THIS DOCUMENT WAS TOO LARGE TO SCAN AS A SINGLE DOCUMENT. IT REQUIRED BREAKING INTO SMALLER SECTIONS.

DOCUMENT NUMBER: SD-WM-DP-149

SECTION: 2 OF 4

TITLE: 60 Day Waste Compatibility Safety Issue & Final Results for Tank 241AW102 Grab Samples 2AW-95-1 2AW-95-2 & 2AW-95-3

AUTHOR: Each RA

RECIPIENT:

DATE: 11/15/95

KEYWORDS:

REFERENCES: EDT-612093

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BASE Date: 11/10/95 Time: 07:16:17

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = .6392937 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.50	60.00
3	1.51	0.80	37.50
4	2.01	1.10	27.27
5	2.51	1.30	15.38
6	3.01	1.60	18.75
7	3.51	1.80	11.11
8	4.01	2.00	10.00
9	4.51	2.30	13.04
10	5.01	2.60	11.54

BLANK VALUE = 3.2 micrograms carbon
BLANK FACTOR = 3.2 / 5.005524 = +6.4E-01 ug/min Carbon

SAMPLE RESULTS:
(2.6 - 3.2)(1)/(200) = < 5.00 E-3 g/L Carbon
(2.6 - 3.2)(1)/(200)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING- PERCENT DIFFERENCE EXCEEDS 10 PERCENT >>>>

Sample Run By: _____
RA WENDLAND 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-149, REV. 0

Sample: 56 Date: 11/10/95 Time: 09:18:28

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .6392937 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	45.00	98.00
3	1.51	58.40	22.95
4	2.00	64.60	9.60
5	2.50	68.20	5.28
6	3.00	70.70	3.54
7	3.50	72.70	2.75
8	4.00	74.10	1.89
9	4.50	75.30	1.59
10	5.00	76.50	1.57

BLANK VALUE = 3.2 micrograms carbon
BLANK FACTOR = 3.2 / 5.005524 = +6.4E-01 ug/min Carbon

SAMPLE RESULTS:
(76.5 - 3.198888)(11)/(200) = +4.03E+00 g/L Carbon
(76.5 - 3.198888)(11)/(200)(12) = +3.36E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 56D Date: 11/10/95 Time: 09:13:12

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .6392937 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.50	0.00
2	1.01	49.20	96.95
3	1.50	61.10	19.48
4	2.00	66.80	8.53
5	2.50	70.20	4.84
6	3.00	72.60	3.31
7	3.50	74.10	2.02
8	4.00	75.50	1.85
9	4.50	76.50	1.31
10	5.00	77.30	1.03

BLANK VALUE = 3.2 micrograms carbon
BLANK FACTOR = 3.2 / 5.005524 = +6.4E-01 ug/min Carbon

SAMPLE RESULTS:
(77.3 - 3.199434)(11)/(200) = +4.08E+00 g/L Carbon
(77.3 - 3.199434)(11)/(200)(12) = +3.40E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

LABCORE Data Entry Template for Worklist# 2696

Analyst: RAW **Instrument:** TIC01 WC39437 **Book #** 17N12-A

Method: LA-622-102 Rev/Mod C-0

Worklist Comment: TIC AW-102

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				TIC-01	LIQUID	1	7.50	N/A	ug/mL
		2	STD				TIC-01	LIQUID	600	573	N/A	ug/mL
95000127	AW-102 GRAB	3	SAMPLE	S95T002157	0		TIC-01	LIQUID	N/A	2.06 E3 ~~371~~ E3	R43 2.00 E1	ug/mL
95000127	AW-102 GRAB	4	DUP	S95T002157	0		TIC-01	LIQUID	2.06 E3	1.83 E3	N/A	ug/mL
95000127	AW-102 GRAB	5	SPK	S95T002157	0		TIC-01	LIQUID	100	127.7	N/A	ug/mL
95000127	AW-102 GRAB	6	SAMPLE	S95T002309	0		TIC-01	LIQUID	N/A	4.15 E3	2.00 E1	ug/mL
95000127	AW-102 GRAB	7	DUP	S95T002309	0		TIC-01	LIQUID	4.15 E3	3.99 E3	N/A	ug/mL
95000127	AW-102 GRAB	8	SAMPLE	S95T002556	0		TIC-01	LIQUID	N/A	371 E3	2.00 E1	ug/mL

Final page for worklist # 2696

R. Wendland 10-9-95
Analyst Signature **Date**

[illegible] 10/11/95
Analyst Signature **Date**

Reviewed
Robert W Schroeder
10/12/95

S95T002157 result rejected

Data Entry Comments: SPK - .250 - .250 SAM - .050 INJ
SAMPLES - .050

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.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			STANDARD
Type	Sample Volume in mL	(SS)	0.200
STANDARD	Dilution Factor	(DF)	1.000
Worklist	Digest Dilution Factor	(DDF)	1.000
2696	µg of Carbon in Sample	(C1)	118.6
Test Code	µg of Carbon in Blank	(C2)	4.1
TIC-01			
Matrix			
LIQUID	g of Carbon/L	=	5.73E-01
Sample#			
17N12A			
Instrument Code			
WC39937			
Analyst			
R. WENDLAND			
Date			
10/09/95			
Time			

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

µg Carbon/mL =	5.73E+02	DETECTION LEVEL in µg/mL
		5.00E+00

Data Entry by:	RtStab	Date:	10/11/95
Approved by:	Ron Schroeder	Date:	10/12/95

Form 622102_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			BLANK
Sample Volume in mL	(SS)		0.200
Dilution Factor	(DF)		1.000
Digest Dilution Factor	(DDF)		1.000
µg of Carbon in Sample	(C1)		4.1
µg of Carbon in Blank	(C2)		2.6
g of Carbon/L	=		7.50E-03

Type	BLANK
Work List	2696
Test Code	TIC-01
Matrix	LIQUID
Sample #	BKNK
Instrument Code	WC39937
Analyst	R. WENDLAND
Date	10/09/95
Time	

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

µg Carbon/mL =	7.50E+00	DETECTION LEVEL in µg/mL
		5.00E+00

Data Entry by:	RJ Steele	Date:	10/11/95
Approved by:	RW Schroeder	Date:	10/12/95

Form 622102_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			SAMPLE
Sample Volume in mL	(SS)		0.050
Dilution Factor	(DF)		1.000
Digest Dilution Factor	(DDF)		1.000
µg of Carbon in Sample	(C1)		105.7
µg of Carbon in Blank	(C2)		2.6
g of Carbon/L		=	2.06E+00

Type	SAMPLE
Work List #	2696
Test Code	TIC-01
Matrix	LIQUID
Sample #	S95T002157
Instrument Code	WC39937
Analyst	R. WENDLAND
Date	10/09/95
Time	

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

µg Carbon/mL =	2.06E+03	DETECTION LEVEL in µg/mL
		2.00E+01

Data Entry by:	RT Steele	Date:	10/11/95
Approved by:	Ric Schroeder	Date:	10/12/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			SAMPLE/dup
Sample Volume in mL	(SS)		0.050
Dilution Factor	(DF)		1.000
Digest Dilution Factor	(DDF)		1.000
µg of Carbon in Sample	(C1)		94
µg of Carbon in Blank	(C2)		2.6
g of Carbon/L		=	1.83E+00

Sample No.	SAMPLE/dup
Worklist	2696
Test Code	TIC-01
Matrix	LIQUID
Sample #	S95T002157/dup
Instrument Code	WC39937
Analyst	R. WENDLAND
Date	10/09/95
Time	

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

µg Carbon/mL =	1.83E+03	DETECTION LEVEL in µg/mL
		2.00E+01

Data Entry by:	RLSlack	Date:	10/11/95
Approved by:	Ron Schroeder	Date:	10/12/95

Form 622102_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) SPIKED SAMPLE

Sample Id	SPIKE
Workcard	2696
Analysis Code	tic-01
Matrix	liquid
Sample Id	S95T002157
Instrument Code	WC39937
Analyst	R. WENDLAND
Date	10/09/95
Time	

>>>>>> Sample Vial Data <<<<<<	
Sample Volume in mL	0.050
µg of Carbon in Sample	105.7
µg of Carbon in Blank	2.6

SPIKE	
>>>>> Spiked Vial Data <<<<<	
Sample Volume in mL	0.250
Spike Volume in mL	0.250
Volume Injected in mL	0.050
Spike Value (µg/mL)	600
µg C in Sample + Spike	73.3
µg C in Blank	2.6

PERCENT SPIKE RECOVERY = $\frac{\text{µg Carbon Recovered from Spike} * 100}{\text{µg Carbon in Spike}}$

WHERE : µg Carbon Recovered from Spike =
[(µgC in sample + spike - µgC in blank) * (Spike Correction Factor)]
- [(µgC sample - µgC blank) * (Sample Size Correction Factor)]

Spike Correction Factor = $\frac{\text{Total volume in spiked sample vial (mL)}}{\text{Volume injected (mL)}}$

Sample Size Correction Factor = $\frac{\text{Sample size in (mL) in spiked vial}}{\text{Sample size (mL) in sample}}$

WHERE : µg Carbon in Spike =
[Spike Value (µg/mL) * Spike Volume (mL)]

Percent Spike Recovery = 127.7%

Data Entry by:	RT Steele	Date:	10/11/95
Approved by:	RW Schroeder	Date:	10/12/95

Form 622102X2 Rev. 1.2

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			SAMPLE
Type	Sample Volume in mL	(SS)	0.050
SAMPLE	Dilution Factor	(DF)	1.000
Work Order	Digest Dilution Factor	(DDF)	1.000
2696	µg of Carbon in Sample	(C1)	210.1
Test Code	µg of Carbon in Blank	(C2)	2.6
TIC-01			
Matrix			
LIQUID	g of Carbon/L	=	4.15E+00
Sample No.			
S95T002309			
Instrument Code			
WC39937			
Analyst			
R. WENDLAND			
Date			
10/09/95			
Time			

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

µg Carbon/mL =	4.15E+03	DETECTION LEVEL in µg/mL
		2.00E+01

Data Entry by:	RT Steele	Date:	10/11/95
Approved by:	Ru Schroeder	Date:	10/12/95

Form 622102_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			SAMPLE/DUP
Sample Volume in mL	(SS)		0.050
Dilution Factor	(DF)		1.000
Digest Dilution Factor	(DDF)		1.000
µg of Carbon in Sample	(C1)		201.9
µg of Carbon in Blank	(C2)		2.6
g of Carbon/L		=	3.99E+00

Type	SAMPLE/DUP
Worklist	2696
Test Code	TIC-01
Matrix	LIQUID
Sample#	S95T002309/DUP
Instrument Code	WC39937
Analyst	R. WENDLAND
Date	10/09/95
Time	

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

µg Carbon/mL =	3.99E+03	DETECTION LEVEL in µg/mL
		2.00E+01

Data Entry by:	RT Steele	Date:	10/11/95
Approved by:	Rw Schroeder	Date:	10/12/95

Form 622102_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			SAMPLE
Sample Volume in mL	(SS)		0.050
Dilution Factor	(DF)		1.000
Digest Dilution Factor	(DDF)		1.000
µg of Carbon in Sample	(C1)		187.9
µg of Carbon in Blank	(C2)		2.6
g of Carbon/L		=	3.71E+00

Type	SAMPLE
Work List	2696
Test Code	TIC-01
Matrix	LIQUID
Sample #	S95T002556
Instrument Code	WC39937
Analyst	R. WENDLAND
Date	10/09/95
Time	

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

µg Carbon/mL =	3.71E+03	DETECTION LEVEL in µg/mL
		2.00E+01

Data Entry by:	RHtad	Date:	10/11/95
Approved by:	Ric Schroeder	Date:	10/12/95

Form 622102_C Rev. 1.1

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-149, REV. 0

Sample: STD1 Date: 10/09/95 Time: 07:29:59

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = .8193699 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	14.30	97.90
3	1.51	64.80	77.93
4	2.00	96.80	33.06
5	2.50	110.20	12.16
6	3.00	115.30	4.42
7	3.50	116.90	1.37
8	4.00	117.70	0.68
9	4.50	118.30	0.51
10	5.00	118.60	0.25

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 155 **TO** 163.

BLANK VALUE = 4.1 micrograms carbon
BLANK FACTOR = 4.1 / 5.003845 = +8.2E-01 ug/min Carbon

SAMPLE RESULTS:
(118.6 - 4.099875)(1)/(200) = +5.725E-01 g/L Carbon
(118.6 - 4.099875)(1)/(200)(12) = +4.771E-02 Molar Carbon

Sample Run By: RW 10-09-95
RA WENDLAND 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BLK Date: 10/09/95 Time: 07:15:32

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = N/A

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	1.10	54.55
3	1.51	1.70	35.29
4	2.00	2.10	19.05
5	2.50	2.60	19.23
6	3.00	2.90	10.34
7	3.50	3.20	9.37
8	4.00	3.50	8.57
9	4.50	3.80	7.89
10	5.00	4.10	7.32

BLANK VALUE = 4.1 micrograms carbon
BLANK FACTOR = 4.1 / 5.003845 = +8.2E-01 ug/min Carbon

Sample Run By: _____
RA WENDLAND 00000

^

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-149, REV. 0

Sample: BASE Date: 10/09/95 Time: 07:22:02

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = .8193699 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.50	60.00
3	1.51	0.80	37.50
4	2.01	1.00	20.00
5	2.51	1.30	23.08
6	3.01	1.50	13.33
7	3.51	1.80	16.67
8	4.01	2.00	10.00
9	4.50	2.30	13.04
10	5.00	2.60	11.54

BLANK VALUE = 4.1 micrograms carbon
BLANK FACTOR = 4.1 / 5.003845 = +8.2E-01 ug/min Carbon

SAMPLE RESULTS:
(2.6 - 4.1007)(1)/(200) = < 5.00 E-3 g/L Carbon
(2.6 - 4.1007)(1)/(200)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING- PERCENT DIFFERENCE EXCEEDS 10 PERCENT >>>>

Sample Run By: _____
RA WENDLAND 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2157 Date: 10/09/95 Time: 08:14:56

Sample Size = 50 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = .8193699 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	22.90	97.82
3	1.51	70.80	67.66
4	2.01	91.40	22.54
5	2.51	99.50	8.14
6	3.01	102.60	3.02
7	3.51	103.90	1.25
8	4.01	104.70	0.76
9	4.51	105.30	0.57
10	5.01	105.70	0.38

BLANK VALUE = 4.1 micrograms carbon
BLANK FACTOR = 4.1 / 5.003845 = +8.2E-01 ug/min Carbon

SAMPLE RESULTS:
(105.7 - 4.1015)(1)/(50) = +2.032E+00 g/L Carbon
(105.7 - 4.1015)(1)/(50)(12) = +1.693E-01 Molar Carbon

Sample Run By: RW
RA WENDLAND 00000

P^^^

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2157 DUP/RW Date: 10/09/95 Time: 08:26:45

Sample Size = 50 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = .8193699 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	28.50	98.60
3	1.51	70.40	59.52
4	2.01	84.70	16.88
5	2.51	89.80	5.68
6	3.01	91.60	1.97
7	3.51	92.50	0.97
8	4.01	93.10	0.64
9	4.50	93.60	0.53
10	5.00	94.00	0.43

BLANK VALUE = 4.1 micrograms carbon
BLANK FACTOR = 4.1 / 5.003845 = +8.2E-01 ug/min Carbon

SAMPLE RESULTS:
(94 - 4.100675)(1)/(50) = +1.80E+00 g/L Carbon
(94 - 4.100675)(1)/(50)(12) = +1.50E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

P

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 57SPK Date: 10/09/95 Time: 08:32:47

Sample Size = 50 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = .8193699 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	20.70	98.07
3	1.51	51.40	59.73
4	2.01	63.80	19.44
5	2.51	68.80	7.27
6	3.01	70.90	2.96
7	3.51	71.80	1.25
8	4.01	72.40	0.83
9	4.51	72.90	0.69
10	5.01	73.30	0.55

BLANK VALUE = 4.1 micrograms carbon
BLANK FACTOR = 4.1 / 5.003845 = +8.2E-01 ug/min Carbon

SAMPLE RESULTS:
(73.3 - 4.102175)(1)/(50) = +1.38E+00 g/L Carbon
(73.3 - 4.102175)(1)/(50)(12) = +1.15E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2309 Date: 10/09/95 Time: 08:04:18

Sample Size = 50 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = .8193699 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	48.40	99.38
3	1.51	149.70	67.67
4	2.01	189.20	20.88
5	2.51	202.10	6.38
6	3.01	206.70	2.23
7	3.51	208.30	0.77
8	4.00	209.10	0.38
9	4.50	209.60	0.24
10	5.00	210.10	0.24

BLANK VALUE = 4.1 micrograms carbon
BLANK FACTOR = 4.1 / 5.003845 = +8.2E-01 ug/min Carbon

SAMPLE RESULTS:
(210.1 - 4.10065)(1)/(50) = +4.120E+00 g/L Carbon
(210.1 - 4.10065)(1)/(50)(12) = +3.433E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2309D Date: 10/09/95 Time: 08:09:33

Sample Size = 50 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = .8193699 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	44.60	99.10
3	1.51	143.10	68.83
4	2.01	181.10	20.98
5	2.51	193.60	6.46
6	3.01	198.20	2.32
7	3.51	199.80	0.80
8	4.00	200.70	0.45
9	4.50	201.40	0.35
10	5.00	201.90	0.25

BLANK VALUE = 4.1 micrograms carbon
BLANK FACTOR = 4.1 / 5.003845 = +8.2E-01 ug/min Carbon

SAMPLE RESULTS:
(201.9 - 4.099875)(1)/(50) = +3.956E+00 g/L Carbon
(201.9 - 4.099875)(1)/(50)(12) = +3.297E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2556 Date: 10/09/95 Time: 07:58:10

Sample Size = 50 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = .8193699 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	44.50	99.33
3	1.51	134.80	66.99
4	2.01	169.40	20.43
5	2.51	180.90	6.36
6	3.01	184.80	2.11
7	3.51	186.20	0.75
8	4.01	186.90	0.37
9	4.51	187.40	0.27
10	5.01	187.90	0.27

BLANK VALUE = 4.1 micrograms carbon
BLANK FACTOR = 4.1 / 5.003845 = +8.2E-01 ug/min Carbon

SAMPLE RESULTS:
(187.9 - 4.1015)(1)/(50) = +3.676E+00 g/L Carbon
(187.9 - 4.1015)(1)/(50)(12) = +3.063E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

LABCORE Data Entry Template for Worklist# 2859

Analyst: KRM **Instrument:** TIC01 **Book #** ~~16~~ 17N12-A
RWS 10/12/95

Method: LA-342-100 Rev/Mod B-0

Worklist Comment: AW-106 AW-102 TIC-02 KRM

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				TIC-02	SOLID	1	4.6	N/A	ug/g
		2	STD				TIC-02	SOLID	$6.00E^{2}$	$5.94E^{2}$	N/A	ug/g
95000126	AW-106 GRAB	3	SAMPLE	S95T002020	0		TIC-02	SOLID	N/A	$2.05E^{3}$	5.00	ug/g
95000126	AW-106 GRAB	4	DUP	S95T002020	0		TIC-02	SOLID	$2.05E^{3}$	$2.08E^{3}$	N/A	ug/g
95000126	AW-106 GRAB	5	SPK	S95T002020	0		TIC-02	SOLID	100	105	N/A	ug/g
95000126	AW-106 GRAB	6	SAMPLE	S95T002036	0		TIC-02	SOLID	N/A	$2.18E^{3}$	5.00	ug/g
95000126	AW-106 GRAB	7	DUP	S95T002036	0		TIC-02	SOLID	$2.18E^{3}$	$2.41E^{3}$	N/A	ug/g
95000127	AW-102 GRAB	8	SAMPLE	S95T002303	0		TIC-02	SOLID	N/A	$3.23E^{3}$	5.00	ug/g
95000127	AW-102 GRAB	9	DUP	S95T002303	0		TIC-02	SOLID	$3.23E^{3}$	$3.17E^{3}$	N/A	ug/g
95000127	AW-102 GRAB	10	SPK	S95T002303	0		TIC-02	SOLID	100	101	N/A	ug/g

Final page for worklist # 2859

10-11-95
Analyst Signature Date

10/13/95
Analyst Signature Date

Ray Schmoeckel 10/16/95

Data Entry Comments:
STDs and blanks were analyzed for both TIC and TOC.
Only ~~TOC~~ TIC was required for this worklist. Therefore, the TOC data is not reported. RWS 10/30/95 10/30/95

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.

