.28E+00	1.55E+00
	537.32	25.00	2.85E-01		-1.28E-02	1.34E-01
LA-140	328.77	20.50	3.09E-01	1.03E-01	1.39E-01	1.48E-01
	487.03	45.50	1.45E-01		-3.78E-02	6.83E-02
	815.85	23.50	3.25E-01		7.12E-02	1.50E-01
	1596.49	95.49	1.03E-01		1.22E-02	4.62E-02
CE-141	145.44	48.40	9.34E-02	9.34E-02	-1.76E-02	4.53E-02
CE-143	57.36	11.80	1.48E+00	4.96E-01	-8.36E-02	7.20E-01
	293.26	42.00	4.96E-01		7.83E-01	2.40E-01
	664.55	5.20	4.00E+00		1.94E+00	1.87E+00
CE-144	133.54	10.80	3.82E-01	3.82E-01	-3.31E-02	1.85E-01
PM-144	476.78	42.00	1.29E-01	6.54E-02	2.76E-02	6.06E-02
	618.01	98.60	6.60E-02		8.14E-03	3.09E-02
	696.49	99.49	6.54E-02		1.14E-03	3.04E-02
PM-145	36.85	21.70	4.83E-01	2.56E-01	9.49E-02	2.34E-01
	37.36	39.70	2.56E-01		-8.41E-02	1.24E-01
	42.30	15.10	5.04E-01		-3.26E-01	2.44E-01
	72.40	2.31	2.62E+00		-4.79E-01	1.28E+00
PM-146	453.90	39.94	1.46E-01	1.46E-01	-3.95E-02	6.90E-02
	735.90	14.01	4.39E-01		4.28E-02	2.02E-01
	747.13	13.10	4.81E-01		-5.96E-02	2.21E-01
ND-147	91.11	28.90	2.14E-01	2.14E-01	-9.64E-02	1.05E-01
	531.02	13.10	5.20E-01		-3.63E-02	2.44E-01
PM-149	285.90	3.10	3.13E+00	3.13E+00	-1.62E+00	1.49E+00
EU-152	121.78	20.50	1.94E-01	1.94E-01	-1.03E-01	9.38E-02
	244.69	5.40	1.06E+00		1.13E-01	5.12E-01
	344.27	19.13	2.74E-01		1.51E-02	1.31E-01
	778.89	9.20	8.02E-01		4.45E-01	3.73E-01
	964.01	10.40	8.71E-01		-1.01E+00	4.06E-01
	1085.78	7.22	1.21E+00		3.96E-01	5.58E-01
	1112.02	9.60	9.10E-01		5.13E-01	4.19E-01
	1407.95	14.94	5.02E-01		1.57E-01	2.23E-01
GD-153	97.43	31.30	1.43E-01	1.43E-01	6.06E-02	6.95E-02
	103.18	22.20	1.85E-01		-1.42E-01	9.01E-02
EU-154	123.07	40.50	9.84E-02	9.84E-02	-6.29E-02	4.77E-02
	723.30	19.70	3.32E-01		-4.60E-02	1.54E-01
	873.19	11.50	6.57E-01		-6.27E-03	3.04E-01
	996.32	10.30	7.08E-01		-3.10E-01	3.23E-01
	1004.76	17.90	4.20E-01		2.75E-02	1.92E-01
	1274.45	35.50	2.52E-01		9.48E-02	1.15E-01
EU-155	86.50	30.90	1.70E-01	1.70E-01	4.45E-02	8.33E-02

Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-155	105.30		20.70	2.04E-01	1.70E-01	3.48E-02	9.91E-02
	EU-156	811.77		10.40	6.96E-01	6.96E-01	-2.69E-01	3.20E-01
		1153.47		7.20	1.44E+00		7.83E-01	6.64E-01
		1230.71		8.90	1.30E+00		4.59E-02	6.05E-01
	HO-166M	184.41		72.60	7.24E-02	7.24E-02	9.31E-02	3.51E-02
		280.45		29.60	1.78E-01		4.08E-02	8.54E-02
		410.94		11.10	5.11E-01		1.39E-01	2.42E-01
		711.69		54.10	1.22E-01		-6.48E-02	5.66E-02
	TM-171	66.72		0.14	3.77E+01	3.77E+01	-8.28E+01	1.84E+01
	HF-172	81.75		4.52	1.08E+00	3.74E-01	-1.61E+00	5.26E-01
		125.81		11.30	3.74E-01		-1.79E-01	1.81E-01
	LU-172	181.53		20.60	2.61E-01	1.66E-01	-1.55E-02	1.26E-01
		810.06		16.63	5.19E-01		-1.86E-02	2.39E-01
		912.12		15.25	1.08E+00		2.12E+00	5.16E-01
		1093.66		62.50	1.66E-01		5.08E-02	7.59E-02
	LU-173	100.72		5.24	8.14E-01	2.59E-01	1.98E-02	3.96E-01
		272.11		21.20	2.59E-01		8.02E-02	1.25E-01
	HF-175	343.40		84.00	6.53E-02	6.53E-02	-2.41E-04	3.11E-02
	LU-176	88.34		13.30	4.12E-01	5.28E-02	1.82E-01	2.01E-01
		201.83		86.00	6.06E-02		2.13E-02	2.93E-02
		306.78		94.00	5.28E-02		-4.68E-03	2.52E-02
	TA-182	67.75		41.20	1.30E-01	1.30E-01	8.48E-03	6.36E-02
		1121.30		34.90	3.45E-01		4.31E-01	1.62E-01
		1189.05		16.23	6.05E-01		7.65E-02	2.80E-01
		1221.41		26.98	3.43E-01		-2.04E-01	1.58E-01
		1231.02		11.44	8.91E-01		7.05E-02	4.12E-01
	IR-192	308.46		29.68	1.72E-01	1.25E-01	-6.11E-02	8.18E-02
		468.07		48.10	1.25E-01		-5.65E-02	5.88E-02
	HG-203	279.19		77.30	7.22E-02	7.22E-02	4.27E-02	3.47E-02
	BI-207	569.67		97.72	6.22E-02	6.22E-02	-1.52E-02	2.91E-02
		1063.62		74.90	1.00E-01		2.01E-02	4.56E-02
+	TL-208	583.14	*	30.22	3.33E-01	3.56E-02	8.16E-01	1.60E-01
		860.37		4.48	1.81E+00		8.66E-01	8.41E-01
		2614.66	*	35.85	3.56E-02		9.48E-01	0.00E+00
	BI-210M	262.00		45.00	1.11E-01	1.11E-01	3.45E-02	5.34E-02
		300.00		23.00	2.41E-01		-5.80E-01	1.16E-01
	PB-210	46.50		4.25	1.64E+00	1.64E+00	1.42E+00	7.96E-01
	PB-211	404.84		2.90	1.92E+00	1.92E+00	-7.11E-01	9.11E-01
		831.96		2.90	2.38E+00		4.91E-01	1.10E+00
+	BI-212	727.17	*	11.80	8.41E-01	8.41E-01	6.29E-01	4.00E-01
		1620.62		2.75	2.00E+00		1.90E-01	8.31E-01
+	PB-212	238.63	*	44.60	1.92E-01	1.92E-01	8.78E-01	9.37E-02
		300.09	*	3.41	2.84E+00		7.40E-01	1.39E+00
+	BI-214	609.31	*	46.30	2.03E-01	2.03E-01	5.54E-01	9.72E-02
		1120.29	*	15.10	7.78E-01		8.63E-01	3.66E-01
		1764.49	*	15.80	3.11E-01		5.68E-01	1.24E-01
		2204.22		4.98	1.62E+00		0.00E+00	6.94E-01
+	PB-214	295.21	*	19.19	4.98E-01	1.55E-01	6.58E-01	2.43E-01
		351.92	*	37.19	1.55E-01		5.59E-01	7.39E-02
	RN-219	401.80		6.50	8.11E-01	8.11E-01	-3.18E-01	3.83E-01
	RA-223	323.87		3.88	1.32E+00	1.32E+00	-1.63E+00	6.27E-01
+	RA-224	240.98	*	3.95	2.18E+00	2.18E+00	2.05E+00	1.07E+00
	RA-225	40.00		31.00	3.08E-01	3.08E-01	7.11E-02	1.49E-01

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Analysis Report for 1411131-16

J1V1M0 SAF: RC-107

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	RA-226	186.21	*	3.28	2.29E+00	2.29E+00	1.43E+00	1.12E+00
	TH-227	50.10		8.40	7.07E-01	7.07E-01	-6.97E-01	3.43E-01
		236.00		11.50	7.24E-01		1.39E+00	3.54E-01
		256.20		6.30	7.98E-01		7.42E-02	3.83E-01
+	AC-228	338.32	*	11.40	7.26E-01	4.48E-01	9.28E-01	3.52E-01
		911.07	*	27.70	4.48E-01		8.42E-01	2.13E-01
		969.11	*	16.60	7.68E-01		9.87E-01	3.65E-01
	TH-230	48.44		16.90	3.79E-01	3.79E-01	-1.55E-01	1.84E-01
		62.85		4.60	1.28E+00		1.15E+00	6.25E-01
		67.67		0.37	1.43E+01		9.32E-01	7.00E+00
	PA-231	283.67		1.60	3.08E+00	2.38E+00	-1.72E-01	1.47E+00
		302.67		2.30	2.38E+00		5.14E-01	1.14E+00
	TH-231	25.64		14.70	2.59E+00	7.45E-01	3.46E-01	1.26E+00
		84.21		6.40	7.45E-01		-1.16E+00	3.63E-01
	PA-233	311.98		38.60	1.45E-01	1.45E-01	6.50E-02	6.92E-02
	PA-234	131.20		20.40	2.13E-01	2.13E-01	7.46E-02	1.04E-01
		733.99		8.80	6.68E-01		-1.95E-01	3.06E-01
		946.00		12.00	6.36E-01		9.12E-02	2.92E-01
	PA-234M	1001.03		0.92	8.70E+00	8.70E+00	8.01E-01	4.00E+00
	TH-234	63.29		3.80	1.52E+00	1.52E+00	1.20E+00	7.44E-01
	U-235	143.76		10.50	4.13E-01	4.13E-01	8.56E-02	2.00E-01
		163.35		4.70	8.67E-01		1.71E-01	4.18E-01
		205.31		4.70	1.05E+00		-9.83E-02	5.10E-01
	NP-237	86.50		12.60	4.18E-01	4.18E-01	1.09E-01	2.04E-01
	NP-239	106.10		22.70	3.52E-01	3.52E-01	-7.18E-02	1.71E-01
		228.18		10.70	9.63E-01		2.87E-01	4.65E-01
		277.60		14.10	7.18E-01		2.83E-01	3.45E-01
	AM-241	59.54		35.90	1.56E-01	1.56E-01	-4.87E-02	7.63E-02
	AM-243	74.67		66.00	1.01E-01	1.01E-01	1.43E-01	4.98E-02
	CM-243	209.75		3.29	1.66E+00	3.80E-01	1.00E+00	8.03E-01
		228.14		10.60	5.11E-01		1.52E-01	2.47E-01
		277.60		14.00	3.80E-01		1.50E-01	1.82E-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 1411131-16

J1V1M0 SAF: RC-107

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: J1V1M0 SAF: RC-107

Elapsed Live time: 3600
Elapsed Real Time: 3616

Channel								
1:	0	0	0	0	0	0	0	0
9:	7	153	158	136	124	107	87	83
17:	86	69	73	53	53	69	82	83
25:	65	90	61	64	63	60	70	59
33:	80	64	68	84	67	68	72	71
41:	85	66	69	70	68	91	112	82
49:	74	67	77	90	86	80	81	90
57:	112	100	114	101	121	87	111	202
65:	109	107	93	134	102	128	113	104
73:	142	122	309	195	228	272	121	122
81:	110	99	98	117	119	96	140	173
89:	123	133	139	101	189	179	105	95
97:	85	74	106	98	65	78	69	82
105:	87	92	72	65	97	82	62	96
113:	82	74	76	94	84	69	83	65
121:	55	71	67	67	65	81	74	72
129:	87	90	57	56	79	69	59	59
137:	50	72	74	68	63	58	72	61
145:	73	70	71	52	67	75	62	51
153:	55	63	65	63	63	60	58	53
161:	48	43	52	55	51	52	42	49
169:	46	46	52	44	50	42	37	53
177:	39	48	49	45	49	49	50	51
185:	58	117	88	46	53	49	51	45
193:	46	39	49	55	51	37	60	54
201:	41	42	45	41	31	48	29	40
209:	61	63	32	56	44	26	51	39
217:	39	53	42	37	30	38	32	42
225:	40	47	37	37	41	40	39	32
233:	41	30	33	33	49	97	363	154
241:	63	89	50	28	29	28	33	25
249:	25	24	35	31	34	33	20	25
257:	24	24	40	28	33	27	20	22
265:	21	24	25	28	28	31	53	32
273:	25	21	26	29	28	44	20	31
281:	18	31	19	26	23	22	22	23
289:	21	33	24	20	27	23	83	98
297:	32	26	19	33	38	23	17	25
305:	19	24	17	17	15	26	22	22
313:	25	24	24	21	19	23	19	23
321:	16	26	19	22	22	19	14	34
329:	38	19	19	21	19	16	20	18
337:	25	55	60	24	21	26	21	13
345:	19	14	17	16	14	23	35	129
353:	100	13	15	17	21	24	13	16
361:	16	14	23	23	17	20	17	19

0714

369:	19	15	23	18	16	7	24	16

Sample Title: J1V1M0 SAF: RC-107

Channel								
377:	17	19	19	14	14	23	10	16
385:	16	15	26	18	15	17	16	18
393:	26	19	18	15	16	13	12	15
401:	13	15	20	12	13	20	18	13
409:	17	27	15	11	13	16	12	9
417:	12	14	16	11	14	20	17	23
425:	15	22	17	18	15	29	13	16
433:	19	15	13	17	17	4	21	15
441:	18	19	18	7	17	12	12	14
449:	16	15	15	11	12	8	18	18
457:	17	16	17	15	12	17	32	21
465:	12	16	11	16	16	13	11	9
473:	10	13	9	8	9	19	10	9
481:	11	14	20	16	15	10	9	16
489:	12	10	9	16	5	10	8	8
497:	9	12	9	13	12	15	11	12
505:	11	16	11	12	26	34	56	42
513:	18	14	11	7	9	14	8	8
521:	11	8	7	13	14	13	7	12
529:	14	9	12	5	8	17	13	12
537:	8	13	15	8	17	16	8	12
545:	9	10	8	9	9	10	11	5
553:	9	12	10	6	11	8	13	14
561:	9	13	10	10	9	16	8	8
569:	14	20	7	6	8	8	14	5
577:	15	12	14	14	13	22	86	69
585:	16	11	8	5	6	13	7	5
593:	7	8	12	9	13	10	16	14
601:	14	5	12	7	10	11	8	22
609:	73	99	19	8	7	5	13	10
617:	8	11	8	12	8	10	13	10
625:	10	9	9	4	3	7	13	5
633:	11	7	6	6	11	16	11	8
641:	8	10	10	7	9	5	7	12
649:	7	7	4	7	9	12	13	5
657:	3	9	8	14	10	9	10	10
665:	8	11	12	3	5	5	9	9
673:	4	11	12	11	10	8	8	3
681:	14	10	10	5	5	13	12	7
689:	11	9	6	8	11	7	8	8
697:	8	8	6	8	9	9	11	11
705:	7	7	6	11	11	7	10	2
713:	10	7	9	11	14	6	12	5
721:	8	8	7	10	6	9	23	19
729:	10	5	5	8	6	4	4	9
737:	5	11	6	4	6	9	10	7
745:	14	4	11	2	4	4	4	8
753:	4	7	4	5	7	8	6	9
761:	5	6	8	5	7	8	11	19
769:	19	7	4	8	10	5	6	7
777:	5	10	10	3	10	15	6	5
785:	6	16	3	6	7	5	5	6
793:	7	6	13	8	9	7	4	4

801:	2	7	1	9	8	2	12	9

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Channel								
809:	6	7	7	4	3	9	7	3
817:	9	10	5	6	5	9	7	5
825:	5	6	4	5	3	12	4	5
833:	5	6	11	7	6	5	7	9
841:	7	11	9	5	10	9	4	3
849:	4	8	9	8	5	4	4	7
857:	4	7	7	15	15	8	5	6
865:	7	6	3	10	7	10	10	2
873:	7	7	4	11	6	7	8	2
881:	8	6	7	4	5	6	6	6
889:	7	8	8	4	2	4	10	5
897:	4	6	8	12	7	4	7	5
905:	8	10	6	4	9	22	60	38
913:	13	6	5	8	2	3	9	6
921:	6	4	4	4	5	4	7	2
929:	7	3	3	5	2	10	10	6
937:	1	2	7	5	3	7	3	6
945:	7	4	8	5	12	7	6	5
953:	8	11	5	7	3	6	4	3
961:	5	6	11	9	16	11	5	15
969:	37	18	13	5	4	3	6	4
977:	6	2	5	7	7	8	3	6
985:	7	5	4	6	10	4	4	8
993:	8	4	5	6	7	2	5	8
1001:	8	9	7	6	8	3	4	2
1009:	4	4	6	4	4	6	2	6
1017:	2	7	11	3	7	6	6	6
1025:	5	7	5	5	4	6	7	10
1033:	8	2	8	7	5	7	4	7
1041:	4	3	2	3	4	5	7	3
1049:	6	5	4	7	10	9	10	3
1057:	5	4	7	4	5	2	8	6
1065:	6	4	1	5	3	9	3	3
1073:	8	4	3	7	8	4	1	5
1081:	5	4	5	9	9	3	11	7
1089:	3	7	4	5	4	10	8	3
1097:	3	5	2	4	3	6	4	2
1105:	5	6	4	4	6	8	7	9
1113:	5	4	6	4	3	5	13	28
1121:	16	10	7	7	5	4	5	7
1129:	2	6	8	4	12	4	6	8
1137:	7	8	8	3	10	7	8	3
1145:	9	3	4	3	2	2	8	8
1153:	6	7	7	11	7	5	3	9
1161:	8	9	5	2	9	7	5	6
1169:	4	5	11	6	10	15	6	3
1177:	9	8	4	6	4	9	13	9
1185:	4	3	5	11	8	12	8	3
1193:	7	6	5	11	6	6	3	5
1201:	5	6	7	8	10	7	5	5
1209:	4	10	3	5	4	10	10	8
1217:	9	5	6	7	5	10	5	4
1225:	14	4	12	8	4	8	8	9

1233:	7	7	7	5	6	14	4	4

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Channel								
1241:	4	5	3	14	5	2	7	5
1249:	6	6	11	3	3	6	5	7
1257:	5	6	5	6	4	3	4	4
1265:	4	9	5	1	2	2	5	4
1273:	7	2	3	4	3	7	4	4
1281:	2	7	5	4	7	5	6	8
1289:	0	5	2	4	4	4	2	4
1297:	4	5	4	3	5	11	5	5
1305:	5	6	6	9	4	3	8	5
1313:	2	7	6	0	5	4	1	8
1321:	7	1	1	2	1	4	1	5
1329:	3	4	3	3	5	5	7	3
1337:	4	2	3	3	2	3	4	3
1345:	3	3	0	5	3	3	3	4
1353:	1	0	4	3	3	0	2	1
1361:	6	0	2	3	0	1	2	3
1369:	3	0	2	2	1	2	2	5
1377:	7	3	3	4	2	2	3	5
1385:	2	1	1	0	1	4	2	5
1393:	1	3	2	4	2	1	1	4
1401:	0	3	0	3	1	1	3	4
1409:	4	2	1	2	1	2	1	1
1417:	6	2	3	3	3	2	3	1
1425:	2	3	5	2	2	2	0	2
1433:	2	0	1	1	2	2	0	0
1441:	3	2	5	2	2	1	2	3
1449:	3	1	3	2	3	3	6	3
1457:	8	4	52	191	231	86	10	6
1465:	1	0	3	2	2	2	0	0
1473:	2	4	1	1	0	2	2	0
1481:	1	3	2	2	3	1	0	1
1489:	3	4	2	0	2	2	2	2
1497:	3	2	2	0	1	1	3	3
1505:	2	2	1	0	2	3	3	1
1513:	2	2	1	1	1	1	1	2
1521:	0	3	3	2	0	1	2	2
1529:	1	1	0	2	0	0	0	1
1537:	2	0	3	0	1	0	0	1
1545:	1	1	1	1	1	0	1	0
1553:	0	3	0	0	2	0	1	2
1561:	0	2	0	0	1	1	0	1
1569:	0	1	2	2	4	0	0	0
1577:	3	0	0	0	2	1	3	1
1585:	3	2	0	2	2	1	4	7
1593:	3	5	2	0	1	2	1	3
1601:	2	0	2	0	0	3	2	1
1609:	0	2	0	0	1	0	1	0
1617:	0	0	1	4	0	1	1	1
1625:	1	1	0	1	2	2	1	1
1633:	0	1	0	0	1	0	0	1
1641:	0	2	0	1	0	1	2	1
1649:	0	0	0	0	1	1	0	0
1657:	2	0	1	1	2	1	0	1

1665:	2	1	3	3	0	1	1	3

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

2097:	0	2	0	1	1	2	1	3

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

2529:	0	1	0	0	0	0	1	1

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Channel								
2537:	0	0	0	1	1	0	0	0
2545:	0	0	0	0	0	0	0	0
2553:	0	2	1	0	0	1	0	0
2561:	0	1	0	0	1	1	0	0
2569:	0	0	0	0	0	0	0	0
2577:	0	0	1	0	0	0	0	0
2585:	0	0	0	1	0	0	0	0
2593:	0	0	0	1	0	0	0	0
2601:	0	0	0	0	1	0	0	0
2609:	3	0	0	8	16	21	20	4
2617:	0	0	1	1	0	1	1	0
2625:	0	0	0	0	0	0	0	0
2633:	1	0	0	1	1	0	0	0
2641:	1	0	0	0	0	0	0	0
2649:	0	0	1	0	0	0	0	0
2657:	0	0	0	1	0	0	0	1
2665:	0	0	0	0	0	0	0	0
2673:	0	0	1	0	1	0	0	0
2681:	0	1	0	2	0	0	0	1
2689:	0	0	0	0	0	0	2	0
2697:	0	0	2	0	3	0	0	0
2705:	0	0	0	0	0	0	0	2
2713:	1	0	0	0	1	0	0	0
2721:	0	1	1	1	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	0	1	0	0	0	0	0	1
2745:	1	1	0	0	0	0	0	0
2753:	1	0	0	1	0	0	0	0
2761:	0	0	0	0	0	0	1	1
2769:	0	1	1	0	0	0	0	0
2777:	0	0	0	0	0	1	2	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	1	0	0	0	0	0
2801:	1	1	0	0	1	0	0	0
2809:	0	0	0	1	2	0	1	0
2817:	0	0	0	0	0	1	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	0	1	0	0	1	0	0
2841:	1	1	1	0	0	0	0	0
2849:	0	0	0	1	0	0	0	2
2857:	1	0	1	0	1	1	0	0
2865:	0	0	0	0	0	0	0	0
2873:	1	0	0	0	1	0	0	0
2881:	1	0	0	0	0	0	0	0
2889:	0	1	0	0	0	0	0	0
2897:	1	0	0	1	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	1	0	1	0	0	0
2929:	1	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	1
2953:	0	1	1	0	0	0	1	0

2961:	0	1	0	1	0	0	0	0

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

3393:	0	0	1	0	1	0	1	1

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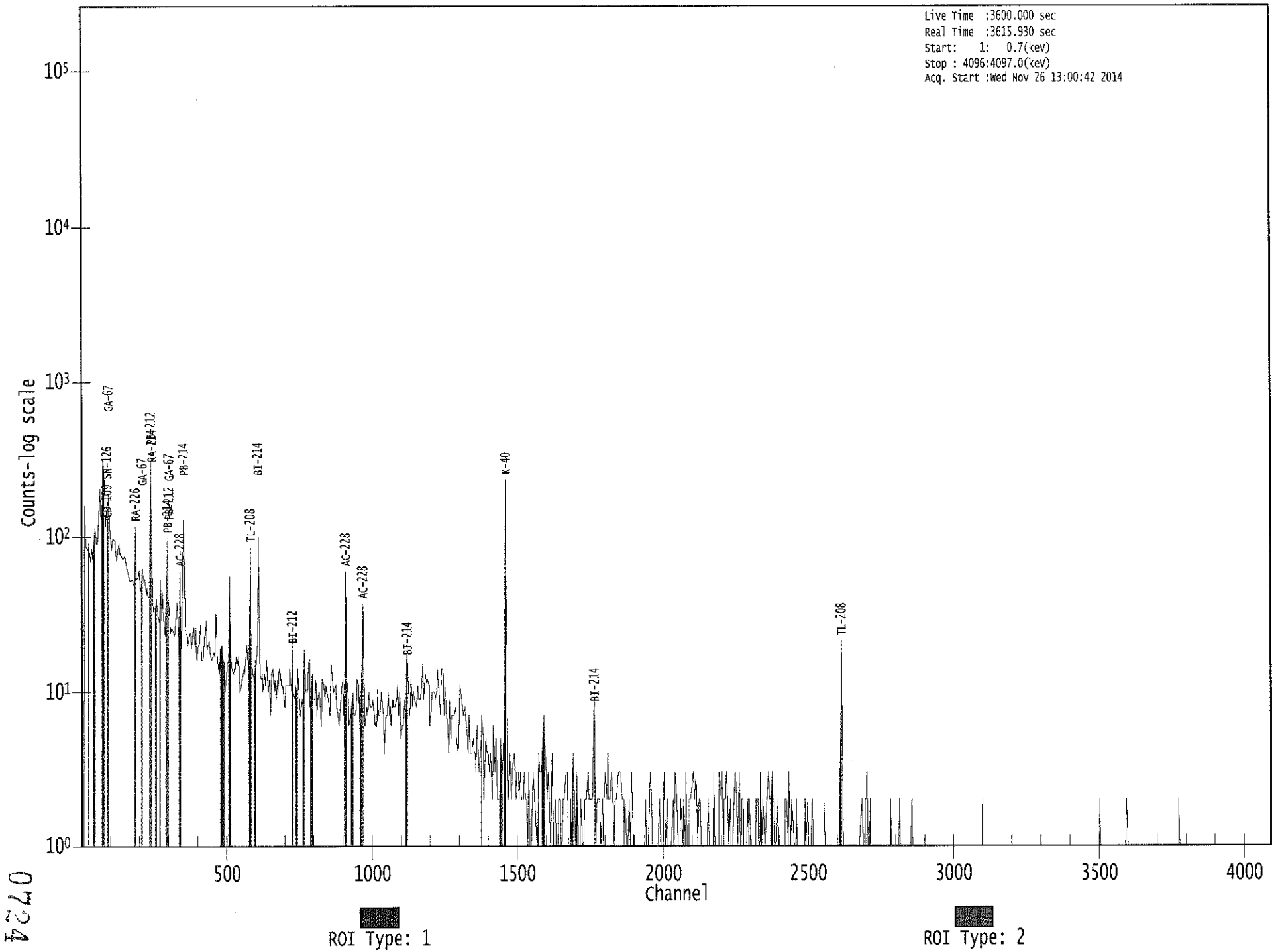
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	1	0	1	0	0	0	0
3417:	0	0	0	0	0	0	1	0
3425:	0	0	1	0	0	0	0	0
3433:	0	1	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	1	0	0	0	1	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	1	1	0	0
3481:	0	0	0	0	0	0	0	1
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	2	0	0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

3825:	0	0	0	0	1	0	0	0

Sample Title: J1V1M0 SAF: RC-107

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

0000015655.CNF



0724

****
***** G E N I E Q U A L I T Y A S S U R A N C E *****
****

Last Results Report
11/26/14 6:07:06 AM

11/26

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004B.QCK

Detector: GE4
Geometry: <None>
Certificate: <None>
Sample ID: QA Background Ch
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 11/26/14 5:51:47 AM
Measurement Date: 11/26/14 5:51:49 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 900.2 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE4 [SD: 1.4570E+001+/-220.93]	1.9300E+000	-5.7211E-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)

****
***** G E N I E Q U A L I T Y A S S U R A N C E *****
****

Last Results Report
11/26/14 6:06:57 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: 11/26/14 5:51:42 AM
Measurement Date: 11/26/14 5:51:43 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 903.5 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE3 [SD: 2.3305E+003+/-1731.7]	4.8430E+003	1.4508E+000 < : : : >

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
11/26/14 6:06:49 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: 11/26/14 5:51:35 AM
Measurement Date: 11/26/14 5:51:37 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: 4.6532E+000+/- 0.248]	4.5933E+000	-2.4103E-001 < : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

****
***** G E N I E Q U A L I T Y A S S U R A N C E *****
****

Last Results Report
11/26/14 6:06:41 AM

11/26

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001B.QCK

Detector: GE1
Geometry: <None>
Certificate: <None>
Sample ID: QA Background Ch
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 11/26/14 5:51:27 AM
Measurement Date: 11/26/14 5:51:28 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	2.0944E+000	-1.9639E-001
[SD: 2.1842E+000+/- 0.457]		< : : : >

Trend Test: The last 9 samples exhibit a bias trend.

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

****
***** GENIE QUALITY ASSURANCE *****
****

Last Results Report
11/26/14 5:47:08 AM

11/26

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004GAW-14C.QCK

Detector: GE4
Geometry: <None>
Certificate: GAW-14
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/14 12:00:00 AM
Measurement Date: 11/26/14 5:30:09 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 1004.0 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	5.8673E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Peak centroid 661.65 kev	6.6119E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Peak centroid 1332.49 ke	1.3326E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.1 kev	1.8366E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	2.2696E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.7200E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	2.6863E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	3.1415E+000	
Boundary Limits: [5.000E-001, 3.500E+000]		< : : : >
Decay corrected activity	1.2137E+005	
Boundary Limits: [1.200E-001, 1.816E-001]		< : : : >
Decay corrected activity	6.5455E+004	
Boundary Limits: [4.918E-002, 7.377E-002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		

Decay corrected activity 1.0114E+005
Boundary Limits: [7.892E-002, 1.184E-001] < : : : >

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Decay corrected activity	2.1900E+005	
Boundary Limits: [1.695E-001, 2.543E-001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

****
***** G E N I E Q U A L I T Y A S S U R A N C E *****
****

Last Results Report
11/26/14 5:46:58 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000003GAS-1402C.QC

Detector: GE3
Geometry: <None>
Certificate: GAS-1402
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/14 12:00:00 AM
Measurement Date: 11/26/14 5:30:00 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 1005.1 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	5.9548E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Peak centroid 661.65 kev	6.6153E+002	
Boundary Limits: [6.600E+002, 6.640E+002]		< : : : >
Peak centroid 1332.49 ke	1.3322E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.1 kev	1.8356E+003	
Boundary Limits: [1.833E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	1.0337E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	2.1543E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	2.2044E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.5491E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.6557E+005	
Boundary Limits: [1.223E-001, 1.834E-001]		< : : : >
Decay corrected activity	6.5094E+004	
Boundary Limits: [4.969E-002, 7.453E-002]		< : : : >
Decay corrected activity	1.0516E+005	
Boundary Limits: [7.972E-002, 1.120E-001]		< : : : >

Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 2.2487E+005
Boundary Limits: [1.713E-001, 2.569E-001] < : : : >

Flags Key:

LU	= Lower/Upper Bounds Test	(Ab = Above, Be = Below)
SD	= Sample Driven N-Sigma Test	(In = Investigate, Ac = Action)
UD	= User Driven N-Sigma Test	(In = Investigate, Ac = Action)
BS	= Measurement Bias Test	(In = Investigate, Ac = Action)

****
***** G E N I E Q U A L I T Y A S S U R A N C E *****
****

Last Results Report
11/26/14 5:46:00 AM

11/26

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002GAS-1401C.QC

Detector: GE2
Geometry: <None>
Certificate: GAS-1401
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/14 12:00:00 AM
Measurement Date: 11/26/14 5:29:51 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 957.8 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54kev	5.9799E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Peak centroid 661.65 kev	6.6107E+002	
Boundary Limits: [6.600E+002, 6.640E+002]		< : : : >
Peak centroid 1332.49 ke	1.3315E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.1 kev	1.8346E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	1.7712E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	1.6380E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	2.1428E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.7060E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.5318E+005	
Boundary Limits: [1.224E-001, 1.836E-001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity	6.1349E+004	
Boundary Limits: [4.971E-002, 7.457E-002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		

Decay corrected activity 1.0076E+005
Boundary Limits: [7.978E-002, 1.197E-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	2.1517E+005	
Boundary Limits: [1.714E-001, 2.571E-001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

****
***** GENIE QUALITY ASSURANCE *****
****

Last Results Report
11/26/14 5:45:40 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001GAF-14C.QCK

Detector: GE1
Geometry: <None>
Certificate: GAF-14
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/14 12:00:00 AM
Measurement Date: 11/26/14 5:29:41 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 946.3 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	6.0050E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Peak centroid 661.65 kev	6.6148E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Peak centroid 1332.49 ke	1.3318E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8349E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	1.1363E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	2.1703E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	2.0706E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-90	2.3990E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.3734E+004	
Boundary Limits: [1.170E-002, 1.754E-002]		< : : : >
Decay corrected activity	6.0789E+003	
Boundary Limits: [4.716E-003, 7.075E-003]		< : : : >
Decay corrected activity	1.0051E+004	
Boundary Limits: [7.572E-003, 1.136E-002]		< : : : >

Decay corrected activity 1.8807E+004
Boundary Limits: [1.626E-002, 2.440E-002] < : : : >

Flags Key:

LU = Lower/Upper Bounds Test	(Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test	(In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test	(In = Investigate, Ac = Action)
BS = Measurement Bias Test	(In = Investigate, Ac = Action)

GEL Laboratories LLC

a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407

P 843.556.8171 F 843.766.1178

www.gel.com

December 02, 2014

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354

Re: RC-107 Soil
Work Order: 361900
SDG: XP0168

Dear Joan Kessner:

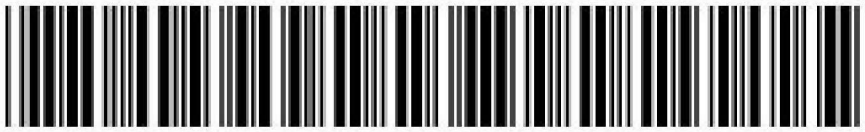
GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 25, 2014. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1616.

Sincerely,

Orlette Johnson
Project Manager

Purchase Order: 1510
Chain of Custody: RC-107-119
Enclosures



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Case Narrative

Receipt Narrative
for
WC-HANFORD, INC.
SDG: XP0168
Work Order: 361900

December 02, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on November 25, 2014 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Diesel Range Organics, GC Semivolatile PCB, GC Semivolatile Pesticide, GC/MS Semivolatile, General Chemistry, HPLC Polynuclear Aromatic Hydrocarbon and Metals.

Orlette Johnson
Project Manager

Chain of Custody and Supporting Documentation

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119

Collector Q Stowe	**Company Contact** Joan Kessner	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Price Code 8B	**Data Turnaround** 7days		
Project Designation 100-H Field Remediation	**Sampling Location** 100-H-28 et al, north overburden pile		**SAF No.** RC-107
Ice Chest No. RCC-07-002	**Field Logbook No.** EL-1627-08	**COA** 01H2832000	**Method of Shipment** Commerical Carrier - fedex
Shipped To GEL Laboratories Charlston	**Offsite Property No.** A 131294		**Bill of Lading/Air Bill No.** See OSPC

Other Labs Shipped To
Eberline Services Oak Ridge

POSSIBLE SAMPLE HAZARDS/REMARKS
none

Special Handling and/or Storage
none

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	250mL	125mL	250mL	250mL	250mL	250mL	250mL	125mL		
Sample Analysis	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	Pesticides - 8081	PAHs - 8310	Semi-VOA - 8270 (TCL)	TPH-Diesel Range - WTPH-D +		

Sample No.	Matrix	Sample Date	Sample Time
~~J1V1L0~~	~~SOIL~~	} DWS 11/20/14	
~~J1V1L1~~	~~SOIL~~		
J1V1L2	SOIL	11/20/14	1102
J1V1L3	SOIL	11/20/14	1051
~~J1V1L4~~	~~SOIL~~	DWS 11/20/14	

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	11-20-14 1110	DWSHEA	11/20/14 WCH 1110
DWSHEA	11/20/14 1545	C. Bingham	11-20-14 1545
C. Bingham	11-20-14 1550	1060 Battelle, fridge #14	11-20-14 1550
1060 Battelle, fridge #14	11-24-14 0715	C. Bingham	11-24-14 0715
C. Bingham WCH	11-24-14 0730	fed ex	
FED EX		P. Ward Patricia Dent	11-25-14 0730

Sign/Print Names

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2 {Nitrogen in Nitrite and Nitrate}; pH (Soil) - 9045 {pH Measurement}

REVIEWED BY K. Woodward DATE 11-24-14

FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time

XP0168

WCH-EE-011

Washington Closure Hanford — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119 | Page 2 of 3

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 8B	Data Turnaround: 7days		
Project Designation: 100-H Field Remediation	Sampling Location: 100-H-28 et al, north overburden pile		SAF No.: RC-107
Ice Chest No.: RCC-07-002	Field Logbook No.: EL-1627-08	COA: 01H2832000	Method of Shipment: Commerical Carrier - fed ex
Shipped To: GEL Laboratories Charlston	Offsite Property No.: A131294		Bill of Lading/Air Bill No.: See OSPC

Other Labs Shipped To: Eberline Services Oak Ridge

POSSIBLE SAMPLE HAZARDS/REMARKS: *none*

Special Handling and/or Storage: *none*

Sample No.	Matrix	Sample Date	Sample Time	Preservation	Type of Container	No. of Container(s)	Volume	Sample Analysis							
				None	G/P	1	250mL	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	Pesticides - 8081	PAHs - 8310	Semi-VOA - 8270 (TCL)	TPH-Diesel Range - WTPH-D +
~~J1V1L5~~	~~SOIL~~	DWShea 11/20/14													
~~J1V1L6~~	~~SOIL~~														
~~J1V1L7~~	~~SOIL~~														
J1V1L8	SOIL	11/20/14	1008		G/P	1	250mL	✓	✓	✓	✓	✓	✓	✓	✓
J1V1L9	SOIL	11/20/14	1038		G/P	1	250mL	✓	✓	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	11-20-14 1110	DWShea DWSHEA	11/20/14 1110
DWShea DWSHEA	11/20/14 1545	C. Bingham	11-20-14 1545
C. Bingham	11-20-14 1550	1060 Battelle, fridge #1A	11-20-14 1550
1060 Battelle, fridge #1A	11-24-14 0715	C. Bingham	11-24-14 0715
C. Bingham WCH	11-24-14 0730	fed ex	
FED EX		P. Ulent Patricia Dent	11-25-14 0930

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2 {Nitrogen in Nitrite and Nitrate}; pH (Soil) - 9045 {pH Measurement}

REVIEWED BY K. Woodward DATE 11-24-14

XP0168

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100-H Field Remediation	Sampling Location: 100-H-28 et al, north overburden pile		SAF No.: RC-107
Ice Chest No.: RCC-07-002	Field Logbook No.: EL-1627-08	COA: 01H2832000	Method of Shipment: Commerical Carrier - fed ex
Shipped To: GEL Laboratories Charlston	Offsite Property No.: A131294		Bill of Lading/Air Bill No.: See OSPC

Price Code: 8B

Data Turnaround: 7 days

Other Labs Shipped To: Eberline Services Oak Ridge

POSSIBLE SAMPLE HAZARDS/REMARKS

none

Special Handling and/or Storage

none

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	250mL	125mL	250mL	250mL	250mL	250mL	250mL	125mL		
Sample Analysis	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	Pesticides - 8081	PAHs - 8310	Semi-VOA - 8270 (TCL)	TPH-Diesel Range - WTPH-D +		

Sample No.	Matrix	Sample Date	Sample Time										
~~J1V1M0~~	~~SOIL~~	DWS 11/20/14											
J1V1M1	SOIL	11/20/14	1026	✓	✓	✓	✓	✓	✓	✓	✓		
J1V1M2	SOIL	11/20/14	1008	✓	✓	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION / **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe [signature]	11-20-14 1110	WCH Dwshea DWSHEA	11/20/14 1110
Dwshea DWSHEA	11/20/14 1545	C. Bingham [signature]	11-20-14 1545
C. Bingham [signature]	11-20-14 1550	1060 Battelle, fndge #1A	11-20-14 1550
1060 Battelle, fndge #1A	11-24-14 0715	C. Bingham [signature]	11-24-14 0715
C. Bingham [signature] WCH	11-24-14 0730	fed ex	
FED EX		P. Dent Patricia Dent	11-25-14 0930

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(2) IC Anions - 9056 {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2 {Nitrogen in Nitrite and Nitrate}; pH (Soil) - 9045 {pH Measurement}

REVIEWED BY K. Wood Viaemal DATE 11-24-14

XP0168

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119

Collector Q Stowe	**Company Contact** Joan Kessner	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Price Code 8B	**Data Turnaround** 7days		
Project Designation 100-H Field Remediation	**Sampling Location** 100-H-28 et al, north overburden pile		**SAF No.** RC-107
Ice Chest No. RCC-07-002	**Field Logbook No.** EL-1627-08	**COA** 01H2832000	**Method of Shipment** Commerical Carrier fed ex
Shipped To GEL Laboratories Charlston	**Offsite Property No.** A131294		**Bill of Lading/Air Bill No.** See OSR

Other Labs Shipped To
Eberline Services Oak Ridge

POSSIBLE SAMPLE HAZARDS/REMARKS
none

Special Handling and/or Storage
none

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	250mL	125mL	250mL	250mL	250mL	250mL	250mL	125mL		
Sample Analysis	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	Pesticides - 8081	PAHs - 8310	Semi-VOA - 8270 (TCL)	TPH-Diesel Range - WTPH-D +		

Sample No.	Matrix	Sample Date	Sample Time								
J1V1L0	SOIL	11/24/14	0811	✓	✓	✓	✓	✓	✓	✓	✓
J1V1L1	SOIL	11/24/14	0804	✓	✓	✓	✓	✓	✓	✓	✓
~~J1V1L2~~	~~SOIL~~	} DWShea 11/20/14									
~~J1V1L3~~	~~SOIL~~										
J1V1L4	SOIL	11/24/14	0758	✓	✓	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION

Sign/Print Names			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	11/24/14 0822	DWShea DWSHEA	11/24/14 0822
DWShea DWSHEA	11/24/14 0933	C. Bingham	11-24-14 0933
C. Bingham WCH	11-24-14 0950	fed ex	
FED EX		P. Dent PATRICIA DENT	11-25-14 0930

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2 {Nitrogen in Nitrite and Nitrate}; pH (Soil) - 9045 {pH Measurement}

REVIEWED BY K. Woodward DATE 11-24-14

11-24-14 cmb

XP0169 8

WCH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119

Collector Q Stowe	**Company Contact** Joan Kessner	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Price Code 8B	**Data Turnaround** 7 days		
Project Designation 100-H Field Remediation	**Sampling Location** 100-H-28 et al, north overburden pile		**SAF No.** RC-107
Ice Chest No. RCC-07-002	**Field Logbook No.** EL-1627-08	**COA** 01H2832000	**Method of Shipment** Commerical Carrier fed ex
Shipped To GEL Laboratories Charlston	**Offsite Property No.** A131 294		**Bill of Lading/Air Bill No.** See OSPC

Other Labs Shipped To
Eberline Services Oak Ridge

POSSIBLE SAMPLE HAZARDS/REMARKS
none

Special Handling and/or Storage
none

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	250mL	125mL	250mL	250mL	250mL	250mL	250mL	125mL		
Sample Analysis	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	Pesticides - 8081	PAHs - 8310	Semi-VOA - 8270 (TCL)	TPH-Diesel Range - WTPH-D +		

Sample No.	Matrix	Sample Date	Sample Time
J1V1L5	SOIL	11/24/14	0743
J1V1L6	SOIL	11/24/14	0738
J1V1L7	SOIL	11/24/14	0732
~~J1V1L8~~	~~SOIL~~	DWShea	
~~J1V1L9~~	~~SOIL~~	11/20/14	

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	11/24/14 0822	DWSHEA	11/24/14 0822
DWShea DWShea	11/24/14 0933	C. Bingham	11-24-14 0933
C. Bingham	0950 11-24-14	fed ex	
FED EX		P. West Patricia Dent	11-25-14 0930

FINAL SAMPLE DISPOSITION Disposal Method | Disposed By | Date/Time

WCH-EE-011

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2 {Nitrogen in Nitrite and Nitrate}; pH (Soil) - 9045 {pH Measurement}

REVIEWED BY K. Woodward DATE 11-24-14

11-24-14 cmb

XP0169/8

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-107-119

Collector Q Stone	**Company Contact** Joan Kessner	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Price Code 8B	**Data Turnaround** 7days		
Project Designation 100-H Field Remediation	**Sampling Location** 100-H-28 et al, north overburden pile		**SAF No.** RC-107
Ice Chest No. RCC-07-002	**Field Logbook No.** EL-1627-08	**COA** 01H2832000	**Method of Shipment** Commerical Carrier - fed ex
Shipped To GEL Laboratories Charlston	**Offsite Property No.** A131294		**Bill of Lading/Air Bill No.** See OSPC

Other Labs Shipped To
Eberline Services Oak Ridge

POSSIBLE SAMPLE HAZARDS/REMARKS
none

Special Handling and/or Storage
none

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	250mL	125mL	250mL	250mL	250mL	250mL	250mL	125mL		
Sample Analysis	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	Pesticides - 8081	PAHs - 8310	Semi-VOA - 8270 (TCL)	TPH-Diesel Range - WTPH-D +		

Sample No.	Matrix	Sample Date	Sample Time										
J1V1M0	SOIL	11/24/14	0726	✓	✓	✓	✓	✓	✓	✓	✓		
~~J1V1M1~~	~~SOIL~~	? DWShea											
~~J1V1M2~~	~~SOIL~~	5 11/20/14											

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stone	11/24/14 0822	DWShea DWSHEA WCH	11/24/14 0822
DWShea DWSHEA	11/24/14 0933	C. Bingham Cindy	11-24-14 0933
C. Bingham WCH	11-24-14 0950	fed ex	
FED EX		P. Dent Patricia Dent	11-25-14 0930

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

WCH-EE-011

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2 {Nitrogen in Nitrite and Nitrate}; pH (Soil) - 9045 {pH Measurement}

REVIEWED BY K. Wood Vlaemo DATE 11-24-14

11-24-14 CMD

XPO 16978

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: WCHN	**SDG/AR/COC/Work Order:** 361900
Received By: P. Nent	**Date Received:** 11-25-14

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		X	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 61cpm
Classified Radioactive II or III by RSO?		X	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		X	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		X	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		X	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	X			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius. 1c
2a	Daily check performed and passed on IR temperature gun?	X			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): 130462966
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?		X		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		X		Sample ID's and containers affected:
7	Are Encore containers present?			X	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	X			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	X			Sample ID's affected:
11	Number of containers received match number indicated on COC?	X			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			X	
13	COC form is properly signed in relinquished/received sections?	X			
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other. 7719 7480 9338 9497 9913 7719 7481 8090

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials CS Date 12/1/14 Page 1 of 1

GL-CHL-SR-001

Laboratory Certifications

List of current GEL Certifications as of 02 December 2014

State	Certification
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC000122013-10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-12-00283, P330-12-00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013-10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC000122013-10
Nebraska	NE-OS-26-13
Nevada	SC000122014-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
Plant Material Permit	PDEP-12-00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-14-9
Utah NELAP	SC000122014-16
Vermont	VT87156
Virginia NELAP	460202
Washington	C780-12
Wisconsin	999887790

Semi-Volatile Analysis

Case Narrative

Semi-Volatile Case Narrative
WC-HANFORD, INC. (WCHN)
SDG XP0168

Method/Analysis Information

Procedure:	**Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry**
Analytical Method:	SW846 3541/8270D
Prep Method:	SW846 3541
Analytical Batch Number:	1439085
Prep Batch Number:	1439084

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3541/8270D:

Sample ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0
1203217572	MB for batch 1439084
1203217573	Laboratory Control Sample (LCS)
1203217574	361900001(J1V1L2) Matrix Spike (MS)
1203217575	361900001(J1V1L2) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-009 REV# 34.

