This document was too large to scan as a whole document, therefore it required breaking into smaller sections.

DOCUMENT NUMBER: SD-WM-DP-150

SECTION 3 **OF** 3

TITLE: Tank 241-AY-102 / Waste Management / PPC / Analytical Services

DATE: 11/16/95

ORIGINATOR: Ruth A. Esch

CO:

RECIPIENT:

CO:

REFERENCES: EDT-612094

Sample ID : S95T2472-DUP Acquisition date : 5-OCT-1995 17:12:19

Total number of lines in spectrum	1	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	1	100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/LI	Wtd Mean Decay Corr uCi/LI	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.00Y	1.000	3.076E+03	3.076E+03	0.013E+03	0.44	
		Total Activity :	3.076E+03	3.076E+03			
		Grand Total Activity :	3.076E+03	3.076E+03			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : S95T2472-DUP Acquisition date : 5-OCT-1995 17:12:19

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
[illegible] 7	6934.	477.59	3.3776E+01
N[illegible] 22	11.	1274.53	3.2379E-01
NA-24	7.	1368.55	2.6872E-01
K-40	106.	1460.75	1.0485E+01
SC-46	27.	1120.55	4.5821E-01
CR-51	5915.	320.08	2.3274E+01
MN-54	42.	834.83	4.3356E-01
CO-56	52.	846.76	4.8902E-01
CO-57	6493.	122.06	1.8018E+00
CO-58	42.	810.78	4.2807E-01
FE-59	18.	1099.25	6.4868E-01
CO-60	9.	1332.50	3.0514E-01
ZN-65	25.	1115.55	8.5783E-01
SE-75	6435.	264.66	3.6644E+00
KR-85	3523.	514.00	6.1154E+02
SR-85	3522.	514.01	2.7648E+00
Y-88	1.	1836.06	1.3173E-01
Y-90	11.	1760.70	1.4730E+00
Y-91	17.	1204.67	1.2943E+02
NB-94	24.	871.09	3.3704E-01
NB-95	55.	765.78	4.6096E-01
ZR-95	64.	756.73	9.0123E-01
RU-103	4397.	497.08	3.1681E+00
RURH-106	1496.	621.93	4.0749E+01
AG-108m	67.	722.94	5.3346E-01
CD-109	5500.	88.03	5.6937E+01
A[illegible]-110M	9307.	657.76	5.5801E+00
[illegible] 113	6074.	391.69	4.2888E+00
TE-123m	6490.	159.00	1.8025E+00
SB-124	1554.	602.73	2.0533E+00
SB-125	7208.	427.89	1.0964E+01
TE-125m	5875.	109.27	5.6812E+02
I-129	5455.	39.60	0.0000E+00
I-131	5856.	364.48	3.1545E+00
XE-131m	6538.	163.93	7.8529E+01
BA-133	5809.	356.02	4.0389E+00
CS-134	1530.	604.70	2.0469E+00
CS-136	46.	818.51	4.4984E-01
CS-138	9.	1435.86	6.9243E-01
CE-139	6436.	165.85	1.9195E+00
BA-140	2580.	537.31	9.6719E+00
LA-140	3.	1596.21	2.0353E-01
CE-141	6497.	145.44	3.0836E+00
CE-144	6586.	133.51	1.3572E+01
CEPR-144	6585.	133.51	2.7119E+01
EU-152	8.	1408.01	1.4439E+00
EU-154	11.	1274.51	9.4070E-01
EU-155	5431.	86.54	6.4104E+00
HF-181	5689.	482.18	3.9671E+00
TA-182	5158.	67.75	8.6514E+00
HG-203	6210.	279.20	2.6784E+00

Sample ID : S95T2472-DUP Acquisition date : 5-OCT-1995 17:12:19

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
[illegible]07	1759.	569.70	2.0867E+00
TL-208	6141.	277.36	3.4224E+01
PB-210	5247.	46.50	0.0000E+00
BI-212	79.	727.18	7.9708E+00
PB-212	7230.	238.63	4.8520E+00
BI-214	1533.	609.31	4.4899E+00
PB-214	5829.	351.92	1.2462E+01
RA-224	7080.	240.99	5.3288E+01
RA-226	8416.	186.10	5.3515E+01
AC-228	**48.**	**911.21**	**1.8766E+00**
TH-228	**5496.**	**84.37**	**1.7477E+02**
TH-229	5512.	88.47	8.2625E+00
U-232	5179.	57.78	3.2416E+03
PA-233	5790.	312.17	5.9047E+00
PA-234M	29.	1001.03	7.1741E-01
TH-234	5265.	63.29	9.9651E+01
U-235	8349.	185.71	3.2399E+00
NP-237	5438.	86.48	1.6989E+01
U-237	5178.	59.54	1.6402E+01
NP-238	25.	984.45	1.3998E+00
NP-239	5852.	106.12	7.2273E+00
PU-239	6516.	129.30	2.3567E+04
AM-241	5178.	59.54	1.5733E+01
AM-243	5414.	74.67	4.7146E+00

LABCORE Data Entry Template for Worklist# 2580

Analyst: EOL **Instrument:** AB00 WB 27811 **Book #** 51B52

Method: LA-220-101 Rev/Mod D-1

Worklist Comment: Determine sample size using Ludlum. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@SR90-01 SR90-01	LIQUID			N/A	uCi/mL
		1	STD				@SR90-01 SR90-01C	LIQUID			N/A	% Recovery
		1	STD				@SR90-01 SR90-01E	LIQUID			N/A	% Ct. Error
		2	BLNK-PREP				@SR90-01 SR90-01	LIQUID			N/A	uCi/mL
		2	BLNK-PREP				@SR90-01 SR90-01C	LIQUID			N/A	% Recovery
		2	BLNK-PREP				@SR90-01 SR90-01E	LIQUID			N/A	% Ct. Error
		3	BLNK/BKG				@SR90-01 SR90-01	LIQUID			N/A	uCi/mL
95000139	AY-102 GRAB	4	SAMPLE	S95T002448	0		@SR90-01 SR90-01	LIQUID	N/A			uCi/mL
95000139	AY-102 GRAB	4	SAMPLE	S95T002448	0		@SR90-01 SR90-01C	LIQUID	N/A			% Recovery
5000139	AY-102 GRAB	4	SAMPLE	S95T002448	0		@SR90-01 SR90-01E	LIQUID	N/A			% Ct. Error
95000139	AY-102 GRAB	5	DUP	S95T002448	0		@SR90-01 SR90-01	LIQUID			N/A	uCi/mL
95000139	AY-102 GRAB	5	DUP	S95T002448	0		@SR90-01 SR90-01C	LIQUID			N/A	% Recovery
95000139	AY-102 GRAB	5	DUP	S95T002448	0		@SR90-01 SR90-01E	LIQUID			N/A	% Ct. Error
95000139	AY-102 GRAB	6	SAMPLE	S95T002449	0		@SR90-01 SR90-01	LIQUID	N/A			uCi/mL
95000139	AY-102 GRAB	6	SAMPLE	S95T002449	0		@SR90-01 SR90-01C	LIQUID	N/A			% Recovery
95000139	AY-102 GRAB	6	SAMPLE	S95T002449	0		@SR90-01 SR90-01E	LIQUID	N/A			% Ct. Error
95000139	AY-102 GRAB	7	DUP	S95T002449	0		@SR90-01 SR90-01	LIQUID			N/A	uCi/mL
95000139	AY-102 GRAB	7	DUP	S95T002449	0		@SR90-01 SR90-01C	LIQUID			N/A	% Recovery

Data Entry Comments: Sr. Carrier: # 117N16-A - 1.0ml per sample

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 2580

ROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
95000139	AY-102 GRAB	7	DUP	S95T002449	0		@SR90-01 SR90-01E	LIQUID			N/A	% Ct. Error
95000140	AY-102 GRAB	8	SAMPLE	S95T002471	0		@SR90-01 SR90-01	LIQUID	N/A			uCi/mL
95000140	AY-102 GRAB	8	SAMPLE	S95T002471	0		@SR90-01 SR90-01C	LIQUID	N/A			% Recovery
95000140	AY-102 GRAB	8	SAMPLE	S95T002471	0		@SR90-01 SR90-01E	LIQUID	N/A			% Ct. Error
95000140	AY-102 GRAB	9	DUP	S95T002471	0		@SR90-01 SR90-01	LIQUID			N/A	uCi/mL
95000140	AY-102 GRAB	9	DUP	S95T002471	0		@SR90-01 SR90-01C	LIQUID			N/A	% Recovery
95000140	AY-102 GRAB	9	DUP	S95T002471	0		@SR90-01 SR90-01E	LIQUID			N/A	% Ct. Error
95000140	AY-102 GRAB	10	SAMPLE	S95T002472	0		@SR90-01 SR90-01	LIQUID	N/A			uCi/mL
95000140	AY-102 GRAB	10	SAMPLE	S95T002472	0		@SR90-01 SR90-01C	LIQUID	N/A			% Recovery
95000140	AY-102 GRAB	10	SAMPLE	S95T002472	0		@SR90-01 SR90-01E	LIQUID	N/A			% Ct. Error
95000140	AY-102 GRAB	11	DUP	S95T002472	0		@SR90-01 SR90-01	LIQUID			N/A	uCi/mL
95000140	AY-102 GRAB	11	DUP	S95T002472	0		@SR90-01 SR90-01C	LIQUID			N/A	% Recovery
95000140	AY-102 GRAB	11	DUP	S95T002472	0		@SR90-01 SR90-01E	LIQUID			N/A	% Ct. Error

Final page for worklist # 2580

Analyst Signature Date 10/9/95

Analyst Signature Date 10/9/95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1) LIQUIDS

							STANDARD
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)		1.000
STD	TOTAL COUNTS	(TC)	9674	GROSS WEIGHT	(W2)		7.9593
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.8673
2580	BACKGROUND in cpm	(BKG)	2.0	NET WEIGHT	(W3)		0.0920
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		3.58
@SR90-01	DILUTION FACTOR	(DF)	1				
Matrix	DIGEST DILUTION FACTOR	DDF	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	965.40	SR-90 EFFICIENCY FACTO	(C1)		0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.85	Y-90 EFFICIENCY FACTOR	(C2)		0.4660
95002756	TIME OF SEPARATION	(ST)	13:00	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	10/07/95	DETECTION LIMIT	(Ld)		1.79
0	TIME OF COUNT	(TOC)	16:35	Sr-89/90 CONC. in µCi/L			1.0849E+00
Sample Prep	DATE OF COUNT	(DOC)	10/07/95				
N/A	STANDARD BOOK #		51B52				
Sample #	STANDARD VALUE in µCi/mL		1.0915E-03				
WRKLST#2580							
Instrument Code							
WB27811							
Prepared By							
MCB							
Chemist							
SLF							
Analyst							
EAL							
Date Complete							
10/09/95							
Analysis Date							
10/07/95							
Analysis Time							
03:00 PM							
Sample Point							
AY-102 GRAB							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/mL REPLACE RS WITH RMAX IF RS<=LcAND RS>=0 OR REPLACE RS WITH Lc IF RS<0

RS*DF*DDF*1000/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	1.08E-03	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	2.0%		2.02E-06 µCi/L
PERCENT CARRIER RECOVERY	92.0%		

Analyst:	EAL	Date:	09-Oct-95
Signature of Chemist:	SLF	Date:	10/10/95

STANDARD.WB1 REV 1.2 22010NML

WORKBOOK PAGE: BLANK2

LA-220-101 / D-1 Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)

						BLNK-PREP
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)	1.000
BLNK-PREP	TOTAL COUNTS	(TC)	54	GROSS WEIGHT	(W2)	8.0203
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.9289
2580	BACKGROUND in cpm	(BKG)	2.0	NET WEIGHT	(W3)	0.0914
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)	3.83
@SR90-01	DILUTION FACTOR	(DF)	101			
Matrix	DIGEST DILUTION FACTOR	(DDF)	1			
LIQUID	SAMPLE COUNT RATE	(Rs)	3.40	SR-90 EFFICIENCY FACTOR	(C1)	0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.85	Y-90 EFFICIENCY FACTOR	(C2)	0.4660
95002756	TIME OF SEPARATION	(ST)	13:00	Rmax		N/A
Rerun	DATE OF SEPARATION	(SD)	10/07/95	DETECTION LIMIT	(Ld)	1.79
0	TIME OF COUNT	(TOC)	16:50	Sr-89/90 CONC in µCi/L		3.8737E-01
Sample Prep	DATE OF COUNT	(DOC)	10/07/95			
N/A						
Sample #						
WRKLST#2580						
Instrument Code						
WB27811						
Prepared By						
MCB						
Chemist						
SLF						
Analyst						
EAL						
Date Complete						
10/09/95						
Analysis Date						
10/07/95						
Analysis Time						
03:00 PM						
Sample Point						
AY-102 GRAB						

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

POE 11/16/95

		µCi/mL ~~µCi/m~~	DETECTION LEVEL
Sr-89/90 CONCENTRATION	3.87E-04		
RELATIVE COUNTING ERROR	49.6%		2.04E-04 µCi/mL
PERCENT CARRIER RECOVERY	91.4%		

Analyst:	EAL	Date:	09-Oct-95
Signature of Chemist:	SLF	Date:	10/10/95

BLANK.WB1 REV 1.2 22010NML

WORKBOOK PAGE: SAM4

LA-220-101 / D-1 **Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)**

							SAMPLE
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)		1.000
SAMPLE	TOTAL COUNTS	(TC)	60029	GROSS WEIGHT	(W2)		7.9809
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.8884
2580	BACKGROUND in cpm	(BKG)	2.0	NET WEIGHT	(W3)		0.0925
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		4.17
@SR90-01	DILUTION FACTOR	(DF)	101				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	6000.90	SR-90 EFFICIENCY FACTOR	(C1)		0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.85	Y-90 EFFICIENCY FACTOR	(C2)		0.4660
95002756	TIME OF SEPARATION	(ST)	13:00	Rmax			N/A
Reran	DATE OF SEPARATION	(SD)	10/07/95	DETECTION LIMIT	(Ld)		1.79
0	TIME OF COUNT	(TOC)	17:10	Sr-89/90 CONC in µCi/L			6.7309E+02
Sample Prep	DATE OF COUNT	(DOC)	10/07/95				
N/A							
Sample #							
S95T002448							
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)						
WB27811	Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0						
Prepared By	RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)						
MCB	NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))						
Chemist	Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)						
SLF	Percent Carrier Recovery = (Net Weight / Expected weight) * 100						
Analyst	NOTE: Expected weight = CVA * 0.1						
EAL	Detection Levels and Less Than Values are determined from Procedure LA-508-002.						
Date Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100						
10/09/95							
Analysis Date							DETECTION LEVEL
10/07/95	Sr-89/90 CONCENTRATION			6.73E-01		µCi/mL	
Analysis Time							
03:00 PM	RELATIVE COUNTING ERROR			0.8%			2.01E-04 µCi/mL
Sample Point							
AY-102 GRAB	PERCENT CARRIER RECOVERY			92.5%			

Analyst:		EAL	Date:	09-Oct-95
Signature of Chemist:		SLF	Date:	10/10/95

SAMPLE.WB1 REV 1.2 22010NML

WORKBOOK PAGE: DUP5

LA-220-101 / D-1 Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)

							DUP
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)	1.000
DUP	TOTAL COUNTS	(TC)	58834	GROSS WEIGHT	(W2)	8.0377
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.9454
2580	BACKGROUND in cpm	(BKG)	2.0	NET WEIGHT	(W3)	0.0923
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)	4.42
@SR90-01	DILUTION FACTOR	(DF)	101			
Matrix	DIGEST DILUTION FACTOR	(DDF)	1			
LIQUID	SAMPLE COUNT RATE	(Rs)	5881.40	SR-90 EFFICIENCY FACTOR	(C1)	0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.85	Y-90 EFFICIENCY FACTOR	(C2)	0.4660
95002756	TIME OF SEPARATION	(ST)	13:00	Rmax		N/A
Rerun	DATE OF SEPARATION	(SD)	10/07/95	DETECTION LIMIT	(Ld)	1.79
0	TIME OF COUNT	(TOC)	17:25	Sr-89/90 CONC in µCi/L		6.5931E+02
Sample Prep	DATE OF COUNT	(DOC)	10/07/95			
N/A						
Sample #						
S95T002448						
Instrument Code						
WB27811						
Prepared By						
MCB						
Chemist						
SLF						
Analyst						
EAL						
Date Complete						
10/09/95						
Analysis Date						
10/07/95						
Analysis Time						
03:00 PM						
Sample Point						
AY-102 GRAB						

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

			DETECTION LEVEL
Sr-89/90 CONCENTRATION	6.59E-01	µCi/mL	2.01E-04 µCi/mL
RELATIVE COUNTING ERROR	0.8%		
PERCENT CARRIER RECOVERY	92.3%		

Analyst:		EAL	Date:	09-Oct-95
Signature of Chemist:		SLF	Date:	10/10/95

SAMPLE.WB1 REV 1.2 22010NML

WORKBOOK PAGE: SAM6

LA-220-101 / D-1 Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)

							SAMPLE
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)		1.000
SAMPLE	TOTAL COUNTS	(TC)	2723	GROSS WEIGHT	(W2)		7.9579
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.8697
2580	BACKGROUND in cpm	(BKG)	2.0	NET WEIGHT	(W3)		0.0882
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		4.50
@SR90-01	DILUTION FACTOR	(DF)	101				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	270.30	SR-90 EFFICIENCY FACTOR	(C1)		0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.85	Y-90 EFFICIENCY FACTOR	(C2)		0.4660
95002756	TIME OF SEPARATION	(ST)	13:05	Rmax			N/A
Reran	DATE OF SEPARATION	(SD)	10/07/95	DETECTION LIMIT	(Ld)		1.79
0	TIME OF COUNT	(TOC)	17:35	Sr-89/90 CONC in µCi/L			3.1681E+01
Sample Prep	DATE OF COUNT	(DOC)	10/07/95				
N/A							
Sample #							
S95T002449							
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)						
WB27811	Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0						
Prepared By	RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)						
MCB	NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))						
Chemist	Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)						
SLF	Percent Carrier Recovery = (Net Weight / Expected weight) * 100						
Analyst	NOTE: Expected weight = CVA * 0.1						
EAL	Detection Levels and Less Than Values are determined from Procedure LA-508-002.						
Date Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100						
10/09/95							
Analysis Date							DETECTION LEVEL
10/07/95	Sr-89/90 CONCENTRATION			3.17E-02		µCi/mL	
Analysis Time							
03:00 PM	RELATIVE COUNTING ERROR			3.8%			2.10E-04 µCi/mL
Sample Point							
AY-102 GRAB	PERCENT CARRIER RECOVERY			88.2%			

Analyst:		EAL	Date:	09-Oct-95
Signature of Chemist:	[signature]	SLF	Date:	10/10/95

SAMPLE.WB1 REV 1.2 22010NML

WORKBOOK PAGE: DUP7

LA-220-101 / D-1 **Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)**

							DUP
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)		1.000
DUP	TOTAL COUNTS	(TC)	2799	GROSS WEIGHT	(W2)		8.0037
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.9149
2580	BACKGROUND in cpm	(BKG)	2.0	NET WEIGHT	(W3)		0.0888
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		4.67
@SR90-01	DILUTION FACTOR	(DF)	101				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	277.90	SR-90 EFFICIENCY FACTOR	(C1)		0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.85	Y-90 EFFICIENCY FACTOR	(C2)		0.4660
95002756	TIME OF SEPARATION	(ST)	13:05	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	10/07/95	DETECTION LIMIT	(Ld)		1.79
0	TIME OF COUNT	(TOC)	17:45	Sr-89/90 CONC in µCi/L			3.2293E+01
Sample Prep	DATE OF COUNT	(DOC)	10/07/95				
N/A							
Sample #							
S95T002449							
Instrument Code							
WB27811							
Prepared By							
MCB							
Chemist							
SLF							
Analyst							
EAL							
Date Complete							
10/09/95							
Analysis Date							
10/07/95							
Analysis Time							
03:00 PM							
Sample Point							
AY-102 GRAB							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	3.23E-02	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	3.7%		2.09E-04 µCi/mL
PERCENT CARRIER RECOVERY	88.8%		

Analyst:	EAL	Date:	09-Oct-95
Signature of Chemist:	SLF	Date:	10/10/95

SAMPLE.WB1 REV 1.2 22010NML

WORKBOOK PAGE: SAM8

LA-220-101 / D-1 **Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)**

						SAMPLE
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	8886	GROSS WEIGHT	(W2)	8.1028
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	8.0141
2580	BACKGROUND in cpm	(BKG)	2.0	NET WEIGHT	(W3)	0.0887
Task Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)	4.83
@SR90-01	DILUTION FACTOR	(DF)	101			
Matrix	DIGEST DILUTION FACTOR	(DDF)	1			
LIQUID	SAMPLE COUNT RATE	(Rs)	886.60	SR-90 EFFICIENCY FACTOR	(C1)	0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.85	Y-90 EFFICIENCY FACTOR	(C2)	0.4660
95002756	TIME OF SEPARATION	(ST)	13:05	Rmax		N/A
Rerun	DATE OF SEPARATION	(SD)	10/07/95	DETECTION LIMIT	(Ld)	1.79
0	TIME OF COUNT	(TOC)	17:55	Sr-89/90 CONC in µCi/L		1.0296E+02
Sample Prep	DATE OF COUNT	(DOC)	10/07/95			
N/A						
Sample #						
S95T002471						

Instrument Code: WB27811

Prepared By: MCB

Chemist: SLF

Analyst: EAL

Data Complete: 10/09/95

Analysis Date: 10/07/95

Analysis Time: 03:00 PM

Sample Point: AY-102 GRAB

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	1.03E-01	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	2.1%		2.08E-04 µCi/mL
PERCENT CARRIER RECOVERY	88.7%		

Analyst:		EAL	Date:	09-Oct-95
Signature of Chemist:		SLF	Date:	10/10/95

SAMPLE.WB1 REV 1.2 22010NML

WORKBOOK PAGE: DUP9

LA-220-101 / D-1 Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)

							DUP
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)	1.000
DUP	TOTAL COUNTS	(TC)	9145	GROSS WEIGHT	(W2)	8.0334
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.9442
2580	BACKGROUND in cpm	(BKG)	2.0	NET WEIGHT	(W3)	0.0892
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)	5.08
@SR90-01	DILUTION FACTOR	(DF)	101			
Matrix	DIGEST DILUTION FACTOR	(DDF)	1			
LIQUID	SAMPLE COUNT RATE	(Rs)	912.50	SR-90 EFFICIENCY FACTOR	(C1)	0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.85	Y-90 EFFICIENCY FACTOR	(C2)	0.4660
95002756	TIME OF SEPARATION	(ST)	13:05	Rmax		N/A
Parent	DATE OF SEPARATION	(SD)	10/07/95	DETECTION LIMIT	(Ld)	1.79
0	TIME OF COUNT	(TOC)	18:10	Sr-89/90 CONC in µCi/L		1.0509E+02
Sample Prep	DATE OF COUNT	(DOC)	10/07/95			
N/A						
Sample #						
S95T002471						
Instrument Code						
WB27811						
Prepared By						
MCB						
Chemist						
SLF						
Analyst						
EAL						
Date Complete						
10/09/95						
Analysis Date						
10/07/95						
Analysis Time						
03:00 PM						
Sample Point						
AY-102 GRAB						