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
< < < BLANK ANALYSIS > > >

Sample: BLK *Date: 10/11/95* *Time: 08:34:23*

Sample Size = 1 uL *Analyst : KR MONTEITH*
Dil Factor = 1 *Min Readings = 22*
Blank ID # = BLK *Max Readings = 22*
Blank Value = N/A *% Difference = 10*

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.00	0.00
3	1.51	0.70	100.00
4	2.00	1.50	53.33
5	2.50	2.00	25.00
6	3.00	2.30	13.04
7	3.50	2.60	11.54
8	4.00	2.80	7.14
9	4.50	3.00	6.67
10	5.00	3.10	3.23
11	5.50	3.30	6.06
12	6.00	3.50	5.71
13	6.50	3.60	2.78
14	7.00	3.80	5.26
15	7.50	4.00	5.00
16	8.00	4.10	2.44
17	8.50	4.30	4.65
18	9.00	4.40	2.27
19	9.50	4.50	2.22
20	10.00	4.70	4.26
21	10.50	4.80	2.08
22	11.00	4.90	2.04

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 165 TO 170

BLANK VALUE = 4.9 micrograms carbon
BLANK FACTOR = 4.9 / 10.99884 = +4.5E-01 ug/min Carbon

Sample Run By: 10-11-95
KR MONTEITH 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK Date: 10/11/95 Time: 09:42:15

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 4 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.40	100.00
3	1.50	7.50	94.67
4	2.00	18.30	59.02
5	2.50	24.50	25.31
6	3.00	27.30	10.26
7	3.50	29.00	5.86
8	4.00	30.00	3.33
9	4.50	30.90	2.91
10	5.00	31.60	2.22
11	5.50	32.30	2.17
12	6.00	32.80	1.52
13	6.50	33.20	1.20
14	7.00	33.50	0.90
15	7.50	33.90	1.18
16	8.00	34.10	0.59
17	8.50	34.40	0.87
18	9.00	34.60	0.58
19	9.50	34.90	0.86
20	10.00	35.00	0.29
21	10.50	35.20	0.57
22	11.00	35.40	0.56

USER INPUT BLANK VALUE
BLANK VALUE = 44.00684 micrograms carbon
BLANK FACTOR = 44.00684 / 11.00171 = +4.0E+00 ug/min Carbon

SAMPLE RESULTS:
(35.4 - 43.98804)(1)/(1) = < 5.00 E-3 g/L Carbon
(35.4 - 43.98804)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK Date: 10/11/95 Time: 09:27:32

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.60	100.00
3	1.50	2.80	78.57
4	2.01	4.50	37.78
5	2.50	5.50	18.18
6	3.00	6.10	9.84
7	3.50	6.50	6.15
8	4.00	6.80	4.41
9	4.50	7.10	4.23
10	5.00	7.30	2.74
11	5.50	7.50	2.67
12	6.00	7.70	2.60
13	6.50	8.00	3.75
14	7.00	8.20	2.44
15	7.50	8.30	1.20
16	8.00	8.50	2.35
17	8.50	8.70	2.30
18	9.00	8.80	1.14
19	9.50	9.00	2.22
20	10.00	9.20	2.17
21	10.50	9.40	2.13
22	11.00	9.50	1.05

USER INPUT BLANK VALUE
BLANK VALUE = 4.950769 micrograms carbon
BLANK FACTOR = 4.950769 / 11.00171 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(9.5 - 4.949039)(1)/(1) = +4.6E+00 g/L Carbon
(9.5 - 4.949039)(1)/(1)(12) = +3.8E-01 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

â

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD Date: 10/11/95 Time: 09:15:06

Sample Size = 300 uL
Dil Factor = 1
Blank ID # =
Blank Value = 4 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	29.30	99.32
3	1.51	337.50	91.32
4	2.00	652.90	48.31
5	2.50	765.10	14.66
6	3.00	803.80	4.81
7	3.50	818.80	1.83
8	4.00	825.60	0.82
9	4.50	829.10	0.42
10	5.00	831.30	0.26
11	5.50	832.70	0.17
12	6.00	834.10	0.17
13	6.50	835.00	0.11
14	7.00	835.90	0.11
15	7.50	836.70	0.10
16	8.00	837.30	0.07
17	8.50	837.90	0.07
18	9.00	838.40	0.06
19	9.50	838.90	0.06
20	10.00	839.30	0.05
21	10.50	839.80	0.06
22	11.00	840.10	0.04

USER INPUT BLANK VALUE
BLANK VALUE = 44.00684 micrograms carbon
BLANK FACTOR = 44.00684 / 11.00171 = +4.0E+00 ug/min Carbon

SAMPLE RESULTS:
(840.1 - 43.99536)(1)/(300) = +2.654E+00 g/L Carbon
(840.1 - 43.99536)(1)/(300)(12) = +2.211E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD Date: 10/11/95 Time: 09:01:42

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.10	0.00
2	1.01	52.50	97.90
3	1.50	206.40	74.56
4	2.00	369.30	44.11
5	2.50	484.20	23.73
6	3.00	543.90	10.98
7	3.50	572.20	4.95
8	4.00	583.80	1.99
9	4.50	588.70	0.83
10	5.00	591.10	0.41
11	5.50	592.80	0.29
12	6.00	593.70	0.15
13	6.50	594.60	0.15
14	7.00	595.20	0.10
15	7.50	595.80	0.10
16	8.00	596.30	0.08
17	8.50	596.90	0.10
18	9.00	597.20	0.05
19	9.50	597.60	0.07
20	10.00	598.00	0.07
21	10.50	598.30	0.05
22	11.00	598.70	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 4.950769 micrograms carbon
BLANK FACTOR = 4.950769 / 11.00171 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(598.7 - 4.949011)(1)/(1000) = +5.938E-01 g/L Carbon
(598.7 - 4.949011)(1)/(1000)(12) = +4.948E-02 Molar Carbon

Sample Run By: KR MONTEITH 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
< < < BLANK ANALYSIS > > >

Sample: BLK *Date: 10/11/95* *Time: 08:46:47*

Sample Size = 1 uL *Analyst : KR MONTEITH*
Dil Factor = 1 *Min Readings = 22*
Blank ID # = BLK *Max Readings = 22*
Blank Value = N/A *% Difference = 10*

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	4.10	87.80
3	1.51	12.70	67.72
4	2.00	23.20	45.26
5	2.50	29.00	20.00
6	3.01	32.10	9.66
7	3.51	34.10	5.87
8	4.01	35.70	4.48
9	4.50	37.00	3.51
10	5.00	38.00	2.63
11	5.50	38.90	2.31
12	6.00	39.60	1.77
13	6.50	40.30	1.74
14	7.00	40.80	1.23
15	7.50	41.30	1.21
16	8.00	41.80	1.20
17	8.50	42.20	0.95
18	9.00	42.60	0.94
19	9.50	43.10	1.16
20	10.00	43.40	0.69
21	10.50	43.70	0.69
22	11.00	44.00	0.68

BLANK VALUE = 44 micrograms carbon
BLANK FACTOR = 44 / 11.00171 = +4.00E+00 ug/min Carbon

< < < < WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!! > > > >

Sample Run By: _____
KR MONTEITH *00000*

	Analy		Sample #				
	KRM		2283				
			2283+SPK				
[illegible] CRYSTALS	KRM		BLK				
AW-106	KRM		STD				
POSSIBLE ORGANIC			BLK				
YELLOW BROWN			STD				
CLOUDY LIQUID			BLK	.1425	[illegible] / 35.4		
POSSIBLE ORGANIC			2020	.3691	763.1	D. BROWN PASTE	
LAYER			2020	.3884	812.1/802.3	AW-106	
.5mL TIC 94%							
1mL TOC 103%			2020+SPK	.3424	1062.7	.5mL TIC	
BROWN GREEN PASTE			2036	.4086	897.6	AW-106	
SOME CRYSTALS	KRM		2036	.2652	643.7	D. BROWN PASTE	
	KRM		2303	.1976	642.8	AW-102	
			2303	.2326	742.2	D. BROWN PASTE	
BY-110		10-11-95	2303+SPK	.2038	967.8	.5mL TIC	KRM
BROWN SUGAR		10-14-95	BLK	—	TOC ONLY 19.00		DPB
			STD	0.200mL	574.7		
.5mL 17N12B							
1mL 16N12B			S95T001976	.0589		BY-108 chocolate pudding	
LOOKS LIKE			~~19~~		RWS 10/14/95		
BROWN SUGAR		10-15-95	BLK	—	6.0/25.8		
	KRM		~~STD~~	TOC 0.200	~~6.0/25.8~~		DPB 10/15
			~~BLK~~				DPB 10/15/95
	KRM		~~S95T001976 DUP~~				DPB 10/15/95
			~~1976 SPK~~	~~+0.100mL std~~			DPB 10/15/95
17N12B							
16N12B							
BROWN SUGAR			STD		569.6/560.5		
BY-110			STD		525.4/562.5		
250mL 17N12B							
100mL 16N12B			BLK		4.9/18.6		
WET BROWN SUGAR			1976	.0493	~~[illegible]~~ 875.1	BY-108 chocolate pudding	
BY-110			1976	.0497	693.1		
			1976+SPK	.0132 + .1mL std	383.7		
WET BROWN SUGAR			1977	.0540	757.4		
BY-110		10/15/95	1977	.0519	712.5		DPB
		10-19-95	BLK	—	8.0/55.4		KRM
	KRM		STD	—	589.9/892.5		
	KRM		R BLK	—	9.9/92.5		
BX-109			R 7864	.2270	170.1/1895.4	DIRT WITH 2 CLAMS	
TAN BROWN SLUDGE		10-19-95	R	.1087	60.0/897.2		KRM

WHC-SD-WM-DP-149, REV 0

Calculations for AW102 Sample S95T2303

sample: $642.8\ \mu g / 0.1976\ g = \cancel{3.25e3}\ 3.23e3\ \mu g/g$

RWS 11/13/95 TIC

Duplicate: $742.2\ \mu g / 0.2326\ g = \cancel{3.19e3}\ 3.17e3\ \mu g/g$

RWS 11/13/95 TIC

$$\frac{|3.25 - 3.19|}{\frac{3.25 + 3.19}{2}} = 6.0 \text{ RPD}$$

Spike: $$\frac{967.8}{\left(\frac{642.8}{0.1976}\right) 0.2038 + 300} \times 100 = 100.5\ \%\ \text{Rec.}$$

THIS PAGE WAS INTENTIONALLY LEFT BLANK

LABCORE Data Entry Template for Worklist# 2921

Analyst: RAW **Instrument:** TIC01 WB39437 **Book #** 17N12-A

Method: LA-622-102 Rev/Mod C-0

Worklist Comment: AW-102, AY-102 TIC WHC-SD-WM-DP-149, REV. 0

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK				TIC-01	LIQUID	1	<5.00E00	N/A	ug/mL
		2 STD				TIC-01	LIQUID	600	581	N/A	ug/mL
95000127	AW-102 GRAB	3 SAMPLE	S95T002157	0		TIC-01	LIQUID	N/A	1.86E03	5.50E01	ug/mL
95000127	AW-102 GRAB	4 DUP	S95T002157	0		TIC-01	LIQUID	1.86E03	1.86E03	N/A	ug/mL
95000127	AW-102 GRAB	5 SPK	S95T002157	0		TIC-01	LIQUID	100	96.9	N/A	ug/mL
95000139	AY-102 GRAB	6 SAMPLE	S95T002444	0		TIC-01	LIQUID	N/A	I.S.		ug/mL
95000139	AY-102 GRAB	7 DUP	S95T002444	0		TIC-01	LIQUID	I.S.	I.S.	N/A	ug/mL

Final page for worklist # 2921

R. WENDLAND 10-18-95
Analyst Signature **Date**

10-20-95
Analyst Signature **Date**

10/23/95

2444 — USED IN PROCESS

Data Entry Comments:

.200 + 2ml H_2O — .200 inj. for S95T002157

SPK .200 — .200 — .200
DIL SPK

~~16N12-B~~ RW
17N12-A

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.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			STANDARD
Type	Sample Volume in mL	(SS)	0.200
STANDARD	Dilution Factor	(DF)	1.000
Work List	Digest Dilution Factor	(DDF)	1.000
2921	µg of Carbon in Sample	(C1)	118.9
Test Code	µg of Carbon in Blank	(C2)	2.8
TIC01			
Matrix			
LIQUID	g of Carbon/L	=	5.81E-01
Sample			
17N12A			
Instrument Code			
WB39937			
Analyst			
R WENDLAND			
Date			
10/18/95			
Time			
08:21 AM			

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

µg Carbon/mL =	5.81E+02	DETECTION LEVEL in µg/mL
		5.00E+00

Data Entry by:		Date:	10/20/95
Approved by:		Date:	10/23/95

Form 622102_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			BLANK
Type	Sample Volume in mL	(SS)	0.200
BLANK	Dilution Factor	(DF)	1.000
Work List	Digest Dilution Factor	(DDF)	1.000
2921	µg of Carbon in Sample	(C1)	2 ~~2.8~~ JWB 10/23/95
Test Code	µg of Carbon in Blank	(C2)	2.8 ~~2~~ JWB 10/23/95
TIC01			
Matrix			
LIQUID	g of Carbon/L	= <	5.00E-03
Sample #			
BLANK			
Instrument Code			
WB39937			
Analyst			
R WENDLAND			
Date			
10/18/95			
Time			
08:21 AM			

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

NOTE: Reported Result is Below Detection Level.

µg Carbon/mL =	< 5.00E+00	DETECTION LEVEL in µg/mL
		5.00E+00

Data Entry by:	[signature]	Date:	10/20/95
Approved by:	[signature]	Date:	10/23/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-W[illegible]-OP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			SAMPLE
Sample Volume in mL	(SS)		0.200
Dilution Factor	(DF)		11.000
Digest Dilution Factor	(DDF)		1.000
µg of Carbon in Sample	(C1)		36.7
µg of Carbon in Blank	(C2)		2.8
g of Carbon/L		=	1.86E+00

Type	SAMPLE
Work List	2921
Test Code	TIC01
Matrix	LIQUID
Sample #	S95T002157
Instrument Code	WB39937
Analyst	R WENDLAND
Date	10/18/95
Time	08:21 AM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

µg Carbon/mL =	1.86E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	[signature]	Date:	10/20/95
Approved by:	[signature]	Date:	10/23/95

Form 622102_C Rev. 4.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) LIQUIDS

			DUPLICATE
Type	Sample Volume in mL	(SS)	0.200
DUPLICATE	Dilution Factor	(DF)	11.000
Work List	Digest Dilution Factor	(DDF)	1.000
2921	µg of Carbon in Sample	(C1)	36.7
Test Code	µg of Carbon in Blank	(C2)	2.8
TIC01			
Matrix			
LIQUID	g of Carbon/L	=	1.86E+00
Sample#			
S95T002157DUP			
Instrument Code			
WB39937			
Analyst			
R WENDLAND			
Date			
10/18/95			
Time			
08:21 AM			

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{SS * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 m

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{SS}$

µg Carbon/mL =	1.86E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:		Date:	10/20/95
Approved by:		Date:	10/23/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-149, REV. 0

TIC : LA-622-102 (C-0) SPIKED SAMPLE

SPIKE

Type
SPIKE
Work List
2921
Test Code
TIC01
Matrix
LIQUID
Sample ID
S95T002157SPK
Instrument Code
WB39937
Analyst
R WENDLAND
Date
10/18/95
Time
08:21 AM

>>>>>> Sample Vial Data <<<<<<	
Sample Volume in mL	0.200
µg of Carbon in Sample	36.7
µg of Carbon in Blank	2.8

>>>>> Spiked Vial Data <<<<<	
Sample Volume in mL	0.200
Spike Volume in mL	0.200
Volume Injected in mL	0.200
Spike Value (µg/mL)	600
µg C in Sample + Spike	77.9
µg C in Blank	2.8

PERCENT SPIKE RECOVERY = $\frac{\text{µg Carbon Recovered from Spike} * 100}{\text{µg Carbon in Spike}}$

WHERE : µg Carbon Recovered from Spike =
[(µgC in sample + spike - µgC in blank) * (Spike Correction Factor)]
- [(µgC sample - µgC blank) * (Sample Size Correction Factor)]

Spike Correction Factor = $\frac{\text{Total volume in spiked sample vial (mL)}}{\text{Volume injected (mL)}}$

Sample Size Correction Factor = $\frac{\text{Sample size in (mL) in spiked vial}}{\text{Sample size (mL) in sample}}$

WHERE : µg Carbon in Spike =
[Spike Value (µg/mL) * Spike Volume (mL)]

Percent Spike Recovery = 96.9%

Data Entry by:		Date:	10/20/95
Approved by:		Date:	10/23/95

Form 622102X2 Rev. 1.2

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-149, REV. 0

Sample: STD *Date: 10/18/95* *Time: 07:54:32*

Sample Size = 200 uL *Analyst : RA WENDLAND*
Dil Factor = 1 *Min Readings = 10*
Blank ID # = BLK *Max Readings = 10*
Blank Value = .5594775 ug/minute C *% Difference = 10*

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	9.20	97.83
3	1.51	45.10	79.60
4	2.00	79.00	42.91
5	2.50	99.70	20.76
6	3.00	110.10	9.45
7	3.50	115.30	4.51
8	4.00	117.30	1.71
9	4.50	118.40	0.93
10	5.00	118.90	0.42

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 180 TO 185.

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 5.004669 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(118.9 - 2.798975)(1)/(200) = +5.805E-01 g/L Carbon
(118.9 - 2.798975)(1)/(200)(12) = +4.838E-02 Molar Carbon

Sample Run By: RW 10-18-95
RA WENDLAND *00000*

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
< < < BLANK ANALYSIS > > >

WHC-SD-WM-DP-149, REV. 0

BASE
Sample: ~~BLK~~ Date: 10/18/95 Time: 07:41:42

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = N/A

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.50	60.00
3	1.50	0.90	44.44
4	2.00	1.30	30.77
5	2.50	1.70	23.53
6	3.00	1.90	10.53
7	3.51	2.20	13.64
8	4.00	2.40	8.33
9	4.50	2.70	11.11
10	5.00	2.80	3.57

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 5.004669 = +5.6E-01 ug/min Carbon

Sample Run By: _____
RA WENDLAND 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: ~~BASE~~ BLK *Date: 10/18/95 Time: 07:48:21*

Sample Size = 200 uL *Analyst : RA WENDLAND*
Dil Factor = 1 *Min Readings = 10*
Blank ID # = BLK *Max Readings = 10*
Blank Value = .5594775 ug/minute C *% Difference = 10*

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.30	33.33
3	1.51	0.50	40.00
4	2.01	0.70	28.57
5	2.51	1.00	30.00
6	3.01	1.20	16.67
7	3.51	1.40	14.29
8	4.01	1.60	12.50
9	4.50	1.80	11.11
10	5.00	2.00	10.00

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 5.004669 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(2 - 2.800017)(1)/(200) = < 5.00 E-3 g/L Carbon
(2 - 2.800017)(1)/(200)(12) = < 4.17 E-4 Molar Carbon
< < < < WARNING- PERCENT DIFFERENCE EXCEEDS 10 PERCENT > > > >

Sample Run By: _____
RA WENDLAND 00000

P TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-149, REV. 0

Sample: 2157-200-2 Date: 10/18/95 Time: 08:10:34

Sample Size = 200 uL Analyst : RA WENDLAND
Dil Factor = 11 Min Readings = 10
Blank ID # = BLK Max Readings = 10
Blank Value = .5594775 ug/minute C % Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	4.50	95.56
3	1.51	18.30	75.41
4	2.01	28.40	35.56
5	2.51	32.70	13.15
6	3.01	35.00	6.57
7	3.51	35.70	1.96
8	4.00	36.10	1.11
9	4.50	36.40	0.82
10	5.00	36.70	0.82

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 5.004669 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(36.7 - 2.799983)(11)/(200) = +1.86E+00 g/L Carbon
(36.7 - 2.799983)(11)/(200)(12) = +1.55E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

P TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 57D Date: 10/18/95 Time: 08:15:52

Sample Size = 200 uL Analyst : RA WENDLAND
Dil Factor = 11 Min Readings = 10
Blank ID # = BLK Max Readings = 10
Blank Value = .5594775 ug/minute C % Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	5.40	98.15
3	1.50	20.20	73.27
4	2.00	29.30	31.06
5	2.50	33.50	12.54
6	3.00	35.00	4.29
7	3.50	35.80	2.23
8	4.00	36.10	0.83
9	4.50	36.50	1.10
10	5.00	36.70	0.54

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 5.004669 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(36.7 - 2.798873)(11)/(200) = +1.86E+00 g/L Carbon
(36.7 - 2.798873)(11)/(200)(12) = +1.55E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 57SPK *Date: 10/18/95* *Time: 08:21:23*

Sample Size = 200 uL *Analyst : RA WENDLAND*
Dil Factor = 1 *Min Readings = 10*
Blank ID # = BLK *Max Readings = 10*
Blank Value = .5594775 ug/minute C *% Difference = 10*

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	7.70	97.40
3	1.51	39.00	80.26
4	2.01	60.10	35.11
5	2.51	70.30	14.51
6	3.01	74.60	5.76
7	3.51	76.30	2.23
8	4.01	77.00	0.91
9	4.51	77.50	0.65
10	5.01	77.90	0.51

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 5.004669 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(77.9 - 2.800461)(1)/(200) = +3.75E-01 g/L Carbon
(77.9 - 2.800461)(1)/(200)(12) = +3.13E-02 Molar Carbon

Sample Run By: _____
RA WENDLAND *00000*

RADIOCHEMICAL ANALYSES

LABCORE Completed Worklist Report for Worklist# 3011

Analyst: dgg **Instrument:** LSC03 **Book#** 148B52

Method: LA-318-114 Rev/Mod A-4

Worklist Comment: Rerun

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0	@H3-01	H3-01	LIQUID	4.00E-04	4.05E-4	101.250	% Recovery
1	STD		0	@H3-01	H3-01E	LIQUID	1	1.33E+00	1.330	% Ct. Error
2	BLNK		0	@H3-01	H3-01	LIQUID	1	<2.99E-6		uCi/mL
2	BLNK		0	@H3-01	H3-01E	LIQUID	1	5.86E+00	5.860	% Ct. Error
3	SAMPLE	S95T002308	0	@H3-01	H3-01	LIQUID	N/A	5.11E-03	3.050e-006	uCi/mL
3	SAMPLE	S95T002308	0	@H3-01	H3-01E	LIQUID	N/A	3.80E-01	1.000e-004	% Ct. Error

Final page for worklist# 3011

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

10/25/95

Reviewer Signature **Date** ~~10/24/95~~

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

LABCORE Data Entry Template for Worklist# 3011

Analyst: DBB **Instrument:** LSC00 3 **Book#** 148B52

Method: LA-218-114 Rev/Mod A-4

Worklist Comment: Rerun

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@H3-01	LIQUID		
2	BLNK				@H3-01	LIQUID		
3	SAMPLE	S95T002308	0		@H3-01	LIQUID	95000127	AW-102 GRAB

Analytes Requested: H3-01 , H3-01E

Final page for worklist # 3011

D B Buffer 10-25-95
Analyst Signature **Date**

Analyst Signature **Date**

Data Entry Comments:

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

H3 Data Collection Sheet

Download File Name: I:\2.8\IN\IN\3011.TXT **Output Name:** H33011

Spike Book Number: ——— **Spike Volume:** ——— **Date/Time:** 10-25-95/0140

	Sample Type	Sample Number	Sample Size	Dilution Factor	Digest Factor	Comments
1	STD	148B52	1.0ml			
2	BLNK		1.0ml			
3	SAM	595T00-2308	1.0ml			
	DUP					
	SPK					
	SAM					
	DUP					
	SPK					
	SAM					
	DUP					
	SAM					
	DUP					
	SAM					

ID:H-3 TRITIUM 25 OCT 1995 06:27

USER: 1 COMMENT:LS 6500

PRESET TIME :	50.00								
DATA CALC :	SL DPM	H#	:YES	SAMPLE REPEATS:	1	PRINTER	: STD
COUNT BLANK :	YES	IC#	: NO	REPLICATES :	1	RS232	: OFF
TWO PHASE :	YES	AQC	: NO	CYCLE REPEATS :	1	DISK	: OFF
SCINTILLATOR:	LIQUID	LUMEX	:YES	LOW SAMPLE REJ:	0		
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:				none	

ISOTOPE 1: H-3 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low:-6.249 High:303.57

SAM NO	POS	TIME MIN	H#	H-3 CPM	H-3 %ERROR	H-3 DPM	H-3 EFF-1	LUMEX %	ELAPSED 2P TIME
B1	**-1	50.00	92.5	23.02	5.90	**47.77**	48.19	0.16	51.51
		Blank Average		DPM for		H-3 :	47.77	COEF. OF VAR:	0.000
1	**-3	50.00	94.5	451.86	1.33	**899.60**	47.70	0.12	103.31
2	**-4	50.00	91.1	23.42	5.86	**0.50**	48.52	0.20	154.95
3	**-5	50.00	95.3	5414.20	0.38	**11350.26**	47.50	0.00	206.63

WORKBOOK PAGE: STD1

H3 :LA-218-114 (A-4) TRITIUM LIQUIDS

			STD
Type	Disintegrations per minute from Counter	(dpm)	899.6
STD	Sample Volume in mL	(SS)	1
Work List	Dilution Factor	(DF)	1
3011	Digest Dilution Factor	(DDF)	1
Test Code	Background Count Rate in Counts per Minute	(BKG cpm)	23.02
@H3-01	Background Count Time in Minutes	(BKG Time)	50
Matrix	Instrument Fractional Efficiency	(EFF)	0.477
LIQUID	% Counting Error		1.33
Batch Number	Detection Limit	(Ld)	6.74
95003313	Critical Level	(Lc)	1.58
Rerun	Tritium Concentration in µCi/L		4.05E-01
0	Standard Book No.		148B52
Sample Prep	Standard Value in µCi/mL		4.0007E-04
N/A			
Sample #	Critical Level (Lc) = 2.33 * the Square Root of (BKG cpm / BKG Time)		
WORKLIST#3011	Detection Limit (Ld) = ((2.72 / BKG Time) + (2 * Lc)) / EFF		
Instrument Code	H3 µCi/L = (dpm * (1000mL/L) * DF * DDF) / (SS * (2220000dpm/µCi))		
WC51586	H3 µCi/mL = µCi/L/1000mL/L		
Prepared By	Detection Limit (µCi/mL) = (Ld)(DF)(DDF) / [(SS) (2220000 dpm/µCi)]		
CJO			
Chemist			
JLS			
Analyst	Tritium Concentration in µCi/L		4.05E-01
DGG			
Date Complete	Tritium Concentration in µCi/mL		4.05E-04
10/25/95	Detection Limit in µCi/mL		3.04E-06
Analysis Date	% Counting Error		1.33
10/25/95			
Analysis Time			
01:40 AM			
Sample Point			
AW-102			

Analyst:	DGG	Date:	10/25/95
Signature of Chemist:	JLS	Date:	10/25/95

STANDARD.WB1 REV 1.1 21811NML

WORKBOOK PAGE: BLANK2

H3 : LA-218-114 (A-4) TRITIUM LIQUIDS/ SOLIDS

			BLNK
Disintegrations per minute from Counter		(dpm)	0.5
Sample Volume in mL		(SS)	1
Dilution Factor		(DF)	1
Digest Dilution Factor		(DDF)	1
Background Count Rate in Counts per Minute		(BKG cpm)	23.02
Background Count Time in Minutes		(BKG Time)	50
Instrument Fractional Efficiency		(EFF)	0.4852
% Counting Error			5.86
Detection Limit		(Ld)	6.63
Critical Level		(Lc)	1.58
Tritium Concentration in µCi/L	<		2.99E-03

Type	BLNK
Work List	3011
Test Code	@H3-01
Matrix	LIQUID
Batch Number	95003313
Rerun	0
Sample Prep	N/A
Sample #	S95T2308-BLANK
Instrument Code	WC51586
Prepared By	CJO
Chemist	JLS
Analyst	DGG
Date Complete	10/25/95
Analysis Date	10/25/95
Analysis Time	01:40 AM
Sample Point	AW-102

Critical Level (Lc) = 2.33 * the Square Root of (BKG cpm / BKG Time)
Detection Limit (Ld) = ((2.72 / BKG Time) + (2 * Lc)) / EFF
H3 µCi/L = (dpm * (1000mL/L) * DF * DDF) / (SS * (2220000dpm/µCi))
H3 µCi/mL = µCi/L/1000mL/L
Detection Limit (µCi/mL) = (Ld)(DF)(DDF) / [(SS)(2220000 dpm/µCi)]

NOTE: Reported result is a LESS THAN value calculated from the statistical Detection Limit (Ld).