Raw data reports are processed and reviewed by the analyst using the data analysis software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package. The various calibration mixes may not be calibrated using all of the calibration levels. In addition, not all of the mixes are calibrated using the same levels.

Diphenylamine has now superseded N-Nitroso-diphenylamine on Quantitation Reports, Initial Calibration Reports, Calibration Check Standard Reports, etc. Previous versions of EPA Methodologies referenced N-Nitroso-diphenylamine. However, as stated in EPA Methodology, "N-Nitroso-diphenylamine decomposes in the gas chromatographic inlet and cannot be separated from Diphenylamine." Studies of these two compounds at GEL, both independent of each other and together, showed that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine will be reported as Diphenylamine on all reports and forms.

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG) in this batch. A second source initial calibration verification (ICV) was included in the standard section directly behind the initial calibration.

CCV Requirements

All Calibration Verification Standards (CCV) did not meet the acceptance criteria as outlined in Method 8270D. However, the method allows for a designated number of outliers dependent on the requested analyte list. This SDG satisfied the 8270D outlier acceptance criteria. Detected concentrations of these analytes should be considered as estimated.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG in this batch met the acceptance criteria.

Surrogate Recoveries

All the surrogate recoveries were within the established acceptance criteria for this SDG in this batch.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Sample 361900001 (J1V1L2) was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement

The MS recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

Multiple RPD values between the MS and MSD, 1203217574 (J1V1L2MS) and 1203217575 (J1V1L2MSD), were not within the 0-30% limits. Please see the QC Summary/Spike Recovery Report for the specific analytes and RPD values. These RPD failures are attributed to the large difference in the recovery values between analyte pairs in the MS and MSD. The MS and MSD passed recoveries for all the analytes. The LCS passed recoveries for all the analytes. The data are reported.

Internal Standard (ISTD) Acceptance

Samples 1203217575 (J1V1L2MSD) and 361900001 (J1V1L2) (J1V1L2) failed internal standards. Since the associated MS(1203217574) displayed similar, but passing, responses, the failures were attributed to sample matrix interference and the data are reported.

Technical Information:

Holding Time Specifications
All samples in this SDG in this batch met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported compound mass spectra met the detection specifications in the method.

Sample Dilutions
The samples in this SDG in this batch did not require dilutions.

Sample Re-extraction/Re-analysis
Sample 361900010 (J1V1L5) was re-analyzed due to internal standard responses (ISTD) outside of the acceptance criteria. The sample passed acceptance criteria. The re-analysis data are reported.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception report 1360498 was generated for the samples in this batch for this SDG.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations. Manual integrations, if any, are included with the raw data.

TIC Comment
Tentatively identified compounds (TIC) may be requested for samples 1203217572 (MB), 361900001 (J1V1L2), 361900002 (J1V1L3), 361900003 (J1V1L8), 361900004 (J1V1L9), 361900005 (J1V1M1), 361900006 (J1V1M2), 361900007 (J1V1L0), 361900008 (J1V1L1), 361900009 (J1V1L4), 361900010 (J1V1L5), 361900011 (J1V1L6), 361900012 (J1V1L7) and 361900013 (J1V1M0) in this delivery group/work order. Please note that non-requested calibrated analytes detected in a client sample may be reported on the Form 1/Certificate of Analysis as TICs. TIC data, if requested, are included on the Sample Data Summary (Form 1) and are also included with the sample raw data.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

Due to rounding differences in the calculation, the data reported in the Surrogate Recovery Report may differ slightly from the raw data. Due to software issue, the raw data may not correctly display the updated SPC limits. Please see Sample Data Summary Report and Surrogate Recovery Report for the correct surrogate acceptance limits.

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the reviewer name associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

System Configuration

The Semi-Volatile-GC/MS analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
MSD5.I	Agilent 6890/5973 GC/MS w/ 7683 Autosampler	HP6890/HP5973	DB-5MS	25m x 0.2mm, 0.33um (5% Phenylmethylpolysiloxane)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
01-DEC-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
SEMIVOA GC/MS	SW846 3541/8270D	Solid	WCHN
Batch ID:	**Sample Numbers:**		
1439085	See Below		

Potentially affected work order(s)(SDG): 361900(XP0168)

Application Issues:

Failed RPD for MS/MSD, or PS/PSD

Specification and Requirements Exception Description:	DER Disposition:
1. The RPD values between the MS(1203217574) and MSD(1203217575) were not within the 0-30% limits for multiple analytes. Please see the QC Summary/Spike Recovery Report for the specific values.	1. These RPD failures are attributed to the large difference in the recovery values between analyte pairs in the MS and MSD. The MS and MSD passed recoveries for all the analytes. The LCS passed recoveries for all the analytes. The data are reported.

Originator's Name:

Richard Bomar 01-DEC-14

Data Validator/Group Leader:

Herbert Maier 01-DEC-14

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Qualifier Definition Report
for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0168 GEL Work Order: 361900 Project: RC-107 Soil

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

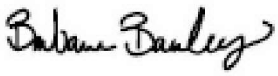
RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Barbara Bailey**

Date: 04 DEC 2014 **Title: Data Validator**

Sample Data Summary

GEL LABORATORIES LLC
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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L2
Sample ID: 361900001
Matrix: Soil
Collect Date: 20-NOV-14 11:02
Receive Date: 25-NOV-14
Collector: Client
Moisture: 2.5%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	102	102	341	ug/kg	1	RMB 11/26/14	1154	1439085	1
1,2-Dichlorobenzene	U	102	102	341	ug/kg	1				
1,3-Dichlorobenzene	U	102	102	341	ug/kg	1				
1,4-Dichlorobenzene	U	102	102	341	ug/kg	1				
2,4,5-Trichlorophenol	U	102	102	341	ug/kg	1				
2,4,6-Trichlorophenol	U	102	102	341	ug/kg	1				
2,4-Dichlorophenol	U	102	102	341	ug/kg	1				
2,4-Dimethylphenol	U	102	102	341	ug/kg	1				
2,4-Dinitrophenol	U	102	102	682	ug/kg	1				
2,4-Dinitrotoluene	U	102	102	341	ug/kg	1				
2,6-Dinitrotoluene	U	102	102	341	ug/kg	1				
2-Chloronaphthalene	U	10.2	10.2	34.1	ug/kg	1				
2-Chlorophenol	U	102	102	341	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	102	102	341	ug/kg	1				
2-Methylnaphthalene	U	10.2	10.2	34.1	ug/kg	1				
2-Nitrophenol	U	102	102	341	ug/kg	1				
3,3'-Dichlorobenzidine	U	102	102	341	ug/kg	1				
4-Bromophenylphenylether	U	102	102	341	ug/kg	1				
4-Chloro-3-methylphenol	U	136	136	341	ug/kg	1				
4-Chloroaniline	U	102	102	341	ug/kg	1				
4-Chlorophenylphenylether	U	102	102	341	ug/kg	1				
4-Nitrophenol	U	102	102	341	ug/kg	1				
Acenaphthene	U	10.2	10.2	34.1	ug/kg	1				
Acenaphthylene	U	10.2	10.2	34.1	ug/kg	1				
Anthracene	U	10.2	10.2	34.1	ug/kg	1				
Benzo(a)anthracene	U	10.2	10.2	34.1	ug/kg	1				
Benzo(a)pyrene	U	10.2	10.2	34.1	ug/kg	1				
Benzo(b)fluoranthene	U	10.2	10.2	34.1	ug/kg	1				
Benzo(ghi)perylene	U	10.2	10.2	34.1	ug/kg	1				
Benzo(k)fluoranthene	U	10.2	10.2	34.1	ug/kg	1				
Butylbenzylphthalate	U	102	102	341	ug/kg	1				
Carbazole	U	10.2	10.2	34.1	ug/kg	1				
Chrysene	U	10.2	10.2	34.1	ug/kg	1				

Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Report Date: December 1, 2014
Contact: Joan Kessner
Project: **RC-107 Soil**
Client SDG: XP0168

Client Sample ID: J1V1L2
Sample ID: 361900001
Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	102	102	341	ug/kg	1				
Di-n-octylphthalate	U	102	102	341	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.2	10.2	34.1	ug/kg	1				
Dibenzofuran	U	102	102	341	ug/kg	1				
Diethylphthalate	U	102	102	341	ug/kg	1				
Dimethylphthalate	U	102	102	341	ug/kg	1				
Diphenylamine	U	102	102	341	ug/kg	1				
Fluoranthene	J	13.6	10.2	34.1	ug/kg	1				
Fluorene	U	10.2	10.2	34.1	ug/kg	1				
Hexachlorobenzene	U	102	102	341	ug/kg	1				
Hexachlorobutadiene	U	102	102	341	ug/kg	1				
Hexachlorocyclopentadiene	U	102	102	341	ug/kg	1				
Hexachloroethane	U	102	102	341	ug/kg	1				
Indeno(1,2,3-cd)pyrene	U	10.2	10.2	34.1	ug/kg	1				
Isophorone	U	102	102	341	ug/kg	1				
N-Nitrosodipropylamine	U	102	102	341	ug/kg	1				
Naphthalene	U	10.2	10.2	34.1	ug/kg	1				
Nitrobenzene	U	102	102	341	ug/kg	1				
Pentachlorophenol	U	102	102	341	ug/kg	1				
Phenanthrene	U	10.2	10.2	34.1	ug/kg	1				
Phenol	U	102	102	341	ug/kg	1				
Pyrene	J	13.0	10.2	34.1	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	102	102	341	ug/kg	1				
bis(2-Chloroethoxy)methane	U	102	102	341	ug/kg	1				
bis(2-Chloroethyl) ether	U	102	102	341	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	102	102	341	ug/kg	1				
3- and/or 4-Methylphenol	U	102	102	341	ug/kg	1				
m-Nitroaniline	U	102	102	341	ug/kg	1				
o-Cresol	U	102	102	341	ug/kg	1				
o-Nitroaniline	U	113	113	341	ug/kg	1				
p-Nitroaniline	U	102	102	341	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 11 54*
2,4,6-Tribromophenol	1470 ug/kg	3410	43.1	(20%-122%)		
2-Fluorophenol	1540 ug/kg	3410	45.2	(23%-107%)		
Phenol-d5	1540 ug/kg	3410	45.1	(25%-108%)		
p-Terphenyl-d14	651 ug/kg	1700	38.2	(31%-124%)		
Nitrobenzene-d5	804 ug/kg	1700	47.2	(21%-103%)		

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
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Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L2
Sample ID: 361900001

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
2-Fluorobiphenyl		816 ug/kg	1700	47.8	(25%-100%)						

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 11 54*
Trichloromethane	000067-66-3	2.025	161 ug/kg	94	NJ		
Furan, 2,5-dimethyl-	000625-86-5	2.525	377 ug/kg	91	NJ		
Unknown Aldol Condensate		3.816	5460 ug/kg		AJ		
5-Eicosene, (E)-	074685-30-6	15.121	486 ug/kg	97	NJ		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L3
Sample ID: 361900002
Matrix: Soil
Collect Date: 20-NOV-14 10:51
Receive Date: 25-NOV-14
Collector: Client
Moisture: 1.67%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	102	102	339	ug/kg	1	RMB 11/26/14	1329	1439085	1
1,2-Dichlorobenzene	U	102	102	339	ug/kg	1				
1,3-Dichlorobenzene	U	102	102	339	ug/kg	1				
1,4-Dichlorobenzene	U	102	102	339	ug/kg	1				
2,4,5-Trichlorophenol	U	102	102	339	ug/kg	1				
2,4,6-Trichlorophenol	U	102	102	339	ug/kg	1				
2,4-Dichlorophenol	U	102	102	339	ug/kg	1				
2,4-Dimethylphenol	U	102	102	339	ug/kg	1				
2,4-Dinitrophenol	U	102	102	677	ug/kg	1				
2,4-Dinitrotoluene	U	102	102	339	ug/kg	1				
2,6-Dinitrotoluene	U	102	102	339	ug/kg	1				
2-Chloronaphthalene	U	10.2	10.2	33.9	ug/kg	1				
2-Chlorophenol	U	102	102	339	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	102	102	339	ug/kg	1				
2-Methylnaphthalene	U	10.2	10.2	33.9	ug/kg	1				
2-Nitrophenol	U	102	102	339	ug/kg	1				
3,3'-Dichlorobenzidine	U	102	102	339	ug/kg	1				
4-Bromophenylphenylether	U	102	102	339	ug/kg	1				
4-Chloro-3-methylphenol	U	135	135	339	ug/kg	1				
4-Chloroaniline	U	102	102	339	ug/kg	1				
4-Chlorophenylphenylether	U	102	102	339	ug/kg	1				
4-Nitrophenol	U	102	102	339	ug/kg	1				
Acenaphthene	U	10.2	10.2	33.9	ug/kg	1				
Acenaphthylene	U	10.2	10.2	33.9	ug/kg	1				
Anthracene	U	10.2	10.2	33.9	ug/kg	1				
Benzo(a)anthracene	U	10.2	10.2	33.9	ug/kg	1				
Benzo(a)pyrene	U	10.2	10.2	33.9	ug/kg	1				
Benzo(b)fluoranthene	U	10.2	10.2	33.9	ug/kg	1				
Benzo(ghi)perylene	U	10.2	10.2	33.9	ug/kg	1				
Benzo(k)fluoranthene	U	10.2	10.2	33.9	ug/kg	1				
Butylbenzylphthalate	U	102	102	339	ug/kg	1				
Carbazole	U	10.2	10.2	33.9	ug/kg	1				
Chrysene	U	10.2	10.2	33.9	ug/kg	1				

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L3
Sample ID: 361900002

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	102	102	339	ug/kg	1				
Di-n-octylphthalate	U	102	102	339	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.2	10.2	33.9	ug/kg	1				
Dibenzofuran	U	102	102	339	ug/kg	1				
Diethylphthalate	U	102	102	339	ug/kg	1				
Dimethylphthalate	U	102	102	339	ug/kg	1				
Diphenylamine	U	102	102	339	ug/kg	1				
Fluoranthene	U	10.2	10.2	33.9	ug/kg	1				
Fluorene	U	10.2	10.2	33.9	ug/kg	1				
Hexachlorobenzene	U	102	102	339	ug/kg	1				
Hexachlorobutadiene	U	102	102	339	ug/kg	1				
Hexachlorocyclopentadiene	U	102	102	339	ug/kg	1				
Hexachloroethane	U	102	102	339	ug/kg	1				
Indeno(1,2,3-cd)pyrene	U	10.2	10.2	33.9	ug/kg	1				
Isophorone	U	102	102	339	ug/kg	1				
N-Nitrosodipropylamine	U	102	102	339	ug/kg	1				
Naphthalene	U	10.2	10.2	33.9	ug/kg	1				
Nitrobenzene	U	102	102	339	ug/kg	1				
Pentachlorophenol	U	102	102	339	ug/kg	1				
Phenanthrene	U	10.2	10.2	33.9	ug/kg	1				
Phenol	U	102	102	339	ug/kg	1				
Pyrene	U	10.2	10.2	33.9	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	102	102	339	ug/kg	1				
bis(2-Chloroethoxy)methane	U	102	102	339	ug/kg	1				
bis(2-Chloroethyl) ether	U	102	102	339	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	102	102	339	ug/kg	1				
3- and/or 4-Methylphenol	U	102	102	339	ug/kg	1				
m-Nitroaniline	U	102	102	339	ug/kg	1				
o-Cresol	U	102	102	339	ug/kg	1				
o-Nitroaniline	U	112	112	339	ug/kg	1				
p-Nitroaniline	U	102	102	339	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 13 29*
2-Fluorobiphenyl	1010 ug/kg	1690	59.8	(25%-100%)		
Phenol-d5	1960 ug/kg	3390	58.0	(25%-108%)		
2-Fluorophenol	1970 ug/kg	3390	58.2	(23%-107%)		
2,4,6-Tribromophenol	2000 ug/kg	3390	59.2	(20%-122%)		
p-Terphenyl-d14	856 ug/kg	1690	50.6	(31%-124%)		

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L3
Sample ID: 361900002

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
Nitrobenzene-d5		996 ug/kg	1690	58.8	(21%-103%)						

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 13 29*
Trichloromethane	000067-66-3	2.015	181 ug/kg	97	NJ		
Furan, 2,5-dimethyl-	000625-86-5	2.52	278 ug/kg	94	NJ		
Unknown Aldol Condensate		3.82	6750 ug/kg		AJ		
Cyclopentane, (2-methylpropyl)-	003788-32-7	15.139	578 ug/kg	86	NJ		
unknown		22.025	144 ug/kg	0	J		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L8
Sample ID: 361900003
Matrix: Soil
Collect Date: 20-NOV-14 10:08
Receive Date: 25-NOV-14
Collector: Client
Moisture: 3.57%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	103	103	345	ug/kg	1	RMB 11/26/14	1400	1439085	1
1,2-Dichlorobenzene	U	103	103	345	ug/kg	1				
1,3-Dichlorobenzene	U	103	103	345	ug/kg	1				
1,4-Dichlorobenzene	U	103	103	345	ug/kg	1				
2,4,5-Trichlorophenol	U	103	103	345	ug/kg	1				
2,4,6-Trichlorophenol	U	103	103	345	ug/kg	1				
2,4-Dichlorophenol	U	103	103	345	ug/kg	1				
2,4-Dimethylphenol	U	103	103	345	ug/kg	1				
2,4-Dinitrophenol	U	103	103	689	ug/kg	1				
2,4-Dinitrotoluene	U	103	103	345	ug/kg	1				
2,6-Dinitrotoluene	U	103	103	345	ug/kg	1				
2-Chloronaphthalene	U	10.3	10.3	34.5	ug/kg	1				
2-Chlorophenol	U	103	103	345	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	103	103	345	ug/kg	1				
2-Methylnaphthalene	U	10.3	10.3	34.5	ug/kg	1				
2-Nitrophenol	U	103	103	345	ug/kg	1				
3,3'-Dichlorobenzidine	U	103	103	345	ug/kg	1				
4-Bromophenylphenylether	U	103	103	345	ug/kg	1				
4-Chloro-3-methylphenol	U	138	138	345	ug/kg	1				
4-Chloroaniline	U	103	103	345	ug/kg	1				
4-Chlorophenylphenylether	U	103	103	345	ug/kg	1				
4-Nitrophenol	U	103	103	345	ug/kg	1				
Acenaphthene	U	10.3	10.3	34.5	ug/kg	1				
Acenaphthylene	U	10.3	10.3	34.5	ug/kg	1				
Anthracene	U	10.3	10.3	34.5	ug/kg	1				
Benzo(a)anthracene	J	12.1	10.3	34.5	ug/kg	1				
Benzo(a)pyrene	U	10.3	10.3	34.5	ug/kg	1				
Benzo(b)fluoranthene	J	13.4	10.3	34.5	ug/kg	1				
Benzo(ghi)perylene	U	10.3	10.3	34.5	ug/kg	1				
Benzo(k)fluoranthene	U	10.3	10.3	34.5	ug/kg	1				
Butylbenzylphthalate	U	103	103	345	ug/kg	1				
Carbazole	U	10.3	10.3	34.5	ug/kg	1				
Chrysene	U	10.3	10.3	34.5	ug/kg	1				

Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Report Date: December 1, 2014
Contact: Joan Kessner
Project: **RC-107 Soil**
Client SDG: XP0168

Client Sample ID: J1V1L8
Sample ID: 361900003
Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	103	103	345	ug/kg	1				
Di-n-octylphthalate	U	103	103	345	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.3	10.3	34.5	ug/kg	1				
Dibenzofuran	U	103	103	345	ug/kg	1				
Diethylphthalate	U	103	103	345	ug/kg	1				
Dimethylphthalate	U	103	103	345	ug/kg	1				
Diphenylamine	U	103	103	345	ug/kg	1				
Fluoranthene	J	15.9	10.3	34.5	ug/kg	1				
Fluorene	U	10.3	10.3	34.5	ug/kg	1				
Hexachlorobenzene	U	103	103	345	ug/kg	1				
Hexachlorobutadiene	U	103	103	345	ug/kg	1				
Hexachlorocyclopentadiene	U	103	103	345	ug/kg	1				
Hexachloroethane	U	103	103	345	ug/kg	1				
Indeno(1,2,3-cd)pyrene	U	10.3	10.3	34.5	ug/kg	1				
Isophorone	U	103	103	345	ug/kg	1				
N-Nitrosodipropylamine	U	103	103	345	ug/kg	1				
Naphthalene	U	10.3	10.3	34.5	ug/kg	1				
Nitrobenzene	U	103	103	345	ug/kg	1				
Pentachlorophenol	U	103	103	345	ug/kg	1				
Phenanthrene	U	10.3	10.3	34.5	ug/kg	1				
Phenol	U	103	103	345	ug/kg	1				
Pyrene	J	12.4	10.3	34.5	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	103	103	345	ug/kg	1				
bis(2-Chloroethoxy)methane	U	103	103	345	ug/kg	1				
bis(2-Chloroethyl) ether	U	103	103	345	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	103	103	345	ug/kg	1				
3- and/or 4-Methylphenol	U	103	103	345	ug/kg	1				
m-Nitroaniline	U	103	103	345	ug/kg	1				
o-Cresol	U	103	103	345	ug/kg	1				
o-Nitroaniline	U	114	114	345	ug/kg	1				
p-Nitroaniline	U	103	103	345	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 14 00*
p-Terphenyl-d14	1080 ug/kg	1720	62.5	(31%-124%)		
Nitrobenzene-d5	1230 ug/kg	1720	71.4	(21%-103%)		
2-Fluorobiphenyl	1230 ug/kg	1720	71.1	(25%-100%)		
2-Fluorophenol	2320 ug/kg	3450	67.3	(23%-107%)		
Phenol-d5	2350 ug/kg	3450	68.0	(25%-108%)		

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L8
Sample ID: 361900003

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
2,4,6-Tribromophenol		2540 ug/kg	3450	73.8	(20%-122%)						

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 14 00*
Trichloromethane	000067-66-3	2.015	208 ug/kg	95	NJ		
Furan, 2,5-dimethyl-	000625-86-5	2.515	379 ug/kg	94	NJ		
unknown		3.544	163 ug/kg	0	J		
Unknown Aldol Condensate		3.82	8040 ug/kg		AJ		
1-Docosene	001599-67-3	15.13	850 ug/kg	99	NJ		
9-Octadecenamide, (Z)-	000301-02-0	17.259	253 ug/kg	86	NJ		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L9
Sample ID: 361900004
Matrix: Soil
Collect Date: 20-NOV-14 10:38
Receive Date: 25-NOV-14
Collector: Client
Moisture: 4.25%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	104	104	348	ug/kg	1	RMB 11/26/14	1432	1439085	1
1,2-Dichlorobenzene	U	104	104	348	ug/kg	1				
1,3-Dichlorobenzene	U	104	104	348	ug/kg	1				
1,4-Dichlorobenzene	U	104	104	348	ug/kg	1				
2,4,5-Trichlorophenol	U	104	104	348	ug/kg	1				
2,4,6-Trichlorophenol	U	104	104	348	ug/kg	1				
2,4-Dichlorophenol	U	104	104	348	ug/kg	1				
2,4-Dimethylphenol	U	104	104	348	ug/kg	1				
2,4-Dinitrophenol	U	104	104	696	ug/kg	1				
2,4-Dinitrotoluene	U	104	104	348	ug/kg	1				
2,6-Dinitrotoluene	U	104	104	348	ug/kg	1				
2-Chloronaphthalene	U	10.4	10.4	34.8	ug/kg	1				
2-Chlorophenol	U	104	104	348	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	104	104	348	ug/kg	1				
2-Methylnaphthalene	U	10.4	10.4	34.8	ug/kg	1				
2-Nitrophenol	U	104	104	348	ug/kg	1				
3,3'-Dichlorobenzidine	U	104	104	348	ug/kg	1				
4-Bromophenylphenylether	U	104	104	348	ug/kg	1				
4-Chloro-3-methylphenol	U	139	139	348	ug/kg	1				
4-Chloroaniline	U	104	104	348	ug/kg	1				
4-Chlorophenylphenylether	U	104	104	348	ug/kg	1				
4-Nitrophenol	U	104	104	348	ug/kg	1				
Acenaphthene	U	10.4	10.4	34.8	ug/kg	1				
Acenaphthylene	U	10.4	10.4	34.8	ug/kg	1				
Anthracene	U	10.4	10.4	34.8	ug/kg	1				
Benzo(a)anthracene	J	23.3	10.4	34.8	ug/kg	1				
Benzo(a)pyrene	J	20.2	10.4	34.8	ug/kg	1				
Benzo(b)fluoranthene	J	29.2	10.4	34.8	ug/kg	1				
Benzo(ghi)perylene	J	11.8	10.4	34.8	ug/kg	1				
Benzo(k)fluoranthene	U	10.4	10.4	34.8	ug/kg	1				
Butylbenzylphthalate	U	104	104	348	ug/kg	1				
Carbazole	U	10.4	10.4	34.8	ug/kg	1				
Chrysene	J	21.9	10.4	34.8	ug/kg	1				

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
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Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L9
Sample ID: 361900004

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	104	104	348	ug/kg	1				
Di-n-octylphthalate	U	104	104	348	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.4	10.4	34.8	ug/kg	1				
Dibenzofuran	U	104	104	348	ug/kg	1				
Diethylphthalate	U	104	104	348	ug/kg	1				
Dimethylphthalate	U	104	104	348	ug/kg	1				
Diphenylamine	U	104	104	348	ug/kg	1				
Fluoranthene		44.2	10.4	34.8	ug/kg	1				
Fluorene	U	10.4	10.4	34.8	ug/kg	1				
Hexachlorobenzene	U	104	104	348	ug/kg	1				
Hexachlorobutadiene	U	104	104	348	ug/kg	1				
Hexachlorocyclopentadiene	U	104	104	348	ug/kg	1				
Hexachloroethane	U	104	104	348	ug/kg	1				
Indeno(1,2,3-cd)pyrene	J	13.6	10.4	34.8	ug/kg	1				
Isophorone	U	104	104	348	ug/kg	1				
N-Nitrosodipropylamine	U	104	104	348	ug/kg	1				
Naphthalene	U	10.4	10.4	34.8	ug/kg	1				
Nitrobenzene	U	104	104	348	ug/kg	1				
Pentachlorophenol	U	104	104	348	ug/kg	1				
Phenanthrene	J	29.9	10.4	34.8	ug/kg	1				
Phenol	U	104	104	348	ug/kg	1				
Pyrene	J	31.3	10.4	34.8	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	104	104	348	ug/kg	1				
bis(2-Chloroethoxy)methane	U	104	104	348	ug/kg	1				
bis(2-Chloroethyl) ether	U	104	104	348	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	104	104	348	ug/kg	1				
3- and/or 4-Methylphenol	U	104	104	348	ug/kg	1				
m-Nitroaniline	U	104	104	348	ug/kg	1				
o-Cresol	U	104	104	348	ug/kg	1				
o-Nitroaniline	U	115	115	348	ug/kg	1				
p-Nitroaniline	U	104	104	348	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 14 32*
Nitrobenzene-d5	1090 ug/kg	1740	62.9	(21%-103%)		
2-Fluorobiphenyl	1110 ug/kg	1740	64.0	(25%-100%)		
2-Fluorophenol	2050 ug/kg	3480	58.9	(23%-107%)		
Phenol-d5	2100 ug/kg	3480	60.4	(25%-108%)		
2,4,6-Tribromophenol	2330 ug/kg	3480	66.9	(20%-122%)		

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
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Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L9
Sample ID: 361900004

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
p-Terphenyl-d14		970 ug/kg	1740	55.7	(31%-124%)					

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 14 32*
unknown		2.015	178 ug/kg	0	J		
Unknown Aldol Condensate		3.82	7250 ug/kg		AJ		
unknown		4.93	157 ug/kg	0	J		
unknown		6.082	149 ug/kg	0	J		
unknown		6.158	160 ug/kg	0	J		
n-Hexadecanoic acid	000057-10-3	12.439	168 ug/kg	96	NJ		
Octadecanoic acid	000057-11-4	13.416	174 ug/kg	97	NJ		
unknown		14.059	181 ug/kg	0	J		
1-Docosene	001599-67-3	15.154	507 ug/kg	94	NJ		
Tridecane, 1-iodo-	035599-77-0	16.525	257 ug/kg	86	NJ		
Hexacosane	000630-01-3	17.992	179 ug/kg	89	NJ		
Heneicosane	000629-94-7	18.382	519 ug/kg	90	NJ		
1,16-Hexadecanediol	007735-42-4	20.059	264 ug/kg	90	NJ		
Sulfurous acid, butyl dodecyl este	1000309-17-9	20.797	363 ug/kg	90	NJ		
unknown		21.063	485 ug/kg	0	J		
1,21-Docosadiene	053057-53-7	22.463	314 ug/kg	87	NJ		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
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Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1M1
Sample ID: 361900005
Matrix: Soil
Collect Date: 20-NOV-14 10:26
Receive Date: 25-NOV-14
Collector: Client
Moisture: 2.94%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	103	103	343	ug/kg	1	RMB 11/26/14	1503	1439085	1
1,2-Dichlorobenzene	U	103	103	343	ug/kg	1				
1,3-Dichlorobenzene	U	103	103	343	ug/kg	1				
1,4-Dichlorobenzene	U	103	103	343	ug/kg	1				
2,4,5-Trichlorophenol	U	103	103	343	ug/kg	1				
2,4,6-Trichlorophenol	U	103	103	343	ug/kg	1				
2,4-Dichlorophenol	U	103	103	343	ug/kg	1				
2,4-Dimethylphenol	U	103	103	343	ug/kg	1				
2,4-Dinitrophenol	U	103	103	687	ug/kg	1				
2,4-Dinitrotoluene	U	103	103	343	ug/kg	1				
2,6-Dinitrotoluene	U	103	103	343	ug/kg	1				
2-Chloronaphthalene	U	10.3	10.3	34.3	ug/kg	1				
2-Chlorophenol	U	103	103	343	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	103	103	343	ug/kg	1				
2-Methylnaphthalene	U	10.3	10.3	34.3	ug/kg	1				
2-Nitrophenol	U	103	103	343	ug/kg	1				
3,3'-Dichlorobenzidine	U	103	103	343	ug/kg	1				
4-Bromophenylphenylether	U	103	103	343	ug/kg	1				
4-Chloro-3-methylphenol	U	137	137	343	ug/kg	1				
4-Chloroaniline	U	103	103	343	ug/kg	1				
4-Chlorophenylphenylether	U	103	103	343	ug/kg	1				
4-Nitrophenol	U	103	103	343	ug/kg	1				
Acenaphthene	U	10.3	10.3	34.3	ug/kg	1				
Acenaphthylene	U	10.3	10.3	34.3	ug/kg	1				
Anthracene	U	10.3	10.3	34.3	ug/kg	1				
Benzo(a)anthracene	U	10.3	10.3	34.3	ug/kg	1				
Benzo(a)pyrene	U	10.3	10.3	34.3	ug/kg	1				
Benzo(b)fluoranthene	U	10.3	10.3	34.3	ug/kg	1				
Benzo(ghi)perylene	U	10.3	10.3	34.3	ug/kg	1				
Benzo(k)fluoranthene	U	10.3	10.3	34.3	ug/kg	1				
Butylbenzylphthalate	U	103	103	343	ug/kg	1				
Carbazole	U	10.3	10.3	34.3	ug/kg	1				
Chrysene	U	10.3	10.3	34.3	ug/kg	1				

Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1M1
Sample ID: 361900005

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	103	103	343	ug/kg	1				
Di-n-octylphthalate	U	103	103	343	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.3	10.3	34.3	ug/kg	1				
Dibenzofuran	U	103	103	343	ug/kg	1				
Diethylphthalate	U	103	103	343	ug/kg	1				
Dimethylphthalate	U	103	103	343	ug/kg	1				
Diphenylamine	U	103	103	343	ug/kg	1				
Fluoranthene	U	10.3	10.3	34.3	ug/kg	1				
Fluorene	U	10.3	10.3	34.3	ug/kg	1				
Hexachlorobenzene	U	103	103	343	ug/kg	1				
Hexachlorobutadiene	U	103	103	343	ug/kg	1				
Hexachlorocyclopentadiene	U	103	103	343	ug/kg	1				
Hexachloroethane	U	103	103	343	ug/kg	1				
Indeno(1,2,3-cd)pyrene	U	10.3	10.3	34.3	ug/kg	1				
Isophorone	U	103	103	343	ug/kg	1				
N-Nitrosodipropylamine	U	103	103	343	ug/kg	1				
Naphthalene	U	10.3	10.3	34.3	ug/kg	1				
Nitrobenzene	U	103	103	343	ug/kg	1				
Pentachlorophenol	U	103	103	343	ug/kg	1				
Phenanthrene	U	10.3	10.3	34.3	ug/kg	1				
Phenol	U	103	103	343	ug/kg	1				
Pyrene	U	10.3	10.3	34.3	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	103	103	343	ug/kg	1				
bis(2-Chloroethoxy)methane	U	103	103	343	ug/kg	1				
bis(2-Chloroethyl) ether	U	103	103	343	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	103	103	343	ug/kg	1				
3- and/or 4-Methylphenol	U	103	103	343	ug/kg	1				
m-Nitroaniline	U	103	103	343	ug/kg	1				
o-Cresol	U	103	103	343	ug/kg	1				
o-Nitroaniline	U	113	113	343	ug/kg	1				
p-Nitroaniline	U	103	103	343	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 15 03*
p-Terphenyl-d14	1020 ug/kg	1720	59.4	(31%-124%)		
2-Fluorobiphenyl	1110 ug/kg	1720	64.4	(25%-100%)		
Nitrobenzene-d5	1120 ug/kg	1720	65.0	(21%-103%)		
2-Fluorophenol	2110 ug/kg	3430	61.4	(23%-107%)		
Phenol-d5	2150 ug/kg	3430	62.5	(25%-108%)		

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Certificate of Analysis

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Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1M1
Sample ID: 361900005

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
2,4,6-Tribromophenol		2160		3430	62.8	ug/kg	(20%-122%)				

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 15 03*
Trichloromethane	000067-66-3	2.02	175 ug/kg	94	NJ		
Furan, 2,5-dimethyl-	000625-86-5	2.52	322 ug/kg	95	NJ		
unknown		3.549	153 ug/kg	0	J		
Unknown Aldol Condensate		3.825	7740 ug/kg		AJ		
unknown		14.058	143 ug/kg	0	J		
1-Docosene	001599-67-3	15.144	711 ug/kg	94	NJ		
unknown		20.792	313 ug/kg	0	J		
unknown		22.925	383 ug/kg	0	J		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1M2
Sample ID: 361900006
Matrix: Soil
Collect Date: 20-NOV-14 10:08
Receive Date: 25-NOV-14
Collector: Client
Moisture: 3.32%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	103	103	344	ug/kg	1	RMB 11/26/14	1534	1439085	1
1,2-Dichlorobenzene	U	103	103	344	ug/kg	1				
1,3-Dichlorobenzene	U	103	103	344	ug/kg	1				
1,4-Dichlorobenzene	U	103	103	344	ug/kg	1				
2,4,5-Trichlorophenol	U	103	103	344	ug/kg	1				
2,4,6-Trichlorophenol	U	103	103	344	ug/kg	1				
2,4-Dichlorophenol	U	103	103	344	ug/kg	1				
2,4-Dimethylphenol	U	103	103	344	ug/kg	1				
2,4-Dinitrophenol	U	103	103	688	ug/kg	1				
2,4-Dinitrotoluene	U	103	103	344	ug/kg	1				
2,6-Dinitrotoluene	U	103	103	344	ug/kg	1				
2-Chloronaphthalene	U	10.3	10.3	34.4	ug/kg	1				
2-Chlorophenol	U	103	103	344	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	103	103	344	ug/kg	1				
2-Methylnaphthalene	U	10.3	10.3	34.4	ug/kg	1				
2-Nitrophenol	U	103	103	344	ug/kg	1				
3,3'-Dichlorobenzidine	U	103	103	344	ug/kg	1				
4-Bromophenylphenylether	U	103	103	344	ug/kg	1				
4-Chloro-3-methylphenol	U	138	138	344	ug/kg	1				
4-Chloroaniline	U	103	103	344	ug/kg	1				
4-Chlorophenylphenylether	U	103	103	344	ug/kg	1				
4-Nitrophenol	U	103	103	344	ug/kg	1				
Acenaphthene	U	10.3	10.3	34.4	ug/kg	1				
Acenaphthylene	U	10.3	10.3	34.4	ug/kg	1				
Anthracene	U	10.3	10.3	34.4	ug/kg	1				
Benzo(a)anthracene	J	15.8	10.3	34.4	ug/kg	1				
Benzo(a)pyrene	J	10.7	10.3	34.4	ug/kg	1				
Benzo(b)fluoranthene	J	13.4	10.3	34.4	ug/kg	1				
Benzo(ghi)perylene	U	10.3	10.3	34.4	ug/kg	1				
Benzo(k)fluoranthene	U	10.3	10.3	34.4	ug/kg	1				
Butylbenzylphthalate	U	103	103	344	ug/kg	1				
Carbazole	U	10.3	10.3	34.4	ug/kg	1				
Chrysene	J	11.4	10.3	34.4	ug/kg	1				

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1M2
Sample ID: 361900006

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	103	103	344	ug/kg	1				
Di-n-octylphthalate	U	103	103	344	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.3	10.3	34.4	ug/kg	1				
Dibenzofuran	U	103	103	344	ug/kg	1				
Diethylphthalate	U	103	103	344	ug/kg	1				
Dimethylphthalate	U	103	103	344	ug/kg	1				
Diphenylamine	U	103	103	344	ug/kg	1				
Fluoranthene	J	23.1	10.3	34.4	ug/kg	1				
Fluorene	U	10.3	10.3	34.4	ug/kg	1				
Hexachlorobenzene	U	103	103	344	ug/kg	1				
Hexachlorobutadiene	U	103	103	344	ug/kg	1				
Hexachlorocyclopentadiene	U	103	103	344	ug/kg	1				
Hexachloroethane	U	103	103	344	ug/kg	1				
Indeno(1,2,3-cd)pyrene	U	10.3	10.3	34.4	ug/kg	1				
Isophorone	U	103	103	344	ug/kg	1				
N-Nitrosodipropylamine	U	103	103	344	ug/kg	1				
Naphthalene	U	10.3	10.3	34.4	ug/kg	1				
Nitrobenzene	U	103	103	344	ug/kg	1				
Pentachlorophenol	U	103	103	344	ug/kg	1				
Phenanthrene	J	14.1	10.3	34.4	ug/kg	1				
Phenol	U	103	103	344	ug/kg	1				
Pyrene	J	19.3	10.3	34.4	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	103	103	344	ug/kg	1				
bis(2-Chloroethoxy)methane	U	103	103	344	ug/kg	1				
bis(2-Chloroethyl) ether	U	103	103	344	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	103	103	344	ug/kg	1				
3- and/or 4-Methylphenol	U	103	103	344	ug/kg	1				
m-Nitroaniline	U	103	103	344	ug/kg	1				
o-Cresol	U	103	103	344	ug/kg	1				
o-Nitroaniline	U	114	114	344	ug/kg	1				
p-Nitroaniline	U	103	103	344	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 15 34*
p-Terphenyl-d14	1050 ug/kg	1720	61.2	(31%-124%)		
Nitrobenzene-d5	1120 ug/kg	1720	64.8	(21%-103%)		
2-Fluorobiphenyl	1160 ug/kg	1720	67.5	(25%-100%)		
2-Fluorophenol	2150 ug/kg	3440	62.5	(23%-107%)		
Phenol-d5	2190 ug/kg	3440	63.6	(25%-108%)		