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

				DETECTION LEVEL
Sr-89/90 CONCENTRATION	1.05E-01	µCi/mL		
RELATIVE COUNTING ERROR	2.1%			2.07E-04 µCi/mL
PERCENT CARRIER RECOVERY	89.2%			

Analyst:	EAL	Date:	09-Oct-95
Signature of Chemist:	SLF	Date:	10/10/95

SAMPLE.WB1 REV 1.2 22010NML

WORKBOOK PAGE: SAM10

LA-220-101 / D-1 **Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)**

						SAMPLE
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	3076	GROSS WEIGHT	(W2)	7.9832
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.8931
2580	BACKGROUND in cpm	(BKG)	2.0	NET WEIGHT	(W3)	0.0901
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)	5.12
@SR90-01	DILUTION FACTOR	(DF)	101			
Matrix	DIGEST DILUTION FACTOR	(DDF)	1			
LIQUID	SAMPLE COUNT RATE	(Rs)	305.60	SR-90 EFFICIENCY FACTOR	(C1)	0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.85	Y-90 EFFICIENCY FACTOR	(C2)	0.4660
95002756	TIME OF SEPARATION	(ST)	13:13	Rmax		N/A
Batch	DATE OF SEPARATION	(SD)	10/07/95	DETECTION LIMIT	(Ld)	1.79
0	TIME OF COUNT	(TOC)	18:20	Sr-89/90 CONC in µCi/L		3.4830E+01
Sample Prep	DATE OF COUNT	(DOC)	10/07/95			
N/A						
Sample #						
S95T002472						
Instrument Code						
WB27811						
Prepared By						
MCB						
Chemist						
SLF						
Analyst						
EAL						
Data Complete						
10/09/95						
Analysis Date						
10/07/95						
Analysis Time						
03:00 PM						
Sample Point						
AY-102 GRAB						

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	3.48E-02	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	3.6%		2.05E-04 µCi/mL
PERCENT CARRIER RECOVERY	90.1%		

Analyst:	EAL	Date:	09-Oct-95
Signature of Chemist:	SLF	Date:	10/10/95

SAMPLE.WB1 REV 1.2 22010NML

WORKBOOK PAGE: DUP11

LA-220-101 / D-1 Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)

							DUP
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)	1.000
DUP	TOTAL COUNTS	(TC)	2991	GROSS WEIGHT	(W2)	7.9563
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.8665
2580	BACKGROUND in cpm	(BKG)	2.0	NET WEIGHT	(W3)	0.0898
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)	5.28
@SR90-01	DILUTION FACTOR	(DF)	101			
Matrix	DIGEST DILUTION FACTOR	(DDF)	1			
LIQUID	SAMPLE COUNT RATE	(Rs)	297.10	SR-90 EFFICIENCY FACTOR	(C1)	0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.85	Y-90 EFFICIENCY FACTOR	(C2)	0.4660
95002756	TIME OF SEPARATION	(ST)	13:13	Rmax		N/A
Rerun	DATE OF SEPARATION	(SD)	10/07/95	DETECTION LIMIT	(Ld)	1.79
0	TIME OF COUNT	(TOC)	18:30	Sr-89/90 CONC in µCi/L		3.3913E+01
Sample Prep	DATE OF COUNT	(DOC)	10/07/95			
N/A						
Sample #						
S95T002472						
Instrument Code						
WB27811						
Prepared By						
MCB						
Chemist						
SLF						
Analyst						
EAL						
Date Complete						
10/09/95						
Analysis Date						
10/07/95						
Analysis Time						
03:00 PM						
Sample Point						
AY-102 GRAB						

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	3.39E-02	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	3.6%		2.05E-04 µCi/mL
PERCENT CARRIER RECOVERY	89.8%		

Analyst:	EAL	Date:	09-Oct-95
Signature of Chemist:	SLF	Date:	10/10/95

SAMPLE.WB1 REV 1.2 22010NML

LABCORE Completed Worklist Report for Worklist# 2553

Analyst: akl **Instrument:** AM01 **Book#** 104643

Method: LA-953-103 Rev/Mod A-4

Worklist Comment: Determine sample size using Ludlum. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0	@AM24101	AM24101	LIQUID	3.07E-02	2.48E-2	80.780	% Recovery
1	STD		0	@AM24101	AM24101E	LIQUID	1.00	1.41E+00	1.410	% Ct. Error
1	STD		0	@AM24101	AM24101T	LIQUID	100	8.82E+01	88.200	% Recovery
2	BLNK		0	@AM24101	AM24101	LIQUID	1	<8.26E-5		uCi/mL
2	BLNK		0	@AM24101	AM24101E	LIQUID	1.00	1.00E+02	100.000	% Ct. Error
2	BLNK		0	@AM24101	AM24101T	LIQUID	100	7.09E+01	70.900	% Recovery
3	SAMPLE	S95T002448	0	@AM24101	AM24101	LIQUID	N/A	3.03E-04	1.070e-004	uCi/mL
3	SAMPLE	S95T002448	0	@AM24101	AM24101E	LIQUID	N/A	2.36E+00	0.000	% Ct. Error
3	SAMPLE	S95T002448	0	@AM24101	AM24101T	LIQUID	N/A	7.57E+01	1.000e-007	% Recovery
4	DUP	S95T002448	0	@AM24101	AM24101	LIQUID	3.03E-4	3.10E-4	2.280	RPD
4	DUP	S95T002448	0	@AM24101	AM24101E	LIQUID	1.00	2.21E+00	2.210	% Ct. Error
4	DUP	S95T002448	0	@AM24101	AM24101T	LIQUID	100	8.43E+01	84.300	% Recovery
5	SAMPLE	S95T002449	0	@AM24101	AM24101	LIQUID	N/A <	1.41E-05	1.410e-005	uCi/mL
5	SAMPLE	S95T002449	0	@AM24101	AM24101E	LIQUID	N/A	9.11E+00	0.000	% Ct. Error
5	SAMPLE	S95T002449	0	@AM24101	AM24101T	LIQUID	N/A	8.81E+01	1.000e-007	% Recovery
6	DUP	S95T002449	0	@AM24101	AM24101	LIQUID	<1.41E-5	<1.47E-5		RPD
	DUP	S95T002449	0	@AM24101	AM24101E	LIQUID	1.00	8.71E+00	8.710	% Ct. Error
	DUP	S95T002449	0	@AM24101	AM24101T	LIQUID	100	8.31E+01	83.100	% Recovery

Final page for worklist# 2553

Analyst Signature **Date** **Analyst Signature** **Date**

10 Oct 95

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2553

Analyst: AKL **Instrument:** AM01 _____ **Book#** 104B43

Method: LA-953-103 Rev/Mod A-4

Worklist Comment: Determine sample size using Ludlum. --LLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@AM24101	LIQUID		
2	BLNK				@AM24101	LIQUID		
3	SAMPLE	S95T002448	0		@AM24101	LIQUID	95000139	AY-102 GRAB
		Analytes Requested: AM24101 , AM24101E, AM24101T						
4	DUP	S95T002448	0		@AM24101	LIQUID		
5	SAMPLE	S95T002449	0		@AM24101	LIQUID	95000139	AY-102 GRAB
		Analytes Requested: AM24101 , AM24101E, AM24101T						
6	DUP	S95T002449	0		@AM24101	LIQUID		

Final page for worklist # 2553

G Lewis 10-6-95
Analyst Signature **Date**

N. Kim 10-7-95
Analyst Signature **Date**

SEHogan 10-9-95

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID

						STD
Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)	0.488
STD	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.412
Work List	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0
2553	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		14906
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		88.14
LIQUID	Detector Number		1	Am 243 cpm		74.41
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002713	Standard Book No		104B43	AEA Count Time	(min)	480
Batch	Standard Value in µCi/mL		0.03067	Am 241 µCi/L =		2.4826E+01
0				Cm 243/244 µCi/L =	<	2.8851E+00
Sample Prep						
N/A						

Sample Number

WORKLIST 2553-STD

Instrument Code

AL10539

Prepared By

SEH

Chemist

LLF

Analyst

AKL

Date Completed

10/09/95

Analysis Date

10/07/95

Analysis Time

06:00 PM

Sample Point

AY-102 GRAB

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	2.48E-02	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	1.4%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 2.89E-03	2.89E-03
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	88.2%	2.89E-03

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	10 Oct 95

STANDARD.WB1 REV 1.2 953103ML

WORKBOOK PAGE: BLANK2

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)	BLNK	0
BLNK	Sample Volume in mL	(SS)	0.200	Am 243 AEA Frac.	(C243)		0.886
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2553	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			5648
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)		4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			0
LIQUID	Detector Number		2	Am 243 cpm			60.59
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002713				AEA Count Time	(min)		480
Batch				Am 241 µCi/L =		<	8.2619E-02
0				Cm 243/244 µCi/L =		<	8.2619E-02
Sample Prep							
N/A							

Sample Number: WORKLIST 2553-BLK

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Instrument Code: AL10540

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Prepared By: SEH

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Chemist: LLF

NOTE: Am-241 Result is a LESS THAN Value.

Am 241 µCi/mL	=	< 8.26E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	100.0%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 8.26E-05	8.26E-05
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	70.9%	8.26E-05

Analyst: AKL

Date Completed: 10/09/95

Analysis Date: 10/07/95

Analysis Time: 06:00 PM

Sample Point: AY-102 GRAB

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	10 Oct 95

BLANK.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM3

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							SAMPLE
Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)		0.187
SAMPLE	Sample Volume in mL	(SS)	0.200	Am 243 AEA Frac.	(C243)		0.041
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2553	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			8279
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)		4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			18.51
LIQUID	Detector Number		3	Am 243 cpm			63.3
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002713				AEA Count Time	(min)		480
Rerun				Am 241 µCi/L =			3.0270E-01
0				Cm 243/244 µCi/L =		<	1.0695E-01
Sample Prep							
N/A							

Sample Number
S95T002448

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Instrument Code
AL10541

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Prepared By
SEH

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Chemist
LLF

Am 241 µCi/mL	=	3.03E-04	
Relative Counting Error	=	2.4%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			
Cm 243/244 µCi/mL		< 1.07E-04	
Relative Counting Error	=	100.0%	
Am 243 Tracer Recovery	=	75.7%	

DETECTION LEVELS in µCi/mL
Am 241
1.07E-04
Cm 243/244
1.07E-04

Analyst
AKL

Date Completed
10/09/95

Analysis Date
10/07/95

Analysis Time
06:00 PM

Sample Point
AY-102 GRAB

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	10 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP4

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							DUP
Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)		0.169
DUP	Sample Volume in mL	(SS)	0.200	Am 243 AEA Frac.	(C243)		0.632
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2553	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			9342
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)		4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			21.29
LIQUID	Detector Number		1	Am 243 cpm			71
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002713				AEA Count Time	(min)		480
Repeat				Am 241 µCi/L =			3.1030E-01
0				Cm 243/244 µCi/L =		<	9.7332E-02
Sample Prep							
N/A							

Sample Number: S95T002448

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Environment Code: AL10539

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Prepared By: SEH

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Chemist: LLF

Analyst: AKL

Date Completed: 10/09/95

Analysis Date: 10/07/95

Analysis Time: 06:00 PM

Sample Point: AY-102 GRAB

Am 241 µCi/mL	=	3.10E-04
Relative Counting Error	=	2.2%
NOTE: Cm-243/244 Result is a LESS THAN Value.		
Cm 243/244 µCi/mL		< 9.73E-05
Relative Counting Error	=	100.0%
Am 243 Tracer Recovery	=	84.3%

DETECTION LEVELS in µCi/mL
Am 241
9.73E-05
Cm 243/244
9.73E-05

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	10 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM5

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							SAMPLE
Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)		0.013
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)		0.835
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2553	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			7408
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)		4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			0.95
LIQUID	Detector Number		2	Am 243 cpm			64.49
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002713				AEA Count Time	(min)		480
Rerun				Am 241 µCi/L =		<	1.4111E-02
0				Cm 243/244 µCi/L =		<	1.4111E-02
Sample Prep							
N/A							

Sample Number: S95T002449

Instrument Code: AL10540

Prepared By: SEH

Chemist: LLF

Analyst: AKL

Date Completed: 10/09/95

Analysis Date: 10/07/95

Analysis Time: 06:00 PM

Sample Point: AY-102 GRAB

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

NOTE: Am-241 Result is a LESS THAN Value.

Am 241 µCi/mL	=	< 1.41E-05
Relative Counting Error	=	9.1%

NOTE: Cm-243/244 Result is a LESS THAN Value.

Cm 243/244 µCi/mL		< 1.41E-05
Relative Counting Error	=	100.0%
Am 243 Tracer Recovery	=	88.1%

DETECTION LEVELS in µCi/mL
Am 241
1.41E-05
Cm 243/244
1.41E-05

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	10 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP6

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							DUP
Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)		0.013
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)		0.949
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2553	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			8550
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)		4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			1.07
LIQUID	Detector Number		3	Am 243 cpm			71.1
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002713				AEA Count Time	(min)		480
Rerun				Am 241 µCi/L =		<	1.4716E-02
0				Cm 243/244 µCi/L =		<	1.4716E-02
Sample Prep							
N/A							
Sample Number							
S95T002449							
Instrument Code							
AL10541							
Prepared By							
SEH							
Chemist							
LLF							
Analyst							
AKL							
Date Completed							
10/09/95							
Analysis Date							
10/07/95							
Analysis Time							
06:00 PM							
Sample Point							
AY-102 GRAB							

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

NOTE: Am-241 Result is a LESS THAN Value.

Am 241 µCi/mL	=	< 1.47E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	8.7%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 1.47E-05	1.47E-05
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	83.1%	1.47E-05

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	10 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

Raymond 10-7-95

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2553-ST
File ID: 13a1320.CNF

Counted on: 10/ 7/95 @18:10
Detector: AEA13
Geometry number: 1
Count time: 28804. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	3330.1	3330.1	300.489	300.489	10.000	4.347	5.000	2.397
2	3020.5	3020.5	254.604	254.602	10.000	3.489	5.000	1.973

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu238	0.488	5.487	5.477	0.010	0.02	88.14	1.0	6342.7	0.286E-02
	Am241		5.479	5.477	0.002				4858.3	0.219E-02
2	Am243	0.412	5.270	5.266	0.004	0.02	74.41	1.0	3894.6	0.175E-02
Totals:		0.900	<--valid peaks only-->				162.55			

DETECTOR CALIBRATION
Energy(MEV) = 4.095 + (0.0046)*Channel
Energy range (MeV): 4.095 TO 6.450
Efficiency = 0.0193 CPM/DPM

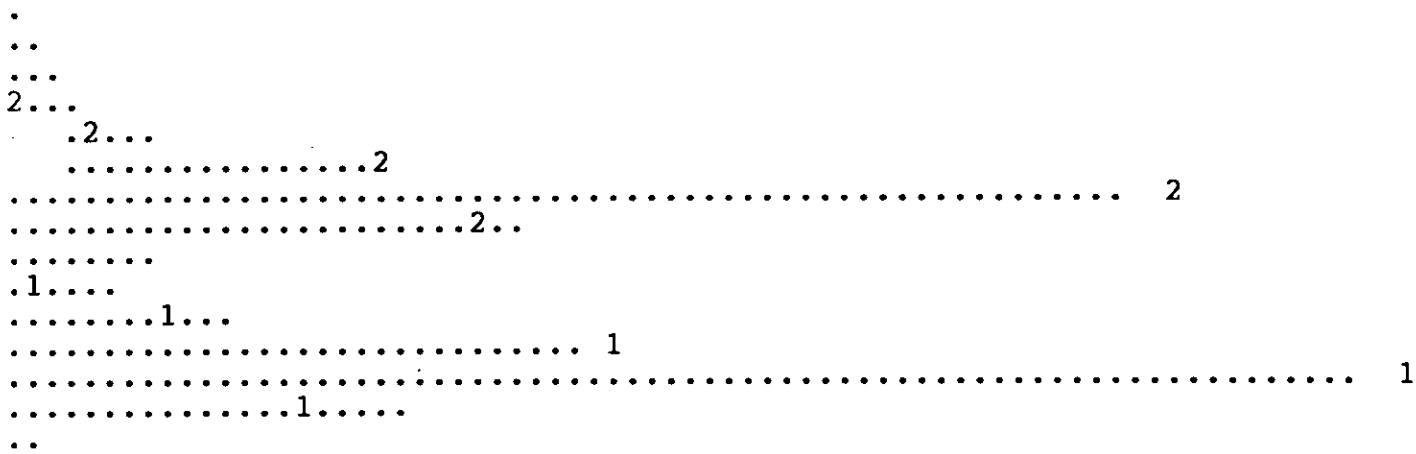
TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	86716.0	100.000
Smoothed	86716.0	100.000
Composite fit	78035.7	89.990
Residuals	8680.3	10.010

Analyzed by: _____
ALJ

Spectrum 13a1320.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 21658.2



Raw Data Dump for AEA Spectrum: 13a1320.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	1.	0.	0.	0.	2.	0.	0.	0.	0.
41	0.	1.	0.	1.	0.	0.	0.	0.	1.	0.
	0.	0.	1.	1.	0.	0.	2.	0.	0.	1.
61	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.
71	0.	1.	1.	1.	0.	0.	0.	1.	0.	1.
81	2.	0.	0.	0.	1.	0.	0.	2.	0.	1.
91	0.	0.	0.	0.	0.	0.	0.	1.	0.	2.
101	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.
111	0.	0.	2.	0.	1.	1.	1.	1.	1.	0.
121	0.	1.	0.	0.	2.	2.	1.	0.	0.	0.
131	1.	2.	3.	3.	1.	1.	0.	1.	3.	0.
141	1.	3.	1.	1.	0.	2.	1.	2.	3.	3.
151	3.	1.	1.	1.	0.	1.	2.	1.	2.	1.
161	4.	2.	4.	4.	2.	2.	6.	10.	4.	4.
171	2.	5.	8.	7.	6.	6.	6.	10.	6.	7.
181	11.	10.	13.	11.	15.	23.	20.	21.	18.	29.
191	16.	26.	24.	22.	32.	29.	36.	48.	35.	27.
201	49.	46.	44.	47.	49.	52.	60.	76.	65.	65.
211	82.	84.	99.	85.	99.	104.	97.	109.	124.	134.
221	111.	144.	120.	154.	148.	168.	173.	197.	205.	220.
231	228.	277.	295.	286.	333.	333.	350.	339.	390.	454.
241	498.	557.	654.	774.	954.	1065.	1170.	1196.	1305.	1508.
251	1809.	2336.	3033.	3568.	3817.	3413.	2281.	1102.	544.	405.
261	320.	312.	325.	308.	319.	314.	312.	260.	247.	236.
271	207.	226.	197.	207.	193.	222.	283.	304.	310.	368.
281	372.	388.	433.	450.	491.	551.	557.	681.	748.	963.
291	1053.	1231.	1297.	1385.	1529.	1792.	2216.	2785.	3448.	3922.
301	4189.	3589.	2391.	1351.	899.	687.	618.	540.	410.	359.
311	278.	193.	129.	95.	41.	13.	2.	2.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	1.	0.	0.	0.	0.	0.	2.	0.	1.
341	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.
351	0.	0.	1.	1.	1.	0.	0.	0.	0.	1.
361	2.	2.	0.	1.	2.	0.	1.	0.	1.	1.
371	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2553-BL
File ID: 14a1425.CNF

Counted on: 10/ 7/95 @18:11
Detector: AEA14
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2161.1	2161.1	255.190	255.190	12.000	3.584	6.000	1.577

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am243	0.886	5.270	5.276	-.006	0.02	60.89	1.1	3289.0	0.148E-02
		---					---			
als:		0.886	<--valid peaks only-->				60.89			

DETECTOR CALIBRATION
Energy(MEV) = 4.102 + (0.0046)*Channel
Energy range (MeV): 4.102 TO 6.457
Efficiency = 0.0187 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	32977.0	100.000
Smoothed	32977.0	100.000
Composite fit	29227.5	88.630
Residuals	3749.5	11.370

Analyzed by: _____
ALJ

Spectrum 14a1425.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 13226.8

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1..
...1.
   ......1.
   ........................1.
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Raw Data Dump for AEA Spectrum: 14a1425.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
41	1.	0.	0.	1.	0.	0.	0.	0.	1.	0.
	1.	0.	0.	0.	0.	1.	0.	0.	1.	1.
61	0.	0.	0.	0.	2.	0.	0.	0.	2.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
81	0.	1.	0.	0.	0.	1.	0.	1.	0.	0.
91	0.	1.	4.	0.	1.	0.	0.	3.	2.	2.
101	1.	0.	4.	2.	2.	1.	1.	2.	4.	2.
111	0.	2.	4.	1.	2.	0.	3.	1.	6.	4.
121	2.	4.	7.	3.	2.	0.	6.	2.	3.	1.
131	5.	2.	3.	6.	7.	4.	5.	5.	8.	5.
141	5.	9.	9.	12.	12.	7.	8.	4.	5.	8.
151	7.	12.	7.	13.	10.	10.	11.	13.	17.	7.
161	15.	10.	15.	13.	12.	13.	21.	19.	18.	17.
171	18.	17.	19.	15.	21.	25.	24.	15.	26.	17.
181	23.	31.	24.	24.	25.	20.	28.	20.	25.	37.
191	26.	31.	33.	34.	33.	37.	42.	39.	40.	48.
201	23.	42.	35.	35.	51.	51.	38.	49.	45.	55.
211	65.	55.	56.	53.	57.	63.	80.	78.	86.	91.
221	89.	86.	103.	110.	121.	134.	106.	137.	128.	130.
231	165.	180.	212.	223.	251.	252.	300.	300.	351.	370.
241	479.	530.	610.	644.	769.	918.	932.	1133.	1146.	1232.
251	1381.	1660.	1898.	2229.	2557.	2647.	2202.	1333.	657.	283.
261	196.	179.	155.	151.	147.	124.	126.	118.	84.	64.
271	56.	34.	21.	10.	3.	2.	0.	0.	1.	0.
281	1.	0.	1.	2.	2.	0.	1.	0.	3.	4.
291	0.	1.	1.	5.	4.	4.	3.	2.	4.	12.
301	4.	7.	8.	4.	4.	0.	4.	1.	0.	1.
311	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
341	0.	0.	1.	0.	1.	0.	1.	1.	0.	0.
351	0.	2.	0.	1.	0.	0.	1.	1.	0.	0.
361	1.	1.	0.	0.	0.	1.	0.	0.	0.	0.
371	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2448-SAM
File ID: 15a1509.CNF

Counted on: 10/ 7/95 @18:11
Detector: AEA15
Geometry number: 1
Count time: 28804. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	757.0	757.0	306.329	306.329	12.000	4.187	6.000	2.737
2	2906.7	2906.7	260.074	260.074	10.000	3.018	5.000	2.058
3	12.3	12.3	141.105	141.105	206.000	1.000	103.000	0.100
4?	4.3	4.3	134.159	134.000	218.000	1.000	109.000	0.100

PEAK RESULTS
Peak Error Limit: 30%

Peak	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.187	5.487	5.489	-.002	0.02	18.51	2.1	1512.5	0.681E-03
	Am241		5.479	5.489	-.01				1158.5	0.522E-03
2	Am243	0.641	5.270	5.277	-.007	0.01	63.30	1.1	3761.4	0.169E-02
3		????		4.729			0.97	9.1		
4		????		4.697			0.33	29.6		
Totals:		0.828	<--valid peaks only-->				81.82			

DETECTOR CALIBRATION
Energy(MEV) = 4.080 + (0.0046)*Channel
Energy range (MeV): 4.080 TO 6.436
Efficiency = 0.0170 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	47427.0	100.000
Smoothed	47427.0	100.000
Composite fit	39904.6	84.139
Residuals	7522.4	15.861

Analyzed by: _____
ALJ

Spectrum 15a1509.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 17797.9

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Raw Data Dump for AEA Spectrum: 15a1509.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	1.	2.	0.	1.	0.	0.	0.
[illegible]	1.	0.	0.	1.	0.	0.	1.	0.	0.	0.
[illegible]	0.	1.	1.	2.	0.	1.	3.	0.	1.	2.
61	1.	0.	3.	0.	0.	0.	0.	1.	0.	1.
71	0.	2.	1.	1.	2.	1.	0.	1.	1.	0.
81	0.	1.	2.	4.	0.	1.	0.	1.	3.	2.
91	0.	0.	0.	3.	7.	4.	1.	2.	2.	0.
101	2.	4.	4.	1.	4.	5.	3.	2.	1.	2.
111	4.	10.	4.	1.	4.	1.	3.	3.	6.	10.
121	4.	3.	3.	4.	6.	8.	13.	14.	4.	9.
131	6.	7.	10.	13.	13.	8.	7.	6.	6.	12.
141	15.	7.	12.	6.	9.	2.	12.	9.	6.	19.
151	10.	13.	20.	15.	11.	17.	12.	15.	22.	18.
161	13.	24.	16.	18.	15.	24.	13.	26.	23.	24.
171	25.	26.	21.	25.	23.	30.	18.	38.	19.	43.
181	24.	27.	33.	44.	39.	33.	45.	40.	36.	46.
191	38.	46.	47.	40.	46.	41.	41.	41.	54.	55.
201	60.	61.	55.	52.	66.	66.	56.	60.	56.	79.
211	60.	67.	67.	77.	76.	90.	74.	94.	79.	94.
221	82.	99.	102.	105.	100.	102.	98.	114.	125.	118.
231	134.	122.	159.	181.	159.	144.	175.	191.	218.	202.
241	212.	229.	269.	264.	287.	354.	392.	474.	545.	667.
251	733.	853.	937.	953.	1194.	1552.	1955.	2504.	3200.	3666.
261	3717.	2597.	1348.	564.	381.	263.	230.	195.	220.	175.
271	181.	188.	183.	152.	94.	113.	81.	58.	51.	44.
281	32.	42.	53.	51.	65.	60.	72.	54.	65.	88.
291	61.	110.	119.	126.	155.	181.	206.	241.	216.	262.
301	302.	385.	541.	655.	786.	939.	976.	740.	458.	315.
[illegible]	211.	151.	116.	104.	106.	84.	57.	36.	31.	20.
[illegible]	10.	5.	2.	0.	1.	0.	0.	0.	1.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	1.	0.	0.	0.	1.	0.	1.	0.	0.	1.
351	0.	1.	0.	1.	0.	0.	2.	2.	0.	1.
361	1.	1.	2.	5.	0.	4.	2.	6.	0.	4.
371	3.	7.	10.	11.	11.	13.	9.	6.	1.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	1.	0.	1.	0.	1.	0.
431	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
441	2.	0.	1.	1.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95TT2448-DUP
File ID: 16a1601.CNF

Counted on: 10/ 7/95 @18:12
Detector: AEA16
Geometry number: 1
Count time: 28803. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1?	10.3	10.3	370.131	370.131	10.000	2.567	5.000	2.093
2	959.9	959.9	302.198	302.198	12.000	3.798	6.000	3.012
3	3537.9	3537.9	256.477	256.477	8.000	2.914	4.000	2.390

PEAK RESULTS
Peak Error Limit: 30%

Peak	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
		????		5.796			0.20	20.0		
2	Pu238	0.189	5.487	5.483	0.004	0.02	21.29	1.9	1516.3	0.683E-03
	Am241		5.479	5.483	-.004				1161.5	0.523E-03
3	Am243	0.632	5.270	5.273	-.003	0.01	71.00	1.1	3678.0	0.166E-02
Totals:		0.821	<--valid peaks only-->				92.29			

DETECTOR CALIBRATION
Energy(MEV) = 4.093 + (0.0046)*Channel
Energy range (MeV): 4.093 TO 6.448
Efficiency = 0.0195 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	53948.0	100.000
Smoothed	53948.0	100.000
Composite fit	44401.8	82.305
Residuals	9546.3	17.695

Analyzed by: _____
ALJ

Spectrum 16a1601.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 15310.2

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Raw Data Dump for AEA Spectrum: 16a1601.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
31	0.	0.	1.	0.	0.	0.	1.	2.	1.	1.
[illegible]	0.	1.	0.	0.	0.	3.	0.	0.	1.	0.
[illegible]	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	1.	0.	0.	2.	0.	2.	1.	1.	0.
71	1.	0.	0.	0.	1.	2.	2.	1.	2.	2.
81	1.	0.	1.	0.	1.	1.	1.	2.	1.	2.
91	4.	2.	3.	0.	3.	2.	0.	0.	3.	4.
101	2.	1.	4.	2.	3.	1.	1.	5.	1.	1.
111	3.	2.	3.	1.	3.	5.	4.	5.	4.	2.
121	4.	2.	2.	3.	7.	10.	3.	9.	7.	8.
131	7.	5.	9.	5.	4.	7.	8.	9.	4.	12.
141	8.	10.	9.	11.	8.	9.	12.	7.	8.	9.
151	11.	7.	18.	14.	10.	13.	20.	18.	28.	19.
161	18.	15.	22.	18.	18.	25.	19.	26.	14.	31.
171	23.	35.	38.	25.	27.	33.	37.	36.	41.	34.
181	46.	38.	42.	43.	40.	51.	50.	39.	43.	53.
191	49.	51.	45.	46.	54.	54.	62.	53.	60.	62.
201	64.	67.	56.	67.	74.	66.	76.	73.	80.	86.
211	86.	86.	70.	87.	87.	78.	94.	85.	103.	95.
221	99.	103.	113.	121.	123.	114.	121.	142.	143.	126.
231	147.	148.	161.	183.	193.	210.	207.	223.	219.	239.
241	237.	318.	340.	384.	547.	625.	777.	902.	923.	923.
251	1075.	1426.	1905.	2759.	3649.	4581.	4656.	3856.	2205.	938.
261	468.	351.	292.	253.	211.	246.	236.	248.	211.	178.
271	128.	114.	101.	81.	49.	42.	29.	33.	41.	46.
281	54.	57.	64.	63.	69.	70.	80.	88.	111.	136.
291	159.	187.	244.	228.	239.	332.	315.	414.	622.	803.
301	1078.	1269.	1164.	885.	523.	336.	238.	167.	167.	150.
[illegible]	136.	94.	60.	52.	38.	25.	7.	3.	0.	0.
[illegible]	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
341	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.
351	1.	1.	2.	1.	0.	1.	1.	0.	2.	0.
361	1.	4.	4.	3.	6.	3.	3.	10.	13.	13.
371	13.	11.	4.	2.	1.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	1.	0.	0.	0.	1.	0.	0.	1.
431	0.	1.	1.	0.	0.	0.	2.	1.	1.	1.
441	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2449-SAM
File ID: 17aSAM.CNF

Counted on: 10/ 7/95 @18:14
Detector: AEA17
Geometry number: 1
Count time: 28803. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	41.9	41.9	299.503	299.503	10.000	3.741	5.000	2.515
2	3154.6	3154.6	253.903	253.903	10.000	2.880	5.000	2.222

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu238	0.013	5.487	5.471	0.016	0.02	0.98	9.0	115.2	0.519E-04
	Am241		5.479	5.471	0.008				88.3	0.398E-04
2	Am243	0.835	5.270	5.261	0.009	0.01	64.49	1.1	5520.9	0.249E-02
Totals:		0.848	<--valid peaks only-->				65.47			

DETECTOR CALIBRATION
Energy(MEV) = 4.093 + (0.0046)*Channel
Energy range (MeV): 4.093 TO 6.448
Efficiency = 0.0118 CPM/DPM

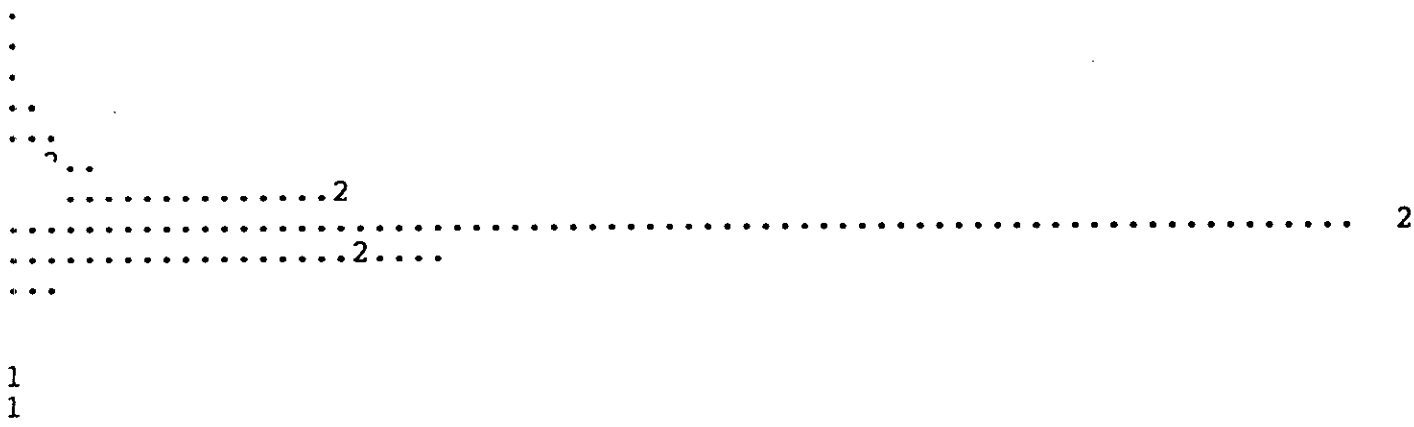
TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	37069.0	100.000
Smoothed	37069.3	100.001
Composite fit	31430.7	84.790
Residuals	5638.3	15.210

Analyzed by: _____
ALJ

Spectrum 17aSAM.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 18797.8



Raw Data Dump for AEA Spectrum: 17aSAM.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.
31	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.
41	0.	0.	1.	0.	0.	0.	1.	0.	1.	0.
	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
61	0.	0.	1.	0.	2.	1.	1.	1.	2.	1.
71	0.	0.	1.	0.	3.	2.	1.	2.	1.	0.
81	1.	0.	1.	1.	0.	0.	1.	3.	1.	3.
91	0.	1.	0.	1.	1.	0.	4.	2.	0.	2.
101	2.	2.	1.	2.	1.	1.	5.	3.	0.	1.
111	6.	4.	0.	2.	3.	0.	3.	3.	2.	3.
121	5.	5.	3.	2.	3.	3.	6.	3.	1.	4.
131	7.	4.	7.	3.	10.	4.	3.	7.	6.	5.
141	10.	9.	2.	8.	6.	6.	10.	11.	10.	15.
151	9.	11.	14.	10.	15.	8.	13.	13.	12.	13.
161	12.	10.	15.	14.	12.	10.	14.	17.	16.	21.
171	16.	26.	17.	25.	27.	24.	23.	18.	25.	34.
181	32.	29.	28.	25.	28.	35.	28.	32.	28.	37.
191	37.	34.	37.	44.	35.	46.	42.	41.	45.	43.
201	39.	57.	60.	46.	43.	49.	48.	59.	56.	49.
211	70.	66.	75.	48.	60.	68.	61.	61.	54.	79.
221	71.	81.	64.	103.	90.	84.	85.	120.	114.	115.
231	122.	138.	142.	150.	167.	142.	188.	200.	231.	285.
241	329.	413.	552.	646.	753.	858.	903.	1065.	1193.	1596.
251	2172.	2888.	3638.	4113.	3743.	2682.	1249.	561.	286.	227.
261	180.	175.	161.	168.	163.	152.	115.	96.	62.	47.
271	36.	20.	5.	5.	0.	0.	2.	3.	3.	1.
281	4.	3.	6.	2.	5.	4.	10.	5.	12.	10.
291	11.	12.	19.	8.	22.	28.	23.	55.	35.	64.
301	36.	28.	21.	10.	10.	7.	5.	1.	5.	4.
[illegible]	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	2.	1.	0.	0.
331	0.	1.	0.	0.	0.	1.	0.	0.	0.	2.
341	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.
351	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.
361	0.	0.	1.	1.	0.	1.	2.	3.	0.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2449-DUP
File ID: 18a1828.CNF

Counted on: 10/ 7/95 @18:15
Detector: AEA18
Geometry number: 1
Count time: 28803. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	25.9	25.9	301.585	301.585	10.000	5.111	5.000	1.335
2	1682.0	1682.0	255.920	255.919	12.000	4.003	6.000	0.964

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu238	0.013	5.487	5.474	0.013	0.02	1.07	8.6	175.6	0.791E-04
	Am241		5.479	5.474	0.005				134.5	0.606E-04
2	Am243	0.849	5.270	5.264	0.006	0.02	71.10	1.1	8449.0	0.381E-02
Totals:		0.862	<--valid peaks only-->				72.17			

DETECTOR CALIBRATION
Energy(MEV) = 4.087 + (0.0046)*Channel
Energy range (MeV): 4.087 TO 6.442
Efficiency = 0.0085 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	40193.0	100.000
Smoothed	40195.0	100.005
Composite fit	34646.7	86.201
Residuals	5546.3	13.799

Analyzed by: _____
ALJ

Spectrum 18a1828.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 10714.7

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2..
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2.....
1
1
1
1
1
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Raw Data Dump for AEA Spectrum: 18a1828.CNF

1	0.	0.	0.	2.	2.	2.	0.	0.	1.	0.
11	0.	1.	0.	2.	0.	1.	0.	0.	3.	3.
21	6.	2.	2.	3.	1.	2.	4.	0.	0.	2.
31	1.	2.	2.	0.	1.	3.	2.	1.	2.	3.
41	4.	3.	1.	2.	2.	1.	2.	1.	2.	1.
	1.	1.	2.	5.	1.	1.	3.	3.	2.	3.
61	4.	5.	0.	4.	3.	1.	4.	1.	4.	3.
71	2.	5.	6.	1.	5.	5.	3.	4.	1.	5.
81	7.	3.	3.	6.	5.	4.	6.	0.	4.	5.
91	4.	2.	4.	2.	4.	4.	6.	4.	4.	8.
101	9.	7.	6.	5.	3.	6.	6.	7.	10.	6.
111	12.	5.	6.	10.	8.	2.	10.	5.	8.	11.
121	6.	7.	7.	7.	10.	8.	11.	7.	9.	8.
131	7.	12.	7.	7.	9.	12.	14.	15.	13.	13.
141	11.	11.	17.	14.	12.	10.	10.	24.	22.	8.
151	23.	19.	14.	20.	19.	15.	21.	28.	24.	23.
161	25.	29.	23.	28.	25.	34.	25.	31.	33.	37.
171	37.	27.	33.	37.	42.	51.	55.	44.	44.	45.
181	48.	62.	53.	69.	47.	76.	61.	78.	61.	99.
191	85.	89.	84.	87.	88.	96.	119.	94.	116.	108.
201	123.	126.	163.	127.	126.	163.	147.	155.	185.	202.
211	169.	192.	212.	186.	171.	197.	227.	266.	224.	248.
221	238.	268.	263.	312.	289.	314.	352.	352.	349.	391.
231	363.	406.	429.	472.	485.	478.	547.	578.	581.	645.
241	678.	728.	747.	793.	850.	991.	1021.	1089.	1089.	1138.
251	1200.	1295.	1426.	1514.	1752.	1946.	1886.	1652.	1044.	530.
261	229.	148.	135.	112.	113.	109.	101.	95.	88.	56.
271	53.	46.	38.	18.	13.	10.	6.	5.	6.	12.
281	5.	8.	8.	6.	12.	8.	7.	9.	8.	15.
291	14.	14.	13.	8.	25.	14.	23.	21.	20.	29.
301	26.	30.	26.	28.	13.	3.	5.	8.	2.	4.
311	6.	4.	2.	0.	1.	1.	0.	0.	1.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
331	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.
341	1.	0.	0.	0.	0.	1.	1.	0.	2.	0.
351	0.	1.	1.	1.	0.	0.	1.	0.	1.	0.
361	2.	1.	0.	1.	4.	1.	1.	1.	0.	1.
371	3.	0.	3.	1.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

LABCORE Completed Worklist Report for Worklist# 2554

Analyst: akl **Instrument:** AM01 **Book#** 104643

Method: LA-953-103 Rev/Mod A-4

Worklist Comment: Determine sample size by Ludlum. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0	@AM24101	AM24101	LIQUID	3.07E-02	2.52E-2	82.080	% Recovery
1	STD		0	@AM24101	AM24101E	LIQUID	1.00	1.63E+00	1.630	% Ct. Error
1	STD		0	@AM24101	AM24101T	LIQUID	100	6.79E+01	67.900	% Recovery
2	BLNK		0	@AM24101	AM24101	LIQUID	1	<1.68E-5		uCi/mL
2	BLNK		0	@AM24101	AM24101E	LIQUID	1.00	1.00E+02	100.000	% Ct. Error
2	BLNK		0	@AM24101	AM24101T	LIQUID	100	6.87E+01	68.700	% Recovery
3	SAMPLE	S95T002471	0	@AM24101	AM24101	LIQUID	N/A <	1.43E-04	1.430e-004	uCi/mL
3	SAMPLE	S95T002471	0	@AM24101	AM24101E	LIQUID	N/A	9.19E+00	0.000	% Ct. Error
3	SAMPLE	S95T002471	0	@AM24101	AM24101T	LIQUID	N/A	5.52E+00	1.000e-007	% Recovery
4	DUP	S95T002471	0	@AM24101	AM24101	LIQUID	<1.43E-4	5.98E-5		RPD
4	DUP	S95T002471	0	@AM24101	AM24101E	LIQUID	1.00	2.31E+00	2.310	% Ct. Error
4	DUP	S95T002471	0	@AM24101	AM24101T	LIQUID	100	8.34E+01	83.400	% Recovery
5	SAMPLE	S95T002472	0	@AM24101	AM24101	LIQUID	N/A <	1.47E-05	1.470e-005	uCi/mL
5	SAMPLE	S95T002472	0	@AM24101	AM24101E	LIQUID	N/A	5.33E+00	0.000	% Ct. Error
5	SAMPLE	S95T002472	0	@AM24101	AM24101T	LIQUID	N/A	8.51E+01	1.000e-007	% Recovery
6	DUP	S95T002472	0	@AM24101	AM24101	LIQUID	<1.47E-5	<6.57E-5		RPD
6	DUP	S95T002472	0	@AM24101	AM24101E	LIQUID	1.00	1.04E+01	10.400	% Ct. Error
	DUP	S95T002472	0	@AM24101	AM24101T	LIQUID	100	2.01E+01	20.100	% Recovery

Final page for worklist# 2554

Analyst Signature **Date** **Analyst Signature** **Date**

LLFitts 9 Oct 95
Reviewer Signature **Date**

Low tracer recovery for sample S95T2471 resulted in a "<" value. The value concurs with the actual value for the duplicate of higher tracer recovery. No rerun requested. LLFitts 9 Oct 95

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2554

Analyst: AKL **Instrument:** AM01 _____ **Book#** 104843

Method: LA-953-103 Rev/Mod A-4

Worklist Comment: Determine sample size by Ludlum. --LLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@AM24101	LIQUID		
2	BLNK				@AM24101	LIQUID		
3	SAMPLE	S95T002471	0		@AM24101	LIQUID	95000140	AY-102 GRAB
		Analytes Requested: AM24101 , AM24101E, AM24101T						
4	DUP	S95T002471	0		@AM24101	LIQUID		
5	SAMPLE	S95T002472	0		@AM24101	LIQUID	95000140	AY-102 GRAB
		Analytes Requested: AM24101 , AM24101E, AM24101T						
6	DUP	S95T002472	0		@AM24101	LIQUID		

Final page for worklist # 2554

C L Lewis
Analyst Signature **Date**

M. Kim 10-7-95
Analyst Signature **Date**

SE Hogan 10-9-95

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID

Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)	0.48
STD	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.4
Work List	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0
2554	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		11845
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		66.69
LIQUID	Detector Number		1	Am 243 cpm		55.53
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002714	Standard Book No		104B43	AEA Count Time	(min)	480
Aliquot	Standard Value in µCi/mL		0.03067	Am 241 µCi/L =		2.5152E+01
0				Cm 243/244 µCi/L =	<	3.8604E+00

Sample Prep
N/A

Sample Number
WORKLIST 2554-STD

Instrument Code
AL10539

Prepared By
SEH

Chemist
LLF

Analyst
AKL

Date Complete
10/09/95

Analysis Date
10/07/95

Analysis Time
06:00 PM

Sample Point
AY-102 GRAB

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	2.52E-02
Relative Counting Error	=	1.6%
NOTE: Cm-243/244 Result is a LESS THAN Value.		
Cm 243/244 µCi/mL		< 3.86E-03
Relative Counting Error	=	100.0%
Am 243 Tracer Recovery	=	67.9%

DETECTION LEVELS in µCi/mL
Am 241
3.86E-03
Cm 243/244
3.86E-03

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	9 Oct 95

STANDARD.WB1 REV 1.2 953103ML

WORKBOOK PAGE: BLANK2

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

						BLNK
BLNK	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)	0
	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.898
2554	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		5405
@AM24101	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
	Tracer Book No.		114B43	Background in cpm	(Bkg)	4
LIQUID	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		0
	Detector Number		2	Am 243 cpm		57.9
95002714	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
				AEA Count Time	(min)	480
0				Am 241 µCi/L =	<	1.6825E-02
				Cm 243/244 µCi/L =	<	1.6825E-02
N/A						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

WORKLIST 2554-BLK

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

AL10540

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

SEH

NOTE: Am-241 Result is a LESS THAN Value.

LLF

Am 241 µCi/mL	=	< 1.68E-05	DETECTION LEVELS In µCi/mL
Relative Counting Error	=	100.0%	

AKL

NOTE: Cm-243/244 Result is a LESS THAN Value.

10/09/95

Cm 243/244 µCi/mL		< 1.68E-05	Am 241 1.68E-05
Relative Counting Error	=	100.0%	Cm 243/244 1.68E-05
Am 243 Tracer Recovery	=	68.7%	

10/07/95

08:00 PM

AY-102 GRAB

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	9 Oct 95

BLANK.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM3

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							SAMPLE
Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)		0.216
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)		0.726
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2554	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			645
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)		4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			1.23
LIQUID	Detector Number		3	Am 243 cpm			4.14
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002714				AEA Count Time	(min)		480
Batch				Am 241 µCi/L =		<	1.4292E-01
0				Cm 243/244 µCi/L =		<	1.4292E-01
Sample Prep							
N/A							

Sample Number: S95T002471

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Instrument Code: AL10541

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Prepared By: SEH

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Chemist: LLF

NOTE: Am-241 Result is a LESS THAN Value.

Am 241 µCi/mL =	< 1.43E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error =	9.2%	
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
Cm 243/244 µCi/mL	< 1.43E-04	1.43E-04
Relative Counting Error =	100.0%	Cm 243/244
Am 243 Tracer Recovery =	5.5%	1.43E-04

Analyst: AKL

Date Completed: 10/09/95

Analysis Date: 10/07/95

Analysis Time: 08:00 PM

Sample Point: AY-102 GRAB

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	9 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP4

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							DUP
Type	Date Counted		OCT-07-95	Am 241 AEA Frac.		(C241)	0.196
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.		(C243)	0.68
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.		(Cm)	0
2554	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			8593
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)		(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm		(Bkg)	4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			19.39
LIQUID	Detector Number		1	Am 243 cpm			67.38
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002714				AEA Count Time		(min)	480
Serial				Am 241 µCi/L =			5.9815E-02
0				Cm 243/244 µCi/L =		<	1.8302E-02
Sample Prep							
N/A							

Sample Number: S95T002471

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Instrument Code: AL10539

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Prepared By: SEH

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Chemist: LLF

Analyst: AKL

Date Completed: 10/09/95

Analysis Date: 10/07/95

Analysis Time: 08:00 PM

Sample Point: AY-102 GRAB

Am 241 µCi/mL =	5.98E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error =	2.3%	
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
Cm 243/244 µCi/mL	< 1.83E-05	1.83E-05
Relative Counting Error =	100.0%	Cm 243/244
Am 243 Tracer Recovery =	83.4%	1.83E-05

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	9 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM5

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							SAMPLE
Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)		0.035
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)		0.832
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2554	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			7187
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24101	Tracer Book No.		114843	Background in cpm	(Bkg)		4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			2.93
LIQUID	Detector Number		2	Am 243 cpm			70.15
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002714				AEA Count Time	(min)		480
Reps				Am 241 µCi/L =		<	1.4658E-02
0				Cm 243/244 µCi/L =		<	1.4658E-02
Sample Prep							
N/A							
Sample Number							
S95T002472							
Instrument Code							
AL10540							
Prepared By							
SEH							
Chemist							
LLF							
Analyst							
AKL							
Date Completed							
10/09/95							
Analysis Date							
10/07/95							
Analysis Time							
08:00 PM							
Sample Point							
AY-102 GRAB							

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

NOTE: Am-241 Result is a LESS THAN Value.

Am 241 µCi/mL	=	< 1.47E-05
Relative Counting Error	=	5.3%

NOTE: Cm-243/244 Result is a LESS THAN Value.

Cm 243/244 µCi/mL		< 1.47E-05
Relative Counting Error	=	100.0%
Am 243 Tracer Recovery	=	85.1%

DETECTION LEVELS in µCi/mL
Am 241
1.47E-05
Cm 243/244
1.47E-05

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	9 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP6

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							DUP
Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)		0.035
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)		0.765
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2554	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			1890
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)		4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			0.77
LIQUID	Detector Number		5	Am 243 cpm			16.93
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002714				AEA Count Time	(min)		480
Rerun				Am 241 µCi/L =		<	6.5740E-02
0				Cm 243/244 µCi/L =		<	6.5740E-02
Sample Prep							
N/A							

Sample Number: S95T002472

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Instrument Code: AL10541

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Prepared By: SEH

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Chemist: LLF

NOTE: Am-241 Result is a LESS THAN Value.

Am 241 µCi/mL	=	< 6.57E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	10.4%	
			Am 241
NOTE: Cm-243/244 Result is a LESS THAN Value.			6.57E-05
Cm 243/244 µCi/mL		< 6.57E-05	
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	20.1%	6.57E-05

Analyst: AKL

Date Completed: 10/09/95

Analysis Date: 10/07/95

Analysis Time: 08:00 PM

Sample Point: AY-102 GRAB

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	9 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

Raymond 10.8.95

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2554-ST
File ID: 19a1932.CNF

Counted on: 10/ 7/95 @20:20
Detector: AEA19
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak	Peak height		Peak center		FWHM		Tau	
ID	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1	2767.5	2767.5	302.802	302.802	10.000	3.698	5.000	2.280
2	2443.9	2443.9	257.393	257.392	10.000	3.149	5.000	2.001

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.480	5.487	5.476	0.011	0.02	66.69	1.1	859.3	0.387E-03
	Am241		5.479	5.476	0.003				658.2	0.296E-03
2	Am243	0.400	5.270	5.268	0.002	0.01	55.53	1.2	520.3	0.234E-03
		---					---			
Totals:		0.879	<--valid peaks only-->				122.22			

DETECTOR CALIBRATION
Energy(MEV) = 4.084 + (0.0046)*Channel
Energy range (MeV): 4.084 TO 6.439
Efficiency = 0.1078 CPM/DPM

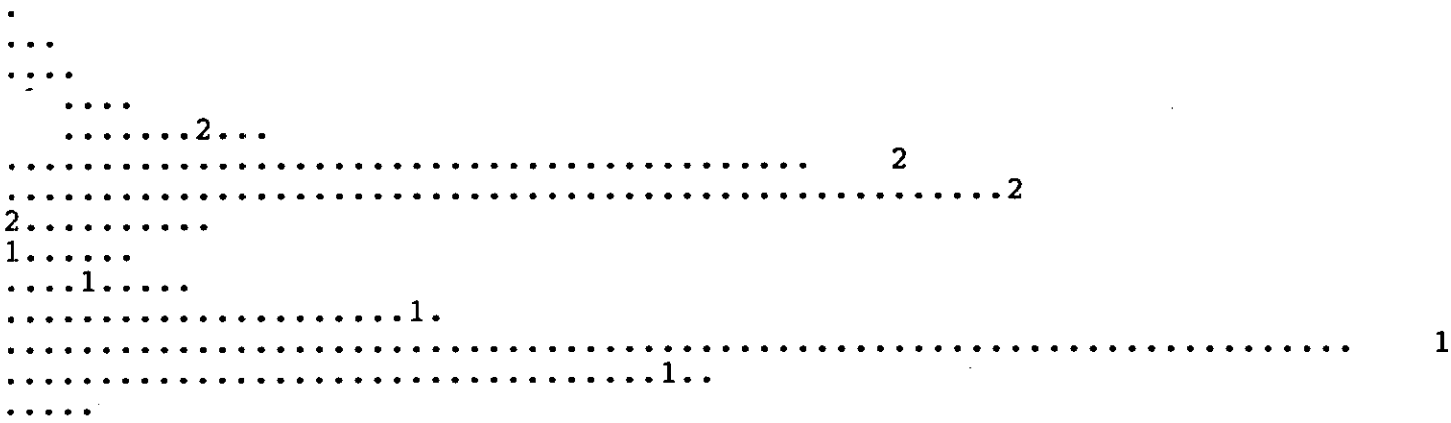
TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	66719.0	100.000
Smoothed	66718.3	99.999
Composite fit	58668.1	87.933
Residuals	8050.9	12.067

Analyzed by: _____
ALJ

Spectrum 19a1932.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 15850.3



Raw Data Dump for AEA Spectrum: 19a1932.CNF

1	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
21	0.	1.	0.	0.	1.	0.	0.	1.	0.	0.
31	0.	0.	1.	1.	0.	0.	0.	1.	0.	3.
[illegible]	0.	1.	0.	0.	0.	0.	1.	0.	0.	1.
[illegible]	1.	1.	1.	0.	0.	1.	0.	0.	1.	0.
61	0.	1.	1.	2.	0.	0.	0.	1.	0.	0.
71	0.	1.	0.	0.	0.	1.	0.	2.	0.	0.
81	0.	0.	0.	0.	0.	5.	0.	0.	0.	2.
91	1.	3.	1.	1.	0.	1.	0.	0.	1.	1.
101	2.	0.	0.	2.	2.	0.	0.	1.	0.	2.
111	4.	2.	1.	0.	2.	2.	0.	2.	1.	1.
121	0.	0.	1.	1.	2.	1.	1.	1.	1.	3.
131	0.	2.	1.	0.	1.	3.	0.	0.	1.	0.
141	2.	1.	0.	1.	2.	1.	0.	2.	2.	1.
151	1.	1.	2.	1.	3.	5.	1.	0.	1.	2.
161	1.	1.	1.	0.	3.	0.	1.	0.	1.	1.
171	4.	2.	2.	4.	3.	2.	1.	3.	3.	3.
181	3.	4.	5.	7.	10.	2.	6.	5.	5.	7.
191	7.	11.	16.	12.	14.	17.	11.	11.	10.	22.
201	12.	19.	20.	16.	30.	35.	32.	30.	42.	37.
211	45.	50.	58.	74.	47.	56.	74.	75.	86.	76.
221	102.	111.	118.	101.	114.	126.	133.	130.	136.	166.
231	147.	152.	178.	224.	189.	229.	205.	252.	251.	244.
241	277.	292.	318.	348.	396.	502.	593.	710.	813.	760.
251	838.	930.	1094.	1429.	2011.	2530.	3089.	3174.	2639.	1432.
261	670.	339.	245.	235.	236.	205.	228.	242.	237.	257.
271	219.	196.	202.	210.	191.	203.	175.	204.	240.	263.
281	242.	269.	255.	283.	301.	298.	333.	368.	389.	478.
291	559.	631.	772.	857.	1004.	943.	1079.	1215.	1525.	1975.
301	2534.	3202.	3589.	3253.	2095.	1202.	680.	547.	457.	408.
[illegible]	361.	271.	211.	146.	109.	75.	40.	15.	4.	0.
[illegible]	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
351	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
361	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.
371	1.	2.	0.	1.	1.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Raymond 10.7.95

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2554-BL
File ID: 20a2037.CNF

Counted on: 10/ 7/95 @20:21
Detector: AEA20
Geometry number: 1
Count time: 28805. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2533.8	2533.8	257.807	257.807	10.000	3.187	5.000	2.015

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am243	0.898	5.270	5.265	0.0050	0.01	57.90	1.2	574.0	0.259E-03
		---					---			
als:		0.898	<--valid peaks only-->				57.90			

DETECTOR CALIBRATION
Energy(MEV) = 4.079 + (0.0046)*Channel
Energy range (MeV): 4.079 TO 6.434
Efficiency = 0.1019 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	30948.0	100.000
Smoothed	30948.0	100.000
Composite fit	27798.4	89.823
Residuals	3149.6	10.177

Analyzed by: _____
ALJ

Spectrum 20a2037.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 13125.8

Raw Data Dump for AEA Spectrum: 20a2037.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
11	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
[illegible]	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
[illegible]	0.	1.	1.	0.	0.	0.	0.	0.	1.	0.
61	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.
71	0.	0.	1.	1.	0.	0.	0.	0.	1.	0.
81	0.	0.	0.	0.	1.	0.	1.	1.	0.	0.
91	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
111	2.	0.	0.	0.	0.	1.	1.	0.	0.	1.
121	0.	1.	1.	0.	2.	0.	0.	0.	1.	0.
131	0.	0.	0.	1.	0.	0.	1.	0.	1.	2.
141	0.	0.	1.	3.	2.	0.	0.	2.	0.	1.
151	5.	1.	1.	3.	2.	1.	3.	1.	2.	2.
161	3.	0.	3.	4.	2.	3.	7.	1.	3.	2.
171	2.	2.	3.	6.	5.	4.	7.	4.	6.	9.
181	4.	12.	11.	7.	16.	12.	10.	18.	3.	14.
191	10.	7.	10.	12.	18.	14.	16.	17.	13.	25.
201	30.	25.	12.	27.	19.	23.	24.	25.	32.	23.
211	28.	31.	26.	28.	31.	31.	30.	37.	31.	50.
221	46.	41.	53.	62.	53.	51.	63.	64.	55.	61.
231	76.	89.	100.	102.	102.	112.	122.	154.	171.	178.
241	174.	189.	262.	294.	343.	457.	517.	676.	761.	882.
251	971.	1124.	1281.	1507.	1959.	2353.	2813.	3170.	3038.	2096.
261	1016.	426.	295.	224.	160.	155.	145.	139.	148.	144.
271	130.	102.	64.	44.	30.	14.	7.	2.	0.	0.
281	1.	0.	0.	0.	1.	1.	0.	0.	2.	1.
291	3.	2.	5.	4.	1.	8.	4.	5.	6.	2.
301	4.	5.	12.	9.	5.	7.	2.	2.	1.	2.
[illegible]	2.	3.	1.	1.	1.	0.	0.	0.	0.	0.
[illegible]	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	1.	0.	0.	1.	0.	0.	2.	0.	0.	0.
351	0.	1.	0.	0.	0.	0.	3.	2.	2.	0.
361	1.	2.	1.	0.	2.	1.	0.	0.	0.	1.
371	1.	0.	2.	1.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Raymond 10 8 95

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2471-SAM
File ID: 21a2144.CNF

Counted on: 10/ 7/95 @20:21
Detector: AEA21
Geometry number: 1
Count time: 28805. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	49.4	49.4	301.462	301.462	12.000	3.834	6.000	2.236
2	169.7	169.7	255.827	255.827	10.000	3.192	5.000	1.755

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu238	0.216	5.487	5.479	0.008	0.02	1.23	8.1	15.8	0.711E-05
	Am241		5.479	5.479	0.000				12.1	0.544E-05
2	Am243	0.726	5.270	5.269	0.001	0.01	4.14	4.4	38.5	0.174E-04
Totals:		0.941	<--valid peaks only-->				5.37			

DETECTOR CALIBRATION
Energy(MEV) = 4.092 + (0.0046)*Channel
Energy range (MeV): 4.092 TO 6.447
Efficiency = 0.1085 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	2740.0	100.000
Smoothed	2740.0	100.000
Composite fit	2579.7	94.149
Residuals	160.3	5.851

Analyzed by: _____
ALJ

Spectrum 21a2144.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 915.0

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2
   ..2
   ...................2..
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.............................................2
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........1
.......................... 1
......1.
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Raw Data Dump for AEA Spectrum: 21a2144.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
101	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.
121	0.	0.	0.	1.	0.	0.	0.	2.	0.	0.
131	0.	0.	0.	0.	1.	0.	1.	0.	1.	0.
141	0.	0.	0.	0.	0.	1.	2.	0.	0.	1.
151	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
161	2.	0.	0.	1.	0.	1.	0.	1.	0.	0.
171	2.	0.	0.	1.	1.	0.	0.	2.	0.	0.
181	0.	0.	2.	2.	0.	0.	0.	0.	0.	0.
191	0.	2.	0.	1.	0.	3.	0.	0.	1.	0.
201	0.	1.	0.	0.	1.	1.	1.	0.	1.	3.
211	1.	3.	1.	3.	1.	1.	2.	2.	0.	4.
221	2.	2.	2.	0.	1.	2.	3.	2.	2.	2.
231	0.	5.	5.	6.	11.	12.	9.	15.	12.	23.
241	27.	22.	35.	25.	52.	61.	50.	80.	79.	68.
251	96.	104.	123.	151.	179.	226.	187.	142.	77.	26.
261	20.	20.	14.	4.	10.	9.	12.	8.	11.	6.
271	0.	5.	3.	0.	1.	4.	1.	1.	0.	1.
281	3.	2.	3.	4.	7.	5.	5.	8.	12.	10.
291	16.	15.	22.	20.	17.	25.	23.	31.	38.	47.
301	64.	63.	51.	35.	12.	13.	11.	5.	10.	3.
311	6.	4.	3.	2.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	1.	0.	0.	1.	0.
341	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
351	0.	0.	1.	0.	0.	1.	1.	0.	0.	1.
361	2.	1.	0.	1.	2.	1.	2.	2.	1.	1.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2471-DUP
File ID: 22a2293.CNF

Counted on: 10/ 7/95 @20:22
Detector: AEA22
Geometry number: 1
Count time: 28800. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	798.8	798.8	304.570	304.570	10.000	4.396	5.000	3.072
2	2912.1	2912.1	258.376	258.376	10.000	3.542	5.000	2.339
3	19.9	19.9	158.437	158.437	186.000	1.000	93.000	0.100

PEAK RESULTS
Peak Error Limit: 30%

Peak	Isotope	AEA Frac	Peak Centroid Exp.	Peak Centroid Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu238	0.196	5.487	5.492	-.005	0.02	19.39	2.0	272.3	0.123E-03
	Am241		5.479	5.492	-.013				208.6	0.939E-04
2	Am243	0.680	5.270	5.280	-.010	0.02	67.38	1.1	688.2	0.310E-03
3		0.016		4.820		0.00	1.58	7.1	16.0	0.721E-05
Totals:		0.892	<--valid peaks only-->				88.35			

DETECTOR CALIBRATION
Energy(MEV) = 4.091 + (0.0046)*Channel
Energy range (MeV): 4.091 TO 6.447
Efficiency = 0.0989 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	47568.0	100.000
Smoothed	47569.3	100.003
Composite fit	42408.1	89.153
Residuals	5159.9	10.847

Analyzed by: _____
ALJ

Spectrum 22a2293.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 16679.1

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Raw Data Dump for AEA Spectrum: 22a2293.CNF

1	0.	0.	0.	1.	1.	0.	1.	1.	2.	0.
11	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
21	0.	1.	0.	1.	0.	0.	0.	1.	0.	0.
31	1.	0.	0.	1.	0.	1.	0.	0.	0.	0.
41	0.	0.	1.	0.	1.	0.	1.	0.	0.	0.
[illegible]	0.	0.	2.	2.	1.	2.	0.	0.	0.	1.
61	0.	3.	0.	1.	0.	2.	1.	0.	2.	0.
71	0.	0.	0.	1.	3.	0.	0.	1.	1.	1.
81	4.	2.	1.	1.	2.	1.	0.	0.	4.	3.
91	4.	1.	3.	1.	5.	1.	6.	1.	2.	1.
101	0.	6.	1.	2.	8.	3.	0.	3.	0.	4.
111	4.	1.	6.	3.	4.	3.	6.	6.	4.	7.
121	5.	7.	5.	6.	6.	9.	8.	14.	4.	9.
131	3.	10.	4.	3.	11.	9.	8.	6.	11.	18.
141	14.	9.	16.	4.	10.	14.	15.	20.	19.	14.
151	12.	14.	19.	12.	15.	20.	27.	13.	22.	22.
161	20.	12.	11.	9.	19.	11.	19.	24.	17.	27.
171	17.	18.	24.	18.	22.	23.	24.	26.	38.	22.
181	28.	27.	32.	22.	39.	27.	34.	18.	23.	38.
191	36.	39.	35.	33.	28.	44.	36.	34.	36.	31.
201	42.	38.	35.	36.	44.	54.	44.	43.	50.	37.
211	51.	51.	60.	53.	57.	52.	53.	53.	54.	61.
221	74.	67.	67.	57.	62.	69.	67.	86.	70.	77.
231	89.	74.	96.	89.	113.	125.	153.	154.	177.	148.
241	211.	226.	257.	313.	327.	407.	557.	609.	789.	902.
251	981.	1110.	1347.	1650.	2008.	2511.	3113.	3498.	3673.	3064.
261	2004.	1046.	440.	302.	225.	214.	195.	216.	205.	172.
271	158.	164.	103.	75.	65.	49.	25.	29.	29.	27.
281	42.	39.	40.	44.	42.	56.	45.	58.	68.	66.
291	101.	116.	140.	137.	214.	258.	267.	285.	318.	440.
301	547.	654.	816.	896.	1041.	843.	586.	356.	231.	170.
[illegible]	147.	151.	124.	86.	63.	51.	22.	17.	17.	5.
[illegible]	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
341	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.
351	0.	1.	0.	0.	0.	0.	2.	1.	0.	2.
361	1.	3.	4.	1.	5.	6.	4.	2.	3.	3.
371	7.	10.	12.	11.	12.	8.	7.	0.	0.	0.
381	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.
431	2.	1.	3.	0.	1.	0.	0.	1.	0.	0.
441	3.	1.	1.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

10-8-95

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2472-SAM
File ID: 23a2395.CNF

Counted on: 10/ 7/95 @20:23
Detector: AEA23
Geometry number: 1
Count time: 28805. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	111.4	111.4	301.972	301.972	10.000	3.899	5.000	2.044
2	2896.7	2896.7	256.289	256.289	10.000	3.194	5.000	1.783

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.035	5.487	5.480	0.007	0.02	2.93	5.2	305.8	0.138E-03
	Am241		5.479	5.480	-.001				234.2	0.106E-03
2	Am243	0.832	5.270	5.270	0.000	0.01	70.15	1.1	5327.4	0.240E-02
Totals:		0.866	<--valid peaks only-->				73.07			

DETECTOR CALIBRATION
Energy(MEV) = 4.091 + (0.0046)*Channel
Energy range (MeV): 4.091 TO 6.446
Efficiency = 0.0133 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	40493.0	100.000
Smoothed	40493.0	100.000
Composite fit	35081.6	86.636
Residuals	5411.4	13.364

Analyzed by: _____
ALJ

Spectrum 23a2395.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 14536.7

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Raw Data Dump for AEA Spectrum: 23a2395.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.	0.	0.	1.	0.	0.	1.	1.	0.	0.
21	1.	1.	2.	2.	0.	0.	0.	1.	0.	4.
31	0.	1.	0.	0.	1.	1.	1.	0.	0.	1.
41	1.	1.	0.	2.	0.	1.	0.	0.	0.	0.
	1.	0.	0.	0.	0.	0.	0.	2.	0.	2.
61	0.	0.	0.	2.	0.	1.	0.	1.	0.	1.
71	1.	0.	0.	1.	0.	0.	0.	1.	0.	0.
81	0.	1.	0.	1.	0.	2.	0.	1.	1.	0.
91	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
101	0.	2.	1.	0.	1.	2.	0.	0.	2.	0.
111	0.	1.	0.	0.	4.	0.	2.	0.	2.	1.
121	0.	1.	0.	1.	0.	0.	1.	2.	1.	2.
131	1.	2.	2.	3.	2.	3.	2.	3.	1.	2.
141	1.	2.	4.	2.	0.	1.	2.	3.	1.	0.
151	4.	5.	8.	1.	6.	5.	3.	4.	1.	3.
161	1.	5.	4.	3.	3.	9.	6.	4.	8.	6.
171	5.	8.	4.	7.	6.	13.	15.	11.	8.	9.
181	5.	11.	16.	16.	18.	12.	14.	21.	13.	25.
191	22.	21.	35.	25.	34.	20.	25.	26.	36.	47.
201	33.	37.	46.	50.	42.	56.	49.	52.	58.	63.
211	72.	59.	64.	71.	77.	85.	91.	95.	95.	103.
221	108.	132.	101.	123.	129.	105.	151.	162.	164.	165.
231	218.	207.	230.	249.	255.	285.	280.	312.	361.	370.
241	416.	457.	506.	584.	670.	803.	913.	1037.	1093.	1096.
251	1352.	1658.	1865.	2410.	3029.	3598.	3660.	2960.	1741.	797.
261	365.	268.	199.	191.	187.	161.	158.	138.	160.	125.
271	109.	59.	60.	44.	16.	5.	5.	14.	5.	12.
281	15.	14.	9.	17.	14.	11.	27.	17.	22.	20.
291	35.	42.	41.	46.	42.	43.	43.	56.	91.	101.
301	116.	152.	119.	89.	76.	37.	14.	20.	17.	9.
[illegible]	15.	8.	4.	4.	5.	4.	1.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	1.	1.	0.	1.	1.	1.	0.	0.	0.
351	0.	0.	1.	0.	1.	0.	1.	1.	1.	2.
361	0.	1.	1.	1.	2.	1.	2.	2.	1.	2.
371	3.	3.	2.	0.	1.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	2.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2472-DUP
File ID: 24a2484.CNF

Counted on: 10/ 7/95 @20:24
Detector: AEA24
Geometry number: 1
Count time: 28803. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	25.2	25.2	302.413	302.413	10.000	4.748	5.000	2.004
2	647.2	647.2	257.147	257.147	10.000	3.045	5.000	1.435

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
*	Pu238	0.036	5.487	5.470	0.017	0.02	0.77	10.2	131.2	0.591E-04
	Am241		5.479	5.470	0.009				100.5	0.453E-04
2	Am243	0.785	5.270	5.261	0.009	0.01	16.93	2.2	2085.4	0.939E-03
Totals:		0.821	<--valid peaks only-->				17.70			

DETECTOR CALIBRATION
Energy(MEV) = 4.078 + (0.0046)*Channel
Energy range (MeV): 4.078 TO 6.434
Efficiency = 0.0082 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	10354.0	100.000
Smoothed	10355.0	100.010
Composite fit	8498.9	82.083
Residuals	1855.1	17.917

Analyzed by: _____
ALJ

Spectrum 24a2484.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 3004.7

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Raw Data Dump for AEA Spectrum: 24a2484.CNF

1	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.
61	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
71	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.
81	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.
111	0.	0.	0.	1.	0.	0.	0.	3.	0.	0.
121	1.	0.	0.	2.	0.	0.	0.	0.	0.	0.
131	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.
141	0.	1.	3.	1.	0.	1.	1.	1.	1.	3.
151	3.	1.	3.	0.	1.	0.	1.	1.	1.	0.
161	1.	2.	2.	0.	1.	0.	2.	2.	2.	3.
171	2.	0.	3.	2.	3.	1.	5.	2.	3.	3.
181	3.	7.	2.	5.	5.	4.	4.	7.	6.	4.
191	9.	3.	8.	8.	15.	8.	12.	13.	19.	12.
201	16.	15.	14.	17.	17.	22.	17.	24.	34.	32.
211	26.	27.	35.	35.	37.	43.	43.	50.	37.	41.
221	46.	44.	58.	59.	61.	56.	57.	59.	66.	81.
231	61.	53.	90.	92.	85.	93.	100.	106.	107.	123.
241	122.	115.	116.	136.	158.	174.	225.	273.	262.	278.
251	270.	308.	359.	448.	541.	655.	804.	836.	612.	308.
261	143.	88.	55.	38.	46.	50.	38.	33.	32.	31.
271	33.	18.	11.	14.	10.	2.	2.	2.	5.	6.
281	2.	6.	7.	4.	7.	4.	5.	6.	4.	6.
291	2.	10.	14.	13.	14.	12.	10.	14.	17.	24.
301	27.	29.	30.	28.	18.	13.	4.	6.	6.	6.
[illegible]	1.	2.	3.	0.	3.	0.	1.	0.	0.	0.
[illegible]	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
341	0.	1.	0.	0.	0.	0.	1.	0.	2.	0.
351	0.	0.	1.	1.	0.	0.	0.	0.	0.	1.
361	1.	0.	1.	1.	1.	1.	1.	0.	0.	0.
371	1.	2.	0.	1.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

LABCORE Completed Worklist Report for Worklist# 2556

Analyst: dcd **Instrument:** PU01 **Book#** 104B43

Method: LA-943-127 Rev/Mod B-0

Worklist Comment: Determine sample using Ludlum. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
1	STD		0	@PU23901	PU23901	LIQUID	1.28E-01		1.23E-1	96.090	% Recovery
1	STD		0	@PU23901	PU23901E	LIQUID	1.00		2.04E+00	2.040	% Ct. Error
1	STD		0	@PU23901	PU23901T	LIQUID	100		8.39E+01	83.900	% Recovery
2	BLNK		0	@PU23901	PU23901	LIQUID	1		<2.75E-5		uCi/mL
2	BLNK		0	@PU23901	PU23901T	LIQUID	100		5.26E+01	52.600	% Recovery
2	BLNK		0	@PU23901	PU23901E	LIQUID	1.00		1.00E+02	100.000	% Ct. Error
3	SAMPLE	S95T002448	0	@PU23901	PU23901	LIQUID	N/A		3.41E-05	2.130e-005	uCi/mL
3	SAMPLE	S95T002448	0	@PU23901	PU23901T	LIQUID	N/A		7.50E+01	1.000e-007	% Recovery
3	SAMPLE	S95T002448	0	@PU23901	PU23901E	LIQUID	N/A		6.54E+00	0.000	% Ct. Error
4	DUP	S95T002448	0	@PU23901	PU23901	LIQUID	3.41E-5		4.44E-5	26.240	RPD
4	DUP	S95T002448	0	@PU23901	PU23901T	LIQUID	100		6.50E+01	65.000	% Recovery
4	DUP	S95T002448	0	@PU23901	PU23901E	LIQUID	1.00		6.05E+00	6.050	% Ct. Error
5	SAMPLE	S95T002449	0	@PU23901	PU23901	LIQUID	N/A	<	4.81E-06	4.810e-006	uCi/mL
5	SAMPLE	S95T002449	0	@PU23901	PU23901T	LIQUID	N/A		6.24E+01	1.000e-007	% Recovery
5	SAMPLE	S95T002449	0	@PU23901	PU23901E	LIQUID	N/A		1.15E+01	0.000	% Ct. Error
6	DUP	S95T002449	0	@PU23901	PU23901	LIQUID	<4.81E-6		<5.13E-6		RPD
	DUP	S95T002449	0	@PU23901	PU23901T	LIQUID	100		5.98E+01	59.800	% Recovery
	DUP	S95T002449	0	@PU23901	PU23901E	LIQUID	1.00		1.18E+01	11.800	% Ct. Error

Final page for worklist# 2556

Analyst Signature **Date** **Analyst Signature** **Date**

LLFitts 6 Oct 95
Reviewer Signature **Date**

S95T2448 sample and dup are close to detection limit. High % RPD will be accepted; no rerun requested. LLF 10/6/95

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2556

Analyst: DCD **Instrument:** PU01 _____ **Book#** 104B43

Method: LA-943-127 Rev/Mod B-0

Worklist Comment: Determine sample using Ludlum. --LLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@PU23901	LIQUID		
2	BLNK				@PU23901	LIQUID		
3	SAMPLE	S95T002448	0		@PU23901	LIQUID	95000139	AY-102 GRAB
	Analytes Requested: PU23901 , PU23901E, PU23901T							
4	DUP	S95T002448	0		@PU23901	LIQUID		
5	SAMPLE	S95T002449	0		@PU23901	LIQUID	95000139	AY-102 GRAB
	Analytes Requested: PU23901 , PU23901E, PU23901T							
6	DUP	S95T002449	0		@PU23901	LIQUID		

Final page for worklist # 2556

David C. Dunham 10-2-95
Analyst Signature **Date**

C. J. Quinn 10/6/95
Analyst Signature **Date**

Joel M. Schmidt 10-5-95

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID

						STD
Type	DATE COUNTED		OCT-05-95	PU 236 AEA FRAC	(C236)	0.476
STD	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC	(C238)	0.000
Work List	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)	0.579
2556	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		6045
Test Code	DIGEST DILUTION FACTOR	DDF	1.000	AT COUNT TIME (MIN)		30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)	5.000
Matrix	DETECTOR NUMBER		3	PU 236 cpm		34.980
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		0.000
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm		42.560
95002711	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME		480
Replicate	PU-236 DECAY CORR'D VALUE (dpm/mL)		2230.575	Pu 239/240 µCi/L		1.2344E+02
0	PU-238 TRACER VALUE (dpm/mL		0.000			
Sample Prep	STANDARD BOOK NO		104B43			
N/A	STANDARD VALUE in µCi/mL		0.128			

Sample #
WORKLIST#2556

Instrument Code
AL10541

Decay Time = Date Counted - Tracer Preparation Date
Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]
Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)* 1/EFF *C236*100/Pu-236 Decay Corr'd Value * SPKV
Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(2220000 dpm/µCi)]
Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)
Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]
Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Prepared By
CJD

Chemist
LLF

Analyst
DCD

Date Completed
10/06/95

Analysis Date
09/29/95

Analysis Time
02:00 PM

Sample Point
AY-102

v RESULTS v

Pu 239/240 µCi/L		1.23E-01	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	2.0%	Pu 239/240
			7.63E-03
Pu 236 Tracer Recovery	=	83.9%	

Analyst:	DCD	Date:	06-Oct-95
Signature of Chemist:	LLF	Date:	6 Oct 95

STANDARD.WB1 REV 1.2 943127ML

WORKBOOK PAGE: BLANK2

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type	DATE COUNTED		OCT-05-95	PU 236 AEA FRAC	(C236)		BLNK 1.041
BLNK	SAMPLE VOLUME in mL	SS	0.200	PU 238 AEA FRAC	(C238)		0.000
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.000
2556	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			1871
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm (Bkg)			6.000
Matrix	DETECTOR NUMBER		1	PU 236 cpm			21.940
LIQUID	EFFICIENCY FACTOR	EFF	0.5000	PU 238 cpm			0.000
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			0.000
95002711	TRACER PREPARATION VALUE (dpm/mL)		2265.00	AEA COUNT TIME			480
Aliquot	PU-236 DECAY CORR'D VALUE (dpm/mL)		2230.58	Pu 239/240 µCi/L =		<	2.752E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.00				

Sample Prep
N/A

Sample #
S95T2448-BLANK

Instrument Code
AL10539

Prepared By
CJO

Chemist
LLF

Analyst
DCD

Date Complete
10/06/95

Analysis Date
09/29/95

Analysis Time
02:00 PM

Sample Point
AY-102

Decay Time = Date Counted - Tracer Preparation Date
Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)}]
Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)*C236*100/(Pu-236 Decay Corr'd Value * SPKV*EFF)
Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]
Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)
Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]
Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

v RESULTS v

Pu 239/240 µCi/mL		**< 2.75E-05**		**DETECTION LEVELS in µCi/mL**
Relative Counting Error	**=**	**100.0%**		
NOTE: Pu 238 Result is a LESS THAN Value.				**Pu 239/240**
Pu 238 µCimL		**< 2.75E-05**		**2.75E-05**
Relative Counting Error	**=**	**100.0%**		**Pu 238**
Pu 236 Tracer Recovery	**=**	**52.6%**		**2.75E-05**

Analyst:	DCD	Date:	06-Oct-95
Signature of Chemist:	LLF	Date:	6 Oct 95

BLANK.WB1 REV 1.2 943127ML

WORKBOOK PAGE: SAM3

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

							SAMPLE
Type	DATE COUNTED		OCT-05-95	PU 236 AEA FRAC		(C236)	0.943
SAMPLE	SAMPLE VOLUME in mL	SS	0.200	PU 238 AEA FRAC		(C238)	0.039
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC		(C239)	0.064
2556	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2762
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm		(Bkg)	3.000
Matrix	DETECTOR NUMBER		2	PU 236 cpm			29.620
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			1.230
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			2.000
95002711	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Filter	PU-236 DECAY CORR'D VALUE (dpm/mL)		2230.575	Pu 239/240 µCi/L			3.4096E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000				
Sample Prep							
N/A							
Sample #	Decay Time = Date Counted - Tracer Preparation Date						
S95T002448	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)}]						
Instrument Code	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)						
AL10540	Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]						
Prepared By	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)						
CJO	Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]						
Checked	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100						
LLF							
Analyst							
DCD							
Date Completed	v RESULTS v						
10/06/95	Pu 239/240 µCi/mL		3.41E-05				DETECTION
Analysis Date	Relative Counting Error	=	6.5%				LEVELS
09/29/95							in µCi/mL
Analysis Time	NOTE: Pu 238 Result is a LESS THAN Value.						Pu 239/240
02:00 PM	Pu 238 µCimL		< 2.13E-05				2.13E-05
Sample Point	Relative Counting Error	=	8.2%				Pu 238
AY-102	Pu 236 Tracer Recovery	=	75.0%				2.13E-05

Analyst:	DCD	Date:	06-Oct-95
Signature of Chemist:	LLF	Date:	6 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: DUP4

WHC-SD-WM-DP-150, REV. 0

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

							DUP
Type	DATE COUNTED		OCT-06-95	PU 236 AEA FRAC		(C236)	0.893
DUP	SAMPLE VOLUME in mL	SS	0.200	PU 238 AEA FRAC		(C238)	0.063
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC		(C239)	0.079
2556	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2584
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm		(Bkg)	5.000
Matrix	DETECTOR NUMBER		3	PU 236 cpm			26.940
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			1.610
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			2.380
95002711	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Aliquot	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2230.575	Pu 239/240 µCi/L			4.4444E-02
0	PU-238 TRACER VALUE	(dpm/mL)	0.000				
Sample Place							
N/A							
Comment	Decay Time = Date Counted - Tracer Preparation Date						
S95T002448	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)}]						
Instrument Code	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)						
AL10541	Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]						
Prepared By	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)						
C.JO	Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]						
Chemist	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100						
LLF							
Analyst							
DCD							
Date Completed	v RESULTS v						
10/06/95	Pu 239/240 µCi/mL		4.44E-05				DETECTION
Analysis Date	Relative Counting Error	=	6.0%				LEVELS
09/29/95							in µCi/mL
Analysis Time							Pu 239/240
02:00 PM	Pu 238 µCimL		2.98E-05				2.60E-05
Sample Point	Relative Counting Error	=	7.3%				Pu 238
AY-102	Pu 236 Tracer Recovery	=	65.0%				2.60E-05

Analyst:	DCD	Date:	06-Oct-95
Signature of Chemist:	LLF	Date:	6 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: SAM5

WHC-SD-WM-DP-150, REV. 0

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

							SAMPLE
Type	DATE COUNTED		OCT-06-95	PU 236 AEA FRAC		(C236)	1.003
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC		(C238)	0.023
Worklist	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC		(C239)	0.027
2556	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2263
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm		(Bkg)	6.000
Matrix	DETECTOR NUMBER		1	PU 236 cpm			22.680
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			0.520
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			0.620
95002711	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Aliquot	PU-236 DECAY CORR'D VALUE (dpm/mL)		2230.575	Pu 239/240 µCi/L =		<	4.8128E-03
0	PU-238 TRACER VALUE (dpm/mL)		0.000				

Sample Prep
N/A

Sample #
S95T002449

Decay Time = Date Counted - Tracer Preparation Date
Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]
Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)
Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]
Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)
Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]
Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Instrument Code
AL10539

Prepared By
CJO

Chemist
LLF

Analyst
DCD

Date Completed
10/06/95

Analysis Date
09/29/95

Analysis Time
02:00 PM

Sample Point
AY-102

v RESULTS v

Pu 239/240 µCi/mL		< 4.81E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	11.5%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCimL		< 4.81E-06	4.81E-06
Relative Counting Error	=	12.5%	Pu 238
Pu 236 Tracer Recovery	=	62.4%	4.81E-06

Analyst:	DCD	Date:	06-Oct-95
Signature of Chemist:	LLF	Date:	6 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: DUP6

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

							DUP
	DATE COUNTED		OCT-05-95	PU 236 AEA FRAC	(C236)		0.983
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)		0.027
	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.023
2556	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2126
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)		3.000
	DETECTOR NUMBER		2	PU 236 cpm			24.670
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			0.690
	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			0.600
95002711	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2230.575	Pu 239/240 µCi/L =		<	5.1264E-03
0	PU-238 TRACER VALUE	(dpm/mL)	0.000				

N/A

Decay Time = Date Counted - Tracer Preparation Date

S95T002449 Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

AL10640 Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

C-10 Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

LLF

DCD

v RESULTS v

10/06/95	Pu 239/240 µCi/mL		< 5.13E-06	DETECTION LEVELS in µCi/mL
	Relative Counting Error	=	11.8%	
00/00/00				
	NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
02:00 PM	Pu 238 µCimL		< 5.13E-06	5.13E-06
	Relative Counting Error	=	10.9%	Pu 238
AY-102	Pu 236 Tracer Recovery	=	59.8%	5.13E-06

Analyst:	DCD	Date:	06-Oct-95
Signature of Chemist:	LLF	Date:	6 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST2556-STD
File ID: 13a1314.CNF

Ruth Eichler for Larry Fritts 11/15/95

Counted on: 10/ 5/95 @10:18
Detector: AEA13
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	571.3	571.3	358.821	358.821	14.000	5.743	7.000	0.896
2?	0.0	0.1	302.557	302.557	0.000	0.100	0.000	0.100
3	787.5	787.5	226.056	226.053	14.000	5.710	7.000	1.049

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu236	0.476	5.755	5.755	0.000	0.03	34.98	1.5	358.3	0.161E-03
	Cm243		5.779	5.755	0.024				481.1	0.217E-03
2		????		5.496			0.00	*****		
3	Pu239	0.579	5.147	5.144	0.003	0.03	42.56	1.4	427.3	0.192E-03
	Pu240		5.144	5.144	0.000				427.3	0.192E-03
Totals:		1.055	<--valid peaks only-->				77.54			

DETECTOR CALIBRATION
Energy(MEV) = 4.104 + (0.0046)*Channel
Energy range (MeV): 4.104 TO 6.460
Efficiency = 0.0996 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	35287.0	100.000
Smoothed	35287.0	100.000
Composite fit	37221.3	105.482
Residuals	-1934.3	-5.482

Analyzed by: _____
EMB

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 359 TO 376.

Spectrum 13a1314.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 5277.6

```
3
3
.3
..3
...  3
.....   3
.......    3
..............     3
........................... 3
.........................................3..
.......................................................................3.....
.......................................................................3.
    .....3
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1
1
.1
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2..  1
..     1
....      1
.......        1
..............     1
........................... 1
.........................................1.......
.......................................................1...
...........................1
1
```

Raw Data Dump for AEA Spectrum: 13a1314.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	1.	1.	1.	2.	3.	0.	1.
31	0.	2.	1.	1.	4.	2.	3.	1.	1.	1.
41	0.	1.	1.	2.	2.	1.	0.	3.	1.	1.
	4.	1.	5.	1.	3.	1.	1.	3.	0.	1.
61	1.	2.	0.	3.	3.	2.	3.	2.	4.	4.
71	3.	4.	1.	3.	3.	2.	2.	4.	0.	1.
81	4.	4.	2.	0.	1.	4.	4.	1.	2.	0.
91	2.	3.	1.	3.	2.	5.	5.	1.	3.	1.
101	1.	9.	1.	5.	1.	5.	5.	6.	4.	6.
111	5.	4.	7.	6.	8.	2.	3.	9.	4.	4.
121	3.	8.	6.	4.	5.	5.	11.	4.	7.	6.
131	11.	9.	8.	7.	1.	9.	11.	5.	11.	9.
141	11.	17.	20.	17.	5.	14.	16.	22.	10.	13.
151	18.	22.	14.	11.	19.	16.	22.	12.	22.	19.
161	21.	30.	20.	32.	22.	28.	24.	18.	32.	35.
171	33.	33.	34.	31.	42.	44.	45.	48.	41.	46.
181	53.	53.	66.	71.	65.	73.	83.	88.	94.	99.
191	100.	103.	110.	125.	123.	156.	138.	166.	171.	180.
201	220.	190.	226.	263.	272.	294.	302.	348.	367.	356.
211	404.	449.	439.	521.	532.	571.	580.	660.	637.	694.
221	652.	752.	731.	798.	811.	834.	815.	803.	753.	559.
231	328.	161.	57.	22.	10.	3.	1.	5.	4.	3.
241	2.	8.	4.	6.	5.	2.	5.	5.	6.	7.
251	8.	7.	9.	6.	5.	8.	8.	6.	8.	7.
261	4.	5.	3.	8.	3.	0.	7.	3.	4.	7.
271	7.	7.	4.	6.	5.	6.	14.	17.	7.	5.
281	16.	6.	18.	19.	17.	15.	21.	14.	19.	19.
291	18.	16.	19.	27.	27.	27.	30.	31.	34.	28.
301	29.	27.	28.	32.	26.	32.	19.	18.	27.	33.
311	27.	32.	37.	40.	39.	60.	40.	50.	47.	49.
	45.	65.	72.	80.	79.	84.	96.	115.	103.	128.
331	150.	133.	155.	145.	155.	208.	216.	229.	219.	231.
341	268.	295.	322.	344.	377.	367.	409.	511.	493.	503.
351	542.	544.	601.	542.	537.	547.	540.	570.	606.	572.
361	571.	542.	411.	217.	59.	11.	3.	0.	2.	1.
371	0.	3.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST2556-BLK
File ID: 14a1419.CNF

Counted on: 10/ 5/95 @10:19
Detector: AEA14
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	686.7	686.7	361.332	361.332	10.000	3.581	5.000	1.273

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	1.041	5.755	5.761	-.006	0.02	21.94	1.9	1286.8	0.580E-03
	Cm243		5.779	5.761	0.018				1727.4	0.778E-03
Totals:		1.041	<--valid peaks only-->				21.94			

DETECTOR CALIBRATION
Energy(MEV) = 4.098 + (0.0046)*Channel
Energy range (MeV): 4.098 TO 6.454
Efficiency = 0.0174 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	10121.0	100.000
Smoothed	10121.0	100.000
Composite fit	10532.8	104.069
Residuals	-411.8	-4.069

Analyzed by: _____
EMB

Spectrum 14a1419.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 3903.9

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1
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Raw Data Dump for AEA Spectrum: 14a1419.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
101	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
121	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
131	1.	0.	0.	0.	1.	1.	1.	1.	0.	0.
141	0.	0.	0.	1.	2.	0.	0.	0.	1.	1.
151	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
161	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
171	1.	0.	2.	1.	0.	0.	0.	0.	0.	0.
181	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
191	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.
201	1.	0.	1.	0.	0.	0.	0.	0.	0.	1.
211	0.	3.	0.	1.	0.	0.	1.	3.	0.	3.
221	0.	1.	2.	6.	0.	8.	3.	5.	4.	2.
231	6.	4.	2.	0.	0.	0.	1.	0.	0.	0.
241	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
251	2.	2.	3.	1.	2.	5.	1.	1.	0.	0.
261	1.	0.	1.	0.	0.	0.	0.	1.	0.	1.
271	0.	1.	1.	0.	0.	0.	0.	2.	0.	2.
281	0.	1.	2.	1.	1.	0.	0.	1.	1.	1.
291	3.	1.	2.	3.	4.	3.	3.	2.	3.	4.
301	4.	7.	7.	2.	1.	3.	4.	0.	1.	2.
311	1.	0.	1.	1.	3.	1.	0.	4.	2.	2.
	2.	4.	2.	3.	0.	5.	9.	10.	8.	8.
331	12.	9.	9.	13.	13.	15.	20.	28.	31.	44.
341	46.	59.	82.	93.	122.	128.	195.	212.	237.	264.
351	363.	449.	428.	412.	429.	416.	539.	583.	633.	720.
361	734.	783.	742.	591.	317.	81.	10.	2.	1.	3.
371	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2448-SAM
File ID: 15a1503.CNF

Counted on: 10/ 5/95 @10:20
Detector: AEA15
Geometry number: 1
Count time: 28805. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	905.5	905.5	366.899	366.899	10.000	3.326	5.000	1.122
2	38.8	38.8	308.091	307.924	10.000	2.754	5.000	0.920
3	68.8	68.8	233.068	233.067	12.000	4.707	6.000	2.208

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Cm244	0.943	5.795	5.777	0.018	0.02	29.52	1.6	264.3	0.119E-03
	Cm243		5.779	5.777	0.002				362.0	0.163E-03
2	Pu238	0.039	5.487	5.506	-.019	0.01	1.23	8.8	15.3	0.691E-05
	Am241		5.479	5.506	-.027				11.7	0.529E-05
3	Pu239	0.064	5.147	5.161	-.014	0.02	2.00	6.3	17.9	0.808E-05
	Pu240		5.144	5.161	-.017				17.9	0.808E-05
Totals:		1.046	<--valid peaks only-->				32.75			

DETECTOR CALIBRATION
Energy(MEV) = 4.089 + (0.0046)*Channel
Energy range (MeV): 4.089 TO 6.444
Efficiency = 0.1117 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	15030.0	100.000
Smoothed	15030.0	100.000
Composite fit	15724.2	104.619
Residuals	-694.2	-4.619

Analyzed by: EMB

Spectrum 15a1503.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6082.4

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Raw Data Dump for AEA Spectrum: 15a1503.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.
91	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
121	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.
131	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.
141	1.	1.	0.	0.	0.	2.	1.	0.	2.	2.
151	1.	0.	1.	1.	1.	2.	1.	1.	1.	1.
161	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.
171	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
181	0.	0.	0.	0.	1.	1.	1.	0.	1.	0.
191	0.	0.	0.	1.	0.	1.	1.	1.	0.	1.
201	1.	1.	1.	2.	0.	2.	2.	5.	2.	4.
211	5.	2.	4.	4.	6.	6.	13.	10.	20.	19.
221	10.	28.	27.	24.	32.	36.	48.	36.	47.	58.
231	63.	84.	79.	76.	67.	54.	32.	26.	13.	3.
241	0.	0.	0.	2.	0.	0.	0.	1.	1.	0.
251	0.	0.	3.	1.	2.	3.	1.	2.	1.	1.
261	2.	2.	1.	0.	1.	1.	0.	0.	1.	3.
271	0.	0.	2.	2.	0.	1.	1.	2.	2.	0.
281	1.	0.	1.	2.	2.	4.	2.	7.	4.	6.
291	11.	8.	11.	9.	13.	25.	12.	20.	22.	33.
301	39.	23.	25.	34.	26.	54.	44.	46.	45.	55.
[illegible]	28.	14.	7.	1.	1.	1.	3.	1.	0.	1.
[illegible]	3.	3.	2.	1.	2.	2.	6.	5.	5.	5.
331	9.	3.	17.	9.	17.	9.	22.	16.	23.	42.
341	26.	49.	47.	57.	70.	87.	98.	106.	122.	174.
351	197.	212.	242.	320.	398.	421.	485.	564.	624.	560.
361	600.	593.	750.	797.	837.	941.	1026.	1021.	915.	567.
371	196.	47.	3.	1.	0.	0.	1.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2448-DUP
File ID: 16a1695.CNF

Counted on: 10/ 5/95 @10:20
Detector: AEA16
Geometry number: 1
Count time: 28806. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	936.1	936.1	362.209	362.209	10.000	2.905	5.000	1.146
2	53.4	53.4	303.806	303.754	8.000	3.239	4.000	1.229
3	85.8	85.8	229.903	229.903	12.000	4.378	6.000	2.193

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu236	0.893	5.755	5.750	0.0050	.01	26.94	1.7	2067.3	0.931E-03
2	Pu238	0.053	5.487	5.481	0.0060	.01	1.61	7.3	168.1	0.757E-04
	Am241		5.479	5.481	-.002				128.7	0.580E-04
3	Pu239	0.079	5.147	5.141	0.0060	.02	2.38	5.8	178.7	0.805E-04
	Pu240		5.144	5.141	0.003				178.7	0.805E-04
		---					---			
Totals:		1.025	<--valid peaks only-->				30.93			

DETECTOR CALIBRATION
Energy(MEV) = 4.084 + (0.0046)*Channel
Energy range (MeV): 4.084 TO 6.439
Efficiency = 0.0133 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	14485.0	100.000
Smoothed	14485.0	100.000
Composite fit	14849.9	102.519
Residuals	-364.9	-2.519

Analyzed by: _____
EMB

Spectrum 16a1695.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 5089.0

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Raw Data Dump for AEA Spectrum: 16a1695.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
101	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
111	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
121	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
131	0.	1.	0.	1.	2.	0.	2.	0.	0.	2.
141	1.	0.	0.	0.	1.	1.	0.	2.	2.	1.
151	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
161	1.	0.	0.	0.	0.	1.	0.	0.	1.	2.
171	1.	0.	0.	0.	1.	1.	1.	2.	0.	0.
181	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.
191	0.	0.	1.	1.	0.	1.	1.	1.	2.	2.
201	1.	4.	4.	3.	4.	2.	4.	8.	4.	5.
211	5.	12.	11.	11.	13.	18.	25.	28.	22.	31.
221	37.	39.	35.	40.	40.	55.	76.	85.	99.	106.
231	90.	74.	66.	47.	24.	6.	2.	0.	0.	1.
241	0.	1.	0.	1.	1.	1.	1.	0.	2.	5.
251	3.	2.	2.	4.	5.	6.	5.	7.	2.	2.
261	2.	1.	1.	0.	2.	3.	1.	3.	1.	4.
271	1.	1.	2.	0.	0.	1.	3.	1.	1.	8.
281	6.	3.	4.	4.	7.	11.	4.	15.	6.	14.
291	7.	21.	27.	25.	30.	42.	33.	31.	36.	35.
301	39.	58.	72.	52.	70.	55.	31.	13.	2.	5.
[illegible]	4.	5.	2.	6.	0.	3.	4.	6.	11.	6.
[illegible]	5.	4.	4.	5.	6.	4.	5.	11.	11.	13.
331	13.	18.	9.	20.	14.	19.	36.	23.	39.	36.
341	51.	56.	90.	96.	114.	118.	162.	184.	253.	317.
351	391.	488.	561.	527.	521.	512.	531.	551.	746.	815.
361	939.	1103.	1135.	993.	595.	214.	42.	6.	1.	0.
371	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
481	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2449-SAM
File ID: 17a1784.CNF

Counted on: 10/ 5/95 @10:21
Detector: AEA17
Geometry number: 1
Count time: 28805. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	662.3	662.3	358.769	358.769	10.000	3.842	5.000	1.249
2	14.3	14.3	301.183	300.687	8.000	2.341	4.000	0.623
3	19.6	19.6	228.076	228.071	10.000	3.214	5.000	1.121

PEAK RESULTS
Peak Error Limit: 30%

Peak	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu236	1.003	5.755	5.741	0.014	0.02	22.68	1.9	1402.5	0.632E-03
2	Pu238	0.023	5.487	5.473	0.014	0.01	0.52	14.7	44.0	0.198E-04
	Am241		5.479	5.473	0.006				33.7	0.152E-04
3	Pu239	0.027	5.147	5.139	0.008	0.01	0.62	11.4	37.6	0.169E-04
	Pu240		5.144	5.139	0.005				37.6	0.169E-04
Totals:		1.054	<--valid peaks only-->				23.82			

DETECTOR CALIBRATION
Energy(MEV) = 4.090 + (0.0046)*Channel
Energy range (MeV): 4.090 TO 6.445
Efficiency = 0.0165 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	10850.0	100.000
Smoothed	10850.0	100.000
Composite fit	11436.2	105.403
Residuals	-586.2	-5.403

Analyzed by: _____
EMB

Spectrum 17a1784.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4489.9

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Raw Data Dump for AEA Spectrum: 17a1784.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	1.	2.	0.	1.	1.	0.	1.
21	1.	1.	0.	0.	0.	0.	0.	1.	0.	0.
31	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	1.	0.	0.	0.	0.	1.	0.	1.
71	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.
81	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
91	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
111	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.
121	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.
131	3.	1.	0.	4.	3.	2.	1.	1.	1.	3.
141	3.	1.	3.	2.	2.	2.	2.	4.	4.	4.
151	9.	3.	3.	3.	7.	4.	4.	1.	0.	1.
161	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
171	0.	0.	0.	0.	0.	1.	0.	0.	1.	0.
181	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
191	0.	0.	1.	0.	0.	0.	0.	0.	2.	2.
201	1.	1.	1.	4.	1.	2.	3.	4.	4.	3.
211	1.	4.	3.	4.	5.	10.	6.	13.	7.	9.
221	9.	18.	16.	25.	14.	17.	10.	27.	21.	16.
231	16.	1.	5.	2.	0.	0.	0.	0.	0.	0.
241	0.	0.	0.	0.	1.	2.	1.	1.	0.	0.
251	0.	2.	1.	3.	2.	0.	3.	0.	0.	3.
261	0.	1.	0.	1.	0.	0.	0.	1.	2.	0.
271	1.	0.	1.	2.	0.	0.	0.	1.	2.	3.
281	1.	1.	1.	2.	1.	6.	8.	4.	10.	10.
291	10.	13.	10.	19.	12.	9.	20.	16.	19.	19.
301	18.	19.	25.	12.	5.	4.	2.	2.	2.	0.
311	2.	0.	4.	0.	3.	6.	4.	6.	8.	5.
	3.	6.	9.	4.	7.	8.	13.	5.	8.	24.
331	14.	21.	19.	25.	24.	39.	48.	61.	74.	81.
341	109.	112.	142.	188.	197.	229.	329.	345.	423.	405.
351	473.	464.	447.	417.	535.	576.	648.	708.	760.	710.
361	633.	468.	205.	60.	9.	4.	0.	3.	2.	0.
371	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2449-DUP
File ID: 18a1822.CNF

Counted on: 10/ 5/95 @10:21
Detector: AEA18
Geometry number: 1
Count time: 28806. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	804.3	804.3	362.438	362.438	10.000	3.119	5.000	1.136
2	22.7	22.7	304.701	304.584	10.000	2.316	5.000	0.799
3	22.2	22.2	230.410	230.408	12.000	3.511	6.000	1.733

PEAK RESULTS
Peak Error Limit: 30%

Peak	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu236	**0.983**	**5.755**	**5.754**	**0.0010**	**.01**	**24.67**	**1.8**	**3032.9**	**0.137E-02**
2	Pu238	0.027	5.487	5.487	0.0000	.01	0.69	11.9	115.0	0.518E-04
	Am241		5.479	5.487	-.008				88.1	0.397E-04
3	Pu239	0.023	5.147	5.146	0.0010	.02	0.59	11.7	70.5	0.318E-04
	Pu240		5.144	5.146	-.002				70.5	0.318E-04
		---					---			
Totals:		1.034	<--valid peaks only-->				25.94			

DETECTOR CALIBRATION
Energy(MEV) = 4.086 + (0.0046)*Channel
Energy range (MeV): 4.086 TO 6.442
Efficiency = 0.0083 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	12051.0	100.000
Smoothed	12051.0	100.000
Composite fit	12454.8	103.351
Residuals	-403.8	-3.351

Analyzed by: _____
EMB

Spectrum 18a1822.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4585.8

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Raw Data Dump for AEA Spectrum: 18a1822.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.
	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
111	0.	0.	0.	0.	1.	1.	0.	1.	0.	1.
121	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
131	1.	0.	0.	0.	0.	1.	1.	2.	2.	2.
141	0.	0.	0.	0.	2.	1.	3.	0.	4.	2.
151	1.	3.	0.	2.	2.	2.	1.	6.	0.	0.
161	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
171	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
181	0.	0.	0.	0.	0.	0.	2.	0.	1.	0.
191	0.	0.	0.	1.	0.	0.	2.	1.	1.	2.
201	2.	0.	3.	2.	1.	2.	1.	3.	0.	3.
211	1.	2.	3.	5.	2.	4.	3.	4.	5.	7.
221	9.	11.	9.	9.	13.	17.	14.	18.	17.	33.
231	21.	23.	15.	12.	4.	4.	0.	0.	0.	1.
241	3.	1.	0.	0.	0.	1.	0.	2.	0.	0.
251	0.	0.	3.	0.	0.	1.	4.	4.	2.	0.
261	1.	1.	0.	0.	0.	0.	0.	2.	0.	1.
271	1.	2.	2.	3.	2.	1.	0.	0.	1.	0.
281	1.	2.	4.	4.	3.	10.	3.	6.	5.	4.
291	7.	12.	12.	14.	12.	9.	14.	14.	18.	16.
301	16.	19.	15.	35.	27.	34.	14.	12.	7.	1.
311	5.	8.	4.	4.	5.	2.	5.	3.	5.	7.
	3.	3.	3.	8.	5.	9.	9.	9.	14.	11.
331	28.	18.	19.	22.	15.	18.	26.	40.	36.	34.
341	51.	41.	81.	82.	107.	129.	185.	216.	208.	299.
351	346.	424.	441.	482.	508.	464.	486.	507.	614.	680.
361	757.	949.	957.	883.	646.	285.	79.	19.	3.	0.
371	2.	0.	0.	1.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

LABCORE Completed Worklist Report for Worklist# 2557

Analyst: rwk **Instrument:** PU01 **Book#** 104643

Method: LA-943-127 Rev/Mod B-D

Worklist Comment: Determine sample size using Ludlum. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0	@PU23901	PU23901	LIQUID	1.28E-01	1.30E-1	101.560	% Recovery
1	STD		0	@PU23901	PU23901E	LIQUID	1.00	2.52E+00	2.520	% Ct. Error
1	STD		0	@PU23901	PU23901T	LIQUID	100	5.36E+01	53.600	% Recovery
2	BLNK		0	@PU23901	PU23901	LIQUID	1	<3.30E-6		uCi/mL
2	BLNK		0	@PU23901	PU23901T	LIQUID	100	8.97E+01	89.700	% Recovery
2	BLNK		0	@PU23901	PU23901E	LIQUID	1.00	1.00E+02	100.000	% Ct. Error
3	SAMPLE	S95T002471	0	@PU23901	PU23901	LIQUID	N/A	9.57E-06	3.650e-006	uCi/mL
3	SAMPLE	S95T002471	0	@PU23901	PU23901T	LIQUID	N/A	9.37E+01	1.000e-007	% Recovery
3	SAMPLE	S95T002471	0	@PU23901	PU23901E	LIQUID	N/A	4.97E+00	0.000	% Ct. Error
4	DUP	S95T002471	0	@PU23901	PU23901	LIQUID	9.57E-6	1.02E-5	6.370	RPD
4	DUP	S95T002471	0	@PU23901	PU23901T	LIQUID	100	8.70E+01	87.000	% Recovery
4	DUP	S95T002471	0	@PU23901	PU23901E	LIQUID	1.00	5.00E+00	5.000	% Ct. Error
5	SAMPLE	S95T002472	0	@PU23901	PU23901	LIQUID	N/A <	1.80E-05	1.800e-005	uCi/mL
5	SAMPLE	S95T002472	0	@PU23901	PU23901T	LIQUID	N/A	1.82E+01	1.000e-007	% Recovery
5	SAMPLE	S95T002472	0	@PU23901	PU23901E	LIQUID	N/A	1.00E+02	0.000	% Ct. Error
6	DUP	S95T002472	0	@PU23901	PU23901	LIQUID	<1.80E-5	<3.13E-6		RPD
<	DUP	S95T002472	0	@PU23901	PU23901T	LIQUID	100	9.77E+01	97.700	% Recovery
	DUP	S95T002472	0	@PU23901	PU23901E	LIQUID	1.00	8.29E+00	8.290	% Ct. Error

Final page for worklist# 2557

Analyst Signature **Date** **Analyst Signature** **Date**

2 Oct 95
Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2557

Analyst: RK **Instrument:** PU01 _____ **Book#** 104B43

Method: LA-943-127 Rev/Mod B-0

Worklist Comment: Determine sample size using Ludlum. --LLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@PU23901	LIQUID		
2	BLNK				@PU23901	LIQUID		
3	SAMPLE	S95T002471	0		@PU23901	LIQUID	95000140	AY-102 GRAB
		Analytes Requested: PU23901 , PU23901E, PU23901T						
4	DUP	S95T002471	0		@PU23901	LIQUID		
5	SAMPLE	S95T002472	0		@PU23901	LIQUID	95000140	AY-102 GRAB
		Analytes Requested: PU23901 , PU23901E, PU23901T						
6	DUP	S95T002472	0		@PU23901	LIQUID		

Final page for worklist # 2557

Analyst Signature 9/29/95 Date

Analyst Signature 10/2/95 Date

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID

							STD
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)		0.449
STD	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC	(C238)		0.000
Work List	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)		0.571
2557	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			4191
Test Code	DIGEST DILUTION FACTOR	DDF	1.000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)		6.000
Matrix	DETECTOR NUMBER		1	PU 236 cpm			22.490
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			0.000
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			28.550
95002712	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L			1.2957E+02
0	PU-238 TRACER VALUE (dpm/mL		0.000				
Sample Prep	STANDARD BOOK NO		104B43				
N/A	STANDARD VALUE in µCi/mL		0.128				
Sample #							
WRKLST#2557							
Instrument Code	Decay Time = Date Counted - Tracer Preparation Date						
AL10539	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95}]						
Prepared By	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)* 1/EFF *C236*100/Pu-236 Decay Corr'd Value * SPKV						
MCB	Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(2220000 dpm/µCi)]						
Chemist	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)						
LLF	Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]						
Analyst	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100						
RWK							
Date Complete	v RESULTS v						
10/02/95	Pu 239/240 µCi/mL		1.30E-01				
Analysis Date	Relative Counting Error	=	2.5%				
09/29/95							
Analysis Time							
06:00 AM							
Sample Point							
AY-102 GRAB	Pu 236 Tracer Recovery	=	53.6%				

DETECTION LEVELS in µCi/mL
Pu 239/240
1.27E-02

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

STANDARD.WB1 REV 1.2 943127ML

WORKBOOK PAGE: BLANK2

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)	BLNK 1.023
BLNK	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.000
2557	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		3036
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm (Bkg)		3.000
Matrix	DETECTOR NUMBER		2	PU 236 cpm		34.350
LIQUID	EFFICIENCY FACTOR	EFF	0.5000	PU 238 cpm		0.000
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm		0.000
95002712	TRACER PREPARATION VALUE (dpm/mL)		2265.00	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.50	Pu 239/240 µCi/L =	<	3.297E-03
0	PU-238 TRACER VALUE (dpm/mL)		0.00			
Sample Prep						
N/A						
Sample #	Decay Time = Date Counted - Tracer Preparation Date					
WRKLST#2557	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]					
Instrument Code	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)*C236*100/(Pu-236 Decay Corr'd Value * SPKV*EFF)					
AL10540	Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]					
Prepared By	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)					
MCB	Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]					
Chemist	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100					
LLF						
Analyst						
RWK						
Date Complete	v RESULTS v					
10/02/95	Pu 239/240 µCi/mL		< 3.30E-06			
Analysis Date	Relative Counting Error	=	100.0%			
09/29/95						
Analysis Time	NOTE: Pu 238 Result is a LESS THAN Value.					
06:00 AM	Pu 238 µCimL		< 3.30E-06			
Sample Point	Relative Counting Error	=	100.0%			
AY-102 GRAB	Pu 236 Tracer Recovery	=	89.7%			

DETECTION LEVELS in µCi/mL	
Pu 239/240	3.30E-06
Pu 238	3.30E-06

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

BLANK.WB1 REV 1.2 943127ML

WORKBOOK PAGE: SAM3

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

						SAMPLE
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)	0.885
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.068
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.084
2557	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		3676
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)	4.000
Matrix	DETECTOR NUMBER		3	PU 236 cpm		37.360
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		2.880
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm		3.540
95002712	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L		9.5749E-03
0	PU-238 TRACER VALUE (dpm/mL)		0.000			

Sample Prep
N/A

Sample #
S95T002471

Instrument Code
AL10541

Prepared By
MCB

Chemist
LLF

Analyst
RWK

Date Complete
10/02/95

Analysis Date
09/29/95

Analysis Time
06:00 AM

Sample Point
AY-102 GRAB

Decay Time = Date Counted - Tracer Preparation Date
Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)}]
Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)
Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]
Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)
Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]
Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

v RESULTS v

				DETECTION LEVELS in µCi/mL
Pu 239/240 µCi/mL		9.57E-06		Pu 239/240
Relative Counting Error	=	5.0%		3.65E-06
Pu 238 µCimL		7.75E-06		Pu 238
Relative Counting Error	=	5.5%		3.65E-06
Pu 236 Tracer Recovery	=	93.7%		

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: DUP4

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

							DUP
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)		0.874
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)		0.066
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.088
2557	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			3463
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)		4.000
Matrix	DETECTOR NUMBER		3	PU 236 cpm			36.030
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			2.640
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			3.530
95002712	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L			1.0157E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000				
Sample Prep							
N/A							

Sample #
S95T002471
Instrument Code
AL10541
Prepared By
MCB
Chemist
LLF
Analyst
RWK
Date Complete
10/02/95
Analysis Date
09/29/95
Analysis Time
06:00 AM
Sample Point
AY-102 GRAB

Decay Time = Date Counted - Tracer Preparation Date
Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]
Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)
Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]
Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)
Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]
Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

v RESULTS v

				DETECTION LEVELS in µCi/mL
Pu 239/240 µCi/mL		1.02E-05		Pu 239/240
Relative Counting Error	=	5.0%		3.98E-06
Pu 238 µCimL		7.62E-06		Pu 238
Relative Counting Error	=	5.7%		3.98E-06
Pu 236 Tracer Recovery	=	87.0%		

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: SAM5

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

						SAMPLE
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)	0.919
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.000
2557	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		847
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)	6.000
Matrix	DETECTOR NUMBER		1	PU 236 cpm		7.060
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		0.000
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm		0.000
95002712	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L =	<	1.8047E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000			

Sample Prep: N/A

Sample #: S95T002472

Instrument Code: AL10539

Prepared By: MCB

Chemist: LLF

Analyst: RWK

Date Complete: 10/02/95

Analysis Date: 09/29/95

Analysis Time: 06:00 AM

Sample Point: AY-102 GRAB

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)}]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

v RESULTS v

Pu 239/240 µCi/mL		< 1.80E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	100.0%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240 1.80E-05
Pu 238 µCimL		< 1.80E-05	
Relative Counting Error	=	100.0%	Pu 238 1.80E-05
Pu 236 Tracer Recovery	=	18.2%	

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: DUP6

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

							DUP
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)		0.991
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)		0.025
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.029
2557	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			3402
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)		3.000
Matrix	DETECTOR NUMBER		2	PU 236 cpm			40.730
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			1.050
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			1.200
95002712	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L =		<	3.1255E-03
0	PU-238 TRACER VALUE (dpm/mL)		0.000				

Sample Prep: N/A

Sample #: S95T002472

Instrument Code: AL10540

Prepared By: MCB

Chemist: LLF

Analyst: RWK

Date Complete: 10/02/96

Analysis Date: 09/29/95

Analysis Time: 06:00 AM

Sample Point: AY-102 GRAB

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

v RESULTS v

Pu 239/240 µCi/mL		< 3.13E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	8.3%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240 3.13E-06
Pu 238 µCimL		< 3.13E-06	
Relative Counting Error	=	8.8%	Pu 238 3.13E-06
Pu 236 Tracer Recovery	=	97.7%	

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

Raymond 9.29.95

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2557-ST
File ID: 13a1300.CNF

Counted on: 9/29/95 @10:32
Detector: AEA13
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	718.7	718.7	359.341	359.341	10.000	4.018	5.000	1.535
2?	11.0	11.0	302.027	301.796	10.000	2.218	5.000	0.681
3	1017.4	1017.4	226.370	226.370	14.000	4.816	7.000	2.481

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu236	0.449	5.755	5.758	-.0030	2.02	22.49	1.9	1233.9	0.556E-03
2		????		5.493			0.36	16.9		
3	Pu239	0.571	5.147	5.146	0.0010	2.02	28.55	1.7	1535.2	0.692E-03
	Pu240		5.144	5.146	-.002				1535.2	0.692E-03
Totals:		1.020	<--valid peaks only-->				51.05			

DETECTOR CALIBRATION
Energy(MEV) = 4.105 + (0.0046)*Channel
Energy range (MeV): 4.105 TO 6.460
Efficiency = 0.0186 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	24026.0	100.000
Smoothed	24026.0	100.000
Composite fit	24676.1	102.706
Residuals	-650.1	-2.706

Analyzed by: ALJ

WHC-SD-WM-DP-150, REV. 0

Spectrum 13a1300.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6397.8

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3
.. 3
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.   ....3
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2
2
2
2

1
   1
....    1
.......................1..
.................................................1.
...........................1
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Raw Data Dump for AEA Spectrum: 13a1300.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	1.	0.	0.	1.	0.
31	0.	0.	1.	0.	0.	0.	0.	1.	1.	0.
41	1.	0.	1.	0.	0.	0.	1.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
81	0.	0.	1.	1.	0.	0.	0.	0.	0.	1.
91	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
101	1.	0.	0.	0.	0.	0.	0.	0.	2.	1.
111	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
121	1.	0.	0.	0.	1.	0.	0.	0.	2.	0.
131	2.	1.	0.	0.	1.	2.	1.	0.	1.	1.
141	1.	0.	1.	0.	0.	1.	1.	0.	2.	0.
151	1.	0.	1.	1.	1.	0.	1.	0.	0.	0.
161	0.	1.	1.	0.	0.	0.	1.	0.	0.	0.
171	0.	1.	0.	0.	1.	0.	1.	0.	0.	0.
181	0.	2.	0.	0.	0.	3.	2.	0.	0.	1.
191	0.	1.	2.	6.	1.	4.	7.	3.	3.	8.
201	11.	12.	15.	24.	15.	44.	33.	49.	65.	78.
211	114.	157.	196.	232.	272.	334.	415.	465.	551.	532.
221	653.	767.	869.	986.	1113.	1155.	1136.	1057.	893.	643.
231	375.	160.	62.	21.	7.	0.	0.	0.	0.	1.
241	1.	0.	1.	0.	1.	0.	3.	1.	1.	1.
251	0.	3.	0.	4.	0.	3.	1.	1.	3.	0.
261	1.	0.	2.	0.	0.	0.	0.	1.	2.	0.
271	0.	1.	1.	0.	0.	0.	1.	0.	0.	0.
281	1.	0.	2.	0.	2.	0.	4.	5.	8.	6.
291	2.	12.	5.	10.	11.	10.	10.	10.	8.	10.
301	16.	13.	16.	15.	4.	4.	4.	1.	1.	0.
311	2.	0.	0.	1.	0.	0.	1.	1.	0.	0.
[illegible]	0.	1.	0.	4.	2.	1.	2.	2.	3.	7.
331	6.	4.	12.	9.	13.	11.	13.	33.	33.	56.
341	59.	77.	92.	124.	158.	189.	255.	281.	330.	428.
351	427.	457.	453.	508.	551.	580.	649.	789.	761.	824.
361	755.	621.	397.	162.	44.	5.	1.	1.	1.	1.
371	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

09 29 95

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S

Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2557-BL
File ID: 14a1403.CNF

Counted on: 9/29/95 @10:33
Detector: AEA14
Geometry number: 1
Count time: 28808. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	1217.3	1217.3	360.893	360.893	10.000	3.377	5.000	1.448

PEAK RESULTS

Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	1.023	5.755	5.763	-.008	0.02	34.35	1.5	359.5	0.162E-03
	Cm243		5.779	5.763	0.016				482.6	0.217E-03
Totals:		1.023	<--valid peaks only-->				34.35			

DETECTOR CALIBRATION

Energy(MEV) = 4.103 + (0.0046)*Channel
Energy range (MeV): 4.103 TO 6.458
Efficiency = 0.0975 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	16127.0	100.000
Smoothed	16126.9	99.999
Composite fit	16490.7	102.255
Residuals	-363.7	-2.255

Analyzed by: _____
ALJ

WHC-SD-WM-DP-150, REV. 0

Spectrum 14a1403.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6703.5

```
1
  1
...       1
.........................1.
.......................................................................1..
.......................................................1
1...
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Raw Data Dump for AEA Spectrum: 14a1403.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.
81	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
111	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
121	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.
131	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.
141	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
151	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
161	0.	0.	1.	1.	0.	1.	0.	0.	0.	0.
171	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.
181	0.	0.	1.	0.	0.	0.	1.	1.	1.	0.
191	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
201	0.	0.	1.	0.	0.	0.	1.	2.	1.	2.
211	2.	0.	3.	1.	0.	2.	2.	1.	2.	1.
221	5.	5.	3.	4.	10.	12.	6.	6.	8.	11.
231	8.	4.	1.	0.	0.	0.	1.	1.	0.	0.
241	0.	0.	0.	0.	1.	0.	2.	1.	1.	2.
251	0.	1.	1.	2.	7.	8.	7.	3.	1.	0.
261	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
271	0.	1.	0.	0.	1.	0.	0.	1.	0.	0.
281	1.	2.	0.	0.	0.	0.	1.	3.	0.	1.
291	2.	3.	4.	1.	2.	5.	5.	5.	3.	5.
301	8.	7.	6.	7.	4.	2.	2.	2.	1.	1.
311	0.	2.	0.	0.	1.	0.	2.	1.	1.	0.
[illegible]	1.	2.	1.	2.	7.	5.	5.	5.	5.	7.
331	3.	5.	6.	4.	5.	16.	17.	20.	25.	37.
341	57.	56.	94.	108.	134.	193.	240.	318.	405.	507.
351	609.	610.	690.	719.	669.	719.	876.	1014.	1177.	1384.
361	1370.	1409.	1196.	760.	299.	56.	8.	2.	2.	1.
371	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

9/29/95

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2471-SAM
File ID: 15a1588.CNF

Counted on: 9/29/95 @10:33
Detector: AEA15
Geometry number: 1
Count time: 28805. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	1337.6	1337.6	365.794	365.794	10.000	3.262	5.000	1.406
2	104.4	104.4	307.394	307.373	10.000	2.860	5.000	1.204
3	134.9	134.9	232.541	232.540	10.000	4.120	5.000	2.237

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Cm244	0.885	5.795	5.779	0.016	0.02	37.36	1.5	332.9	0.150E-03
	Cm243		5.779	5.779	0.000				456.1	0.205E-03
2	Pu238	0.068	5.487	5.510	-.023	0.01	2.88	5.4	35.6	0.160E-04
	Am241		5.479	5.510	-.031				27.3	0.123E-04
3	Pu239	0.084	5.147	5.166	-.019	0.02	3.54	4.8	31.6	0.142E-04
	Pu240		5.144	5.166	-.022				31.6	0.142E-04
		---					---			
Totals:		1.037	<--valid peaks only-->				43.78			

DETECTOR CALIBRATION
Energy(MEV) = 4.096 + (0.0046)*Channel
Energy range (MeV): 4.096 TO 6.452
Efficiency = 0.1122 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	20271.0	100.000
Smoothed	20271.0	100.000
Composite fit	21015.8	103.674
Residuals	-744.8	-3.674

Analyzed by: _____
ALJ

Spectrum 15a1588.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 8861.9

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Raw Data Dump for AEA Spectrum: 15a1588.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
[illegible]	1.	0.	0.	1.	0.	0.	0.	0.	1.	0.
71	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	1.	0.	0.	0.	0.	0.	0.	2.
91	0.	0.	0.	0.	0.	2.	1.	0.	0.	0.
101	0.	0.	1.	0.	0.	1.	0.	0.	1.	0.
111	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.
121	0.	0.	0.	0.	1.	0.	1.	0.	1.	0.
131	1.	0.	0.	0.	1.	0.	1.	2.	1.	0.
141	1.	1.	0.	0.	0.	1.	0.	1.	1.	2.
151	0.	0.	0.	2.	4.	1.	2.	0.	1.	1.
161	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
171	0.	0.	1.	0.	0.	1.	2.	0.	4.	0.
181	0.	0.	0.	1.	0.	1.	0.	1.	0.	1.
191	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
201	0.	0.	0.	3.	1.	0.	1.	3.	0.	1.
211	4.	3.	2.	6.	11.	9.	8.	16.	24.	29.
221	32.	44.	45.	48.	59.	72.	78.	84.	101.	145.
231	140.	127.	161.	155.	100.	84.	45.	20.	7.	0.
241	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.
251	0.	1.	0.	0.	0.	0.	2.	3.	2.	1.
261	3.	1.	0.	1.	0.	0.	0.	0.	0.	0.
271	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.
281	0.	0.	1.	1.	3.	6.	4.	2.	3.	9.
291	15.	18.	23.	26.	30.	50.	41.	43.	59.	56.
301	66.	62.	66.	82.	85.	110.	112.	132.	115.	77.
[illegible]	37.	12.	1.	0.	0.	0.	0.	0.	1.	1.
	0.	0.	0.	1.	3.	1.	5.	1.	3.	5.
[illegible]	4.	4.	3.	4.	5.	4.	1.	7.	3.	14.
341	21.	19.	25.	23.	43.	69.	70.	78.	113.	202.
351	209.	285.	399.	490.	549.	675.	709.	738.	683.	721.
361	767.	898.	1153.	1313.	1393.	1632.	1456.	1248.	756.	287.
371	66.	11.	0.	0.	2.	2.	1.	1.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

9-29-95

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2471-DUP
File ID: 16a1680.CNF

Counted on: 9/29/95 @10:34
Detector: AEA16
Geometry number: 1
Count time: 28808. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	1147.4	1147.4	360.816	360.816	12.000	3.901	6.000	1.539
2	93.5	93.5	302.453	302.407	12.000	3.826	6.000	1.720
3	120.7	120.7	228.805	228.805	14.000	5.209	7.000	2.566

PEAK RESULTS
Peak Error Limit: 30%

Peak	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu236	0.874	5.755	5.748	0.007	0.02	35.03	1.5	4155.9	0.187E-02
2	Pu238	0.066	5.487	5.480	0.007	0.02	2.64	5.7	426.9	0.192E-03
	Am241		5.479	5.480	-.001				327.0	0.147E-03
3	Pu239	0.088	5.147	5.141	0.006	0.02	3.53	4.8	410.7	0.185E-03
	Pu240		5.144	5.141	0.003				410.7	0.185E-03
		---					---			
Totals:		1.028	<--valid peaks only-->				41.20			

DETECTOR CALIBRATION
Energy(MEV) = 4.089 + (0.0046)*Channel
Energy range (MeV): 4.089 TO 6.444
Efficiency = 0.0086 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	19235.0	100.000
Smoothed	19235.0	100.000
Composite fit	19782.0	102.844
Residuals	-547.0	-2.844

Analyzed by: _____
ALJ

Spectrum 16a1680.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6711.8

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Raw Data Dump for AEA Spectrum: 16a1680.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.
61	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
111	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
121	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
131	0.	0.	0.	0.	0.	0.	0.	1.	0.	2.
141	1.	0.	3.	1.	1.	1.	3.	0.	1.	2.
151	2.	1.	0.	3.	0.	2.	1.	0.	0.	0.
161	0.	0.	0.	0.	2.	1.	1.	1.	0.	1.
171	0.	0.	2.	0.	1.	0.	0.	0.	0.	0.
181	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.
191	0.	0.	0.	0.	0.	0.	0.	2.	3.	2.
201	2.	0.	2.	2.	3.	2.	2.	2.	6.	10.
211	8.	11.	14.	17.	23.	24.	48.	38.	42.	46.
221	61.	74.	73.	90.	98.	116.	114.	147.	129.	131.
231	114.	95.	53.	46.	15.	7.	2.	0.	0.	0.
241	0.	1.	0.	2.	0.	0.	1.	1.	0.	1.
251	1.	3.	1.	1.	1.	1.	2.	1.	1.	2.
261	0.	0.	0.	0.	0.	0.	0.	2.	0.	2.
271	0.	1.	1.	0.	1.	3.	0.	1.	2.	5.
281	1.	7.	0.	7.	11.	14.	16.	11.	21.	21.
291	28.	44.	47.	32.	55.	58.	73.	69.	93.	66.
301	102.	115.	108.	89.	89.	62.	32.	8.	2.	1.
311	0.	1.	0.	0.	0.	1.	1.	1.	2.	2.
[illegible]	2.	4.	1.	3.	3.	3.	8.	8.	5.	7.
331	9.	13.	8.	9.	10.	18.	18.	25.	34.	54.
341	61.	79.	103.	175.	190.	239.	305.	366.	428.	521.
351	624.	630.	745.	713.	700.	812.	834.	1025.	1145.	1242.
361	1291.	1286.	1081.	807.	410.	112.	13.	1.	0.	1.
371	3.	1.	0.	0.	0.	0.	0.	0.	0.	1.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2472-SAM
File ID: 17a1773.CNF

Counted on: 9/29/95 @10:34
Detector: AEA17
Geometry number: 1
Count time: 28810. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	227.0	227.0	359.063	359.063	12.000	3.540	6.000	1.309

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.919	5.755	5.746	0.009	0.02	7.06	3.4	615.5	0.277E-03
		---					---			
' ıls:		0.919	<--valid peaks only-->				7.06			

DETECTOR CALIBRATION
Energy(MEV) = 4.094 + (0.0046)*Channel
Energy range (MeV): 4.094 TO 6.449
Efficiency = 0.0117 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	3686.0	100.000
Smoothed	3685.5	99.986
Composite fit	3388.9	91.940
Residuals	297.1	8.060

Analyzed by: _____
ALJ

Spectrum 17a1773.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 1449.9

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Raw Data Dump for AEA Spectrum: 17a1773.CNF

1	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
21	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
81	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
121	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
131	0.	0.	1.	1.	1.	0.	0.	1.	1.	1.
141	0.	0.	0.	1.	0.	1.	1.	0.	0.	2.
151	0.	2.	2.	1.	2.	2.	0.	1.	0.	0.
161	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
171	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.
181	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.
191	0.	1.	0.	0.	1.	0.	1.	0.	0.	0.
201	0.	0.	0.	0.	2.	0.	0.	1.	5.	0.
211	1.	2.	2.	2.	1.	6.	2.	2.	3.	4.
221	1.	7.	4.	6.	10.	7.	10.	4.	17.	6.
231	7.	1.	1.	1.	0.	1.	0.	0.	0.	0.
241	0.	0.	1.	0.	0.	0.	1.	2.	0.	1.
251	0.	0.	0.	2.	0.	1.	1.	0.	1.	1.
261	0.	0.	1.	1.	0.	1.	0.	0.	0.	0.
271	0.	1.	2.	1.	4.	0.	1.	1.	1.	2.
281	0.	1.	1.	0.	4.	2.	6.	2.	4.	5.
291	4.	3.	10.	9.	6.	8.	5.	5.	10.	11.
301	7.	11.	9.	3.	5.	8.	4.	0.	1.	0.
311	4.	1.	4.	4.	4.	4.	1.	5.	2.	4.
[illegible]	4.	6.	6.	8.	5.	9.	9.	9.	9.	12.
331	14.	11.	12.	12.	17.	19.	14.	24.	18.	34.
341	28.	37.	43.	45.	53.	66.	95.	111.	140.	141.
351	100.	133.	133.	138.	151.	186.	197.	250.	262.	269.
361	224.	139.	77.	43.	9.	0.	2.	0.	0.	2.
371	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

9-29-95

Westinghouse Hanford Co.

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2472-DUP
File ID: 18a1811.CNF

Counted on: 9/29/95 @10:35
Detector: AEA18
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	1340.5	1340.5	361.318	361.318	10.000	3.725	5.000	1.457
2	39.6	39.6	303.740	303.560	10.000	2.759	5.000	1.229
3	44.8	44.8	229.552	229.552	14.000	4.400	7.000	2.377

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
	Pu236	0.991	5.755	5.745	0.010	0.02	40.73	1.4	2088.6	0.941E-03
2	Pu238	0.025	5.487	5.480	0.007	0.01	1.05	9.5	73.1	0.329E-04
	Am241		5.479	5.480	-.001				56.0	0.252E-04
3	Pu239	0.029	5.147	5.139	0.008	0.02	1.20	8.2	60.4	0.272E-04
	Pu240		5.144	5.139	0.005				60.4	0.272E-04
		---					---			
Totals:		1.046	<--valid peaks only-->				42.98			

DETECTOR CALIBRATION
Energy(MEV) = 4.083 + (0.0046)*Channel
Energy range (MeV): 4.083 TO 6.439
Efficiency = 0.0199 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	19729.0	100.000
Smoothed	19729.0	100.000
Composite fit	20631.0	104.572
Residuals	-902.0	-4.572

Analyzed by: _____
ALJ

Spectrum 18a1811.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 7415.0

```
3
.3
3

2
.2
2

 1
    1
....       1
...........................1
.......................................................................1...
.............................................................1
.1...
```

Raw Data Dump for AEA Spectrum: 18a1811.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	2.	1.	0.	0.	1.	0.
21	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
71	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
111	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
121	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
131	0.	0.	0.	0.	2.	0.	2.	1.	0.	0.
141	1.	1.	3.	2.	1.	5.	4.	2.	2.	5.
151	2.	2.	4.	3.	0.	1.	4.	4.	3.	0.
161	1.	0.	3.	1.	0.	1.	0.	0.	0.	0.
171	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.
181	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
191	0.	0.	1.	0.	1.	0.	1.	1.	0.	0.
201	0.	0.	0.	2.	0.	0.	1.	1.	1.	1.
211	3.	5.	8.	7.	5.	7.	8.	9.	13.	14.
221	15.	18.	26.	31.	25.	40.	47.	36.	56.	49.
231	49.	37.	24.	19.	7.	6.	0.	0.	0.	0.
241	0.	1.	1.	0.	1.	0.	1.	2.	2.	1.
251	0.	2.	1.	2.	2.	1.	3.	3.	2.	0.
261	1.	0.	1.	0.	0.	0.	1.	1.	0.	0.
271	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.
281	0.	0.	0.	1.	1.	3.	4.	7.	4.	6.
291	10.	9.	14.	13.	34.	21.	33.	23.	29.	36.
301	38.	41.	40.	56.	36.	47.	22.	13.	1.	0.
311	0.	0.	2.	1.	0.	1.	2.	2.	5.	1.
[illegible]	2.	0.	4.	2.	2.	7.	6.	3.	2.	5.
331	7.	9.	3.	9.	17.	12.	15.	26.	38.	30.
341	56.	78.	107.	140.	189.	233.	277.	355.	471.	541.
351	617.	757.	815.	849.	807.	847.	932.	1043.	1227.	1420.
361	1517.	1569.	1372.	1149.	627.	237.	51.	2.	2.	0.
371	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

ORGANIC ANALYSES

LABCORE Completed Worklist Report for Worklist# 2699

Analyst: jdc Instrument: GCMS2 Book# WHC-N-3371

Method: LA-523-405 Rev/Mod 4

Worklist Comment: organic acetone jdc

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLANK			0	ACETONE	LIQ	1	0	0.000	ug/L
2	SAMPLE	S95T002193		0	ACETONE	LIQ	N/A		0.000	ug/L
3	DUP	S95T002193		0	ACETONE	LIQ	90	100	10.530	RPD
4	SAMPLE	S95T002194		0	ACETONE	LIQ	N/A		0.000	ug/L
5	DUP	S95T002194		0	ACETONE	LIQ	160	160	0.000	RPD
6	SAMPLE	S95T002195		0	ACETONE	LIQ	N/A		0.000	ug/L
7	DUP	S95T002195		0	ACETONE	LIQ	970	1000	3.050	RPD
8	SAMPLE	S95T002459		0	ACETONE	LIQ	N/A		0.000	ug/L
9	DUP	S95T002459		0	ACETONE	LIQ	1200	1100	8.700	RPD
10	SAMPLE	S95T002460		0	ACETONE	LIQ	N/A		0.000	ug/L
11	DUP	S95T002460		0	ACETONE	LIQ	1600	1700	6.060	RPD
12	SAMPLE	S95T002473		0	ACETONE	LIQ	N/A		0.000	ug/L
13	DUP	S95T002473		0	ACETONE	LIQ	1200	1200	0.000	RPD
14	SAMPLE	S95T002474		0	ACETONE	LIQ	N/A		0.000	ug/L
15	DUP	S95T002474		0	ACETONE	LIQ	1700	1700	0.000	RPD

Comments Section:

Comments for sample# S95T002193 and test ACETONE .
Tentatively identified compounds were found:
Trimethyl silanol CAS# 1066406
2-propylfuran CAS# 4229918
Normal paraffin hydrocarbons (NPHs)

Comments for sample# S95T002194 and test ACETONE .
Tentatively identified compounds were found:
2-propylfuran CAS# 4229918
Normal paraffin hydrocarbon (NPH)

Comments for sample# S95T002195 and test ACETONE .
Tentatively identified compounds were found:
Trimethylsilanol CAS# 1066406
2-propylfuran CAS# 4229918
Normal paraffin hydrocarbons (NPHs)

Comments for sample# S95T002459 and test ACETONE .
Tentatively identified compound was found:
2-ethyl-1-hexanol CAS# 104767

Comments for sample# S95T002460 and test ACETONE .

LABCORE Completed Worklist Report for Worklist# 2699

.q Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit

Tentatively identified compound was found:
2-ethyl-1-hexanol CAS# 104767

Comments for sample# S95T002473 **and test** ACETONE .
Tentatively identified compound was found:
2-ethyl-1-hexanol CAS# 104767

Comments for sample# S95T002474 **and test** ACETONE .
Tentatively identified compound was found:
2-ethyl-1-hexanol CAS# 104767

Final page for worklist# 2699

Jaydeh Rosa-Chang 10/19/95
Analyst Signature Date

Analyst Signature Date

D E Nelson 10/19/95
Reviewer Signature Date

QUANT REPORT

erator ID: JDC
utput File: ^AI21D::D2
Data File: >AI21D::D5
Name: VBLK70
Misc: METHOD BLANK

Quant Rev: 7
Quant Time: 950921 11:14
Injected at: 950921 10:43
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58
Last Qcal Time: 950921 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.96	128.0	119834	50.00	UG/L	78
14)	1,2-DICHLOROETHANE-d4	7.13	65.0	127315	47.11	UG/L	30
17)	*1,4-DIFLUOROBENZENE	8.15	114.0	472142	50.00	UG/L	85
32)	*CHLOROBENZENE-d5	13.76	117.0	389410	50.00	UG/L	88
35)	TOLUENE-d8	10.90	98.0	401793	51.75	UG/L	96
43)	BROMOFLUOROBENZENE	16.32	95.0	276148	50.42	UG/L	82

* Compound is ISTD

No acetone detected. 9/26/95 JDC

QUANT REPORT

erator ID: JDC
tput File: ^AI28C::D2
Data File: >AI28C::D5
Name: VBLK71
Misc: METHOD BLANK

Quant Rev: 7
Quant Time: 950928 09:37
Injected at: 950928 09:05
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58
Last Qcal Time: 950928 08:29

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.95	128.0	118855	50.00	UG/L	82
14)	1,2-DICHLOROETHANE-d4	7.12	65.0	130178	48.16	UG/L	85
17)	*1,4-DIFLUOROBENZENE	8.15	114.0	460486	50.00	UG/L	88
32)	*CHLOROBENZENE-d5	13.75	117.0	396236	50.00	UG/L	88
35)	TOLUENE-d8	10.91	98.0	410972	48.64	UG/L	95
43)	BROMOFLUOROBENZENE	16.31	95.0	289971	49.49	UG/L	83

* Compound is ISTD

No acetone detected. 10/2/95 JDC

No TIC found.

QUANT REPORT

9/26/95

erator ID: JDC Quant Rev: 7 Quant Time: 950921 14:35
.tput File: ^AI21F::D2 Injected at: 950921 14:03
Data File: >AI21F::D5 Dilution Factor: 1.00000
Name: S95T002193 AW-105 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950921 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.98	128.0	126608 9/26/95	50.00	UG/L	83
8)	ACETONE	2.66	43.0	8457M JDC	9.00	UG/L	98
12)	~~2-BUTANONE~~ No 9/26/95 JDC	5.80	43.0	402	.228	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.12	65.0	136334	47.75	UG/L	80
17)	*1,4-DIFLUOROBENZENE	8.16	114.0	520338	50.00	UG/L	85
32)	*CHLOROBENZENE-d5	13.78	117.0	434441	50.00	UG/L	91
34)	~~4-METHYL-2-PENTANONE~~ No 9/26/95 JDC	11.07	43.0	368	.114	UG/L	88
35)	TOLUENE-d8	10.92	98.0	454705	52.50	UG/L	92
36)	~~TOLUENE~~ No 9/26/95 JDC	11.03	91.0	2598	.268	UG/L	79
43)	BROMOFLUOROBENZENE	16.34	95.0	310496	50.81	UG/L	79

* Compound is ISTD

Note :
CLIENT LOOKING ONLY FOR ACETONE = 90 ug/L (with dilution factor of $\frac{5.0 ml}{0.5 ml} = 10$)

Tentatively Identified Compound :

1) Trimethyl silanol CAS # 1066406
2) 2-Propyl-furan CAS # 4229918
3) Dodecane CAS# 112403
4) Tridecane CAS# 629505
5) Tetradecane CAS# 629594
6) Pentadecane CAS# 629629

QUANT REPORT

Jodie Rose - Chang 9/26/95

:rator ID: JDC Quant Rev: 7 Quant Time: 950921 15:11
..tput File: ^AI21G::D2 Injected at: 950921 14:39
Data File: >AI21G::D5 Dilution Factor: 1.00000
Name: S95T002193 AW-105 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950921 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.99	128.0	129166 9/26/95	50.00	UG/L	84
8)	ACETONE	2.69	43.0	9565M JDC	9.98	UG/L	77
12)	~~2-BUTANONE~~ No 9/26/95 JDC	5.84	43.0	659	.367	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.14	65.0	139253	47.80	UG/L	81
17)	*1,4-DIFLUOROBENZENE	8.18	114.0	529132	50.00	UG/L	86
32)	*CHLOROBENZENE-d5	13.79	117.0	446471	50.00	UG/L	83
34)	~~4-METHYL-2-PENTANONE~~ No 9/26/95	11.16	43.0	254	.0762	UG/L	94
35)	TOLUENE-d8 JDC	10.94	98.0	475047	53.37	UG/L	91
36)	~~TOLUENE~~ No 9/26/95 JDC	11.06	91.0	2684	.270	UG/L	90
38)	~~2-HEXANONE~~ No 9/26/95	12.72	43.0	365	.0995	UG/L	76
43)	BROMOFLUOROBENZENE	16.36	95.0	321286	51.16	UG/L	79

* Compound is ISTD

Note: Duplicate Run
CLIENT ONLY LOOKING FOR ACETONE = 99.8 ug/L ~ 100 ug/L
(with dil. factor of 10)

Tentatively Identified Compound:

1) Trimethyl silanol
2) 2-propyl furan
3) Dodecane
4) Tridecane
5) Tetradecane
6) Pentadecane

QUANT REPORT Page 1

Johnson-Chang 9/26/95

erator ID: JDC Quant Rev: 7 Quant Time: 950921 16:22
Output File: ^AI21I::D2 Injected at: 950921 15:50
Data File: >AI21I::D5 Dilution Factor: 1.00000
Name: S95T002194 AW-105 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950921 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.99	128.0	118717 9/26/95	50.00	UG/L	76
8)	ACETONE	2.64	43.0	14559M JDC	16.53	UG/L	92
12)	~~2-BUTANONE~~ No 9/26/95 JDC	5.88	43.0	1615M JDC	.978	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.14	65.0	129299	48.29	UG/L	85
17)	*1,4-DIFLUOROBENZENE	8.18	114.0	485963	50.00	UG/L	85
32)	*CHLOROBENZENE-d5	13.79	117.0	420744	50.00	UG/L	88
35)	TOLUENE-d8	10.93	98.0	448896	53.51	UG/L	93
38)	~~2-HEXANONE~~ No 9/26/95 JDC	12.91	43.0	241	.0697	UG/L	56
43)	BROMOFLUOROBENZENE	16.35	95.0	301924	51.02	UG/L	83

* Compound is ISTD

Note :

CLIENT ONLY LOOKING FOR ACETONE = 165 ug/L ~ 160 ug/L

(with dil. factor of 10)

Tentatively Identified Compounds :

1) 2-propyl furan

2) Tetradecane

QUANT REPORT

erator ID: JDC Jdb Rose - Chang 9/26/95 Quant Rev: 7 Quant Time: 950921 16:57
utput File: ^AI21J::D2 Injected at: 950921 16:25
Data File: >AI21J::D5 Dilution Factor: 1.00000
Name: S95T002194 AW-105 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950921 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.97	128.0	116951 9/26/95	50.00	UG/L	79
8)	ACETONE	2.61	43.0	13578M JDC	15.65	UG/L	79
12)	2-BUTANONE	5.84	43.0	1848M JDC	1.14	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.14	65.0	129596	49.13	UG/L	85
17)	*1,4-DIFLUOROBENZENE	8.17	114.0	477668	50.00	UG/L	86
32)	*CHLOROBENZENE-d5	13.78	117.0	416355 9/26/95	50.00	UG/L	88
34)	~~4-METHYL-2-PENTANONE~~ No 9/26/95	10.93	43.0	3103M JDC	.999	UG/L	81
35)	TOLUENE-d8	10.93	98.0	430554	51.87	UG/L	95
43)	BROMOFLUOROBENZENE	16.35	95.0	304951	52.07	UG/L	87

* Compound is ISTD

Note :

CLIENT ONLY LOOKING FOR ACETONE : 156 ug/L ~ 160 ug/L

(with dil. factor of 10)

Tentatively Identified Compounds :

1) 2-propyl furan

2) Tetradecane

QUANT REPORT

erator ID: JDC Jdela Rosa-Chang 9/26/95 Quant Rev: 7 Quant Time: 950921 17:35
utput File: ^AI21K::D2 Injected at: 950921 17:03
Data File: >AI21K::D5 Dilution Factor: 1.00000
Name: S95T002195 AW-105 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950921 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.99	128.0	113624	9/26/95 50.00	UG/L	85
8)	ACETONE	2.59	43.0	81815M	JDC 97.05	UG/L	72
12)	2-BUTANONE	5.81	43.0	5757M	JDC 3.64	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.13	65.0	122391	47.76	UG/L	82
17)	*1,4-DIFLUOROBENZENE	8.17	114.0	480979	50.00	UG/L	86
18)	~~VINYL ACETATE~~ No 9/26/95 JDC	4.68	43.0	699	.141	UG/L	100
32)	*CHLOROBENZENE-d5	13.77	117.0	392209	50.00	UG/L	87
35)	TOLUENE-d8	10.91	98.0	413423	52.87	UG/L	93
36)	~~TOLUENE~~ 9/26/95 JDC	11.03	91.0	1256	9/26/95 .144	UG/L	90
38)	~~2-HEXANONE~~ 9/26/95 JDC	12.74	43.0	1750M	JDC .543	UG/L	90
43)	BROMOFLUOROBENZENE	16.33	95.0	281965	51.11	UG/L	83

* Compound is ISTD

Note :

CLIENT ONLY LOOKING FOR ACETONE : 970 ug/L

(with dil. factor of 10)

Tentatively Identified Compound :

1) Trimethyl silanol
2) 2 - propyl furan
3) Tridecane
4) Tetradecane

9/26/95 Jodie Rose-Chang

QUANT REPORT

erator ID: JDC Quant Rev: 7 Quant Time: 950921 18:11
utput File: ^AI21L::D2 Injected at: 950921 17:39
Data File: >AI21L::D5 Dilution Factor: 1.00000
Name: S95T002195 AW-105 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950921 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.96	128.0	115208 9/26/95	50.00	UG/L	73
8)	ACETONE	2.59	43.0	85432M JDC	99.94	UG/L	69
9)	~~METHYLENE CHLORIDE~~ No 9/26/95 JDC	3.00	84.0	301M JDC	.126	UG/L	77
12)	2-BUTANONE	5.83	43.0	6793M JDC	4.24	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.13	65.0	126864	48.83	UG/L	84
17)	*1,4-DIFLUOROBENZENE	8.16	114.0	462443	50.00	UG/L	86
32)	*CHLOROBENZENE-d5	13.77	117.0	406193	50.00	UG/L	85
34)	~~4-METHYL-2-PENTANONE~~ No 9/26/95 JDC	11.03	43.0	283	.0934	UG/L	63
35)	TOLUENE-d8	10.92	98.0	415527	51.31	UG/L	95
36)	~~TOLUENE~~ No 9/26/95 JDC	11.01	91.0	1319	.146	UG/L	91
38)	~~2-HEXANONE~~ No 9/26/95 JDC	12.72	43.0	1983 9/26/95	.594	UG/L	84
43)	BROMOFLUOROBENZENE	16.32	95.0	279352M JDC	48.90	UG/L	80

Compound is ISTD

Note:
CLIENT ONLY LOOKING FOR ACETONE = 999 ug/L ~ 1000 ug/L
(with dil. factor of 10)

Tentatively Identified Compound:

1) Trimethyl silanol
2) 2-propyl furan
3) Tridecane
4) Tetradecane

QUANT REPORT

erator ID: JDC 10/2/95 JDC Quant Rev: 7 Quant Time: 950928 10:29
utput File: ^AI28D::D2 Injected at: 950928 09:57
Data File: >AI28D::D5 Dilution Factor: 1.00000
Name: S95T002459 AY-102 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950928 08:29

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.95	128.0	118961	50.00	UG/L	85
8)	ACETONE	2.43	43.0	37599	122.33	UG/L	73
12)	2-BUTANONE	5.74	43.0	2980	4.18	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.11	65.0	127914	47.28	UG/L	78
17)	*1,4-DIFLUOROBENZENE	8.15	114.0	471412	50.00	UG/L	85
32)	*CHLOROBENZENE-d5	13.77	117.0	396701	50.00	UG/L	84
35)	TOLUENE-d8	10.90	98.0	418286	49.45	UG/L	92
36)	TOLUENE	11.03	91.0	18936	1.86	UG/L	99
43)	BROMOFLUOROBENZENE	16.33	95.0	284320	48.47	UG/L	79

* Compound is ISTD

NOTE :

CLIENT ONLY LOOKING FOR ACETONE = 1220 ug/L ~ 1200 ug/L
(with dil. factor of 10)

TENTATIVELY IDENTIFIED COMPOUNDS :

1) 2 - ethyl - 1 - hexanol CAS # 104767

QUANT REPORT

:rator ID: JDC Quant Rev: 7 Quant Time: 950928 11:04
utput File: ^AI28E::D2 Injected at: 950928 10:32
Data File: >AI28E::D5 Dilution Factor: 1.00000
Name: S95T002459 AY-102 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950928 08:29

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.97	128.0	121977	50.00	UG/L	84
8)	ACETONE	2.45	43.0	36049	114.39	UG/L	66
12)	2-BUTANONE	5.74	43.0	2962	4.06	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.12	65.0	134590	48.52	UG/L	86
17)	*1,4-DIFLUOROBENZENE	8.17	114.0	483064	50.00	UG/L	86
32)	*CHLOROBENZENE-d5	13.78	117.0	415653	50.00	UG/L	84
35)	TOLUENE-d8	10.93	98.0	428043	48.30	UG/L	96
36)	TOLUENE	11.04	91.0	20903	1.96	UG/L	95
43)	BROMOFLUOROBENZENE	16.34	95.0	294529	47.92	UG/L	77

* Compound is ISTD

CLIENT ONLY LOOKING FOR ACETONE = 1,140 ug/L ~ 1,100 ug/L
(with dil. factor of 10)

TENTATIVELY IDENTIFIED COMPOUND:

1) 2-ethyl-1-hexanol

QUANT REPORT

erator ID: JDC
tput File: ^AI28F::D2
Data File: >AI28F::D5
Name: S95T002460 AY-102
Misc: SAMPLE 0.5ML Instrument ID: 70 2

Quant Rev: 7 Quant Time: 950928 11:44
Injected at: 950928 11:12
Dilution Factor: 1.00000
Instrument ID: VOA-1

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950928 08:29

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.96	128.0	113456	50.00	UG/L	84
8)	ACETONE	2.45	43.0	47583	162.32	UG/L	74
12)	2-BUTANONE	5.75	43.0	6956	10.24	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.12	65.0	126254	48.93	UG/L	84
17)	*1,4-DIFLUOROBENZENE	8.16	114.0	456976	50.00	UG/L	90
32)	*CHLOROBENZENE-d5	13.76	117.0	394129	50.00	UG/L	83
35)	TOLUENE-d8	10.91	98.0	410269	48.82	UG/L	94
38)	2-HEXANONE	12.67	43.0	544	.342	UG/L	56
43)	BROMOFLUOROBENZENE	16.32	95.0	278663	47.82	UG/L	83

* Compound is ISTD

Note :

CLIENT ONLY LOOKING FOR ACETONE : 1,620 ug/L ~ 1,600 ug/L
(with dil. factor of 10)

TENTATIVELY IDENTIFIED COMPOUND :

1) 2-ethyl-1-hexanol

QUANT REPORT

Operator ID: JDC
Output File: ^AI28G::D2
Data File: >AI28G::D5
Name: S95T002460 AY-102
Misc: SAMPLE 0.5ML Instrument ID: 70 2

Quant Rev: 7
Quant Time: 950928 12:19
Injected at: 950928 11:48
Dilution Factor: 1.00000
Instrument ID: VOA-1

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58
Last Qcal Time: 950928 08:29

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.95	128.0	110979	50.00	UG/L	78
8)	ACETONE	2.42	43.0	49849	173.85	UG/L	75
12)	2-BUTANONE	5.76	43.0	6827	10.27	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.10	65.0	121028	47.95	UG/L	85
17)	*1,4-DIFLUOROBENZENE	8.15	114.0	441663	50.00	UG/L	87
32)	*CHLOROBENZENE-d5	13.76	117.0	385013	50.00	UG/L	86
34)	4-METHYL-2-PENTANONE	10.90	43.0	3270M	1.27	UG/L	83
35)	TOLUENE-d8	10.90	98.0	399345	48.64	UG/L	93
36)	TOLUENE	11.03	91.0	1803	.182	UG/L	98
38)	2-HEXANONE	12.70	43.0	1636	1.05	UG/L	96
43)	BROMOFLUOROBENZENE	16.32	95.0	275180	48.34	UG/L	81

* Compound is ISTD

Note :

CLIENT ONLY LOOKING FOR ACETONE : ~~1,720~~ 1,738 ug/L = 1,700 ug/L

(with dil. factor of 10)

TENTATIVELY IDENTIFIED COMPOUND :

1) 2-ethyl-1-hexanol

QUANT REPORT

erator ID: JDC Quant Rev: 7 Quant Time: 950928 13:21
Output File: ^AI28H::D2 Injected at: 950928 12:49
Data File: >AI28H::D5 Dilution Factor: 1.00000
Name: S95T002473 AY-102 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950928 08:29

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.97	128.0	119041	50.00	UG/L	82
8)	ACETONE	2.45	43.0	38719	125.89	UG/L	78
12)	2-BUTANONE	5.75	43.0	3873	5.43	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.12	65.0	126343	46.67	UG/L	75
17)	*1,4-DIFLUOROBENZENE	8.16	114.0	478299	50.00	UG/L	84
32)	*CHLOROBENZENE-d5	13.78	117.0	396057	50.00	UG/L	89
35)	TOLUENE-d8	10.91	98.0	422895	50.08	UG/L	93
38)	2-HEXANONE	12.70	43.0	899M	.562	UG/L	74
43)	BROMOFLUOROBENZENE	16.34	95.0	282121	48.17	UG/L	76

* Compound is ISTD

Note :

CLIENT ONLY LOOKING FOR ACETONE : 1,259 ug/L ~ 1200 ug/L
(with dil. factor of 10)

TENTATIVELY IDENTIFIED COMPOUND :

1) 2 - ethyl - 1 - hexanol

QUANT REPORT

erator ID: JDC Quant Rev: 7 Quant Time: 950928 13:57
Output File: ^AI28I::D2 Injected at: 950928 13:25
Data File: >AI28I::D5 Dilution Factor: 1.00000
Name: S95T002473 AY-102 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950928 08:29

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.96	128.0	113802	50.00	UG/L	73
8)	ACETONE	2.45	43.0	35461	120.60	UG/L	74
12)	2-BUTANONE	5.79	43.0	3862M	5.67	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.14	65.0	126539	48.89	UG/L	88
17)	*1,4-DIFLUOROBENZENE	8.16	114.0	454368	50.00	UG/L	87
32)	*CHLOROBENZENE-d5	13.76	117.0	397211	50.00	UG/L	80
35)	TOLUENE-d8	10.92	98.0	406215	47.96	UG/L	92
38)	2-HEXANONE	12.73	43.0	645M	.402	UG/L	86
43)	BROMOFLUOROBENZENE	16.34	95.0	289492	49.29	UG/L	88

* Compound is ISTD

Note:

CLIENT ONLY LOOKING FOR ACETONE. = 1,206 ug/L ~ 1,200 ug/L

(with dil. factor of 10)

TENTATIVELY IDENTIFIED COMPOUND:

1) 2-ethyl-1-hexanol

QUANT REPORT

:rator ID: JDC Quant Rev: 7 Quant Time: 950928 14:33
Output File: ^AI28J::D2 Injected at: 950928 14:01
Data File: >AI28J::D5 Dilution Factor: 1.00000
Name: S95T002474 AY-102 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950928 08:29

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.96	128.0	109235	50.00	UG/L	74
8)	ACETONE	2.44	43.0	47148	167.05	UG/L	78
12)	2-BUTANONE	5.74	43.0	6975	10.66	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.11	65.0	121743	49.00	UG/L	85
17)	*1,4-DIFLUOROBENZENE	8.16	114.0	442581	50.00	UG/L	85
32)	*CHLOROBENZENE-d5	13.77	117.0	378891	50.00	UG/L	84
35)	TOLUENE-d8	10.90	98.0	402282	49.79	UG/L	93
38)	2-HEXANONE	12.69	43.0	2267	1.48	UG/L	88
43)	BROMOFLUOROBENZENE	16.33	95.0	282630	50.45	UG/L	86

* Compound is ISTD

CLIENT ONLY LOOKING FOR ACETONE : 1670 ug/L ~ 1,700 ug/L
(with dil. factor of 10)

TENTATIVELY IDENTIFIED COMPOUND :

1) 2-ethyl-1-hexanol

QUANT REPORT

erator ID: JDC Quant Rev: 7 Quant Time: 950928 15:08
tput File: ^AI28K::D2 Injected at: 950928 14:37
Data File: >AI28K::D5 Dilution Factor: 1.00000
Name: S95T002474 AY-102 Instrument ID: VOA-1
Misc: SAMPLE 0.5ML Instrument ID: 70 2

ID File: ID_108::QT
Title: VOLATILE ANALYSIS
Last Calibration: 950711 10:58 Last Qcal Time: 950928 08:29

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	5.95	128.0	111181	50.00	UG/L	81
8)	ACETONE	2.43	43.0	49945	173.87	UG/L	79
12)	2-BUTANONE	5.75	43.0	7381	11.09	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.12	65.0	123485	48.84	UG/L	89
17)	*1,4-DIFLUOROBENZENE	8.15	114.0	449026	50.00	UG/L	86
32)	*CHLOROBENZENE-d5	13.76	117.0	382289	50.00	UG/L	85
35)	TOLUENE-d8	10.91	98.0	391547	48.03	UG/L	96
38)	2-HEXANONE	12.70	43.0	2081	1.35	UG/L	99
43)	BROMOFLUOROBENZENE	16.31	95.0	269503	47.68	UG/L	80

* Compound is ISTD

CLIENT ONLY LOOKING FOR ACETONE = 1,738 ug/L ~ 1,700 ug/L
(with dil. factor of 10)

TENTATIVELY IDENTIFIED COMPOUND:
1) 2-ethyl-1-hexanol

DISTRIBUTION SHEET

To Distribution	From Production Planning and Control	Page 2 of 2
		Date: 11/13/95
Project Title/Work Order WHC-SD-WM-DP-150, Rev. 0, 60-Day Waste Compatibility Safety Issue and Final Results for Tank 241-AY-102, Grab Samples 2AY-95-1, 2AY-95-2, 2AY-95-3 and 2AY-95-4"		EDT NO.: EDT-612094
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY	
Washington State Department of Ecology Single-Shell Tank Unit Manager A. B. Stone	B5-18	X		
U. S. Department of Energy Jim Poppiti 12800 Middlebrook Rd. Trevion II, EM-36 Germantown, MD 20874			X	
Los Alamos Technical Associates A. T. DiCenso 309 Bradley Blvd. Richland, WA 99352		X		

DISTRIBUTION SHEET

To Distribution	From Production Planning and Control	Page 1 of 2
		Date: 11/13/95
Project Title/Work Order WHC-SD-WM-DP-150, Rev. 0, "60-Day Waste Compatibility Safety Issue and Final Results for Tank 241-AY-102, Grab Samples 2AY-95-1, 2AY-95-2, 2AY-95-3 and 2AY-95-4"		EDT NO.: EDT-612094
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY
Pacific Northwest Laboratory			
J. R. Gormsen	K7-28		X
S. J. Harris	K7-22	X	
K. L. Silvers	P7-27		X
U.S. Department of Energy, RL			
C. A. Babel	S7-54	X	
Westinghouse Hanford Company			
J. N. Appel	G3-21		X
H. Babad	S7-30	X	
T. M. Blaak	S5-13		
R. A. Esch	T6-06	X	
W. Hall	T6-03	X	
J. C. Hetzer	S6-31		X
L. Jensen	T6-07	X	
J. M. Jones	S5-13	X	
N. W. Kirch	R2-11	X	
M. J. Kupfer	H5-49	X	
E. Q. Le	R1-43	X	
J. E. Meacham	S7-15	X	
P. M. Morant	H4-25	X	
R. J. Nicklas	R1-43	X	
K. L. Powell	T6-06		X
A. D. Rice	T6-06	X	
D. A. Reynolds	R2-11	X	
B. C. Simpson	R2-12		X
L. A. Tusler	R2-11	X	
J. A. Voogd	H5-03		X
Central Files	A3-88	2	
EDMC	H6-08	X	
LTIC	T6-03		X
TCRC	R2-12	X	
TFIC (Tank Farm Information Center)	R1-20		X