Tritium Concentration in µCi/L	<	2.99E-03
Tritium Concentration in µCi/mL	<	2.99E-06
Detection Limit in µCi/mL		2.99E-06
% Counting Error		5.86

Analyst:	DGG	Date:	10/25/95
Signature of Chemist:	JLS	Date:	10/25/95

BLANK.WB1 REV 1.1 21811NML

WORKBOOK PAGE: SAM3

WHC-SD-WM-DP-149, REV. 0

H3 :LA-218-114 (A-4) TRITIUM LIQUIDS/SOLIDS

			SAMPLE
Type	Disintegrations per minute from Counter	(dpm)	11350.26
SAMPLE	Sample Volume in mL	(SS)	1
Work List	Dilution Factor	(DF)	1
3011	Digest Dilution Factor	(DDF)	1
Test Code	Background Count Rate in Counts per Minute	(BKG cpm)	23.02
@H3-01	Background Count Time in Minutes	(BKG Time)	50
Matrix	Instrument Fractional Efficiency	(EFF)	0.475
LIQUID	% Counting Error		0.38
Batch Number	Detection Limit	(Ld)	6.77
95003313	Critical Level	(Lc)	1.58
Rerun	Tritium Concentration in µCi/L		5.11E+00
0			

Sample Prep: N/A

Sample # : S95T002308

Instrument Code: WC51586

Prepared By: CJO

Chemist: JLS

Analyst: DGG

Date Complete: 10/25/95

Analysis Date: 10/25/95

Analysis Time: 01:40 AM

Sample Point: AW-102

Critical Level (Lc) = 2.33 * the Square Root of (BKG cpm / BKG Time)

Detection Limit (Ld) = ((2.72 / BKG Time) + (2 * Lc)) / EFF

H3 µCi/L = (dpm * (1000mL/L) * DF * DDF) / (SS * (2220000dpm/µCi))

H3 µCi/mL = µCi/L/1000mL/L

Detection Limit (µCi/mL) = (Ld)(DF)(DDF) / [(SS)(2220000 dpm/µCi)]

Tritium Concentration in µCi/L	5.11E+00

Tritium Concentration in µCi/mL	5.11E-03
Detection Limit in µCi/mL	3.05E-06
% Counting Error	0.38

Analyst:	DGG	Date:	10/25/95
Signature of Chemist:	JLS	Date:	10/25/95

SAMPLE.WB1 REV 1.1 21811NML

THE FOLLOWING ANALYSES ARE INCLUDED IN THE DATA PACKAGE BUT THE RESULTS HAVE NOT BEEN REPORTED IN THE FINAL SUMMARY REPORTS.

LABCORE Data Entry Template for Worklist# 2694

Analyst: RY **Instrument:** LSC00 ~~WC51586~~ 3 **Book#** 138B52

Method: LA-218-114 Rev/Mod A-4

Worklist Comment: WHC-SD-WM-DP-149, REV. 0

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@H3-01	LIQUID		
2	BLNK				@H3-01	LIQUID		
3	SAMPLE	S95T002308	0		@H3-01	LIQUID	95000127	AW-102 GRAB

Analytes Requested: H3-01 , H3-01E

Final page for worklist # 2694

Rae Ann Green 10-12-95
Analyst Signature **Date**

10/2/95
Analyst Signature **Date**

Sample will be rerun. Standard outside of control limits

10/24/94

DATA NOT USED IN PACKAGE

Data Entry Comments:

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

H3 Data Collection Sheet

Download File Name: I:\21811N\OUT\2694.TXT **Output Name:** 2694

Spike Book Number:_____ **Spike Volume:**_____ **Date/Time:** 10-12-95/05:00

R 10-12-95

	Sample Type	Sample Number	Sample Size	Dilution Factor	Digest Factor	Comments
#1	STD	ENVSTD	1ml	1		
2	BLNK		1ml	1		
3	SAM	595T01238	1ml	1		
	DUP					
	SPK					
	SAM					DATA NOT USED IN PACKAGE
	DUP					
	SPK					
	SAM					
	DUP					
	SAM					
	DUP					
	SAM					

10-12 95

ID:H-3 TRITIUM 12 OCT 1995 10:10

USER: 1 COMMENT:LS 6500

PRESET TIME : 50.00

DATA CALC :	SL DPM	H#	:YES	SAMPLE REPEATS:	1	PRINTER	: STD
COUNT BLANK :	YES	IC#	: NO	REPLICATES :	1	RS232	: OFF
TWO PHASE :	YES	AOC	: NO	CYCLE REPEATS :	1	DISK	: OFF
SCINTILLATOR:	LIQUID	LUMEX	:YES	LOW SAMPLE REJ:	0		
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:				none	

ISOTOPE 1: H-3 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low:-6.249 High:303.57

SAM NO	POS	TIME MIN	H#	H-3 CPM	H-3 %ERROR	H-3 DPM	H-3 EFF-1	LUMEX %	ELAPSED TIME	2P
B1	**-1	50.00	70.2	22.20	6.02	41.47	53.53	0.31	51.55	
		Blank Average DPM for H-3 : 41.47 COEF. OF VAR: 0.000								
1	**-3	50.00	100.2	682.66	1.09	1433.68	46.28	0.30	104.13	
2	**-4	50.00	92.9	23.44	5.86	7.27	48.09	0.25	155.75	
3	**-5	50.00	102.9	5615.58	0.38	12270.91	45.61	0.01	207.67	

WHC-SD-WM-DP-149, REV. 0

DATA NOT USED IN PACKAGE

WORKBOOK PAGE: STD1 WHC-SD-WM-DP-149, REV. 0

H3 :LA-218-114 (A-4) TRITIUM LIQUIDS

			STD
Disintegrations per minute from Counter	(dpm)	1433.68
Sample Volume in mL	(SS)	1
Dilution Factor	(DF)	1
Digest Dilution Factor	(DDF)	1
Background Count Rate in Counts per Minute	(BKG cpm)	22.2
Background Count Time in Minutes	(BKG Time)	50
Instrument Fractional Efficiency	(EFF)	0.4628
% Counting Error		1.09
Detection Limit	(Ld)	6.83
Critical Level	(Lc)	1.55
Tritium Concentration in µCi/L		6.46E-01
Standard Book No.		138B52
Standard Value in µCi/mL		4.0226E-04

Type	STD
Work List	2694
Test Code	@H3-01
Matrix	LIQUID
Batch Number	95002888
Rerun	0
Sample Prep	N/A
Sample #	WRKLST#2694
Instrument Code	WC51586
Prepared By	MCB
Chemist	JLS
Analyst	RAG
Date Complete	10/17/95
Analysis Date	10/12/95
Analysis Time	05:00 AM
Sample Point	AW-102 GRAB

Critical Level (Lc) = 2.33 * the Square Root of (BKG cpm / BKG Time)
Detection Limit (Ld) = ((2.72 / BKG Time) + (2 * Lc)) / EFF
H3 µCi/L = (dpm * (1000mL/L) * DF * DDF) / (SS * (2220000dpm/µCi))
H3 µCi/mL = µCi/L/1000mL/L
Detection Limit (µCi/mL) = (Ld)(DF)(DDF) / [(SS) (2220000 dpm/µCi)]

Tritium Concentration in µCi/L	6.46E-01

Tritium Concentration in µCi/mL	6.46E-04
Detection Limit in µCi/mL	3.08E-06
% Counting Error	1.09

DATA NOT USED IN PACKAGE

Analyst:	RAG	Date:	10/17/95
Signature of Chemist: Jennifer L. Sleppen	JLS	Date:	10/24/95

STANDARD.WB1 REV 1.1 21811NML

WORKBOOK PAGE: BLANK2

H3 : LA-218-114 (A-4) TRITIUM LIQUIDS/ SOLIDS

			BLNK
Type	Disintegrations per minute from Counter	(dpm)	7.27
BLNK	Sample Volume in mL	(SS)	1
Work List	Dilution Factor	(DF)	1
2694	Digest Dilution Factor	(DDF)	1
Test Code	Background Count Rate in Counts per Minute	(BKG cpm)	22.2
@H3-01	Background Count Time in Minutes	(BKG Time)	50
Matrix	Instrument Fractional Efficiency	(EFF)	0.4809
LIQUID	% Counting Error		5.86
Batch Number	Detection Limit	(Ld)	6.57
95002888	Critical Level	(Lc)	1.55
Rerun	Tritium Concentration in µCi/L		3.27E-03
0			
Sample Prep	Critical Level (Lc) = 2.33 * the Square Root of (BKG cpm / BKG Time)		
N/A	Detection Limit (Ld) = ((2.72 / BKG Time) + (2 * Lc)) / EFF		
Sample #	H3 µCi/L = (dpm * (1000mL/L) * DF * DDF) / (SS * (2220000dpm/µCi))		
WRKLST#2694	H3 µCi/mL = µCi/L/1000mL/L		
Instrument Code	Detection Limit (µCi/mL) = (Ld)(DF)(DDF) / [(SS)(2220000 dpm/µCi)]		
WC51586			
Prepared By			
MCB			
Chemist			
JLS			
Analyst	Tritium Concentration in µCi/L		3.27E-03
RAG			
Date Complete	Tritium Concentration in µCi/mL		3.27E-06
10/17/95	Detection Limit in µCi/mL		2.96E-06
Analysis Date	% Counting Error		5.86
10/12/95			
Analysis Time			
05:00 AM			
Sample Point			
AW-102 GRAB			

DATA NOT USED IN PACKAGE

Analyst:	RAG	Date:	10/17/95
Signature of Chemist:	JLS	Date:	10/24/95

BLANK.WB1 REV 1.1 21811NML

WORKBOOK PAGE: SAM3

H3 :LA-218-114 (A-4) TRITIUM LIQUIDS/SOLIDS

			SAMPLE
Type	Disintegrations per minute from Counter	(dpm)	12270.91
SAMPLE	Sample Volume in mL	(SS)	1
Work List	Dilution Factor	(DF)	1
2694	Digest Dilution Factor	(DDF)	1
Test Code	Background Count Rate in Counts per Minute	(BKG cpm)	22.2
@H3-01	Background Count Time in Minutes	(BKG Time)	50
Matrix	Instrument Fractional Efficiency	(EFF)	0.4561
LIQUID	% Counting Error		0.38
Batch Number	Detection Limit	(Ld)	6.93
95002888	Critical Level	(Lc)	1.55
Rerun	Tritium Concentration in µCi/L		5.53E+00
0			

Sample Prep	Critical Level (Lc) = 2.33 * the Square Root of (BKG cpm / BKG Time)
N/A	Detection Limit (Ld) = ((2.72 / BKG Time) + (2 * Lc)) / EFF
Sample #	H3 µCi/L = (dpm * (1000mL/L) * DF * DDF) / (SS * (2220000dpm/µCi))
S95T002308	H3 µCi/mL = µCi/L/1000mL/L
Instrument Code	Detection Limit (µCi/mL) = (Ld)(DF)(DDF) / [(SS)(2220000 dpm/µCi)]
WC51586	
Prepared By	
MCB	
Chemist	
JLS	
Analyst	Tritium Concentration in µCi/L 5.53E+00
RAG	
Date Complete	Tritium Concentration in µCi/mL 5.53E-03
10/17/95	Detection Limit in µCi/mL 3.12E-06
Analysis Date	% Counting Error 0.38
10/12/95	
Analysis Time	
05:00 AM	
Sample Point	
AW-102 GRAB	

DATA NOT USED IN PACKAGE

Analyst:	RAG	Date:	10/17/95
Signature of Chemist:	JLS	Date:	10/24/95

SAMPLE.WB1 REV 1.1 21811NML

LABCORE Data Entry Template for Worklist# 2719

Analyst: RK **Instrument:** AB00(15) WB26872 **Book #** 147B52

Method: LA-508-101 Rev/Mod D2

Worklist Comment: Use sample size of .100-10-.050 dlh

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST		MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@AB-01	ALPHA01	LIQUID			N/A	uCi/mL
		1	STD				@AB-01	ALPHA01E	LIQUID			N/A	% Ct. Error
		1	STD				@AB-01	BETA-01	LIQUID			N/A	uCi/mL
		1	STD				@AB-01	BETA-01E	LIQUID			N/A	% Ct. Error
		2	BLNK-PREP				@AB-01	ALPHA01	LIQUID			N/A	uCi/mL
		2	BLNK-PREP				@AB-01	ALPHA01E	LIQUID			N/A	% Ct. Error
		2	BLNK-PREP				@AB-01	BETA-01	LIQUID			N/A	uCi/mL
		2	BLNK-PREP				@AB-01	BETA-01E	LIQUID			N/A	% Ct. Error
		3	BLNK/BKG				@AB-01	ALPHA01	LIQUID			N/A	uCi/mL
		3	BLNK/BKG				@AB-01	BETA-01	LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	4	SAMPLE	S95T002158	0		@AB-01	ALPHA01	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	4	SAMPLE	S95T002158	0		@AB-01	ALPHA01E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	4	SAMPLE	S95T002158	0		@AB-01	BETA-01	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	4	SAMPLE	S95T002158	0		@AB-01	BETA-01E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	5	DUP	S95T002158	0		@AB-01	ALPHA01	LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	5	DUP	S95T002158	0		@AB-01	ALPHA01E	LIQUID			N/A	% Ct. Error
95000127	AW-102 GRAB	5	DUP	S95T002158	0		@AB-01	BETA-01	LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	5	DUP	S95T002158	0		@AB-01	BETA-01E	LIQUID			N/A	% Ct. Error

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.

LABCORE Data Entry Template for Worklist# 2719

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------		MATRIX	ACTUAL	FOUND	DL	UNIT
95000127	AW-102 GRAB	6 SAMPLE	S95T002308	0	@AB-01	ALPHA01		LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	6 SAMPLE	S95T002308	0	@AB-01	ALPHA01E		LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	6 SAMPLE	S95T002308	0	@AB-01	BETA-01		LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	6 SAMPLE	S95T002308	0	@AB-01	BETA-01E		LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	7 SAMPLE	S95T002309	0	@AB-01	ALPHA01		LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	7 SAMPLE	S95T002309	0	@AB-01	ALPHA01E		LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	7 SAMPLE	S95T002309	0	@AB-01	BETA-01		LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	7 SAMPLE	S95T002309	0	@AB-01	BETA-01E		LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	8 DUP	S95T002309	0	@AB-01	ALPHA01		LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	8 DUP	S95T002309	0	@AB-01	ALPHA01E		LIQUID			N/A	% Ct. Error
95000127	AW-102 GRAB	8 DUP	S95T002309	0	@AB-01	BETA-01		LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	8 DUP	S95T002309	0	@AB-01	BETA-01E		LIQUID			N/A	% Ct. Error

Final page for worklist # 2719

Analyst Signature 10/10/95 Date

Analyst Signature 10/11/95 Date

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

TB : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
DETECTOR NUMBER			15	15
DISH SIZE (1 , 2 , or 5)		(MS)	2	2
GROSS COUNTS		(GC)	76830	76614
COUNT TIME in MINUTES		(CT)	30	30
BACKGROUND in cpm		(BKG)	10	10
SAMPLE SIZE in mL		(SS)	10.000	10.000
DILUTION FACTOR		(DF)	1	1
STANDARD BOOK NUMBER		(Std BN)	147B52	147B52
EFFICIENCY FACTOR		(EFF)	0.4207	0.4207
Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE			2551.000	2543.800
Standard Value in µCi/mL			2.75E-04	
Concentration in µCi/L	=		2.73E-01	
Replicate Concentration in µCi/L	=		2.72E-01	
AVERAGE CONCENTRATION in µCi/L	=		2.7275E-01	

Type	STD
Work List	2719
AT or TB ?	TB
Test Code	@AB-01
Matrix	LIQUID
Batch Number	95002920
Rerun	0
Sample Prep	N/A
Sample #	WRKLST#2719
Instrument Code	WB26872
Prepared By	MCB
Chemist	SLF
Analyst	RWK
Date Complete	10/11/95
Analysis Date	10/10/95
Analysis Time	11:00 AM
Sample Point	AW-102 GRAB

Rs (Sample Count Rate) = (TC / CT) - BKG

TOTAL BETA µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)

TOTAL BETA µCi/mL = TOTAL BETA µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

			DETECTION LEVEL
TOTAL BETA CONTRATION in µCi/mL		2.73E-04	2.98E-07 µCi/mL
RELATIVE COUNTING ERROR	=	0.7%	

Analyst:	MCB		Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: STD2

AT : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		15	15
STD	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	2885	2802
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@AB-01	STANDARD BOOK NUMBER	(Std BN)	147B52	147B52
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		95.567	92.800
Batch Number	Standard Value in µCi/mL		~~1.69E-05~~	1.92E-05 RAE 10/27/95
95002920	Concentration in µCi/L	=	1.81E-02	
Rerun	Replicate Concentration in µCi/L	=	1.76E-02	
0	AVERAGE CONCENTRATION in µCi/L	=	1.7826E-02	

Sample Prep: N/A

Sample #: WRKLST#2719

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: RWK

Date Complete: 10/11/95

Analysis Date: 10/10/95

Analysis Time: 11:00 AM

Sample Point: AW-102 GRAB

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

ALPHA TOTAL CONCENTRATION in µCi/mL		1.78E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR	=	3.7%	1.42E-07 µCi/mL

Analyst:	MCB		Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK3

TB : LA-508-101 (D-2) LIQUIDS

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		15	15
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work Unit	GROSS COUNTS	(GC)	484	428
2719	COUNT TIME in MINUTES	(CT)	30	30
Analyte	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		6.133	4.267

Batch Number		
95002920	Blank Concentration in µCi/L	1.33E+01
Replicate	Replicate Concentration in µCi/L	9.23E+00
0	Average Concentration in µCi/L	1.1247E+01

Sample Code: N/A

Sample Date: S95T2158

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: RWK

Date Completed: 10/11/95

Preservation: 10/10/95

Collection Time: 11:00 AM

Sample Matrix: AW-102 GRAB

Rs (Sample Count Rate) = (TC / CT) - BKG

TOTAL BETA µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

TOTAL BETA µCi/mL = TOTAL BETA µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
TOTAL BETA	in µCi/mL	1.12E-02	6.02E-03 µCi/mL
RELATIVE COUNTING ERROR		41.3%	

RWK 11/15/95

Analyst:	MCB		Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

BLANK.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK4

AT : LA-508-101 (D-2) LIQUIDS

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		15	15
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	3	6
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.330
Batch Number				
95002920	Blank Concentration in µCi/L	<	1.26E+00	
Rerun	Replicate Concentration in µCi/L	<	1.26E+00	
0	Maximum Concentration in µCi/L	<	1.2616E+00	

Sample Prep: N/A

Sample #: S95T2158

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: RWK

Date Complete: 10/11/95

Analysis Date: 10/10/95

Analysis Time: 11:00 AM

Sample Point: AW-102 GRAB

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/mL	< 1.26E-03	
	RSE 11/15/95 LESS Than Value was Determined from L		2.87E-03 µCi/mL
RELATIVE COUNTING ERROR		500.0%	

Analyst:		MCB	Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

BLANK.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM7

TB : LA-508-101 (D-2) LIQUIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	224844	228329
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		7484.800	7600.967
Batch Number				
95002920	Blank Concentration in µCi/L		1.62E+04	
Rerun	Replicate Concentration in µCi/L		1.64E+04	
0	Average Concentration in µCi/L		1.6314E+04	
Sample Prep				
N/A	Rs (Sample Count Rate) = (TC / CT) - BKG			
Sample #	TOTAL BETA µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)			
S95T002158	TOTAL BETA µCi/mL = TOTAL BETA µCi/L / 1000mL/L			
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			
Prepared By				
MCB				
Chemist	v RESULTS v			
SLF	TOTAL BETA	in µCi/mL	1.63E+01	DETECTION LEVEL
Analyst		RAE 11/15/95		
RWK				
Date Complete				6.02E-03 µCi/mL
10/11/95	RELATIVE COUNTING ERROR		0.4%	
Analysis Date				
10/10/95				
Analysis Time				
11:00 AM				
Sample Point				
AW-102 GRAB				

Analyst:	MCB		Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

SAMPLE.WB1 Rev. 1.0 50810 ML

WORKBOOK PAGE: SAM8

AT : LA-508-101 (D-2) LIQUIDS

			SAMPLE	REPLICATE
DETECTOR NUMBER			15	15
DISH SIZE (1 , 2 , or 5)	(MS)		2	2
GROSS COUNTS	(GC)		15	10
COUNT TIME in MINUTES	(CT)		30	30
BACKGROUND in cpm	(BKG)		0.6	0.6
SAMPLE SIZE in mL	(SS)		0.050	0.050
DILUTION FACTOR	(DF)		101	101
DIGEST DILUTION FACTOR	(DDF)		1	1
EFFICIENCY FACTOR	(EFF)		0.2380	0.2380
Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE			0.330	0.330
Blank Concentration in µCi/L		<	1.26E+00	
Replicate Concentration in µCi/L		<	1.26E+00	
Maximum Concentration in µCi/L		<	1.2616E+00	