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Certificate of Analysis

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Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1M2
Sample ID: 361900006

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
2,4,6-Tribromophenol		2390		3440	ug/kg	69.5	(20%-122%)				

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 15 34*
Trichloromethane	000067-66-3	2.01	179 ug/kg	94	NJ		
Furan, 2,5-dimethyl-	000625-86-5	2.515	199 ug/kg	91	NJ		
unknown		3.544	157 ug/kg	0	J		
Unknown Aldol Condensate		3.82	7590 ug/kg		AJ		
1-Docosene	001599-67-3	15.144	747 ug/kg	91	NJ		
Octacosane	000630-02-4	18.377	289 ug/kg	90	NJ		
unknown		20.792	139 ug/kg	0	J		
unknown		21.139	507 ug/kg	0	J		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L0
Sample ID: 361900007
Matrix: Soil
Collect Date: 20-NOV-14 08:11
Receive Date: 25-NOV-14
Collector: Client
Moisture: 6.64%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
1,2,4-Trichlorobenzene	U	107	107	357	ug/kg	1	RMB	11/26/14	1606	1439085	1
1,2-Dichlorobenzene	U	107	107	357	ug/kg	1					
1,3-Dichlorobenzene	U	107	107	357	ug/kg	1					
1,4-Dichlorobenzene	U	107	107	357	ug/kg	1					
2,4,5-Trichlorophenol	U	107	107	357	ug/kg	1					
2,4,6-Trichlorophenol	U	107	107	357	ug/kg	1					
2,4-Dichlorophenol	U	107	107	357	ug/kg	1					
2,4-Dimethylphenol	U	107	107	357	ug/kg	1					
2,4-Dinitrophenol	U	107	107	714	ug/kg	1					
2,4-Dinitrotoluene	U	107	107	357	ug/kg	1					
2,6-Dinitrotoluene	U	107	107	357	ug/kg	1					
2-Chloronaphthalene	U	10.7	10.7	35.7	ug/kg	1					
2-Chlorophenol	U	107	107	357	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	107	107	357	ug/kg	1					
2-Methylnaphthalene	U	10.7	10.7	35.7	ug/kg	1					
2-Nitrophenol	U	107	107	357	ug/kg	1					
3,3'-Dichlorobenzidine	U	107	107	357	ug/kg	1					
4-Bromophenylphenylether	U	107	107	357	ug/kg	1					
4-Chloro-3-methylphenol	U	143	143	357	ug/kg	1					
4-Chloroaniline	U	107	107	357	ug/kg	1					
4-Chlorophenylphenylether	U	107	107	357	ug/kg	1					
4-Nitrophenol	U	107	107	357	ug/kg	1					
Acenaphthene	U	10.7	10.7	35.7	ug/kg	1					
Acenaphthylene	U	10.7	10.7	35.7	ug/kg	1					
Anthracene	U	10.7	10.7	35.7	ug/kg	1					
Benzo(a)anthracene	J	26.8	10.7	35.7	ug/kg	1					
Benzo(a)pyrene	J	21.1	10.7	35.7	ug/kg	1					
Benzo(b)fluoranthene	J	25.3	10.7	35.7	ug/kg	1					
Benzo(ghi)perylene	U	10.7	10.7	35.7	ug/kg	1					
Benzo(k)fluoranthene	J	14.3	10.7	35.7	ug/kg	1					
Butylbenzylphthalate	U	107	107	357	ug/kg	1					
Carbazole	U	10.7	10.7	35.7	ug/kg	1					
Chrysene	J	21.1	10.7	35.7	ug/kg	1					

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L0
Sample ID: 361900007

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	107	107	357	ug/kg	1				
Di-n-octylphthalate	U	107	107	357	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.7	10.7	35.7	ug/kg	1				
Dibenzofuran	U	107	107	357	ug/kg	1				
Diethylphthalate	U	107	107	357	ug/kg	1				
Dimethylphthalate	U	107	107	357	ug/kg	1				
Diphenylamine	U	107	107	357	ug/kg	1				
Fluoranthene		46.7	10.7	35.7	ug/kg	1				
Fluorene	U	10.7	10.7	35.7	ug/kg	1				
Hexachlorobenzene	U	107	107	357	ug/kg	1				
Hexachlorobutadiene	U	107	107	357	ug/kg	1				
Hexachlorocyclopentadiene	U	107	107	357	ug/kg	1				
Hexachloroethane	U	107	107	357	ug/kg	1				
Indeno(1,2,3-cd)pyrene	J	11.1	10.7	35.7	ug/kg	1				
Isophorone	U	107	107	357	ug/kg	1				
N-Nitrosodipropylamine	U	107	107	357	ug/kg	1				
Naphthalene	U	10.7	10.7	35.7	ug/kg	1				
Nitrobenzene	U	107	107	357	ug/kg	1				
Pentachlorophenol	U	107	107	357	ug/kg	1				
Phenanthrene	J	25.7	10.7	35.7	ug/kg	1				
Phenol	U	107	107	357	ug/kg	1				
Pyrene	J	33.9	10.7	35.7	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	107	107	357	ug/kg	1				
bis(2-Chloroethoxy)methane	U	107	107	357	ug/kg	1				
bis(2-Chloroethyl) ether	U	107	107	357	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	107	107	357	ug/kg	1				
3- and/or 4-Methylphenol	U	107	107	357	ug/kg	1				
m-Nitroaniline	U	107	107	357	ug/kg	1				
o-Cresol	U	107	107	357	ug/kg	1				
o-Nitroaniline	U	118	118	357	ug/kg	1				
p-Nitroaniline	U	107	107	357	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 16 06*
2-Fluorophenol	1490 ug/kg	3570	41.8	(23%-107%)		
Phenol-d5	1510 ug/kg	3570	42.2	(25%-108%)		
2,4,6-Tribromophenol	1730 ug/kg	3570	48.4	(20%-122%)		
p-Terphenyl-d14	774 ug/kg	1780	43.4	(31%-124%)		
Nitrobenzene-d5	784 ug/kg	1780	44.0	(21%-103%)		

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Certificate of Analysis

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Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L0
Sample ID: 361900007

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
2-Fluorobiphenyl		814 ug/kg	1780	45.6	(25%-100%)						

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 16 06*
Trichloromethane	000067-66-3	2.015	161 ug/kg	94	NJ		
Furan, 2,5-dimethyl-	000625-86-5	2.515	149 ug/kg	91	NJ		
Unknown Aldol Condensate		3.806	5470 ug/kg		AJ		
unknown		12.73	164 ug/kg	0	J		
unknown		15.192	273 ug/kg	0	J		
unknown		17.259	1030 ug/kg	0	J		
unknown		20.792	251 ug/kg	0	J		
unknown		22.925	507 ug/kg	0	J		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L1
Sample ID: 361900008
Matrix: Soil
Collect Date: 20-NOV-14 08:04
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.8%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	106	106	353	ug/kg	1	RMB 11/26/14	1637	1439085	1
1,2-Dichlorobenzene	U	106	106	353	ug/kg	1				
1,3-Dichlorobenzene	U	106	106	353	ug/kg	1				
1,4-Dichlorobenzene	U	106	106	353	ug/kg	1				
2,4,5-Trichlorophenol	U	106	106	353	ug/kg	1				
2,4,6-Trichlorophenol	U	106	106	353	ug/kg	1				
2,4-Dichlorophenol	U	106	106	353	ug/kg	1				
2,4-Dimethylphenol	U	106	106	353	ug/kg	1				
2,4-Dinitrophenol	U	106	106	705	ug/kg	1				
2,4-Dinitrotoluene	U	106	106	353	ug/kg	1				
2,6-Dinitrotoluene	U	106	106	353	ug/kg	1				
2-Chloronaphthalene	U	10.6	10.6	35.3	ug/kg	1				
2-Chlorophenol	U	106	106	353	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	106	106	353	ug/kg	1				
2-Methylnaphthalene	U	10.6	10.6	35.3	ug/kg	1				
2-Nitrophenol	U	106	106	353	ug/kg	1				
3,3'-Dichlorobenzidine	U	106	106	353	ug/kg	1				
4-Bromophenylphenylether	U	106	106	353	ug/kg	1				
4-Chloro-3-methylphenol	U	141	141	353	ug/kg	1				
4-Chloroaniline	U	106	106	353	ug/kg	1				
4-Chlorophenylphenylether	U	106	106	353	ug/kg	1				
4-Nitrophenol	U	106	106	353	ug/kg	1				
Acenaphthene	J	16.9	10.6	35.3	ug/kg	1				
Acenaphthylene	U	10.6	10.6	35.3	ug/kg	1				
Anthracene		35.6	10.6	35.3	ug/kg	1				
Benzo(a)anthracene		146	10.6	35.3	ug/kg	1				
Benzo(a)pyrene		138	10.6	35.3	ug/kg	1				
Benzo(b)fluoranthene		192	10.6	35.3	ug/kg	1				
Benzo(ghi)perylene		67.0	10.6	35.3	ug/kg	1				
Benzo(k)fluoranthene		76.2	10.6	35.3	ug/kg	1				
Butylbenzylphthalate	U	106	106	353	ug/kg	1				
Carbazole	J	27.2	10.6	35.3	ug/kg	1				
Chrysene		146	10.6	35.3	ug/kg	1				

Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
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Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L1
Sample ID: 361900008

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	106	106	353	ug/kg	1				
Di-n-octylphthalate	U	106	106	353	ug/kg	1				
Dibenzo(a,h)anthracene	J	20.5	10.6	35.3	ug/kg	1				
Dibenzofuran	U	106	106	353	ug/kg	1				
Diethylphthalate	U	106	106	353	ug/kg	1				
Dimethylphthalate	U	106	106	353	ug/kg	1				
Diphenylamine	U	106	106	353	ug/kg	1				
Fluoranthene		273	10.6	35.3	ug/kg	1				
Fluorene	J	13.8	10.6	35.3	ug/kg	1				
Hexachlorobenzene	U	106	106	353	ug/kg	1				
Hexachlorobutadiene	U	106	106	353	ug/kg	1				
Hexachlorocyclopentadiene	U	106	106	353	ug/kg	1				
Hexachloroethane	U	106	106	353	ug/kg	1				
Indeno(1,2,3-cd)pyrene		73.4	10.6	35.3	ug/kg	1				
Isophorone	U	106	106	353	ug/kg	1				
N-Nitrosodipropylamine	U	106	106	353	ug/kg	1				
Naphthalene	U	10.6	10.6	35.3	ug/kg	1				
Nitrobenzene	U	106	106	353	ug/kg	1				
Pentachlorophenol	U	106	106	353	ug/kg	1				
Phenanthrene		148	10.6	35.3	ug/kg	1				
Phenol	U	106	106	353	ug/kg	1				
Pyrene		202	10.6	35.3	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	106	106	353	ug/kg	1				
bis(2-Chloroethoxy)methane	U	106	106	353	ug/kg	1				
bis(2-Chloroethyl) ether	U	106	106	353	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	106	106	353	ug/kg	1				
3- and/or 4-Methylphenol	U	106	106	353	ug/kg	1				
m-Nitroaniline	U	106	106	353	ug/kg	1				
o-Cresol	U	106	106	353	ug/kg	1				
o-Nitroaniline	U	116	116	353	ug/kg	1				
p-Nitroaniline	U	106	106	353	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 16 37*
Nitrobenzene-d5	1010 ug/kg	1760	57.4	(21%-103%)		
2-Fluorobiphenyl	1050 ug/kg	1760	59.8	(25%-100%)		
2-Fluorophenol	1990 ug/kg	3530	56.4	(23%-107%)		
Phenol-d5	1990 ug/kg	3530	56.4	(25%-108%)		
2,4,6-Tribromophenol	2130 ug/kg	3530	60.3	(20%-122%)		

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Certificate of Analysis

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Address : 2620 Fermi Avenue
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Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L1
Sample ID: 361900008

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
p-Terphenyl-d14		997 ug/kg	1760	56.5	(31%-124%)						

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 16 37*
unknown		2.015	146 ug/kg	0	J		
unknown		3.544	153 ug/kg	0	J		
Unknown Aldol Condensate		3.815	6910 ug/kg		AJ		
Pyrene, 1-methyl-	002381-21-7	14.073	146 ug/kg	90	NJ		
Cyclohexadecane, 1,2-diethyl-	1000155-85-3	15.154	697 ug/kg	98	NJ		
unknown		16.52	145 ug/kg	0	J		
unknown		21.187	224 ug/kg	0	J		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L4
Sample ID: 361900009
Matrix: Soil
Collect Date: 20-NOV-14 07:58
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.2%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	105	105	351	ug/kg	1	RMB 11/26/14	1709	1439085	1
1,2-Dichlorobenzene	U	105	105	351	ug/kg	1				
1,3-Dichlorobenzene	U	105	105	351	ug/kg	1				
1,4-Dichlorobenzene	U	105	105	351	ug/kg	1				
2,4,5-Trichlorophenol	U	105	105	351	ug/kg	1				
2,4,6-Trichlorophenol	U	105	105	351	ug/kg	1				
2,4-Dichlorophenol	U	105	105	351	ug/kg	1				
2,4-Dimethylphenol	U	105	105	351	ug/kg	1				
2,4-Dinitrophenol	U	105	105	702	ug/kg	1				
2,4-Dinitrotoluene	U	105	105	351	ug/kg	1				
2,6-Dinitrotoluene	U	105	105	351	ug/kg	1				
2-Chloronaphthalene	U	10.5	10.5	35.1	ug/kg	1				
2-Chlorophenol	U	105	105	351	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	105	105	351	ug/kg	1				
2-Methylnaphthalene	U	10.5	10.5	35.1	ug/kg	1				
2-Nitrophenol	U	105	105	351	ug/kg	1				
3,3'-Dichlorobenzidine	U	105	105	351	ug/kg	1				
4-Bromophenylphenylether	U	105	105	351	ug/kg	1				
4-Chloro-3-methylphenol	U	140	140	351	ug/kg	1				
4-Chloroaniline	U	105	105	351	ug/kg	1				
4-Chlorophenylphenylether	U	105	105	351	ug/kg	1				
4-Nitrophenol	U	105	105	351	ug/kg	1				
Acenaphthene	J	21.8	10.5	35.1	ug/kg	1				
Acenaphthylene	U	10.5	10.5	35.1	ug/kg	1				
Anthracene		55.4	10.5	35.1	ug/kg	1				
Benzo(a)anthracene		239	10.5	35.1	ug/kg	1				
Benzo(a)pyrene		265	10.5	35.1	ug/kg	1				
Benzo(b)fluoranthene		348	10.5	35.1	ug/kg	1				
Benzo(ghi)perylene		138	10.5	35.1	ug/kg	1				
Benzo(k)fluoranthene		134	10.5	35.1	ug/kg	1				
Butylbenzylphthalate	U	105	105	351	ug/kg	1				
Carbazole	J	31.9	10.5	35.1	ug/kg	1				
Chrysene		247	10.5	35.1	ug/kg	1				

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L4
Sample ID: 361900009

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	105	105	351	ug/kg	1				
Di-n-octylphthalate	U	105	105	351	ug/kg	1				
Dibenzo(a,h)anthracene	J	34.4	10.5	35.1	ug/kg	1				
Dibenzofuran	U	105	105	351	ug/kg	1				
Diethylphthalate	U	105	105	351	ug/kg	1				
Dimethylphthalate	U	105	105	351	ug/kg	1				
Diphenylamine	U	105	105	351	ug/kg	1				
Fluoranthene		421	10.5	35.1	ug/kg	1				
Fluorene	J	16.8	10.5	35.1	ug/kg	1				
Hexachlorobenzene	U	105	105	351	ug/kg	1				
Hexachlorobutadiene	U	105	105	351	ug/kg	1				
Hexachlorocyclopentadiene	U	105	105	351	ug/kg	1				
Hexachloroethane	U	105	105	351	ug/kg	1				
Indeno(1,2,3-cd)pyrene		141	10.5	35.1	ug/kg	1				
Isophorone	U	105	105	351	ug/kg	1				
N-Nitrosodipropylamine	U	105	105	351	ug/kg	1				
Naphthalene	U	10.5	10.5	35.1	ug/kg	1				
Nitrobenzene	U	105	105	351	ug/kg	1				
Pentachlorophenol	U	105	105	351	ug/kg	1				
Phenanthrene		200	10.5	35.1	ug/kg	1				
Phenol	U	105	105	351	ug/kg	1				
Pyrene		375	10.5	35.1	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	105	105	351	ug/kg	1				
bis(2-Chloroethoxy)methane	U	105	105	351	ug/kg	1				
bis(2-Chloroethyl) ether	U	105	105	351	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	105	105	351	ug/kg	1				
3- and/or 4-Methylphenol	U	105	105	351	ug/kg	1				
m-Nitroaniline	U	105	105	351	ug/kg	1				
o-Cresol	U	105	105	351	ug/kg	1				
o-Nitroaniline	U	116	116	351	ug/kg	1				
p-Nitroaniline	U	105	105	351	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 17 09*
Nitrobenzene-d5	1120 ug/kg	1750	64.1	(21%-103%)		
2-Fluorobiphenyl	1130 ug/kg	1750	64.4	(25%-100%)		
p-Terphenyl-d14	1190 ug/kg	1750	67.6	(31%-124%)		
2-Fluorophenol	2110 ug/kg	3510	60.1	(23%-107%)		
Phenol-d5	2110 ug/kg	3510	60.0	(25%-108%)		

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L4
Sample ID: 361900009

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
2,4,6-Tribromophenol		2250 ug/kg	3510	64.0	(20%-122%)					

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 17 09*
Trichloromethane	000067-66-3	2.02	419 ug/kg	90	NJ		
unknown		3.553	164 ug/kg	0	J		
Unknown Aldol Condensate		3.82	7380 ug/kg		AJ		
unknown		5.42	243 ug/kg	0	J		
unknown		12.144	145 ug/kg	0	J		
unknown		12.763	157 ug/kg	0	J		
unknown		13.139	161 ug/kg	0	J		
Octadecanoic acid	000057-11-4	13.416	155 ug/kg	86	NJ		
Fluoranthene, 2-methyl-	033543-31-6	13.982	156 ug/kg	95	NJ		
unknown		14.125	192 ug/kg	0	J		
unknown		14.297	206 ug/kg	0	J		
unknown		14.749	159 ug/kg	0	J		
5-Eicosene, (E)-	074685-30-6	15.211	544 ug/kg	95	NJ		
unknown		15.777	167 ug/kg	0	J		
unknown		16.525	195 ug/kg	0	J		
Benzo[e]pyrene	000192-97-2	18.525	205 ug/kg	96	NJ		
unknown		22.02	398 ug/kg	0	J		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L5
Sample ID: 361900010
Matrix: Soil
Collect Date: 20-NOV-14 07:43
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.36%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	105	105	351	ug/kg	1	RMB 11/28/14	1440	1439085	1
1,2-Dichlorobenzene	U	105	105	351	ug/kg	1				
1,3-Dichlorobenzene	U	105	105	351	ug/kg	1				
1,4-Dichlorobenzene	U	105	105	351	ug/kg	1				
2,4,5-Trichlorophenol	U	105	105	351	ug/kg	1				
2,4,6-Trichlorophenol	U	105	105	351	ug/kg	1				
2,4-Dichlorophenol	U	105	105	351	ug/kg	1				
2,4-Dimethylphenol	U	105	105	351	ug/kg	1				
2,4-Dinitrophenol	U	105	105	702	ug/kg	1				
2,4-Dinitrotoluene	U	105	105	351	ug/kg	1				
2,6-Dinitrotoluene	U	105	105	351	ug/kg	1				
2-Chloronaphthalene	U	10.5	10.5	35.1	ug/kg	1				
2-Chlorophenol	U	105	105	351	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	105	105	351	ug/kg	1				
2-Methylnaphthalene	U	10.5	10.5	35.1	ug/kg	1				
2-Nitrophenol	U	105	105	351	ug/kg	1				
3,3'-Dichlorobenzidine	U	105	105	351	ug/kg	1				
4-Bromophenylphenylether	U	105	105	351	ug/kg	1				
4-Chloro-3-methylphenol	U	140	140	351	ug/kg	1				
4-Chloroaniline	U	105	105	351	ug/kg	1				
4-Chlorophenylphenylether	U	105	105	351	ug/kg	1				
4-Nitrophenol	U	105	105	351	ug/kg	1				
Acenaphthene	U	10.5	10.5	35.1	ug/kg	1				
Acenaphthylene	U	10.5	10.5	35.1	ug/kg	1				
Anthracene	U	10.5	10.5	35.1	ug/kg	1				
Benzo(a)anthracene	U	10.5	10.5	35.1	ug/kg	1				
Benzo(a)pyrene	U	10.5	10.5	35.1	ug/kg	1				
Benzo(b)fluoranthene	U	10.5	10.5	35.1	ug/kg	1				
Benzo(ghi)perylene	U	10.5	10.5	35.1	ug/kg	1				
Benzo(k)fluoranthene	U	10.5	10.5	35.1	ug/kg	1				
Butylbenzylphthalate	U	105	105	351	ug/kg	1				
Carbazole	U	10.5	10.5	35.1	ug/kg	1				
Chrysene	U	10.5	10.5	35.1	ug/kg	1				

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L5
Sample ID: 361900010

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	105	105	351	ug/kg	1				
Di-n-octylphthalate	U	105	105	351	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.5	10.5	35.1	ug/kg	1				
Dibenzofuran	U	105	105	351	ug/kg	1				
Diethylphthalate	U	105	105	351	ug/kg	1				
Dimethylphthalate	U	105	105	351	ug/kg	1				
Diphenylamine	U	105	105	351	ug/kg	1				
Fluoranthene	U	10.5	10.5	35.1	ug/kg	1				
Fluorene	U	10.5	10.5	35.1	ug/kg	1				
Hexachlorobenzene	U	105	105	351	ug/kg	1				
Hexachlorobutadiene	U	105	105	351	ug/kg	1				
Hexachlorocyclopentadiene	U	105	105	351	ug/kg	1				
Hexachloroethane	U	105	105	351	ug/kg	1				
Indeno(1,2,3-cd)pyrene	U	10.5	10.5	35.1	ug/kg	1				
Isophorone	U	105	105	351	ug/kg	1				
N-Nitrosodipropylamine	U	105	105	351	ug/kg	1				
Naphthalene	U	10.5	10.5	35.1	ug/kg	1				
Nitrobenzene	U	105	105	351	ug/kg	1				
Pentachlorophenol	U	105	105	351	ug/kg	1				
Phenanthrene	U	10.5	10.5	35.1	ug/kg	1				
Phenol	U	105	105	351	ug/kg	1				
Pyrene	U	10.5	10.5	35.1	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	105	105	351	ug/kg	1				
bis(2-Chloroethoxy)methane	U	105	105	351	ug/kg	1				
bis(2-Chloroethyl) ether	U	105	105	351	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	105	105	351	ug/kg	1				
3- and/or 4-Methylphenol	U	105	105	351	ug/kg	1				
m-Nitroaniline	U	105	105	351	ug/kg	1				
o-Cresol	U	105	105	351	ug/kg	1				
o-Nitroaniline	U	116	116	351	ug/kg	1				
p-Nitroaniline	U	105	105	351	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/28/14 14 40*
2-Fluorobiphenyl	1090 ug/kg	1760	61.8	(25%-100%)		
Nitrobenzene-d5	1120 ug/kg	1760	64.1	(21%-103%)		
p-Terphenyl-d14	1150 ug/kg	1760	65.3	(31%-124%)		
Phenol-d5	2140 ug/kg	3510	60.9	(25%-108%)		
2-Fluorophenol	2150 ug/kg	3510	61.1	(23%-107%)		

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L5
Sample ID: 361900010

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
2,4,6-Tribromophenol		2350		3510	66.8	ug/kg	(20%-122%)				

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/28/14 14 40*
Trichloromethane	000067-66-3	2.02	142 ug/kg	90	NJ		
Furan, 2,5-dimethyl-	000625-86-5	2.52	282 ug/kg	94	NJ		
Unknown Aldol Condensate		3.82	6940 ug/kg		AJ		
13-Docosenamide, (Z)-	000112-84-5	17.259	172 ug/kg	87	NJ		
Octacosane	000630-02-4	18.373	148 ug/kg	87	NJ		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L6
Sample ID: 361900011
Matrix: Soil
Collect Date: 20-NOV-14 07:38
Receive Date: 25-NOV-14
Collector: Client
Moisture: 4.88%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	105	105	350	ug/kg	1	RMB 11/26/14	1811	1439085	1
1,2-Dichlorobenzene	U	105	105	350	ug/kg	1				
1,3-Dichlorobenzene	U	105	105	350	ug/kg	1				
1,4-Dichlorobenzene	U	105	105	350	ug/kg	1				
2,4,5-Trichlorophenol	U	105	105	350	ug/kg	1				
2,4,6-Trichlorophenol	U	105	105	350	ug/kg	1				
2,4-Dichlorophenol	U	105	105	350	ug/kg	1				
2,4-Dimethylphenol	U	105	105	350	ug/kg	1				
2,4-Dinitrophenol	U	105	105	701	ug/kg	1				
2,4-Dinitrotoluene	U	105	105	350	ug/kg	1				
2,6-Dinitrotoluene	U	105	105	350	ug/kg	1				
2-Chloronaphthalene	U	10.5	10.5	35.0	ug/kg	1				
2-Chlorophenol	U	105	105	350	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	105	105	350	ug/kg	1				
2-Methylnaphthalene	U	10.5	10.5	35.0	ug/kg	1				
2-Nitrophenol	U	105	105	350	ug/kg	1				
3,3'-Dichlorobenzidine	U	105	105	350	ug/kg	1				
4-Bromophenylphenylether	U	105	105	350	ug/kg	1				
4-Chloro-3-methylphenol	U	140	140	350	ug/kg	1				
4-Chloroaniline	U	105	105	350	ug/kg	1				
4-Chlorophenylphenylether	U	105	105	350	ug/kg	1				
4-Nitrophenol	U	105	105	350	ug/kg	1				
Acenaphthene	U	10.5	10.5	35.0	ug/kg	1				
Acenaphthylene	U	10.5	10.5	35.0	ug/kg	1				
Anthracene	U	10.5	10.5	35.0	ug/kg	1				
Benzo(a)anthracene	U	10.5	10.5	35.0	ug/kg	1				
Benzo(a)pyrene	U	10.5	10.5	35.0	ug/kg	1				
Benzo(b)fluoranthene	U	10.5	10.5	35.0	ug/kg	1				
Benzo(ghi)perylene	U	10.5	10.5	35.0	ug/kg	1				
Benzo(k)fluoranthene	U	10.5	10.5	35.0	ug/kg	1				
Butylbenzylphthalate	U	105	105	350	ug/kg	1				
Carbazole	U	10.5	10.5	35.0	ug/kg	1				
Chrysene	U	10.5	10.5	35.0	ug/kg	1				

Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Report Date: December 1, 2014
Contact: Joan Kessner
Project: **RC-107 Soil**
Client SDG: XP0168

Client Sample ID: J1V1L6
Sample ID: 361900011
Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	105	105	350	ug/kg	1				
Di-n-octylphthalate	U	105	105	350	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.5	10.5	35.0	ug/kg	1				
Dibenzofuran	U	105	105	350	ug/kg	1				
Diethylphthalate	U	105	105	350	ug/kg	1				
Dimethylphthalate	U	105	105	350	ug/kg	1				
Diphenylamine	U	105	105	350	ug/kg	1				
Fluoranthene	U	10.5	10.5	35.0	ug/kg	1				
Fluorene	U	10.5	10.5	35.0	ug/kg	1				
Hexachlorobenzene	U	105	105	350	ug/kg	1				
Hexachlorobutadiene	U	105	105	350	ug/kg	1				
Hexachlorocyclopentadiene	U	105	105	350	ug/kg	1				
Hexachloroethane	U	105	105	350	ug/kg	1				
Indeno(1,2,3-cd)pyrene	U	10.5	10.5	35.0	ug/kg	1				
Isophorone	U	105	105	350	ug/kg	1				
N-Nitrosodipropylamine	U	105	105	350	ug/kg	1				
Naphthalene	U	10.5	10.5	35.0	ug/kg	1				
Nitrobenzene	U	105	105	350	ug/kg	1				
Pentachlorophenol	U	105	105	350	ug/kg	1				
Phenanthrene	U	10.5	10.5	35.0	ug/kg	1				
Phenol	U	105	105	350	ug/kg	1				
Pyrene	U	10.5	10.5	35.0	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	105	105	350	ug/kg	1				
bis(2-Chloroethoxy)methane	U	105	105	350	ug/kg	1				
bis(2-Chloroethyl) ether	U	105	105	350	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	105	105	350	ug/kg	1				
3- and/or 4-Methylphenol	U	105	105	350	ug/kg	1				
m-Nitroaniline	U	105	105	350	ug/kg	1				
o-Cresol	U	105	105	350	ug/kg	1				
o-Nitroaniline	U	116	116	350	ug/kg	1				
p-Nitroaniline	U	105	105	350	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 18 11*
Nitrobenzene-d5	1170 ug/kg	1750	66.9	(21%-103%)		
2-Fluorobiphenyl	1200 ug/kg	1750	68.6	(25%-100%)		
p-Terphenyl-d14	1250 ug/kg	1750	71.3	(31%-124%)		
2-Fluorophenol	2290 ug/kg	3500	65.3	(23%-107%)		
Phenol-d5	2320 ug/kg	3500	66.2	(25%-108%)		

Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L6
Sample ID: 361900011

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
2,4,6-Tribromophenol		2560 ug/kg	3500	73.0	(20%-122%)						

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 18 11*
unknown		2.025	160 ug/kg	0	J		
Furan, 2,5-dimethyl-	000625-86-5	2.525	315 ug/kg	94	NJ		
Unknown Aldol Condensate		3.825	7250 ug/kg		AJ		
unknown		13.135	204 ug/kg	0	J		
Octadecanoic acid	000057-11-4	13.416	152 ug/kg	98	NJ		
unknown		14.059	213 ug/kg	0	J		
Cycloeicosane	000296-56-0	15.206	664 ug/kg	90	NJ		
Octacosane	000630-02-4	18.378	161 ug/kg	87	NJ		
unknown		20.787	169 ug/kg	0	J		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L7
Sample ID: 361900012
Matrix: Soil
Collect Date: 20-NOV-14 07:32
Receive Date: 25-NOV-14
Collector: Client
Moisture: 8.22%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
1,2,4-Trichlorobenzene	U	109	109	362	ug/kg	1	RMB 11/26/14	1843	1439085	1
1,2-Dichlorobenzene	U	109	109	362	ug/kg	1				
1,3-Dichlorobenzene	U	109	109	362	ug/kg	1				
1,4-Dichlorobenzene	U	109	109	362	ug/kg	1				
2,4,5-Trichlorophenol	U	109	109	362	ug/kg	1				
2,4,6-Trichlorophenol	U	109	109	362	ug/kg	1				
2,4-Dichlorophenol	U	109	109	362	ug/kg	1				
2,4-Dimethylphenol	U	109	109	362	ug/kg	1				
2,4-Dinitrophenol	U	109	109	725	ug/kg	1				
2,4-Dinitrotoluene	U	109	109	362	ug/kg	1				
2,6-Dinitrotoluene	U	109	109	362	ug/kg	1				
2-Chloronaphthalene	U	10.9	10.9	36.2	ug/kg	1				
2-Chlorophenol	U	109	109	362	ug/kg	1				
2-Methyl-4,6-dinitrophenol	U	109	109	362	ug/kg	1				
2-Methylnaphthalene	U	10.9	10.9	36.2	ug/kg	1				
2-Nitrophenol	U	109	109	362	ug/kg	1				
3,3'-Dichlorobenzidine	U	109	109	362	ug/kg	1				
4-Bromophenylphenylether	U	109	109	362	ug/kg	1				
4-Chloro-3-methylphenol	U	145	145	362	ug/kg	1				
4-Chloroaniline	U	109	109	362	ug/kg	1				
4-Chlorophenylphenylether	U	109	109	362	ug/kg	1				
4-Nitrophenol	U	109	109	362	ug/kg	1				
Acenaphthene	U	10.9	10.9	36.2	ug/kg	1				
Acenaphthylene	U	10.9	10.9	36.2	ug/kg	1				
Anthracene	U	10.9	10.9	36.2	ug/kg	1				
Benzo(a)anthracene	J	23.2	10.9	36.2	ug/kg	1				
Benzo(a)pyrene	J	20.3	10.9	36.2	ug/kg	1				
Benzo(b)fluoranthene	J	32.2	10.9	36.2	ug/kg	1				
Benzo(ghi)perylene	U	10.9	10.9	36.2	ug/kg	1				
Benzo(k)fluoranthene	U	10.9	10.9	36.2	ug/kg	1				
Butylbenzylphthalate	U	109	109	362	ug/kg	1				
Carbazole	U	10.9	10.9	36.2	ug/kg	1				
Chrysene	J	21.4	10.9	36.2	ug/kg	1				

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L7
Sample ID: 361900012

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	109	109	362	ug/kg	1				
Di-n-octylphthalate	U	109	109	362	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.9	10.9	36.2	ug/kg	1				
Dibenzofuran	U	109	109	362	ug/kg	1				
Diethylphthalate	U	109	109	362	ug/kg	1				
Dimethylphthalate	U	109	109	362	ug/kg	1				
Diphenylamine	U	109	109	362	ug/kg	1				
Fluoranthene	J	35.1	10.9	36.2	ug/kg	1				
Fluorene	U	10.9	10.9	36.2	ug/kg	1				
Hexachlorobenzene	U	109	109	362	ug/kg	1				
Hexachlorobutadiene	U	109	109	362	ug/kg	1				
Hexachlorocyclopentadiene	U	109	109	362	ug/kg	1				
Hexachloroethane	U	109	109	362	ug/kg	1				
Indeno(1,2,3-cd)pyrene	U	10.9	10.9	36.2	ug/kg	1				
Isophorone	U	109	109	362	ug/kg	1				
N-Nitrosodipropylamine	U	109	109	362	ug/kg	1				
Naphthalene	U	10.9	10.9	36.2	ug/kg	1				
Nitrobenzene	U	109	109	362	ug/kg	1				
Pentachlorophenol	U	109	109	362	ug/kg	1				
Phenanthrene	J	14.1	10.9	36.2	ug/kg	1				
Phenol	U	109	109	362	ug/kg	1				
Pyrene	J	30.4	10.9	36.2	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	109	109	362	ug/kg	1				
bis(2-Chloroethoxy)methane	U	109	109	362	ug/kg	1				
bis(2-Chloroethyl) ether	U	109	109	362	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	109	109	362	ug/kg	1				
3- and/or 4-Methylphenol	U	109	109	362	ug/kg	1				
m-Nitroaniline	U	109	109	362	ug/kg	1				
o-Cresol	U	109	109	362	ug/kg	1				
o-Nitroaniline	U	120	120	362	ug/kg	1				
p-Nitroaniline	U	109	109	362	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 18 43*
p-Terphenyl-d14	1160 ug/kg	1810	63.8	(31%-124%)		
Nitrobenzene-d5	1170 ug/kg	1810	64.4	(21%-103%)		
2-Fluorobiphenyl	1170 ug/kg	1810	64.6	(25%-100%)		
2-Fluorophenol	2220 ug/kg	3620	61.4	(23%-107%)		
Phenol-d5	2240 ug/kg	3620	61.7	(25%-108%)		

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
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Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1L7
Sample ID: 361900012

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
2,4,6-Tribromophenol		2330 ug/kg	3620	64.2	(20%-122%)						

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 18 43*
Trichloromethane	000067-66-3	2.03	524 ug/kg	91	NJ		
unknown		3.554	187 ug/kg	0	J		
Unknown Aldol Condensate		3.825	6020 ug/kg		AJ		
unknown		5.42	160 ug/kg	0	J		
unknown		12.73	295 ug/kg	0	J		
unknown		15.206	594 ug/kg	0	J		
9-Octadecenamide, (Z)-	000301-02-0	17.263	183 ug/kg	87	NJ		
unknown		18.378	174 ug/kg	0	J		
unknown		22.459	947 ug/kg	0	J		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1M0
Sample ID: 361900013
Matrix: Soil
Collect Date: 20-NOV-14 07:26
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.33%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
1,2,4-Trichlorobenzene	U	105	105	351	ug/kg	1	RMB	11/26/14	1914	1439085	1
1,2-Dichlorobenzene	U	105	105	351	ug/kg	1					
1,3-Dichlorobenzene	U	105	105	351	ug/kg	1					
1,4-Dichlorobenzene	U	105	105	351	ug/kg	1					
2,4,5-Trichlorophenol	U	105	105	351	ug/kg	1					
2,4,6-Trichlorophenol	U	105	105	351	ug/kg	1					
2,4-Dichlorophenol	U	105	105	351	ug/kg	1					
2,4-Dimethylphenol	U	105	105	351	ug/kg	1					
2,4-Dinitrophenol	U	105	105	703	ug/kg	1					
2,4-Dinitrotoluene	U	105	105	351	ug/kg	1					
2,6-Dinitrotoluene	U	105	105	351	ug/kg	1					
2-Chloronaphthalene	U	10.5	10.5	35.1	ug/kg	1					
2-Chlorophenol	U	105	105	351	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	105	105	351	ug/kg	1					
2-Methylnaphthalene	U	10.5	10.5	35.1	ug/kg	1					
2-Nitrophenol	U	105	105	351	ug/kg	1					
3,3'-Dichlorobenzidine	U	105	105	351	ug/kg	1					
4-Bromophenylphenylether	U	105	105	351	ug/kg	1					
4-Chloro-3-methylphenol	U	141	141	351	ug/kg	1					
4-Chloroaniline	U	105	105	351	ug/kg	1					
4-Chlorophenylphenylether	U	105	105	351	ug/kg	1					
4-Nitrophenol	U	105	105	351	ug/kg	1					
Acenaphthene	U	10.5	10.5	35.1	ug/kg	1					
Acenaphthylene	U	10.5	10.5	35.1	ug/kg	1					
Anthracene	U	10.5	10.5	35.1	ug/kg	1					
Benzo(a)anthracene	J	17.2	10.5	35.1	ug/kg	1					
Benzo(a)pyrene	J	11.6	10.5	35.1	ug/kg	1					
Benzo(b)fluoranthene	J	18.6	10.5	35.1	ug/kg	1					
Benzo(ghi)perylene	U	10.5	10.5	35.1	ug/kg	1					
Benzo(k)fluoranthene	U	10.5	10.5	35.1	ug/kg	1					
Butylbenzylphthalate	U	105	105	351	ug/kg	1					
Carbazole	U	10.5	10.5	35.1	ug/kg	1					
Chrysene	U	10.5	10.5	35.1	ug/kg	1					

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
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Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1M0
Sample ID: 361900013

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"										
Di-n-butylphthalate	U	105	105	351	ug/kg	1				
Di-n-octylphthalate	U	105	105	351	ug/kg	1				
Dibenzo(a,h)anthracene	U	10.5	10.5	35.1	ug/kg	1				
Dibenzofuran	U	105	105	351	ug/kg	1				
Diethylphthalate	U	105	105	351	ug/kg	1				
Dimethylphthalate	U	105	105	351	ug/kg	1				
Diphenylamine	U	105	105	351	ug/kg	1				
Fluoranthene	J	20.7	10.5	35.1	ug/kg	1				
Fluorene	U	10.5	10.5	35.1	ug/kg	1				
Hexachlorobenzene	U	105	105	351	ug/kg	1				
Hexachlorobutadiene	U	105	105	351	ug/kg	1				
Hexachlorocyclopentadiene	U	105	105	351	ug/kg	1				
Hexachloroethane	U	105	105	351	ug/kg	1				
Indeno(1,2,3-cd)pyrene	U	10.5	10.5	35.1	ug/kg	1				
Isophorone	U	105	105	351	ug/kg	1				
N-Nitrosodipropylamine	U	105	105	351	ug/kg	1				
Naphthalene	U	10.5	10.5	35.1	ug/kg	1				
Nitrobenzene	U	105	105	351	ug/kg	1				
Pentachlorophenol	U	105	105	351	ug/kg	1				
Phenanthrene	U	10.5	10.5	35.1	ug/kg	1				
Phenol	U	105	105	351	ug/kg	1				
Pyrene	J	17.2	10.5	35.1	ug/kg	1				
bis(2-Chloro-1-methylethyl)ether	U	105	105	351	ug/kg	1				
bis(2-Chloroethoxy)methane	U	105	105	351	ug/kg	1				
bis(2-Chloroethyl) ether	U	105	105	351	ug/kg	1				
bis(2-Ethylhexyl)phthalate	U	105	105	351	ug/kg	1				
3- and/or 4-Methylphenol	U	105	105	351	ug/kg	1				
m-Nitroaniline	U	105	105	351	ug/kg	1				
o-Cresol	U	105	105	351	ug/kg	1				
o-Nitroaniline	U	116	116	351	ug/kg	1				
p-Nitroaniline	U	105	105	351	ug/kg	1				

Surrogate/Tracer recovery	*Result*	*Nominal*	*Recovery%*	*Acceptable Limits*	*Date Time:*	*11/26/14 19 14*
Nitrobenzene-d5	1120 ug/kg	1760	63.5	(21%-103%)		
2-Fluorobiphenyl	1120 ug/kg	1760	64.0	(25%-100%)		
p-Terphenyl-d14	1160 ug/kg	1760	66.2	(31%-124%)		
2-Fluorophenol	2120 ug/kg	3510	60.4	(23%-107%)		
Phenol-d5	2150 ug/kg	3510	61.2	(25%-108%)		

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Certificate of Analysis

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: **RC-107 Soil**

Report Date: December 1, 2014
Client SDG: XP0168

Client Sample ID: J1V1M0
Sample ID: 361900013

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270D/3541 BNA Soil Automated Soxhlet "Dry Weight Corrected"											
2,4,6-Tribromophenol		2410 ug/kg	3510	68.5	(20%-122%)						

Tentatively Identified Compound (TIC)	*CAS No.*	*RT*	*Est. Concentration*	*Fit*	*Qual*	*Date Time:*	*11/26/14 19 14*
unknown		2.016	182 ug/kg	0	J		
Unknown Aldol Condensate		3.82	6970 ug/kg		AJ		
unknown		12.478	149 ug/kg	0	J		
Octadecanoic acid	000057-11-4	13.416	147 ug/kg	98	NJ		
unknown		14.059	185 ug/kg	0	J		
1-Eicosanol	000629-96-9	15.22	497 ug/kg	87	NJ		
unknown		21.43	253 ug/kg	0	J		

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270D BNA for Soil	AXV1	11/25/14	1730	1439084

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8270D	

Quality Control Summary

QC Summary

Report Date: December 1, 2014

WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington

Contact: **Joan Kessner**

Workorder: **361900** **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1439085											
QC1203217573 LCS											
1,2,4-Trichlorobenzene	1660			992	ug/kg		59.6	(37%-98%)	RMB	11/26/14	19:45
1,2-Dichlorobenzene	1660			939	ug/kg		56.5	(39%-93%)			
1,3-Dichlorobenzene	1660			906	ug/kg		54.5	(39%-110%)			
1,4-Dichlorobenzene	1660			967	ug/kg		58.1	(40%-110%)			
2,4,5-Trichlorophenol	1660			987	ug/kg		59.3	(41%-103%)			
2,4,6-Trichlorophenol	1660			986	ug/kg		59.3	(36%-98%)			
2,4-Dichlorophenol	1660			942	ug/kg		56.6	(35%-110%)			
2,4-Dimethylphenol	1660			869	ug/kg		52.2	(35%-102%)			
2,4-Dinitrophenol	1660		J	386	ug/kg		23.2	(22%-83%)			
2,4-Dinitrotoluene	1660			1070	ug/kg		64.4	(43%-109%)			
2,6-Dinitrotoluene	1660			1000	ug/kg		60.4	(41%-103%)			
2-Chloronaphthalene	1660			946	ug/kg		56.9	(39%-101%)			
2-Chlorophenol	1660			990	ug/kg		59.5	(38%-100%)			
2-Methyl-4,6-dinitrophenol	1660			716	ug/kg		43	(33%-103%)			
2-Methylnaphthalene	1660			949	ug/kg		57.1	(36%-107%)			
2-Nitrophenol	1660			948	ug/kg		57	(35%-106%)			
3,3'-Dichlorobenzidine	1660			1120	ug/kg		67.4	(32%-111%)			
3- and/or 4-Methylphenol	1660			1110	ug/kg		66.4	(39%-115%)			
4-Bromophenylphenylether	1660			974	ug/kg		58.5	(42%-110%)			
4-Chloro-3-methylphenol	1660			985	ug/kg		59.2	(35%-104%)			

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1439085											
4-Chloroaniline	1660			900	ug/kg		54.1	(32%-106%)	RMB	11/26/14	19:45
4-Chlorophenylphenylether	1660			1060	ug/kg		63.4	(41%-104%)			
4-Nitrophenol	1660			950	ug/kg		57.1	(23%-114%)			
Acenaphthene	1660			957	ug/kg		57.5	(36%-105%)			
Acenaphthylene	1660			988	ug/kg		59.4	(38%-103%)			
Anthracene	1660			977	ug/kg		58.7	(43%-104%)			
Benzo(a)anthracene	1660			1000	ug/kg		60.3	(46%-108%)			
Benzo(a)pyrene	1660			974	ug/kg		58.6	(45%-109%)			
Benzo(b)fluoranthene	1660			994	ug/kg		59.8	(42%-111%)			
Benzo(ghi)perylene	1660			832	ug/kg		50	(43%-115%)			
Benzo(k)fluoranthene	1660			1010	ug/kg		60.6	(43%-103%)			
Butylbenzylphthalate	1660			1160	ug/kg		69.8	(37%-107%)			
Carbazole	1660			1120	ug/kg		67.5	(53%-118%)			
Chrysene	1660			1030	ug/kg		61.8	(47%-107%)			
Di-n-butylphthalate	1660			1090	ug/kg		65.4	(46%-112%)			
Di-n-octylphthalate	1660			1270	ug/kg		76	(41%-110%)			
Dibenzo(a,h)anthracene	1660			906	ug/kg		54.4	(39%-128%)			
Dibenzofuran	1660			1080	ug/kg		64.8	(38%-104%)			
Diethylphthalate	1660			1050	ug/kg		63	(42%-109%)			
Dimethylphthalate	1660			1040	ug/kg		62.7	(41%-105%)			
Diphenylamine	1660			1030	ug/kg		61.6	(40%-101%)			

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1439085											
Fluoranthene	1660			1040	ug/kg		62.6	(44%-106%)			
Fluorene	1660			989	ug/kg		59.5	(39%-102%)	RMB	11/26/14	19:45
Hexachlorobenzene	1660			962	ug/kg		57.8	(41%-108%)			
Hexachlorobutadiene	1660			983	ug/kg		59.1	(32%-104%)			
Hexachlorocyclopentadiene	1660			807	ug/kg		48.5	(24%-84%)			
Hexachloroethane	1660			956	ug/kg		57.5	(34%-98%)			
Indeno(1,2,3-cd)pyrene	1660			883	ug/kg		53.1	(45%-115%)			
Isophorone	1660			1000	ug/kg		60.3	(36%-98%)			
N-Nitrosodipropylamine	1660			1030	ug/kg		61.7	(34%-106%)			
Naphthalene	1660			958	ug/kg		57.6	(38%-106%)			
Nitrobenzene	1660			1000	ug/kg		60.2	(35%-99%)			
Pentachlorophenol	1660			751	ug/kg		45.1	(31%-93%)			
Phenanthrene	1660			929	ug/kg		55.8	(43%-105%)			
Phenol	1660			974	ug/kg		58.5	(38%-98%)			
Pyrene	1660			973	ug/kg		58.5	(33%-99%)			
bis(2-Chloro-1-methylethyl)ether	1660			944	ug/kg		56.7	(27%-109%)			
bis(2-Chloroethoxy)methane	1660			1010	ug/kg		60.4	(37%-98%)			
bis(2-Chloroethyl) ether	1660			994	ug/kg		59.7	(35%-96%)			
bis(2-Ethylhexyl)phthalate	1660			1280	ug/kg		76.7	(41%-104%)			
m-Nitroaniline	1660			1040	ug/kg		62.7	(32%-113%)			
o-Cresol	1660			960	ug/kg		57.7	(37%-97%)			
o-Nitroaniline	1660			1080	ug/kg		64.8	(34%-116%)			

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1439085											
p-Nitroaniline	1660			1390	ug/kg		83.8	(35%-150%)			
**2,4,6-Tribromophenol	3330			2110	ug/kg		63.3	(20%-122%)	RMB	11/26/14	19:45
**2-Fluorobiphenyl	1660			960	ug/kg		57.7	(25%-100%)			
**2-Fluorophenol	3330			1900	ug/kg		57.1	(23%-107%)			
**Nitrobenzene-d5	1660			981	ug/kg		59	(21%-103%)			
**Phenol-d5	3330			1880	ug/kg		56.6	(25%-108%)			
**p-Terphenyl-d14	1660			995	ug/kg		59.8	(31%-124%)			
QC1203217572 MB											
1,2,4-Trichlorobenzene			U	99.9	ug/kg					11/26/14	10:52
1,2-Dichlorobenzene			U	99.9	ug/kg						
1,3-Dichlorobenzene			U	99.9	ug/kg						
1,4-Dichlorobenzene			U	99.9	ug/kg						
2,4,5-Trichlorophenol			U	99.9	ug/kg						
2,4,6-Trichlorophenol			U	99.9	ug/kg						
2,4-Dichlorophenol			U	99.9	ug/kg						
2,4-Dimethylphenol			U	99.9	ug/kg						
2,4-Dinitrophenol			U	99.9	ug/kg						
2,4-Dinitrotoluene			U	99.9	ug/kg						
2,6-Dinitrotoluene			U	99.9	ug/kg						
2-Chloronaphthalene			U	9.99	ug/kg						
2-Chlorophenol			U	99.9	ug/kg						
2-Methyl-4,6-dinitrophenol			U	99.9	ug/kg						
2-Methylnaphthalene			U	9.99	ug/kg						

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1439085											
2-Nitrophenol			U	99.9	ug/kg				RMB	11/26/14	10:52
3,3'-Dichlorobenzidine			U	99.9	ug/kg						
3- and/or 4-Methylphenol			U	99.9	ug/kg						
4-Bromophenylphenylether			U	99.9	ug/kg						
4-Chloro-3-methylphenol			U	133	ug/kg						
4-Chloroaniline			U	99.9	ug/kg						
4-Chlorophenylphenylether			U	99.9	ug/kg						
4-Nitrophenol			U	99.9	ug/kg						
Acenaphthene			U	9.99	ug/kg						
Acenaphthylene			U	9.99	ug/kg						
Anthracene			U	9.99	ug/kg						
Benzo(a)anthracene			U	9.99	ug/kg						
Benzo(a)pyrene			U	9.99	ug/kg						
Benzo(b)fluoranthene			U	9.99	ug/kg						
Benzo(ghi)perylene			U	9.99	ug/kg						
Benzo(k)fluoranthene			U	9.99	ug/kg						
Butylbenzylphthalate			U	99.9	ug/kg						
Carbazole			U	9.99	ug/kg						
Chrysene			U	9.99	ug/kg						
Di-n-butylphthalate			U	99.9	ug/kg						
Di-n-octylphthalate			U	99.9	ug/kg						

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1439085											
Dibenzo(a,h)anthracene			U	9.99	ug/kg						
Dibenzofuran			U	99.9	ug/kg				RMB	11/26/14	10:52
Diethylphthalate			U	99.9	ug/kg						
Dimethylphthalate			U	99.9	ug/kg						
Diphenylamine			U	99.9	ug/kg						
Fluoranthene			U	9.99	ug/kg						
Fluorene			U	9.99	ug/kg						
Hexachlorobenzene			U	99.9	ug/kg						
Hexachlorobutadiene			U	99.9	ug/kg						
Hexachlorocyclopentadiene			U	99.9	ug/kg						
Hexachloroethane			U	99.9	ug/kg						
Indeno(1,2,3-cd)pyrene			U	9.99	ug/kg						
Isophorone			U	99.9	ug/kg						
N-Nitrosodipropylamine			U	99.9	ug/kg						
Naphthalene			U	9.99	ug/kg						
Nitrobenzene			U	99.9	ug/kg						
Pentachlorophenol			U	99.9	ug/kg						
Phenanthrene			U	9.99	ug/kg						
Phenol			U	99.9	ug/kg						
Pyrene			U	9.99	ug/kg						
bis(2-Chloro-1-methylethyl)ether			U	99.9	ug/kg						
bis(2-Chloroethoxy)methane			U	99.9	ug/kg						

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1439085											
bis(2-Chloroethyl) ether			U	99.9	ug/kg						
bis(2-Ethylhexyl)phthalate			U	99.9	ug/kg				RMB	11/26/14	10:52
m-Nitroaniline			U	99.9	ug/kg						
o-Cresol			U	99.9	ug/kg						
o-Nitroaniline			U	110	ug/kg						
p-Nitroaniline			U	99.9	ug/kg						
**2,4,6-Tribromophenol	3330			1750	ug/kg		52.6	(20%-122%)			
**2-Fluorobiphenyl	1670			1090	ug/kg		65.4	(25%-100%)			
**2-Fluorophenol	3330			1880	ug/kg		56.6	(23%-107%)			
**Nitrobenzene-d5	1670			1060	ug/kg		63.9	(21%-103%)			
**Phenol-d5	3330			1900	ug/kg		57	(25%-108%)			
**p-Terphenyl-d14	1670			851	ug/kg		51.1	(31%-124%)			
QC1203217574 361900001 MS											
1,2,4-Trichlorobenzene	1710	U	102	1180	ug/kg		69.1	(25%-102%)		11/26/14	12:26
1,2-Dichlorobenzene	1710	U	102	1110	ug/kg		64.8	(25%-99%)			
1,3-Dichlorobenzene	1710	U	102	1050	ug/kg		61.3	(24%-96%)			
1,4-Dichlorobenzene	1710	U	102	1100	ug/kg		64.7	(24%-97%)			
2,4,5-Trichlorophenol	1710	U	102	1120	ug/kg		65.6	(38%-109%)			
2,4,6-Trichlorophenol	1710	U	102	1130	ug/kg		66.4	(32%-103%)			
2,4-Dichlorophenol	1710	U	102	1030	ug/kg		60.6	(31%-103%)			
2,4-Dimethylphenol	1710	U	102	1030	ug/kg		60.1	(30%-109%)			
2,4-Dinitrophenol	1710	U	102	1000	ug/kg		58.8	(19%-101%)			
2,4-Dinitrotoluene	1710	U	102	1230	ug/kg		72.3	(36%-115%)			

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1439085											
2,6-Dinitrotoluene	1710	U	102	1170	ug/kg		68.7	(36%-107%)	RMB	11/26/14	12:26
2-Chloronaphthalene	1710	U	10.2	1150	ug/kg		67.1	(27%-109%)			
2-Chlorophenol	1710	U	102	1070	ug/kg		62.5	(28%-108%)			
2-Methyl-4,6-dinitrophenol	1710	U	102	1240	ug/kg		72.7	(14%-116%)			
2-Methylnaphthalene	1710	U	10.2	1070	ug/kg		62.9	(23%-107%)			
2-Nitrophenol	1710	U	102	1030	ug/kg		60.3	(24%-106%)			
3,3'-Dichlorobenzidine	1710	U	102	1310	ug/kg		76.7	(28%-105%)			
3- and/or 4-Methylphenol	1710	U	102	1250	ug/kg		73.2	(32%-123%)			
4-Bromophenylphenylether	1710	U	102	1220	ug/kg		71.4	(37%-112%)			
4-Chloro-3-methylphenol	1710	U	136	1110	ug/kg		65	(32%-112%)			
4-Chloroaniline	1710	U	102	1110	ug/kg		65.1	(27%-100%)			
4-Chlorophenylphenylether	1710	U	102	1210	ug/kg		71.1	(37%-110%)			
4-Nitrophenol	1710	U	102	1290	ug/kg		75.8	(12%-128%)			
Acenaphthene	1710	U	10.2	1130	ug/kg		65.9	(28%-102%)			
Acenaphthylene	1710	U	10.2	1180	ug/kg		69	(32%-103%)			
Anthracene	1710	U	10.2	1190	ug/kg		69.7	(36%-104%)			
Benzo(a)anthracene	1710	U	10.2	1210	ug/kg		71.2	(27%-120%)			
Benzo(a)pyrene	1710	U	10.2	1160	ug/kg		67.9	(31%-116%)			
Benzo(b)fluoranthene	1710	U	10.2	1160	ug/kg		67.8	(30%-119%)			
Benzo(ghi)perylene	1710	U	10.2	1290	ug/kg		75.4	(30%-109%)			
Benzo(k)fluoranthene	1710	U	10.2	1140	ug/kg		66.8	(31%-125%)			

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch 1439085												
Butylbenzylphthalate	1710	U	102		1290	ug/kg		75.4	(33%-121%)			
Carbazole	1710	U	10.2		1390	ug/kg		81.6	(40%-133%)	RMB	11/26/14	12:26
Chrysene	1710	U	10.2		1240	ug/kg		72.9	(33%-114%)			
Di-n-butylphthalate	1710	U	102		1390	ug/kg		81.6	(42%-119%)			
Di-n-octylphthalate	1710	U	102		1460	ug/kg		85.8	(36%-115%)			
Dibenzo(a,h)anthracene	1710	U	10.2		1310	ug/kg		77	(26%-128%)			
Dibenzofuran	1710	U	102		1250	ug/kg		73.2	(28%-117%)			
Diethylphthalate	1710	U	102		1260	ug/kg		74.1	(40%-113%)			
Dimethylphthalate	1710	U	102		1220	ug/kg		71.4	(38%-110%)			
Diphenylamine	1710	U	102		1240	ug/kg		72.4	(34%-111%)			
Fluoranthene	1710	J	13.6		1320	ug/kg		76.3	(32%-115%)			
Fluorene	1710	U	10.2		1170	ug/kg		68.3	(30%-115%)			
Hexachlorobenzene	1710	U	102		1230	ug/kg		72.3	(34%-111%)			
Hexachlorobutadiene	1710	U	102		1200	ug/kg		70.4	(24%-105%)			
Hexachlorocyclopentadiene	1710	U	102		1010	ug/kg		59.2	(12%-106%)			
Hexachloroethane	1710	U	102		1060	ug/kg		62.2	(24%-102%)			
Indeno(1,2,3-cd)pyrene	1710	U	10.2		1280	ug/kg		74.9	(29%-117%)			
Isophorone	1710	U	102		1160	ug/kg		67.8	(24%-108%)			
N-Nitrosodipropylamine	1710	U	102		1140	ug/kg		66.8	(23%-117%)			
Naphthalene	1710	U	10.2		1150	ug/kg		67.6	(21%-107%)			
Nitrobenzene	1710	U	102		1090	ug/kg		63.8	(25%-104%)			
Pentachlorophenol	1710	U	102		1180	ug/kg		69.2	(22%-108%)			

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1439085											
Phenanthrene	1710	U	10.2		1180	ug/kg		69	(28%-119%)		
Phenol	1710	U	102		1090	ug/kg		64	(28%-108%)	RMB	11/26/14 12:26
Pyrene	1710	J	13.0		1110	ug/kg		64	(25%-119%)		
bis(2-Chloro-1-methylethyl)ether	1710	U	102		1060	ug/kg		62.1	(25%-105%)		
bis(2-Chloroethoxy)methane	1710	U	102		1130	ug/kg		66.1	(27%-104%)		
bis(2-Chloroethyl) ether	1710	U	102		1090	ug/kg		64.1	(25%-102%)		
bis(2-Ethylhexyl)phthalate	1710	U	102		1390	ug/kg		81.7	(33%-124%)		
m-Nitroaniline	1710	U	102		1210	ug/kg		70.8	(31%-110%)		
o-Cresol	1710	U	102		1060	ug/kg		62.3	(27%-105%)		
o-Nitroaniline	1710	U	113		1230	ug/kg		72.1	(37%-114%)		
p-Nitroaniline	1710	U	102		1620	ug/kg		95.1	(36%-141%)		
**2,4,6-Tribromophenol	3410		1470		2440	ug/kg		71.5	(20%-122%)		
**2-Fluorobiphenyl	1710		816		1140	ug/kg		66.5	(25%-100%)		
**2-Fluorophenol	3410		1540		2220	ug/kg		65	(23%-107%)		
**Nitrobenzene-d5	1710		804		1090	ug/kg		64.1	(21%-103%)		
**Phenol-d5	3410		1540		2080	ug/kg		60.8	(25%-108%)		
**p-Terphenyl-d14	1710		651		1090	ug/kg		63.6	(31%-124%)		
QC1203217575 361900001 MSD											
1,2,4-Trichlorobenzene	1710	U	102		931	ug/kg	23.5	54.5	(0%-30%)		11/26/14 12:57
1,2-Dichlorobenzene	1710	U	102		831	ug/kg	28.4	48.7	(0%-30%)		
1,3-Dichlorobenzene	1710	U	102		794	ug/kg	27.4	46.5	(0%-30%)		
1,4-Dichlorobenzene	1710	U	102		829	ug/kg	28.5	48.6	(0%-30%)		
2,4,5-Trichlorophenol	1710	U	102		809	ug/kg	32.3*	47.4	(0%-30%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch 1439085												
2,4,6-Trichlorophenol	1710	U	102		824	ug/kg	31.7*	48.2	(0%-30%)	RMB	11/26/14	12:57
2,4-Dichlorophenol	1710	U	102		846	ug/kg	20.1	49.5	(0%-30%)			
2,4-Dimethylphenol	1710	U	102		796	ug/kg	25.2	46.6	(0%-30%)			
2,4-Dinitrophenol	1710	U	102	J	373	ug/kg	91.6*	21.8	(0%-30%)			
2,4-Dinitrotoluene	1710	U	102		867	ug/kg	34.8*	50.8	(0%-30%)			
2,6-Dinitrotoluene	1710	U	102		834	ug/kg	33.6*	48.9	(0%-30%)			
2-Chloronaphthalene	1710	U	10.2		855	ug/kg	29.0	50.1	(0%-30%)			
2-Chlorophenol	1710	U	102		796	ug/kg	29.0	46.6	(0%-30%)			
2-Methyl-4,6-dinitrophenol	1710	U	102		660	ug/kg	61.2*	38.6	(0%-30%)			
2-Methylnaphthalene	1710	U	10.2		842	ug/kg	24.1	49.3	(0%-30%)			
2-Nitrophenol	1710	U	102		814	ug/kg	23.4	47.7	(0%-30%)			
3,3'-Dichlorobenzidine	1710	U	102		944	ug/kg	32.5*	55.3	(0%-30%)			
3- and/or 4-Methylphenol	1710	U	102		916	ug/kg	30.8*	53.6	(0%-30%)			
4-Bromophenylphenylether	1710	U	102		854	ug/kg	35.2*	50	(0%-30%)			
4-Chloro-3-methylphenol	1710	U	136		842	ug/kg	27.3	49.3	(0%-30%)			
4-Chloroaniline	1710	U	102		836	ug/kg	28.3	49	(0%-30%)			
4-Chlorophenylphenylether	1710	U	102		922	ug/kg	27.3	54	(0%-30%)			
4-Nitrophenol	1710	U	102		836	ug/kg	42.9*	49	(0%-30%)			
Acenaphthene	1710	U	10.2		818	ug/kg	31.6*	47.9	(0%-30%)			
Acenaphthylene	1710	U	10.2		877	ug/kg	29.2	51.4	(0%-30%)			
Anthracene	1710	U	10.2		842	ug/kg	34.3*	49.3	(0%-30%)			

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch 1439085												
Benzo(a)anthracene	1710	U	10.2		843	ug/kg	36.2*	49.3	(0%-30%)			
Benzo(a)pyrene	1710	U	10.2		817	ug/kg	34.6*	47.8	(0%-30%)	RMB	11/26/14	12:57
Benzo(b)fluoranthene	1710	U	10.2		845	ug/kg	31.3*	49.5	(0%-30%)			
Benzo(ghi)perylene	1710	U	10.2		736	ug/kg	54.4*	43.1	(0%-30%)			
Benzo(k)fluoranthene	1710	U	10.2		853	ug/kg	28.8	49.9	(0%-30%)			
Butylbenzylphthalate	1710	U	102		844	ug/kg	41.6*	49.4	(0%-30%)			
Carbazole	1710	U	10.2		971	ug/kg	35.6*	56.9	(0%-30%)			
Chrysene	1710	U	10.2		871	ug/kg	35.3*	51	(0%-30%)			
Di-n-butylphthalate	1710	U	102		981	ug/kg	34.7*	57.4	(0%-30%)			
Di-n-octylphthalate	1710	U	102		1080	ug/kg	30.6*	63	(0%-30%)			
Dibenzo(a,h)anthracene	1710	U	10.2		770	ug/kg	52.3*	45.1	(0%-30%)			
Dibenzofuran	1710	U	102		927	ug/kg	29.7	54.3	(0%-30%)			
Diethylphthalate	1710	U	102		909	ug/kg	32.8*	53.2	(0%-30%)			
Dimethylphthalate	1710	U	102		894	ug/kg	30.8*	52.3	(0%-30%)			
Diphenylamine	1710	U	102		890	ug/kg	32.5*	52.1	(0%-30%)			
Fluoranthene	1710	J	13.6		931	ug/kg	34.2*	53.7	(0%-30%)			
Fluorene	1710	U	10.2		844	ug/kg	32.0*	49.4	(0%-30%)			
Hexachlorobenzene	1710	U	102		843	ug/kg	37.7*	49.3	(0%-30%)			
Hexachlorobutadiene	1710	U	102		926	ug/kg	25.9	54.2	(0%-30%)			
Hexachlorocyclopentadiene	1710	U	102		885	ug/kg	13.3	51.8	(0%-30%)			
Hexachloroethane	1710	U	102		817	ug/kg	26.1	47.8	(0%-30%)			
Indeno(1,2,3-cd)pyrene	1710	U	10.2		738	ug/kg	53.6*	43.2	(0%-30%)			

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch 1439085												
Isophorone	1710	U	102		890	ug/kg	26.1	52.1	(0%-30%)			
N-Nitrosodipropylamine	1710	U	102		836	ug/kg	30.8*	48.9	(0%-30%)	RMB	11/26/14	12:57
Naphthalene	1710	U	10.2		845	ug/kg	30.9*	49.5	(0%-30%)			
Nitrobenzene	1710	U	102		872	ug/kg	22.2	51.1	(0%-30%)			
Pentachlorophenol	1710	U	102		765	ug/kg	42.6*	44.8	(0%-30%)			
Phenanthrene	1710	U	10.2		819	ug/kg	35.9*	48	(0%-30%)			
Phenol	1710	U	102		810	ug/kg	29.6	47.5	(0%-30%)			
Pyrene	1710	J	13.0		707	ug/kg	44.1*	40.6	(0%-30%)			
bis(2-Chloro-1-methylethyl)ether	1710	U	102		792	ug/kg	28.8	46.4	(0%-30%)			
bis(2-Chloroethoxy)methane	1710	U	102		876	ug/kg	25.1	51.3	(0%-30%)			
bis(2-Chloroethyl) ether	1710	U	102		806	ug/kg	30.2*	47.2	(0%-30%)			
bis(2-Ethylhexyl)phthalate	1710	U	102		969	ug/kg	36.0*	56.7	(0%-30%)			
m-Nitroaniline	1710	U	102		878	ug/kg	31.7*	51.4	(0%-30%)			
o-Cresol	1710	U	102		805	ug/kg	27.6	47.1	(0%-30%)			
o-Nitroaniline	1710	U	113		910	ug/kg	30.0	53.3	(0%-30%)			
p-Nitroaniline	1710	U	102		1180	ug/kg	32.0*	68.8	(0%-30%)			
**2,4,6-Tribromophenol	3420		1470		1690	ug/kg		49.5	(20%-122%)			
**2-Fluorobiphenyl	1710		816		809	ug/kg		47.4	(25%-100%)			
**2-Fluorophenol	3420		1540		1650	ug/kg		48.2	(23%-107%)			
**Nitrobenzene-d5	1710		804		871	ug/kg		51	(21%-103%)			
**Phenol-d5	3420		1540		1540	ug/kg		45	(25%-108%)			
**p-Terphenyl-d14	1710		651		687	ug/kg		40.2	(31%-124%)			

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

Prep Logbook

Automated Soxhlet Extraction

Batch ID: 1439084 **Verified by:** _____
Analyst: Alberto Velasco
Method: SW846 3541

Lab SOP: GL-OA-E-066 REV# 5
Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Prepped Aliquot (mL)	Prepped Factor (mL/g)
1203217572 MB	25-NOV-2014 17:30:00	30.03	1	0.0333
1203217573 LCS	25-NOV-2014 17:30:00	30.05	1	0.03328
361900001	25-NOV-2014 17:30:00	30.08	1	0.03324
1203217574 MS (361900001)	25-NOV-2014 17:30:00	30.05	1	0.03328
1203217575 MSD (361900001)	25-NOV-2014 17:30:00	30.03	1	0.0333
361900002	25-NOV-2014 17:30:00	30.04	1	0.03329
361900003	25-NOV-2014 17:30:00	30.09	1	0.03323
361900004	25-NOV-2014 17:30:00	30.01	1	0.03332
361900005	25-NOV-2014 17:30:00	30	1	0.03333
361900006	25-NOV-2014 17:30:00	30.06	1	0.03327
361900007	25-NOV-2014 17:30:00	30.02	1	0.03331
361900008	25-NOV-2014 17:30:00	30.1	1	0.03322
361900009	25-NOV-2014 17:30:00	30.06	1	0.03327
361900010	25-NOV-2014 17:30:00	30.09	1	0.03323
361900011	25-NOV-2014 17:30:00	30.01	1	0.03332
361900012	25-NOV-2014 17:30:00	30.07	1	0.03326
361900013	25-NOV-2014 17:30:00	30.06	1	0.03327

Type	Sample Id	Description	Serial Number	Spike Amt	Units
LCS	1203217573	BNA LCS w/o Benzidine 50ppm	UE141111-40	1	mL
LCS	1203217573	BENZIDINE LCS	UE141111-45	1	mL
MS	1203217574	BNA LCS w/o Benzidine 50ppm	UE141111-40	1	mL
MS	1203217574	BENZIDINE LCS	UE141111-45	1	mL
MSD	1203217575	BNA LCS w/o Benzidine 50ppm	UE141111-40	1	mL
MSD	1203217575	BENZIDINE LCS	UE141111-45	1	mL
SURR	All	BNA for all Surrogate	UE141111-20	1	mL
REGNT	All	Methylene Chloride	2177614-D	60	mL
REGNT	All	Acetone	2182922-B1	60	mL
SOURC	All	SODIUM SULFATE	2168618	30	g

Comments:

Final Solvent: CH2Cl2
Verified By: SLW

HPLC Polynuclear Aromatic Hydrocarbon Analysis

HPLC-PAH
WC-HANFORD, INC. (WCHN)
SDG XP0168

Method/Analysis Information

Procedure:	**Polynuclear Aromatic Hydrocarbons**
Analytical Method:	SW846 8310
Prep Method:	SW846 3550B
Analytical Batch Number:	1439317
Prep Batch Number:	1439316

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8310:

Sample ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0
1203218127	MB for batch 1439316
1203218128	Laboratory Control Sample (LCS)
1203218129	361900010(J1V1L5) Matrix Spike (MS)
1203218130	361900010(J1V1L5) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-030 REV# 16.

Raw data reports are processed and reviewed by the analyst using the Target software package. False positives have been removed from the Target quantitation reports per standard operating procedures (SOP) section 18.0.

Calibration Information

Due to software limitations, the files displayed at the beginning of the Form 6 are only the last files uploaded for each individual level. A complete listing of all files used in the current ICAL are shown on the Calibration History that is included with each Level 4 or higher package. The last file by date in each level is the one currently uploaded for that level.

The linear equation used in Target and indicated on the initial calibration summary form is not a conventional linear equation (slope intercept formula) and does not match the equation found in SW-846 method 8000B. The x and y axes are inversed in Target, so that the instrument response is treated as the independent variable (x) and the concentration ratio is treated as the dependent variable (y). The equation used in Target to calculate sample results is adjusted to account for the linear equation inversion and reciprocal slope. The adjusted calculation has been independently verified to produce valid results.

Initial Calibration
All initial calibration requirements have been met for this SDG.

CCV Requirements
All associated calibration verification standards (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Client sample 361900010 (J1V1L5) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits.

Technical Information:

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection or sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
Samples 361900008 (J1V1L1) and 361900009 (J1V1L4) were diluted to bring over range target analytes within the calibration range.

Parmname	361900	
	008	009
Benzo(a)anthracene	4X	1X
Benzo(b)fluoranthene	4X	1X
Decafluorobiphenyl	4X 1X	4X 1X
Fluoranthene	4X	4X
Pyrene	4X	1X

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required for this SDG except for dilutions.

Samples 361900008 (J1V1L1) and 361900009 (J1V1L4) required re-analysis at a 1:4 dilution for multiply target analytes. Both sets of data were reported. In the diluted analysis, the target analytes were flagged with a 'D' qualifier.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents.

A data exception report (DER) was not generated for this SDG.

Manual Integrations
Some initial calibration standards, and samples 361900001 (J1V1L2), 361900002 (J1V1L3), 361900005 (J1V1M1), 361900006 (J1V1M2), 361900007 (J1V1L0), 361900008 (J1V1L1), 361900009 (J1V1L4), 361900010 (J1V1L5), 361900011 (J1V1L6), 361900012 (J1V1L7) and 361900013 (J1V1M0) required manual integrations due to software limitations.

Please see the raw data in the Miscellaneous Section.

Additional Comments
The Form 8 is used only as a sequence of the analysis.

One or more analytes were detected whose concentration greatly differed between the primary and confirmation analysis (greater than 40% difference or RPD) in samples 361900002 (J1V1L3) and 361900009 (J1V1L4). Because both detectors indicated an acceptable peak in the appropriate retention time window for these analytes, the analytes are reported as positive results. Due to the high percent difference or RPD between the two detectors, it is indicated as such on the appropriate Form I/Certificate of Analysis (C of A) with a 'P' qualifier. Those analytes reported with a percent difference or RPD greater than 40% but less than 70% are qualified as presumptive evidence of the presence of the material.

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the analyst, reviewer, and report specialist names associated with the generation of the data and package. The data validator will always sign and date the case narrative.

Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

System Configuration

The laboratory utilizes a high performance liquid chromatography (HPLC) instrument configuration for Polynuclear Aromatic Hydrocarbons analyses.

The chromatographic hardware system consists of a HP Model 1100 HPLC with programmable gradient pumping and a 100uL loop injector.

The HPLC 1100 is coupled to a HP Model G1315A Diode Array UV detector which monitors absorbance at the following five wavelengths: 1) 224 nm; 2) 250 nm; 3) 270 nm; 4) 234 nm; 5) 300 nm.

The HPLC 1100 is also coupled to a HP Model G1321A Fluorescence Detector in series which monitors the following varying excitations and emissions 1) EX 230 nm EM 330 nm; 2) EX 210 nm EM 314 nm; 3) EX 250 nm EM 368 nm; 4) EX 237 nm EM 440 nm; 5) EX 277 nm EM 376 nm; 6) EX 255 nm EM 420 nm; 7) EX 230 nm EM 453 nm.

The Diode Array UV detector is used as the primary detector and the Fluorescence Detector is used as the confirmation detector. All results are reported from the primary Diode Array UV detector.

The HPLC system is identified with a designation of HPLC E in the raw data printouts.

Chromatographic Columns

Chromatographic separation of Polynuclear Aromatic Hydrocarbons is accomplished through analysis on the following reversed phase columns:

Phenomenex: Luna C18 (2), 100 A, 250 mm x 4.6 mm containing 5 um size particle.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0168 GEL Work Order: 361900 Project: RC-107 Soil

The Qualifiers in this report are defined as follows:

D Results are reported from a diluted aliquot of sample.

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

P Aroclor target analyte with greater than 25% difference between column analyses.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Michael A. Penny Jr. **Name: Michael Penny**

Date: 03 DEC 2014 **Title: Group Leader**

Roadmap for WCHN XP0168 HPLC_PAH

This roadmap was analyzed by cww on 12-02-2014, 10:07.
This roadmap was reviewed by map on 12-02-2014, 10:42.
This roadmap was packaged by map on 12-03-2014, 07:45.

Sample

exclude	manual	datafile	smpid	injdate	injtime	sublist	clientid	dilution	batchid	comment
☐	N	/chem/hplce.i/p112814.b/ph5k2806.d	361900001	28-NOV-2014	12:22	XP0168.sub	J1V1L2	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2807.d	361900002	28-NOV-2014	13:04	XP0168.sub	J1V1L3	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2808.d	361900003	28-NOV-2014	13:46	XP0168.sub	J1V1L8	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2809.d	361900004	28-NOV-2014	14:28	XP0168.sub	J1V1L9	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2810.d	361900005	28-NOV-2014	15:10	XP0168.sub	J1V1M1	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2811.d	361900006	28-NOV-2014	15:52	XP0168.sub	J1V1M2	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2812.d	361900007	28-NOV-2014	16:35	XP0168.sub	J1V1L0	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2816.d	361900008	28-NOV-2014	19:23	XP0168.sub	J1V1L1	1	1439317	Needs dilution, report w/ ph5k2830.
☐	N	/chem/hplce.i/p112814.b/ph5k2830.d	361900008	29-NOV-2014	05:14	XP0168.sub	J1V1L1DL	4	1439317	(DL) Report w/ ph5k2816
☐	N	/chem/hplce.i/p112814.b/ph5k2818.d	361900009	28-NOV-2014	20:48	XP0168.sub	J1V1L4	1	1439317	Needs dilution, report w/ ph5k2832.
☐	N	/chem/hplce.i/p112814.b/ph5k2832.d	361900009	29-NOV-2014	06:38	XP0168.sub	J1V1L4DL	4	1439317	(DL) Report w/ ph5k2818
☐	N	/chem/hplce.i/p112814.b/ph5k2820.d	361900010	28-NOV-2014	22:12	XP0168.sub	J1V1L5	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2823.d	361900011	29-NOV-2014	00:19	XP0168.sub	J1V1L6	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2824.d	361900012	29-NOV-2014	01:01	XP0168.sub	J1V1L7	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2828.d	361900013	29-NOV-2014	03:49	XP0168.sub	J1V1M0	1	1439317	

QC Sample

exclude	manual	datafile	smpid	sampletype	injdate	injtime	sublist	clientid	dilution	batchid	comment
☐	N	/chem/hplce.i/p112814.b/ph5k2804.d	1203218127	mb	28-NOV-2014	10:57	XP0168.sub	PAHBLK01	1	1439317	
☐	N	/chem/hplce.i/p112814.b/ph5k2805.d	1203218128	lcs	28-NOV-2014	11:40	XP0168.sub	PAHBLK01LCS	1	1439317	Pass
☐	N	/chem/hplce.i/p112814.b/ph5k2821.d	1203218129	ms	28-NOV-2014	22:54	XP0168.sub	J1V1L5MS	1	1439317	Pass
☐	N	/chem/hplce.i/p112814.b/ph5k2822.d	1203218130	msd	28-NOV-2014	23:37	XP0168.sub	J1V1L5MSD	1	1439317	Pass

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L2
Sample ID: 361900001
Matrix: Soil
Collect Date: 20-NOV-14 11:02
Receive Date: 25-NOV-14
Collector: Client
Moisture: 2.5%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	U	5.12	5.12	17.1	ug/kg	1	CWW	11/28/14	1222	1439317	1
Acenaphthylene	U	5.12	5.12	17.1	ug/kg	1					
Anthracene	U	1.71	1.71	17.1	ug/kg	1					
Benzo(a)anthracene		14.7	0.546	1.71	ug/kg	1					
Benzo(a)pyrene		11.7	0.546	1.71	ug/kg	1					
Benzo(b)fluoranthene		10.4	0.546	1.71	ug/kg	1					
Benzo(ghi)perylene		7.93	0.546	1.71	ug/kg	1					
Benzo(k)fluoranthene	U	0.273	0.273	0.854	ug/kg	1					
Chrysene		13.4	0.546	1.71	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.546	0.546	1.71	ug/kg	1					
Fluoranthene		21.8	0.546	1.71	ug/kg	1					
Fluorene	U	5.12	5.12	17.1	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.546	0.546	1.71	ug/kg	1					
Naphthalene	U	5.12	5.12	17.1	ug/kg	1					
Phenanthrene		17.1	5.12	17.1	ug/kg	1					
Pyrene		29.4	0.546	1.71	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	5670 ug/kg	8540	66.4	(46%-101%)

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L3	Project:	WCHN00720
Sample ID:	361900002	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:51		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	1.67%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	U	5.08	5.08	16.9	ug/kg	1	CWW	11/28/14	1304	1439317	1
Acenaphthylene	U	5.08	5.08	16.9	ug/kg	1					
Anthracene	U	1.69	1.69	16.9	ug/kg	1					
Benzo(a)anthracene		2.63	0.541	1.69	ug/kg	1					
Benzo(a)pyrene		2.14	0.541	1.69	ug/kg	1					
Benzo(b)fluoranthene		1.92	0.541	1.69	ug/kg	1					
Benzo(ghi)perylene	J	1.53	0.541	1.69	ug/kg	1					
Benzo(k)fluoranthene	U	0.271	0.271	0.846	ug/kg	1					
Chrysene	P	3.12	0.541	1.69	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.541	0.541	1.69	ug/kg	1					
Fluoranthene		4.25	0.541	1.69	ug/kg	1					
Fluorene	U	5.08	5.08	16.9	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.541	0.541	1.69	ug/kg	1					
Naphthalene	U	5.08	5.08	16.9	ug/kg	1					
Phenanthrene	U	5.08	5.08	16.9	ug/kg	1					
Pyrene		4.54	0.541	1.69	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	5310 ug/kg	8460	62.8	(46%-101%)

Notes:

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Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L8	Project:	WCHN00720
Sample ID:	361900003	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:08		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	3.57%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	U	5.18	5.18	17.3	ug/kg	1	CWW	11/28/14	1346	1439317	1
Acenaphthylene	U	5.18	5.18	17.3	ug/kg	1					
Anthracene	U	1.73	1.73	17.3	ug/kg	1					
Benzo(a)anthracene		8.96	0.552	1.73	ug/kg	1					
Benzo(a)pyrene		7.68	0.552	1.73	ug/kg	1					
Benzo(b)fluoranthene		8.83	0.552	1.73	ug/kg	1					
Benzo(ghi)perylene	U	0.552	0.552	1.73	ug/kg	1					
Benzo(k)fluoranthene	U	0.276	0.276	0.863	ug/kg	1					
Chrysene		6.51	0.552	1.73	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.552	0.552	1.73	ug/kg	1					
Fluoranthene		11.8	0.552	1.73	ug/kg	1					
Fluorene	U	5.18	5.18	17.3	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.552	0.552	1.73	ug/kg	1					
Naphthalene	U	5.18	5.18	17.3	ug/kg	1					
Phenanthrene	J	7.11	5.18	17.3	ug/kg	1					
Pyrene		12.4	0.552	1.73	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	4650 ug/kg	8630	53.9	(46%-101%)

Notes:

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Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L9
Sample ID: 361900004
Matrix: Soil
Collect Date: 20-NOV-14 10:38
Receive Date: 25-NOV-14
Collector: Client
Moisture: 4.25%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	U	5.20	5.20	17.3	ug/kg	1	CWW	11/28/14	1428	1439317	1
Acenaphthylene	U	5.20	5.20	17.3	ug/kg	1					
Anthracene	J	5.36	1.73	17.3	ug/kg	1					
Benzo(a)anthracene		21.5	0.555	1.73	ug/kg	1					
Benzo(a)pyrene		19.0	0.555	1.73	ug/kg	1					
Benzo(b)fluoranthene		21.4	0.555	1.73	ug/kg	1					
Benzo(ghi)perylene		11.1	0.555	1.73	ug/kg	1					
Benzo(k)fluoranthene		12.0	0.278	0.867	ug/kg	1					
Chrysene		17.7	0.555	1.73	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.555	0.555	1.73	ug/kg	1					
Fluoranthene		32.8	0.555	1.73	ug/kg	1					
Fluorene	U	5.20	5.20	17.3	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.555	0.555	1.73	ug/kg	1					
Naphthalene	U	5.20	5.20	17.3	ug/kg	1					
Phenanthrene		25.4	5.20	17.3	ug/kg	1					
Pyrene		31.3	0.555	1.73	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	4850 ug/kg	8670	55.9	(46%-101%)

Notes:

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Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1M1	Project:	WCHN00720
Sample ID:	361900005	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:26		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	2.94%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	U	5.14	5.14	17.1	ug/kg	1	CWW	11/28/14	1510	1439317	1
Acenaphthylene	U	5.14	5.14	17.1	ug/kg	1					
Anthracene	U	1.71	1.71	17.1	ug/kg	1					
Benzo(a)anthracene		5.34	0.549	1.71	ug/kg	1					
Benzo(a)pyrene		5.34	0.549	1.71	ug/kg	1					
Benzo(b)fluoranthene		5.87	0.549	1.71	ug/kg	1					
Benzo(ghi)perylene		4.20	0.549	1.71	ug/kg	1					
Benzo(k)fluoranthene	U	0.274	0.274	0.857	ug/kg	1					
Chrysene		4.84	0.549	1.71	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.549	0.549	1.71	ug/kg	1					
Fluoranthene		7.48	0.549	1.71	ug/kg	1					
Fluorene	U	5.14	5.14	17.1	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.549	0.549	1.71	ug/kg	1					
Naphthalene	U	5.14	5.14	17.1	ug/kg	1					
Phenanthrene	U	5.14	5.14	17.1	ug/kg	1					
Pyrene		7.88	0.549	1.71	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	5110 ug/kg	8570	59.6	(46%-101%)

Notes:

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Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1M2
Sample ID: 361900006
Matrix: Soil
Collect Date: 20-NOV-14 10:08
Receive Date: 25-NOV-14
Collector: Client
Moisture: 3.32%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	U	5.16	5.16	17.2	ug/kg	1	CWW	11/28/14	1552	1439317	1
Acenaphthylene	U	5.16	5.16	17.2	ug/kg	1					
Anthracene	J	2.56	1.72	17.2	ug/kg	1					
Benzo(a)anthracene		14.3	0.550	1.72	ug/kg	1					
Benzo(a)pyrene		12.3	0.550	1.72	ug/kg	1					
Benzo(b)fluoranthene		14.4	0.550	1.72	ug/kg	1					
Benzo(ghi)perylene		8.08	0.550	1.72	ug/kg	1					
Benzo(k)fluoranthene	U	0.275	0.275	0.860	ug/kg	1					
Chrysene		10.3	0.550	1.72	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.550	0.550	1.72	ug/kg	1					
Fluoranthene		20.5	0.550	1.72	ug/kg	1					
Fluorene	U	5.16	5.16	17.2	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.550	0.550	1.72	ug/kg	1					
Naphthalene	U	5.16	5.16	17.2	ug/kg	1					
Phenanthrene	J	10.6	5.16	17.2	ug/kg	1					
Pyrene		18.6	0.550	1.72	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	5450 ug/kg	8600	63.4	(46%-101%)