Type	SAMPLE
Work List	2719
AT or TB ?	AT
Test Code	@AB-01
Matrix	LIQUID
Batch Number	95002920
Rerun	0
Sample Prep	N/A
Sample #	S95T002158
Instrument Code	WB26872
Prepared By	MCB
Chemist	SLF
Analyst	RWK
Date Complete	10/11/95
Analysis Date	10/10/95
Analysis Time	11:00 AM
Sample Point	AW-102 GRAB

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/mL	< 1.26E-03	
	RDE 11/15/95 LESS Than Value was Determined from L		2.87E-03 µCi/mL
RELATIVE COUNTING ERROR		500.0%	

Analyst:	MCB		Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP9

TB : LA-508-101 (D-2) LIQUIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	228296	225755
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		7599.867	7515.167

Batch Number	
95002920	Blank Concentration in µCi/L 1.64E+04
Rerun	Replicate Concentration in µCi/L 1.63E+04
0	Average Concentration in µCi/L 1.6346E+04
Sample Prep	
N/A	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	TOTAL BETA µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)
S95T002158	TOTAL BETA µCi/mL = TOTAL BETA µCi/L / 1000mL/L
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
MCB	
Chemist	v RESULTS v
SLF	TOTAL BETA in µCi/mL 1.63E+01
Analyst	RAE 11/15/95
RWK	
Date Complete	
10/11/95	RELATIVE COUNTING ERROR 0.4%
Analysis Date	
10/10/95	
Analysis Time	
11:00 AM	
Sample Point	
AW-102 GRAB	

DETECTION LEVEL
6.02E-03 µCi/mL

Analyst:	MCB	Date: 11-Oct-95	
Signature of Chemist:	SLF	Date: 10/16/95	

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP1

AT : LA-508-101 (D-2) LIQUIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	7	17
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.330
Batch Number				
95002920	Blank Concentration in µCi/L	<	1.26E+00	
Rerun	Replicate Concentration in µCi/L	<	1.26E+00	
0	Maximum Concentration in µCi/L	<	1.2616E+00	
Sample Prep				
N/A				
Sample #				
S95T002158				
Instrument Code				
WB26872				
Prepared By				
MCB				
Chemist				
SLF				
Analyst				
RWK				
Date Complete				
10/11/95				
Analysis Date				
10/10/95				
Analysis Time				
11:00 AM				
Sample Point				
AW-102 GRAB				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/mL	< 1.26E-03	2.87E-03 µCi/mL
	RSE 11/15/95 LESS Than Value was Determined from L		
RELATIVE COUNTING ERROR		500.0%	

Analyst:	MCB		Date: 11-Oct-95
Signature of Chemist:	SLF		Date: 10/16/95

SAMPLE WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM1

TB : LA-508-101 (D-2) LIQUIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	622613	606781
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		20743.767	20216.033

Batch Number	
95002920	Blank Concentration in µCi/L 4.49E+04
Rerun	Replicate Concentration in µCi/L 4.37E+04
0	Average Concentration in µCi/L 4.4295E+04
Sample Prep	
N/A	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	TOTAL BETA µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)
S95T002308	TOTAL BETA µCi/mL = TOTAL BETA µCi/L / 1000mL/L
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
MCB	
Chemist	v RESULTS v
SLF	TOTAL BETA in µCi/mL 4.43E+01
Analyst	RCE 11/15/95
RWK	
Date Complete	
10/11/95	RELATIVE COUNTING ERROR 0.3%
Analysis Date	
10/10/95	
Analysis Time	
11:00 AM	
Sample Point	
AW-102 GRAB	

DETECTION LEVEL
6.02E-03 µCi/mL

Analyst:	MCB		Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM1

AT : LA-508-101 (D-2) LIQUIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	16	5
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.330
Batch Number				
95002920	Blank Concentration in µCi/L	<	1.26E+00	
Rerun	Replicate Concentration in µCi/L	<	1.26E+00	
0	Maximum Concentration in µCi/L	<	1.2616E+00	

Sample Prep: N/A

Sample #: S95T002308

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: RWK

Date Complete: 10/11/95

Analysis Date: 10/10/95

Analysis Time: 11:00 AM

Sample Point: AW-102 GRAB

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/mL	< 1.26E-03	
	RAE 11/15/95 LESS Than Value was Determined from L		
RELATIVE COUNTING ERROR		500.0%	2.87E-03 µCi/mL

Analyst:	MCB		Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM1

TB : LA-508-101 (D-2) LIQUIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	651367	643044
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		21702.233	21424.800

Batch Number	
95002920	Blank Concentration in µCi/L 4.69E+04
Rerun	Replicate Concentration in µCi/L 4.63E+04
0	Average Concentration in µCi/L 4.6639E+04
Sample Prep	
N/A	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	TOTAL BETA µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)
S95T002309	TOTAL BETA µCi/mL = TOTAL BETA µCi/L / 1000mL/L
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
MCB	
Chemist	v RESULTS v
SLF	TOTAL BETA in µCi/mL 4.66E+01
Analyst	RAE 11/15/95
RWK	
Date Complete	
10/11/95	RELATIVE COUNTING ERROR 0.2%
Analysis Date	
10/10/95	
Analysis Time	
11:00 AM	
Sample Point	
AW-102 GRAB	

DETECTION LEVEL
6.02E-03 µCi/mL

Analyst:		MCB	Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM1

AT : LA-508-101 (D-2) LIQUIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	22	21
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.481	0.443

Blank Concentration in µCi/L	<	1.84E+00
Replicate Concentration in µCi/L	<	1.70E+00
Maximum Concentration in µCi/L	<	1.8396E+00

Batch Number: 95002920
Rerun: 0
Sample Prep: N/A
Sample #: S95T002309
Instrument Code: WB26872
Prepared By: MCB
Chemist: SLF
Analyst: RWK
Date Complete: 10/11/95
Analysis Date: 10/10/95
Analysis Time: 11:00 AM
Sample Point: AW-102 GRAB

Rs (Sample Count Rate) = (TC / CT) - BKG
ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)
ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L
Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/mL	< 1.84E-03	
	LESS THAN Value was Determined from		2.87E-03 µCi/mL
RELATIVE COUNTING ERROR		500.0%	

rae 11/15/95

Analyst:	MCB	Date: 11-Oct-95	
Signature of Chemist:	SLF	Date: 10/16/95	

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP1

TB : LA-508-101 (D-2) LIQUIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	644445	641022
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		21471.500	21357.400

Batch Number	
95002920	Blank Concentration in µCi/L 4.64E+04
Rerun	Replicate Concentration in µCi/L 4.62E+04
0	Average Concentration in µCi/L 4.6316E+04
Sample Prep	
N/A	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	TOTAL BETA µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)
S95T002309	TOTAL BETA µCi/mL = TOTAL BETA µCi/L / 1000mL/L
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
MCB	
Chemist	v RESULTS v
SLF	TOTAL BETA in µCi/mL 4.63E+01
Analyst	RAE 11/15/95
RWK	
Date Complete	
10/11/95	RELATIVE COUNTING ERROR 0.2%
Analysis Date	
10/10/95	
Analysis Time	
11:00 AM	
Sample Point	
AW-102 GRAB	

DETECTION LEVEL
6.02E-03 µCi/mL

Analyst:	MCB		Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP1

AT : LA-508-101 (D-2) LIQUIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	27	21
2719	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.669	0.443
Batch Number				
95002920	Blank Concentration in µCi/L	<	2.56E+00	
Rerun	Replicate Concentration in µCi/L	<	1.70E+00	
0	Maximum Concentration in µCi/L	<	2.5575E+00	
Sample Prep				
N/A				
Sample #				
S95T002309				
Instrument Code				
WB26872				
Prepared By				
MCB				
Chemist				
SLF				
Analyst				
RWK				
Date Complete				
10/11/95				
Analysis Date				
10/10/95				
Analysis Time				
11:00 AM				
Sample Point				
AW-102 GRAB				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

ALPHA TOTAL	in µCi/mL	< 2.56E-03	DETECTION LEVEL
	RKE 11/15/95 LESS THAN Value was Determined from		2.87E-03 µCi/mL
RELATIVE COUNTING ERROR		408.0%	

Analyst:	MCB		Date: 11-Oct-95
Signature of Chemist:		SLF	Date: 10/16/95

SAMPLE.WB1 Rev. 1.0 508101ML

worklistrpt Version 2.1 05/15/95
10/17/95 09:06

LABCORE Data Entry Template for Worklist# 2938

Analyst: AKL **Instrument:** AB00 15 **Book #** 140652

Method: LA-508-101 Rev/Mod D-2 WHC-SD-WM-DP-149, REV. 0

Worklist Comment: Determine sample size using Ludlum. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------		MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@AB-01	ALPHA01	SOLID			N/A	uCi/g
		1	STD				@AB-01	ALPHA01E	SOLID			N/A	% Ct. Error
		1	STD				@AB-01	BETA-01	SOLID			N/A	uCi/g
		1	STD				@AB-01	BETA-01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@AB-01	ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@AB-01	ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@AB-01	BETA-01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@AB-01	BETA-01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG				@AB-01	ALPHA01	SOLID			N/A	uCi/g
		3	BLNK/BKG				@AB-01	BETA-01	SOLID			N/A	uCi/g
95000127	AW-102 GRAB	4	SAMPLE	S95T002304	0	F	@AB-01	ALPHA01	SOLID	N/A			uCi/g
95000127	AW-102 GRAB	4	SAMPLE	S95T002304	0	F	@AB-01	ALPHA01E	SOLID	N/A			% Ct. Error
95000127	AW-102 GRAB	4	SAMPLE	S95T002304	0	F	@AB-01	BETA-01	SOLID	N/A			uCi/g
95000127	AW-102 GRAB	4	SAMPLE	S95T002304	0	F	@AB-01	BETA-01E	SOLID	N/A			% Ct. Error
95000127	AW-102 GRAB	5	DUP	S95T002304	0	F	@AB-01	ALPHA01	SOLID			N/A	uCi/g
95000127	AW-102 GRAB	5	DUP	S95T002304	0	F	@AB-01	ALPHA01E	SOLID			N/A	% Ct. Error
95000127	AW-102 GRAB	5	DUP	S95T002304	0	F	@AB-01	BETA-01	SOLID			N/A	uCi/g
95000127	AW-102 GRAB	5	DUP	S95T002304	0	F	@AB-01	BETA-01E	SOLID			N/A	% Ct. Error

Data Entry Comments: The high RPD for sample 2304 alpha is acceptable due to the low alpha activity in the sample. [signature] 10/23/95

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# 2938

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------		MATRIX	ACTUAL	FOUND	DL	UNIT
95000127	AW-102 GRAB	6 SAMPLE	S95T002305	0	F	@AB-01	ALPHA01	SOLID	N/A			uCi/g
95000127	AW-102 GRAB	6 SAMPLE	S95T002305	0	F	@AB-01	ALPHA01E	SOLID	N/A			% Ct. Error
95000127	AW-102 GRAB	6 SAMPLE	S95T002305	0	F	@AB-01	BETA-01	SOLID	N/A			uCi/g
95000127	AW-102 GRAB	6 SAMPLE	S95T002305	0	F	@AB-01	BETA-01E	SOLID	N/A			% Ct. Error
95000127	AW-102 GRAB	7 DUP	S95T002305	0	F	@AB-01	ALPHA01	SOLID			N/A	uCi/g
95000127	AW-102 GRAB	7 DUP	S95T002305	0	F	@AB-01	ALPHA01E	SOLID			N/A	% Ct. Error
95000127	AW-102 GRAB	7 DUP	S95T002305	0	F	@AB-01	BETA-01	SOLID			N/A	uCi/g
95000127	AW-102 GRAB	7 DUP	S95T002305	0	F	@AB-01	BETA-01E	SOLID			N/A	% Ct. Error

Final page for worklist # 2938

C Lewis 10/18/95

Analyst Signature **Date**

Analyst Signature **Date**

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.

LABCORE Completed Worklist Report for Worklist# 2938

Analyst: akl **Instrument:** AB15 **Book#** _____

Method: _____ Rev/Mod _____

Worklist Comment: Determine sample size using Ludlum. SLF

Seq	Type	Sample#	R	A		Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@AB-01	ALPHA01	SOLID	1.92e-05	1.83e-05	95.210	% Recovery
1	STD		0		@AB-01	ALPHA01E	SOLID	1	3.69E+00	3.690	% Ct. Error
1	STD		0		@AB-01	BETA-01	SOLID	2.75E-04	2.62E-4	95.270	% Recovery
1	STD		0		@AB-01	BETA-01E	SOLID	1	7.30E-01	0.730	% Ct. Error
2	BLNK-PREP		0		@AB-01	ALPHA01	SOLID	1	<3.34E-2		uCi/g
2	BLNK-PREP		0		@AB-01	ALPHA01E	SOLID	1.00	5.00E+02	500.000	% Ct. Error
2	BLNK-PREP		0		@AB-01	BETA-01	SOLID	1	4.60E-1	0.460	uCi/g
2	BLNK-PREP		0		@AB-01	BETA-01E	SOLID	1.00	3.13E+01	31.300	% Ct. Error
3	BLNK/BKG		0		@AB-01	ALPHA01	SOLID	1	6.67E-01	0.670	uCi/g
3	BLNK/BKG		0		@AB-01	BETA-01	SOLID	1	1.70E+00	1.700	uCi/g
4	SAMPLE	S95T002304	0	F	@AB-01	ALPHA01	SOLID	N/A	5.55E-01	7.740e-002	uCi/g
4	SAMPLE	S95T002304	0	F	@AB-01	ALPHA01E	SOLID	N/A	2.08E+01	0.000	% Ct. Error
4	SAMPLE	S95T002304	0	F	@AB-01	BETA-01	SOLID	N/A	3.85E+02	0.184	uCi/g
4	SAMPLE	S95T002304	0	F	@AB-01	BETA-01E	SOLID	N/A	4.72E-01	0.000	% Ct. Error
5	DUP	S95T002304	0	F	@AB-01	ALPHA01	SOLID	5.55E-1	6.96E-1	22.540	RPD
5	DUP	S95T002304	0	F	@AB-01	ALPHA01E	SOLID	1.00	1.60E+01	16.000	% Ct. Error
5	DUP	S95T002304	0	F	@AB-01	BETA-01	SOLID	3.85E+2	3.76E+2	2.370	RPD
5	DUP	S95T002304	0	F	@AB-01	BETA-01E	SOLID	1.00	4.81E-01	0.480	% Ct. Error
6	SAMPLE	S95T002305	0	F	@AB-01	ALPHA01	SOLID	N/A	3.53E+00	0.288	uCi/g
6	SAMPLE	S95T002305	0	F	@AB-01	ALPHA01E	SOLID	N/A	1.33E+01	0.000	% Ct. Error
6	SAMPLE	S95T002305	0	F	@AB-01	BETA-01	SOLID	N/A	1.93E+03	0.686	uCi/g
6	SAMPLE	S95T002305	0	F	@AB-01	BETA-01E	SOLID	N/A	4.05E-01	0.000	% Ct. Error
7	DUP	S95T002305	0	F	@AB-01	ALPHA01	SOLID	3.53E+0	3.51E+0	0.570	RPD
7	DUP	S95T002305	0	F	@AB-01	ALPHA01E	SOLID	1.00	1.35E+01	13.500	% Ct. Error
7	DUP	S95T002305	0	F	@AB-01	BETA-01	SOLID	1.93E+3	1.87E+3	3.160	RPD
7	DUP	S95T002305	0	F	@AB-01	BETA-01E	SOLID	1.00	4.17E-01	0.420	% Ct. Error

Final page for worklist# 2938

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

10/25/95

Reviewer Signature **Date**

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

WORKBOOK PAGE: STD1

TB : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
DETECTOR NUMBER			15	15
DISH SIZE (1 , 2 , or 5)		(MS)	2	2
GROSS COUNTS		(GC)	74252	72970
COUNT TIME in MINUTES		(CT)	30	30
BACKGROUND in cpm		(BKG)	10	10
SAMPLE SIZE in mL		(SS)	10.000	10.000
DILUTION FACTOR		(DF)	1	1
STANDARD BOOK NUMBER		(Std BN)	147B52	147B52
EFFICIENCY FACTOR		(EFF)	0.4207	0.4207
Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE			2465.067	2422.333
Standard Value in µCi/mL			2.75E-04	
Concentration in µCi/L	=		2.64E-01	
Replicate Concentration in µCi/L	=		2.59E-01	
AVERAGE CONCENTRATION in µCi/L	=		2.6165E-01	

Type	STD
Work List	2938
AT or TB ?	TB
Test Code	@AB-01
Matrix	LIQUID
Batch Number	95003215
Rerun	0
Sample Prep	N/A
Sample #	
Instrument Code	WB26872
Prepared By	SEH
Chemist	SLF
Analyst	AKL
Date Complete	10/19/95
Analysis Date	10/18/95
Analysis Time	01:00 PM
Sample Point	AW-102

Rs (Sample Count Rate) = (TC / CT) - BKG

TOTAL BETA µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)

TOTAL BETA µCi/mL = TOTAL BETA µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

			DETECTION LEVEL
TOTAL BETA CONTRATION in µCi/mL		2.62E-04	2.98E-07 µCi/mL
RELATIVE COUNTING ERROR	=	0.7%	

Analyst:	SEH	Date: 19-Oct-95	
Signature of Chemist:	SLF	Date: 10/23/95	

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: STD2

AT : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		15	15
STD	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work Unit	GROSS COUNTS	(GC)	2958	2958
2938	COUNT TIME in MINUTES	(CT)	30	30
Analyte	BACKGROUND in cpm	(BKG)	0.45	0.45
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Control	DILUTION FACTOR	(DF)	1	1
@AB-01	STANDARD BOOK NUMBER	(Std BN)	147B52	147B52
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		94.817	98.150
Batch Number	Standard Value in µCi/mL		~~1.69E-05~~	1.92E-5 SLF 10/25/95
95003215	Concentration in µCi/L	=	1.79E-02	
Replicate	Replicate Concentration in µCi/L	=	1.86E-02	
0	AVERAGE CONCENTRATION in µCi/L	=	1.8261E-02	

Sample Type	
N/A	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample Size	ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)
	ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
15	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
SEH	
Chemist	
SLF	
Analyzed By	
AKL	
Date Completed	
10/19/95	
Analysis Date	
10/18/95	
Analysis Time	
01:00 PM	
Instrument Id	
AW-102	

			DETECTION LEVEL
ALPHA TOTAL CONCENTRATION in µCi/mL		1.83E-05	
RELATIVE COUNTING ERROR	=	3.7%	1.25E-07 µCi/mL

Analyst:	SEH	Date: 19-Oct-95	
Signature of Chemist:	SLF	Date: 10/23/95	

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK3

TB : LA-508-101 (D-2) SOLIDS

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		15	15
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	544	474
2938	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	21	21
@AB-01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	0.6804	0.6804
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		8.133	5.800

Batch Number	
95003215	Blank Concentration in µCi/g 5.38E-01
Rerun	Replicate Concentration in µCi/g 3.83E-01
0	Average Concentration in µCi/g 4.6045E-01
Sample Prep	
N/A	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	TOTAL BETA µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
SEH	
Chemist	
SLF	
Analyst	
AKL	
Date Complete	
10/19/95	
Analysis Date	
10/18/95	
Analysis Time	
01:00 PM	
Sample Point	
AW-102	

	v RESULTS v		DETECTION LEVEL
TOTAL BETA	in µCi/g	4.60E-01	
RELATIVE COUNTING ERROR		31.3%	1.84E-01 µCi/g

Analyst:	SEH	Date: 19-Oct-95	
Signature of Chemist:	SLF	Date: 10/23/95	

BLANK.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK4

AT : LA-508-101 (D-2) SOLIDS

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		15	15
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	9	9
2938	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.45	0.45
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	21	21
@AB-01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	0.6804	0.6804
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.286	0.286

Batch Number			
95003215	Blank Concentration in µCi/g	<	3.34E-02
Rerun	Replicate Concentration in µCi/g	<	3.34E-02
0	Maximum Concentration in µCi/g	<	3.3389E-02

Sample Prep: N/A

Sample #:

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

Instrument Code: WB26872

Prepared By: SEH

Chemist: SLF

Analyst: AKL

Date Complete: 10/19/95

Analysis Date: 10/18/95

Analysis Time: 01:00 PM

Sample Point: AW-102

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 3.34E-02	
	LESS Than Value was Determined from L		7.74E-02 µCi/g
RELATIVE COUNTING ERROR		500.0%	

Analyst:	SEH	Date: 19-Oct-95	
Signature of Chemist:	SLF	Date: 10/23/95	

BLANK.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM7

TB : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	173085	176623
2938	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	21	21
@AB-01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	0.6804	0.6804
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		5759.500	5877.433

Blank Concentration in µCi/g	3.81E+02
Replicate Concentration in µCi/g	3.88E+02
Average Concentration in µCi/g	3.8456E+02

Batch Number: 95003215
Rerun: 0
Sample Prep: FUSION01
Sample #: S95T002304
Instrument Code: WB26872
Prepared By: SEH
Chemist: SLF
Analyst: AKL
Date Complete: 10/19/95
Analysis Date: 10/18/95
Analysis Time: 01:00 PM
Sample Point: AW-102

Rs (Sample Count Rate) = (TC / CT) - BKG
TOTAL BETA µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
TOTAL BETA	in µCi/g	3.85E+02	1.84E-01 µCi/g
RELATIVE COUNTING ERROR		0.5%	

Analyst:	SEH	Date: 19-Oct-95	
Signature of Chemist:	SLF	Date: 10/23/95	

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM8

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	188	124
2938	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.45	0.45
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	21	21
@AB-01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	0.6804	0.6804
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		5.817	3.683

Batch Number	
95003215	Blank Concentration in µCi/g 6.80E-01
Rerun	Replicate Concentration in µCi/g 4.30E-01
0	Average Concentration in µCi/g 5.5494E-01

Sample Prep: FUSION01

Sample #: S95T002304

Instrument Code: WB26872

Prepared By: SEH

Chemist: SLF

Analyst: AKL

Date Complete: 10/19/95

Analysis Date: 10/18/95

Analysis Time: 01:00 PM

Sample Point: AW-102

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	5.55E-01	7.74E-02 µCi/g
RELATIVE COUNTING ERROR		20.8%	

Analyst:		SEH	Date: 19-Oct-95
Signature of Chemist:		SLF	Date: 10/23/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP9

TB : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	168997	166922
2938	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	21	21
@AB-01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	0.6684	0.6684
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		5623.233	5554.067

Batch Number	
95003215	Blank Concentration in µCi/g 3.78E+02
Rerun	Replicate Concentration in µCi/g 3.74E+02
0	Average Concentration in µCi/g 3.7601E+02

Sample Prep: FUSION01

Sample #: S95T002304

Instrument Code: WB26872

Prepared By: SEH

Chemist: SLF

Analyst: AKL

Date Complete: 10/19/95

Analysis Date: 10/18/95

Analysis Time: 01:00 PM

Sample Point: AW-102

Rs (Sample Count Rate) = (TC / CT) - BKG

TOTAL BETA µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
TOTAL BETA	in µCi/g	3.76E+02	
RELATIVE COUNTING ERROR		0.5%	1.87E-01 µCi/g

Analyst:	SEH		Date: 19-Oct-95
Signature of Chemist:		SLF	Date: 10/23/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP1

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	186	192
2938	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.45	0.45
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	21	21
@AB-01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	0.6684	0.6684
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		5.750	5.950
Batch Number				
95003215	Blank Concentration in µCi/g		6.84E-01	
Rerun	Replicate Concentration in µCi/g		7.08E-01	
0	Average Concentration in µCi/g		6.9573E-01	

Sample Prep: FUSION01

Sample #: S95T002304

Instrument Code: WB26872

Prepared By: SEH

Chemist: SLF

Analyst: AKL

Date Complete: 10/19/95

Analysis Date: 10/18/95

Analysis Time: 01:00 PM

Sample Point: AW-102

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	6.96E-01	7.88E-02 µCi/g
RELATIVE COUNTING ERROR		16.0%	

Analyst:	SEH		Date: 19-Oct-95
Signature of Chemist:		SLF	Date: 10/23/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM1

TB : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	234888	235444
2938	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.200	0.200
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1948	2.1948
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		7819.600	7838.133

Batch Number		
95003215	Blank Concentration in µCi/g	1.93E+03
Rerun	Replicate Concentration in µCi/g	1.93E+03
0	Average Concentration in µCi/g	1.9287E+03

Sample Prep: FUSION01

Sample #: S95T002305

Instrument Code: WB26872

Prepared By: SEH

Chemist: SLF

Analyst: AKL

Date Complete: 10/19/95

Analysis Date: 10/18/95

Analysis Time: 01:00 PM

Sample Point: AW-102

Rs (Sample Count Rate) = (TC / CT) - BKG

TOTAL BETA µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
TOTAL BETA	in µCi/g	1.93E+03	
RELATIVE COUNTING ERROR		0.4%	6.86E-01 µCi/g

Analyst:	SEH		Date: 19-Oct-95
Signature of Chemist:		SLF	Date: 10/23/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM1

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	256	257
2938	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.45	0.45
AT	SAMPLE SIZE in mL	(SS)	0.200	0.200
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1948	2.1948
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		8.083	8.117

Batch Number	
95003215	Blank Concentration in µCi/g 3.52E+00
Rerun	Replicate Concentration in µCi/g 3.53E+00
0	Average Concentration in µCi/g 3.5274E+00

Sample Prep: FUSION01

Sample #: S95T002305

Instrument Code: WB26872

Prepared By: SEH

Chemist: SLF

Analyst: AKL

Date Complete: 10/19/95

Analysis Date: 10/18/95

Analysis Time: 01:00 PM

Sample Point: AW-102

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	3.53E+00	2.88E-01 µCi/g
RELATIVE COUNTING ERROR		13.3%	

Analyst:	SEH	Date: 19-Oct-95	
Signature of Chemist:	SLF	Date: 10/23/95	

SAMPLE.WB1 Rev. 1.0 508101MN

WORKBOOK PAGE: DUP1

TB : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	221514	226404
2938	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	10	10
TB	SAMPLE SIZE in mL	(SS)	0.200	0.200
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1556	2.1556
Matrix	EFFICIENCY FACTOR	(EFF)	0.4207	0.4207
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		7373.800	7536.800

Batch Number	
95003215	Blank Concentration in µCi/g 1.85E+03
Rerun	Replicate Concentration in µCi/g 1.89E+03
0	Average Concentration in µCi/g 1.8701E+03
Sample Prep	
FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	TOTAL BETA µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
S95T002305	
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
SEH	
Chemist	
SLF	
Analyst	
AKL	
Date Complete	
10/19/95	
Analysis Date	
10/18/95	
Analysis Time	
01:00 PM	
Sample Point	
AW-102	

v RESULTS v

			DETECTION LEVEL
TOTAL BETA	in µCi/g	1.87E+03	
RELATIVE COUNTING ERROR		0.4%	6.99E-01 µCi/g

Analyst:	SEH		Date: 19-Oct-95
Signature of Chemist:		SLF	Date: 10/23/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP1

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	252	250
2938	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.45	0.45
AT	SAMPLE SIZE in mL	(SS)	0.200	0.200
Test Code	DILUTION FACTOR	(DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1556	2.1556
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		7.950	7.883

Batch Number	
95003215	Blank Concentration in µCi/g 3.53E+00
Rerun	Replicate Concentration in µCi/g 3.50E+00
0	Average Concentration in µCi/g 3.5102E+00

Sample Prep: FUSION01

Sample #: S95T002305

Instrument Code: WB26872

Prepared By: SEH

Chemist: SLF

Analyst: AKL

Date Complete: 10/19/95

Analysis Date: 10/18/95

Analysis Time: 01:00 PM

Sample Point: AW-102

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

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

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	3.51E+00	2.94E-01 µCi/g
RELATIVE COUNTING ERROR		13.5%	

Analyst:	SEH	Date: 19-Oct-95	
Signature of Chemist:	SLF	Date: 10/23/95	

SAMPLE.WB1 Rev. 1.0 508101ML

LABCORE Data Entry Template for Worklist# 2885

Analyst: SMF **Instrument:** GEA00 2 **Book #** 144B52

Method: LA-548-121 Rev/Mod D-1

Worklist Comment: Use .100 mL sample size. SLF WHC-SD-WM-DP-149, REV. 0

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD			@GEA-01	C060-02	LIQUID			N/A	uCi/mL
		1	STD			@GEA-01	C060-02E	LIQUID			N/A	% Ct. Error
		1	STD			@GEA-01	CS13702	LIQUID			N/A	uCi/mL
		1	STD			@GEA-01	CS13702E	LIQUID			N/A	% Ct. Error
		2	BLNK			@GEA-01	C060-02	LIQUID			N/A	uCi/mL
		2	BLNK			@GEA-01	CS13702	LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	3	SAMPLE	S95T002309	0	@GEA-01	C060-02	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	3	SAMPLE	S95T002309	0	@GEA-01	C060-02E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	3	SAMPLE	S95T002309	0	@GEA-01	CS13702	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	3	SAMPLE	S95T002309	0	@GEA-01	CS13702E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	4	DUP	S95T002309	0	@GEA-01	C060-02	LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	4	DUP	S95T002309	0	@GEA-01	C060-02E	LIQUID			N/A	% Ct. Error
95000127	AW-102 GRAB	4	DUP	S95T002309	0	@GEA-01	CS13702	LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	4	DUP	S95T002309	0	@GEA-01	CS13702E	LIQUID			N/A	% Ct. Error
95000127	AW-102 GRAB	5	SAMPLE	S95T002158	0	@GEA-01	C060-02	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	5	SAMPLE	S95T002158	0	@GEA-01	C060-02E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	5	SAMPLE	S95T002158	0	@GEA-01	CS13702	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	5	SAMPLE	S95T002158	0	@GEA-01	CS13702E	LIQUID	N/A			% Ct. Error

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.

LABCORE Data Entry Template for Worklist# 2885

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------		MATRIX	ACTUAL	FOUND	DL	UNIT
95000127	AW-102 GRAB	6 DUP	S95T002158	0		@GEA-01	CO60-02	LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	6 DUP	S95T002158	0		@GEA-01	CO60-02E	LIQUID			N/A	% Ct. Error
95000127	AW-102 GRAB	6 DUP	S95T002158	0		@GEA-01	CS13702	LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	6 DUP	S95T002158	0		@GEA-01	CS13702E	LIQUID			N/A	% Ct. Error

Final page for worklist # 2885

Susie M. Fulton 10.16.95 1530
Analyst Signature Date

[illegible] 10/12/95
Analyst Signature Date

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.

```
*************************************************************************
* 222-S Laboratory Counting Room   16-OCT-1995 18:18:32.85              *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2885
Sample ID:               144B52-STD                    Removed by:
Sample Size:             1.00000E-03 LI
Dilution Factor:         1.00000E+00

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2                          Verified by:
File Number:             dka300:[spec.GEA2]2g2255.cnf
Geometry:                42
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:50:07.52 sec
Dead Time:               0.3%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       16-OCT-1995 17:27:47.31
Decayed to:              16-OCT-1995 17:27:47.31
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 EMB
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       21-MAR-1994 09:31:55.15
 Date of last efficiency calibration:   21-MAR-1994 09:43:42.61
*************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/LI
0	661.37*	18352	1.51	1322.75	1314	17	1.7		CS-137	25.5
0	1172.76	10764	1.87	2345.58	2337	18	2.1		CO-60	21.1
0	1332.02	9507	2.04	2664.19	2655	20	2.1		CO-60	20.7

Sample ID : 144B52-STD Acquisition date : 16-OCT-1995 17:27:47

Total number of lines in spectrum	3	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	3	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
CO-60	5.27Y	1.000	2.092E+01	2.092E+01	0.031E+01	1.49	
CS-137	30.00Y	1.000	2.547E+01	2.547E+01	0.042E+01	1.67	
		Total Activity :	4.639E+01	4.639E+01			
		Grand Total Activity :	4.639E+01	4.639E+01			

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

Sample ID : 144B52-STD Acquisition date : 16-OCT-1995 17:27:47

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
BE-7	1001.	477.59	1.2836E+00
NA-22	77.	1274.53	8.5655E-02
NA-24	16.	1368.55	4.2099E-02
K-40	119.	1460.75	1.1130E+00
SC-46	400.	1120.55	1.7495E-01
CR-51	924.	320.08	9.1990E-01
MN-54	536.	834.83	1.5508E-01
CO-56	558.	846.76	1.6024E-01
CO-57	1086.	122.06	7.3680E-02
CO-58	504.	810.78	1.4748E-01
FE-59	525.	1099.25	3.4864E-01
ZN-65	491.	1115.55	3.8066E-01
SE-75	1139.	264.66	1.5419E-01
KR-85	675.	514.00	2.6775E+01
SR-85	676.	514.01	1.2109E-01
Y-88	7.	1836.06	3.4017E-02
Y-90	19.	1760.70	1.9284E-01
Y-91	147.	1204.67	3.7656E+01
NB-94	573.	871.09	1.6624E-01
NB-95	455.	765.78	1.3305E-01
ZR-95	464.	756.73	2.4366E-01
RU-103	806.	497.08	1.3565E-01
RURH-106	506.	621.93	2.3703E+00
AG-108m	421.	722.94	1.3402E-01
CD-109	982.	88.03	2.4055E+00
AG-110M	1186.	657.76	1.9919E-01
SN-113	950.	391.69	1.6963E-01
TE-123m	1136.	159.00	7.5421E-02
SB-124	510.	602.73	1.1765E-01
SB-125	996.	427.89	4.0766E-01
TE-125m	1031.	109.27	2.3803E+01
I-129	979.	39.60	0.0000E+00
I-131	946.	364.48	1.2676E-01
XE-131m	1130.	163.93	3.2653E+00
BA-133	956.	356.02	1.6388E-01
CS-134	491.	604.70	1.1596E-01
CS-136	559.	818.51	1.5630E-01
CS-138	12.	1435.86	7.8603E-02
CE-139	1129.	165.85	8.0401E-02
BA-140	601.	537.31	4.6699E-01
LA-140	8.	1596.21	3.5671E-02
CE-141	1121.	145.44	1.2811E-01
CE-144	1143.	133.51	5.6541E-01
CEPR-144	1143.	133.51	1.1298E+00
EU-152	15.	1408.01	1.9700E-01
EU-154	77.	1274.51	2.4866E-01
EU-155	987.	86.54	2.7328E-01
HF-181	850.	482.18	1.5334E-01
TA-182	883.	67.75	3.5800E-01
HG-203	1099.	279.20	1.1265E-01
BI-207	515.	569.70	1.1295E-01

Sample ID : 144B52-STD Acquisition date : 16-OCT-1995 17:27:47

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
TL-208	1126.	277.36	1.4653E+00
PB-210	911.	46.50	0.0000E+00
BI-212	448.	727.18	1.8967E+00
PB-212	1313.	238.63	2.0678E-01
BI-214	540.	609.31	2.6663E-01
PB-214	936.	351.92	4.9740E-01
RA-224	1307.	240.99	2.2898E+00
RA-226	1305.	186.10	2.1071E+00
AC-228	763.	911.21	7.4942E-01
TH-228	998.	84.37	7.4481E+00
TH-229	980.	88.47	3.4833E-01
U-232	872.	57.78	1.3302E+02
PA-233	952.	312.17	2.3946E-01
PA-234M	530.	1001.03	3.0730E-01
TH-234	879.	63.29	4.0719E+00
U-235	1300.	185.71	1.2782E-01
NP-237	987.	86.48	7.2388E-01
U-237	888.	59.54	6.7919E-01
NP-238	636.	984.45	7.0783E-01
NP-239	1010.	106.12	3.0025E-01
PU-239	1150.	129.30	9.9023E+02
AM-241	888.	59.54	6.5150E-01
AM-243	915.	74.67	1.9382E-01

```
*************************************************************************
* 222-S Laboratory Counting Room   16-OCT-1995 19:17:20.59             *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2885
Sample ID:               2885-BLK                          Removed by:
Sample Size:             1.00000E-03 LI
Dilution Factor:         1.00000E+01                       EmBaeb

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2                              Verified by:
File Number:             dka300:[spec.GEA2]2g2256.cnf
Geometry:                42                                Bmachelor 10/17/95
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:50:00.52 sec
Dead Time:               0.0%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       16-OCT-1995 18:26:41.24
Decayed to:              16-OCT-1995 18:26:41.24
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 EMB
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       21-MAR-1994 09:31:55.15
 Date of last efficiency calibration:   21-MAR-1994 09:43:42.61
*************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/LI
0	661.37*	275	1.54	1322.76	1315	17	19.1		CS-137	3.81

Sample ID : 2885-BLK
Acquisition date : 16-OCT-1995 18:26:41

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	3.815E+00	3.815E+00	0.727E+00	19.07	
		Total Activity :	3.815E+00	3.815E+00			
		Grand Total Activity :	3.815E+00	3.815E+00			

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

Sample ID : 2885-BLK Acquisition date : 16-OCT-1995 18:26:41

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
BE-7	40.	477.59	2.5715E+00
NA-22	9.	1274.53	2.9288E-01
NA-24	5.	1368.55	2.3557E-01
K-40	121.	1460.75	1.1233E+01
SC-46	21.	1120.55	3.9742E-01
CR-51	62.	320.08	2.3774E+00
MN-54	9.	834.83	2.0191E-01
CO-56	23.	846.76	3.2522E-01
CO-57	79.	122.06	1.9915E-01
CO-58	15.	810.78	2.5331E-01
FE-59	13.	1099.25	5.5238E-01
CO-60	4.	1332.50	2.0593E-01
ZN-65	10.	1115.55	5.4524E-01
SE-75	58.	264.66	3.4913E-01
KR-85	34.	514.00	5.9759E+01
SR-85	34.	514.01	2.6982E-01
Y-88	5.	1836.06	2.8300E-01
Y-90	7.	1760.70	1.1981E+00
Y-91	14.	1204.67	1.1669E+02
NB-94	14.	871.09	2.6414E-01
NB-95	23.	765.78	3.0037E-01
ZR-95	21.	756.73	5.1570E-01
RU-103	46.	497.08	3.2477E-01
RURH-106	27.	621.93	5.5171E+00
AG-108m	19.	722.94	2.8269E-01
CD-109	89.	88.03	7.2293E+00
AG-110M	48.	657.76	4.0006E-01
SN-113	58.	391.69	4.2059E-01
TE-123m	70.	159.00	1.8677E-01
SB-124	29.	602.73	2.8186E-01
SB-125	45.	427.89	8.7014E-01
TE-125m	78.	109.27	6.5549E+01
I-129	71.	39.60	0.0000E+00
I-131	48.	364.48	2.8626E-01
XE-131m	80.	163.93	8.6992E+00
BA-133	56.	356.02	3.9533E-01
CS-134	28.	604.70	2.7592E-01
CS-136	10.	818.51	2.0778E-01
CS-138	6.	1435.86	5.8028E-01
CE-139	90.	165.85	2.2672E-01
BA-140	38.	537.31	1.1797E+00
LA-140	5.	1596.21	2.6757E-01
CE-141	79.	145.44	3.4076E-01
CE-144	83.	133.51	1.5277E+00
CEPR-144	83.	133.51	3.0515E+00
EU-152	8.	1408.01	1.4399E+00
EU-154	9.	1274.51	8.5089E-01
EU-155	88.	86.54	8.1670E-01
HF-181	45.	482.18	3.5182E-01
TA-182	73.	67.75	1.0284E+00
HG-203	71.	279.20	2.8593E-01

Sample ID : 2885-BLK Acquisition date : 16-OCT-1995 18:26:41

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
BI-207	22.	569.70	2.3072E-01
TL-208	72.	277.36	3.7170E+00
PB-210	68.	46.50	0.0000E+00
BI-212	21.	727.18	4.0992E+00
PB-212	92.	238.63	5.4847E-01
BI-214	50.	609.31	8.1504E-01
PB-214	67.	351.92	1.3274E+00
RA-224	74.	240.99	5.4525E+00
RA-226	80.	186.10	5.2211E+00
AC-228	18.	911.21	1.1645E+00
TH-228	79.	84.37	2.0957E+01
TH-229	90.	88.47	1.0534E+00
U-232	65.	57.78	3.6367E+02
PA-233	74.	312.17	6.6672E-01
PA-234M	17.	1001.03	5.4413E-01
TH-234	74.	63.29	1.1784E+01
U-235	81.	185.71	3.1918E-01
NP-237	89.	86.48	2.1743E+00
U-237	65.	59.54	1.8418E+00
NP-238	11.	984.45	9.5063E-01
NP-239	81.	106.12	8.4919E-01
PU-239	85.	129.30	2.6913E+03
AM-241	65.	59.54	1.7666E+00
AM-243	77.	74.67	5.6283E-01

```
*****************************************************************************
* 222-S Laboratory Counting Room   17-OCT-1995 09:03:24.46                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2885
Sample ID:               S95T2309-SAM                    Removed by:
Sample Size:             1.00000E-03 L
Dilution Factor:         1.00000E+01                     SEHogan

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2                            Verified by:
File Number:             dka300:[spec.GEA2]2g2267.cnf
Geometry:                43                              RBBachelor 10/17/95
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:52:10.51 sec
Dead Time:               4.2%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-OCT-1995 08:10:36.46
Decayed to:              17-OCT-1995 08:10:36.46
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 MB
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       21-MAR-1994 09:31:55.15
 Date of last efficiency calibration:   21-MAR-1994 09:54:47.36
*****************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	604.35	2151	1.55	1208.74	1204	10	15.6		CS-134	91.8
0	661.36*	886214	1.52	1322.74	1314	18	0.2		CS-137	4.593E+04
0	795.47	1481	1.69	1590.93	1583	15	10.7		CS-134	87.9
0	801.41	195	1.61	1602.81	1598	12	59.7		CS-134	114.
0	1322.30	135	1.37	2644.75	2639	13	39.2			
0	1331.35	58	1.53	2662.85	2655	16	37.6			
0	1365.10	32	1.20	2730.38	2725	10	57.2			

Sample ID : S95T2309-SAM Acquisition date : 17-OCT-1995 08:10:36

Total number of lines in spectrum	7	
Number of unidentified lines	2	
Number of lines tentatively identified by NID	5	71.43%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-134	2.06Y	1.000	8.937E+01	8.937E+01	0.783E+01	8.76	
CS-137	30.00Y	1.000	4.593E+04	4.593E+04	0.010E+04	0.22	
			---	---			
Total Activity :			4.602E+04	4.602E+04			
Grand Total Activity :			4.602E+04	4.602E+04			

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

Sample ID : S95T2309-SAM Acquisition date : 17-OCT-1995 08:10:36

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	28384.	477.59	2.6559E+02
NA-22	89.	1274.53	3.3871E+00
NA-24	14.	1368.55	1.4669E+00
K-40	92.	1460.75	3.5897E+01
SC-46	197.	1120.55	4.4773E+00
CR-51	26056.	320.08	1.8702E+02
MN-54	566.	834.83	5.8115E+00
CO-56	535.	846.76	5.7072E+00
CO-57	28986.	122.06	1.7585E+01
CO-58	679.	810.78	6.2622E+00
FE-59	215.	1099.25	8.1149E+00
CO-60	63.	1332.50	2.9575E+00
ZN-65	179.	1115.55	8.3740E+00
SE-75	29445.	264.66	3.0670E+01
KR-85	15101.	514.00	4.9588E+03
SR-85	15098.	514.01	2.2420E+01
Y-88	3.	1836.06	8.2202E-01
Y-90	3.	1760.70	3.0298E+00
Y-91	87.	1204.67	1.0611E+03
NB-94	488.	871.09	5.5659E+00
NB-95	769.	765.78	6.3624E+00
ZR-95	755.	756.73	1.1440E+01
RU-103	18185.	497.08	2.5188E+01
RURH-106	6605.	621.93	3.2283E+02
AG-108m	940.	722.94	7.4074E+00
CD-109	24342.	88.03	5.1536E+02
AG-110M	37915.	657.76	4.2092E+01
SN-113	26927.	391.69	3.3945E+01
TE-123m	29615.	159.00	1.6014E+01
SB-124	8562.	602.73	1.8293E+01
SB-125	30812.	427.89	8.6008E+01
TE-125m	26611.	109.27	5.5137E+03
I-129	22358.	39.60	0.0000E+00
I-131	25817.	364.48	2.5026E+01
XE-131m	29610.	163.93	6.8449E+02
BA-133	25610.	356.02	3.2129E+01
CS-136	642.	818.51	6.1187E+00
CS-138	13.	1435.86	3.0963E+00
CE-139	29467.	165.85	1.6734E+01
BA-140	11127.	537.31	7.8372E+01
LA-140	1.	1596.21	5.3508E-01
CE-141	30096.	145.44	2.8973E+01
CE-144	29960.	133.51	1.3127E+02
CEPR-144	29959.	133.51	2.6230E+02
EU-152	12.	1408.01	6.3125E+00
EU-154	90.	1274.51	9.8560E+00
EU-155	24174.	86.54	5.7993E+01
HF-181	23355.	482.18	3.1292E+01
TA-182	22466.	67.75	7.7122E+01
HG-203	28677.	279.20	2.2331E+01
BI-207	8049.	569.70	1.7190E+01

Sample ID : S95T2309-SAM Acquisition date : 17-OCT-1995 08:10:36

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
TL-208	28624.	277.36	2.8696E+02
PB-210	22072.	46.50	0.0000E+00
BI-212	963.	727.18	1.0280E+02
PB-212	31422.	238.63	4.0077E+01
BI-214	6769.	609.31	3.5729E+01
PB-214	26043.	351.92	1.0165E+02
RA-224	31398.	240.99	4.4437E+02
RA-226	38501.	186.10	4.5187E+02
AC-228	393.	911.21	1.9455E+01
TH-228	24063.	84.37	1.5615E+03
TH-229	24255.	88.47	7.4650E+01
U-232	21858.	57.78	3.0592E+04
PA-233	26472.	312.17	4.8428E+01
PA-234M	259.	1001.03	7.7992E+00
TH-234	22056.	63.29	8.8705E+02
U-235	38016.	185.71	2.7300E+01
NP-237	24185.	86.48	1.5361E+02
U-237	21918.	59.54	1.5139E+02
NP-238	271.	984.45	1.6771E+01
NP-239	26099.	106.12	6.9102E+01
PU-239	29961.	129.30	2.3139E+05
AM-241	21919.	59.54	1.4520E+02
AM-243	23333.	74.67	4.1441E+01