Notes:

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Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L0	Project:	WCHN00720
Sample ID:	361900007	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 08:11		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	6.64%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	J	14.4	5.34	17.8	ug/kg	1	CWW	11/28/14	1635	1439317	1
Acenaphthylene	U	5.34	5.34	17.8	ug/kg	1					
Anthracene		23.3	1.78	17.8	ug/kg	1					
Benzo(a)anthracene		58.7	0.570	1.78	ug/kg	1					
Benzo(a)pyrene		50.6	0.570	1.78	ug/kg	1					
Benzo(b)fluoranthene		56.7	0.570	1.78	ug/kg	1					
Benzo(ghi)perylene		30.5	0.570	1.78	ug/kg	1					
Benzo(k)fluoranthene	U	0.285	0.285	0.891	ug/kg	1					
Chrysene		41.6	0.570	1.78	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.570	0.570	1.78	ug/kg	1					
Fluoranthene		87.1	0.570	1.78	ug/kg	1					
Fluorene	J	11.2	5.34	17.8	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.570	0.570	1.78	ug/kg	1					
Naphthalene	U	5.34	5.34	17.8	ug/kg	1					
Phenanthrene		75.1	5.34	17.8	ug/kg	1					
Pyrene		81.5	0.570	1.78	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	5290 ug/kg	8910	59.4	(46%-101%)

Notes:

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Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L1
Sample ID: 361900008
Matrix: Soil
Collect Date: 20-NOV-14 08:04
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.8%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene		85.2	5.31	17.7	ug/kg	1	CWW	11/28/14	1923	1439317	1
Acenaphthylene	U	5.31	5.31	17.7	ug/kg	1					
Anthracene		170	1.77	17.7	ug/kg	1					
Benzo(a)pyrene		318	0.566	1.77	ug/kg	1					
Benzo(ghi)perylene		172	0.566	1.77	ug/kg	1					
Benzo(k)fluoranthene		166	0.283	0.884	ug/kg	1					
Chrysene		244	0.566	1.77	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.566	0.566	1.77	ug/kg	1					
Fluorene		72.5	5.31	17.7	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.566	0.566	1.77	ug/kg	1					
Naphthalene	U	5.31	5.31	17.7	ug/kg	1					
Phenanthrene		511	5.31	17.7	ug/kg	1					
Benzo(a)anthracene	D	375	2.26	7.07	ug/kg	4	CWW	11/29/14	0514	1439317	2
Benzo(b)fluoranthene	D	332	2.26	7.07	ug/kg	4					
Fluoranthene	D	593	2.26	7.07	ug/kg	4					
Pyrene	D	494	2.26	7.07	ug/kg	4					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	
2	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	4760 ug/kg	8840	53.9	(46%-101%)
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	4870 ug/kg	8840	55.1	(46%-101%)

Notes:

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Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L4
Sample ID: 361900009
Matrix: Soil
Collect Date: 20-NOV-14 07:58
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.2%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene		57.8	5.27	17.6	ug/kg	1	CWW	11/28/14	2048	1439317	1
Acenaphthylene	U	5.27	5.27	17.6	ug/kg	1					
Anthracene		57.1	1.76	17.6	ug/kg	1					
Benzo(a)anthracene		273	0.562	1.76	ug/kg	1					
Benzo(a)pyrene		286	0.562	1.76	ug/kg	1					
Benzo(b)fluoranthene		329	0.562	1.76	ug/kg	1					
Benzo(ghi)perylene		173	0.562	1.76	ug/kg	1					
Benzo(k)fluoranthene		140	0.281	0.878	ug/kg	1					
Chrysene		191	0.562	1.76	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.562	0.562	1.76	ug/kg	1					
Fluorene	P	18.9	5.27	17.6	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.562	0.562	1.76	ug/kg	1					
Naphthalene	U	5.27	5.27	17.6	ug/kg	1					
Phenanthrene		181	5.27	17.6	ug/kg	1					
Pyrene		327	0.562	1.76	ug/kg	1					
Fluoranthene	D	358	2.25	7.02	ug/kg	4	CWW	11/29/14	0638	1439317	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	
2	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	4620 ug/kg	8780	52.6	(46%-101%)
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	4670 ug/kg	8780	53.2	(46%-101%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L5
Sample ID: 361900010
Matrix: Soil
Collect Date: 20-NOV-14 07:43
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.36%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	U	5.27	5.27	17.6	ug/kg	1	CWW	11/28/14	2212	1439317	1
Acenaphthylene	U	5.27	5.27	17.6	ug/kg	1					
Anthracene	U	1.76	1.76	17.6	ug/kg	1					
Benzo(a)anthracene		6.13	0.562	1.76	ug/kg	1					
Benzo(a)pyrene		5.48	0.562	1.76	ug/kg	1					
Benzo(b)fluoranthene		5.13	0.562	1.76	ug/kg	1					
Benzo(ghi)perylene		4.62	0.562	1.76	ug/kg	1					
Benzo(k)fluoranthene	U	0.281	0.281	0.878	ug/kg	1					
Chrysene		6.05	0.562	1.76	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.562	0.562	1.76	ug/kg	1					
Fluoranthene		9.28	0.562	1.76	ug/kg	1					
Fluorene	U	5.27	5.27	17.6	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.562	0.562	1.76	ug/kg	1					
Naphthalene	U	5.27	5.27	17.6	ug/kg	1					
Phenanthrene	J	6.15	5.27	17.6	ug/kg	1					
Pyrene		10.4	0.562	1.76	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	4840 ug/kg	8780	55.1	(46%-101%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L6	Project:	WCHN00720
Sample ID:	361900011	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:38		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	4.88%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	U	5.25	5.25	17.5	ug/kg	1	CWW	11/29/14	0019	1439317	1
Acenaphthylene	U	5.25	5.25	17.5	ug/kg	1					
Anthracene	U	1.75	1.75	17.5	ug/kg	1					
Benzo(a)anthracene		3.76	0.560	1.75	ug/kg	1					
Benzo(a)pyrene		3.37	0.560	1.75	ug/kg	1					
Benzo(b)fluoranthene		3.69	0.560	1.75	ug/kg	1					
Benzo(ghi)perylene		2.66	0.560	1.75	ug/kg	1					
Benzo(k)fluoranthene	U	0.280	0.280	0.874	ug/kg	1					
Chrysene		3.38	0.560	1.75	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.560	0.560	1.75	ug/kg	1					
Fluoranthene		5.94	0.560	1.75	ug/kg	1					
Fluorene	U	5.25	5.25	17.5	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.560	0.560	1.75	ug/kg	1					
Naphthalene	U	5.25	5.25	17.5	ug/kg	1					
Phenanthrene	U	5.25	5.25	17.5	ug/kg	1					
Pyrene		5.02	0.560	1.75	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	5370 ug/kg	8740	61.4	(46%-101%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L7	Project:	WCHN00720
Sample ID:	361900012	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:32		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	8.22%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	U	5.45	5.45	18.2	ug/kg	1	CWW	11/29/14	0101	1439317	1
Acenaphthylene	U	5.45	5.45	18.2	ug/kg	1					
Anthracene	U	1.82	1.82	18.2	ug/kg	1					
Benzo(a)anthracene		5.73	0.581	1.82	ug/kg	1					
Benzo(a)pyrene		4.64	0.581	1.82	ug/kg	1					
Benzo(b)fluoranthene		5.45	0.581	1.82	ug/kg	1					
Benzo(ghi)perylene		3.50	0.581	1.82	ug/kg	1					
Benzo(k)fluoranthene	U	0.290	0.290	0.908	ug/kg	1					
Chrysene		4.38	0.581	1.82	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.581	0.581	1.82	ug/kg	1					
Fluoranthene		7.73	0.581	1.82	ug/kg	1					
Fluorene	U	5.45	5.45	18.2	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.581	0.581	1.82	ug/kg	1					
Naphthalene	U	5.45	5.45	18.2	ug/kg	1					
Phenanthrene	U	5.45	5.45	18.2	ug/kg	1					
Pyrene		6.59	0.581	1.82	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	5740 ug/kg	9080	63.2	(46%-101%)

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1M0
Sample ID: 361900013
Matrix: Soil
Collect Date: 20-NOV-14 07:26
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.33%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
HPLC-PAH											
8310/3550 PAH Std list Soil "Dry Weight Corrected"											
Acenaphthene	U	5.28	5.28	17.6	ug/kg	1	CWW	11/29/14	0349	1439317	1
Acenaphthylene	U	5.28	5.28	17.6	ug/kg	1					
Anthracene	J	4.23	1.76	17.6	ug/kg	1					
Benzo(a)anthracene		22.5	0.563	1.76	ug/kg	1					
Benzo(a)pyrene		19.8	0.563	1.76	ug/kg	1					
Benzo(b)fluoranthene		24.6	0.563	1.76	ug/kg	1					
Benzo(ghi)perylene		13.4	0.563	1.76	ug/kg	1					
Benzo(k)fluoranthene	U	0.281	0.281	0.880	ug/kg	1					
Chrysene		15.0	0.563	1.76	ug/kg	1					
Dibenzo(a,h)anthracene	U	0.563	0.563	1.76	ug/kg	1					
Fluoranthene		30.1	0.563	1.76	ug/kg	1					
Fluorene	U	5.28	5.28	17.6	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	0.563	0.563	1.76	ug/kg	1					
Naphthalene	U	5.28	5.28	17.6	ug/kg	1					
Phenanthrene	J	16.3	5.28	17.6	ug/kg	1					
Pyrene		26.7	0.563	1.76	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PAH BY HPLC Prep in soil	AXV1	11/26/14	1754	1439316

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8310	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decafluorobiphenyl	8310/3550 PAH Std list Soil "Dry Weight Corrected"	5420 ug/kg	8800	61.6	(46%-101%)

Notes:

QC Summary

QC Summary

Report Date: December 2, 2014

WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington

Contact: **Joan Kessner**

Workorder: **361900** **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
HPLC-PAH											
Batch 1439317											
QC1203218128 LCS											
Acenaphthene	1660			1350	ug/kg		81.5	(66%-98%)	CWW	11/28/14	11:40
Acenaphthylene	1660			1250	ug/kg		75.3	(65%-95%)			
Anthracene	1660			1350	ug/kg		80.9	(71%-107%)			
Benzo(a)anthracene	166			133	ug/kg		79.7	(72%-103%)			
Benzo(a)pyrene	166			125	ug/kg		74.9	(68%-98%)			
Benzo(b)fluoranthene	166			131	ug/kg		78.9	(72%-99%)			
Benzo(ghi)perylene	166			121	ug/kg		72.7	(69%-98%)			
Benzo(k)fluoranthene	83.2			71.1	ug/kg		85.5	(62%-103%)			
Chrysene	166			142	ug/kg		85.5	(80%-113%)			
Dibenzo(a,h)anthracene	166			153	ug/kg		91.7	(83%-115%)			
Fluoranthene	166			132	ug/kg		79.3	(68%-98%)			
Fluorene	1660			1310	ug/kg		78.8	(68%-99%)			
Indeno(1,2,3-cd)pyrene	166			137	ug/kg		82.4	(76%-105%)			
Naphthalene	1660			1220	ug/kg		73.6	(62%-93%)			
Phenanthrene	1660			1320	ug/kg		79.4	(70%-98%)			
Pyrene	166			133	ug/kg		79.9	(73%-104%)			
**Decafluorobiphenyl	8320			5630	ug/kg		67.6	(46%-101%)			
QC1203218127 MB											
Acenaphthene			U	5.00	ug/kg					11/28/14	10:57
Acenaphthylene			U	5.00	ug/kg						

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
HPLC-PAH											
Batch 1439317											
Anthracene				U	1.67	ug/kg					
Benzo(a)anthracene				U	0.533	ug/kg				CWW	11/28/14 10:57
Benzo(a)pyrene				U	0.533	ug/kg					
Benzo(b)fluoranthene				U	0.533	ug/kg					
Benzo(ghi)perylene				U	0.533	ug/kg					
Benzo(k)fluoranthene				U	0.267	ug/kg					
Chrysene				U	0.533	ug/kg					
Dibenzo(a,h)anthracene				U	0.533	ug/kg					
Fluoranthene				U	0.533	ug/kg					
Fluorene				U	5.00	ug/kg					
Indeno(1,2,3-cd)pyrene				U	0.533	ug/kg					
Naphthalene				U	5.00	ug/kg					
Phenanthrene				U	5.00	ug/kg					
Pyrene				U	0.533	ug/kg					
**Decafluorobiphenyl	8330				5620	ug/kg		67.4	(46%-101%)		
QC1203218129 361900010 MS											
Acenaphthene	1760	U	5.27		1390	ug/kg		79.2	(57%-97%)		11/28/14 22:54
Acenaphthylene	1760	U	5.27		1290	ug/kg		73.4	(55%-94%)		
Anthracene	1760	U	1.76		1440	ug/kg		81.9	(65%-103%)		
Benzo(a)anthracene	176		6.13		154	ug/kg		84.2	(53%-110%)		
Benzo(a)pyrene	176		5.48		149	ug/kg		82	(53%-105%)		
Benzo(b)fluoranthene	176		5.13		148	ug/kg		81.1	(52%-110%)		
Benzo(ghi)perylene	176		4.62		134	ug/kg		73.6	(44%-107%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
HPLC-PAH											
Batch 1439317											
Benzo(k)fluoranthene	87.8	U	0.281		83.4	ug/kg		94.9	(48%-116%)	CWW	11/28/14 22:54
Chrysene	176		6.05		157	ug/kg		85.8	(61%-118%)		
Dibenzo(a,h)anthracene	176	U	0.562		163	ug/kg		93	(63%-119%)		
Fluoranthene	176		9.28		153	ug/kg		81.6	(56%-100%)		
Fluorene	1760	U	5.27		1350	ug/kg		76.8	(59%-97%)		
Indeno(1,2,3-cd)pyrene	176	U	0.562		150	ug/kg		85.3	(53%-115%)		
Naphthalene	1760	U	5.27		1250	ug/kg		71.2	(54%-88%)		
Phenanthrene	1760	J	6.15		1400	ug/kg		79.5	(60%-99%)		
Pyrene	176		10.4		170	ug/kg		90.8	(54%-112%)		
**Decafluorobiphenyl	8780		4840		5820	ug/kg		66.2	(46%-101%)		
QC1203218130 361900010 MSD											
Acenaphthene	1760	U	5.27		1380	ug/kg	1.13	78.2	(0%-30%)		11/28/14 23:37
Acenaphthylene	1760	U	5.27		1270	ug/kg	1.42	72.3	(0%-30%)		
Anthracene	1760	U	1.76		1430	ug/kg	0.683	81.2	(0%-30%)		
Benzo(a)anthracene	176		6.13		145	ug/kg	5.86	79.1	(0%-30%)		
Benzo(a)pyrene	176		5.48		142	ug/kg	5.15	77.6	(0%-30%)		
Benzo(b)fluoranthene	176		5.13		140	ug/kg	5.33	76.7	(0%-30%)		
Benzo(ghi)perylene	176		4.62		129	ug/kg	3.67	70.8	(0%-30%)		
Benzo(k)fluoranthene	87.9	U	0.281		77.6	ug/kg	7.16	88.3	(0%-30%)		
Chrysene	176		6.05		148	ug/kg	5.55	80.9	(0%-30%)		
Dibenzo(a,h)anthracene	176	U	0.562		160	ug/kg	2.13	91	(0%-30%)		
Fluoranthene	176		9.28		140	ug/kg	8.84	74.2	(0%-30%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
HPLC-PAH											
Batch 1439317											
Fluorene	1760	U	5.27		1340	ug/kg	0.873	76.1	(0%-30%)	CWW	11/28/14 23:37
Indeno(1,2,3-cd)pyrene	176	U	0.562		145	ug/kg	3.09	82.6	(0%-30%)		
Naphthalene	1760	U	5.27		1230	ug/kg	2.02	69.7	(0%-30%)		
Phenanthrene	1760	J	6.15		1370	ug/kg	2.39	77.6	(0%-30%)		
Pyrene	176		10.4		148	ug/kg	14.0	78.1	(0%-30%)		
**Decafluorobiphenyl	8790		4840		5660	ug/kg		64.4	(46%-101%)		

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous Data

Prep Logbook

Extraction of Semivolatile and Nonvolatile Organic Compounds from Soil, Sludge, and Other Miscellaneous Solid Samples

Batch ID: 1439316 **Verified by:** _____
Analyst: Alberto Velasco
Method: SW846 3550B

Lab SOP: GL-OA-E-010 REV# 23
Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Prepped Aliquot (mL)	Prepped Factor (mL/g)
1203218127 MB	26-NOV-2014 17:54:00	30.01	1	0.03332
1203218128 LCS	26-NOV-2014 17:54:00	30.06	1	0.03327
361900001	26-NOV-2014 17:54:00	30.03	1	0.0333
361900002	26-NOV-2014 17:54:00	30.05	1	0.03328
361900003	26-NOV-2014 17:54:00	30.05	1	0.03328
361900004	26-NOV-2014 17:54:00	30.1	1	0.03322
361900005	26-NOV-2014 17:54:00	30.04	1	0.03329
361900006	26-NOV-2014 17:54:00	30.08	1	0.03324
361900007	26-NOV-2014 17:54:00	30.06	1	0.03327
361900008	26-NOV-2014 17:54:00	30.01	1	0.03332
361900009	26-NOV-2014 17:54:00	30.04	1	0.03329
361900010	26-NOV-2014 17:54:00	30.07	1	0.03326
1203218129 MS (361900010)	26-NOV-2014 17:54:00	30.08	1	0.03324
1203218130 MSD (361900010)	26-NOV-2014 17:54:00	30.05	1	0.03328
361900011	26-NOV-2014 17:54:00	30.06	1	0.03327
361900012	26-NOV-2014 17:54:00	30.01	1	0.03332
361900013	26-NOV-2014 17:54:00	30.02	1	0.03331

Type	Sample Id	Description	Serial Number	Spike Amt	Units
LCS	1203218128	8310 PAH SPIKE	UE140804-10	1	mL
MS	1203218129	8310 PAH SPIKE	UE140804-10	1	mL
MSD	1203218130	8310 PAH SPIKE	UE140804-10	1	mL
SURR	All	Decafluorobiphenyl 250 mg/L	UE141110-35	1	mL
REGNT	All	Acetonitrile UV 4L	2172689	5	mL
REGNT	All	Methylene Chloride	2187128-D	300	mL
SOURC	All	SODIUM SULFATE	2168618	30	g

Comments:

Verified By: SJW
Final Solvent: ACN

FID Diesel Range Organics Analysis

Case Narrative

FID Diesel Range Organics
WC-HANFORD, INC. (WCHN)
SDG XP0168

Method/Analysis Information

Procedure:	**Analysis of Diesel Range Organics by Flame Ionization Detector**
Analytical Method:	NWTPH-Dx in Soil
Prep Method:	SW846 3541
Analytical Batch Number:	1439114
Prep Batch Number:	1439113

Sample Analysis

The following samples were analyzed using the analytical protocol as established in NWTPH-Dx in Soil:

Sample ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0
1203217603	MB for batch 1439113
1203217604	Laboratory Control Sample (LCS)
1203217605	361900008(J1V1L1) Matrix Spike (MS)
1203217606	361900008(J1V1L1) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-003 REV# 24.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria. Analyte peaks eluted within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Sample 361900008 (J1V1L1) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS recovery was within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recovery was within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Analyte peaks eluted within the established retention time windows for this method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Electronic Package Comment

This package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative.

Data Exception (DER) Documentation
Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for this SDG in this batch. A data exception report (DER) was not generated for this SDG.

Manual Integrations
Samples required manual integration for surrogates.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The additional comments were not required.

System Configuration

The Diesel Range Organics analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
FID7.I	Agilent Gas Chromatograph	Agilent 6890N GC/FID	DB-5MS	30m x 0.25mm, 0.25um(J&W)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0168 GEL Work Order: 361900 Project: RC-107 Soil

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Cameron Bearden **Name: Cameron Bearden**

Date: 02 DEC 2014 **Title: Group Leader**

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L2	Project:	WCHN00720
Sample ID:	361900001	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 11:02		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	2.5%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2210	2210	6810	ug/kg	1	BYT1	12/01/14	1845	1439114	1
Motor Oil (C20-C36)	J	3220	2210	6810	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	439 ug/kg	681	64.4	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L3	Project:	WCHN00720
Sample ID:	361900002	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:51		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	1.67%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2200	2200	6770	ug/kg	1	BYT1	11/30/14	2246	1439114	1
Motor Oil (C20-C36)	U	2200	2200	6770	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	349 ug/kg	677	51.5	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L8	Project:	WCHN00720
Sample ID:	361900003	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:08		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	3.57%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2240	2240	6900	ug/kg	1	BYT1	12/01/14	1924	1439114	1
Motor Oil (C20-C36)	J	4880	2240	6900	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	519 ug/kg	690	75.2	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L9
Sample ID: 361900004
Matrix: Soil
Collect Date: 20-NOV-14 10:38
Receive Date: 25-NOV-14
Collector: Client
Moisture: 4.25%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2260	2260	6950	ug/kg	1	BYT1	12/01/14	0003	1439114	1
Motor Oil (C20-C36)	J	4620	2260	6950	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	376 ug/kg	695	54.1	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1M1
Sample ID: 361900005
Matrix: Soil
Collect Date: 20-NOV-14 10:26
Receive Date: 25-NOV-14
Collector: Client
Moisture: 2.94%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2220	2220	6840	ug/kg	1	BYT1	12/01/14	0041	1439114	1
Motor Oil (C20-C36)	J	3910	2220	6840	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	476 ug/kg	684	69.5	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1M2	Project:	WCHN00720
Sample ID:	361900006	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:08		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	3.32%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2240	2240	6880	ug/kg	1	BYT1	12/01/14	0120	1439114	1
Motor Oil (C20-C36)	J	3020	2240	6880	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	467 ug/kg	688	68.0	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L0
Sample ID: 361900007
Matrix: Soil
Collect Date: 20-NOV-14 08:11
Receive Date: 25-NOV-14
Collector: Client
Moisture: 6.64%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2320	2320	7130	ug/kg	1	BYT1	12/01/14	0158	1439114	1
Motor Oil (C20-C36)	J	6370	2320	7130	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	486 ug/kg	713	68.2	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L1	Project:	WCHN00720
Sample ID:	361900008	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 08:04		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.8%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2300	2300	7070	ug/kg	1	BYT1	12/01/14	1140	1439114	1
Motor Oil (C20-C36)		8300	2300	7070	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	592 ug/kg	707	83.7	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L4	Project:	WCHN00720
Sample ID:	361900009	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:58		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2280	2280	7030	ug/kg	1	BYT1	12/01/14	1336	1439114	1
Motor Oil (C20-C36)		8580	2280	7030	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	535 ug/kg	703	76.1	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L5	Project:	WCHN00720
Sample ID:	361900010	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:43		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.36%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2280	2280	7030	ug/kg	1	BYT1	12/01/14	1415	1439114	1
Motor Oil (C20-C36)	J	4090	2280	7030	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	458 ug/kg	703	65.2	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L6
Sample ID: 361900011
Matrix: Soil
Collect Date: 20-NOV-14 07:38
Receive Date: 25-NOV-14
Collector: Client
Moisture: 4.88%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2270	2270	6990	ug/kg	1	BYT1	12/01/14	1454	1439114	1
Motor Oil (C20-C36)	J	2830	2270	6990	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	456 ug/kg	699	65.2	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L7	Project:	WCHN00720
Sample ID:	361900012	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:32		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	8.22%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2360	2360	7250	ug/kg	1	BYT1	12/02/14	1256	1439114	1
Motor Oil (C20-C36)	J	2890	2360	7250	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	503 ug/kg	725	69.5	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: December 2, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1M0	Project:	WCHN00720
Sample ID:	361900013	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:26		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.33%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2290	2290	7040	ug/kg	1	BYT1	12/01/14	1611	1439114	1
Motor Oil (C20-C36)	J	2540	2290	7040	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	SJW1	11/26/14	1100	1439113

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	388 ug/kg	704	55.1	(50%-150%)

Notes:

Quality Control Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: December 2, 2014

WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington

Contact: **Joan Kessner**

Workorder: **361900** **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Diesel Range Organics										
Batch 1439114										
QC1203217604 LCS										
Diesel Range Organics (C10-C20)	66600			49100	ug/kg		73.7	(70%-130%)	BYT1	12/01/14 16:49
Motor Oil (C20-C36)	66600			60100	ug/kg		90.3	(70%-130%)		
**o-Terphenyl	666			538	ug/kg		80.8	(50%-150%)		
QC1203217603 MB										
Diesel Range Organics (C10-C20)			U	2170	ug/kg					11/30/14 20:50
Motor Oil (C20-C36)			U	2170	ug/kg					
**o-Terphenyl	667			480	ug/kg		71.9	(50%-150%)		
QC1203217605 361900008 MS										
Diesel Range Organics (C10-C20)	70700	U	2300	60800	ug/kg		86	(70%-130%)		12/01/14 12:19
Motor Oil (C20-C36)	70700		8300	69500	ug/kg		86.6	(70%-130%)		
**o-Terphenyl	707		592	585	ug/kg		82.7	(50%-150%)		
QC1203217606 361900008 MSD										
Diesel Range Organics (C10-C20)	70600	U	2300	57300	ug/kg	6.03	81.1	(0%-20%)		12/01/14 12:58
Motor Oil (C20-C36)	70600		8300	74100	ug/kg	6.34	93.1	(0%-20%)		
**o-Terphenyl	706		592	582	ug/kg		82.3	(50%-150%)		

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

P Aroclor target analyte with greater than 25% difference between column analyses.

T Spike and/or spike duplicate sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

Prep Logbook

Extraction of Semivolatile and Nonvolatile Organic Compounds from Soil, Sludge, and Other Miscellaneous Solid Samples

Batch ID: 1439113 **Verified by:** _____
Analyst: Sirena White
Method: SW846 3541

Lab SOP: GL-OA-E-010 REV# 23
Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Prepped Aliquot (mL)	Prepped Factor (mL/g)
1203217603 MB	26-NOV-2014 11:00:00	30	1	0.03333
1203217604 LCS	26-NOV-2014 11:00:00	30.04	1	0.03329
361900001	26-NOV-2014 11:00:00	30.12	1	0.0332
361900002	26-NOV-2014 11:00:00	30.05	1	0.03328
361900003	26-NOV-2014 11:00:00	30.06	1	0.03327
361900004	26-NOV-2014 11:00:00	30.07	1	0.03326
361900005	26-NOV-2014 11:00:00	30.11	1	0.03321
361900006	26-NOV-2014 11:00:00	30.07	1	0.03326
361900007	26-NOV-2014 11:00:00	30.05	1	0.03328
361900008	26-NOV-2014 11:00:00	30.03	1	0.0333
1203217605 MS (361900008)	26-NOV-2014 11:00:00	30.02	1	0.03331
1203217606 MSD (361900008)	26-NOV-2014 11:00:00	30.06	1	0.03327
361900009	26-NOV-2014 11:00:00	30.02	1	0.03331
361900010	26-NOV-2014 11:00:00	30.06	1	0.03327
361900011	26-NOV-2014 11:00:00	30.07	1	0.03326
361900012	26-NOV-2014 11:00:00	30.07	1	0.03326
361900013	26-NOV-2014 11:00:00	30	1	0.03333

Type	Sample Id	Description	Serial Number	Spike Amt	Units
LCS	1203217604	AZDRO SPIKE LCS STD,4000ug/ml	WFI141107-62	1	mL
MS	1203217605	AZDRO SPIKE LCS STD,4000ug/ml	WFI141107-62	1	mL
MSD	1203217606	AZDRO SPIKE LCS STD,4000ug/ml	WFI141107-62	1	mL
SURR	All	20 ppm surrogate	WE141001-04	1	mL
SURR	All	20 ppm surrogate	WE141120-04	1	mL
REGNT	All	Methylene Chloride	2177614-D	120	mL
SOURC	All	SODIUM SULFATE	2168618	30	g

Comments:

Final Solvent: CH2Cl2
Verified by: MD

Pesticide Analysis

Case Narrative

Pesticide Case Narrative
WC-HANFORD, INC. (WCHN)
SDG XP0168

Method/Analysis Information

Procedure:	**Organochlorine Pesticides and Chlorinated Hydrocarbons**
Analytical Method:	SW846 3541/8081B
Prep Method:	SW846 3541
Analytical Batch Number:	1439094
Prep Batch Number:	1439091

Sample Analysis

Sample ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0
1203217576	MB for batch 1439091
1203217577	Laboratory Control Sample (LCS)
1203217578	361900003(J1V1L8) Matrix Spike (MS)
1203217579	361900003(J1V1L8) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-041 REV# 13.

Raw data reports are processed and reviewed by the analyst using ChemStation software. False positives have been removed from the ChemStation quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All calibration verification standards (CVS, ICV, or CCV) requirements have not been met for this SDG. Several target analytes failed acceptance criteria with a positive bias on one analytical column in the standards bracketing the samples in this SDG. The positive bias for the analytical data is a result of instrument response increasing after the initial calibration. These target analytes were not detected above the PQL in the samples; therefore, the non-compliance has no adverse effects on the data.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this analytical batch for this SDG.

Laboratory Control Sample (LCS) Recovery
The laboratory control sample (LCS) spike recoveries met the acceptance limits.

QC Sample Designation
Sample 361900003 (J1V1L8) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS recoveries for this SDG were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries for this SDG were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD values between the MS and MSD were within the acceptance limits.

Technical Information:

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG in this analytical batch met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported analyte detections in client and quality control samples were within the established retention time windows.

Sample Dilutions
The samples in this SDG in this analytical batch did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch unless confirmations or dilutions were required.

Florisil
Florisil clean-up was not performed on client and quality control samples in this batch.

Miscellaneous Information:

Electronic Package Comment

This package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative.

Data Exception (DER) Documentation
Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for the samples in this batch for this SDG. A data exception report (DER) was not generated for this SDG.

Manual Integrations
Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this pesticide fraction.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments required for this SDG:

System Configuration

The Semi-Volatiles-Pesticide analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
ECD7A.I_1	Agilent 6890 Gas Chromatograph/Dual ECD w/ 7673 Autosampler	HP6890 Series ECD	Rtx-CLP I	30m x 0.25mm, 0.25um (Rtx-CLPesticide I)
ECD7A.I_2	Agilent 6890 Gas Chromatograph/Dual ECD w/ 7673 Autosampler	HP6890 Series ECD	Rtx-CLP II	30m x 0.25mm, 0.20um (Rtx-CLPesticide II)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0168 GEL Work Order: 361900 Project: RC-107 Soil

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

P Aroclor target analyte with greater than 25% difference between column analyses.

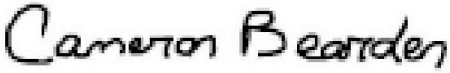
U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Cameron Bearden**

Date: 04 DEC 2014 **Title: Group Leader**

Sample Data Summary

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L2	Project:	WCHN00720
Sample ID:	361900001	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 11:02		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	2.5%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.342	0.342	1.37	ug/kg	1	LOF	11/26/14	1837	1439094	1
4,4'-DDE	U	0.342	0.342	1.37	ug/kg	1					
4,4'-DDT	U	0.342	0.342	1.37	ug/kg	1					
Aldrin	U	0.171	0.171	0.683	ug/kg	1					
Dieldrin	U	0.342	0.342	1.37	ug/kg	1					
Endosulfan I	U	0.171	0.171	0.683	ug/kg	1					
Endosulfan II	U	0.342	0.342	1.37	ug/kg	1					
Endosulfan sulfate	U	0.342	0.342	1.37	ug/kg	1					
Endrin	U	0.342	0.342	1.37	ug/kg	1					
Endrin aldehyde	U	0.342	0.342	1.37	ug/kg	1					
Endrin ketone	U	0.342	0.342	1.37	ug/kg	1					
Heptachlor	U	0.171	0.171	0.683	ug/kg	1					
Heptachlor epoxide	U	0.171	0.171	0.683	ug/kg	1					
Methoxychlor	U	1.71	1.71	6.83	ug/kg	1					
Toxaphene	U	5.69	5.69	17.1	ug/kg	1					
alpha-BHC	U	0.171	0.171	0.683	ug/kg	1					
alpha-Chlordane	U	0.171	0.171	0.683	ug/kg	1					
beta-BHC	U	0.171	0.171	0.683	ug/kg	1					
delta-BHC	U	0.171	0.171	0.683	ug/kg	1					
gamma-BHC (Lindane)	U	0.171	0.171	0.683	ug/kg	1					
gamma-Chlordane	U	0.171	0.171	0.683	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	30.0 ug/kg	34.2	87.8	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	29.4 ug/kg	34.2	86.1	(31%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L3	Project:	WCHN00720
Sample ID:	361900002	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:51		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	1.67%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.338	0.338	1.35	ug/kg	1	LOF	11/26/14	1853	1439094	1
4,4'-DDE	U	0.338	0.338	1.35	ug/kg	1					
4,4'-DDT	U	0.338	0.338	1.35	ug/kg	1					
Aldrin	U	0.169	0.169	0.676	ug/kg	1					
Dieldrin	U	0.338	0.338	1.35	ug/kg	1					
Endosulfan I	U	0.169	0.169	0.676	ug/kg	1					
Endosulfan II	U	0.338	0.338	1.35	ug/kg	1					
Endosulfan sulfate	U	0.338	0.338	1.35	ug/kg	1					
Endrin	U	0.338	0.338	1.35	ug/kg	1					
Endrin aldehyde	U	0.338	0.338	1.35	ug/kg	1					
Endrin ketone	U	0.338	0.338	1.35	ug/kg	1					
Heptachlor	U	0.169	0.169	0.676	ug/kg	1					
Heptachlor epoxide	U	0.169	0.169	0.676	ug/kg	1					
Methoxychlor	U	1.69	1.69	6.76	ug/kg	1					
Toxaphene	U	5.63	5.63	16.9	ug/kg	1					
alpha-BHC	U	0.169	0.169	0.676	ug/kg	1					
alpha-Chlordane	U	0.169	0.169	0.676	ug/kg	1					
beta-BHC	U	0.169	0.169	0.676	ug/kg	1					
delta-BHC	U	0.169	0.169	0.676	ug/kg	1					
gamma-BHC (Lindane)	U	0.169	0.169	0.676	ug/kg	1					
gamma-Chlordane	U	0.169	0.169	0.676	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	32.5 ug/kg	33.8	96.1	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	30.1 ug/kg	33.8	89.1	(31%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L8	Project:	WCHN00720
Sample ID:	361900003	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:08		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	3.57%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.345	0.345	1.38	ug/kg	1	LOF	11/26/14	1909	1439094	1
4,4'-DDE	U	0.345	0.345	1.38	ug/kg	1					
4,4'-DDT	U	0.345	0.345	1.38	ug/kg	1					
Aldrin	U	0.172	0.172	0.690	ug/kg	1					
Dieldrin	U	0.345	0.345	1.38	ug/kg	1					
Endosulfan I	U	0.172	0.172	0.690	ug/kg	1					
Endosulfan II	U	0.345	0.345	1.38	ug/kg	1					
Endosulfan sulfate	U	0.345	0.345	1.38	ug/kg	1					
Endrin	U	0.345	0.345	1.38	ug/kg	1					
Endrin aldehyde	U	0.345	0.345	1.38	ug/kg	1					
Endrin ketone	U	0.345	0.345	1.38	ug/kg	1					
Heptachlor	U	0.172	0.172	0.690	ug/kg	1					
Heptachlor epoxide	U	0.172	0.172	0.690	ug/kg	1					
Methoxychlor	U	1.72	1.72	6.90	ug/kg	1					
Toxaphene	U	5.74	5.74	17.2	ug/kg	1					
alpha-BHC	U	0.172	0.172	0.690	ug/kg	1					
alpha-Chlordane	U	0.172	0.172	0.690	ug/kg	1					
beta-BHC	U	0.172	0.172	0.690	ug/kg	1					
delta-BHC	U	0.172	0.172	0.690	ug/kg	1					
gamma-BHC (Lindane)	U	0.172	0.172	0.690	ug/kg	1					
gamma-Chlordane	U	0.172	0.172	0.690	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	31.2 ug/kg	34.5	90.6	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	29.0 ug/kg	34.5	84.0	(31%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L9	Project:	WCHN00720
Sample ID:	361900004	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:38		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	4.25%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.347	0.347	1.39	ug/kg	1	LOF	11/26/14	1958	1439094	1
4,4'-DDE	U	0.347	0.347	1.39	ug/kg	1					
4,4'-DDT	J	0.781	0.347	1.39	ug/kg	1					
Aldrin	U	0.174	0.174	0.695	ug/kg	1					
Dieldrin	U	0.347	0.347	1.39	ug/kg	1					
Endosulfan I	U	0.174	0.174	0.695	ug/kg	1					
Endosulfan II	U	0.347	0.347	1.39	ug/kg	1					
Endosulfan sulfate	U	0.347	0.347	1.39	ug/kg	1					
Endrin	U	0.347	0.347	1.39	ug/kg	1					
Endrin aldehyde	U	0.347	0.347	1.39	ug/kg	1					
Endrin ketone	U	0.347	0.347	1.39	ug/kg	1					
Heptachlor	U	0.174	0.174	0.695	ug/kg	1					
Heptachlor epoxide	U	0.174	0.174	0.695	ug/kg	1					
Methoxychlor	U	1.74	1.74	6.95	ug/kg	1					
Toxaphene	U	5.78	5.78	17.4	ug/kg	1					
alpha-BHC	U	0.174	0.174	0.695	ug/kg	1					
alpha-Chlordane	U	0.174	0.174	0.695	ug/kg	1					
beta-BHC	U	0.174	0.174	0.695	ug/kg	1					
delta-BHC	U	0.174	0.174	0.695	ug/kg	1					
gamma-BHC (Lindane)	U	0.174	0.174	0.695	ug/kg	1					
gamma-Chlordane	U	0.174	0.174	0.695	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	
2	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	21.2 ug/kg	34.7	61.0	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	30.8 ug/kg	34.7	88.6	(31%-131%)

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L9	Project:	WCHN00720
Sample ID:	361900004	Client ID:	WCHN001

Notes:

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1M1	Project:	WCHN00720
Sample ID:	361900005	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:26		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	2.94%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.343	0.343	1.37	ug/kg	1	LOF	11/26/14	2014	1439094	1
4,4'-DDE	U	0.343	0.343	1.37	ug/kg	1					
4,4'-DDT	U	0.343	0.343	1.37	ug/kg	1					
Aldrin	U	0.171	0.171	0.685	ug/kg	1					
Dieldrin	U	0.343	0.343	1.37	ug/kg	1					
Endosulfan I	U	0.171	0.171	0.685	ug/kg	1					
Endosulfan II	U	0.343	0.343	1.37	ug/kg	1					
Endosulfan sulfate	U	0.343	0.343	1.37	ug/kg	1					
Endrin	U	0.343	0.343	1.37	ug/kg	1					
Endrin aldehyde	U	0.343	0.343	1.37	ug/kg	1					
Endrin ketone	U	0.343	0.343	1.37	ug/kg	1					
Heptachlor	U	0.171	0.171	0.685	ug/kg	1					
Heptachlor epoxide	U	0.171	0.171	0.685	ug/kg	1					
Methoxychlor	U	1.71	1.71	6.85	ug/kg	1					
Toxaphene	U	5.70	5.70	17.1	ug/kg	1					
alpha-BHC	U	0.171	0.171	0.685	ug/kg	1					
alpha-Chlordane	U	0.171	0.171	0.685	ug/kg	1					
beta-BHC	U	0.171	0.171	0.685	ug/kg	1					
delta-BHC	U	0.171	0.171	0.685	ug/kg	1					
gamma-BHC (Lindane)	U	0.171	0.171	0.685	ug/kg	1					
gamma-Chlordane	U	0.171	0.171	0.685	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	
2	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	32.1 ug/kg	34.3	93.8	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	30.1 ug/kg	34.3	88.0	(31%-131%)

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1M1	Project:	WCHN00720
Sample ID:	361900005	Client ID:	WCHN001

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1M2
Sample ID: 361900006
Matrix: Soil
Collect Date: 20-NOV-14 10:08
Receive Date: 25-NOV-14
Collector: Client
Moisture: 3.32%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.344	0.344	1.38	ug/kg	1	LOF	11/26/14	2030	1439094	1
4,4'-DDE	U	0.344	0.344	1.38	ug/kg	1					
4,4'-DDT	U	0.344	0.344	1.38	ug/kg	1					
Aldrin	U	0.172	0.172	0.688	ug/kg	1					
Dieldrin	U	0.344	0.344	1.38	ug/kg	1					
Endosulfan I	U	0.172	0.172	0.688	ug/kg	1					
Endosulfan II	U	0.344	0.344	1.38	ug/kg	1					
Endosulfan sulfate	U	0.344	0.344	1.38	ug/kg	1					
Endrin	U	0.344	0.344	1.38	ug/kg	1					
Endrin aldehyde	U	0.344	0.344	1.38	ug/kg	1					
Endrin ketone	U	0.344	0.344	1.38	ug/kg	1					
Heptachlor	U	0.172	0.172	0.688	ug/kg	1					
Heptachlor epoxide	U	0.172	0.172	0.688	ug/kg	1					
Methoxychlor	U	1.72	1.72	6.88	ug/kg	1					
Toxaphene	U	5.73	5.73	17.2	ug/kg	1					
alpha-BHC	U	0.172	0.172	0.688	ug/kg	1					
alpha-Chlordane	U	0.172	0.172	0.688	ug/kg	1					
beta-BHC	U	0.172	0.172	0.688	ug/kg	1					
delta-BHC	U	0.172	0.172	0.688	ug/kg	1					
gamma-BHC (Lindane)	U	0.172	0.172	0.688	ug/kg	1					
gamma-Chlordane	U	0.172	0.172	0.688	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	29.8 ug/kg	34.4	86.4	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	27.4 ug/kg	34.4	79.5	(31%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L0
Sample ID: 361900007
Matrix: Soil
Collect Date: 20-NOV-14 08:11
Receive Date: 25-NOV-14
Collector: Client
Moisture: 6.64%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.357	0.357	1.43	ug/kg	1	LOF	11/26/14	2119	1439094	1
4,4'-DDE	U	0.357	0.357	1.43	ug/kg	1					
4,4'-DDT	U	0.357	0.357	1.43	ug/kg	1					
Aldrin	U	0.178	0.178	0.714	ug/kg	1					
Dieldrin	U	0.357	0.357	1.43	ug/kg	1					
Endosulfan I	U	0.178	0.178	0.714	ug/kg	1					
Endosulfan II	U	0.357	0.357	1.43	ug/kg	1					
Endosulfan sulfate	U	0.357	0.357	1.43	ug/kg	1					
Endrin	U	0.357	0.357	1.43	ug/kg	1					
Endrin aldehyde	U	0.357	0.357	1.43	ug/kg	1					
Endrin ketone	U	0.357	0.357	1.43	ug/kg	1					
Heptachlor	U	0.178	0.178	0.714	ug/kg	1					
Heptachlor epoxide	U	0.178	0.178	0.714	ug/kg	1					
Methoxychlor	U	1.78	1.78	7.14	ug/kg	1					
Toxaphene	U	5.94	5.94	17.8	ug/kg	1					
alpha-BHC	U	0.178	0.178	0.714	ug/kg	1					
alpha-Chlordane	U	0.178	0.178	0.714	ug/kg	1					
beta-BHC	U	0.178	0.178	0.714	ug/kg	1					
delta-BHC	U	0.178	0.178	0.714	ug/kg	1					
gamma-BHC (Lindane)	U	0.178	0.178	0.714	ug/kg	1					
gamma-Chlordane	U	0.178	0.178	0.714	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	33.9 ug/kg	35.7	94.9	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	36.2 ug/kg	35.7	101	(31%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L1	Project:	WCHN00720
Sample ID:	361900008	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 08:04		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.8%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.353	0.353	1.41	ug/kg	1	LOF	11/26/14	2135	1439094	1
4,4'-DDE	JP	0.827	0.353	1.41	ug/kg	1					
4,4'-DDT	U	0.353	0.353	1.41	ug/kg	1					
Aldrin	U	0.177	0.177	0.707	ug/kg	1					
Dieldrin	U	0.353	0.353	1.41	ug/kg	1					
Endosulfan I	U	0.177	0.177	0.707	ug/kg	1					
Endosulfan II	U	0.353	0.353	1.41	ug/kg	1					
Endosulfan sulfate	U	0.353	0.353	1.41	ug/kg	1					
Endrin	U	0.353	0.353	1.41	ug/kg	1					
Endrin aldehyde	U	0.353	0.353	1.41	ug/kg	1					
Endrin ketone	U	0.353	0.353	1.41	ug/kg	1					
Heptachlor	U	0.177	0.177	0.707	ug/kg	1					
Heptachlor epoxide	U	0.177	0.177	0.707	ug/kg	1					
Methoxychlor	U	1.77	1.77	7.07	ug/kg	1					
Toxaphene	U	5.89	5.89	17.7	ug/kg	1					
alpha-BHC	U	0.177	0.177	0.707	ug/kg	1					
alpha-Chlordane	U	0.177	0.177	0.707	ug/kg	1					
beta-BHC	U	0.177	0.177	0.707	ug/kg	1					
delta-BHC	U	0.177	0.177	0.707	ug/kg	1					
gamma-BHC (Lindane)	U	0.177	0.177	0.707	ug/kg	1					
gamma-Chlordane	U	0.177	0.177	0.707	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	
2	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	29.2 ug/kg	35.3	82.6	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	28.5 ug/kg	35.3	80.6	(31%-131%)

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L1	Project:	WCHN00720
Sample ID:	361900008	Client ID:	WCHN001

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L4	Project:	WCHN00720
Sample ID:	361900009	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:58		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.351	0.351	1.40	ug/kg	1	LOF	11/26/14	2151	1439094	1
4,4'-DDE	U	0.351	0.351	1.40	ug/kg	1					
4,4'-DDT	U	0.351	0.351	1.40	ug/kg	1					
Aldrin	U	0.175	0.175	0.702	ug/kg	1					
Dieldrin	U	0.351	0.351	1.40	ug/kg	1					
Endosulfan I	U	0.175	0.175	0.702	ug/kg	1					
Endosulfan II	U	0.351	0.351	1.40	ug/kg	1					
Endosulfan sulfate	U	0.351	0.351	1.40	ug/kg	1					
Endrin	U	0.351	0.351	1.40	ug/kg	1					
Endrin aldehyde	U	0.351	0.351	1.40	ug/kg	1					
Endrin ketone	U	0.351	0.351	1.40	ug/kg	1					
Heptachlor	U	0.175	0.175	0.702	ug/kg	1					
Heptachlor epoxide	U	0.175	0.175	0.702	ug/kg	1					
Methoxychlor	U	1.75	1.75	7.02	ug/kg	1					
Toxaphene	U	5.84	5.84	17.5	ug/kg	1					
alpha-BHC	U	0.175	0.175	0.702	ug/kg	1					
alpha-Chlordane	U	0.175	0.175	0.702	ug/kg	1					
beta-BHC	U	0.175	0.175	0.702	ug/kg	1					
delta-BHC	U	0.175	0.175	0.702	ug/kg	1					
gamma-BHC (Lindane)	U	0.175	0.175	0.702	ug/kg	1					
gamma-Chlordane	U	0.175	0.175	0.702	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	
2	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	28.6 ug/kg	35.1	81.6	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	30.8 ug/kg	35.1	87.7	(31%-131%)

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L4	Project:	WCHN00720
Sample ID:	361900009	Client ID:	WCHN001

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L5
Sample ID: 361900010
Matrix: Soil
Collect Date: 20-NOV-14 07:43
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.36%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.352	0.352	1.41	ug/kg	1	LOF	11/26/14	2207	1439094	1
4,4'-DDE	U	0.352	0.352	1.41	ug/kg	1					
4,4'-DDT	U	0.352	0.352	1.41	ug/kg	1					
Aldrin	U	0.176	0.176	0.704	ug/kg	1					
Dieldrin	U	0.352	0.352	1.41	ug/kg	1					
Endosulfan I	U	0.176	0.176	0.704	ug/kg	1					
Endosulfan II	U	0.352	0.352	1.41	ug/kg	1					
Endosulfan sulfate	U	0.352	0.352	1.41	ug/kg	1					
Endrin	U	0.352	0.352	1.41	ug/kg	1					
Endrin aldehyde	U	0.352	0.352	1.41	ug/kg	1					
Endrin ketone	U	0.352	0.352	1.41	ug/kg	1					
Heptachlor	U	0.176	0.176	0.704	ug/kg	1					
Heptachlor epoxide	U	0.176	0.176	0.704	ug/kg	1					
Methoxychlor	U	1.76	1.76	7.04	ug/kg	1					
Toxaphene	U	5.86	5.86	17.6	ug/kg	1					
alpha-BHC	U	0.176	0.176	0.704	ug/kg	1					
alpha-Chlordane	U	0.176	0.176	0.704	ug/kg	1					
beta-BHC	U	0.176	0.176	0.704	ug/kg	1					
delta-BHC	U	0.176	0.176	0.704	ug/kg	1					
gamma-BHC (Lindane)	U	0.176	0.176	0.704	ug/kg	1					
gamma-Chlordane	U	0.176	0.176	0.704	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	28.9 ug/kg	35.2	82.1	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	31.1 ug/kg	35.2	88.3	(31%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L6	Project:	WCHN00720
Sample ID:	361900011	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:38		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	4.88%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.350	0.350	1.40	ug/kg	1	LOF	11/26/14	2223	1439094	1
4,4'-DDE	U	0.350	0.350	1.40	ug/kg	1					
4,4'-DDT	U	0.350	0.350	1.40	ug/kg	1					
Aldrin	U	0.175	0.175	0.699	ug/kg	1					
Dieldrin	U	0.350	0.350	1.40	ug/kg	1					
Endosulfan I	U	0.175	0.175	0.699	ug/kg	1					
Endosulfan II	U	0.350	0.350	1.40	ug/kg	1					
Endosulfan sulfate	U	0.350	0.350	1.40	ug/kg	1					
Endrin	U	0.350	0.350	1.40	ug/kg	1					
Endrin aldehyde	U	0.350	0.350	1.40	ug/kg	1					
Endrin ketone	U	0.350	0.350	1.40	ug/kg	1					
Heptachlor	U	0.175	0.175	0.699	ug/kg	1					
Heptachlor epoxide	U	0.175	0.175	0.699	ug/kg	1					
Methoxychlor	U	1.75	1.75	6.99	ug/kg	1					
Toxaphene	U	5.82	5.82	17.5	ug/kg	1					
alpha-BHC	U	0.175	0.175	0.699	ug/kg	1					
alpha-Chlordane	U	0.175	0.175	0.699	ug/kg	1					
beta-BHC	U	0.175	0.175	0.699	ug/kg	1					
delta-BHC	U	0.175	0.175	0.699	ug/kg	1					
gamma-BHC (Lindane)	U	0.175	0.175	0.699	ug/kg	1					
gamma-Chlordane	U	0.175	0.175	0.699	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	31.8 ug/kg	35.0	90.8	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	31.1 ug/kg	35.0	88.9	(31%-131%)

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L7	Project:	WCHN00720
Sample ID:	361900012	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:32		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	8.22%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.363	0.363	1.45	ug/kg	1	LOF	11/26/14	2239	1439094	1
4,4'-DDE	U	0.363	0.363	1.45	ug/kg	1					
4,4'-DDT	U	0.363	0.363	1.45	ug/kg	1					
Aldrin	U	0.182	0.182	0.726	ug/kg	1					
Dieldrin	U	0.363	0.363	1.45	ug/kg	1					
Endosulfan I	U	0.182	0.182	0.726	ug/kg	1					
Endosulfan II	U	0.363	0.363	1.45	ug/kg	1					
Endosulfan sulfate	U	0.363	0.363	1.45	ug/kg	1					
Endrin	U	0.363	0.363	1.45	ug/kg	1					
Endrin aldehyde	U	0.363	0.363	1.45	ug/kg	1					
Endrin ketone	U	0.363	0.363	1.45	ug/kg	1					
Heptachlor	U	0.182	0.182	0.726	ug/kg	1					
Heptachlor epoxide	U	0.182	0.182	0.726	ug/kg	1					
Methoxychlor	U	1.82	1.82	7.26	ug/kg	1					
Toxaphene	U	6.04	6.04	18.2	ug/kg	1					
alpha-BHC	U	0.182	0.182	0.726	ug/kg	1					
alpha-Chlordane	U	0.182	0.182	0.726	ug/kg	1					
beta-BHC	U	0.182	0.182	0.726	ug/kg	1					
delta-BHC	U	0.182	0.182	0.726	ug/kg	1					
gamma-BHC (Lindane)	U	0.182	0.182	0.726	ug/kg	1					
gamma-Chlordane	U	0.182	0.182	0.726	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	30.1 ug/kg	36.3	83.0	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	33.8 ug/kg	36.3	93.1	(31%-131%)

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1M0	Project:	WCHN00720
Sample ID:	361900013	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:26		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.33%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide											
8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"											
4,4'-DDD	U	0.351	0.351	1.40	ug/kg	1	LOF	11/26/14	2256	1439094	1
4,4'-DDE	U	0.351	0.351	1.40	ug/kg	1					
4,4'-DDT	U	0.351	0.351	1.40	ug/kg	1					
Aldrin	U	0.176	0.176	0.702	ug/kg	1					
Dieldrin	U	0.351	0.351	1.40	ug/kg	1					
Endosulfan I	U	0.176	0.176	0.702	ug/kg	1					
Endosulfan II	U	0.351	0.351	1.40	ug/kg	1					
Endosulfan sulfate	U	0.351	0.351	1.40	ug/kg	1					
Endrin	U	0.351	0.351	1.40	ug/kg	1					
Endrin aldehyde	U	0.351	0.351	1.40	ug/kg	1					
Endrin ketone	U	0.351	0.351	1.40	ug/kg	1					
Heptachlor	U	0.176	0.176	0.702	ug/kg	1					
Heptachlor epoxide	U	0.176	0.176	0.702	ug/kg	1					
Methoxychlor	U	1.76	1.76	7.02	ug/kg	1					
Toxaphene	U	5.85	5.85	17.6	ug/kg	1					
alpha-BHC	U	0.176	0.176	0.702	ug/kg	1					
alpha-Chlordane	U	0.176	0.176	0.702	ug/kg	1					
beta-BHC	U	0.176	0.176	0.702	ug/kg	1					
delta-BHC	U	0.176	0.176	0.702	ug/kg	1					
gamma-BHC (Lindane)	U	0.176	0.176	0.702	ug/kg	1					
gamma-Chlordane	U	0.176	0.176	0.702	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8081B Prep Soil	SXW3	11/25/14	1818	1439091

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	32.5 ug/kg	35.1	92.4	(27%-124%)
Decachlorobiphenyl	8081B/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	29.5 ug/kg	35.1	84.0	(31%-131%)

Notes:

Quality Control Summary

QC Summary

Report Date: November 28, 2014

WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington

Contact: **Joan Kessner**

Workorder: **361900** **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatiles-Pesticide										
Batch 1439094										
QC1203217577 LCS										
4,4'-DDD	41.7			40.0	ug/kg		96	(49%-123%)	LOF	11/26/14 18:21
4,4'-DDE	41.7			37.5	ug/kg		90.1	(46%-118%)		
4,4'-DDT	41.7			39.4	ug/kg		94.5	(48%-126%)		
Aldrin	16.7			14.9	ug/kg		89.2	(42%-114%)		
Dieldrin	41.7			36.2	ug/kg		87	(45%-110%)		
Endosulfan I	16.7			14.2	ug/kg		85.2	(38%-107%)		
Endosulfan II	41.7			43.0	ug/kg		103	(43%-110%)		
Endosulfan sulfate	41.7			41.7	ug/kg		100	(46%-121%)		
Endrin	41.7			40.2	ug/kg		96.5	(53%-135%)		
Endrin aldehyde	41.7			38.8	ug/kg		93.2	(42%-116%)		
Endrin ketone	41.7			37.5	ug/kg		90	(45%-111%)		
Heptachlor	16.7			14.4	ug/kg		86.4	(43%-120%)		
Heptachlor epoxide	16.7			14.1	ug/kg		84.7	(44%-116%)		
Methoxychlor	167			154	ug/kg		92.5	(45%-127%)		
alpha-BHC	16.7			15.1	ug/kg		90.5	(42%-124%)		
alpha-Chlordane	16.7			14.0	ug/kg		84	(43%-116%)		
beta-BHC	16.7			15.3	ug/kg		92.1	(44%-118%)		
delta-BHC	16.7			15.5	ug/kg		93.2	(43%-124%)		
gamma-BHC (Lindane)	16.7			14.6	ug/kg		87.4	(42%-123%)		
gamma-Chlordane	16.7			13.7	ug/kg		82.2	(45%-117%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-Pesticide											
Batch 1439094											
**4cmx	33.3			30.3	ug/kg		90.9	(27%-124%)	LOF	11/26/14	18:21
**Decachlorobiphenyl	33.3			28.4	ug/kg		85.3	(31%-131%)			
QC1203217576 MB											
4,4'-DDD			U	0.333	ug/kg					11/26/14	18:05
4,4'-DDE			U	0.333	ug/kg						
4,4'-DDT			U	0.333	ug/kg						
Aldrin			U	0.167	ug/kg						
Dieldrin			U	0.333	ug/kg						
Endosulfan I			U	0.167	ug/kg						
Endosulfan II			U	0.333	ug/kg						
Endosulfan sulfate			U	0.333	ug/kg						
Endrin			U	0.333	ug/kg						
Endrin aldehyde			U	0.333	ug/kg						
Endrin ketone			U	0.333	ug/kg						
Heptachlor			U	0.167	ug/kg						
Heptachlor epoxide			U	0.167	ug/kg						
Methoxychlor			U	1.67	ug/kg						
Toxaphene			U	5.55	ug/kg						
alpha-BHC			U	0.167	ug/kg						
alpha-Chlordane			U	0.167	ug/kg						
beta-BHC			U	0.167	ug/kg						
delta-BHC			U	0.167	ug/kg						

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatiles-Pesticide											
Batch 1439094											
gamma-BHC (Lindane)				U	0.167	ug/kg				LOF	11/26/14 18:05
gamma-Chlordane				U	0.167	ug/kg					
**4cmx	33.3				29.7	ug/kg		89.2	(27%-124%)		
**Decachlorobiphenyl	33.3				28.2	ug/kg		84.7	(31%-131%)		
QC1203217578 361900003 MS											
4,4'-DDD	43.2	U	0.345		44.8	ug/kg		104	(23%-142%)		11/26/14 19:25
4,4'-DDE	43.2	U	0.345		42.8	ug/kg		99.2	(23%-133%)		
4,4'-DDT	43.2	U	0.345		43.2	ug/kg		100	(25%-141%)		
Aldrin	17.3	U	0.172		17.0	ug/kg		98.7	(21%-129%)		
Dieldrin	43.2	U	0.345		40.3	ug/kg		93.4	(19%-131%)		
Endosulfan I	17.3	U	0.172		15.9	ug/kg		91.8	(15%-121%)		
Endosulfan II	43.2	U	0.345		47.1	ug/kg		109	(17%-126%)		
Endosulfan sulfate	43.2	U	0.345		44.3	ug/kg		103	(20%-134%)		
Endrin	43.2	U	0.345		46.1	ug/kg		107	(24%-154%)		
Endrin aldehyde	43.2	U	0.345		41.5	ug/kg		96.2	(18%-124%)		
Endrin ketone	43.2	U	0.345		39.1	ug/kg		90.5	(18%-127%)		
Heptachlor	17.3	U	0.172		16.8	ug/kg		97.5	(19%-137%)		
Heptachlor epoxide	17.3	U	0.172		15.9	ug/kg		92.2	(20%-131%)		
Methoxychlor	173	U	1.72		160	ug/kg		92.4	(18%-147%)		
alpha-BHC	17.3	U	0.172		17.6	ug/kg		102	(21%-133%)		
alpha-Chlordane	17.3	U	0.172		15.6	ug/kg		90.1	(17%-133%)		
beta-BHC	17.3	U	0.172		19.6	ug/kg		113	(22%-135%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatiles-Pesticide											
Batch 1439094											
delta-BHC	17.3	U	0.172		17.9	ug/kg		104	(20%-139%)	LOF	11/26/14 19:25
gamma-BHC (Lindane)	17.3	U	0.172		17.1	ug/kg		99.1	(20%-134%)		
gamma-Chlordane	17.3	U	0.172		15.4	ug/kg		89.3	(20%-131%)		
**4cmx	34.5		31.2		35.3	ug/kg		102	(27%-124%)		
**Decachlorobiphenyl	34.5		29.0		30.1	ug/kg		87	(31%-131%)		
QC1203217579 361900003 MSD											
4,4'-DDD	43.1	U	0.345		40.6	ug/kg	9.77	94.1	(0%-30%)		11/26/14 19:42
4,4'-DDE	43.1	U	0.345		39.6	ug/kg	7.87	91.7	(0%-30%)		
4,4'-DDT	43.1	U	0.345		38.8	ug/kg	10.8	89.9	(0%-30%)		
Aldrin	17.3	U	0.172		13.9	ug/kg	20.2	80.7	(0%-30%)		
Dieldrin	43.1	U	0.345		36.8	ug/kg	9.10	85.3	(0%-30%)		
Endosulfan I	17.3	U	0.172		14.4	ug/kg	9.75	83.4	(0%-30%)		
Endosulfan II	43.1	U	0.345		43.5	ug/kg	7.81	101	(0%-30%)		
Endosulfan sulfate	43.1	U	0.345		41.0	ug/kg	7.89	95	(0%-30%)		
Endrin	43.1	U	0.345		42.3	ug/kg	8.57	98.1	(0%-30%)		
Endrin aldehyde	43.1	U	0.345		37.3	ug/kg	10.8	86.4	(0%-30%)		
Endrin ketone	43.1	U	0.345		36.3	ug/kg	7.29	84.2	(0%-30%)		
Heptachlor	17.3	U	0.172		13.7	ug/kg	20.6	79.4	(0%-30%)		
Heptachlor epoxide	17.3	U	0.172		13.8	ug/kg	14.3	80	(0%-30%)		
Methoxychlor	173	U	1.72		148	ug/kg	7.30	86	(0%-30%)		
alpha-BHC	17.3	U	0.172		13.7	ug/kg	25.0	79.3	(0%-30%)		
alpha-Chlordane	17.3	U	0.172		14.1	ug/kg	9.52	82	(0%-30%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatiles-Pesticide											
Batch 1439094											
beta-BHC	17.3	U	0.172		15.7	ug/kg	22.2	90.7	(0%-30%)	LOF	11/26/14 19:42
delta-BHC	17.3	U	0.172		15.5	ug/kg	14.3	90.1	(0%-30%)		
gamma-BHC (Lindane)	17.3	U	0.172		13.9	ug/kg	20.6	80.6	(0%-30%)		
gamma-Chlordane	17.3	U	0.172		13.7	ug/kg	11.7	79.5	(0%-30%)		
**4cmx	34.5		31.2		24.8	ug/kg		71.7	(27%-124%)		
**Decachlorobiphenyl	34.5		29.0		27.5	ug/kg		79.7	(31%-131%)		

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

Prep Logbook

Automated Soxhlet Extraction

Batch ID: 1439091 **Verified by:** _____
Analyst: Shannon Whitehead
Method: SW846 3541

Lab SOP: GL-OA-E-066 REV# 5
Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Final Volume (mL)	Prepped Factor (mL/g)
1203217576 MB	25-NOV-2014 18:18:00	30.02	5	0.16656
1203217577 LCS	25-NOV-2014 18:18:00	30.01	5	0.16661
361900001	25-NOV-2014 18:18:00	30.03	5	0.1665
361900002	25-NOV-2014 18:18:00	30.08	5	0.16622
361900003	25-NOV-2014 18:18:00	30.07	5	0.16628
1203217578 MS (361900003)	25-NOV-2014 18:18:00	30.03	5	0.1665
1203217579 MSD (361900003)	25-NOV-2014 18:18:00	30.05	5	0.16639
361900004	25-NOV-2014 18:18:00	30.07	5	0.16628
361900005	25-NOV-2014 18:18:00	30.07	5	0.16628
361900006	25-NOV-2014 18:18:00	30.05	5	0.16639
361900007	25-NOV-2014 18:18:00	30.01	5	0.16661
361900008	25-NOV-2014 18:18:00	30.03	5	0.1665
361900009	25-NOV-2014 18:18:00	30.06	5	0.16633
361900010	25-NOV-2014 18:18:00	30.03	5	0.1665
361900011	25-NOV-2014 18:18:00	30.08	5	0.16622
361900012	25-NOV-2014 18:18:00	30.01	5	0.16661
361900013	25-NOV-2014 18:18:00	30.08	5	0.16622

Type	Sample Id	Description	Serial Number	Spike Amt	Units
LCS	1203217577	PESTSPIKE	WE141016-10	1	mL
MS	1203217578	PESTSPIKE	WE141016-10	1	mL
MSD	1203217579	PESTSPIKE	WE141016-10	1	mL
SURR	All	PEST SURROGATE 1000 UG/L	WE140829-08	1	mL
REGNT	All	Hexane	141024-B10	60	mL
REGNT	All	Acetone	2148834-B1	60	mL
SOURC	All	SODIUM SULFATE	2168618	30	g

Comments:

Final Solvent: Hexane
Verified By: AV

PCB Analysis

Case Narrative

PCB Case Narrative
WC-HANFORD, INC. (WCHN)
SDG XP0168

Method/Analysis Information

Procedure:	**Analysis of Polychlorinated Biphenyls by ECD**
Analytical Method:	SW846 3541/8082A
Prep Method:	SW846 3541
Analytical Batch Number:	1439108
Prep Batch Number:	1439105

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3541/8082A:

Sample ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0
1203217589	MB for batch 1439105
1203217590	Laboratory Control Sample (LCS)
1203217591	361900006(J1V1M2) Matrix Spike (MS)
1203217592	361900006(J1V1M2) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-040 REV# 20.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standards (ICV or CCV) met the acceptance criteria. All analytes were within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for the samples in this SDG in this batch.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Sample 361900006 (J1V1M2) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS recoveries for this SDG were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries for this SDG were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns. All sample extracts were cleaned using alumina.

Sample Dilutions
The samples in this SDG in this batch did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG in this batch.

Miscellaneous Information

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation

Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for the samples in this SDG in this batch.

Manual Integrations

Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

Additional Comments

The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

The higher results from either column have been chosen and reported in the data package for the client samples, MB and LCS. The data reported for the MS and MSD are from the same analytical column as the parent sample.

Due to software issue, the surrogate recovery range was not indicated or possibly indicated incorrectly in Quantitation Report. Please see Surrogate Recovery Report for correct surrogate acceptance limits.

Due to rounding differences in the calculation between the forms, the data reported in Sample Summary (form 1) and Spike Recovery Report (form 3) may differ slightly from the data reported in Identification Summary (form 10).

Aroclors quantitated on the raw data report by ChemStation data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-detect on the data report.

System Configuration

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
ECD9A.I_1	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 1	30m x 0.25mm, 0.25um

ECD9A.I_2	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 2	30m x 0.25mm, 0.20um

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0168 GEL Work Order: 361900 Project: RC-107 Soil

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

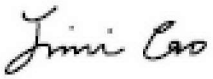
RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Jimin Cao**

Date: 02 DEC 2014 **Title: Data Validator**

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L2	Project:	WCHN00720
Sample ID:	361900001	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 11:02		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	2.5%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.14	1.14	3.42	ug/kg	1	YS1	11/27/14	2328	1439108	1
Aroclor-1221	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1232	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1242	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1248	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1254	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1260	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1262	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1268	U	1.14	1.14	3.42	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.86 ug/kg	6.83	71.2	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.57 ug/kg	6.83	81.6	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L3
Sample ID: 361900002
Matrix: Soil
Collect Date: 20-NOV-14 10:51
Receive Date: 25-NOV-14
Collector: Client
Moisture: 1.67%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.13	1.13	3.38	ug/kg	1	YS1	11/27/14	2343	1439108	1
Aroclor-1221	U	1.13	1.13	3.38	ug/kg	1					
Aroclor-1232	U	1.13	1.13	3.38	ug/kg	1					
Aroclor-1242	U	1.13	1.13	3.38	ug/kg	1					
Aroclor-1248	U	1.13	1.13	3.38	ug/kg	1					
Aroclor-1254	U	1.13	1.13	3.38	ug/kg	1					
Aroclor-1260	U	1.13	1.13	3.38	ug/kg	1					
Aroclor-1262	U	1.13	1.13	3.38	ug/kg	1					
Aroclor-1268	U	1.13	1.13	3.38	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.64 ug/kg	6.76	68.6	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.49 ug/kg	6.76	81.2	(25%-131%)

Notes:

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Report Date: November 28, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L8
Sample ID: 361900003
Matrix: Soil
Collect Date: 20-NOV-14 10:08
Receive Date: 25-NOV-14
Collector: Client
Moisture: 3.57%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.15	1.15	3.45	ug/kg	1	YS1	11/27/14	2358	1439108	1
Aroclor-1221	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1232	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1242	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1248	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1254	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1260	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1262	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1268	U	1.15	1.15	3.45	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.50 ug/kg	6.91	65.2	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.96 ug/kg	6.91	71.9	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L9
Sample ID: 361900004
Matrix: Soil
Collect Date: 20-NOV-14 10:38
Receive Date: 25-NOV-14
Collector: Client
Moisture: 4.25%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.16	1.16	3.48	ug/kg	1	YS1	11/28/14	0014	1439108	1
Aroclor-1221	U	1.16	1.16	3.48	ug/kg	1					
Aroclor-1232	U	1.16	1.16	3.48	ug/kg	1					
Aroclor-1242	U	1.16	1.16	3.48	ug/kg	1					
Aroclor-1248	U	1.16	1.16	3.48	ug/kg	1					
Aroclor-1254	U	1.16	1.16	3.48	ug/kg	1					
Aroclor-1262	U	1.16	1.16	3.48	ug/kg	1					
Aroclor-1268	U	1.16	1.16	3.48	ug/kg	1					
Aroclor-1260		13.2	1.16	3.48	ug/kg	1	YS1	11/28/14	0014	1439108	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.24 ug/kg	6.95	61.0	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.01 ug/kg	6.95	72.0	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1M1	Project:	WCHN00720
Sample ID:	361900005	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:26		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	2.94%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.14	1.14	3.42	ug/kg	1	YS1	11/28/14	0029	1439108	1
Aroclor-1221	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1232	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1242	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1248	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1254	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1260	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1262	U	1.14	1.14	3.42	ug/kg	1					
Aroclor-1268	U	1.14	1.14	3.42	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.89 ug/kg	6.85	71.4	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.51 ug/kg	6.85	80.5	(25%-131%)

Notes:

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Report Date: November 28, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1M2
Sample ID: 361900006
Matrix: Soil
Collect Date: 20-NOV-14 10:08
Receive Date: 25-NOV-14
Collector: Client
Moisture: 3.32%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.15	1.15	3.45	ug/kg	1	YS1	11/28/14	0045	1439108	1
Aroclor-1221	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1232	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1242	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1248	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1254	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1260	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1262	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1268	U	1.15	1.15	3.45	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.95 ug/kg	6.90	71.8	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.59 ug/kg	6.90	81.0	(25%-131%)

Notes:

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Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L0	Project:	WCHN00720
Sample ID:	361900007	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 08:11		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	6.64%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.18	1.18	3.56	ug/kg	1	YS1	11/28/14	0153	1439108	1
Aroclor-1221	U	1.18	1.18	3.56	ug/kg	1					
Aroclor-1232	U	1.18	1.18	3.56	ug/kg	1					
Aroclor-1242	U	1.18	1.18	3.56	ug/kg	1					
Aroclor-1248	U	1.18	1.18	3.56	ug/kg	1					
Aroclor-1254	U	1.18	1.18	3.56	ug/kg	1					
Aroclor-1262	U	1.18	1.18	3.56	ug/kg	1					
Aroclor-1268	U	1.18	1.18	3.56	ug/kg	1					
Aroclor-1260		8.01	1.18	3.56	ug/kg	1	YS1	11/28/14	0153	1439108	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.73 ug/kg	7.11	66.4	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.26 ug/kg	7.11	73.9	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L1	Project:	WCHN00720
Sample ID:	361900008	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 08:04		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.8%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.18	1.18	3.54	ug/kg	1	YS1	11/28/14	0209	1439108	1
Aroclor-1221	U	1.18	1.18	3.54	ug/kg	1					
Aroclor-1232	U	1.18	1.18	3.54	ug/kg	1					
Aroclor-1242	U	1.18	1.18	3.54	ug/kg	1					
Aroclor-1248	U	1.18	1.18	3.54	ug/kg	1					
Aroclor-1254	U	1.18	1.18	3.54	ug/kg	1					
Aroclor-1262	U	1.18	1.18	3.54	ug/kg	1					
Aroclor-1268	U	1.18	1.18	3.54	ug/kg	1					
Aroclor-1260	J	1.71	1.18	3.54	ug/kg	1	YS1	11/28/14	0209	1439108	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.19 ug/kg	7.07	59.2	(25%-131%)
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.43 ug/kg	7.07	34.4	(29%-106%)

Notes:

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L4	Project:	WCHN00720
Sample ID:	361900009	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:58		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.17	1.17	3.51	ug/kg	1	YS1	11/28/14	0224	1439108	1
Aroclor-1221	U	1.17	1.17	3.51	ug/kg	1					
Aroclor-1232	U	1.17	1.17	3.51	ug/kg	1					
Aroclor-1242	U	1.17	1.17	3.51	ug/kg	1					
Aroclor-1248	U	1.17	1.17	3.51	ug/kg	1					
Aroclor-1254	U	1.17	1.17	3.51	ug/kg	1					
Aroclor-1260	J	1.42	1.17	3.51	ug/kg	1					
Aroclor-1262	U	1.17	1.17	3.51	ug/kg	1					
Aroclor-1268	U	1.17	1.17	3.51	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.25 ug/kg	7.03	60.4	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.84 ug/kg	7.03	68.8	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L5	Project:	WCHN00720
Sample ID:	361900010	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:43		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.36%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.17	1.17	3.52	ug/kg	1	YS1	11/28/14	0239	1439108	1
Aroclor-1221	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1232	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1242	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1248	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1254	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1260	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1262	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1268	U	1.17	1.17	3.52	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.74 ug/kg	7.04	67.4	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.45 ug/kg	7.04	77.4	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L6	Project:	WCHN00720
Sample ID:	361900011	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:38		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	4.88%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.16	1.16	3.49	ug/kg	1	YS1	11/28/14	0255	1439108	1
Aroclor-1221	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1232	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1242	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1248	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1254	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1260	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1262	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1268	U	1.16	1.16	3.49	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.06 ug/kg	6.98	58.2	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.12 ug/kg	6.98	73.3	(25%-131%)

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L7	Project:	WCHN00720
Sample ID:	361900012	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:32		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	8.22%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.21	1.21	3.63	ug/kg	1	YS1	11/28/14	0310	1439108	1
Aroclor-1221	U	1.21	1.21	3.63	ug/kg	1					
Aroclor-1232	U	1.21	1.21	3.63	ug/kg	1					
Aroclor-1242	U	1.21	1.21	3.63	ug/kg	1					
Aroclor-1248	U	1.21	1.21	3.63	ug/kg	1					
Aroclor-1254	U	1.21	1.21	3.63	ug/kg	1					
Aroclor-1260	U	1.21	1.21	3.63	ug/kg	1					
Aroclor-1262	U	1.21	1.21	3.63	ug/kg	1					
Aroclor-1268	U	1.21	1.21	3.63	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.33 ug/kg	7.26	73.4	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	6.44 ug/kg	7.26	88.7	(25%-131%)

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 28, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1M0	Project:	WCHN00720
Sample ID:	361900013	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:26		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.33%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"											
Aroclor-1016	U	1.17	1.17	3.52	ug/kg	1	YS1	11/28/14	0326	1439108	1
Aroclor-1221	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1232	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1242	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1248	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1254	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1260	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1262	U	1.17	1.17	3.52	ug/kg	1					
Aroclor-1268	U	1.17	1.17	3.52	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXD2	11/26/14	1010	1439105

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.97 ug/kg	7.04	70.7	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.88 ug/kg	7.04	83.6	(25%-131%)

Notes:

Quality Control Summary

QC Summary

Report Date: November 28, 2014

WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington

Contact: **Joan Kessner**

Workorder: **361900** **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatiles-PCB										
Batch 1439108										
QC1203217590 LCS										
Aroclor-1016	33.3			23.7	ug/kg		71.2	(44%-97%)	YS1	11/27/14 23:12
Aroclor-1260	33.3			26.3	ug/kg		79.1	(49%-109%)		
**4cmx	6.66			4.79	ug/kg		71.9	(29%-106%)		
**Decachlorobiphenyl	6.66			6.06	ug/kg		91	(25%-131%)		
QC1203217589 MB										
Aroclor-1016			U	1.11	ug/kg					11/27/14 22:57
Aroclor-1221			U	1.11	ug/kg					
Aroclor-1232			U	1.11	ug/kg					
Aroclor-1242			U	1.11	ug/kg					
Aroclor-1248			U	1.11	ug/kg					
Aroclor-1254			U	1.11	ug/kg					
Aroclor-1260			U	1.11	ug/kg					
Aroclor-1262			U	1.11	ug/kg					
Aroclor-1268			U	1.11	ug/kg					
**4cmx	6.66			4.36	ug/kg		65.5	(29%-106%)		
**Decachlorobiphenyl	6.66			5.40	ug/kg		81.2	(25%-131%)		
QC1203217591 361900006 MS										
Aroclor-1016	34.4	U	1.15	23.5	ug/kg		68.4	(22%-127%)		11/28/14 01:00
Aroclor-1260	34.4	U	1.15	28.1	ug/kg		81.6	(18%-130%)		
**4cmx	6.88		4.95	4.83	ug/kg		70.2	(29%-106%)		
**Decachlorobiphenyl	6.88		5.59	5.67	ug/kg		82.4	(25%-131%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatiles-PCB											
Batch 1439108											
QC1203217592 361900006 MSD											
Aroclor-1016	34.5	U	1.15		24.6	ug/kg	4.42	71.4	(0%-30%)	YS1	11/28/14 01:15
Aroclor-1260	34.5	U	1.15		29.3	ug/kg	4.30	85	(0%-30%)		
**4cmx	6.89		4.95		5.08	ug/kg		73.8	(29%-106%)		
**Decachlorobiphenyl	6.89		5.59		5.86	ug/kg		85.1	(25%-131%)		

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

Prep Logbook

Automated Soxhlet Extraction

Batch ID: 1439105 **Verified by:** _____
Analyst: Mia DeLee
Method: SW846 3541

Lab SOP: GL-OA-E-066 REV# 5
Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Clean Up 1	Clean Up Amount 1 (mL)	Post Clean Up Amount 1 (mL)	Final Volume (mL)	Prepped Factor (mL/g)
1203217589 MB	26-NOV-2014 10:10:00	30.04	H2SO4/KMnO4	2	9	1	0.03329
1203217590 LCS	26-NOV-2014 10:10:00	30.04	H2SO4/KMnO4	2	9	1	0.03329
361900001	26-NOV-2014 10:10:00	30.03	H2SO4/KMnO4	2	9	1	0.0333
361900002	26-NOV-2014 10:10:00	30.09	H2SO4/KMnO4	2	9	1	0.03323
361900003	26-NOV-2014 10:10:00	30.02	H2SO4/KMnO4	2	9	1	0.03331
361900004	26-NOV-2014 10:10:00	30.05	H2SO4/KMnO4	2	9	1	0.03328
361900005	26-NOV-2014 10:10:00	30.09	H2SO4/KMnO4	2	9	1	0.03323
361900006	26-NOV-2014 10:10:00	30	H2SO4/KMnO4	2	9	1	0.03333
1203217591 MS (361900006)	26-NOV-2014 10:10:00	30.06	H2SO4/KMnO4	2	9	1	0.03327
1203217592 MSD (361900006)	26-NOV-2014 10:10:00	30.02	H2SO4/KMnO4	2	9	1	0.03331
361900007	26-NOV-2014 10:10:00	30.11	H2SO4/KMnO4	2	9	1	0.03321
361900008	26-NOV-2014 10:10:00	30.01	H2SO4/KMnO4	2	9	1	0.03332
361900009	26-NOV-2014 10:10:00	30.01	H2SO4/KMnO4	2	9	1	0.03332
361900010	26-NOV-2014 10:10:00	30.02	H2SO4/KMnO4	2	9	1	0.03331
361900011	26-NOV-2014 10:10:00	30.11	H2SO4/KMnO4	2	9	1	0.03321
361900012	26-NOV-2014 10:10:00	30	H2SO4/KMnO4	2	9	1	0.03333
361900013	26-NOV-2014 10:10:00	30.03	H2SO4/KMnO4	2	9	1	0.0333

Type	Sample Id	Description	Serial Number	Spike Amt	Units
LCS	1203217590	PCB Laboratory Control	WE141103-06	1	mL
MS	1203217591	PCB Laboratory Control	WE141103-06	1	mL
MSD	1203217592	PCB Laboratory Control	WE141103-06	1	mL
SURR	All	PEST LOW LEVEL SURROGATE 200 UG/L	WE141016-01	1	mL
SURR	All	PEST LOW LEVEL SURROGATE 200 UG/L	WE141120-01	1	mL
REGNT	All	Hexane	141024-B10	120	mL
REGNT	All	5% Potassium Permanganate	2176611	5	mL

Comments:

Final Solvent: Hexane
Verified by: SJW

Clean-up: H2SO4/KMnO4
Prior to clean-up: 2mL
Clean-up initials: MD
Clean-up SOP: GL-OA-E-037 Rev.1
Clean-up date: 11/26/14

All samples were a mixture of soil and rocks (small and large).

Prep Logbook

Batch ID: 1439105 **Verified by:** _____
Analyst: Mia DeLee
Method: SW846 3541

Lab SOP: GL-OA-E-066 REV# 5
Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Clean Up 1	Clean Up Amount 1 (mL)	Post Clean Up Amount 1 (mL)	Final Volume (mL)	Prepped Factor (mL/g)
REGNT All	1:1 sulfuric acid		2181438		5	mL	
SOURC All	SODIUM SULFATE		2168618		30	g	

Metals Analysis

Case Narrative

Metals Fractional Narrative
WC-HANFORD, INC. (WCHN)
SDG XP0168

Sample ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0
1203217774	Method Blank (MB)**ICP**
1203217775	Laboratory Control Sample (LCS)
1203217778	361900001(J1V1L2L) Serial Dilution (SD)
1203217776	361900001(J1V1L2D) Sample Duplicate (DUP)
1203217777	361900001(J1V1L2S) Matrix Spike (MS)
1203219998	361900001(J1V1L2PS) Post Spike (PS)
1203217725	Method Blank (MB)**ICP-MS**
1203217726	Laboratory Control Sample (LCS)
1203217729	361900001(J1V1L2L) Serial Dilution (SD)
1203217727	361900001(J1V1L2D) Sample Duplicate (DUP)
1203217728	361900001(J1V1L2S) Matrix Spike (MS)
1203218010	Method Blank (MB)**CVAA**
1203218011	Laboratory Control Sample (LCS)
1203218014	361900001(J1V1L2L) Serial Dilution (SD)
1203218012	361900001(J1V1L2D) Sample Duplicate (DUP)
1203218013	361900001(J1V1L2S) Matrix Spike (MS)

Sample Analysis

The samples in this SDG were analyzed on a "dry weight" basis.

Method/Analysis Information

Analytical Batch:	1439189, 1439164 and 1439275
Prep Batch :	1439188, 1439162 and 1439274
Standard Operating Procedures:	GL-MA-E-013 REV# 23, GL-MA-E-009 REV# 24, GL-MA-E-014 REV# 25 and GL-MA-E-010 REV# 28
Analytical Method:	SW846 3050B/6010C, SW846 3050B/6020A and SW846 7471B
Prep Method :	SW846 3050B and SW846 7471B Prep

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Metals analysis-ICP was performed on a PE 7300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with an ESI SC-FAST introduction, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 0.4L/min, argon gas flows of 13 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

The Metals analysis - ICPMS was performed on a PerkinElmer NexION 300X ICPMS. The instrument is equipped with a ESI PFA-ST nebulizer, quadrupole mass spectrometer, dual mode electron multiplier detector, and Kinetic Energy Discrimination (KED) technology. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1600W power, 16 L/m for the plasma, and 1.2 L/m auxiliary gases, and 1.12 L/min carrier gas flow.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL/PQL Requirements
The PQL standard recoveries for SW846 6010C met the control limits with the exception of calcium and potassium. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 361900001 (J1V1L2), 361900002 (J1V1L3), 361900003 (J1V1L8), 361900004 (J1V1L9), 361900005 (J1V1M1), 361900006 (J1V1M2), 361900007 (J1V1L0), 361900008 (J1V1L1), 361900009 (J1V1L4), 361900010 (J1V1L5), 361900011 (J1V1L6), 361900012 (J1V1L7) and 361900013 (J1V1M0)-ICP.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blanks (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The preparation blank analyzed with this SDG contained zinc at concentrations greater than the client required detection limit (CRDL). The failing elements were at a concentration ten times greater than that which was exhibited in the blank. This indicates that any contribution to the concentration of these elements in these samples from potential laboratory contamination would be minimal. 1203217774 (MB)-ICP.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 361900001 (J1V1L2)-ICP, ICP-MS and CVAA.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS did not meet the recommended quality control acceptance criteria for percent recoveries for silicon. 1203217777 (J1V1L2MS)-ICP.

Duplicate Relative Percent Difference (RPD) Statement
The RPD obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control of +/-RL is used to evaluate the DUP results. Sodium did not meet these requirements. 1203217776 (J1V1L2DUP)-ICP.

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS met the recommended quality control acceptance criteria for percent recoveries for all applicable analytes and verifies the absence of matrix interferences in the post-digested sample.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. Zinc did not meet the established percent difference criteria. 1203217778 (J1V1L2SDILT)-ICP.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology. Holding time is measured by comparison of the date and time of sample collection to the date and time of sample preparation and analysis. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. Samples were diluted in order to bring raw values for titanium within the linear range of the instrument, and for the analytes interfered with, in order to ensure that the inter-element correction factors were valid for antimony. 361900001 (J1V1L2), 361900002 (J1V1L3), 361900003 (J1V1L8), 361900004 (J1V1L9), 361900005 (J1V1M1), 361900006 (J1V1M2), 361900007 (J1V1L0), 361900008 (J1V1L1), 361900009 (J1V1L4), 361900010 (J1V1L5) and 361900013 (J1V1M0)-ICP. The ICPMS solid samples in this SDG were diluted the standard two times. ICP-MS.

Preparation Information
The samples in this SDG were prepared exactly according to the cited SOP.