```
*************************************************************************
* 222-S Laboratory Counting Room   17-OCT-1995 09:59:17.04              *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2885
Sample ID:               S95T2309-~~SAM~~ Dup
Sample Size:             1.00000E-03 L
Dilution Factor:         1.00000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2268.cnf
Geometry:                43
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:52:01.10 sec
Dead Time:               3.9%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-OCT-1995 09:06:36.03
Decayed to:              17-OCT-1995 09:06:36.03
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SEH
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       21-MAR-1994 09:31:55.15
 Date of last efficiency calibration:   21-MAR-1994 09:54:47.36
*************************************************************************
```

Removed by: SE Hogan

Verified by: B Bachelor 10/17/95

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	569.07	314	1.37	1138.19	1135	8	88.1		CS-134	82.0
0	604.52	1920	1.46	1209.07	1204	10	16.9		CS-134	82.0
0	661.39*	826899	1.52	1322.81	1314	18	0.2		CS-137	4.285E+04
0	795.52	1349	1.69	1591.04	1586	12	9.9		CS-134	80.1
0	801.75	157	1.84	1603.49	1600	8	47.8		CS-134	91.8
0	1321.83	177	1.53	2643.80	2636	17	30.8			
0	1331.93	70	2.22	2664.02	2657	18	28.0			

Sample ID : S95T2309-SAM
Acquisition date : 17-OCT-1995 09:06:36

Total number of lines in spectrum	7	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	6	85.71%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-134	2.06Y	1.000	8.080E+01	8.080E+01	0.676E+01	8.37	
CS-137	30.00Y	1.000	4.285E+04	4.285E+04	0.001E+05	0.23	
		Total Activity :	4.293E+04	4.293E+04			
		Grand Total Activity :	4.293E+04	4.293E+04			

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

Sample ID : S95T2309-SAM Acquisition date : 17-OCT-1995 09:06:36

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	26218.	477.59	2.5525E+02
NA-22	91.	1274.53	3.4065E+00
NA-24	10.	1368.55	1.2169E+00
K-40	112.	1460.75	3.9623E+01
SC-46	165.	1120.55	4.1005E+00
CR-51	24373.	320.08	1.8088E+02
MN-54	507.	834.83	5.4988E+00
CO-56	477.	846.76	5.3918E+00
CO-57	26850.	122.06	1.6925E+01
CO-58	540.	810.78	5.5815E+00
FE-59	168.	1099.25	7.1774E+00
CO-60	67.	1332.50	3.0496E+00
ZN-65	165.	1115.55	8.0468E+00
SE-75	27221.	264.66	2.9489E+01
KR-85	13947.	514.00	4.7656E+03
SR-85	13944.	514.01	2.1546E+01
Y-88	5.	1836.06	1.0707E+00
Y-90	8.	1760.70	4.5687E+00
Y-91	73.	1204.67	9.7216E+02
NB-94	423.	871.09	5.1812E+00
NB-95	685.	765.78	6.0054E+00
ZR-95	660.	756.73	1.0702E+01
RU-103	16994.	497.08	2.4349E+01
RURH-106	6306.	621.93	3.1543E+02
AG-108m	790.	722.94	6.7902E+00
CD-109	22710.	88.03	4.9779E+02
AG-110M	32645.	657.76	3.9058E+01
SN-113	24885.	391.69	3.2633E+01
TE-123m	27792.	159.00	1.5513E+01
SB-124	7882.	602.73	1.7552E+01
SB-125	28408.	427.89	8.2585E+01
TE-125m	24807.	109.27	5.3235E+03
I-129	20720.	39.60	0.0000E+00
I-131	24161.	364.48	2.4211E+01
XE-131m	27918.	163.93	6.6466E+02
BA-133	23869.	356.02	3.1018E+01
CS-136	555.	818.51	5.6911E+00
CS-138	9.	1435.86	2.6259E+00
CE-139	27884.	165.85	1.6278E+01
BA-140	10310.	537.31	7.5438E+01
LA-140	8.	1596.21	1.3084E+00
CE-141	28055.	145.44	2.7973E+01
CE-144	27867.	133.51	1.2660E+02
CEPR-144	27867.	133.51	2.5298E+02
EU-152	13.	1408.01	6.7739E+00
EU-154	90.	1274.51	9.8881E+00
EU-155	22705.	86.54	5.6204E+01
HF-181	21530.	482.18	3.0044E+01
TA-182	21076.	67.75	7.4699E+01
HG-203	26584.	279.20	2.1501E+01
BI-207	7369.	569.70	1.6448E+01

Sample ID : S95T2309-SAM Acquisition date : 17-OCT-1995 09:06:36

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
TL-208	26647.	277.36	2.7687E+02
PB-210	20431.	46.50	0.0000E+00
BI-212	805.	727.18	9.3966E+01
PB-212	29055.	238.63	3.8537E+01
BI-214	6319.	609.31	3.4522E+01
PB-214	24044.	351.92	9.7512E+01
RA-224	29229.	240.99	4.2875E+02
RA-226	35467.	186.10	4.3371E+02
AC-228	350.	911.21	1.8354E+01
TH-228	22773.	84.37	1.5191E+03
TH-229	22665.	88.47	7.2162E+01
U-232	20380.	57.78	2.9539E+04
PA-233	24959.	312.17	4.7024E+01
PA-234M	219.	1001.03	7.1808E+00
TH-234	20619.	63.29	8.5768E+02
U-235	34934.	185.71	2.6170E+01
NP-237	22697.	86.48	1.4881E+02
U-237	20449.	59.54	1.4622E+02
NP-238	220.	984.45	1.5109E+01
NP-239	24424.	106.12	6.6848E+01
PU-239	27791.	129.30	2.2285E+05
AM-241	20449.	59.54	1.4025E+02
AM-243	21758.	74.67	4.0018E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   16-OCT-1995 22:34:04.13                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2885
Sample ID:               S95T002158
Sample Size:             1.00000E-03 LI
Dilution Factor:         1.00000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2260.cnf
Geometry:                42
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:52:36.81 sec
Dead Time:               5.0%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       16-OCT-1995 21:40:50.03
Decayed to:              16-OCT-1995 21:40:50.03
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 EMB
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       21-MAR-1994 09:31:55.15
 Date of last efficiency calibration:   21-MAR-1994 09:43:42.61
*****************************************************************************
```

Removed by: EM Barclay

Verified by: B Machelor 10/17/95

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/LI
0	475.68	1171	1.42	951.47	949	7	49.9			
0	604.46	2510	1.39	1208.95	1205	10	14.9		CS-134	28.2
0	661.35*	1117882	1.53	1322.72	1314	17	0.2		CS-137	1.551E+04
0	795.61	1783	1.70	1591.20	1585	13	9.5		CS-134	28.9
0	801.48	256	1.23	1602.95	1598	10	45.3		CS-134	40.8
0	1322.28	245	2.13	2644.71	2638	18	33.0			
0	1331.68	59	1.99	2663.51	2656	14	39.9			
0	1364.75	47	1.47	2729.68	2724	12	41.5			

Sample ID : S95T002158 Acquisition date : 16-OCT-1995 21:40:50

Total number of lines in spectrum	8	
Number of unidentified lines	3	
Number of lines tentatively identified by NID	5	62.50%

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-134	2.06Y	1.000	2.887E+01	2.887E+01	0.228E+01	7.90	
CS-137	30.00Y	1.000	1.551E+04	1.551E+04	0.003E+04	0.20	
			---	---			
Total Activity :			1.554E+04	1.554E+04			
Grand Total Activity :			1.554E+04	1.554E+04			

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

Sample ID : S95T002158
Acquisition date : 16-OCT-1995 21:40:50

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
BE-7	35320.	477.59	7.6233E+01
NA-22	127.	1274.53	1.1021E+00
NA-24	21.	1368.55	4.8269E-01
K-40	113.	1460.75	1.0862E+01
SC-46	286.	1120.55	1.4805E+00
CR-51	29588.	320.08	5.2055E+01
MN-54	819.	834.83	1.9175E+00
CO-56	826.	846.76	1.9496E+00
CO-57	31810.	122.06	3.9880E+00
CO-58	880.	810.78	1.9488E+00
FE-59	295.	1099.25	2.6119E+00
CO-60	73.	1332.50	8.6505E-01
ZN-65	275.	1115.55	2.8502E+00
SE-75	32757.	264.66	8.2678E+00
KR-85	18695.	514.00	1.4088E+03
SR-85	18691.	514.01	6.3695E+00
Y-88	4.	1836.06	2.6347E-01
Y-90	6.	1760.70	1.1350E+00
Y-91	146.	1204.67	3.7542E+02
NB-94	747.	871.09	1.8985E+00
NB-95	1169.	765.78	2.1333E+00
ZR-95	1072.	756.73	3.7019E+00
RU-103	22664.	497.08	7.1926E+00
RURH-106	8111.	621.93	9.4868E+01
AG-108m	1418.	722.94	2.4584E+00
CD-109	28052.	88.03	1.2859E+02
AG-110M	49695.	657.76	1.2894E+01
SN-113	32191.	391.69	9.8737E+00
TE-123m	32695.	159.00	4.0456E+00
SB-124	10514.	602.73	5.3410E+00
SB-125	37131.	427.89	2.4885E+01
TE-125m	29199.	109.27	1.2665E+03
I-129	26791.	39.60	0.0000E+00
I-131	30050.	364.48	7.1464E+00
XE-131m	32841.	163.93	1.7600E+02
BA-133	29856.	356.02	9.1566E+00
CS-136	862.	818.51	1.9409E+00
CS-138	11.	1435.86	7.8948E-01
CE-139	32742.	165.85	4.3296E+00
BA-140	13949.	537.31	2.2490E+01
LA-140	9.	1596.21	3.7855E-01
CE-141	32884.	145.44	6.9377E+00
CE-144	32529.	133.51	3.0164E+01
CEPR-144	32529.	133.51	6.0274E+01
EU-152	19.	1408.01	2.2189E+00
EU-154	128.	1274.51	3.2034E+00
EU-155	27940.	86.54	1.4540E+01
HF-181	28643.	482.18	8.9017E+00
TA-182	26433.	67.75	1.9586E+01
HG-203	31501.	279.20	6.0324E+00
BI-207	9846.	569.70	4.9374E+00

Sample ID : S95T002158 Acquisition date : 16-OCT-1995 21:40:50

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
TL-208	31769.	277.36	7.7842E+01
PB-210	26430.	46.50	0.0000E+00
BI-212	1395.	727.18	3.3458E+01
PB-212	36717.	238.63	1.0934E+01
BI-214	8298.	609.31	1.0448E+01
PB-214	29915.	351.92	2.8842E+01
RA-224	36358.	240.99	1.2078E+02
RA-226	42180.	186.10	1.1981E+02
AC-228	585.	911.21	6.5614E+00
TH-228	27684.	84.37	3.9226E+02
TH-229	27965.	88.47	1.8612E+01
U-232	26309.	57.78	7.3058E+03
PA-233	29740.	312.17	1.3383E+01
PA-234M	404.	1001.03	2.6834E+00
TH-234	26163.	63.29	2.2213E+02
U-235	41828.	185.71	7.2517E+00
NP-237	27922.	86.48	3.8498E+01
U-237	26162.	59.54	3.6872E+01
NP-238	459.	984.45	6.0161E+00
NP-239	29075.	106.12	1.6113E+01
PU-239	32496.	129.30	5.2632E+04
AM-241	26162.	59.54	3.5365E+01
AM-243	26620.	74.67	1.0454E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   16-OCT-1995 23:30:24.23                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2885
Sample ID:               S95T002158-DUP
Sample Size:             1.00000E-03 LI
Dilution Factor:         1.00000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2261.cnf
Geometry:                42
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:52:38.09 sec
Dead Time:               5.0%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       16-OCT-1995 22:37:09.30
Decayed to:              16-OCT-1995 22:37:09.30
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 EMB
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       21-MAR-1994 09:31:55.15
 Date of last efficiency calibration:   21-MAR-1994 09:43:42.61
*****************************************************************************
```

Removed by:

Verified by: 10/17/95

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/LI
0	562.90	445	1.14	1125.85	1123	6	57.7		CS-134	55.0
0	604.45	2749	1.44	1208.94	1204	10	13.5		CS-134	30.9
0	661.35*	1124265	1.52	1322.71	1314	17	0.2		CS-137	1.560E+04
0	795.51	1766	1.68	1591.01	1586	12	9.1		CS-134	28.6
0	801.68	206	1.69	1603.34	1598	13	73.2		CS-134	32.9
0	1322.05	281	2.86	2644.24	2638	15	26.6			
0	1331.62	68	2.30	2663.39	2658	14	31.4			
0	1364.79	38	1.13	2729.76	2724	16	70.3			

Sample ID : S95T002158-DUP Acquisition date : 16-OCT-1995 22:37:09

Total number of lines in spectrum	8	
Number of unidentified lines	2	
Number of lines tentatively identified by NID	6	75.00%

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-134	2.06Y	1.000	2.940E+01	2.940E+01	0.220E+01	7.49	
CS-137	30.00Y	1.000	1.560E+04	1.560E+04	0.003E+04	0.20	
			---	---			
Total Activity :			1.563E+04	1.563E+04			
Grand Total Activity :			1.563E+04	1.563E+04			

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

Sample ID : S95T002158-DUP Acquisition date : 16-OCT-1995 22:37:09

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
BE-7	35907.	477.59	7.6863E+01
NA-22	124.	1274.53	1.0861E+00
NA-24	24.	1368.55	5.1498E-01
K-40	103.	1460.75	1.0335E+01
SC-46	278.	1120.55	1.4586E+00
CR-51	29890.	320.08	5.2320E+01
MN-54	811.	834.83	1.9075E+00
CO-56	785.	846.76	1.9005E+00
CO-57	32460.	122.06	4.0286E+00
CO-58	880.	810.78	1.9488E+00
FE-59	290.	1099.25	2.5917E+00
CO-60	73.	1332.50	8.6561E-01
ZN-65	281.	1115.55	2.8795E+00
SE-75	33158.	264.66	8.3183E+00
KR-85	18926.	514.00	1.4174E+03
SR-85	18925.	514.01	6.4092E+00
Y-88	5.	1836.06	2.8300E-01
Y-90	5.	1760.70	1.0194E+00
Y-91	120.	1204.67	3.4040E+02
NB-94	764.	871.09	1.9206E+00
NB-95	1094.	765.78	2.0635E+00
ZR-95	1134.	756.73	3.8076E+00
RU-103	22968.	497.08	7.2407E+00
RURH-106	8246.	621.93	9.5658E+01
AG-108m	1436.	722.94	2.4733E+00
CD-109	28036.	88.03	1.2855E+02
AG-110M	49950.	657.76	1.2927E+01
SN-113	32578.	391.69	9.9328E+00
TE-123m	33025.	159.00	4.0660E+00
SB-124	10640.	602.73	5.3729E+00
SB-125	37458.	427.89	2.4995E+01
TE-125m	29777.	109.27	1.2790E+03
I-129	26994.	39.60	0.0000E+00
I-131	30769.	364.48	7.2315E+00
XE-131m	32858.	163.93	1.7605E+02
BA-133	30472.	356.02	9.2505E+00
CS-136	891.	818.51	1.9737E+00
CS-138	7.	1435.86	6.3876E-01
CE-139	32996.	165.85	4.3464E+00
BA-140	13877.	537.31	2.2432E+01
LA-140	9.	1596.21	3.7855E-01
CE-141	33309.	145.44	6.9824E+00
CE-144	33033.	133.51	3.0397E+01
CEPR-144	33031.	133.51	6.0736E+01
EU-152	11.	1408.01	1.6848E+00
EU-154	124.	1274.51	3.1559E+00
EU-155	27826.	86.54	1.4510E+01
HF-181	29009.	482.18	8.9584E+00
TA-182	26519.	67.75	1.9617E+01
HG-203	32046.	279.20	6.0843E+00
BI-207	9823.	569.70	4.9317E+00

Sample ID : S95T002158-DUP Acquisition date : 16-OCT-1995 22:37:09

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
TL-208	32140.	277.36	7.8296E+01
PB-210	26328.	46.50	0.0000E+00
BI-212	1370.	727.18	3.3162E+01
PB-212	37086.	238.63	1.0989E+01
BI-214	8222.	609.31	1.0400E+01
PB-214	30199.	351.92	2.8985E+01
RA-224	36957.	240.99	1.2177E+02
RA-226	42396.	186.10	1.2011E+02
AC-228	565.	911.21	6.4468E+00
TH-228	27622.	84.37	3.9181E+02
TH-229	28162.	88.47	1.8677E+01
U-232	26404.	57.78	7.3191E+03
PA-233	30174.	312.17	1.3480E+01
PA-234M	372.	1001.03	2.5748E+00
TH-234	26297.	63.29	2.2271E+02
U-235	42018.	185.71	7.2682E+00
NP-237	27836.	86.48	3.8438E+01
U-237	26385.	59.54	3.7028E+01
NP-238	456.	984.45	5.9981E+00
NP-239	29313.	106.12	1.6179E+01
PU-239	32709.	129.30	5.2804E+04
AM-241	26385.	59.54	3.5515E+01
AM-243	27415.	74.67	1.0609E+01

LABCORE Data Entry Template for Worklist# 2886

Analyst: SMF **Instrument:** GEA00 3 **Book #** 144B52

Method: LA-548-121 Rev/Mod D-1

Worklist Comment: Use .100 mL sample size. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@GEA-03 CO60-02	LIQUID			N/A	uCi/mL
		1	STD				@GEA-03 CO60-02E	LIQUID			N/A	% Ct. Error
		1	STD				@GEA-03 CS13702	LIQUID			N/A	uCi/mL
		1	STD				@GEA-03 CS13702E	LIQUID			N/A	% Ct. Error
		2	BLNK				@GEA-03 CO60-02	LIQUID			N/A	uCi/mL
		2	BLNK				@GEA-03 NB94-02	LIQUID			N/A	uCi/mL
		2	BLNK				@GEA-03 RU10602	LIQUID			N/A	uCi/mL
		2	BLNK				@GEA-03 CS13402	LIQUID			N/A	uCi/mL
		2	BLNK				@GEA-03 CS13702	LIQUID			N/A	uCi/mL
		2	BLNK				@GEA-03 CE14402	LIQUID			N/A	uCi/mL
		2	BLNK				@GEA-03 EU15402	LIQUID			N/A	uCi/mL
		2	BLNK				@GEA-03 EU15502	LIQUID			N/A	uCi/mL
		2	BLNK				@GEA-03 RA22602	LIQUID			N/A	uCi/mL
95000127	AW-102 GRAB	3	SAMPLE	S95T002308	0		@GEA-03 CO60-02	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	3	SAMPLE	S95T002308	0		@GEA-03 CO60-02E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	3	SAMPLE	S95T002308	0		@GEA-03 NB94-02	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	3	SAMPLE	S95T002308	0		@GEA-03 NB94-02E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	3	SAMPLE	S95T002308	0		@GEA-03 RU10602	LIQUID	N/A			uCi/mL

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.

LABCORE Data Entry Template for Worklist# 2886

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------		MATRIX	ACTUAL	FOUND	DL	UNIT
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	RU10602E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	CS13402	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	CS13402E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	CS13702	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	CS13702E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	CE14402	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	CE14402E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	EU15402	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	EU15402E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	EU15502	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	EU15502E	LIQUID	N/A			% Ct. Error
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	RA22602	LIQUID	N/A			uCi/mL
95000127	AW-102 GRAB	3 SAMPLE	S95T002308	0		@GEA-03	RA22602E	LIQUID	N/A			% Ct. Error

Final page for worklist # 2886

Susie M. Fulton 10·16·95 1530
Analyst Signature Date

[illegible] 10/12/95
Analyst Signature Date

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.

```
*************************************************************************
* 222-S Laboratory Counting Room   16-OCT-1995 18:20:18.67              *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2886
Sample ID:               144B52-STD                    Removed by:
Sample Size:             1.00000E-03 LI
Dilution Factor:         1.00000E+00

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA3                          Verified by:
File Number:             dka300:[spec.GEA3]3g3683.cnf
Geometry:                42
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:50:08.39 sec
Dead Time:               0.3%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       16-OCT-1995 17:29:30.79
Decayed to:              16-OCT-1995 17:29:30.79
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 EMB
Background Subtract:     DKA300:[SPEC.GEA3]3GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       11-MAR-1994 11:47:01.11
 Date of last efficiency calibration:   15-MAR-1994 10:28:40.20
*************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/LI
0	661.51*	22755	1.52	1323.20	1315	16	1.5		CS-137	25.7
0	1172.94	13238	1.87	2346.15	2336	19	1.9		CO-60	20.9
0	1332.17	11868	1.99	2664.72	2655	21	1.9		CO-60	20.8
0	1411.50	17	1.02	2823.43	2818	12	83.7			
0	1460.59*	32	1.94	2921.67	2913	18	95.4		K-40	0.571

Sample ID : 144B52-STD Acquisition date : 16-OCT-1995 17:29:30

Total number of lines in spectrum	5	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	4	80.00%

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
~~K-40~~	~~1.28E+09Y~~	~~1.000~~	~~5.706E-01~~	~~5.706E-01~~	~~5.442E-01~~	~~95.36~~	BKG
CO-60	5.27Y	1.000	2.082E+01	2.082E+01	0.028E+01	1.35	
CS-137	30.00Y	1.000	2.572E+01	2.572E+01	0.037E+01	1.45	
		Total Activity :	4.711E+01	4.711E+01			
		Grand Total Activity :	4.711E+01	4.711E+01			

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

Sample ID : 144B52-STD
Acquisition date : 16-OCT-1995 17:29:30

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
BE-7	1083.	477.59	1.0840E+00
NA-22	65.	1274.53	6.3052E-02
NA-24	28.	1368.55	4.5189E-02
SC-46	434.	1120.55	1.4671E-01
CR-51	1091.	320.08	8.1885E-01
MN-54	639.	834.83	1.3824E-01
CO-56	664.	846.76	1.4266E-01
CO-57	1161.	122.06	5.8957E-02
CO-58	605.	810.78	1.3188E-01
FE-59	620.	1099.25	3.0527E-01
ZN-65	586.	1115.55	3.3508E-01
SE-75	1284.	264.66	1.3310E-01
KR-85	764.	514.00	2.3017E+01
SR-85	763.	514.01	1.0407E-01
Y-88	9.	1836.06	3.1436E-02
Y-90	25.	1760.70	1.7685E-01
Y-91	145.	1204.67	3.0077E+01
NB-94	705.	871.09	1.5064E-01
NB-95	513.	765.78	1.1525E-01
ZR-95	536.	756.73	2.1343E-01
RU-103	814.	497.08	1.1034E-01
RURH-106	568.	621.93	2.0426E+00
AG-108m	515.	722.94	1.2079E-01
CD-109	1020.	88.03	1.8306E+00
AG-110M	984.	657.76	1.4776E-01
SN-113	1053.	391.69	1.4749E-01
TE-123m	1168.	159.00	6.0841E-02
SB-124	540.	602.73	9.8377E-02
SB-125	1079.	427.89	3.4857E-01
TE-125m	1081.	109.27	1.8529E+01
I-129	938.	39.60	0.0000E+00
I-131	1020.	364.48	1.0857E-01
XE-131m	1246.	163.93	2.7337E+00
BA-133	1060.	356.02	1.4207E-01
CS-134	536.	604.70	9.8403E-02
CS-136	612.	818.51	1.3344E-01
CS-138	19.	1435.86	8.0961E-02
CE-139	1262.	165.85	6.7818E-02
BA-140	708.	537.31	4.0956E-01
LA-140	20.	1596.21	4.4384E-02
CE-141	1169.	145.44	1.0335E-01
CE-144	1269.	133.51	4.6659E-01
CEPR-144	1269.	133.51	9.3233E-01
EU-152	28.	1408.01	2.1490E-01
EU-154	65.	1274.51	1.8341E-01
EU-155	1007.	86.54	2.0625E-01
HF-181	939.	482.18	1.3081E-01
TA-182	994.	67.75	3.0774E-01
HG-203	1178.	279.20	9.5081E-02
BI-207	550.	569.70	9.4524E-02
TL-208	1177.	277.36	1.2207E+00

Sample ID : 144B52-STD Acquisition date : 16-OCT-1995 17:29:30

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
PB-210	1007.	46.50	0.0000E+00
BI-212	539.	727.18	1.6955E+00
PB-212	1416.	238.63	1.7385E-01
BI-214	549.	609.31	2.1838E-01
PB-214	1050.	351.92	4.3366E-01
RA-224	1395.	240.99	1.9158E+00
RA-226	1359.	186.10	1.7259E+00
AC-228	749.	911.21	6.0619E-01
TH-228	994.	84.37	5.5647E+00
TH-229	1005.	88.47	2.6337E-01
U-232	948.	57.78	1.4413E+02
PA-233	1113.	312.17	2.1192E-01
PA-234M	628.	1001.03	2.7149E-01
TH-234	981.	63.29	3.7235E+00
U-235	1333.	185.71	1.0389E-01
NP-237	1007.	86.48	5.4631E-01
U-237	983.	59.54	6.8555E-01
NP-238	666.	984.45	5.8816E-01
NP-239	1096.	106.12	2.3666E-01
PU-239	1165.	129.30	7.7756E+02
AM-241	983.	59.54	6.5757E-01
AM-243	993.	74.67	1.5534E-01

```
*****************************************************************************
* 222-S Laboratory Counting Room   16-OCT-1995 19:18:29.10                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:             2886
Sample ID:              2886-BLK
Sample Size:            1.00000E-03 LI
Dilution Factor:        1.00000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:            GEA3
File Number:            dka300:[spec.GEA3]3g3684.cnf
Geometry:               42
Count Time:             0 00:50:00.00 sec
Real Time:              0 00:50:00.47 sec
Dead Time:              0.0%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:      16-OCT-1995 18:27:50.11
Decayed to:             16-OCT-1995 18:27:50.11
Standard Deviations:    2
Analysis Library:       ENVGEA
Analyst:                EMB
Background Subtract:    DKA300:[SPEC.GEA3]3GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       11-MAR-1994 11:47:01.11
 Date of last efficiency calibration:   15-MAR-1994 10:28:40.20
*****************************************************************************
```

Removed by:

Verified by: 10/17/95

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/LI
0	611.69	49	8.70	1223.57	1212	27	65.6			
0	661.54*	52	1.54	1323.25	1319	13	61.8		CS-137	0.592

Sample ID : 2886-BLK Acquisition date : 16-OCT-1995 18:27:50

Total number of lines in spectrum	2	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	1	50.00%

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~~	~~5.923E-01~~	~~5.923E-01~~	~~3.661E-01~~	~~61.81~~	BKG
			---	---			
Total Activity :			5.923E-01	5.923E-01			
Grand Total Activity :			5.923E-01	5.923E-01			

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

Sample ID : 2886-BLK Acquisition date : 16-OCT-1995 18:27:50

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
BE-7	34.	477.59	1.9304E+00
NA-22	11.	1274.53	2.6255E-01
NA-24	7.	1368.55	2.1813E-01
K-40	127.	1460.75	9.2387E+00
SC-46	24.	1120.55	3.4211E-01
CR-51	49.	320.08	1.7278E+00
MN-54	21.	834.83	2.4876E-01
CO-56	14.	846.76	2.0381E-01
CO-57	74.	122.06	1.4838E-01
CO-58	15.	810.78	2.0963E-01
FE-59	12.	1099.25	4.3094E-01
CO-60	11.	1332.50	2.7530E-01
ZN-65	10.	1115.55	4.4402E-01
SE-75	67.	264.66	3.0403E-01
KR-85	36.	514.00	5.0273E+01
SR-85	36.	514.01	2.2677E-01
Y-88	2.	1836.06	1.4838E-01
Y-90	4.	1760.70	6.8155E-01
Y-91	14.	1204.67	9.4055E+01
NB-94	19.	871.09	2.4988E-01
NB-95	20.	765.78	2.2966E-01
ZR-95	15.	756.73	3.6059E-01
RU-103	27.	497.08	2.0067E-01
RURH-106	22.	621.93	4.0342E+00
AG-108m	15.	722.94	2.0801E-01
CD-109	70.	88.03	4.7905E+00
AG-110M	21.	657.76	2.1373E-01
SN-113	40.	391.69	2.8871E-01
TE-123m	76.	159.00	1.5498E-01
SB-124	30.	602.73	2.3150E-01
SB-125	46.	427.89	7.1907E-01
TE-125m	63.	109.27	4.4585E+01
I-129	38.	39.60	0.0000E+00
I-131	55.	364.48	2.5273E-01
XE-131m	88.	163.93	7.2762E+00
BA-133	51.	356.02	3.1305E-01
CS-134	26.	604.70	2.1640E-01
CS-136	15.	818.51	2.0649E-01
CS-138	6.	1435.86	4.3618E-01
CE-139	80.	165.85	1.7063E-01
BA-140	37.	537.31	9.3874E-01
LA-140	3.	1596.21	1.7457E-01
CE-141	81.	145.44	2.7209E-01
CE-144	65.	133.51	1.0524E+00
CEPR-144	64.	133.51	2.1018E+00
EU-152	7.	1408.01	1.0632E+00
EU-154	11.	1274.51	7.6414E-01
EU-155	61.	86.54	5.0740E-01
HF-181	28.	482.18	2.2752E-01
TA-182	75.	67.75	8.4329E-01
HG-203	58.	279.20	2.1011E-01

Sample ID : 2886-BLK Acquisition date : 16-OCT-1995 18:27:50

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
BI-207	28.	569.70	2.1397E-01
TL-208	61.	277.36	2.7680E+00
PB-210	41.	46.50	0.0000E+00
BI-212	26.	727.18	3.6884E+00
PB-212	83.	238.63	4.2210E-01
BI-214	38.	609.31	5.7781E-01
PB-214	66.	351.92	1.0895E+00
RA-224	60.	240.99	3.9857E+00
RA-226	86.	186.10	4.3363E+00
AC-228	34.	911.21	1.2838E+00
TH-228	65.	84.37	1.4208E+01
TH-229	69.	88.47	6.9138E-01
U-232	55.	57.78	3.4686E+02
PA-233	51.	312.17	4.5330E-01
PA-234M	18.	1001.03	4.5412E-01
TH-234	59.	63.29	9.1046E+00
U-235	84.	185.71	2.6148E-01
NP-237	61.	86.48	1.3461E+00
U-237	63.	59.54	1.7299E+00
NP-238	13.	984.45	8.1698E-01
NP-239	68.	106.12	5.8858E-01
PU-239	93.	129.30	2.1973E+03
AM-241	63.	59.54	1.6593E+00
AM-243	72.	74.67	4.1751E-01

```
*****************************************************************************
* 222-S Laboratory Counting Room   16-OCT-1995 20:21:13.34                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2886
Sample ID:               S95T002308-SAM
Sample Size:             1.00000E-03 LI
Dilution Factor:         1.00000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA3
File Number:             dka300:[spec.GEA3]3g3685.cnf
Geometry:                42
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:58:43.29 sec
Dead Time:                15%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       16-OCT-1995 19:21:48.45
Decayed to:              16-OCT-1995 19:21:48.45
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 EMB
Background Subtract:     DKA300:[SPEC.GEA3]3GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       11-MAR-1994 11:47:01.11
 Date of last efficiency calibration:   15-MAR-1994 10:28:40.20
*****************************************************************************
```

Removed by: Em Barela

Verified by: D Machelor 10/17/95

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/LI
0	186.00	987	1.55	372.43	370	6	103.5		RA-226	99.4
0	563.53	636	1.05	1127.25	1125	7	81.9		CS-134	63.7
0	569.25	1504	1.33	1138.71	1136	7	33.8		CS-134	82.6
0	604.55	8498	1.49	1209.30	1204	11	8.2		CS-134	77.7
0	661.51*	3567561	1.56	1323.20	1315	17	0.1		CS-137	4.032E+04
0	795.72	5942	1.66	1591.60	1586	12	7.7		CS-134	78.5
0	801.63	863	1.54	1603.42	1599	10	42.2		CS-134	112.
0	1173.08	199	1.49	2346.43	2343	9	68.9		CO-60	3.14
0	1321.78	3867	2.99	2643.93	2635	25	8.4			
0	1332.26	202	1.93	2664.90	2660	11	34.3		CO-60	3.54
0	1364.75	123	1.24	2729.91	2725	12	54.4			

Summary of Nuclide Activity
Sample ID : S95T002308-SAM

Acquisition date : 16-OCT-1995 19:21:48

Total number of lines in spectrum 11
Number of unidentified lines 2
Number of lines tentatively identified by NID 9 81.82%

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
CO-60	5.27Y	1.000	3.448E+00	3.448E+00	1.059E+00	30.72	
CS-134	2.06Y	1.000	7.842E+01	7.842E+01	0.429E+01	5.48	
CS-137	30.00Y	1.000	4.032E+04	4.032E+04	0.004E+04	0.11	
~~RA-226~~	~~1600.00Y~~	~~1.000~~	~~9.939E+01~~	~~9.939E+01~~	~~10.29E+01~~	~~103.50~~	BKG
			---	---			
Total Activity :			4.050E+04	4.050E+04			
Grand Total Activity :			4.050E+04	4.050E+04			

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

Sample ID : S95T002308-SAM Acquisition date : 16-OCT-1995 19:21:48

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
BE-7	115704.	477.59	1.1207E+02
NA-22	1361.	1274.53	2.8956E+00
NA-24	235.	1368.55	1.3037E+00
K-40	243.	1460.75	1.2754E+01
SC-46	2719.	1120.55	3.6734E+00
CR-51	88144.	320.08	7.3610E+01
MN-54	8203.	834.83	4.9521E+00
CO-56	7978.	846.76	4.9462E+00
CO-57	88164.	122.06	5.1387E+00
CO-58	9084.	810.78	5.1099E+00
FE-59	3086.	1099.25	6.8120E+00
ZN-65	2794.	1115.55	7.3143E+00
SE-75	96988.	264.66	1.1567E+01
KR-85	61332.	514.00	2.0629E+03
SR-85	61319.	514.01	9.3274E+00
Y-88	20.	1836.06	4.6665E-01
Y-90	38.	1760.70	2.1986E+00
Y-91	1471.	1204.67	9.5774E+02
NB-94	7057.	871.09	4.7672E+00
NB-95	10034.	765.78	5.0975E+00
ZR-95	10667.	756.73	9.5247E+00
RU-103	73426.	497.08	1.0483E+01
RURH-106	24276.	621.93	1.3351E+02
AG-108m	12828.	722.94	6.0270E+00
CD-109	76036.	88.03	1.5802E+02
AG-110M	92394.	657.76	1.4319E+01
SN-113	97973.	391.69	1.4230E+01
TE-123m	92423.	159.00	5.4128E+00
SB-124	31837.	602.73	7.5523E+00
SB-125	114233.	427.89	3.5871E+01
TE-125m	81077.	109.27	1.6044E+03
I-129	71045.	39.60	0.0000E+00
I-131	92467.	364.48	1.0339E+01
XE-131m	92752.	163.93	2.3588E+02
BA-133	90740.	356.02	1.3147E+01
CS-136	8846.	818.51	5.0753E+00
CS-138	150.	1435.86	2.4386E+00
CE-139	92617.	165.85	5.8107E+00
BA-140	45504.	537.31	3.2841E+01
LA-140	56.	1596.21	7.3644E-01
CE-141	91709.	145.44	9.1551E+00
CE-144	90646.	133.51	3.9439E+01
CEPR-144	90646.	133.51	7.8808E+01
EU-152	188.	1408.01	5.5737E+00
EU-154	1361.	1274.51	8.4115E+00
EU-155	75613.	86.54	1.7868E+01
HF-181	94181.	482.18	1.3099E+01
TA-182	70889.	67.75	2.5989E+01
HG-203	93439.	279.20	8.4667E+00
BI-207	31040.	569.70	7.1035E+00
TL-208	93965.	277.36	1.0907E+02

Sample ID : S95T002308-SAM Acquisition date : 16-OCT-1995 19:21:48

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/LI)
PB-210	70459.	46.50	0.0000E+00
BI-212	12476.	727.18	8.1566E+01
PB-212	107880.	238.63	1.5172E+01
BI-214	25004.	609.31	1.4743E+01
PB-214	90388.	351.92	4.3845E+01
RA-224	106484.	240.99	1.6745E+02
AC-228	5653.	911.21	1.6655E+01
TH-228	75021.	84.37	4.8341E+02
TH-229	76126.	88.47	2.2916E+01
U-232	69518.	57.78	1.2342E+04
PA-233	89222.	312.17	1.8972E+01
PA-234M	4168.	1001.03	6.9916E+00
TH-234	69899.	63.29	3.1428E+02
U-235	121710.	185.71	9.9280E+00
NP-237	75601.	86.48	4.7324E+01
U-237	69490.	59.54	5.7669E+01
NP-238	4218.	984.45	1.4813E+01
NP-239	79706.	106.12	2.0202E+01
PU-239	89976.	129.30	6.8329E+04
AM-241	69489.	59.54	5.5298E+01
AM-243	73269.	74.67	1.3346E+01

LABCORE Data Entry Template for Worklist# 2914

Analyst: RDM **Instrument:** GEA00 4 **Book#** 144B52

Method: LA-548-121 Rev/Mod D-1

Worklist Comment: GEA AW-102; use 1 mL sample size. R(0) -PPB

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@GEA-01	SOLID		
2	BLNK-PREP				@GEA-01	SOLID		
3	SAMPLE	S95T002304	0	F	@GEA-01	SOLID	95000127	AW-102 GRAB
	Analytes Requested: CO60-02 , CO60-02E, CS13702 , CS13702E							
4	DUP	S95T002304	0	F	@GEA-01	SOLID		
5	SAMPLE	S95T002305	0	F	@GEA-01	SOLID	95000127	AW-102 GRAB
	Analytes Requested: CO60-02 , CO60-02E, CS13702 , CS13702E							
6	DUP	S95T002305	0	F	@GEA-01	SOLID		

Final page for worklist # 2914

10/17/95
Analyst Signature **Date**

10/25/95
Analyst Signature **Date**

Data Entry Comments:

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

```
*************************************************************************
* 222-S Laboratory Counting Room   17-OCT-1995 11:16:22.10             *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2914
Sample ID:               WORKLIST2914-STD
Sample Size:             1.00000E-03 L
Dilution Factor:         1.00000E+00

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA4
File Number:             dka300:[spec.GEA4]4g4558.cnf
Geometry:                41
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:50:30.55 sec
Dead Time:               1.0%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-OCT-1995 10:25:14.06
Decayed to:              17-OCT-1995 10:25:14.06
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SEH
Background Subtract:     DKA300:[SPEC.GEA4]4GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       18-APR-1994 11:17:09.37
 Date of last efficiency calibration:   18-APR-1994 11:18:36.88
*************************************************************************
```

Removed by: SE Hogan

Verified by: RJ Bachelor 10/18/95

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
10	24.61	904	1.21	49.23	46	18	16.7	1.69E+01		
10	26.38	2118	2.11	52.76	46	18	12.7			
10	28.72	896	1.61	57.44	46	18	25.8		I-129	0.000E+00
0	661.57*	85007	1.50	1323.05	1315	16	0.8		CS-137	26.1
0	1173.05*	47728	1.82	2346.06	2339	17	1.0		CO-60	21.1
0	1332.28	44110	1.93	2664.56	2654	22	1.0		CO-60	21.2

Sample ID : WORKLIST2914-STD Acquisition date : 17-OCT-1995 10:25:14

Total number of lines in spectrum	6	
Number of unidentified lines	2	
Number of lines tentatively identified by NID	4	66.67%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.000	2.112E+01	2.112E+01	0.015E+01	0.70	
~~I-129~~	~~5.73E+09D~~	~~1.000~~	~~0.000E+00~~	~~0.000E+00~~	~~0.000E+00~~	~~0.00~~	BKG
CS-137	30.00Y	1.000	2.606E+01	2.606E+01	0.020E+01	0.75	
			---	---			
Total Activity :			4.718E+01	4.718E+01			
Grand Total Activity :			4.718E+01	4.718E+01			

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

Sample ID : WORKLIST2914-STD Acquisition date : 17-OCT-1995 10:25:14

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	3823.	477.59	5.7710E-01
NA-22	282.	1274.53	3.6381E-02
NA-24	92.	1368.55	2.2267E-02
K-40	870.	1460.75	6.6720E-01
SC-46	1701.	1120.55	8.1711E-02
CR-51	3687.	320.08	4.1009E-01
MN-54	2144.	834.83	7.1956E-02
CO-56	2065.	846.76	7.1756E-02
CO-57	3355.	122.06	2.7349E-02
CO-58	1980.	810.78	6.7376E-02
FE-59	2156.	1099.25	1.6051E-01
ZN-65	1926.	1115.55	1.7089E-01
SE-75	3946.	264.66	6.3519E-02
KR-85	2735.	514.00	1.2468E+01
SR-85	2734.	514.01	5.6367E-02
Y-88	61.	1836.06	2.3073E-02
Y-90	66.	1760.70	8.0697E-02
Y-91	585.	1204.67	1.6839E+01
NB-94	2364.	871.09	7.9227E-02
NB-95	1886.	765.78	6.1752E-02
ZR-95	1848.	756.73	1.1054E-01
RU-103	2944.	497.08	5.9910E-02
RURH-106	1931.	621.93	1.0297E+00
AG-108m	1784.	722.94	6.2063E-02
CD-109	3149.	88.03	8.5247E-01
AG-110M	3066.	657.76	7.0731E-02
SN-113	3585.	391.69	7.4163E-02
TE-123m	3596.	159.00	2.9059E-02
SB-124	1929.	602.73	5.1288E-02
SB-125	3898.	427.89	1.8290E-01
TE-125m	3246.	109.27	8.7089E+00
I-131	3515.	364.48	5.4819E-02
XE-131m	3701.	163.93	1.2811E+00
BA-133	3517.	356.02	7.0428E-02
CS-134	2014.	604.70	5.2594E-02
CS-136	2106.	818.51	7.0058E-02
CS-138	82.	1435.86	4.6416E-02
CE-139	3729.	165.85	3.1697E-02
BA-140	2254.	537.31	2.0842E-01
LA-140	48.	1596.21	1.9093E-02
CE-141	3631.	145.44	4.9709E-02
CE-144	3509.	133.51	2.1199E-01
CEPR-144	3509.	133.51	4.2358E-01
EU-152	87.	1408.01	1.0478E-01
EU-154	282.	1274.51	1.0570E-01
EU-155	3117.	86.54	9.5907E-02
HF-181	3431.	482.18	7.0974E-02
TA-182	2885.	67.75	1.2890E-01
HG-203	3905.	279.20	4.7115E-02
BI-207	2051.	569.70	5.1319E-02
TL-208	3937.	277.36	6.0774E-01

Sample ID : WORKLIST2914-STD Acquisition date : 17-OCT-1995 10:25:14

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-210	2916.	46.50	0.0000E+00
BI-212	1788.	727.18	8.5381E-01
PB-212	4382.	238.63	8.3252E-02
BI-214	2156.	609.31	1.1904E-01
PB-214	3859.	351.92	2.2714E-01
RA-224	4260.	240.99	9.1145E-01
RA-226	4222.	186.10	8.2601E-01
AC-228	2689.	911.21	3.3145E-01
TH-228	3069.	84.37	2.5736E+00
TH-229	3140.	88.47	1.2348E-01
U-232	2784.	57.78	5.0973E+01
PA-233	3684.	312.17	1.0499E-01
PA-234M	2179.	1001.03	1.4397E-01
TH-234	2954.	63.29	1.5162E+00
U-235	4200.	185.71	5.0068E-02
NP-237	3112.	86.48	2.5380E-01
U-237	2836.	59.54	2.5434E-01
NP-238	2245.	984.45	3.0801E-01
NP-239	3182.	106.12	1.0918E-01
PU-239	3432.	129.30	3.6450E+02
AM-241	2836.	59.54	2.4396E-01
AM-243	3126.	74.67	7.0511E-02

```
*************************************************************************
* 222-S Laboratory Counting Room   17-OCT-1995 12:15:52.35              *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2914
Sample ID:               WORKLIST2914-BLK
Sample Size:             1.00000E-03 L
Dilution Factor:         1.00000E+00

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA4
File Number:             dka300:[spec.GEA4]4g4559.cnf
Geometry:                41
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:50:02.36 sec
Dead Time:               0.1%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-OCT-1995 11:25:10.38
Decayed to:              17-OCT-1995 11:25:10.38
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SEH
Background Subtract:     DKA300:[SPEC.GEA4]4GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       18-APR-1994 11:17:09.37
 Date of last efficiency calibration:   18-APR-1994 11:18:36.88
*************************************************************************
```

Removed by: M S Brown 10/12/95

Verified by: B Bachelor 10/18/95

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.62*	1097	1.50	1323.13	1317	14	8.5		CS-137	0.336
0	1238.19*	39	2.66	2476.34	2470	14	105.8			
0	1897.65	11	0.87	3795.51	3792	6	78.2			

Sample ID : WORKLIST2914-BLK Acquisition date : 17-OCT-1995 11:25:10

Total number of lines in spectrum	3	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	2	66.67%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.00Y	1.000	3.362E-01	3.362E-01	0.284E-01	8.46	
		Total Activity :	3.362E-01	3.362E-01			
		Grand Total Activity :	3.362E-01	3.362E-01			

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

Sample ID : WORKLIST2914-BLK Acquisition date : 17-OCT-1995 11:25:10

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	193.	477.59	1.2978E-01
NA-22	54.	1274.53	1.5927E-02
NA-24	41.	1368.55	1.4879E-02
K-40	827.	1460.75	6.5026E-01
SC-46	143.	1120.55	2.3708E-02
CR-51	280.	320.08	1.1296E-01
MN-54	106.	834.83	1.6007E-02
CO-56	108.	846.76	1.6406E-02
CO-57	351.	122.06	8.8512E-03
CO-58	93.	810.78	1.4608E-02
FE-59	69.	1099.25	2.8756E-02
CO-60	48.	1332.50	1.5462E-02
ZN-65	69.	1115.55	3.2403E-02
SE-75	345.	264.66	1.8771E-02
KR-85	226.	514.00	3.5803E+00
SR-85	225.	514.01	1.6166E-02
Y-88	6.	1836.06	7.3945E-03
Y-90	28.	1760.70	5.2424E-02
Y-91	76.	1204.67	6.0689E+00
NB-94	91.	871.09	1.5511E-02
NB-95	101.	765.78	1.4297E-02
ZR-95	70.	756.73	2.1479E-02
RU-103	163.	497.08	1.4086E-02
RURH-106	118.	621.93	2.5452E-01
AG-108m	115.	722.94	1.5784E-02
CD-109	325.	88.03	2.7369E-01
AG-110M	125.	657.76	1.4299E-02
SN-113	210.	391.69	1.7953E-02
TE-123m	382.	159.00	9.4709E-03
SB-124	143.	602.73	1.3944E-02
SB-125	229.	427.89	4.4363E-02
TE-125m	304.	109.27	2.6671E+00
I-129	247.	39.60	0.0000E+00
I-131	261.	364.48	1.4930E-02
XE-131m	379.	163.93	4.0991E-01
BA-133	253.	356.02	1.8877E-02
CS-134	130.	604.70	1.3363E-02
CS-136	105.	818.51	1.5628E-02
CS-138	31.	1435.86	2.8162E-02
CE-139	365.	165.85	9.9158E-03
BA-140	158.	537.31	5.5171E-02
LA-140	19.	1596.21	1.1993E-02
CE-141	356.	145.44	1.5564E-02
CE-144	374.	133.51	6.9157E-02
CEPR-144	374.	133.51	1.3819E-01
EU-152	39.	1408.01	6.9679E-02
EU-154	54.	1274.51	4.6325E-02
EU-155	347.	86.54	3.1979E-02
HF-181	187.	482.18	1.6563E-02
TA-182	249.	67.75	3.7841E-02
HG-203	348.	279.20	1.4057E-02

Sample ID : WORKLIST2914-BLK Acquisition date : 17-OCT-1995 11:25:10

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-207	141.	569.70	1.3470E-02
TL-208	339.	277.36	1.7847E-01
PB-210	286.	46.50	0.0000E+00
BI-212	129.	727.18	2.2937E-01
PB-212	493.	238.63	2.7920E-02
BI-214	338.	609.31	4.7165E-02
PB-214	410.	351.92	7.3675E-02
RA-224	396.	240.99	2.7776E-01
RA-226	449.	186.10	2.6944E-01
AC-228	173.	911.21	8.4174E-02
TH-228	392.	84.37	9.2005E-01
TH-229	324.	88.47	3.9665E-02
U-232	253.	57.78	1.5354E+01
PA-233	292.	312.17	2.9555E-02
PA-234M	75.	1001.03	2.6739E-02
TH-234	300.	63.29	4.8295E-01
U-235	458.	185.71	1.6533E-02
NP-237	352.	86.48	8.5379E-02
U-237	273.	59.54	7.8861E-02
NP-238	73.	984.45	5.5522E-02
NP-239	346.	106.12	3.5995E-02
PU-239	350.	129.30	1.1640E+02
AM-241	273.	59.54	7.5651E-02
AM-243	398.	74.67	2.5153E-02

```
*****************************************************************************
* 222-S Laboratory Counting Room   17-OCT-1995 13:41:14.44                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2914
Sample ID:               SS95T2304-SAM
Sample Size:             1.00000E-03 L
Dilution Factor:         1.00000E+00

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA4
File Number:             dka300:[spec.GEA4]4g4560.cnf
Geometry:                41
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:50:14.57 sec
Dead Time:               0.5%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-OCT-1995 12:50:18.45
Decayed to:              17-OCT-1995 12:50:18.45
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 MB
Background Subtract:     DKA300:[SPEC.GEA4]4GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       18-APR-1994 11:17:09.37
 Date of last efficiency calibration:   18-APR-1994 11:18:36.88
*****************************************************************************
```

Removed by: SE Hegan

Verified by: B Machelor 10/18/95

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	59.62	470	0.82	119.23	116	8	47.6		AM-241	0.463
0	86.35*	467	0.79	172.68	169	8	51.2		NP-237	0.457
									EU-155	0.173
0	105.10	579	1.08	210.19	207	8	39.3		EU-155	0.254
0	123.14	815	0.88	246.25	243	8	28.0		~~CO-57~~	8.277E-02
									EU-154	0.175
0	427.48	533	2.83	854.88	850	11	45.5			
0	600.73	110	1.41	1201.37	1199	7	69.7			
0	604.60	135	0.98	1209.11	1206	8	65.8		CS-134	3.408E-02
0	661.58*	90389	1.48	1323.06	1315	16	0.7		CS-137	27.7
0	723.30	121	1.13	1446.50	1443	8	35.6		EU-154	0.174
									ZR-95	7.909E-02
0	756.14	59	1.47	1512.18	1508	10	72.4		ZR-95	3.254E-02
0	795.66	157	1.45	1591.23	1587	10	29.2		CS-134	5.831E-02
0	1004.99	107	1.03	2009.90	2005	11	36.3		EU-154	0.233
0	1274.12	152	1.27	2548.21	2541	14	27.0		EU-154	0.205
									~~NA-22~~	7.062E-02
0	1332.18	56	1.28	2664.36	2660	13	51.6			

Sample ID : SS95T2304-SAM Acquisition date : 17-OCT-1995 12:50:18

Total number of lines in spectrum 14
Number of unidentified lines 0
Number of lines tentatively identified by NID 14 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
~~NA-22~~	~~2.60Y~~	~~1.000~~	~~7.062E-02~~	~~7.062E-02~~	~~1.909E-02~~	~~27.03~~	15Y Eu
~~CO-57~~	~~271.80D~~	~~1.000~~	~~8.276E-02~~	~~8.277E-02~~	~~2.322E-02~~	~~28.05~~	
~~ZR-95~~	~~64.02D~~	~~1.000~~	~~3.254E-02~~	~~3.254E-02~~	~~2.357E-02~~	~~72.44~~	BKG
CS-134	2.06Y	1.000	4.943E-02	4.943E-02	1.357E-02	27.45	7.26 e-2
CS-137	30.00Y	1.000	2.771E+01	2.771E+01	0.019E+01	0.68	
EU-154	8.59Y	1.000	2.335E-01	2.335E-01	0.849E-01	36.35	3.49e-1
EU-155	4.68Y	1.000	2.537E-01	2.537E-01	0.996E-01	39.27	3.73e-1
~~NP-237~~	~~2.14E+06Y~~	~~1.000~~	~~4.573E-01~~	~~4.573E-01~~	~~2.340E-01~~	~~51.18~~	BKG
AM-241	432.20Y	1.000	4.628E-01	4.628E-01	2.205E-01	47.64	6.80e-1
		Total Activity :	2.935E+01	2.935E+01			
		Grand Total Activity :	2.935E+01	2.935E+01			

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

Sample ID : SS95T2304-SAM Acquisition date : 17-OCT-1995 12:50:18

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	2714.	477.59	4.8629E-01
NA-24	31.	1368.55	1.3024E-02
K-40	857.	1460.75	6.6219E-01
SC-46	148.	1120.55	2.4097E-02
CR-51	2257.	320.08	3.2086E-01
MN-54	97.	834.83	1.5311E-02
CO-56	117.	846.76	1.7058E-02
CO-58	112.	810.78	1.6039E-02
FE-59	72.	1099.25	2.9325E-02
CO-60	86.	1332.50	2.0699E-02
ZN-65	75.	1115.55	3.3664E-02
SE-75	2542.	264.66	5.0984E-02
KR-85	1442.	514.00	9.0518E+00
SR-85	1441.	514.01	4.0915E-02
Y-88	10.	1836.06	9.4676E-03
Y-90	39.	1760.70	6.2278E-02
Y-91	81.	1204.67	6.2740E+00
NB-94	130.	871.09	1.8606E-02
NB-95	155.	765.78	1.7712E-02
RU-103	1763.	497.08	4.6357E-02
RURH-106	590.	621.93	5.6928E-01
AG-108m	255.	722.94	2.3485E-02
CD-109	3365.	88.03	8.8130E-01
AG-110M	1526.	657.76	4.9897E-02
SN-113	2472.	391.69	6.1586E-02
TE-123m	2823.	159.00	2.5748E-02
SB-124	777.	602.73	3.2554E-02
SB-125	3239.	427.89	1.6670E-01
TE-125m	3062.	109.27	8.4583E+00
I-129	2483.	39.60	0.0000E+00
I-131	2343.	364.48	4.4760E-02
XE-131m	2858.	163.93	1.1259E+00
BA-133	2454.	356.02	5.8835E-02
CS-136	105.	818.51	1.5625E-02
CS-138	43.	1435.86	3.3315E-02
CE-139	2830.	165.85	2.7616E-02
BA-140	1002.	537.31	1.3899E-01
LA-140	30.	1596.21	1.5011E-02
CE-141	2916.	145.44	4.4544E-02
CE-144	3166.	133.51	2.0135E-01
CEPR-144	3166.	133.51	4.0233E-01
EU-152	54.	1408.01	8.2375E-02
HF-181	2205.	482.18	5.6907E-02
TA-182	2913.	67.75	1.2954E-01
HG-203	2465.	279.20	3.7432E-02
BI-207	722.	569.70	3.0451E-02
TL-208	2521.	277.36	4.8637E-01
PB-210	2334.	46.50	0.0000E+00
BI-212	172.	727.18	2.6448E-01
PB-212	2974.	238.63	6.8585E-02
BI-214	788.	609.31	7.1975E-02

Sample ID : SS95T2304-SAM Acquisition date : 17-OCT-1995 12:50:18

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-214	2490.	351.92	1.8198E-01
RA-224	2865.	240.99	7.4739E-01
RA-226	3492.	186.10	7.5123E-01
AC-228	218.	911.21	9.4455E-02
TH-228	3269.	84.37	2.6564E+00
TH-229	3174.	88.47	1.2414E-01
U-232	2768.	57.78	5.0825E+01
PA-233	2418.	312.17	8.5066E-02
PA-234M	104.	1001.03	3.1399E-02
TH-234	2746.	63.29	1.4617E+00
U-235	3458.	185.71	4.5432E-02
U-237	3158.	59.54	2.6839E-01
NP-238	81.	984.45	5.8500E-02
NP-239	3456.	106.12	1.1379E-01
PU-239	3038.	129.30	3.4294E+02
AM-243	3207.	74.67	7.1417E-02

```
*****************************************************************************
* 222-S Laboratory Counting Room   17-OCT-1995 14:38:28.49                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2914
Sample ID:               S95T002304-DUP
Sample Size:             1.00000E-03 L
Dilution Factor:         1.00000E+00

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA4
File Number:             dka300:[spec.GEA4]4g4561.cnf
Geometry:                41
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:50:14.59 sec
Dead Time:               0.5%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-OCT-1995 13:47:34.21
Decayed to:              17-OCT-1995 13:47:34.21
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SEH
Background Subtract:     DKA300:[SPEC.GEA4]4GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       18-APR-1994 11:17:09.37
 Date of last efficiency calibration:   18-APR-1994 11:18:36.88
*****************************************************************************
```

Removed by: SE Hogan

Verified by: B Bachelor 10/18/95

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	59.50	510	1.17	118.99	115	8	43.3		AM-241	0.502
0	74.52*	210	1.45	149.03	147	6	86.8		AM-243	5.692E-02
0	86.48*	452	1.15	172.95	169	8	52.6		~~NP-237~~	0.442
									EU-155	0.167
0	105.18	474	0.98	210.34	207	7	43.4		EU-155	0.208
0	122.89	765	1.23	245.76	242	9	32.5		CO-57	7.765E-02
									EU-154	0.165
0	428.01	345	1.53	855.94	852	8	54.3			
0	600.60	146	1.49	1201.10	1195	11	74.7			
0	604.37	150	1.38	1208.64	1206	7	52.8		CS-134	3.775E-02
0	661.55*	90867	1.48	1323.00	1315	16	0.7		CS-137	27.9
0	723.26	145	1.54	1446.43	1443	9	31.4		EU-154	0.207
0	795.62	188	1.95	1591.14	1586	10	23.6		CS-134	6.996E-02
0	873.01	73	1.31	1745.93	1741	9	50.0		EU-154	0.213
0	995.93	80	1.70	1991.77	1986	11	50.0		EU-154	0.301
0	1004.41	82	1.21	2008.74	2005	9	42.4		EU-154	0.180
0	1274.60	170	1.83	2549.19	2542	16	23.8		EU-154	0.230
									~~NA-22~~	7.923E-02
0	1592.06	16	1.25	3184.20	3181	11	121.0			
0	1764.29*	15	2.15	3528.73	3523	13	140.3			

Summary of Nuclide Activity
Sample ID : S95T002304-DUP Acquisition date : 17-OCT-1995 13:47:34

Total number of lines in spectrum 17
Number of unidentified lines 1
Number of lines tentatively identified by NID 16 94.12%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
~~NA-22~~	~~2.60Y~~	~~1.000~~	~~7.923E-02~~	~~7.923E-02~~	~~1.883E-02~~	~~23.76~~	154 Eu
~~CO-57~~	~~271.80D~~	~~1.000~~	~~7.765E-02~~	~~7.765E-02~~	~~2.526E-02~~	~~32.53~~	
CS-134	2.06Y	1.000	5.684E-02	5.684E-02	1.272E-02	22.38	8.50e-2
CS-137	30.00Y	1.000	2.785E+01	2.785E+01	0.019E+01	0.68	
EU-154	8.59Y	1.000	2.070E-01	2.070E-01	0.430E-01	20.79	3.10e-1
EU-155	4.68Y	1.000	2.077E-01	2.077E-01	0.901E-01	43.37	3.11e-1
~~NP-237~~	~~2.14E+06Y~~	~~1.000~~	~~4.421E-01~~	~~4.421E-01~~	~~2.326E-01~~	~~52.62~~	BKG
AM-241	432.20Y	1.000	5.024E-01	5.024E-01	2.178E-01	43.34	7.52e-1
~~AM-243~~	~~7380.00Y~~	~~1.000~~	~~5.692E-02~~	~~5.692E-02~~	~~4.939E-02~~	~~86.77~~	BKG
		Total Activity :	2.948E+01	2.948E+01			

Grand Total Activity : 2.948E+01 2.948E+01

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

Sample ID : S95T002304-DUP Acquisition date : 17-OCT-1995 13:47:34

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	2764.	477.59	4.9075E-01
NA-24	38.	1368.55	1.4438E-02
K-40	812.	1460.75	6.4458E-01
SC-46	135.	1120.55	2.3021E-02
CR-51	2356.	320.08	3.2781E-01
MN-54	125.	834.83	1.7346E-02
CO-56	103.	846.76	1.6057E-02
CO-58	112.	810.78	1.6019E-02
FE-59	67.	1099.25	2.8354E-02
CO-60	85.	1332.50	2.0564E-02
ZN-65	85.	1115.55	3.5950E-02
SE-75	2604.	264.66	5.1603E-02
KR-85	1484.	514.00	9.1853E+00
SR-85	1483.	514.01	4.1519E-02
Y-88	15.	1836.06	1.1502E-02
Y-90	36.	1760.70	5.9647E-02
Y-91	90.	1204.67	6.6118E+00
NB-94	132.	871.09	1.8753E-02
NB-95	130.	765.78	1.6199E-02
ZR-95	151.	756.73	3.1574E-02
RU-103	1720.	497.08	4.5785E-02
RURH-106	595.	621.93	5.7134E-01
AG-108m	261.	722.94	2.3757E-02
CD-109	3342.	88.03	8.7824E-01
AG-110M	1651.	657.76	5.1911E-02
SN-113	2476.	391.69	6.1633E-02
TE-123m	2871.	159.00	2.5965E-02
SB-124	804.	602.73	3.3118E-02
SB-125	3115.	427.89	1.6349E-01
TE-125m	3071.	109.27	8.4707E+00
I-129	2355.	39.60	0.0000E+00
I-131	2450.	364.48	4.5771E-02
XE-131m	2794.	163.93	1.1132E+00
BA-133	2429.	356.02	5.8526E-02
CS-136	129.	818.51	1.7334E-02
CS-138	30.	1435.86	2.7865E-02
CE-139	2751.	165.85	2.7224E-02
BA-140	1099.	537.31	1.4552E-01
LA-140	21.	1596.21	1.2584E-02
CE-141	2894.	145.44	4.4373E-02
CE-144	3129.	133.51	2.0017E-01
CEPR-144	3130.	133.51	4.0002E-01
EU-152	46.	1408.01	7.6336E-02
HF-181	2210.	482.18	5.6971E-02
TA-182	2916.	67.75	1.2959E-01
HG-203	2468.	279.20	3.7454E-02
BI-207	711.	569.70	3.0212E-02
TL-208	2456.	277.36	4.7998E-01
PB-210	2439.	46.50	0.0000E+00
BI-212	145.	727.18	2.4284E-01
PB-212	2903.	238.63	6.7764E-02

Sample ID : S95T002304-DUP Acquisition date : 17-OCT-1995 13:47:34

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-214	829.	609.31	7.3806E-02
PB-214	2376.	351.92	1.7775E-01
RA-224	2727.	240.99	7.2920E-01
RA-226	3354.	186.10	7.3620E-01
AC-228	194.	911.21	8.9087E-02
TH-228	3245.	84.37	2.6466E+00
TH-229	3171.	88.47	1.2408E-01
U-232	2735.	57.78	5.0522E+01
PA-233	2390.	312.17	8.4565E-02
PA-234M	102.	1001.03	3.1093E-02
TH-234	2715.	63.29	1.4536E+00
U-235	3325.	185.71	4.4548E-02
U-237	3184.	59.54	2.6946E-01
NP-238	86.	984.45	6.0183E-02
NP-239	3573.	106.12	1.1569E-01
PU-239	3069.	129.30	3.4471E+02

```
*****************************************************************************
* 222-S Laboratory Counting Room   17-OCT-1995 15:53:40.80                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              2914
Sample ID:               S95T002305-SAM                  Removed by:
Sample Size:             1.00000E-03 L
Dilution Factor:         1.00000E+00

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA4                            Verified by:
File Number:             dka300:[spec.GEA4]4g4563.cnf
Geometry:                41
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:52:25.52 sec
Dead Time:               4.6%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-OCT-1995 15:00:37.73
Decayed to:              17-OCT-1995 15:00:37.73
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SEH
Background Subtract:     DKA300:[SPEC.GEA4]4GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       18-APR-1994 11:17:09.37
 Date of last efficiency calibration:   18-APR-1994 11:18:36.88
*****************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	26.38	22613	3.91	52.76	48	12	3.9			
0	59.51	6677	0.97	119.02	115	9	12.6		AM-241	6.58
0	86.52*	9307	0.96	173.03	169	8	8.9		~~NP-237~~	9.11
									EU-155	3.44
0	105.22	8418	1.11	210.41	207	8	9.5		EU-155	3.69
0	123.03	11076	1.05	246.04	242	9	7.7		~~CO-57~~	1.12
									EU-154	2.38
0	133.59	1956	0.94	267.14	265	6	30.0		CEPR-144	3.01
									CE-144	1.51
0	176.19	2309	1.16	352.33	350	7	26.3		SB-125	3.14
0	247.87	1273	1.02	495.69	494	6	38.6		EU-154	2.26
0	427.74	4253	1.24	855.40	852	9	15.6		SB-125	2.68
0	463.04	1012	1.23	926.00	924	7	56.9		SB-125	1.95
0	511.15*	1616	2.05	1022.20	1017	11	33.8			
7	600.44	2060	1.45	1200.79	1196	21	14.1	8.87E+00	SB-125	2.84
7	605.00	2575	2.27	1209.91	1196	21	16.1		CS-134	0.649
0	635.88	1341	1.65	1271.65	1267	10	22.2		SB-125	3.00
0	661.53*	939863	1.48	1322.97	1315	16	0.2		CS-137	288.
0	692.32	163	1.49	1384.53	1381	9	67.4		~~CO-57~~	27.5
0	723.13	1575	1.52	1446.16	1441	12	9.5		EU-154	2.26
									ZR-95	1.03
0	756.63	408	1.42	1513.16	1509	10	26.5		ZR-95	0.226

Sample ID : S95T002305-SAM Acquisition date : 17-OCT-1995 15:00:37

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	795.68	1342	1.61	1591.26	1585	13	10.3		CS-134	0.499
0	801.82	136	1.48	1603.54	1600	7	52.0		CS-134	0.499
0	872.91	1053	1.62	1745.74	1739	13	10.8		EU-154	3.06
0	996.18	645	1.61	1992.29	1986	13	15.7		EU-154	2.43
0	1004.59	1230	1.72	2009.10	2002	14	9.3		EU-154	2.70
0	1173.03*	547	1.66	2346.02	2341	12	13.6		CO-60	0.241
0	1274.29	2018	1.85	2548.55	2539	20	5.4		EU-154	2.73
									~~NA-22~~	0.941
0	1332.36	537	1.82	2664.72	2655	20	12.7		CO-60	0.258
0	1596.48	67	1.71	3193.05	3188	12	43.2			

Sample ID : S95T002305-SAM Acquisition date : 17-OCT-1995 15:00:37

Total number of lines in spectrum 27
Number of unidentified lines 1
Number of lines tentatively identified by NID 26 96.30%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
~~NA-22~~	~~2.60Y~~	~~1.000~~	~~9.407E-01~~	~~9.407E-01~~	~~0.509E-01~~	~~5.41~~	~~154Eu~~
~~CO-57~~	~~271.80D~~	~~1.000~~	~~2.749E+01~~	~~2.749E+01~~	~~1.854E+01~~	~~67.45~~	
CO-60	5.27Y	1.000	2.496E-01	2.496E-01	0.232E-01	9.31	
ZR-95	64.02D	1.000	2.255E-01	2.255E-01	0.597E-01	26.46	1.03e-1
SB-125	2.73Y	1.000	2.789E+00	2.789E+00	0.246E+00	8.82	1.27e0
CS-134	2.06Y	1.000	5.270E-01	5.270E-01	0.454E-01	8.62	2.40e-1
CS-137	30.00Y	1.000	2.881E+02	2.881E+02	0.006E+02	0.21	
~~CE-144~~	~~284.90D~~	~~1.000~~	~~1.506E+00~~	~~1.506E+00~~	~~0.452E+00~~	~~30.02~~	BKG
CEPR-144	284.90D	1.000	3.008E+00	3.009E+00	0.903E+00	30.02	1.37e0
EU-154	8.59Y	1.000	2.724E+00	2.724E+00	0.174E+00	6.38	1.24e0
EU-155	4.68Y	1.000	3.685E+00	3.685E+00	0.349E+00	9.46	~~1.24e0~~ 1.68e0
~~NP-237~~	~~2.14E+06Y~~	~~1.000~~	~~9.106E+00~~	~~9.106E+00~~	~~0.811E+00~~	~~8.91~~	155Eu
AM-241	432.20Y	1.000	6.578E+00	6.578E+00	0.830E+00	12.62	3.00e0
			---	---			
	Total Activity :		3.469E+02	3.469E+02			

Grand Total Activity : 3.469E+02 3.469E+02

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