Miscellaneous Information

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. Data exception reports were included behind the Case Narrative or in the Miscellaneous Data section of this data package. The following DER was generated for this SDG: 1360869. 1203217776 (J1V1L2DUP) and 1203217777 (J1V1L2MS)-ICP.

Additional Comments
Additional comments were not required for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer:_____ **Date:**_____

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
01-DEC-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP	SW846 3050B/6010C	Solid	WCHN
Batch ID:	**Sample Numbers:**		
1439189	See Below		

Potentially affected work order(s)(SDG): 361900(XP0168)

Application Issues:

Failed RPD for DUP

Failed Recovery for MS/PS

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203217777MS 2. Failed RPD for DUP: QC 1203217776DUP	1. The matrix spike recovery failed outside of the control limits for silicon. The post spike passed the required control limits for silicon. This verifies the absence of a matrix interference. 2. The sample and sample duplicate % RPD failed outside the control limits for sodium due to possible sample non-homogeneity and/or matrix interference.

Originator's Name:

Jerry Wigfall 01-DEC-14

Data Validator/Group Leader:

Jamie Johnson 05-DEC-14

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0168 GEL Work Order: 361900 Project: RC-107 Soil

The Qualifiers in this report are defined as follows:

* Duplicate analysis not within control limits

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.

D Results are reported from a diluted aliquot of sample.

E Reported value is estimated due to interferences. See comment in narrative.

M Duplicate precision not met.

N Spike Sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Orlette Johnson.

Reviewed by _____

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L2
Sample ID: 361900001
Matrix: Soil
Collect Date: 20-NOV-14 11:02
Receive Date: 25-NOV-14
Collector: Client
Moisture: 2.5%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury	B	0.00417	0.00405	0.0121	mg/kg	1	MTM1	12/01/14	1006	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		5020	6.71	19.7	mg/kg	1	JWJ	12/01/14	1516	1439189	2
Arsenic		8.42	0.493	2.96	mg/kg	1					
Barium		39.4	0.0986	0.493	mg/kg	1					
Beryllium		0.983	0.0986	0.493	mg/kg	1					
Boron	U	0.986	0.986	4.93	mg/kg	1					
Cadmium	B	0.216	0.0986	0.493	mg/kg	1					
Calcium		4550	7.89	24.7	mg/kg	1					
Chromium		8.65	0.148	0.493	mg/kg	1					
Cobalt		8.02	0.148	0.493	mg/kg	1					
Copper		10.5	0.296	0.986	mg/kg	1					
Iron		16100	7.89	24.7	mg/kg	1					
Lead		33.8	0.325	0.986	mg/kg	1					
Magnesium		3600	8.38	29.6	mg/kg	1					
Manganese		232	0.197	0.986	mg/kg	1					
Molybdenum	U	0.197	0.197	0.986	mg/kg	1					
Nickel		8.65	0.148	0.493	mg/kg	1					
Potassium		715	6.31	24.7	mg/kg	1					
Silicon	N	1010	1.48	9.86	mg/kg	1					
Silver	B	0.196	0.0986	0.493	mg/kg	1					
Sodium	*	137	6.90	24.7	mg/kg	1					
Vanadium		43.4	0.0986	0.493	mg/kg	1					
Zinc	CM	29.6	0.394	0.986	mg/kg	1					
Antimony	DU	3.25	3.25	9.86	mg/kg	10	JWJ	12/01/14	1621	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	DU	0.333	0.333	1.01	mg/kg	2	PRB	11/29/14	0104	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L2	Project:	WCHN00720
Sample ID:	361900001	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L3
Sample ID: 361900002
Matrix: Soil
Collect Date: 20-NOV-14 10:51
Receive Date: 25-NOV-14
Collector: Client
Moisture: 1.67%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury	U	0.00409	0.00409	0.0122	mg/kg	1	MTM1	12/01/14	1018	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		4410	6.57	19.3	mg/kg	1	JWJ	12/01/14	1526	1439189	2
Arsenic		4.62	0.483	2.90	mg/kg	1					
Barium		32.1	0.0967	0.483	mg/kg	1					
Beryllium		0.917	0.0967	0.483	mg/kg	1					
Boron	U	0.967	0.967	4.83	mg/kg	1					
Cadmium	B	0.267	0.0967	0.483	mg/kg	1					
Calcium		5110	7.73	24.2	mg/kg	1					
Chromium		9.15	0.145	0.483	mg/kg	1					
Cobalt		7.81	0.145	0.483	mg/kg	1					
Copper		11.1	0.290	0.967	mg/kg	1					
Iron		15600	7.73	24.2	mg/kg	1					
Lead		9.66	0.319	0.967	mg/kg	1					
Magnesium		3770	8.22	29.0	mg/kg	1					
Manganese		234	0.193	0.967	mg/kg	1					
Molybdenum	U	0.193	0.193	0.967	mg/kg	1					
Nickel		9.59	0.145	0.483	mg/kg	1					
Potassium		530	6.19	24.2	mg/kg	1					
Silicon	N	756	1.45	9.67	mg/kg	1					
Silver	U	0.0967	0.0967	0.483	mg/kg	1					
Sodium	*	123	6.77	24.2	mg/kg	1					
Vanadium		41.5	0.0967	0.483	mg/kg	1					
Zinc	CM	25.8	0.387	0.967	mg/kg	1					
Antimony	DU	3.19	3.19	9.67	mg/kg	10	JWJ	12/01/14	1640	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	BD	0.522	0.336	1.02	mg/kg	2	PRB	11/29/14	0127	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L3	Project:	WCHN00720
Sample ID:	361900002	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L8
Sample ID: 361900003
Matrix: Soil
Collect Date: 20-NOV-14 10:08
Receive Date: 25-NOV-14
Collector: Client
Moisture: 3.57%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury	B	0.0055	0.00388	0.0116	mg/kg	1	MTM1	12/01/14	1019	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		5440	7.01	20.6	mg/kg	1	JWJ	12/01/14	1528	1439189	2
Arsenic		5.58	0.515	3.09	mg/kg	1					
Barium		51.6	0.103	0.515	mg/kg	1					
Beryllium		1.07	0.103	0.515	mg/kg	1					
Boron	U	1.03	1.03	5.15	mg/kg	1					
Cadmium	B	0.238	0.103	0.515	mg/kg	1					
Calcium		5430	8.25	25.8	mg/kg	1					
Chromium		9.38	0.155	0.515	mg/kg	1					
Cobalt		8.35	0.155	0.515	mg/kg	1					
Copper		11.6	0.309	1.03	mg/kg	1					
Iron		16800	8.25	25.8	mg/kg	1					
Lead		9.18	0.340	1.03	mg/kg	1					
Magnesium		3950	8.76	30.9	mg/kg	1					
Manganese		232	0.206	1.03	mg/kg	1					
Molybdenum	U	0.206	0.206	1.03	mg/kg	1					
Nickel		10.2	0.155	0.515	mg/kg	1					
Potassium		799	6.60	25.8	mg/kg	1					
Silicon	N	1070	1.55	10.3	mg/kg	1					
Silver	B	0.251	0.103	0.515	mg/kg	1					
Sodium	*	158	7.22	25.8	mg/kg	1					
Vanadium		45.6	0.103	0.515	mg/kg	1					
Zinc	CM	28.3	0.412	1.03	mg/kg	1					
Antimony	DU	3.40	3.40	10.3	mg/kg	10	JWJ	12/01/14	1643	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	BD	0.333	0.328	1.00	mg/kg	2	PRB	11/29/14	0130	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L8	Project:	WCHN00720
Sample ID:	361900003	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L9
Sample ID: 361900004
Matrix: Soil
Collect Date: 20-NOV-14 10:38
Receive Date: 25-NOV-14
Collector: Client
Moisture: 4.25%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury		0.0764	0.0036	0.0107	mg/kg	1	MTM1	12/01/14	1021	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		6970	6.67	19.6	mg/kg	1	JWJ	12/01/14	1530	1439189	2
Arsenic		6.03	0.491	2.94	mg/kg	1					
Barium		65.1	0.0982	0.491	mg/kg	1					
Beryllium		1.06	0.0982	0.491	mg/kg	1					
Boron	U	0.982	0.982	4.91	mg/kg	1					
Cadmium	B	0.342	0.0982	0.491	mg/kg	1					
Calcium		5120	7.85	24.5	mg/kg	1					
Chromium		13.7	0.147	0.491	mg/kg	1					
Cobalt		8.54	0.147	0.491	mg/kg	1					
Copper		13.4	0.294	0.982	mg/kg	1					
Iron		18500	7.85	24.5	mg/kg	1					
Lead		12.7	0.324	0.982	mg/kg	1					
Magnesium		5100	8.34	29.4	mg/kg	1					
Manganese		273	0.196	0.982	mg/kg	1					
Molybdenum	U	0.196	0.196	0.982	mg/kg	1					
Nickel		14.4	0.147	0.491	mg/kg	1					
Potassium		1060	6.28	24.5	mg/kg	1					
Silicon	N	996	1.47	9.82	mg/kg	1					
Silver	B	0.227	0.0982	0.491	mg/kg	1					
Sodium	*	157	6.87	24.5	mg/kg	1					
Vanadium		41.5	0.0982	0.491	mg/kg	1					
Zinc	CM	40.7	0.393	0.982	mg/kg	1					
Antimony	DU	3.24	3.24	9.82	mg/kg	10	JWJ	12/01/14	1655	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	BD	0.321	0.302	1.00	mg/kg	2	PRB	11/29/14	0132	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L9	Project:	WCHN00720
Sample ID:	361900004	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1M1
Sample ID: 361900005
Matrix: Soil
Collect Date: 20-NOV-14 10:26
Receive Date: 25-NOV-14
Collector: Client
Moisture: 2.94%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury	B	0.00627	0.00408	0.0122	mg/kg	1	MTM1	12/01/14	1026	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		5270	6.26	18.4	mg/kg	1	JWJ	12/01/14	1538	1439189	2
Arsenic		9.89	0.460	2.76	mg/kg	1					
Barium		50.3	0.092	0.460	mg/kg	1					
Beryllium		1.04	0.092	0.460	mg/kg	1					
Boron	U	0.920	0.920	4.60	mg/kg	1					
Cadmium	B	0.198	0.092	0.460	mg/kg	1					
Calcium		5280	7.36	23.0	mg/kg	1					
Chromium		9.69	0.138	0.460	mg/kg	1					
Cobalt		8.26	0.138	0.460	mg/kg	1					
Copper		11.5	0.276	0.920	mg/kg	1					
Iron		16900	7.36	23.0	mg/kg	1					
Lead		28.0	0.304	0.920	mg/kg	1					
Magnesium		3890	7.82	27.6	mg/kg	1					
Manganese		237	0.184	0.920	mg/kg	1					
Molybdenum	U	0.184	0.184	0.920	mg/kg	1					
Nickel		10.1	0.138	0.460	mg/kg	1					
Potassium		899	5.89	23.0	mg/kg	1					
Silicon	N	728	1.38	9.20	mg/kg	1					
Silver	B	0.318	0.092	0.460	mg/kg	1					
Sodium	*	137	6.44	23.0	mg/kg	1					
Vanadium		46.3	0.092	0.460	mg/kg	1					
Zinc	CM	26.9	0.368	0.920	mg/kg	1					
Antimony	DU	3.04	3.04	9.20	mg/kg	10	JWJ	12/01/14	1658	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	BD	0.362	0.339	1.03	mg/kg	2	PRB	11/29/14	0135	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1M1	Project:	WCHN00720
Sample ID:	361900005	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1M2
Sample ID: 361900006
Matrix: Soil
Collect Date: 20-NOV-14 10:08
Receive Date: 25-NOV-14
Collector: Client
Moisture: 3.32%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury	B	0.00668	0.00386	0.0115	mg/kg	1	MTM1	12/01/14	1028	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		5810	6.99	20.6	mg/kg	1	JWJ	12/01/14	1540	1439189	2
Arsenic		7.02	0.514	3.08	mg/kg	1					
Barium		53.5	0.103	0.514	mg/kg	1					
Beryllium		1.02	0.103	0.514	mg/kg	1					
Boron	U	1.03	1.03	5.14	mg/kg	1					
Cadmium	B	0.203	0.103	0.514	mg/kg	1					
Calcium		5730	8.23	25.7	mg/kg	1					
Chromium		10.9	0.154	0.514	mg/kg	1					
Cobalt		8.46	0.154	0.514	mg/kg	1					
Copper		12.1	0.308	1.03	mg/kg	1					
Iron		17500	8.23	25.7	mg/kg	1					
Lead		11.0	0.339	1.03	mg/kg	1					
Magnesium		4320	8.74	30.8	mg/kg	1					
Manganese		255	0.206	1.03	mg/kg	1					
Molybdenum	U	0.206	0.206	1.03	mg/kg	1					
Nickel		12.1	0.154	0.514	mg/kg	1					
Potassium		896	6.58	25.7	mg/kg	1					
Silicon	N	753	1.54	10.3	mg/kg	1					
Silver	B	0.283	0.103	0.514	mg/kg	1					
Sodium	*	153	7.20	25.7	mg/kg	1					
Vanadium		44.3	0.103	0.514	mg/kg	1					
Zinc	CM	28.9	0.411	1.03	mg/kg	1					
Antimony	DU	3.39	3.39	10.3	mg/kg	10	JWJ	12/01/14	1701	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	DU	0.341	0.341	1.03	mg/kg	2	PRB	11/29/14	0138	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1M2	Project:	WCHN00720
Sample ID:	361900006	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

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Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L0
Sample ID: 361900007
Matrix: Soil
Collect Date: 20-NOV-14 08:11
Receive Date: 25-NOV-14
Collector: Client
Moisture: 6.64%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury	B	0.00976	0.00382	0.0114	mg/kg	1	MTM1	12/01/14	1029	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		6540	7.20	21.2	mg/kg	1	JWJ	12/01/14	1542	1439189	2
Arsenic		9.32	0.529	3.18	mg/kg	1					
Barium		66.2	0.106	0.529	mg/kg	1					
Beryllium		1.13	0.106	0.529	mg/kg	1					
Boron	U	1.06	1.06	5.29	mg/kg	1					
Cadmium	B	0.262	0.106	0.529	mg/kg	1					
Calcium		7620	8.47	26.5	mg/kg	1					
Chromium		11.6	0.159	0.529	mg/kg	1					
Cobalt		9.15	0.159	0.529	mg/kg	1					
Copper		12.9	0.318	1.06	mg/kg	1					
Iron		19000	8.47	26.5	mg/kg	1					
Lead		21.7	0.349	1.06	mg/kg	1					
Magnesium		4900	9.00	31.8	mg/kg	1					
Manganese		284	0.212	1.06	mg/kg	1					
Molybdenum	U	0.212	0.212	1.06	mg/kg	1					
Nickel		11.7	0.159	0.529	mg/kg	1					
Potassium		1160	6.77	26.5	mg/kg	1					
Silicon	N	895	1.59	10.6	mg/kg	1					
Silver	B	0.347	0.106	0.529	mg/kg	1					
Sodium	*	196	7.41	26.5	mg/kg	1					
Vanadium		45.7	0.106	0.529	mg/kg	1					
Zinc	CM	35.3	0.423	1.06	mg/kg	1					
Antimony	DU	3.49	3.49	10.6	mg/kg	10	JWJ	12/01/14	1704	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	BD	0.508	0.339	1.03	mg/kg	2	PRB	11/29/14	0141	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Report Date: December 3, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L0	Project:	WCHN00720
Sample ID:	361900007	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

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Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L1
Sample ID: 361900008
Matrix: Soil
Collect Date: 20-NOV-14 08:04
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.8%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury		0.0127	0.00384	0.0115	mg/kg	1	MTM1	12/01/14	1031	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		6670	7.22	21.2	mg/kg	1	JWJ	12/01/14	1544	1439189	2
Arsenic		4.70	0.531	3.18	mg/kg	1					
Barium		62.0	0.106	0.531	mg/kg	1					
Beryllium		1.03	0.106	0.531	mg/kg	1					
Boron	U	1.06	1.06	5.31	mg/kg	1					
Cadmium	B	0.204	0.106	0.531	mg/kg	1					
Calcium		6580	8.49	26.5	mg/kg	1					
Chromium		12.5	0.159	0.531	mg/kg	1					
Cobalt		8.43	0.159	0.531	mg/kg	1					
Copper		11.8	0.318	1.06	mg/kg	1					
Iron		17900	8.49	26.5	mg/kg	1					
Lead		6.00	0.350	1.06	mg/kg	1					
Magnesium		4750	9.02	31.8	mg/kg	1					
Manganese		268	0.212	1.06	mg/kg	1					
Molybdenum	U	0.212	0.212	1.06	mg/kg	1					
Nickel		12.2	0.159	0.531	mg/kg	1					
Potassium		1110	6.79	26.5	mg/kg	1					
Silicon	N	1360	1.59	10.6	mg/kg	1					
Silver	B	0.311	0.106	0.531	mg/kg	1					
Sodium	*	230	7.43	26.5	mg/kg	1					
Vanadium		41.7	0.106	0.531	mg/kg	1					
Zinc	CM	33.1	0.425	1.06	mg/kg	1					
Antimony	DU	3.50	3.50	10.6	mg/kg	10	JWJ	12/01/14	1707	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	BD	0.428	0.326	1.00	mg/kg	2	PRB	11/29/14	0152	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Report Date: December 3, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L1	Project:	WCHN00720
Sample ID:	361900008	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

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Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L4
Sample ID: 361900009
Matrix: Soil
Collect Date: 20-NOV-14 07:58
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.2%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury		0.0233	0.00422	0.0126	mg/kg	1	MTM1	12/01/14	1033	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		5970	6.67	19.6	mg/kg	1	JWJ	12/01/14	1546	1439189	2
Arsenic		5.47	0.490	2.94	mg/kg	1					
Barium		69.7	0.098	0.490	mg/kg	1					
Beryllium		1.11	0.098	0.490	mg/kg	1					
Boron	B	1.56	0.980	4.90	mg/kg	1					
Cadmium	B	0.204	0.098	0.490	mg/kg	1					
Calcium		5960	7.84	24.5	mg/kg	1					
Chromium		9.42	0.147	0.490	mg/kg	1					
Cobalt		8.72	0.147	0.490	mg/kg	1					
Copper		12.1	0.294	0.980	mg/kg	1					
Iron		17800	7.84	24.5	mg/kg	1					
Lead		9.63	0.324	0.980	mg/kg	1					
Magnesium		4160	8.33	29.4	mg/kg	1					
Manganese		262	0.196	0.980	mg/kg	1					
Molybdenum	U	0.196	0.196	0.980	mg/kg	1					
Nickel		10.6	0.147	0.490	mg/kg	1					
Potassium		1040	6.27	24.5	mg/kg	1					
Silicon	N	1100	1.47	9.80	mg/kg	1					
Silver	B	0.252	0.098	0.490	mg/kg	1					
Sodium	*	199	6.86	24.5	mg/kg	1					
Vanadium		45.6	0.098	0.490	mg/kg	1					
Zinc	CM	29.9	0.392	0.980	mg/kg	1					
Antimony	DU	3.24	3.24	9.80	mg/kg	10	JWJ	12/01/14	1709	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	BD	0.401	0.333	1.01	mg/kg	2	PRB	11/29/14	0155	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L4	Project:	WCHN00720
Sample ID:	361900009	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L5
Sample ID: 361900010
Matrix: Soil
Collect Date: 20-NOV-14 07:43
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.36%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury	B	0.00505	0.00408	0.0122	mg/kg	1	MTM1	12/01/14	1034	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		6180	7.14	21.0	mg/kg	1	JWJ	12/01/14	1548	1439189	2
Arsenic		9.20	0.525	3.15	mg/kg	1					
Barium		59.4	0.105	0.525	mg/kg	1					
Beryllium		1.12	0.105	0.525	mg/kg	1					
Boron	U	1.05	1.05	5.25	mg/kg	1					
Cadmium	B	0.216	0.105	0.525	mg/kg	1					
Calcium		5650	8.40	26.3	mg/kg	1					
Chromium		10.7	0.158	0.525	mg/kg	1					
Cobalt		8.57	0.158	0.525	mg/kg	1					
Copper		11.1	0.315	1.05	mg/kg	1					
Iron		17600	8.40	26.3	mg/kg	1					
Lead		19.8	0.347	1.05	mg/kg	1					
Magnesium		4530	8.93	31.5	mg/kg	1					
Manganese		243	0.210	1.05	mg/kg	1					
Molybdenum	U	0.210	0.210	1.05	mg/kg	1					
Nickel		11.7	0.158	0.525	mg/kg	1					
Potassium		925	6.72	26.3	mg/kg	1					
Silicon	N	927	1.58	10.5	mg/kg	1					
Silver	B	0.274	0.105	0.525	mg/kg	1					
Sodium	*	163	7.35	26.3	mg/kg	1					
Vanadium		45.2	0.105	0.525	mg/kg	1					
Zinc	CM	31.3	0.420	1.05	mg/kg	1					
Antimony	BD	4.16	3.47	10.5	mg/kg	10	JWJ	12/01/14	1712	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	DU	0.346	0.346	1.05	mg/kg	2	PRB	11/29/14	0158	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1L5	Project:	WCHN00720
Sample ID:	361900010	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

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Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L6
Sample ID: 361900011
Matrix: Soil
Collect Date: 20-NOV-14 07:38
Receive Date: 25-NOV-14
Collector: Client
Moisture: 4.88%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury	B	0.0053	0.00359	0.0107	mg/kg	1	MTM1	12/01/14	1036	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		6570	6.90	20.3	mg/kg	1	JWJ	12/01/14	1550	1439189	2
Antimony		1.08	0.335	1.01	mg/kg	1					
Arsenic		5.26	0.507	3.04	mg/kg	1					
Barium		58.3	0.101	0.507	mg/kg	1					
Beryllium		0.984	0.101	0.507	mg/kg	1					
Boron	U	1.01	1.01	5.07	mg/kg	1					
Cadmium	B	0.214	0.101	0.507	mg/kg	1					
Calcium		5770	8.12	25.4	mg/kg	1					
Chromium		12.6	0.152	0.507	mg/kg	1					
Cobalt		8.10	0.152	0.507	mg/kg	1					
Copper		13.1	0.304	1.01	mg/kg	1					
Iron		17700	8.12	25.4	mg/kg	1					
Lead		8.33	0.335	1.01	mg/kg	1					
Magnesium		4800	8.63	30.4	mg/kg	1					
Manganese		259	0.203	1.01	mg/kg	1					
Molybdenum	U	0.203	0.203	1.01	mg/kg	1					
Nickel		13.4	0.152	0.507	mg/kg	1					
Potassium		966	6.49	25.4	mg/kg	1					
Silicon	N	1020	1.52	10.1	mg/kg	1					
Silver	B	0.360	0.101	0.507	mg/kg	1					
Sodium	*	153	7.10	25.4	mg/kg	1					
Vanadium		42.0	0.101	0.507	mg/kg	1					
Zinc	CM	31.3	0.406	1.01	mg/kg	1					
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	BD	0.461	0.340	1.03	mg/kg	2	PRB	11/29/14	0201	1439164	3

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L6	Project:	WCHN00720
Sample ID:	361900011	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6020A	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L7
Sample ID: 361900012
Matrix: Soil
Collect Date: 20-NOV-14 07:32
Receive Date: 25-NOV-14
Collector: Client
Moisture: 8.22%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury	B	0.00748	0.00395	0.0118	mg/kg	1	MTM1	12/01/14	1459	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		6500	7.28	21.4	mg/kg	1	JWJ	12/01/14	1552	1439189	2
Antimony	B	0.908	0.353	1.07	mg/kg	1					
Arsenic		6.83	0.535	3.21	mg/kg	1					
Barium		57.0	0.107	0.535	mg/kg	1					
Beryllium		0.904	0.107	0.535	mg/kg	1					
Boron	U	1.07	1.07	5.35	mg/kg	1					
Cadmium	B	0.125	0.107	0.535	mg/kg	1					
Calcium		5230	8.56	26.8	mg/kg	1					
Chromium		13.3	0.161	0.535	mg/kg	1					
Cobalt		7.86	0.161	0.535	mg/kg	1					
Copper		12.1	0.321	1.07	mg/kg	1					
Iron		17100	8.56	26.8	mg/kg	1					
Lead		2.94	0.353	1.07	mg/kg	1					
Magnesium		4800	9.10	32.1	mg/kg	1					
Manganese		248	0.214	1.07	mg/kg	1					
Molybdenum	U	0.214	0.214	1.07	mg/kg	1					
Nickel		13.0	0.161	0.535	mg/kg	1					
Potassium		850	6.85	26.8	mg/kg	1					
Silicon	N	1060	1.61	10.7	mg/kg	1					
Silver	B	0.240	0.107	0.535	mg/kg	1					
Sodium	*	136	7.49	26.8	mg/kg	1					
Vanadium		39.1	0.107	0.535	mg/kg	1					
Zinc	CM	30.3	0.428	1.07	mg/kg	1					
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	BD	0.568	0.326	1.00	mg/kg	2	PRB	11/29/14	0204	1439164	3

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L7	Project:	WCHN00720
Sample ID:	361900012	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6020A	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1M0
Sample ID: 361900013
Matrix: Soil
Collect Date: 20-NOV-14 07:26
Receive Date: 25-NOV-14
Collector: Client
Moisture: 5.33%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA											
SW846 7471B Mercury in Solid "Dry Weight Corrected"											
Mercury	U	0.00405	0.00405	0.0121	mg/kg	1	MTM1	12/01/14	1039	1439275	1
Metals Analysis-ICP											
ICP METALS 6010TR Close-out List "Dry Weight Corrected"											
Aluminum		6320	6.78	19.9	mg/kg	1	JWJ	12/01/14	1554	1439189	2
Arsenic		7.60	0.498	2.99	mg/kg	1					
Barium		56.7	0.0997	0.498	mg/kg	1					
Beryllium		1.10	0.0997	0.498	mg/kg	1					
Boron	U	0.997	0.997	4.98	mg/kg	1					
Cadmium	B	0.215	0.0997	0.498	mg/kg	1					
Calcium		5670	7.97	24.9	mg/kg	1					
Chromium		12.1	0.149	0.498	mg/kg	1					
Cobalt		8.35	0.149	0.498	mg/kg	1					
Copper		11.5	0.299	0.997	mg/kg	1					
Iron		17900	7.97	24.9	mg/kg	1					
Lead		14.2	0.329	0.997	mg/kg	1					
Magnesium		4710	8.47	29.9	mg/kg	1					
Manganese		251	0.199	0.997	mg/kg	1					
Molybdenum	U	0.199	0.199	0.997	mg/kg	1					
Nickel		12.3	0.149	0.498	mg/kg	1					
Potassium		979	6.38	24.9	mg/kg	1					
Silicon	N	1110	1.49	9.97	mg/kg	1					
Silver	B	0.334	0.0997	0.498	mg/kg	1					
Sodium	*	176	6.98	24.9	mg/kg	1					
Vanadium		44.3	0.0997	0.498	mg/kg	1					
Zinc	CM	31.1	0.399	0.997	mg/kg	1					
Antimony	DU	3.29	3.29	9.97	mg/kg	10	JWJ	12/01/14	1715	1439189	3
Metals Analysis-ICP-MS											
SW846 3050B/6020A Selenium "Dry Weight Corrected"											
Selenium	BD	0.376	0.344	1.04	mg/kg	2	PRB	11/29/14	0206	1439164	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	EXF1	11/25/14	1615	1439162
SW846 3050B	SW846 3050B Prep for 6010C	EXF1	11/25/14	1615	1439188
SW846 7471B Prep	SW846 7471B Mercury Prep Soil	AXS5	11/26/14	1244	1439274

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.		
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354		
Contact:	Joan Kessner	Client SDG:	XP0168
Project:	RC-107 Soil		

Client Sample ID:	J1V1M0	Project:	WCHN00720
Sample ID:	361900013	Client ID:	WCHN001

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471B	
2	SW846 3050B/6010C	
3	SW846 3050B/6010C	
4	SW846 3050B/6020A	

Notes:

Quality Control Summary

QC Summary

Report Date: December 3, 2014

WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington

Contact: **Joan Kessner**

Workorder: **361900** **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1439164										
QC1203217727 361900001 DUP										
Selenium DU		0.333	BD	0.493	mg/kg	60.5 ^		(+/-1.00)	PRB	11/29/14 01:07
QC1203217726 LCS										
Selenium	4.88		D	4.76	mg/kg		97.5	(80%-120%)		11/29/14 00:55
QC1203217725 MB										
Selenium			DU	0.318	mg/kg					11/29/14 00:53
QC1203217728 361900001 MS										
Selenium	4.98 DU	0.333	D	5.11	mg/kg		97.4	(75%-125%)		11/29/14 01:10
QC1203217729 361900001 SDILT										
Selenium DU		1.31	DU	1.67	ug/L	N/A		(0%-10%)		11/29/14 01:15
Metals Analysis-ICP										
Batch 1439189										
QC1203217776 361900001 DUP										
Aluminum		5020		4730	mg/kg	5.86		(0%-20%)	JWJ	12/01/14 15:18
Antimony DU		3.25	DU	3.32	mg/kg	N/A				12/01/14 16:24
Arsenic		8.42		7.82	mg/kg	7.31 ^		(+/-3.02)		12/01/14 15:18
Barium		39.4		40.9	mg/kg	3.89		(0%-20%)		
Beryllium		0.983		0.937	mg/kg	4.81 ^		(+/-0.504)		
Boron U		0.986	U	1.01	mg/kg	N/A				
Cadmium B		0.216	B	0.250	mg/kg	14.8 ^		(+/-0.504)		
Calcium		4550		4950	mg/kg	8.33		(0%-20%)		
Chromium		8.65		8.12	mg/kg	6.27		(0%-20%)		
Cobalt		8.02		7.80	mg/kg	2.88		(0%-20%)		
Copper		10.5		9.82	mg/kg	6.81		(0%-20%)		
Iron		16100		15300	mg/kg	5.44		(0%-20%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP										
Batch 1439189										
Lead		33.8		34.8	mg/kg	2.80		(0%-20%)	JWJ	12/01/14 15:18
Magnesium		3600		3560	mg/kg	1.34		(0%-20%)		
Manganese		232		239	mg/kg	3.00		(0%-20%)		
Molybdenum	U	0.197	U	0.201	mg/kg	N/A				
Nickel		8.65		8.66	mg/kg	0.0766		(0%-20%)		
Potassium		715		661	mg/kg	7.84		(0%-20%)		
Silicon	N	1010		965	mg/kg	4.33		(0%-20%)		
Silver	B	0.196	B	0.193	mg/kg	1.55 ^		(+/-0.504)		
Sodium	*	137	*	111	mg/kg	21.0*^		(+/-25.2)		
Vanadium		43.4		42.3	mg/kg	2.50		(0%-20%)		
Zinc	CM	29.6		25.5	mg/kg	15.0		(0%-20%)		
QC1203217775 LCS										
Aluminum	476			492	mg/kg		103	(80%-120%)		12/01/14 15:13
Antimony	47.6			47.8	mg/kg		100	(80%-120%)		
Arsenic	47.6			47.9	mg/kg		101	(80%-120%)		
Barium	47.6			48.0	mg/kg		101	(80%-120%)		
Beryllium	47.6			49.0	mg/kg		103	(80%-120%)		
Boron	47.6			47.7	mg/kg		100	(80%-120%)		
Cadmium	47.6			48.2	mg/kg		101	(80%-120%)		
Calcium	476			505	mg/kg		106	(80%-120%)		
Chromium	47.6			47.3	mg/kg		99.4	(80%-120%)		
Cobalt	47.6			48.2	mg/kg		101	(80%-120%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP										
Batch 1439189										
Copper	47.6			48.3	mg/kg		101	(80%-120%)	JWJ	12/01/14 15:13
Iron	476			496	mg/kg		104	(80%-120%)		
Lead	47.6			47.3	mg/kg		99.3	(80%-120%)		
Magnesium	476			511	mg/kg		107	(80%-120%)		
Manganese	47.6			47.9	mg/kg		101	(80%-120%)		
Molybdenum	47.6			47.0	mg/kg		98.6	(80%-120%)		
Nickel	47.6			47.8	mg/kg		100	(80%-120%)		
Potassium	476			473	mg/kg		99.4	(80%-120%)		
Silicon	476			433	mg/kg		91	(80%-120%)		
Silver	47.6			47.7	mg/kg		100	(80%-120%)		
Sodium	476			494	mg/kg		104	(80%-120%)		
Vanadium	47.6			48.9	mg/kg		103	(80%-120%)		
Zinc	47.6			48.9	mg/kg		103	(80%-120%)		
QC1203217774 MB										
Aluminum			U	6.77	mg/kg					12/01/14 15:10
Antimony			U	0.329	mg/kg					
Arsenic			U	0.498	mg/kg					
Barium			U	0.0996	mg/kg					
Beryllium			U	0.0996	mg/kg					
Boron			U	0.996	mg/kg					
Cadmium			U	0.0996	mg/kg					
Calcium			U	7.97	mg/kg					

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP												
Batch 1439189												
Chromium				B	0.201	mg/kg				JWJ	12/01/14	15:10
Cobalt				U	0.149	mg/kg						
Copper				U	0.299	mg/kg						
Iron				U	7.97	mg/kg						
Lead				U	0.329	mg/kg						
Magnesium				U	8.47	mg/kg						
Manganese				U	0.199	mg/kg						
Molybdenum				U	0.199	mg/kg						
Nickel				U	0.149	mg/kg						
Potassium				U	6.37	mg/kg						
Silicon				U	1.49	mg/kg						
Silver				U	0.0996	mg/kg						
Sodium				U	6.97	mg/kg						
Vanadium				U	0.0996	mg/kg						
Zinc					1.35	mg/kg						
QC1203217777 361900001 MS												
Aluminum	501		5020		6530	mg/kg		N/A	(75%-125%)		12/01/14	15:20
Antimony	50.1	DU	3.25	D	44.7	mg/kg		85.1	(75%-125%)		12/01/14	16:27
Arsenic	50.1		8.42		56.4	mg/kg		95.8	(75%-125%)		12/01/14	15:20
Barium	50.1		39.4		92.0	mg/kg		105	(75%-125%)			
Beryllium	50.1		0.983		50.6	mg/kg		99.1	(75%-125%)			
Boron	50.1	U	0.986		48.1	mg/kg		96	(75%-125%)			

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1439189											
Cadmium	50.1	B	0.216		47.8	mg/kg		95	(75%-125%)	JWJ	12/01/14 15:20
Calcium	501		4550		5630	mg/kg		N/A	(75%-125%)		
Chromium	50.1		8.65		56.0	mg/kg		94.5	(75%-125%)		
Cobalt	50.1		8.02		55.8	mg/kg		95.5	(75%-125%)		
Copper	50.1		10.5		61.7	mg/kg		102	(75%-125%)		
Iron	501		16100		17200	mg/kg		N/A	(75%-125%)		
Lead	50.1		33.8		79.4	mg/kg		91	(75%-125%)		
Magnesium	501		3600		4470	mg/kg		N/A	(75%-125%)		
Manganese	50.1		232		296	mg/kg		N/A	(75%-125%)		
Molybdenum	50.1	U	0.197		46.9	mg/kg		93.6	(75%-125%)		
Nickel	50.1		8.65		56.5	mg/kg		95.5	(75%-125%)		
Potassium	501		715		1240	mg/kg		105	(75%-125%)		
Silicon	501	N	1010	N	929	mg/kg		0*	(75%-125%)		
Silver	50.1	B	0.196		49.1	mg/kg		97.6	(75%-125%)		
Sodium	501	*	137		680	mg/kg		109	(75%-125%)		
Vanadium	50.1		43.4		95.1	mg/kg		103	(75%-125%)		
Zinc	50.1	CM	29.6		74.9	mg/kg		90.4	(75%-125%)		
QC1203219998 361900001 PS											
Silicon	5000	N	10200		14700	ug/L		90.5	(80%-120%)		12/01/14 15:24
QC1203217778 361900001 SDILT											
Aluminum			50900	D	10600	ug/L	4.05		(0%-10%)		12/01/14 15:22
Antimony		DU	2.13	DU	16.3	ug/L	N/A		(0%-10%)		12/01/14 16:52
Arsenic			85.3	D	16.7	ug/L	1.92		(0%-10%)		12/01/14 15:22

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP										
Batch 1439189										
Barium		399	D	80.8	ug/L	1.22		(0%-10%)	JWJ	12/01/14 15:22
Beryllium		9.97	D	2.17	ug/L	8.94		(0%-10%)		
Boron	U	-7.91	DU	4.93	ug/L	N/A		(0%-10%)		
Cadmium	B	2.19	DU	0.493	ug/L	N/A		(0%-10%)		
Calcium		46200	D	9410	ug/L	1.91		(0%-10%)		
Chromium		87.7	D	16.6	ug/L	5.31		(0%-10%)		
Cobalt		81.4	D	17.2	ug/L	5.94		(0%-10%)		
Copper		107	D	20.9	ug/L	1.83		(0%-10%)		
Iron		163000	D	33600	ug/L	2.71		(0%-10%)		
Lead		343	D	69.7	ug/L	1.57		(0%-10%)		
Magnesium		36500	D	7550	ug/L	3.26		(0%-10%)		
Manganese		2360	D	486	ug/L	3.15		(0%-10%)		
Molybdenum	U	-4.66	DU	0.986	ug/L	N/A		(0%-10%)		
Nickel		87.7	D	18.6	ug/L	5.76		(0%-10%)		
Potassium		7250	D	1490	ug/L	2.98		(0%-10%)		
Silicon	N	10200	D	2030	ug/L	.676		(0%-10%)		
Silver	B	1.99	DU	0.493	ug/L	N/A		(0%-10%)		
Sodium	*	1380	D	289	ug/L	4.5		(0%-10%)		
Vanadium		440	D	87.4	ug/L	.768		(0%-10%)		
Zinc	CM	300	DM	66.6	ug/L	10.9*		(0%-10%)		
Metals Analysis-Mercury										
Batch 1439275										

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-Mercury										
Batch 1439275										
QC1203218012 361900001 DUP										
Mercury	B	0.00417	B	0.00591	mg/kg	34.5 ^		(+/-0.0123)	MTM1	12/01/14 10:11
QC1203218011 LCS										
Mercury	0.117			0.112	mg/kg		95.8	(80%-120%)		12/01/14 10:04
QC1203218010 MB										
Mercury			U	0.00397	mg/kg					12/01/14 10:02
QC1203218013 361900001 MS										
Mercury	0.119	B 0.00417		0.121	mg/kg		98.1	(80%-120%)		12/01/14 10:13
QC1203218014 361900001 SDILT										
Mercury	B	0.069	DU	0.0203	ug/L	N/A		(0%-10%)		12/01/14 10:14

Notes:

The Qualifiers in this report are defined as follows:

- * Duplicate analysis not within control limits
- + Correlation coefficient for Method of Standard Additions (MSA) is < 0.995
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- E Reported value is estimated due to interferences. See comment in narrative.
- M Duplicate precision not met.
- N Spike Sample recovery is outside control limits.
- S Reported value determined by the Method of Standard Additions (MSA)
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- W Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

Prep Logbook

Acid Digestion of Sediments, Sludges, and Soils

Batch ID: **1439188**
Analyst: Edmund Frampton
Method: SW846 3050B
Lab SOP: GL-MA-E-009 REV# 24
Instrument: Metals Manual Instrument

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1203217775	Metals Spike Mix I	UI141022-01	.25	mL
LCS	1203217775	Metals Spike Mix II	UI141022-06	.25	mL
MS	1203217777	Metals Spike Mix I	UI141022-01	.25	mL
MS	1203217777	Metals Spike Mix II	UI141022-06	.25	mL

Sample ID	Run Date	Matrix	Initial Weight (g)	Final Volume (mL)	Prep Factor (mL/g)
1203217774 MB	25-NOV-2014 16:15:58	Soil	0.502	50	99.60159
1203217775 LCS	25-NOV-2014 16:15:58	Soil	0.525	50	95.2381
361900001	25-NOV-2014 16:15:58	Soil	0.52	50	96.15385
1203217776 DUP (361900001)	25-NOV-2014 16:15:58	Soil	0.509	50	98.23183
1203217777 MS (361900001)	25-NOV-2014 16:15:58	Soil	0.512	50	97.65625
1203217778 SDILT (361900001)	25-NOV-2014 16:15:58	Soil	0.52	50	96.15385
361900002	25-NOV-2014 16:15:58	Soil	0.526	50	95.05703
361900003	25-NOV-2014 16:15:58	Soil	0.503	50	99.40358
361900004	25-NOV-2014 16:15:58	Soil	0.532	50	93.98496
361900005	25-NOV-2014 16:15:58	Soil	0.56	50	89.28571
361900006	25-NOV-2014 16:15:58	Soil	0.503	50	99.40358
361900007	25-NOV-2014 16:15:58	Soil	0.506	50	98.81423
361900008	25-NOV-2014 16:15:58	Soil	0.5	50	100
361900009	25-NOV-2014 16:15:58	Soil	0.538	50	92.9368
361900010	25-NOV-2014 16:15:58	Soil	0.503	50	99.40358
361900011	25-NOV-2014 16:15:58	Soil	0.518	50	96.5251
361900012	25-NOV-2014 16:15:58	Soil	0.509	50	98.23183
361900013	25-NOV-2014 16:15:58	Soil	0.53	50	94.33962

Reagent/Solvent Lot ID	Description	Amount
141118	HYDROCHLORIC ACID	10 mL
2169064	Concentrated Nitric Acid	1.25 mL

Comments:
Block Temperature: 95 C
Thermometer ID: 118631
Hot Block ID: 2

Prep Logbook

Acid Digestion of Sediments, Sludges, and Soils

Batch ID: **1439162**
Analyst: Edmund Frampton
Method: SW846 3050B
Lab SOP: GL-MA-E-009 REV# 24
Instrument: Metals Manual Instrument

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1203217726	ICP-MS spiking soluiton A	UI140923-A	.25	mL
LCS	1203217726	ICP-MS spiking solution B	UI140923-B	.25	mL
MS	1203217728	ICP-MS spiking soluiton A	UI140923-A	.25	mL
MS	1203217728	ICP-MS spiking solution B	UI140923-B	.25	mL

Sample ID	Run Date	Matrix	Initial Weight (g)	Final Volume (mL)	Prep Factor (mL/g)
1203217725 MB	25-NOV-2014 16:15:58	Soil	0.519	50	96.33911
1203217726 LCS	25-NOV-2014 16:15:58	Soil	0.512	50	97.65625
361900001	25-NOV-2014 16:15:58	Soil	0.508	50	98.4252
1203217727 DUP (361900001)	25-NOV-2014 16:15:58	Soil	0.521	50	95.96929
1203217728 MS (361900001)	25-NOV-2014 16:15:58	Soil	0.515	50	97.08738
1203217729 SDILT (361900001)	25-NOV-2014 16:15:58	Soil	0.508	50	98.4252
361900002	25-NOV-2014 16:15:58	Soil	0.5	50	100
361900003	25-NOV-2014 16:15:58	Soil	0.521	50	95.96929
361900004	25-NOV-2014 16:15:58	Soil	0.57	50	87.7193
361900005	25-NOV-2014 16:15:58	Soil	0.502	50	99.60159
361900006	25-NOV-2014 16:15:58	Soil	0.501	50	99.8004
361900007	25-NOV-2014 16:15:58	Soil	0.522	50	95.78544
361900008	25-NOV-2014 16:15:58	Soil	0.538	50	92.9368
361900009	25-NOV-2014 16:15:58	Soil	0.523	50	95.60229
361900010	25-NOV-2014 16:15:58	Soil	0.504	50	99.20635
361900011	25-NOV-2014 16:15:58	Soil	0.51	50	98.03922
361900012	25-NOV-2014 16:15:58	Soil	0.552	50	90.57971
361900013	25-NOV-2014 16:15:58	Soil	0.506	50	98.81423

Reagent/Solvent Lot ID	Description	Amount
2115989-02	Hydrogen Peroxide 30%	1.5 mL
2169064	Concentrated Nitric Acid	5 mL

Comments:

Block Temperature: 94 C
Thermometer ID: 61066-a1
Hot Block ID: 8

Prep Logbook

Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer

Batch ID: **1439274**
Analyst: Alan Stanley
Method: SW846 7471B Prep
Lab SOP: GL-MA-E-010 REV# 28
Instrument: Satorius

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1203218011	MHGSOILMSSPIKE	WHG141126-14	.3	mL
MS	1203218013	MHGSOILMSSPIKE	WHG141126-14	.3	mL

Sample ID	Run Date	Matrix	Initial Weight (g)	Final Volume (mL)	Prep Factor (mL/g)
1203218010 MB	26-NOV-2014 12:44:48	Soil	0.506	30	59.28854
1203218011 LCS	26-NOV-2014 12:44:48	Soil	0.511	30	58.70841
361900001	26-NOV-2014 12:44:48	Soil	0.509	30	58.9391
1203218012 DUP (361900001)	26-NOV-2014 12:44:48	Soil	0.5	30	60
1203218013 MS (361900001)	26-NOV-2014 12:44:48	Soil	0.517	30	58.02708
1203218014 SDILT (361900001)	26-NOV-2014 12:44:48	Soil	0.509	30	58.9391
361900002	26-NOV-2014 12:44:48	Soil	0.5	30	60
361900003	26-NOV-2014 12:44:48	Soil	0.537	30	55.86592
361900004	26-NOV-2014 12:44:48	Soil	0.583	30	51.45798
361900005	26-NOV-2014 12:44:48	Soil	0.508	30	59.05512
361900006	26-NOV-2014 12:44:48	Soil	0.539	30	55.65863
361900007	26-NOV-2014 12:44:48	Soil	0.563	30	53.28597
361900008	26-NOV-2014 12:44:48	Soil	0.556	30	53.95683
361900009	26-NOV-2014 12:44:48	Soil	0.503	30	59.64215
361900010	26-NOV-2014 12:44:48	Soil	0.521	30	57.58157
361900011	26-NOV-2014 12:44:48	Soil	0.589	30	50.93379
361900012	26-NOV-2014 12:44:48	Soil	0.555	30	54.05405
361900013	26-NOV-2014 12:44:48	Soil	0.524	30	57.25191

Reagent/Solvent Lot ID	Description	Amount
2145891-C	Hg reducing agent	3 mL
2146339-1	NITRIC ACID	.375 mL
2157475-C	5% KMnO4 solution	7.5 mL
2163875-A	Hydrochloric Acid Conc.	1.125 mL
WHG141126-07	Mercury Working Standard 1st Source CAL S 0.2/CRA	30 uL
WHG141126-08	Mercury Working Standard 1st Source CAL S	75 uL

Comments:

Digestion Start Date: 26-NOV-2014 12:44
Digestion End Date: 26-NOV-2014 13:14
Block Temperature: 95 C
Thermometer ID: 118131
Hot Block ID: 6

Prep Logbook

Sample ID	Run Date	Matrix	Initial Weight (g)	Final Volume (mL)	Prep Factor (mL/g)

Reagent/Solvent Lot ID	Description	Amount
	0.5	
WHG141126-09	Mercury Working 1st Source CAL S 2.0	300 uL
WHG141126-10	Mercury Working 1st Source CAL S 5.0/CCV	750 uL
WHG141126-11	Mercury Working 1st Source CAL S 10.0	1.5 mL
WHG141126-12	Mercury Working 2nd Source S 5.0/ICV	750 uL

Comments:

General Chem Analysis

Case Narrative

General Chemistry Narrative
WC-HANFORD, INC. (WCHN)
SDG XP0168

Method/Analysis Information

Product:	**Ion Chromatography**		
Analytical Batch:	1439133	**Method:**	SW846 9056A Anions
Prep Batch :	1439132	**Method:**	SW846 9056A

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 9056A:

Sample ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0
1203217663	Method Blank (MB)
1203217664	Laboratory Control Sample (LCS)
1203217665	361900001(J1V1L2) Sample Duplicate (DUP)
1203217666	361900002(J1V1L3) Sample Duplicate (DUP)
1203217667	361900001(J1V1L2) Matrix Spike (MS)
1203217668	361900002(J1V1L3) Matrix Spike (MS)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-086 REV# 23.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Ion Chromatography analysis was performed on a Dionex ICS-3000 Ion Chromatograph.

Initial Calibration
All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following samples were selected for QC analysis: 361900001 (J1V1L2) and 361900002 (J1V1L3).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recoveries for this sample set were within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
The following DER was generated for this SDG: 1360745. 1203217663 (MB), 1203217664 (LCS), 1203217665 (J1V1L2DUP), 1203217666 (J1V1L3DUP), 1203217667 (J1V1L2MS), 1203217668 (J1V1L3MS), 361900001 (J1V1L2), 361900002 (J1V1L3), 361900003 (J1V1L8), 361900004 (J1V1L9), 361900005 (J1V1M1), 361900006 (J1V1M2), 361900007 (J1V1L0), 361900008 (J1V1L1), 361900009 (J1V1L4), 361900010 (J1V1L5), 361900011 (J1V1L6), 361900012 (J1V1L7) and 361900013 (J1V1M0).

Manual Integrations
The following samples from this sample group had to be manually integrated due to errors in the instrument software peak integration: 1203217663 (MB), 1203217665 (J1V1L2DUP), 1203217666 (J1V1L3DUP), 361900001 (J1V1L2), 361900002 (J1V1L3), 361900003 (J1V1L8), 361900006 (J1V1M2), 361900008 (J1V1L1), 361900009 (J1V1L4), 361900010 (J1V1L5), 361900011 (J1V1L6) and 361900012 (J1V1L7).

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Nitrate + Nitrite**		
Analytical Batch:	1439246	**Method:**	EPA 353.2 Nitrogen and Nitrate/Nitrite
Prep Batch :	1439245	**Method:**	EEPA 353.2 Modified

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 353.2 Modified:

Sample ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0
1203217935	Method Blank (MB)
1203217936	Laboratory Control Sample (LCS)
1203217937	361900001(J1V1L2) Sample Duplicate (DUP)
1203217938	361900002(J1V1L3) Sample Duplicate (DUP)
1203217939	361900001(J1V1L2) Matrix Spike (MS)
1203217940	361900002(J1V1L3) Matrix Spike (MS)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-128 REV# 8.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8500 Series.

Calibration Verification Information
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following samples were selected for QC analysis: 361900001 (J1V1L2) and 361900002 (J1V1L3).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recoveries for this sample set were within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Dilutions
The following sample in this sample group was diluted due to high concentration: 361900007 (J1V1L0).

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Hexavalent Chromium**		
Analytical Batch:	1439217	**Method:**	SW846_7196A Hexavalent Chromium
Prep Batch :	1439216	**Method:**	SW846 3060A

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 7196A:

Sample ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0
1203217843	Method Blank (MB)
1203217844	Laboratory Control Sample (LCS)
1203217846	361900007(J1V1L0) Sample Duplicate (DUP)
1203217847	361900013(J1V1M0) Sample Duplicate (DUP)
1203217848	361900013(J1V1M0) Matrix Spike (MS)
1203217850	361900007(J1V1L0) Matrix Spike (MS)
1203217853	361900007(J1V1L0) Matrix Spike Duplicate (MSD)
1203217854	361900013(J1V1M0) Matrix Spike Duplicate (MSD)
1203217845	Insoluble Lab Control Sample (ILCS)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-044 REV# 19.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories,

LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Spectrometric analysis was performed on a Spectronic 20D+ Digital Spectrophotometer.

Initial Calibration
All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following samples were selected for QC analysis: 361900007 (J1V1L0) and 361900013 (J1V1M0).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recoveries for this sample set were within the required acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recoveries for this sample set were within the required acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The following samples was re-analyzed to verify the result.The reanalysis data was reported. 1203217845 (ILCS).

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: **pH**

Analytical Batch: 1439826 **Method:** SW9045D pH

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 9045D:

Sample ID	Client ID
361900001	J1V1L2
361900002	J1V1L3
361900003	J1V1L8
361900004	J1V1L9
361900005	J1V1M1
361900006	J1V1M2
361900007	J1V1L0
361900008	J1V1L1
361900009	J1V1L4
361900010	J1V1L5
361900011	J1V1L6
361900012	J1V1L7
361900013	J1V1M0
1203219277	Laboratory Control Sample (LCS)
1203219278	361900007(J1V1L0) Sample Duplicate (DUP)
1203219279	361900013(J1V1M0) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-008 REV# 21.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Titration and Ion analysis was performed on a Thermo Orion Star A111. Immediates

Initial Standardization
The titrant was properly standardized

Quality Control (QC) Information

Method Blank (MB) Statement
This batch does not require a method blank.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
The following samples were selected for QC analysis: 361900007 (J1V1L0) and 361900013 (J1V1M0).

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
The following samples from this sample group were received by the lab outside of the method specified holding time: 361900001 (J1V1L2), 361900002 (J1V1L3), 361900003 (J1V1L8), 361900004 (J1V1L9), 361900005 (J1V1M1), 361900006 (J1V1M2), 361900007 (J1V1L0), 361900008 (J1V1L1), 361900009 (J1V1L4), 361900010 (J1V1L5), 361900011 (J1V1L6), 361900012 (J1V1L7) and 361900013 (J1V1M0).

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
The following DER was generated for this SDG: 1360341. 361900001 (J1V1L2), 361900002 (J1V1L3), 361900003 (J1V1L8), 361900004 (J1V1L9), 361900005 (J1V1M1), 361900006 (J1V1M2), 361900007 (J1V1L0), 361900008 (J1V1L1), 361900009 (J1V1L4), 361900010 (J1V1L5), 361900011 (J1V1L6), 361900012 (J1V1L7) and 361900013 (J1V1M0).

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be

scanned and inserted into the electronic package.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer:_____ **Date:** 05Dec14

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
29-NOV-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ELECTRODE	SW846 9045D	Solid	WCHN
Batch ID:	**Sample Numbers:**		
1439826	See Below		

Potentially affected work order(s)(SDG): 361900(XP0168)

Application Issues:

Sample received out of holding

Specification and Requirements Exception Description:	DER Disposition:
1. Sample received out of holding: 361900 001,002,003,004,005,006,007,008,009, 010,011,012,013	1. Samples were received and analyzed outside of method specified holding time.

Originator's Name:

Patrick Orgel 29-NOV-14

Data Validator/Group Leader:

Elzbieta Szulc 02-DEC-14

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
01-DEC-14	Federal	SOP	Process
Instrument Type:	**Test / Method:** ICX9056	**Matrix Type:** Solid	**Client Code:** WCHN
Batch ID: 1439133	**Sample Numbers:** see below		

Potentially affected work order(s)(SDG): 361900(XP0168)

Application Issues:

Other

Specification and Requirements Exception Description:	DER Disposition:
1. Error on Raw Data 3619000 001, 002, 003, 004, 005, 006, 007 008, 009, 010, 011, 012, 013 QC 1203217663 MB, 1203217664 LCS, 1203217665 DUP, 1203217667 MS, 1203217666 DUP, 1203217668 MS	1. Due to an unknown computer glich the raw data has an incorrect month. The month should be November instead of December. The day and times are correct.

Originator's Name:

Mary Sherwood 01-DEC-14

Data Validator/Group Leader:

Thomas Lewis 02-DEC-14

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0168 GEL Work Order: 361900 Project: RC-107 Soil

The Qualifiers in this report are defined as follows:

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.

D Results are reported from a diluted aliquot of sample.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Orlette Johnson.

Reviewed by _____

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L2	Project:	WCHN00720
Sample ID:	361900001	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 11:02		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	2.5%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.687	0.687	2.05	mg/kg	1	MAR1	11/29/14	0656	1439133	1
Chloride	BC	1.58	0.687	2.05	mg/kg	1					
Fluoride		1.31	0.338	1.03	mg/kg	1					
Nitrate-N		1.29	0.338	1.03	mg/kg	1					
Nitrite-N	U	0.338	0.338	1.03	mg/kg	1					
O-Phosphate as P	U	0.687	0.687	2.05	mg/kg	1					
Sulfate		5.08	1.36	4.10	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite	B	0.249	0.171	0.502	mg/kg	1	AXH3	11/28/14	1046	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.122	0.122	0.408	mg/kg	1	PXO1	11/29/14	1647	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.8C	X	8.99	0.010	0.100	pH	1	PXO1	11/29/14	1436	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L3
Sample ID: 361900002
Matrix: Soil
Collect Date: 20-NOV-14 10:51
Receive Date: 25-NOV-14
Collector: Client
Moisture: 1.67%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.681	0.681	2.03	mg/kg	1	MAR1	11/29/14	0826	1439133	1
Chloride	BC	1.56	0.681	2.03	mg/kg	1					
Fluoride	B	0.991	0.336	1.02	mg/kg	1					
Nitrate-N	B	0.936	0.336	1.02	mg/kg	1					
Nitrite-N	U	0.336	0.336	1.02	mg/kg	1					
O-Phosphate as P	U	0.681	0.681	2.03	mg/kg	1					
Sulfate		4.87	1.35	4.07	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite	B	0.219	0.169	0.497	mg/kg	1	AXH3	11/28/14	1050	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.114	0.114	0.379	mg/kg	1	PXO1	11/29/14	1649	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.7C	X	9.07	0.010	0.100	pH	1	PXO1	11/29/14	1438	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L8
Sample ID: 361900003
Matrix: Soil
Collect Date: 20-NOV-14 10:08
Receive Date: 25-NOV-14
Collector: Client
Moisture: 3.57%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.695	0.695	2.07	mg/kg	1	MAR1	11/29/14	0955	1439133	1
Chloride	BC	1.28	0.695	2.07	mg/kg	1					
Fluoride		1.34	0.342	1.04	mg/kg	1					
Nitrate-N	B	0.842	0.342	1.04	mg/kg	1					
Nitrite-N	U	0.342	0.342	1.04	mg/kg	1					
O-Phosphate as P	U	0.695	0.695	2.07	mg/kg	1					
Sulfate		4.87	1.38	4.15	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite	B	0.244	0.176	0.519	mg/kg	1	AXH3	11/28/14	1053	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.122	0.122	0.407	mg/kg	1	PXO1	11/29/14	1649	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.7C	X	9.15	0.010	0.100	pH	1	PXO1	11/29/14	1440	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L9
Sample ID: 361900004
Matrix: Soil
Collect Date: 20-NOV-14 10:38
Receive Date: 25-NOV-14
Collector: Client
Moisture: 4.25%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.700	0.700	2.09	mg/kg	1	MAR1	11/29/14	1125	1439133	1
Chloride	BC	1.90	0.700	2.09	mg/kg	1					
Fluoride		1.29	0.345	1.04	mg/kg	1					
Nitrate-N		1.60	0.345	1.04	mg/kg	1					
Nitrite-N	U	0.345	0.345	1.04	mg/kg	1					
O-Phosphate as P	U	0.700	0.700	2.09	mg/kg	1					
Sulfate		11.4	1.39	4.18	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite		0.814	0.167	0.493	mg/kg	1	AXH3	11/28/14	1059	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	B	0.292	0.114	0.380	mg/kg	1	PXO1	11/29/14	1650	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.7C	X	8.87	0.010	0.100	pH	1	PXO1	11/29/14	1441	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1M1
Sample ID: 361900005
Matrix: Soil
Collect Date: 20-NOV-14 10:26
Receive Date: 25-NOV-14
Collector: Client
Moisture: 2.94%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.690	0.690	2.06	mg/kg	1	MAR1	11/29/14	1155	1439133	1
Chloride	C	2.34	0.690	2.06	mg/kg	1					
Fluoride		1.34	0.340	1.03	mg/kg	1					
Nitrate-N		1.06	0.340	1.03	mg/kg	1					
Nitrite-N	U	0.340	0.340	1.03	mg/kg	1					
O-Phosphate as P	B	1.24	0.690	2.06	mg/kg	1					
Sulfate		11.1	1.37	4.12	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite	B	0.336	0.170	0.501	mg/kg	1	AXH3	11/28/14	1100	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.127	0.127	0.424	mg/kg	1	PXO1	11/29/14	1652	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.9C	X	9.15	0.010	0.100	pH	1	PXO1	11/29/14	1444	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

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Report Date: December 3, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1M2	Project:	WCHN00720
Sample ID:	361900006	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 10:08		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	3.32%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.693	0.693	2.07	mg/kg	1	MAR1	11/29/14	1225	1439133	1
Chloride	BC	1.16	0.693	2.07	mg/kg	1					
Fluoride		1.30	0.341	1.03	mg/kg	1					
Nitrate-N	B	0.826	0.341	1.03	mg/kg	1					
Nitrite-N	U	0.341	0.341	1.03	mg/kg	1					
O-Phosphate as P	U	0.693	0.693	2.07	mg/kg	1					
Sulfate		4.72	1.38	4.14	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite	B	0.278	0.174	0.512	mg/kg	1	AXH3	11/28/14	1101	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.122	0.122	0.405	mg/kg	1	PXO1	11/29/14	1708	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.8C	X	9.03	0.010	0.100	pH	1	PXO1	11/29/14	1446	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L0
Sample ID: 361900007
Matrix: Soil
Collect Date: 20-NOV-14 08:11
Receive Date: 25-NOV-14
Collector: Client
Moisture: 6.64%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.718	0.718	2.14	mg/kg	1	MAR1	11/29/14	1255	1439133	1
Chloride	C	11.2	0.718	2.14	mg/kg	1					
Fluoride		1.40	0.353	1.07	mg/kg	1					
Nitrate-N		10.8	0.353	1.07	mg/kg	1					
Nitrite-N	U	0.353	0.353	1.07	mg/kg	1					
O-Phosphate as P	U	0.718	0.718	2.14	mg/kg	1					
Sulfate		145	1.42	4.28	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite	D	10.6	0.897	2.64	mg/kg	5	AXH3	11/28/14	1103	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.127	0.127	0.424	mg/kg	1	PXO1	11/29/14	1708	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.8C	X	8.66	0.010	0.100	pH	1	PXO1	11/29/14	1447	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L1	Project:	WCHN00720
Sample ID:	361900008	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 08:04		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.8%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.711	0.711	2.12	mg/kg	1	MAR1	11/29/14	1325	1439133	1
Chloride	C	3.33	0.711	2.12	mg/kg	1					
Fluoride		1.28	0.350	1.06	mg/kg	1					
Nitrate-N		1.30	0.350	1.06	mg/kg	1					
Nitrite-N	U	0.350	0.350	1.06	mg/kg	1					
O-Phosphate as P	U	0.711	0.711	2.12	mg/kg	1					
Sulfate		16.4	1.41	4.25	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite	B	0.444	0.180	0.531	mg/kg	1	AXH3	11/28/14	1104	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.123	0.123	0.410	mg/kg	1	PXO1	11/29/14	1708	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.5C	X	9.18	0.010	0.100	pH	1	PXO1	11/29/14	1450	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L4	Project:	WCHN00720
Sample ID:	361900009	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:58		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.707	0.707	2.11	mg/kg	1	MAR1	11/29/14	1355	1439133	1
Chloride	C	4.63	0.707	2.11	mg/kg	1					
Fluoride		1.29	0.348	1.05	mg/kg	1					
Nitrate-N		4.16	0.348	1.05	mg/kg	1					
Nitrite-N	U	0.348	0.348	1.05	mg/kg	1					
O-Phosphate as P	B	0.807	0.707	2.11	mg/kg	1					
Sulfate		158	1.40	4.22	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite		1.55	0.178	0.525	mg/kg	1	AXH3	11/28/14	1105	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.121	0.121	0.402	mg/kg	1	PXO1	11/29/14	1729	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.9C	X	8.55	0.010	0.100	pH	1	PXO1	11/29/14	1453	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1L5	Project:	WCHN00720
Sample ID:	361900010	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:43		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.36%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.708	0.708	2.11	mg/kg	1	MAR1	11/29/14	1425	1439133	1
Chloride	C	2.39	0.708	2.11	mg/kg	1					
Fluoride		1.30	0.349	1.06	mg/kg	1					
Nitrate-N		1.28	0.349	1.06	mg/kg	1					
Nitrite-N	U	0.349	0.349	1.06	mg/kg	1					
O-Phosphate as P	U	0.708	0.708	2.11	mg/kg	1					
Sulfate		6.07	1.41	4.23	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite		0.718	0.174	0.513	mg/kg	1	AXH3	11/28/14	1106	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.126	0.126	0.421	mg/kg	1	PXO1	11/29/14	1730	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.7C	X	9.11	0.010	0.100	pH	1	PXO1	11/29/14	1456	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L6
Sample ID: 361900011
Matrix: Soil
Collect Date: 20-NOV-14 07:38
Receive Date: 25-NOV-14
Collector: Client
Moisture: 4.88%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.704	0.704	2.10	mg/kg	1	MAR1	11/29/14	1454	1439133	1
Chloride	C	2.46	0.704	2.10	mg/kg	1					
Fluoride		1.33	0.347	1.05	mg/kg	1					
Nitrate-N	B	0.958	0.347	1.05	mg/kg	1					
Nitrite-N	U	0.347	0.347	1.05	mg/kg	1					
O-Phosphate as P	U	0.704	0.704	2.10	mg/kg	1					
Sulfate		5.71	1.40	4.21	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite	B	0.297	0.176	0.518	mg/kg	1	AXH3	11/28/14	1107	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.117	0.117	0.391	mg/kg	1	PXO1	11/29/14	1731	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.6C	X	9.02	0.010	0.100	pH	1	PXO1	11/29/14	1457	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 3, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-107 Soil

Client SDG: XP0168

Client Sample ID: J1V1L7
Sample ID: 361900012
Matrix: Soil
Collect Date: 20-NOV-14 07:32
Receive Date: 25-NOV-14
Collector: Client
Moisture: 8.22%

Project: WCHN00720
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.730	0.730	2.18	mg/kg	1	MAR1	11/29/14	1524	1439133	1
Chloride	C	2.85	0.730	2.18	mg/kg	1					
Fluoride		1.30	0.360	1.09	mg/kg	1					
Nitrate-N		1.09	0.360	1.09	mg/kg	1					
Nitrite-N	U	0.360	0.360	1.09	mg/kg	1					
O-Phosphate as P	U	0.730	0.730	2.18	mg/kg	1					
Sulfate		8.90	1.45	4.36	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite	B	0.450	0.170	0.500	mg/kg	1	AXH3	11/28/14	1109	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.120	0.120	0.399	mg/kg	1	PXO1	11/29/14	1732	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.6C	X	8.86	0.010	0.100	pH	1	PXO1	11/29/14	1458	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 3, 2014

Company :	WC-Hanford, Inc.
Address :	2620 Fermi Avenue MSIN H4-21 Richland, Washington 99354
Contact:	Joan Kessner
Project:	RC-107 Soil

Client SDG: XP0168

Client Sample ID:	J1V1M0	Project:	WCHN00720
Sample ID:	361900013	Client ID:	WCHN001
Matrix:	Soil		
Collect Date:	20-NOV-14 07:26		
Receive Date:	25-NOV-14		
Collector:	Client		
Moisture:	5.33%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
SW846 9056A Anions "Dry Weight Corrected"											
Bromide	U	0.708	0.708	2.11	mg/kg	1	MAR1	11/29/14	1554	1439133	1
Chloride	C	6.33	0.708	2.11	mg/kg	1					
Fluoride		1.31	0.349	1.06	mg/kg	1					
Nitrate-N		2.33	0.349	1.06	mg/kg	1					
Nitrite-N	U	0.349	0.349	1.06	mg/kg	1					
O-Phosphate as P	U	0.708	0.708	2.11	mg/kg	1					
Sulfate		14.1	1.40	4.23	mg/kg	1					
Nutrient Analysis											
EPA 353.2 Nitrogen, Nitrate/Nitrite "Dry Weight Corrected"											
Nitrogen, Nitrate/Nitrite		1.46	0.170	0.501	mg/kg	1	AXH3	11/28/14	1110	1439246	2
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium "Dry Weight Corrected"											
Hexavalent Chromium	U	0.119	0.119	0.397	mg/kg	1	PXO1	11/29/14	1745	1439217	3
Titration and Ion Analysis											
SW9045D pH "As Received"											
pH at Temp 21.5C	X	9.07	0.010	0.100	pH	1	PXO1	11/29/14	1501	1439826	4

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 353.2 Modified	EPA 353.2 Modified Nitrate/Nitrite	AXH3	11/28/14	0851	1439245
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	PXO1	11/26/14	1327	1439216
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/28/14	1138	1439132

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	EPA 353.2 Modified	
3	SW846 7196A	
4	SW846 9045D	

Notes:

Quality Control Summary

QC Summary

Report Date: December 3, 2014

WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington

Contact: **Joan Kessner**

Workorder: **361900** **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 1439133										
QC1203217665 361900001 DUP										
Bromide	U	0.687	U	0.687	mg/kg	N/A			MAR1	11/29/14 07:26
Chloride	BC	1.58	B	1.62	mg/kg	2.56 ^		(+/-2.05)		
Fluoride		1.31		1.38	mg/kg	5.35 ^		(+/-1.03)		
Nitrate-N		1.29		1.34	mg/kg	4.21 ^		(+/-1.03)		
Nitrite-N	U	0.338	U	0.338	mg/kg	N/A				
O-Phosphate as P	U	0.687	B	0.866	mg/kg	200 ^		(+/-2.05)		
Sulfate		5.08		5.54	mg/kg	8.63 ^		(+/-4.10)		
QC1203217666 361900002 DUP										
Bromide	U	0.681	U	0.681	mg/kg	N/A				11/29/14 08:56
Chloride	BC	1.56		2.13	mg/kg	31.0 ^		(+/-2.03)		
Fluoride	B	0.991	B	1.00	mg/kg	1.12 ^		(+/-1.02)		
Nitrate-N	B	0.936	B	0.944	mg/kg	0.866 ^		(+/-1.02)		
Nitrite-N	U	0.336	U	0.336	mg/kg	N/A				
O-Phosphate as P	U	0.681	U	0.681	mg/kg	N/A				
Sulfate		4.87		4.72	mg/kg	3.08 ^		(+/-4.07)		
QC1203217664 LCS										
Bromide	12.5			12.6	mg/kg		101	(90%-110%)		11/29/14 06:26
Chloride	50.0			47.0	mg/kg		94	(90%-110%)		
Fluoride	25.0			24.1	mg/kg		96.6	(90%-110%)		
Nitrate-N	25.0			23.9	mg/kg		95.4	(90%-110%)		
Nitrite-N	25.0			23.5	mg/kg		94.2	(90%-110%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1439133											
O-Phosphate as P	12.5				12.7	mg/kg		102	(90%-110%)	MAR1	11/29/14 06:26
Sulfate	100				96.6	mg/kg		96.6	(90%-110%)		
QC1203217663 MB											
Bromide				U	0.670	mg/kg					11/29/14 05:56
Chloride				B	1.21	mg/kg					
Fluoride				U	0.330	mg/kg					
Nitrate-N				U	0.330	mg/kg					
Nitrite-N				U	0.330	mg/kg					
O-Phosphate as P				U	0.670	mg/kg					
Sulfate				U	1.33	mg/kg					
QC1203217667 361900001 MS											
Bromide	12.8	U	0.687		13.0	mg/kg		101	(72%-133%)		11/29/14 07:56
Chloride	51.3	BC	1.58		49.7	mg/kg		93.8	(53%-137%)		
Fluoride	25.6		1.31		25.7	mg/kg		95.3	(35%-133%)		
Nitrate-N	25.6		1.29		25.8	mg/kg		95.7	(64%-131%)		
Nitrite-N	25.6	U	0.338		25.0	mg/kg		97.4	(66%-128%)		
O-Phosphate as P	12.8	U	0.687		12.7	mg/kg		99.1	(35%-134%)		
Sulfate	103		5.08		106	mg/kg		98.5	(44%-146%)		
QC1203217668 361900002 MS											
Bromide	12.7	U	0.681		13.0	mg/kg		103	(72%-133%)		11/29/14 09:26
Chloride	50.8	BC	1.56		50.0	mg/kg		95.3	(53%-137%)		
Fluoride	25.4	B	0.991		25.6	mg/kg		96.7	(35%-133%)		
Nitrate-N	25.4	B	0.936		25.4	mg/kg		96.2	(64%-131%)		

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1439133											
Nitrite-N	25.4	U	0.336		25.0	mg/kg		98.4	(66%-128%)		
O-Phosphate as P	12.7	U	0.681		12.8	mg/kg		101	(35%-134%)	MAR1	11/29/14 09:26
Sulfate	102		4.87		105	mg/kg		98.7	(44%-146%)		
Nutrient Analysis											
Batch 1439246											
QC1203217937 361900001 DUP											
Nitrogen, Nitrate/Nitrite		B	0.249	B	0.259	mg/kg	3.89 ^		(+/-0.495)	AXH3	11/28/14 10:47
QC1203217938 361900002 DUP											
Nitrogen, Nitrate/Nitrite		B	0.219	B	0.200	mg/kg	8.79 ^		(+/-0.501)		11/28/14 10:51
QC1203217936 LCS											
Nitrogen, Nitrate/Nitrite	10.0				9.85	mg/kg		98.5	(90%-110%)		11/28/14 10:45
QC1203217935 MB											
Nitrogen, Nitrate/Nitrite				U	0.170	mg/kg					11/28/14 10:44
QC1203217939 361900001 MS											
Nitrogen, Nitrate/Nitrite	9.70	B	0.249		9.67	mg/kg		97.1	(75%-125%)		11/28/14 10:48
QC1203217940 361900002 MS											
Nitrogen, Nitrate/Nitrite	10.0	B	0.219		9.78	mg/kg		95.4	(75%-125%)		11/28/14 10:52
Spectrometric Analysis											
Batch 1439217											
QC1203217846 361900007 DUP											
Hexavalent Chromium		U	0.127	U	0.127	mg/kg	N/A			PXO1	11/29/14 17:08
QC1203217847 361900013 DUP											
Hexavalent Chromium		U	0.119	U	0.126	mg/kg	N/A				11/29/14 17:45
QC1203217845 ILCS											
Hexavalent Chromium	7.98				6.39	mg/kg		80.1	(80%-120%)		12/02/14 12:44
QC1203217844 LCS											
Hexavalent Chromium	4.00				3.29	mg/kg		82.3	(80%-120%)		11/29/14 16:43
QC1203217843 MB											
Hexavalent Chromium				U	0.120	mg/kg					11/29/14 16:43
QC1203217848 361900013 MS											
Hexavalent Chromium	4.25	U	0.119		4.07	mg/kg		95.8	(75%-125%)		11/29/14 17:46
QC1203217850 361900007 MS											

QC Summary

Workorder: 361900 **Client SDG:** XP0168 **Project Description:** RC-107 Soil

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Spectrometric Analysis											
Batch 1439217											
Hexavalent Chromium	4.15	U	0.127		3.98	mg/kg		95.8	(75%-125%)		11/29/14 17:08
QC1203217853 361900007 MSD											
Hexavalent Chromium	4.15	U	0.127		4.04	mg/kg	1.62	97.5	(0%-30%)	PXO1	11/29/14 17:08
QC1203217854 361900013 MSD											
Hexavalent Chromium	4.15	U	0.119		3.98	mg/kg	2.39	95.8	(0%-30%)		11/29/14 17:47
Titration and Ion Analysis											
Batch 1439826											
QC1203219278 361900007 DUP											
pH		X	8.66	X	8.81	pH	1.72		(0%-10%)	PXO1	11/29/14 14:49
QC1203219279 361900013 DUP											
pH		X	9.07	X	9.06	pH	0.110		(0%-10%)		11/29/14 15:03
QC1203219277 LCS											
pH	7.00				7.01	pH		100	(99%-101%)		11/29/14 14:36

Notes:

The Qualifiers in this report are defined as follows:

- < Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
- > Result greater than quantifiable range or greater than upper limit of the analysis range
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

Moisture LogBook

Batch: 1439103
Analyst: KYW2
Date/Time: 25-NOV-2014
Procedure Code DRY WEIGHT
Procedure Description Dry Weight-Percent Moisture
Lab Sop: GL-OA-E-020

Sample St	Sample Id	Rpd(%)
DUP	1203217581	.438

Sample Id	Sample Type	Original Hsn	Instrument	Run Time	Container Wt	Initial Wt	Final Wt (g)	Net Initial Wt (g)	Net Final Wt (g)	Moisture (%)
361893001	SAMPLE		BALHD2000D	15:43	7.047	19.497	17.187	12.45	10.14	18.6
361897001	SAMPLE		BALHD2000D	15:43	7.21	20.292	18.195	13.082	10.985	16
361900001	SAMPLE		BALHD2000D	15:43	7.001	20.171	19.842	13.17	12.841	2.5
361900002	SAMPLE		BALHD2000D	15:43	6.931	20.172	19.951	13.241	13.02	1.67
361900003	SAMPLE		BALHD2000D	15:43	6.95	21.503	20.983	14.553	14.033	3.57
361900004	SAMPLE		BALHD2000D	15:43	7.123	16.731	16.323	9.608	9.2	4.25
361900005	SAMPLE		BALHD2000D	15:43	7.125	19.017	18.667	11.892	11.542	2.94
361900006	SAMPLE		BALHD2000D	15:43	7.127	17.871	17.514	10.744	10.387	3.32
361900007	SAMPLE		BALHD2000D	15:43	7.221	18.127	17.403	10.906	10.182	6.64
361900008	SAMPLE		BALHD2000D	15:43	7.259	20.06	19.318	12.801	12.059	5.8
361900009	SAMPLE		BALHD2000D	15:43	6.901	17.484	16.934	10.583	10.033	5.2
361900010	SAMPLE		BALHD2000D	15:43	7.13	18.304	17.705	11.174	10.575	5.36
361900011	SAMPLE		BALHD2000D	15:43	7.2	19.063	18.484	11.863	11.284	4.88
361900012	SAMPLE		BALHD2000D	15:43	6.962	22.548	21.267	15.586	14.305	8.22
361900013	SAMPLE		BALHD2000D	15:43	7.211	20.096	19.409	12.885	12.198	5.33
1203217581	DUP	361893001	BALHD2000D	15:43	7.24	18.385	16.292	11.145	9.052	18.8

Comments:

A) Result = (Net Initial - Net Final) /Net Initial * 100

Note: Aliquot is used for the determination of the effective MDL and PQL in LIMS

Prep Logbook

Colorimetric Determination of Hexavalent Chromium

Batch ID: **1439216**
Analyst: Patrick Orgel
Method: SW846 3060A
Lab SOP: GL-GC-E-044 REV# 19
Instrument: Sartorius Balance B-001

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
ILCS	1203217845	100mg/kg for cr6	IMM140807-HVC	.08	g
LCS	1203217844	Cr6 LCS 10mg/L	WD141126-1	.4	mL
MS	1203217848	Cr6 Intermediate Spike 10mg/L	141126-Cr6	.4	mL
MS	1203217849	Cr6 Intermediate Spike 10mg/L	141126-Cr6	.4	mL
MS	1203217850	Cr6 Intermediate Spike 10mg/L	141126-Cr6	.4	mL
MS	1203217851	Cr6 Intermediate Spike 10mg/L	141126-Cr6	.4	mL
MSD	1203217852	Cr6 Intermediate Spike 10mg/L	141126-Cr6	.4	mL
MSD	1203217853	Cr6 Intermediate Spike 10mg/L	141126-Cr6	.4	mL
MSD	1203217854	Cr6 Intermediate Spike 10mg/L	141126-Cr6	.4	mL
MSD	1203217855	Cr6 Intermediate Spike 10mg/L	141126-Cr6	.4	mL

Sample ID	Run Date	Matrix	Initial Weight (g)	Final Volume (mL)	Prep Factor (mL/g)	pH Check
1203217843 MB	26-NOV-2014 13:27:00	Soil	1.0017	40	39.93212	7.5
1203217844 LCS	26-NOV-2014 13:27:00	Soil	1.0004	40	39.98401	7.5
1203217845 ILCS	26-NOV-2014 13:27:00	Soil	1.0022	40	39.91219	7.5
361900001	26-NOV-2014 13:27:00	Soil	1.0054	40	39.78516	7.5
361900002	26-NOV-2014 13:27:00	Soil	1.0741	40	37.24048	7.5
361900003	26-NOV-2014 13:27:00	Soil	1.0183	40	39.28115	7.5
361900004	26-NOV-2014 13:27:00	Soil	1.1005	40	36.34711	7.5
361900005	26-NOV-2014 13:27:00	Soil	0.9716	40	41.16921	7.5
361900006	26-NOV-2014 13:27:00	Soil	1.0209	40	39.18111	7.5
361900007	26-NOV-2014 13:27:00	Soil	1.0097	40	39.61573	7.5
1203217846 DUP (361900007)	26-NOV-2014 13:27:00	Soil	1.0124	40	39.51008	7.5
1203217849 MS (361900007)	26-NOV-2014 13:27:00	Soil	0.9905	40	40.38364	7.5
1203217850 MS (361900007)	26-NOV-2014 13:27:00	Soil	1.0322	40	38.75218	7.5
1203217852 MSD (361900007)	26-NOV-2014 13:27:00	Soil	1.0256	40	39.00156	7.5
1203217853 MSD (361900007)	26-NOV-2014 13:27:00	Soil	1.0336	40	38.69969	7.5
361900008	26-NOV-2014 13:27:00	Soil	1.0352	40	38.63988	7.5
361900009	26-NOV-2014 13:27:00	Soil	1.0484	40	38.15338	7.5
361900010	26-NOV-2014 13:27:00	Soil	1.0045	40	39.82081	7.5
361900011	26-NOV-2014 13:27:00	Soil	1.0758	40	37.18163	7.5
361900012	26-NOV-2014 13:27:00	Soil	1.0919	40	36.63339	7.5

Prep Logbook

Sample ID	Run Date	Matrix	Initial Weight (g)	Final Volume (mL)	Prep Factor (mL/g)	pH Check
361900013	26-NOV-2014 13:27:00	Soil	1.0652	40	37.55163	7.5
1203217847 DUP (361900013)	26-NOV-2014 13:27:00	Soil	1.0098	40	39.6118	7.5
1203217848 MS (361900013)	26-NOV-2014 13:27:00	Soil	0.9939	40	40.2455	7.5
1203217851 MS (361900013)	26-NOV-2014 13:27:00	Soil	1.0526	40	38.00114	7.5
1203217854 MSD (361900013)	26-NOV-2014 13:27:00	Soil	1.0179	40	39.29659	7.5
1203217855 MSD (361900013)	26-NOV-2014 13:27:00	Soil	1.0041	40	39.83667	7.5

Reagent/Solvent Lot ID	Description	Amount
141028-C	MAGNESIUM CHLORIDE SOLUTION FOR CR+6	1 mL
IMM140929-HVC	5M Nitric Acid Solution for Cr+6	2 mL
IMM141110-HVCS	PHOSPHATE BUFFER SOLUTION FOR CR+6	.5 mL
IMM141117b-HVCS	DIGESTION SOLUTION FOR CR+6	20 mL

Comments:

Prep Logbook

Nitrate/Nitrite (NO3+NO2) Analysis Using the Lachat QuikChem FIA+ 8000 Series Instrument

Batch ID: **1439245**
Analyst: Aubrey Kingsbury
Method: EPA 353.2 Modified
Lab SOP: GL-GC-E-128 REV# 8
Instrument: Sartorius Balance B-001

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1203217936	TRASPIKE2	UTR2099128-02	.4	mL
MS	1203217939	TRASPIKE2	UTR2099128-02	.4	mL
MS	1203217940	TRASPIKE2	UTR2099128-02	.4	mL

Sample ID	Run Date	Matrix	Initial Weight (g)	Final Volume (mL)	Prep Factor (mL/g)	pH Check
1203217935 MB	28-NOV-2014 08:51:00	Soil	4	40	10	
1203217936 LCS	28-NOV-2014 08:51:00	Soil	4	40	10	
361900001	28-NOV-2014 08:51:00	Soil	4.09	40	9.77995	
1203217937 DUP (361900001)	28-NOV-2014 08:51:00	Soil	4.14	40	9.66184	
1203217939 MS (361900001)	28-NOV-2014 08:51:00	Soil	4.23	40	9.45626	
361900002	28-NOV-2014 08:51:00	Soil	4.09	40	9.77995	
1203217938 DUP (361900002)	28-NOV-2014 08:51:00	Soil	4.06	40	9.85222	
1203217940 MS (361900002)	28-NOV-2014 08:51:00	Soil	4.06	40	9.85222	
361900003	28-NOV-2014 08:51:00	Soil	4	40	10	
361900004	28-NOV-2014 08:51:00	Soil	4.24	40	9.43396	
361900005	28-NOV-2014 08:51:00	Soil	4.11	40	9.73236	
361900006	28-NOV-2014 08:51:00	Soil	4.04	40	9.90099	
361900007	28-NOV-2014 08:51:00	Soil	4.06	40	9.85222	
361900008	28-NOV-2014 08:51:00	Soil	4	40	10	
361900009	28-NOV-2014 08:51:00	Soil	4.02	40	9.95025	
361900010	28-NOV-2014 08:51:00	Soil	4.12	40	9.70874	
361900011	28-NOV-2014 08:51:00	Soil	4.06	40	9.85222	
361900012	28-NOV-2014 08:51:00	Soil	4.36	40	9.17431	
361900013	28-NOV-2014 08:51:00	Soil	4.22	40	9.47867	

Reagent/Solvent Lot ID	Description	Amount
2182073-C	0.04N H2SO4 Solution	40 mL

Comments:

Prep Logbook

Ion Chromatography (IC)

Batch ID: **1439132**
Analyst: Marcy Lamb
Method: SW846 9056A
Lab SOP: GL-GC-E-086 REV# 23
Instrument: Sartorius Balance B-001

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1203217664	Spiking Solution	UIC141124SPK	.4	mL
MS	1203217667	Spiking Solution	UIC141124SPK	.4	mL
MS	1203217668	Spiking Solution	UIC141124SPK	.4	mL

Sample ID	Run Date	Matrix	Initial Weight (g)	Final Volume (mL)	Prep Factor (mL/g)
1203217663 MB	28-NOV-2014 11:38:15	Soil	4	40	10
1203217664 LCS	28-NOV-2014 11:38:15	Soil	4	40	10
361900001	28-NOV-2014 11:38:15	Soil	4	40	10
1203217665 DUP (361900001)	28-NOV-2014 11:38:15	Soil	4	40	10
1203217667 MS (361900001)	28-NOV-2014 11:38:15	Soil	4	40	10
361900002	28-NOV-2014 11:38:15	Soil	4	40	10
1203217666 DUP (361900002)	28-NOV-2014 11:38:15	Soil	4	40	10
1203217668 MS (361900002)	28-NOV-2014 11:38:15	Soil	4	40	10
361900003	28-NOV-2014 11:38:15	Soil	4	40	10
361900004	28-NOV-2014 11:38:15	Soil	4	40	10
361900005	28-NOV-2014 11:38:15	Soil	4	40	10
361900006	28-NOV-2014 11:38:15	Soil	4	40	10
361900007	28-NOV-2014 11:38:15	Soil	4	40	10
361900008	28-NOV-2014 11:38:15	Soil	4	40	10
361900009	28-NOV-2014 11:38:15	Soil	4	40	10
361900010	28-NOV-2014 11:38:15	Soil	4	40	10
361900011	28-NOV-2014 11:38:15	Soil	4	40	10
361900012	28-NOV-2014 11:38:15	Soil	4	40	10
361900013	28-NOV-2014 11:38:15	Soil	4	40	10

Reagent/Solvent Lot ID	Description	Amount

Comments: