0012371

SINGLE-SHELL TANK WASTE CHARACTERIZATION FOR TANK 241-U-110 CORE 7
COMPOSITE SEGMENTS 1 2 3 4

DATA PACKAGE

SECTION

3 OF 12

Single Shell Tank Calibration Record

Analyte:	C-14		
Procedure:	LA-508-121	Revision:	
Instrument:	Liquid Scientillation Counter	Property Number:	
Technologist:	R. A. Jones	Payroll Number:	65801
Date:	September 20, 1988		

Calibration Standard ID: Packard 6008502 #2

Analyte Concentration: (See Attached)

Type of Calibration:

Comments:

SST-103 Rev. B 9/27/90 Interim

9-20-88
RAJones

PAGE:

USER: 2 ID:CARBON-14 PRESET TIME: 10.00 MON 19 SEP 1988 16:51
SAMPLE REPEAT: 1 CYCLE REPEAT: 1 SCR:N RS232:N
H#: 3 AQC:Y QCF:N RCM:Y 2 PHASE MONITOR:Y POST CHK:N VIAL:G VOLUME:1
RCM-TIME: 0.10 INT:999.95
CHANNEL 1-LL: 0 UL: 700 2SIGMA: 0.10 BKG SUB: 0.00 BKG 2SIG: 0.00 LSR:

SINGLE LABEL DPM
UNKNOWN ID:C-14 UNKNOWN REPLICATES: 1
UNKNOWN NORM FACTOR ISO1:0 1.00000
UNKNOWN UNITS ISO1:DPM
UNKNOWN HALF LIFE CORRECTION:N
INDIVIDUAL UNKNOWN NORM FACTORS:N BACKGROUND QUENCH CURVES:Y
STANDARD ID:PACKARD 6008502 #2
HALF LIFE(DAYS) ISO1:N
STANDARD DPM ISO1: 108600.0 T_0 = 5-7-86

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	E
B1	**- 1	1	44.90	9.44	10.00	11.02	58.3	0.15		
	H#: 58, 58, 59									

BACKGROUND QUENCH CURVES: CONSTANT

CHANNEL 1
QUENCH CURVE COEFFICIENTS
A: 44.90000 B:0.00000000 C:0.00000000 D:0.00000000000

BACKGROUND QUENCH CURVE CORRELATION TABLE

BKG	H#	MEASURED CPM.	CALCULATED CPM.	PERCENT DIFF.	FLAG
1	58.3	44.90	44.90	0.00	

BACKGROUND QUENCH LIMITS LOW:0.000 HIGH:1000.
TOTAL QUENCH LIMITS LOW:0.000 HIGH:1000.

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	FR
A S1	**- 3	1	105004.40	0.20	10.00	22.67	-5.3	0.00		
	H#: -6, -5, -5									
	ISO1 %EFF CH1:96.65									
B S2	**- 4	1	104881.70	0.20	10.00	34.15	11.7	0.00		
	H#: 11, 11, 13									
	ISO1 %EFF CH1:96.53									
C S3	**- 5	1	104007.30	0.20	10.00	45.61	36.0	0.00		
	H#: 36, 36, 36									
	ISO1 %EFF CH1:95.73									

0-88 RAJones

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	ERR
S4	**- 6	1	102265.80	0.20	10.00	57.08	73.3	0.00		
	H#: 74, 73. 73									
	ISO1 %EFF CH1:94.13									
S5	**- 7	1	101574.90	0.20	10.00	68.57	100.0	0.00		
	H#: 99, 100, 101									
	ISO1 %EFF CH1:93.49									
S6	**- 8	1	98969.60	0.20	10.00	80.03	134.7	0.00		
	H#: 133, 135. 136									
	ISO1 %EFF CH1:91.09									
S7	**- 9	1	96142.50	0.20	10.00	91.49	166.3	0.00		
	H#: 167, 167, 165									
	ISO1 %EFF CH1:88.49									
S8	**-10	1	94268.30	0.21	10.00	102.91	195.3	0.00		
	H#: 195, 196, 195									
	ISO1 %EFF CH1:86.76									
S9	**-11	1	90921.30	0.21	10.00	114.31	218.3	0.00		
	H#: 218, 218. 219									
	ISO1 %EFF CH1:83.68									
S10	**-12	1	85164.00	0.22	10.00	125.65	253.7	0.00		
	H#: 252, 254, 255									
	ISO1 %EFF CH1:78.38									

ISOTOPE 1 QUENCH STANDARDS

STANDARD	H#	%EFF CH1
1	-5.33	96.65
2	11.67	96.54
3	36.00	95.73
4	73.33	94.12
5	100.0	93.49
6	134.7	91.09
7	166.3	88.49
8	195.3	86.76
9	218.3	83.68
10	253.7	78.38

QUENCH LIMITS LOW:0.000 HIGH:253.7

[illegible] 2 ID:PACKARD [illegible] PRESET TIME: 10.00 FRI 29 JUL 1988 11:0[illegible]
SAMPLE REPORT: 1 CYCLE REPORT: 1 SCR:0 RS232:N
HP: 2 ASSAY SCR:Y RPT:Y 2 PHASE MONITOR:Y POST CHK:N VIAL:C VOLUME:1
ROM-TIME: 0.10 INT.172.5[illegible]
CHANNEL 1-LLS: 0 UL: 100 ESIGMA: 0.10 BKG SUB: 0.00 BKG ES:S: 0.00 LSR: 0

SINGLE LABEL DPM SET UP ON 19 SEP 1988 10:58

UNKNOWN ID:[illegible]-14 UNKNOWN REPLICATES: 1
UNKNOWN NORM FACTOR ISO1:0 1.00000
UNKNOWN UNITS ISO1:DPM
UNKNOWN HALF LIFE CORRECTION:N
INDIVIDUAL UNKNOWN NORM FACTORS:N BACKGROUND QUENCH CURVES:Y
STANDARD ID:PACKARD 4000502 K2 QUENCH LIMITS LOW:0.000 HIGH:[illegible]
HALF LIFE(DAYS) ISO1:N
STANDARD DPM ISO1: 108[illegible]0.0

SAM	POS	CH	CPM	ESIGM	TIME	EL TIME	AVG	[illegible]	REM.	SP	[illegible]
D1	[illegible]	1	1	43.30	9.61	10.00	10.[illegible]	141.0		[illegible]	

BACKGROUND QUENCH CURVES: CONSTANT

CHANNEL 1
[illegible]
[illegible] 43.[illegible] [illegible] [illegible] [illegible]

BACKGROUND QUENCH CURVE CORRELATION TABLE

CLS	CP	MEASURED CPM.	CALCULATED CPM.	PERCENT DIFF.	FLAG
1	141.2	43.30	43.30	0.00	

[illegible] QUENCH LIMITS LOW:0.000 HIGH:1000
[illegible] QUENCH LIMITS LOW:0.000 HIGH:255.7

SAM	POS	CH	CPM	ESIGM	TIME	EL TIME	AVG	[illegible]	REM.	SP	[illegible]
1-078	[illegible]	[illegible]	1[illegible]3.00	[illegible].55	10.[illegible]	21.[illegible]	142.0		[illegible]		
	[illegible]	1[illegible], 1[illegible], 14[illegible]									
		ISO1 [illegible] DHI:[illegible]									
1-079	[illegible]	[illegible]	1	37.90	10.57	10.00	32.12	143.[illegible]		[illegible]	
	[illegible]	1[illegible], 1[illegible], 13[illegible]									
		ISO1 DIFF DHI:[illegible]									
1-083	[illegible]	[illegible]	1	41.56	5.06	10.00	44.26	143.[illegible]		[illegible]	
	[illegible]	143, 13[illegible], 147									
		ISO1 DIFF DHI:[illegible]									

SAM	POS	CH	CPM	2SIGX	TIME	EL TIME	AVG AB	PCMX	2P	ERR
F0984	4	[illegible]	63.60	7.99	10.00	55.17	155.0	0.50	**	
	HB: 147	145								
	[illegible]						1231 DPM		-21.42961	
F0985	5	[illegible]	1774.30	1.55	10.00	66.11	125.0	0.02	**	
	HB: 155	1								
	[illegible]						1151 DPM		.1077.690	
F0986	6	[illegible]	1750.35	1.51	10.00	76.84	145.0	0.33	**	
	[illegible]						1151 DPM		.1051.415	

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Jupiter
Procedure/Rev	LA-378-103/A-2
Technologist	S.Cervantes
Date	February 27, 1990
Temperature	26 C
Starting Time	0800 02-27-90
Ending Time	1030 02-28-90
Chemist	S. A. Catlow

Iodine 129 Analysis

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std.	F0981
2	Reagent Blank	F0982
3	Sample Composite 7	F0983
4	Duplicate Sample Composite 7	F0984
5	Spike Composite 7	F0985
6	Final LMCS Check Std.	F0986
7		
8		
9		
10		
11		

	Description	Lab ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	124B44/1.0 mL			N/A
Spike	124B44/1.0 mL	F0983/1.0 mL		N/A

SST-102 Rev. I 10/2/90 Interim

Single Shell Tank Calibration Record

Analyte:	I-129		
Procedure:	LA-508-152	Revision:	A-1
Instrument:	TN-4500	Property Number:	WA45242
Technologist:	R. A. Jones	Payroll Number:	65801
Date:	January 09, 1989		

Calibration Standard ID: 45B40A & B

Analyte Concentration: Se^{75} = 4.06 uci, SB^{125} = 4.67 uci, I^{129} = 57.8 uci

Type of Calibration: Efficiency

Comments: T zero = June 06, 1988

SST-103 Rev. A 9/25/90 Interim

[illegible]	[illegible] Energy	[illegible] Area (Ln(X))	[illegible]
1	[illegible]	[illegible]	0.5[illegible]
	[illegible]	35.00	
2	[illegible]	[illegible]	[illegible]
	[illegible]	7.69	
3	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	
4	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	
5	[illegible]	[illegible]	[illegible]
	[illegible]	57.15	
6	[illegible]	[illegible]	[illegible]
	[illegible]	11.21	
7	[illegible]	[illegible]	[illegible]
	[illegible]	1.93	

[illegible] Error for Isotope Identification = 1.5 keV

[illegible] ?

[illegible] File

[illegible]	Isotope	Half-life	[illegible]	Intensity
	Energy	[illegible]		
1	I 129	[illegible]	---	[illegible]
	39.6	7.50		
2	[illegible]	[illegible]	---	[illegible]
	57.5	35.90		
3	[illegible]	[illegible]	---	[illegible]
	74.7	61.00		
4	[illegible] 125	[illegible]	---	[illegible]
	176.3	6.00		
5	[illegible]	[illegible]	---	[illegible]
	135.0	54.00		
	121.1	17.30		

[illegible] Energy Error for Isotope [illegible] = [illegible] keV

[illegible] values are corrected for decay.

Command-- ?

AUTOMATIC ISOTOPE ANALYSIS 28-FEB-90 21:40:39

SAMPLE PARAMETERS

Spectrum Label:	F981 SEG/COMP/#13 I-129	
Sample Counting Date	28-FEB-90	19:48:47
Sample Collection Date	28-FEB-90	19:48:00
Decay Time	0. Days	0.013 Hrs.
Acq.Live Time	3000. Sec.	
Acq.Clock Time	3003. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Mem.Group	1AB
Search Range	25 - 200 keV
Max. % Error	50.0 %
Filter Width	1.6 keV
Multiplet Det.Factor	0.1
Max.Delta-E	1.5 keV
keV/Ch.	0.20
Zero Offset	0.60 keV

Lineshape File Name:	JIM	-- H2 SHP FILE 5/13/86
Efficiency File Name:	WEM01	-- H2 EFF TABLE 5/13/86
Isotope File Name:	WIM01	-- H-2 DET. ISOTOPE FILE

***** PEAK SEARCH TABLE *****

No.	O.Energy (keV)	T.Energy (keV)	Net Cnts.	Bgnd.	% Err.	FWHM (keV)	Eff.	
1	29.3*	29.3	2787.	818.	2.2	1.375	0.0000E+00	
2	34.0*	34.0	575.	618.	6.8	1.375	0.4492E+00	
3	39.3	39.2	476.	1068.	8.6	1.373	0.5054E+00	I 129
4	74.6	74.4	47.	131.	33.4	1.367	0.6151E+00	AM 243
5	96.2*	95.9	148.	285.	15.3	1.366	0.5835E+00	
6	120.5	120.1	478.	176.	5.7	1.366	0.5376E+00	SE 75
7	135.3	134.9	1508.	183.	2.8	1.367	0.5050E+00	SE 75

***** IDENTIFIED ISOTOPES *****

Nuclide / Energy	UCI/GM	Decay Corr. Abundance(%)	Rate(CPM)	% Err	Delta-E	%MPC
I 129 ?	0.113E-03 +/- 0.969E-05		1.00			
39.6	0.113E-03	7.50	9.51	8.6	0.4	
AM 243 ?	0.105E-05 +/- 0.352E-06		1.00			
74.7	0.105E-05	66.00	0.95	33.4	0.3	
SE 75	0.457E-04 +/- 0.116E-05		1.00			
136.0	0.458E-04	59.00	30.15	2.8	1.1	
121.1	0.463E-04	17.30	9.55	5.7	1.0	

- -

***** MDL TABLE *****

Nuclide / Energy	UCI/GM	Decay Corr. Abundance(%)	Rate(CPM)	% Err	Delta-E	%MPC
AM 241			1.00			
59.5	<0.217E-05	35.90	< 0.97			
SB 125			1.00			
176.3	<0.175E-04	6.80	< 1.04			

- -

***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
29.3	55.75	2.2	34.0	11.51	6.8	95.9	2.95	15.3

```
STOP --
MG4500
R AIA
            AUTOMATIC ISOTOPE ANALYSIS     [1N]

Mem.Group = ?1AB
Sample Definitions File (1-6 Chars.)-- ?WDM01
Do You Wish To Enter Sample Data ?

Enter A Sample Label--

Sample Collection Date -- 28-FEB-90
    Time ?21:42\

Is 28-FEB-90 at 21:**: 0 Correct ?N
```

SAMPLE PARAMETERS

Spectrum Label:	F982 SEG/COMP#14 I-129	
Sample Counting Date	28-FEB-90	21:42:08
Sample Collection Date	28-FEB-90	21:42:00
Decay Time	0. Days	0.002 Hrs.
Acq.Live Time	3000. Sec.	
Acq.Clock Time	3003. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Mem.Group	1AB
Search Range	25 - 200 keV
Max. % Error	50.0 %
Filter Width	1.6 keV
Multiplet Det.Factor	0.1
Max.Delta-E	1.5 keV
keV/Ch.	0.20
Zero Offset	0.60 keV

Lineshape File Name:	JIM	-- H2 SHP FILE 5/13/86
Efficiency File Name:	WEM01	-- H2 EFF TABLE 5/13/86
Isotope File Name:	WIM01	-- H-2 DET. ISOTOPE FILE

***** PEAK SEARCH TABLE *****

No.	O.Energy (keV)	T.Energy (keV)	Net Cnts.	Bgnd.	% Err.	FWHM (keV)	Eff.	
1	31.6*	31.6	98.	313.	22.7	1.375	0.4316E+00	
2	36.3*	36.3	45.	313.	45.6	1.375	0.4707E+00	
3	42.5	42.4	28.	97.	47.0	1.372	0.5547E+00	
4	75.1	74.9	47.	128.	32.3	1.367	0.6157E+00	AM 243
5	96.4	96.1	137.	162.	14.3	1.366	0.5832E+00	
6	111.8	111.5	40.	141.	39.2	1.366	0.5552E+00	
7	120.5	120.1	473.	214.	6.0	1.366	0.5376E+00	SE 75
8	135.4	135.0	1579.	202.	2.8	1.367	0.5048E+00	SE 75
9	145.5	145.1	31.	124.	46.6	1.369	0.4805E+00	

***** IDENTIFIED ISOTOPES *****

Nuclide / Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
AM 243 ?	0.105E-05 +/- 0.338E-06		1.00			
74.7	0.105E-05	66.00	0.95	32.3	-0.2	
SE 75	0.474E-04 +/- 0.119E-05		1.00			
136.0	0.479E-04	59.00	31.59	2.8	1.0	
121.1	0.459E-04	17.30	9.47	6.0	1.0	

- -

***** MDL TABLE *****

Nuclide / Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
I 129			1.00			
39.6	<0.111E-04	7.50	<	0.94		
AM 241			1.00			
59.5	<0.220E-05	35.90	<	0.99		
SB 125			1.00			
176.3	<0.178E-04	6.80	<	1.05		

- -

***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
31.6	1.96	22.7	42.4	0.55	47.0	111.5	0.80	39.2
36.3	0.91	45.6	96.1	2.74	14.3	145.1	0.62	46.6

STOP --
PG4500

SAMPLE PARAMETERS

Spectrum Label:	F983 SEG/COMP#15 I-129	
Sample Counting Date	28-FEB-90	22:42:26
Sample Collection Date	28-FEB-90	22:42:00
Decay Time	0. Days	0.007 Hrs.
Acq.Live Time	3000. Sec.	
Acq.Clock Time	3002. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Nom.Group	1AB
Search Range	25 - 200 keV
Max. % Error	50.0 %
Filter Width	1.6 keV
Multiplet Det.Factor	0.1
Max.Delta-E	1.5 keV
keV/Ch.	0.20
Zero Offset	0.60 keV

Lineshape File Name:	JIM	-- H2 SHP FILE 5/13/86
Efficiency File Name:	WEM01	-- H2 EFF TABLE 5/13/86
Isotope File Name:	WIM01	-- H-2 DET. ISOTOPE FILE

***** PEAK SEARCH TABLE *****

No.	O.Energy (keV)	T.Energy (keV)	Net Cnts.	Bgnd.	% Err.	FWHM (keV)	Eff.	
1	31.5	31.5	72.	167.	25.1	1.375	0.4309E+00	
2	74.1	73.9	45.	115.	33.0	1.367	0.6138E+00	AM 243
3	96.2	95.9	119.	199.	17.6	1.366	0.5835E+00	
4	120.5	120.1	500.	191.	5.7	1.366	0.5376E+00	SE 75
5	135.4	135.0	1658.	196.	2.7	1.367	0.5048E+00	SE 75

***** IDENTIFIED ISOTOPES *****

Nuclide / Energy	UCI/GM	Abundance(%)	Decay Corr. Rate(CPM)	% Err	Delta-E	%MPC
AM 243 ?	0.100E-05 +/- 0.331E-06		1.00			
74.7	0.100E-05	66.00	0.90	33.0	0.8	
SE 75	0.498E-04 +/- 0.121E-05		1.00			
136.0	0.502E-04	59.00	33.16	2.7	1.0	
121.1	0.484E-04	17.30	10.00	5.7	1.0	

- -

***** MDL TABLE *****

Nuclide / Energy	UCI/Gm	Abundance(%)	Decay Corr. Rate(CPM)	% Err	Delta-E	%MPC
I 129			1.00			
39.6	<0.115E-04	7.50	<	0.97		
AM 241			1.00			
59.5	<0.215E-05	35.90	<	0.97		
SB 125			1.00			
176.3	<0.173E-04	6.80	<	1.03		

- -

***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
31.5	1.44	25.0	95.9	2.37	17.6			

STOP --
PG4500

SAMPLE PARAMETERS

Spectrum Label:	F-984 SEG.COMP#16	
Sample Counting Date	1-MAR-90	00:06:45
Sample Collection Date	1-MAR-90	00:06:00
Decay Time	0. Days	0.013 Hrs.
Acq.Live Time	3000. Sec.	
Acq.Clock Time	3003. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Mem.Group	1AB
Search Range	25 - 200 keV
Max. % Error	50.0 %
Filter Width	1.6 keV
Multiplet Det.Factor	0.1
Max.Delta-E	1.5 keV
keV/Ch.	0.20
Zero Offset	0.60 keV

Lineshape File Name:	JIM	-- H2 SHP FILE 5/13/86
Efficiency File Name:	WEM01	-- H2 EFF TABLE 5/13/86
Isotope File Name:	WIM01	-- H-2 DET. ISOTOPE FILE

***** PEAK SEARCH TABLE *****

No.	O.Energy (keV)	T.Energy (keV)	Net Cnts.	Bgnd.	% Err.	FWHM (keV)	Eff.	
1	31.8*	31.8	93.	281.	22.5	1.375	0.4329E+00	
2	59.2	59.1	36.	82.	35.1	1.369	0.5627E+00	AM 241
3	75.0	74.8	38.	125.	39.3	1.367	0.6159E+00	AM 243
4	96.3	96.0	131.	204.	16.2	1.366	0.5834E+00	
5	120.6	120.2	453.	249.	6.4	1.366	0.5374E+00	SE 75
6	135.4	135.0	1634.	226.	2.7	1.367	0.5048E+00	SE 75

***** IDENTIFIED ISOTOPES *****

Nuclide Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
AM 241 ?	0.160E-05 +/- 0.562E-06		1.00			
59.5	0.160E-05	35.90	0.72	35.1	0.4	
AM 243 ?	0.849E-06 +/- 0.334E-06		1.00			
74.7	0.849E-06	66.00	0.77	39.3	-0.1	
SE 75	0.484E-04 +/- 0.121E-05		1.00			
136.0	0.494E-04	59.00	32.67	2.7	1.0	
121.1	0.439E-04	17.30	9.06	6.4	0.9	

- -

***** MDL TABLE *****

Nuclide Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
I 129			1.00			
39.6	<0.121E-04	7.50	< 1.02			
SB 125			1.00			
176.3	<0.166E-04	6.80	< 0.99			

- -

***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
31.8	1.87	22.5	96.0	2.61	16.2			

STOP --
PG4500

SAMPLE PARAMETERS

Spectrum Label:	F-F15 Sol.DBMP117	
Sample Counting Date	1-MAR-90	01:00:13
Sample Collection Date	1-MAR-90	01:00:00
Decay Time	0. Sec	0.094 Hrs.
Acquisitive Time	3600. Sec.	
Acq.Clock Time	3603. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Max.Group	148
Search Range	25 - 200 keV
Max. % Error	30.0 %
Filter Width	1.6 keV
Multiplet Det.Factor	0.1
Max.Delta-E	1.5 keV
keV/Ch.	0.20
Zero Offset	0.60 keV

Lineshape File Name:	J1A	-- H2 SHP FILE 5/13/86
Efficiency File Name:	GEF01	-- H2 EFF TABLE 5/13/86
Isotope File Name:	WIN01	-- H-2 DET. ISOTOPE FILE

FINAL PEAK SEARCH TABLE ****

No.	O.Energy (keV)	I.Energy (keV)	Net Cnts.	Bend.	% Err.	FWHM (keV)	Eff.	
1	29.46	29.4	6472.	1244.	1.4	1.375	0.0000E+00	
2	34.04	34.0	1123.	1244.	4.5	1.375	0.4492E+00	
3	39.7	39.2	1014.	1533.	5.1	1.373	0.5004E+00	I 129
4	96.4	96.1	182.	162.	13.1	1.366	0.5332E+00	
5	120.5	120.2	488.	315.	5.9	1.366	0.5374E+00	SE 75
6	123.8	123.4	59.	172.	43.9	1.367	0.5196E+00	
7	135.4	135.0	1597.	294.	2.6	1.367	0.5048E+00	SE 75

**** IDENTIFIED ISOTOPES ****

Nuclide / Energy	Bq/Gm	Decay Corr. Abundance(%)	Rate(CPM)	% Err	Delta-E	%MPC
I 129 ?	0.2416E-03 +/- 0.1205E-04		1.00			
39.6	0.2416E-03	7.50	20.18	5.1	0.4	
Sb 125	0.481E-04 +/- 0.120E-05		1.00			
176.3	0.[illegible]E-04	37.69	11.43	2.8	1.0	
121.1	0.475E-04	17.30	9.76	5.9	0.9	

**** MDL TABLE ****

Nuclide / Energy	Bq/Gm	Decay Corr. Abundance(%)	Rate(CPM)	% Err	Delta-E	%MPC
AM 241			1.00			
59.5	<0.2075E-05	35.90	<	0.93		
W 183			1.00			
74.7	<0.1275E-05	66.00	<	1.35		
Sb 125			1.00			
176.3	<0.1695E-04	6.80	<	1.0[illegible]		

**** UNIDENTIFIED PEAKS ****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
[illegible]	129.11	1.4	96.1	3.25	13.1	128.4	6.79	43.9
[illegible]	32.45	9.5						

END --
[illegible]

SAMPLE PARAMETERS

Spectrum Label:	F986 SEG.COMP#18	
Sample Counting Date	1-MAR-90	02:07:55
Sample Collection Date	1-MAR-90	02:07:00
Decay Time	0. Days	0.015 Hrs.
Acq.Live Time	3000. Sec.	
Acq.Clock Time	3003. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Mem.Group	1AB
Search Range	25 - 200 keV
Max. % Error	50.0 %
Filter Width	1.6 keV
Multiplet Det.Factor	0.1
Max.Delta-E	1.5 keV
keV/Ch.	0.20
Zero Offset	0.60 keV

Lineshape File Name:	JIM	-- H2 SHP FILE 5/13/86
Efficiency File Name:	WEM01	-- H2 EFF TABLE 5/13/86
Isotope File Name:	WIM01	-- H-2 DET. ISOTOPE FILE

***** PEAK SEARCH TABLE *****

No.	O.Energy (keV)	T.Energy (keV)	Net Cnts.	Bgnd.	% Err.	FWHM (keV)	Eff.	
1	29.3*	29.3	2966.	648.	2.1	1.375	0.0000E+00	
2	34.1*	34.1	589.	648.	6.2	1.375	0.4501E+00	
3	39.3	39.2	511.	818.	7.4	1.373	0.5054E+00	I 129
4	74.8	74.6	35.	130.	43.6	1.367	0.6157E+00	AM 243
5	96.4	96.1	157.	188.	13.5	1.366	0.5832E+00	
6	120.5	120.1	507.	179.	5.6	1.366	0.5376E+00	SE 75
7	135.4	135.0	1695.	210.	2.7	1.367	0.5048E+00	SE 75

***** IDENTIFIED ISOTOPES *****

Nuclide / Energy	UCI/GM	Abundance(%)	Decay Corr. Rate(CPM)	% Err	Delta-E	%MPC
I 129 ?	0.121E-03 +/- 0.894E-05		1.00			
39.6	0.121E-03	7.50	10.21	7.4	0.4	
AM 243 ?	0.770E-06 +/- 0.336E-06		1.00			
74.7	0.770E-06	66.00	0.69	43.6	0.1	
SE 75	0.508E-04 +/- 0.122E-05		1.00			
136.0	0.513E-04	59.00	33.90	2.7	1.0	
121.1	0.491E-04	17.30	10.14	5.6	1.0	

- -

***** MDL TABLE *****

Nuclide / Energy	UCI/GM	Abundance(%)	Decay Corr. Rate(CPM)	% Err	Delta-E	%MPC
AM 241			1.00			
59.5	<0.224E-05	35.90	< 1.01			
SB 125			1.00			
176.3	<0.157E-04	6.80	< 0.94			

- -

***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
29.3	59.33	2.1	34.1	11.77	6.2	96.1	3.14	13.5

STOP --
MB4500

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Carberra Jupiter
Procedure/Rev	LA-933-141/G-1
Technologist	R. Hale
Date	March 09, 1990
Temperature	23 C
Starting Time	0900
Ending Time	1500
Chemist	S. A. Catlow

Neptunium Analysis

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std.	F1029
2	Reagent Blank	F1054
3	Sample Composite 7	F0983
4	Duplicate Sample Composite 7	F0984
5	Sample Composite 14	F1007
6	Duplicate Sample Composite 14	F1008
7	Sample Composite 15	F1031
8	Duplicate sample Composite 15	F1032
9	Sample Composite 12	F1055
10	Duplicate Sample Composite 12	F1056
11	Spike Composite 12	F1057

	Description	Lab ID
12	Final LMCS Check Std.	F1053
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	148B33/100 uL			N/A
Spike	148B33/100 uL	F1055/250 uL		N/A

SST-102 Rev. I 10/2/90 Interim

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Tennelec
Procedure/Rev	LA-220-101/C-0
Technologist	S. C. Lai
Date	June 14, 1990
Temperature	N/A
Starting Time	0800
Ending Time	1450
Chemist	S. A. Catlow

Strontium 89/90 Analysis

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std.	F0981
2	Reagent Blank	F0982
3	Sample Composite 7	F0983
4	Duplicate Sample Composite 7	F0984
5	Spike Composite 7	F0985
6	Final LMCS Check Std.	F0986
7		
8		
9		
10		
11		

	Description	Lab ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	18B46/1.0 mL			N/A
Spike	18B46/1.0 mL	F0983/250 uL		N/A

SST-102 Rev. I 10/2/90 Interim

Single Shell Tank

Calibration Record

ANALYTE:	SrY^{90}		
PROCEDURE:	LQ-508-002	REVISION:	A-0
INSTRUMENT:	Detector #10	PROPERTY NUMBER:	WA38316
TECHNOLOGIST:	R.A. Jones	PAYROLL NUMBER:	65801
DATE:	May 21, 1989		
CALIBRATION STANDARD ID:	48B16T, 48B16U, 48B16TV, 48B16G, 48B16J, 48B16L		
ANALYTE CONCENTRATION:	N/A		
TYPE OF CALIBRATION:	Efficiency		

SST-103 Rev. (Draft) 9/15/90 Short Interim

CALIBRATION SHEET FOR ALPHA/BETA SYSTEMS: USING PROCEDURE LQ-508-002

DETECTOR No. 10

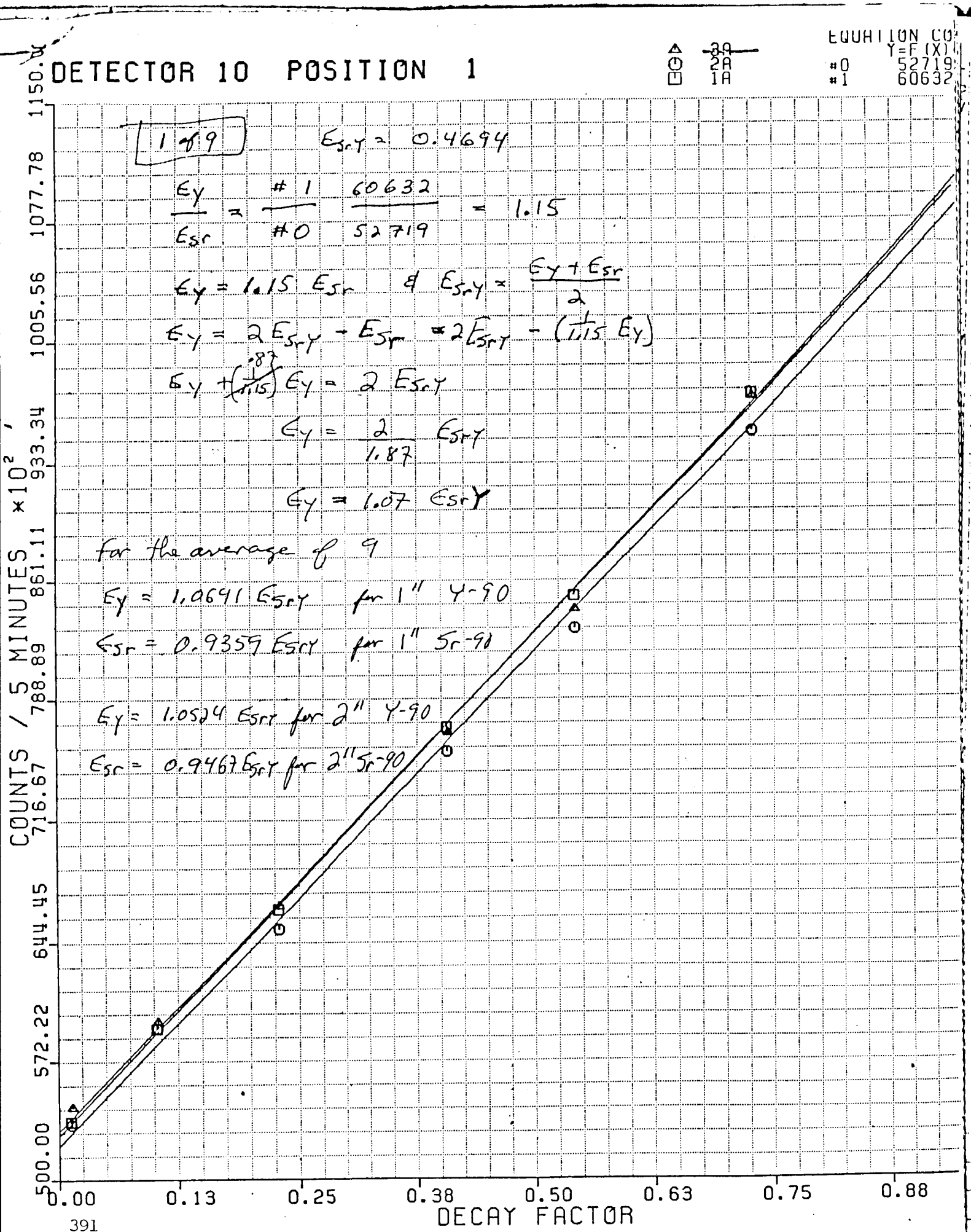
TIME ZERO DATE (HD): 13977

RADIONUCLIDE: SrY-90
HALF LIFE: 10590
COUNT TIME: 5
CPM BKG: 22

DATE COUNTED (HD): 16309

CALIBRATED BY: RA JONES HD 0 = 09/25/44

STANDARD ID	SIZE	DATE	TIME	COUNTS @ 0 DEG.	COUNTS @ 90 DEG.	COUNTS @ 180 DEG.	COUNTS @ 270 DEG.
48B16B	1	05/21/89		84795	84166	84768	83389
48B16D	1	05/21/89		107308	108714	109687	109090
48B16E	1	05/21/89		208878	200713	210979	211700
48B16G	2	05/21/89		62088	62802	61690	63053
48B16J	2	05/21/89		102092	101782	101676	101546
48B16L	2	05/21/89		192834	198242	197051	195835



1 of 9

$E_{SrY} = 0.4694$

$$\frac{E_Y}{E_{Sr}} = \frac{\#1}{\#0} \quad \frac{60632}{52719} = 1.15$$

$E_Y = 1.15\ E_{Sr}$ & $E_{SrY} = \frac{E_Y + E_{Sr}}{2}$

$E_Y = 2E_{SrY} - E_{Sr} = 2E_{SrY} - (\frac{1}{1.15} E_Y)$

$E_Y + (\frac{1}{1.15}) E_Y = 2\ E_{SrY}$ (.87)

$$E_Y = \frac{2}{1.87} E_{SrY}$$

$E_Y = 1.07\ E_{SrY}$

for the average of 9

$E_Y = 1.0641\ E_{SrY}$ for 1" Y-90

$E_{Sr} = 0.9359\ E_{SrY}$ for 1" Sr-90

$E_Y = 1.0524\ E_{SrY}$ for 2" Y-90

$E_{Sr} = 0.9467\ E_{SrY}$ for 2" Sr-90

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Beckman
Procedure/Rev	LA-438-101/C-2
Technologist	S. Lai
Date	March 09, 1990
Temperature	24 C
Starting Time	0800
Ending Time	1500
Chemist	S. A. Catlow

Technetium 99

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std.	F0981
2	Reagent Blank	F0982
3	Sample Composite 7	F0983
4	Duplicate Sample Composite 7	F0984
5	Spike Composite 7	F0985
6	Final LMCS Check Std.	F0986
7		
8		
9		
10		
11		

	Description	Lab ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	68B39/250 uL			20 mL
Spike	68B39/250 uL	F0983/1.0 mL		20 mL

SST-102 Rev. I 10/2/90 Interim

Single Shell Tank Calibration Record

Analyte:	TC 99		
Procedure:	LA-508-121	Revision:	A-0
Instrument:	Liquid Scintillation Counter	Property Number:	WA77390
Technologist:	R. A. Jones	Payroll Number:	65801
Date:	September 02, 1988		

Calibration Standard ID: Packard 6008502 #2

Analyte Concentration: See attached calibration sheets.

Type of Calibration: Quench Curve

Comments: Quench Curve

SST-103 Rev. A 9/25/90 Interim

```
'WOLF'LASER  IPM  SET UP ON 1: 1:  1:  980 (EDITED)                    THU 03 MAY  1:: 1:
UNKNOWN ID(20CHARS)TO BE EDITED
LOCATION ATPL(S.TS)(1-10) 1
UNKNOWN NORM FACTOR(P/S TO10:TS) 1001:2 1.00000
UNKNOWN UNITS(20CHAR)                1001:     DPM
ADDITIONAL UNKNOWN NORM FACTORS(Y/N)N
HALF LIFE CORRECTION(Y/N)N

BACKGROUND QUENCH CURVE(Y/N)Y   COUNT BACKGROUND SAMPLES(Y/N)Y
ENTER AND RE-USE THIS BACKGROUND COUNT(Y/N)N

STANDARD ID(20CHAR)131809-A 1-10
QUENCH LIMITS(DAICITS)LOW:75.67   HIGH:207.7
QUENCH MODE(S/H)H
```

```
1-2-2 1 LYGO IPM BUENLR 01/11/2005                                    THU 03 MAY 1990 12:1:
NO EDIT STANDARDS STORED                                   SET UP ON  1: 11: 1990(EDITED)

STANDARD ID(20CHAR)131809-A 1-10
COUNT QUENCH STANDARDS(Y/N)N QUENCH MODE(S/H)H

                                                  1901
SOFTWARE DPH(10015/TS)                  0.00000E-03
WALF LIFE, DAYS(N/10DIGITS)             N
REFERENCE DATE (DAY MON YEAR)           1 JAN 1983
                        (HOUR MIN)          00 00
QUENCH LIMITS(DAICITS)LOW:75.67   HIGH:207.7
PLOT QUENCH CURVES(Y/N)N

EDIT OR RE-COUNT QUENCH STANDARDS(N=NO/E=EDIT/R=RE-COUNT)N
```

QUENCH STANDARDS FOR ISOTOPE 1 THU 12 MAY 1980 [illegible]

HN	EFF1	HN	EFF1
73.67	98.93	87.50	[illegible]
100.3	95.45	110.9	94.96
126.0	94.66	137.7	94.41
145.7	94.32	164.0	93.87
179.3	92.95	207.7	91.62

DELETE STANDARD(N/ HN)N RE-ORDER(Y/N)N
DISPLAY QUENCH CURVE(Y/N)N PLOT QUENCH CURVE(Y/N)N

```
12:12CNAS)TO-79. ALL              USER  5                          THU 03 MAY 1990 08:
PRESET TIME(.01-999.99) 10.00  HI(0-100) 3  SCR(U/X/N) A
SAMPLE REPEAT(0-10) 1          ASK(Y/N) Y  PROGRAM SUMMARY(Y/N) Y
CYCLE REPEAT(1-10) 1           VERIFY(N) N  LOW TIME(.1-999.99)  0.10 INT999.99
PRINT OUTPUT(Y/N) N            PRINT(Y/N) Y  HIGH TIME(.1-999.99)  0.10 INT999.99
TRIGGER(Y/N) Y FIRST CHANNEL(1-8) 1  LIST(Y/N) Y  VOLUME(1-16-1INL/2-.1-2NL/3-7-CHR)

COUNT CHANNELS(1,2,3) 1
CHANNEL SETTINGS      LL      UL     PSIGMA    BKG SUB   PUS ISIG      LOR
        CHANNEL 1     150     550     0.10      0.00      0.00         0


DATA CALCULATION PROGRAM (SELECT DPM) 5
 1 CPM          2 COUNTS       3 SL % REF     4 DL % REF     5 SL DPM       6 DL DPM
 7 SL DPX       8 SL DPM TOT   9 DL DPM TOT  10 SL RIA
PRINT FORMAT(1=STANDARD/2=SHORT/3=EDITED) 1
```

```
USER: 2 ID:TD-85. ALL   PRESET TIME: 10.00              THU 05 MAR 1990 15:21
SAMPLE REPEAT: 1 CYCLE REPEAT: 1 SCR:N   RESEQ:N
MI: 2 ADC:Y SCR:N BCH: 2 PHASE MONITOR:Y POST CHK:N VIAL:6 VOLUME:1
P-M-TIME:   0.10 INT:999 PT
CHANNEL 1-LL:136 UL: 500 2SIGMA: 0.10 BKG SUB:   0.00 BKG 2SIG:  0.00 LBR:   0

SINGLE LABEL DPM  SET UP ON  19 SEP 1986  08:22

UNKNOWN IDENTIF 99 DIRECT            UNKNOWN REPLICATES: 1
UNKNOWN MORH FACTOR  ISO1:0 1.00000
UNKNOWN UNITS        ISO1:DPM
UNKNOWN HALF LIFE CORRECTION:N
INDIVIDUAL UNKNOWN MORH FACTORS:N    BACKGROUND QUENCH CURVES:Y
STANDARD ID:171528-4 1-10          QUENCH LIMITS   LOW:73.67    HIGH:207.7
HALF LIFE(DAYS)  ISO1:1
STANDARD DPM     ISO1:0.00000000


S/M  POS  CH      CPM    2SIGX  TIME   EL TIME AVG WN        RCM%  2P          SPT

B.   **- 1  1      47.80  9.15  10.00    11.03  98.3          0.57
    MN:  98.  98.  98


BACKGROUND QUENCH CURVES: CONSTANT


CHANNEL 1
QUENCH CURVE COEFFICIENTS
A   17.50000      B:0.00000000      C:0.00000000      D:0.00000000

                 BACKGROUND QUENCH CURVE CORRELATION TABLE

                              MEASURED      CALCULATED      PERCENT
  EXP          AN             CPM.           CPM.           DIFF.        FLAG
  ---          --             --------       ---------      -------      ----
   1          98.3            47.80          47.80          0.00


BACKGROUND QUENCH LIMITS   LOW:0.000    HIGH:1000.
     TSTD  QUENCH LIMITS   LOW:73.67    HIGH:207.7


S/M  POS  CH      CPM    2SIGX  TIME   EL TIME AVG WN        RCM%  2P          SPT

  1  **- 5  1     333.2   4.23  10.00    22.50 147.3          0.60
    MN: 148. 147, 147
F981   ISO1 2EFF CH1:94.76                          ISO1 DPM  :136.0003

  2  **- 4  1    2664.3   1.23  10.00    23.76 153.7          0.50
    MN: 153. 154. 153
F981+  ISO1 2EFF CH1:94.54                          ISO1 DPM  :2719.140
```

SAM	POS	CH	DPM	PSIG%	TIME	EL TIME	AVG HB	RCH%	SP	EXP
3	** 5	1	63.70	7.92	10.00	45.00	134.7	15.57		
	HB: 134, 134, 135									
	ISO1 %EFF CH1:94.48							ISO1 DPM	:16.82875	
4	** 6	1	2556.60	1.25	10.00	56.26	134.7	0.59		
	HB: 135, 134, 135									
	ISO1 %EFF CH1:94.47							ISO1 DPM	:2655.555	
5	** 7	1	72.80	7.41	10.00	67.48	131.0	13.23		
	HB: 131, 131, 131									
	ISO1 %EFF CH1:94.38							ISO1 DPM	:25.43279	
6	** 8	1	2501.90	1.26	10.00	78.71	134.7	0.45		
	HB: 132, 135, 134									
	ISO1 %EFF CH1:94.47							ISO1 DPM	:2397.569	
7	** 9	1	2609.70	1.24	10.00	89.93	135.0	0.46		
	HB: 134, 136, 135									
	ISO1 %EFF CH1:94.46							ISO1 DPM	:2712.049	
8	**10	1	79.00	7.12	10.00	101.16	132.0	7.50		
	HB: 132, 132, 132									
	ISO1 %EFF CH1:94.55							ISO1 DPM	:32.99863	
9	**11	1	216.20	4.30	10.00	112.37	134.7	4.00		
	HB: 134, 135, 135									
	ISO1 %EFF CH1:94.47							ISO1 DPM	:178.5534	
10	**12	1	2476.00	1.27	10.00	123.59	133.7	0.45		
	HB: 133, 134, 134									
	ISO1 %EFF CH1:94.50							ISO1 DPM	:2569.528	
11	** 1	1	204.60	4.42	10.00	134.87	131.7	4.30		
	HB: 131, 132, 132									
	ISO1 %EFF CH1:94.54							ISO1 DPM	:145.8216	
12	** 2	1	2456.30	1.28	10.00	146.18	133.7	0.79		
	HB: 133, 134, 133									
	ISO1 %EFF CH1:94.51							ISO1 DPM	:2548.424	

F982

F982+

F983

F983+

F984+

F984+

F985

F985+

F986

F986+

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Beckman
Procedure/Rev	LA-218-113/A-1
Technologist	M. Lavarias
Date	March 29, 1990
Temperature	100 C
Starting Time	March 26, 1990
Ending Time	March 28, 1990
Chemist	S. A. Catlow

Tritium Analysis

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std.	F0981
2	Reagent Blank	F0982
3	Sample Composite 7	F0983
4	Duplicate Sample Composite 7	F0984
5	Spike Composite 7	F0985
6	Final LMCS Check Std.	F0986
7		
8		
9		
10		
11		

	Description	Lab ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	140B44/1.0 mL			20 mL
Spike	140B44/1.0 mL	F0983/2.0 mL		20 mL

SST-102 Rev. I 10/2/90 Interim

Single Shell Tank Calibration Record

Analyte:	H-3		
Procedure:	LA-508-121	Revision:	A-0
Instrument:	Liquid Scintillation Counter	Property Number:	WA77390
Technologist:	R. A Jones	Payroll Number:	65801
Date:	September 20, 1988		

Calibration Standard ID: Packard 6008501 #54

Analyte Concentration: (See Attached)

Type of Calibration:

Comments:

SST-103 Rev. B 9/27/90 Interim

20-88
KAfones

USER: 1 ID:H-3 TRITIUM PRESET TIME: 10.00 MON 19 SEP 1988 14:37
SAMPLE REPEAT: 1 CYCLE REPEAT: 1 SCR:N RS232:N
H#: 3 ADC:Y QCF:N RCM:Y 2 PHASE MONITOR:Y POST CHK:N VIAL:G VOLUME:1
RCM-TIME: 0.10 INT:999.95
CHANNEL 1-LL: 0 UL: 400 2SIGMA: 0.10 BKG SUB: 0.00 BKG 2SIG: 0.00 LSR: 0

SINGLE LABEL DPM
UNKNOWN ID:H-3 TRITIUM UNKNOWN REPLICATES: 1
UNKNOWN NORM FACTOR ISO1:0 1.00000
UNKNOWN UNITS ISO1:DPM
UNKNOWN HALF LIFE CORRECTION:N
INDIVIDUAL UNKNOWN NORM FACTORS:N BACKGROUND QUENCH CURVES:Y
STANDARD ID:PACKARD 6008501 #54
HALF LIFE(DAYS) ISO1: 4503.000 To = 6-12-86
STANDARD DPM ISO1: 260100.0

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	ERR
B1	**- 1	1	28.10	11.93	10.00	11.04	55.0	0.61		
	H#: 55. 55. 55									

BACKGROUND QUENCH CURVES: CONSTANT

CHANNEL 1
QUENCH CURVE COEFFICIENTS
A: 28.10000 B:0.00000000 C:0.00000000 D:0.00000000000

BACKGROUND QUENCH CURVE CORRELATION TABLE

BKG	H#	MEASURED CPM.	CALCULATED CPM.	PERCENT DIFF.	FLAG
1	55.0	28.10	28.10	0.00	

BACKGROUND QUENCH LIMITS LOW:0.000 HIGH:1000.
TOTAL QUENCH LIMITS LOW:0.000 HIGH:1000.

	SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	ERR
A	S1	**- 3	1	148243.70	0.16	10.00	22.72	-5.0	0.00		
		H#: -5. -5, -5									
		ISO1 %EFF CH1:64.75									
B	S2	**- 4	1	142518.20	0.17	10.00	34.25	13.3	0.00		
		H#: 13, 14, 13									
		ISO1 %EFF CH1:62.25									
C	S3	**- 5	1	127749.40	0.18	10.00	45.75	43.3	0.00		
		H#: 43, 44, 43									
		ISO1 %EFF CH1:55.90									

9-20-88 [illegible]

	SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	ERR
D	S4	**- 6	1	111143.00	0.19	10.00	57.17	76.0	0.00		
		H#: 76, 76, 76									
		ISO1 %EFF CH1:46.54									
E	S5	**- 7	1	95303.30	0.20	10.00	68.56	105.3	0.00		
		H#: 105, 106, 105									
		ISO1 %EFF CH1:41.62									
F	S6	**- 8	1	77574.80	0.23	10.00	79.88	135.3	0.00		
		H#: 135, 136, 135									
		ISO1 %EFF CH1:33.88									
G	S7	**- 9	1	57990.70	0.26	10.00	91.13	173.0	0.00		
		H#: 173, 172, 174									
		ISO1 %EFF CH1:25.32									

POWERFAIL RECOVERY MON 19 SEP 1988 16:16

H	S8	**-10	1	41786.70	0.31	10.00	109.66	207.3	0.00		
		H#: 207, 207, 208									
		ISO1 %EFF CH1:18.24									
I	S9	**-11	1	34400.70	0.34	10.00	120.86	221.7	0.01		
		H#: 223, 220, 222									
		ISO1 %EFF CH1:15.02									
J	S10	**-12	1	23670.80	0.41	10.00	132.04	252.0	0.01		
		H#: 252, 253, 251									
		ISO1 %EFF CH1:10.33									

ISOTOPE 1 QUENCH STANDARDS

STANDARD	H#	%EFF CH1
1	-5.00	64.75
2	13.33	62.25
3	43.33	55.80
4	76.00	48.54
5	105.3	41.62
6	135.3	33.88
7	173.0	25.32
8	207.3	18.24
9	221.7	15.02
10	252.0	10.33

QUENCH LIMITS LOW:0.000 HIGH:252.0

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Perkin-Elmer
Procedure/Rev	LA-355-131/A-2
Technologist	S. Riel
Date	April 10, 1990
Temperature	70 F
Starting Time	0930
Ending Time	0950
Chemist	R. K. Fuller

Arsenic Analysis

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std.	F0981
2	Reagent Blank	F0982
3	Sample Composite 7	F0983
4	Duplicate Sample Composite 7	F0984
5	Spike Composite 7	F0985
6	Final LMCS Check Std.	F0986
7		
8		
9		
10		
11		

	Description	Lab ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	58C11BU/35 uL			35 mL
Spike	58C11BU/35 uL	F0983/1.0 mL		35 mL

SST-102 Rev. I 10/2/90 Interim

Single Shell Tank
Calibration Record

Analyte:	As		
Procedure:	LA-355-131	Revision:	A-2
Instrument:	Perkin-Elmer	Property Number:	WA77479
Technologist:	S. Riel	Payroll Number:	6C280
Date:	April 10, 1990		

Calibration Standard ID: 102C32

Analyte Concentration: 1.001 ppm

Type of Calibration: Linear Regression

Aliquot	Weight	Instrument Reading Units= mm
0	0 ng	4.0
25 ul	25.025 ng	56.0
50 ul	50.050 ng	100.0
75 ul	75.075 ng	141.0

Comments:

SST-103 Rev. B 9/27/90 Interim

4.5

Ux BLK 0.950

78.0

F986 sample STD 58CIIBU 35x

82.0

F985 Sample + spike 58CIIBU 35x

14.0

F984 Duplicate sample 1mL

11.5

F983 sample 1mL

5.0

F982 Reagent BLK 1mL

A5 4-10-90

10mm 5mV

SRIEL

81.0

F981 sample STD 35x

141.0

75x Cal STD

100.0

50x Cal STD

56.0

25x Cal STD

4.0

Ux BLK

144.0

75x Cal STD

140.0

75x Cal STD

140.0

75x Cal STD

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Perkin-Elmer
Procedure/Rev	LA-325-102/A-1
Technologist	J. Hopkins
Date	February 20, 1990
Temperature	70 F
Starting Time	0800
Ending Time	1500
Chemist	R. K. Fuller

Mercury Analysis by Atomic Absorption

Manual Cold Vapor Technique

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std.	F0987
2	Reagent Blank	F0988
3	Sample Composite 7	F0989
4	Duplicate Sample Composite 7	F0990
5	Spike Composite 7	F0991
6	LMCS Check Std.	F0957
7	Sample Composite 8	F0959
8	Duplicate Sample Composite 8	F0960
9	Spike Composite 8	F0961
10	LMCS Check Std.	F0981
11	Sample Composite 7	F0983

	Description	Lab ID
12	Duplicate Sample Composite 7	F0984
13	Spike Composite 7	F0985
14	LMCS Check Std.	F0909
15	Sample Composite 5	F0911
16	Duplicate Sample Composite 5	F0912
17	Spike Composite 5	F0913
18	Final LMCS Check Std.	F0914
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	58C11BN/25 uL			25 mL
Spike	58C11BO/25 uL	F0985/3.0 mL		25 mL

SST-102 Rev. I 10/2/90 Interim

Single Shell Tank
Calibration Record

ANALYTE:	Hg		
PROCEDURE:	LA-325-102	REVISION:	A-1
INSTRUMENT:	Perkin-Elmer AA	PROPERTY NUMBER:	WA77479
TECHNOLOGIST:	J. Hopkins	PAYROLL NUMBER:	6A543
DATE:	February 20, 1990		

CALIBRATION STANDARD ID: 102C3T

ANALYTE CONCENTRATION: 1.01 ppm

TYPE OF CALIBRATION: Linear Regression

Aliquot	Weight	Instrument Reading Units= mm
0	0 ng	6
10 uL	10.1 ng	42.5
20 uL	20.2 ng	79.0
40 uL	40.4 ng	145.5

COMMENTS:

SST-103 Rev. B 9/27/90 Interim

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Perkin-Elmer
Procedure/Rev	LA-365-131/A-3
Technologist	S. Riel
Date	March 30, 1990
Temperature	70 F
Starting Time	1218
Ending Time	1330
Chemist	R. K. Fuller

Selenium Analysis

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std.	F0981
2	Reagent Blank	F0982
3	Sample Composite 7	F0983
4	Duplicate Sample Composite 7	F0984
5	Spike Composite 7	F0985
6	Final LMCS Check Std.	F0986
7		
8		
9		
10		
11		

	Description	Lab ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	58C11BU/35 uL			35 mL
Spike	58C11BU/35 uL	F0983/1.0 mL		35 mL

SST-102 Rev. I 10/2/90 Interim

Single Shell Tank
Calibration Record

Analyte:	Se		
Procedure:	LA-365-131	Revision:	A-3
Instrument:	Perkin-Elmer AA	Property Number:	WA77479
Technologist:	S. Riel	Payroll Number:	6C280
Date:	March 30, 1990		

Calibration Standard ID: 102C3Z

Analyte Concentration: 1.001 ppm

Type of Calibration: Linear Regression

Aliquot	Weight	Instrument Reading Units= mm
0	0	4.5
25 uL	25.025 ng	26.0
50 uL	50.050 ng	43.0
75 uL	75.075 ng	68.5

Comments:

SST-103 Rev. B 9/27/90 Interim

1 of 2

36.0

981 Sample STD 58CU,BU 35x

SE

68.5

3-30-90

75x Cal STD

43.0

10mm 5mV

SRIEL

50x Cal STD

24.0

25x Cal STD

4.5

0x BLK

63.0

75x Cal STD

63.0

75x Cal STD

45.5

50x Cal STD

22.0

25x Cal STD

3.5

stop 11:38 start 12:18

35.0

908 Sample STD 58CU,BU 35x

36.0

907 sample 1mL + spike (58CU,BU) 35x

5.5 410

45.5

50L Cal STD

24.0

2 of 2

25L Cal Spike

3.5

0L BK 14:00

35.0

F986 sample STD 58CellBu 35L

35.0

F985 sample 1 mL + spike 35L (58CellBu)

4.0

F984 Sample Dup 1 mL

3.5

F983 Sample 1 mL

3.0

F982 Sample BlK 1 mL

F982 Sample BlK 1 mL

36.0

981 Sample STD 58CellBu 35L

411 68.5

ACID DIGESTION TEST RESULTS

Single Shell Tank Project

Acid Digestion
Units For Samples Are Wet Weight

Tank: 241-U-110
Core: 7
Segment: F0971
Customer ID: Core Composite 7

	Check Standard	Blank	Sample	Duplicate Sample	Spike Of Sample	Check Standard
Laboratory ID:	N/A	F0910	F0989	F0990	F0991	N/A
Acid Digestion	N/A	N/A	13.5 g/L	9.6 g/L	10.2 g/L	N/A
Laboratory ID:	F0951	F0952	F0989	F0990	F0991	F0914
Arsenic	99.13%	3.27E-04 ug	3.11E-01 ug/g	4.38E-01 ug/g	78.60%	99.14%
Laboratory ID:	F0987	F0988	F0989	F0990	F0991	F0992
Mercury	103.73%	829 ug	1.05 ug/g	1.53 ug/g	74.85%	103.73%
Laboratory ID:	F0987	F0988	F0989	F0990	F0991	F0992
Selenium	108.30%	<5.00E-02 ppm	<3.70 ug/g	<5.20 ug/g	75.70%	86.60%

ICP Results DATA SUMMARY

Date Analyzed:	March 30,1990	Acid Digested LMCS Standard	F0987
Procedure:	LA-505-151/A-0	Reagent Blank	F0988
Analyst:	J. A. White	Core 7 Composite	F0989
Digestion	Acid Digestion	Duplicate of Core 7 Composite	F0990
Procedure:	LA-505-159/A-0	Spike of Core 7 Composite	F0991
		Acid Digested LMCS Standard	F0992

	Instrument Starting LMCS Standard %	Acid Digest. LMCS Standard %	Reagent BLANK ppm	Wet Weight Sample ug/g	Wet Weight Sample Duplicate ug/g	Spike Recovery %	LMCS ACID Digestion %	Closing LMCS Standard %
Aluminum	108.39%		0.11 LT	144784	136021	NOT CALC.		99.55%
Antimony	97.69%		-0.01 LT	131 LT	667			104.22%
Arsenic	107.97%		0.01 LT	114	200			105.32%
Barium	104.24%		0.00	27	43	108.37%		102.72%
Beryllium	104.81%		0.00 LT	0 LT	2			98.80%
Bismuth	105.38%	93.31%	0.10 LT	8829	12220	NOT CALC.	84.93%	100.81%
Boron	102.18%	87.33%	0.09	-35 LT	-77 LT	NOT CALC.	77.82%	101.84%
Cadmium	96.95%	89.24%	0.01 LT	5 LT	21	99.54%	82.37%	103.22%
Calcium	106.40%	94.67%	0.06	354	321	116.35%	101.86%	105.14%
Cerium	93.43%		0.07 LT	272 LT	1082	37.33%		98.38%
Chromium	96.12%		0.02	344	443	100.49%		102.09%
Cobalt	92.80%		0.05	0 LT	283	95.91%		94.00%
Copper	105.09%	91.36%	0.01 LT	290	299	106.63%	88.05%	103.47%
Europium	102.26%		0.00 LT	3 LT	17			91.61%
Iron	99.82%		0.04	8568	9064	NOT CALC.		104.61%
Lead	99.01%	87.03%	0.00 LT	284	674	91.60%	79.07%	101.31%
Lithium	106.00%		0.00 LT	-2 LT	25	NOT CALC.		101.03%
Magnesium	100.77%	92.16%	0.01	346	320	111.12%	83.77%	105.92%
Manganese	98.83%		0.01	2389	2148	138.72%		103.60%
Mercury	106.01%		-0.02 LT	1032	647			105.82%
Molybdenum	107.07%	94.29%	0.01 LT	41	78	99.88%	82.93%	102.04%
Neodymium	96.75%		0.05 LT	102 LT	685 LT	100.49%		100.82%
Nickel	97.60%		0.01 LT	80	127	102.01%		104.23%
Phosphorou	100.38%	82.18%	0.04 LT	8209	18341	NOT CALC.	73.22%	95.83%
Potassium	105.61%	92.54%	0.16 LT	461 LT	1611	111.35%	83.49%	105.90%
Samarium	105.36%		0.09 LT	135 LT	949			97.97%
Selenium	105.73%		0.04 LT	706	1041			100.93%
Silver	107.82%		0.01 LT	19 LT	80	25.44%		100.81%
Sodium	105.66%	93.75%	0.20	60976	83949	NOT CALC.	81.89%	104.06%
Strontium	104.73%	92.69%	0.00	358	330	107.10%	82.07%	104.36%
Sulfur	103.26%		0.05	159	247			97.44%
Tantalum	101.65%		0.02 LT	37 LT	237	23.70%		98.76%
Thallium	107.18%		0.03 LT	572	4972			100.53%
Thorium	107.93%		0.06	107	2326			99.02%
Tin	90.32%		0.03	95	163	98.82%		99.28%
Titanium	103.63%		0.04	40	71	101.00%		95.32%
Vanadium	107.33%		0.00 LT	32	63			100.33%
Zinc	98.13%	88.12%	0.01	1284	81	-22.30%	80.51%	103.22%
Zirconium	104.32%		0.01 LT	61	191	59.47%		96.86%

LT: Less Than
NC: Not Calibrated
NOT CALC: Not Calculated
Instrument Standards Outside Control Limits

Single Shell Tank Project

Acid Digestion
Results On The Laboratory Digestion

Tank: 241-U-110
Core: 7
Segment: F0971
Customer ID: Core Composite 7

	Check Standard	Blank	Sample	Duplicate Sample	Spike Of Sample	Check Standard
Laboratory ID:	N/A	F0910	F0989	F0990	F0991	N/A
Acid Digestion	N/A	N/A	13.5 g/L	9.6 g/L	10.2 g/L	N/A
Laboratory ID:	F0951	F0952	F0989	F0990	F0991	F0914
Arsenic	99.13%	3.27E-04 ug	4.20E-03 ppm	4.20E-03 ppm	78.60%	99.14%
Laboratory ID:	F0987	F0988	F0989	F0990	F0991	F0957
Mercury	103.73%	8.29E-04 ug	1.42E-02 ppm	1.47E-02 ppm	74.85%	90.69%
Laboratory ID:	F0987	F0988	F0989	F0990	F0991	F0992
Selenium	108.30%	<5.00E-02 ppm	<5.00E-02 ppm	<5.00E-02 ppm	75.70%	86.60%

Analytical Batch

LAB SEGMENT SERIAL #: F0971

CUSTOMER ID: 000007

INSTRUMENT	N/A
PROCEDURE/REV	LA-505-159/A-0
TECHNOLOGIST	D. M. Southwick
DATE	Feb. 13, 1990
TEMPERATURE	72 F
STARTING TIME	0740
ENDING TIME	1400
CHEMIST	S. A. Jones

Acid Digestion

Note: Sample is not spiked prior to digestion. This procedure provides a sample to be spiked later with the appropriate element.

	DESCRIPTION	LAB ID
1	Reagent Blank	F0910
2	Sample Composite 5	F0911
3	Duplicate Sample Composite 5	F0912
4	Sample Composite 7	F0989
5	Duplicate Sample Composite 7	F0990
6	Spike Composite 7	F0991
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT. VOL.	FINAL VOL. OF STD.
N/A				
Spike (See Note)				

SST-102 Rev. G 9/21/90 Interim

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	WB39939
Procedure/Rev	LA-505-151/A-0
Technologist	J. A. White
Date	March 30, 1990
Temperature	N/A
Starting Time	1003
Ending Time	1515
Chemist	S. A. Jones

Acid Digestion

ICP

No inter-element corrections were performed on this data.

	Description	Lab ID
1	Reagent Blank	N/A
2	Acid Digested Std.	F0987
3	Reagent Blank	F0988
4	Sample Composite 7	F0989
5	Duplicate Sample Composite 7	F0990
6	Spike Composite 7	F0991
7	Acid Digested Std.	F0922
8	LMCS Check Std.	N/A
9		
10		
11		

	Description	Lab ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
Digested Std.	103C15D/5.0 mL	104C15B/5.0 mL		50.0 mL
Spike	103C15D/0.5 mL	104C15B/0.5 mL	F0991/.5082 g	50.0 mL
LMCS Check Std.	78C11F/3.0 mL	82B38C/3.0 mL	77C11F/3.0 mL	3.0 mL

SST-102 Rev. I 10/2/90 Interim

ICP Results RAW DATA SUMMARY

Date Analyzed:	March 30,1990	Acid Digested LMCS Standard	F0987
Procedure:	LA-505-151/A-0	Reagent Blank	F0988
Analyst:	J. A. White	Core 7 Composite	F0989
Digestion	Acid Digestion	Duplicate of Core 7 Composite	F0990
Procedure:	LA-505-159/A-0	Spike of Core 7 Composite	F0991
		Acid Digested LMCS Standard	F0992

	Instrument Starting LMCS Standard %	Acid Digest. LMCS Standard %	Reagent BLANK ppm	Wet Weight Sample ug/g	Wet Weight Sample Duplicate ug/g	Spike Recovery %	LMCS ACID Digestion %	Closing LMCS Standard %
Aluminum	108.39%		0.11 LT	144784	136021	NOT CALC.		99.55%
Antimony	97.69%		-0.01 LT	131 LT	667			104.22%
Arsenic	107.97%		0.01 LT	114	200			105.32%
Barium	104.24%		0.00	27	43	108.37%		102.72%
Beryllium	104.81%		0.00 LT	0 LT	2			98.80%
Bismuth	105.38%	93.31%	0.10 LT	8829	12220	NOT CALC.	84.93%	100.81%
Boron	102.18%	87.33%	0.09	-35 LT	-77 LT	NOT CALC.	77.82%	101.84%
Cadmium	96.95%	89.24%	0.01 LT	5 LT	21	99.54%	82.37%	103.22%
Calcium	106.40%	94.67%	0.06	354	321	116.35%	101.86%	105.14%
Cerium	93.43%		0.07 LT	272 LT	1082	37.33%		98.38%
Chromium	96.12%		0.02	344	443	100.49%		102.09%
Cobalt	92.80%		0.05	0 LT	283	95.91%		94.00%
Copper	105.09%	91.36%	0.01 LT	290	299	106.63%	88.05%	103.47%
Europium	102.26%		0.00 LT	3 LT	17			91.61%
Iron	99.82%		0.04	8568	9064	NOT CALC.		104.61%
Lanthanum	97.13%	84.20%	0.00 LT	10 LT	90	95.45%	75.68%	87.95% #
Lead	99.01%	87.03%	0.00 LT	284	674	91.60%	79.07%	101.31%
Lithium	106.00%		0.00 LT	-2 LT	25	NOT CALC.		101.03%
Magnesium	100.77%	92.16%	0.01	346	320	111.12%	83.77%	105.92%
Manganese	98.83%		0.01	2389	2148	138.72%		103.60%
Mercury	106.01%		-0.02 LT	1032	647			105.82%
Molybdenum	107.07%	94.29%	0.01 LT	41	78	99.88%	82.93%	102.04%
Neodymium	96.75%		0.05 LT	102 LT	685 LT	100.49%		100.82%
Nickel	97.60%		0.01 LT	80	127	102.01%		104.23%
Phosphorou	100.38%	82.18%	0.04 LT	8209	18341	NOT CALC.	73.22%	95.83%
Potassium	105.61%	92.54%	0.16 LT	461 LT	1611	111.35%	83.49%	105.90%
Samarium	105.36%		0.09 LT	135 LT	949			97.97%
Selenium	105.73%		0.04 LT	706	1041			100.93%
Silicon	87.86% #	59.72%	0.13	2385	3869	19.55%	49.87%	83.03% #
Silver	107.82%		0.01 LT	19 LT	80	25.44%		100.81%
Sodium	105.66%	93.75%	0.20	60976	83949	NOT CALC.	81.89%	104.06%
Strontium	104.73%	92.69%	0.00	358	330	107.10%	82.07%	104.36%
Sulfur	103.26%		0.05	159	247			97.44%
Tantalum	101.65%		0.02 LT	37 LT	237	23.70%		98.76%
Thallium	107.18%		0.03 LT	572	4972			100.53%
Thorium	107.93%		0.06	107	2326			99.02%
Tin	90.32%		0.03	95	163	98.82%		99.28%
Titanium	103.63%		0.04	40	71	101.00%		95.32%
Tungsten	88.98% #		0.01 LT	220	344			86.08% #
Uranium	112.36% #		0.51 LT	6647	10460			105.81%
Vanadium	107.33%		0.00 LT	32	63			100.33%
Zinc	98.13%	88.12%	0.01	1284	81	-22.30%	80.51%	103.22%
Zirconium	104.32%		0.01 LT	61	191	59.47%		96.86%

LT: Less Than
NC: Not Calibrated
NOT CALC: Not Calculated
Instrument Standards Outside Control Limits

ICP Results RAW DATA

	0.01350 g/mL 0.6748 g 50.00 mL Sample Dilution Two ppm	Sample Dilution One ppm	Digestion Weight Volume Sample Duplicate Dilution Three ppm	0.00955 g/mL 0.4775 g 50.00 mL Sample Duplicate Dilution Two ppm	Sample Duplicate Dilution One ppm	Digestion Weight Volume Spike of Sample Dilution Three ppm	0.01016 g/mL 0.5082 g 50.00 mL Spike of Sample Dilution Two ppm	Spike of Sample Dilution One ppm
Aluminum	1954.00	1941.20		1299.00	1288.90		1580.70	1568.60
Antimony	4.71	1.76 LT		13.20	6.37		13.67	12.15
Arsenic	1.92	1.53		4.02	1.91		1.92	1.91
Barium	0.53	0.36		0.93	0.42		11.11	10.74
Beryllium	0.10	0.00 LT		0.08	0.02		0.00	0.01 LT
Bismuth	119.15	117.46		116.70	127.58		138.46	137.27
Boron	-0.99	-0.47 LT		-3.05	-0.74 LT		4.45	8.59
Cadmium	0.12	0.07 LT		0.45	0.21		10.01	12.42
Calcium	4.77	3.68		3.06	2.49		15.23	14.19
Cerium	21.47	3.68 LT		28.37	10.34		9.09	3.73 LT
Chromium	4.64	4.35		4.23	3.35		13.55	13.62
Cobalt	2.94	0.00 LT		10.90	2.70		10.48	9.59
Copper	4.11	3.91		3.79	2.86		13.99	13.61
Europium	0.15	0.04 LT		0.50	0.16		0.13	0.07 LT
Iron	115.63	113.17		86.56	86.02		118.26	116.43
Lanthanum	0.81	0.14 LT		2.11	0.86		10.14	9.65
Lead	9.22	3.83		7.90	6.43		12.51	12.05
Lithium	-0.06	-0.03 LT		0.71	0.24		10.90	10.83
Magnesium	4.67	4.06		3.06	2.98		14.63	14.43
Manganese	32.24	34.36		20.51	20.34		38.15	37.26
Mercury	13.93	1.83		6.18	1.14		1.52	0.74
Molybdenum	0.80	0.55		1.49	0.74		10.40	10.06
Neodymium	5.83	1.38 LT		22.41	6.55 LT		11.98	11.09
Nickel	1.52	1.07		2.30	1.21		11.52	11.01
Phosphorous	110.79	105.30		175.16	176.15		62.22	62.11
Potassium	15.27	6.23 LT		40.01	15.38		17.87	15.82
Samarium	8.01	1.83 LT		28.98	9.07		4.84	2.16 LT
Selenium	12.06	9.52		17.70	9.94		12.49	12.06
Silicon	28.94	32.19		36.95	34.97		16.42	26.20
Silver	0.66	0.25 LT		2.31	0.76		7.27	2.73
Sodium	822.93	800.71		801.71	778.26		593.34	577.12
Strontium	4.84	4.64		3.15	2.89		14.35	13.89
Sulfur	8.42	2.14		2.95	2.36		1.82	2.14
Tantalum	1.79	0.49 LT		6.73	2.27		2.16	2.73
Thallium	13.42	7.71		47.48	14.87		8.53	9.29
Thorium	6.00	1.45		22.22	6.71		3.57	1.89
Tin	1.57	1.29		2.64	1.56		10.95	10.85
Titanium	0.75	0.54		1.38	0.68		10.51	10.27
Tungsten	3.86	2.97		4.99	3.28		2.84	3.03
Uranium	129.19	89.71		225.17	99.90		99.08	79.36
Vanadium	0.67	0.43		1.89	0.60		0.61	0.48
Zinc	17.33	0.96		0.94	0.77		10.82	10.89
Zirconium	1.01	0.82		4.21	1.82		2.90	6.55
Dilution Factor	101.00	21.00	1.00	101.00	21.00	1.00	101.00	21.00

ICP Results RAW DATA

Date Analyzed:	March 30,1990	Acid Digested LMCS Standard	F0987
Procedure:	LA-505-151/A-0	Reagent Blank	F0988
Analyst:	J. A. White	Core 7 Composite	F0989
Digestion	Acid Digestion	Duplicate of Core 7 Composite	F0990
Procedure:	LA-505-159/A-0	Spike of Core 7 Composite	F0991
		Acid Digested LMCS Standard	F0992

	SST-1	SST-2	SST-3	Starting LMCS Instrument Standard ppm	Standard Recovery %		LMCS Acid Digestion Standard ppm	Acid Digestion Standard Recovery %	Reagent Blank ppm	Digestion Weight Volume Sample Dilution Three ppm
Aluminum				54.19	108.39%				0.11 LT	
Antimony	9.77				97.69%				-0.01 LT	
Arsenic				53.99	107.97%				0.01 LT	
Barium	10.42				104.24%				0.00	
Beryllium				10.48	104.81%				0.00 LT	
Bismuth		52.80			105.38%		9.33	93.31%	0.10 LT	
Boron	10.22				102.18%		8.73	87.33%	0.09	
Cadmium	9.70				96.95%		8.92	89.24%	0.01 LT	
Calcium	10.64				106.40%		9.47	94.67%	0.06	
Cerium	9.34				93.43%				0.07 LT	
Chromium	9.61				96.12%				0.02	
Cobalt	9.28				92.80%				0.05	
Copper	10.51				105.09%		9.14	91.36%	0.01 LT	
Europium		10.23			102.26%				0.00 LT	
Iron	9.98				99.82%				0.04	
Lanthanum		48.66			97.13%		8.42	84.20%	0.00 LT	
Lead		49.60			99.01%		8.70	87.03%	0.00 LT	
Lithium	10.60				106.00%				0.00 LT	
Magnesium	10.08				100.77%		9.22	92.16%	0.01	
Manganese	9.88				98.83%				0.01	
Mercury				26.50	106.01%				-0.02 LT	
Molybdenum				53.54	107.07%		9.41	94.29%	0.01 LT	
Neodymium	9.68				96.75%				0.05 LT	
Nickel	9.76				97.60%				0.01 LT	
Phosphorous				50.19	100.38%		8.22	82.18%	0.04 LT	
Potassium	26.40				105.61%		9.25	92.54%	0.16 LT	
Samarium		10.54			105.36%				0.09 LT	
Selenium				52.86	105.73%				0.04 LT	
Silicon				43.93	87.86%	#	5.97	59.72%	0.13	
Silver		10.78			107.82%		7.45		0.01 LT	
Sodium	26.41				105.66%		9.38	93.75%	0.20	
Strontium	10.47				104.73%		9.27	92.69%	0.00	
Sulfur				51.63	103.26%				0.05	
Tantalum				50.82	101.65%				0.02 LT	
Thallium				53.59	107.18%				0.03 LT	
Thorium		54.07			107.93%				0.06	
Tin	45.16				90.32%				0.03	
Titanium				51.82	103.63%				0.04	
Tungsten				22.25	88.98%	#			0.01 LT	
Uranium		56.29			112.36%	#			0.51 LT	
Vanadium				10.73	107.33%				0.00 LT	
Zinc	9.81				98.13%		8.81	88.12%	0.01	
Zirconium				52.16	104.32%				0.01 LT	
Dilution Factor	1.00	1.00	1.00				10.00		1.00	1.00

ICP Results RAW DATA

	Spike Recovery %	Standard LMCS Acid Digestion ppm	Acid Digestion Standard Recovery %	SST-1	SST-2	Ending LMCS Standard SST-3	Standard Recovery %	Spike Standard LMCS ppm added
Aluminum	NOT CALC.					49.77	99.55%	10.00
Antimony				10.42			104.22%	
Arsenic						52.66	105.32%	
Barium	108.37%			10.27			102.72%	10.00
Beryllium						9.88	98.80%	
Bismuth	NOT CALC.	8.49	84.93%		50.51		100.81%	10.00
Boron	NOT CALC.	7.78	77.82%	10.18			101.84%	10.00
Cadmium	99.54%	8.24	82.37%	10.32			103.22%	10.00
Calcium	116.35%	10.19	101.86%	10.51			105.14%	10.00
Cerium	37.33%			9.84			98.38%	10.00
Chromium	100.49%			10.21			102.09%	10.00
Cobalt	95.91%			9.40			94.00%	10.00
Copper	106.63%	8.81	88.05%	10.35			103.47%	10.00
Europium					9.16		91.61%	
Iron	NOT CALC.			10.46			104.61%	10.00
Lanthanum	95.45%	7.57	75.68%		44.06		87.95% #	10.00
Lead	91.60%	7.91	79.07%		50.76		101.31%	10.00
Lithium	NOT CALC.			10.10			101.03%	10.00
Magnesium	111.12%	8.38	83.77%	10.59			105.92%	10.00
Manganese	138.72%			10.36			103.60%	10.00
Mercury						26.45	105.82%	
Molybdenum	99.88%	8.28	82.93%			51.02	102.04%	10.00
Neodymium	100.49%			10.08			100.82%	10.00
Nickel	102.01%			10.42			104.23%	10.00
Phosphorous	NOT CALC.	7.32	73.22%			47.92	95.83%	10.00
Potassium	111.35%	8.35	83.49%	26.47			105.90%	10.00
Samarium					9.80		97.97%	
Selenium						50.47	100.93%	
Silicon	19.55%	4.99	49.87%			41.52	83.03% #	10.00
Silver	25.44%	2.45			10.08		100.81%	10.00
Sodium	NOT CALC.	8.19	81.89%	26.02			104.06%	10.00
Strontium	107.10%	8.21	82.07%	10.44			104.36%	10.00
Sulfur						48.72	97.44%	
Tantalum	23.70%					49.38	98.76%	9.95
Thallium						50.27	100.53%	
Thorium					49.61		99.02%	
Tin	98.82%			49.64			99.28%	10.00
Titanium	101.00%					47.66	95.32%	10.00
Tungsten						21.52	86.08% #	
Uranium					53.01		105.81%	
Vanadium						10.03	100.33%	
Zinc	-22.30%	8.05	80.51%	10.32			103.22%	10.00
Zirconium	59.47%					48.43	96.86%	9.98
Dilution Factor		10.00		1.00	1.00	1.00		

ICP Results RAW DATA

	Spike Standard ID Book # 103C15D 104C15B	SST-1	SST-2	LMCS Standards Values ppm SST-3	LMCS Standard IDs Book # 78C11F 82B38C 77C11F	ACID DIGESTION LMCS STANDARD VALUES ppm in Sample	ACID DIGEST. LMCS IDs Book # 103C15D 104C15B
Aluminum				50.00		100.00	
Antimony		10.00					
Arsenic				50.00			
Barium		10.00				100.00	
Beryllium				10.00			
Bismuth			50.10			100.00	
Boron		10.00				100.00	
Cadmium		10.00				100.00	
Calcium		10.00				100.00	
Cerium		10.00				100.00	
Chromium		10.00				100.90	
Cobalt		10.00				100.00	
Copper		10.00				100.00	
Europium			10.00				
Iron		10.00				100.00	
Lanthanum			50.10			100.00	
Lead			50.10			100.00	
Lithium		10.00				100.00	
Magnesium		10.00				100.00	
Manganese		10.00				100.00	
Mercury				25.00			
Molybdenum				50.00		99.80	
Neodymium		10.00				100.00	
Nickel		10.00				100.00	
Phosphorous				50.00		100.00	
Potassium		25.00				100.00	
Samarium			10.00				
Selenium				50.00			
Silicon				50.00		100.00	
Silver			10.00				
Sodium		25.00				100.00	
Strontium		10.00				100.00	
Sulfur				50.00			
Tantalum				50.00		99.50	
Thallium				50.00			
Thorium			50.10				
Tin		50.00				100.00	
Titanium				50.00		100.10	
Tungsten				25.00			
Uranium			50.10				
Vanadium				10.00			
Zinc		10.00				100.00	
Zirconium				50.00		99.80	
Dilution Factor						10.00	

ICP Calibration Report

Procedure:	LA-505-151	Revision: A-0	
Instrument:	WB39939		
Technologist:	J. A. White		
Date:	March 30, 1990	Time: 10:03	

Calibration Standards for ICP Program "SST"

Element	Standard	Element	Standard
Aluminum	SST-3	Antimony	SST-4
Arsenic	SST-4	Barium	SST-2
Beryllium	SST-2	Bismuth	SST-4
Boron	SST-3	Cadmium	SST-2
Calcium	SST-2	Cerium	SST-5
Chromium	SST-2	Cobalt	SST-2
Copper	SST-2	Europium	SST-5
Iron	SST-2	Lanthanum	SST-5
Lead	SST-4	Lithium	SST-1
Magnesium	SST-2	Manganese	SST-2
Mercury	SST-3	Molybdenum	SST-3
Neodymium	SST-5	Nickel	SST-2
Phosphorous	SST-3	Potassium	SST-1
Samarium	SST-5	Selenium	SST-4
Silicon	SST-3	Silver	SST-2
Sodium	SST-1	Strontium	SST-2
Sulfur	SST-3	Tantalum	SST-3
Thallium	SST-4	Thorium	SST-4
Tin	SST-4	Titanium	SST-3
Tungsten	SST-3	Uranium	SST-4
Vanadium	SST-2	Zinc	SST-2
Zirconium	SST-3		

ICP Standard Formulations

SST-0:
Calibration blank, 1 M ultrex HNO_3.

SST-1:
Stock solutions from AESAR/John Mathey Inc., Seabrook, NH 03874. Individual element solutions as follows:

Li	$LiCO_3$ 10,000 ppm in 5% HNO_3 Lot# 14394A
K	KNO_3 10,000 ppm in 5% HNO_3 Lot# 14379A
Na	$NaCO_3$ 10,000 ppm in 5% HNO_3 Lot# 14400A

200 mL of standard made by combining 25 mL HCl/HNO_3 mixed acid, 1 mL each single element standards, and water.

SST-2:
Stock solutions from VHG labs, Inc., 180 Zachary Rd. #5, Manchester, NH 03103. Mixed element standards as follows:

SM-10	Li, Na, K, Rb, Cs, Be, Mg, Ca, Sr, & Ba 100 ppm Lot# 0-119A
SM-20	V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ag, & Cd 100 ppm Lot# 0-119B

50 mL of each mixed standard are added to a 250 mL volumetric flask and diluted to volume with 1 M HNO3.

SST-3:
Stock solutions from AESAR/John Mathey Inc., Seabrook, NH 03874. Individual element solutions as follows:

Al	Al 10,000 ppm in 10% HCl Lot# 9-053A
B	H_3BO_3 10,000 ppm in 1% NH_4OH Lot# 9-335A
Hg	Hg 10,000 ppm in 5% HNO_3 Lot# 8-656S
Mo	Mo 10,000 ppm in 5% HCl Lot# 9-159T
P	P 10,000 ppm in 5% HNO3 Lot# 9-160A
Si	Si 1000 ppm in KOH Lot# 086DM Spex Industries, Edison, NJ
S	$(NH_4)_2SO_4$ in H_2O Lot# 9-231M
Ta	TaCl5 10,000 ppm in 5% HCl/tr HF Lot# 9-335M
Ti	Ti 10,000 ppm in 5% HF Lot# 9-079EE
W	W 10,000 ppm in 5% HF/tr HNO_3 Lot# 8-685L
Zr	$ZrCl_2O$ 10,100 ppm in 5% HCl Lot# 9-078G

50 mL of each mixed standard are added to a 250 mL volumetric flask and diluted to volume with 1 M HNO33.

SST-4:
Stock solution from VHG labs, Inc., 180 Zachary Rd. #5, Manchester, NH 03103. Mixed element standard as follows:

SM-50 Ga, In, Tl, Ge, Sn, Pb, As, Sb, Bi, Se, Te, Th, & U 100 ppm Lot# 0-119D

Solution is used directly for calibration.

SST-5:
Stock solution from VHG labs, Inc., 180 Zachary Rd. #5, Manchester, NH 03103. Mixed element standard as follows:

SM-60 Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, & Lu 100 ppm Lot# 7-165F

50 mL of SM-60 is added to a 250 mL volumetric flask and diluted to volume with 1 M HNO_3.

ICP Calibration - March 30, 1990

```
30-Mar-90                                    10:03:19
[*****] Spectrometer vacuum out.

Condition     Value                Min      /  Max

VACUUM   =  > 72.75                7.000    /  50.00
SPTEMP   =    38.60                37.00    /  39.00
MAINS    =    233.7                220.0    /  247.0
-1000V   =    -1004                -1010    /  -990
CTEMP    =    24.75                19.00    /  35.00
+5V      =    5.155                4.750    /  5.250
+12V     =    12.15                11.70    /  12.30
-12V     =    -12.2                -12.3    /  -11.7
+24V     =    23.14                22.50    /  26.50
-100V    =    -100                 -101     /  -99.0
+5VSQ    =    5.155                4.750    /  5.250
+15VSQ   =    15.14                14.70    /  15.30
-15VSQ   =    -15.2                -15.3    /  -14.7

Position Calibration in Progress
         SLIT     PM       ALPHA    BETA     ALPHA    BETA     ALPHA    BETA
         POS'N             SLIT     SLIT     LAMBDA1  LAMBDA1  LAMBDA2  LAMBDA2
Previous data :
INSTR    0.00000  586.595  1.00092  0.16992  1.00009  -0.0704  0.00000  0.00000
Current data  :
INSTR    0.00000  587.348  1.00106  -0.6934  1.00008  -0.0604  0.00000  0.00000
START THE PLASMA NOW, PLEASE.30-Mar-90        10:10:38
```

ICP Calibration - March 30, 1990

Sample name : SST0
Programme : SST 30-Mar-90 12:44:35

NAME	MV INT	RSD
AL	1.09	1.52
SB	0.33	1.09
AS	0.67	1.13
BA	1.71	0.86
BE	0.49	1.53
BI	2.40	0.36
B	2.20	0.67
CD	1.46	1.15
CA	0.33	0.63
CE	2.39	1.15
CR	0.76	3.19
CO	0.20	0.51
CU	1.53	0.92
EU	1.79	0.93
FE	0.89	1.99
LA	0.27	0.78
PB	0.23	0.87
LI	2.01	1.01
MG	0.29	1.12
MN	0.52	0.44
HG	2.70	1.70
MO	1.14	0.95
ND	2.60	1.55
NI	2.07	1.04
P	0.79	3.93
K	1.66	1.00
SM	2.27	0.92
SE	1.09	1.56
SI	1.71	0.68
AG	6.48	1.01
NA	2.34	0.91
SR	1.99	0.73
S	0.50	2.73
TA	3.17	70.53
TL	1.82	0.93
TH	0.60	1.17
SN	0.83	0.73
TI	1.95	0.80
W	0.86	1.93
U	2.21	1.00
V1	2.22	0.26
ZN	1.87	0.59
ZR	2.73	0.61

Sample name : SST1
Programme : SST 30-Mar-90 12:48:44

NAME	MV INT	RSD
LI	749.07	0.95
K	15.88	0.65
NA	79.69	0.85

Sample name : SST2
Programme : SST 30-Mar-90 12:50:46

ICP Calibration - March 30, 1990

NAME	MV INT	RSD
BA	436.88	0.15
BE	611.72	0.31
CD	320.42	1.02
CA	626.29	0.06
CR	78.03	0.69
CO	1.80	2.35
CU	143.92	0.03
FE	168.26	1.19
MG	503.57	0.58
MN	348.34	0.70
NI	176.23	1.11
AG	588.04	0.30
SR	752.23	0.11
V1	240.51	0.39
ZN	651.68	0.61

Sample name : SST3
Programme : SST 30-Mar-90 12:53:46

NAME	MV INT	RSD
AL	26.95	0.65
B	940.83	0.74
HG	659.60	1.88
MO	326.78	1.11
P	68.98	3.06
SI	99.01	1.28
S	46.71	1.83
TA	126.04	1.35
TI	645.73	0.71
W	75.50	1.11
ZR	204.59	0.84

Sample name : SST4
Programme : SST 30-Mar-90 12:56:34

NAME	MV INT	RSD
SB	7.47	3.39
AS	139.03	2.91
BI	122.21	2.68
PB	5.35	2.18
SE	56.07	3.06
TL	56.33	1.19
TH	21.36	2.37
SN	230.31	2.66
U	14.19	2.20

Sample name : SST5
Programme : SST 30-Mar-90 12:59:36

NAME	MV INT	RSD
CE	17.16	0.28
ER	727.[illegible]	0.24
LA	8.57	0.18
ND	19.36	0.59

ICP Calibration - March 30, 1990

SM	17.18	0.10

Sample name : SSTO
Programme : SST 30-Mar-90 13:04:18

NAME	MV INT	RSD
AL	1.09	1.06
SB	0.33	1.25
AS	0.67	0.82
BA	1.72	1.24
BE	0.50	0.58
BI	2.46	1.67
B	3.71	4.40
CD	1.48	1.96
CA	0.33	1.04
CE	2.42	2.37
CR	0.73	1.86
CO	0.20	0.59
CU	1.55	1.14
EU	1.80	1.32
FE	0.89	0.98
LA	[illegible]	0.57
PB	0.23	0.50
LI	1.96	1.13
MG	0.29	0.72
MN	0.51	1.81
HG	3.19	2.63
MO	1.15	2.47
ND	2.61	2.64
NI	2.10	0.96
P	0.80	1.83
K	1.66	1.45
SM	2.29	1.37
SE	1.09	1.25
SI	1.82	1.87
AG	6.54	1.51
NA	2.35	1.23
SR	2.00	1.10
S	0.51	1.79
TA	1.89	1.21
TL	1.87	0.54
TH	0.69	1.08
SN	0.84	1.62
TI	1.96	1.00
W	0.87	1.65
U	2.23	1.27
VI	2.24	0.63
ZN	1.08	1.53
ZR	2.74	0.66

Programme name : SST Channel name : AL Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
[illegible]	1.0436	[illegible]	[illegible]	[illegible]		

ICP Calibration - March 30, 1990

Programme name : SST Channel name : SB1 Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.3167	7.5480	-0.466728E+01	0.140029E+02		

Programme name : SST Channel name : AS Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.6400	145.90	-0.486925E+00	0.722797E+00		

Programme name : SST Channel name : BA Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.6308	458.73	-0.788970E-01	0.459594E-01		

Programme name : SST Channel name : BE1 Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4737	642.31	-0.163170E-01	0.327213E-01		

Programme name : SST Channel name : B1 Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.3966	[illegible]	[illegible]	0.835063E+00		

Programme name : SST Channel name : B Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	[illegible]	987.87	0.198135E+00	0.533551E-01		

ICP Calibration - March 30, 1990

Programme name : SST Channel name : CD Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.3013	336.44	-0.934930E-01	0.627071E-01		

Programme name : SST Channel name : CA Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.3154	657.61	-0.106027E-01	[illegible]19510E-01		

Programme name : SST Channel name : CE Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.3031	18.021	-0.328983E+01	0.135700E+01		

Programme name : SST Channel name : CR Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.6967	81.930	-0.189748E+00	0.258747E+00		

Programme name : SST Channel name : CO Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.1859	1.8914	-0.243720E+01	0.124559E+02		

Programme name : SST Channel name : CU Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.4681	151.11	-0.217084E+00	0.140477E+00		

ICP Calibration - March 30, 1990

Programme name : SST Channel name : EU Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.7138	763.58	-0.497368E-01	0.275703E-01		

Programme name : SST Channel name : FE Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.8493	176.68	-0.106830E+00	0.119496E+00		

Programme name : SST Channel name : LA Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.2540	8.9971	-0.644073E+00	0.240925E+01		

Programme name : SST Channel name : PB Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.2210	5.6133	-0.455020E+01	0.195567E+02		

Programme name : SST Channel name : LI Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.8601	786.52	-0.131038E+00	0.669246E-01		

Programme name : SST Channel name : MG Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.2742	528.75	-0.114713E-01	0.397390E-01		

ICP Calibration - March 30, 1990

Programme name : SST Channel name : MN Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4877	365.76	-0.295164E-01	0.574995E-01		

Programme name : SST Channel name : HG Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.0283	692.58	-0.242810E+00	0.761718E-01		

Programme name : SST Channel name : MO Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.0900	343.12	-0.176169E+00	0.153546E+00		

Programme name : SST Channel name : ND Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.4773	20.437	-0.309411E+01	0.118654E+01		

Programme name : SST Channel name : NI Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.9931	185.04	-0.240974E+00	0.114859E+00		

Programme name : SST Channel name : P Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.7594	72.425	-0.586222E+00	0.733389E+00		

ICP Calibration - March 30, 1990

Programme name : SST Channel name : K Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.5776	16.677	-0.583837E+01	0.351568E+01		

Programme name : SST Channel name : SM Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.1714	18.016	-0.307379E+01	0.134481E+01		

Programme name : SST Channel name : SE Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.0342	58.869	-0.198023E+01	0.181895E+01		

Programme name : SST Channel name : SI Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.7296	103.96	-0.936683E+00	0.514472E+00		

Programme name : SST Channel name : AG Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	6.1889	617.44	-0.224055E+00	0.343923E-01		

Programme name : SST Channel name : NA Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.2315	83.671	-0.151866E+01	0.646515E+00		

ICP Calibration - March 30, 1990

Programme name : SST Channel name : SR Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.9000	789.85	-0.533167E-01	0.266583E-01		

Programme name : SST Channel name : S Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4829	49.050	-0.550069E+00	0.108210E+01		

Programme name : SST Channel name : TA Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.7952	132.34	-0.761046E+00	0.402741E+00		

Programme name : SST Channel name : TL2 Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.7790	59.142	-0.343905E+01	0.183645E+01		

Programme name : SST Channel name : TH Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.5735	22.431	-0.290793E+01	0.481711E+01		

Programme name : SST Channel name : SN Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.8005	241.83	-0.367225E+00	0.435789E+00		

ICP Calibration - March 30, 1990

Programme name : SST Channel name : TI Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.8633	678.02	-0.152331E+00	0.776673E-01		

Programme name : SST Channel name : W Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.8303	79.280	-0.585553E+00	0.669969E+00		

Programme name : SST Channel name : U Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.1201	14.903	-0.186573E+02	0.836027E+01		

Programme name : SST Channel name : V1 Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.1251	252.54	-0.187767E+00	0.839368E-01		

Programme name : SST Channel name : ZN Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.7860	684.27	-0.578637E-01	0.307785E-01		

Programme name : SST Channel name : ZR Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.6071	214.82	-0.679794E+00	0.247708E+00		

ICP Calibration - March 30, 1990

Sample name : HNO3
Programme : SST 30-Mar-90 13:18:10

NAME	MV INT	CONCEN	RSD
Al	1.14	0.110	26.19
Sb	0.34	0.098	50.17
As	0.70	0.018	14.24
Ba	1.82	0.005	32.82
Be	0.51	0.000	27.91
Bi	2.53	0.058	80.20
B	3.86	0.008	20.93
Cd	1.52	0.003	56.15
Ca	0.34	0.000	22.21
Ce	2.57	0.199	23.45
Cr	0.77	0.011	25.64
Co	0.20	0.075	34.69
Cu	1.61	0.009	35.49
Eu	1.93	0.003	27.39
Fe	0.95	0.007	38.67
La	0.28	0.020	24.98
Pb	0.24	0.098	23.09
Li	2.04	0.005	43.05
Mg	0.30	0.000	23.89
Mn	0.53	0.001	64.79
Hg	4.03	0.064	9.84
Mo	1.19	0.007	28.85
Nd	2.73	0.146	44.75
Ni	2.18	0.009	72.99
P	0.81	0.007	97.12
K	1.74	0.281	32.07
Sm	2.43	0.199	33.27
Se	1.13	0.071	30.05
Si	1.82	-0.000	-4564.8
Ag	6.95	0.015	35.51
Na	2.49	0.094	28.15
Sr	2.09	0.002	30.22
S	0.51	0.007	143.09
Ta	2.01	0.048	38.73
Tl	1.99	0.211	20.16
Th	0.64	0.151	33.62
Sn	0.87	0.012	53.60
Ti	2.06	0.007	36.67
W	0.92	0.028	12.12
U	2.37	1.193	32.22
V	2.32	0.007	44.46
Zn	1.92	0.001	46.12
Zr	2.84	0.023	34.68

ICP Analysis - March 30, 1990 LMCS Check Standard

Sample name : 78C11F
Sample code 1 : SST1
Sample code 2 : DIRECT
Programme : SST 30-Mar-90 13:23:17

NAME	MV INT	CONCEN	RSD
Al	1.19	0.206	7.06
Sb	1.03	9.769	2.02
As	0.80	0.090	5.34
Ba	228.52	10.424	0.46
Be	0.52	0.001	12.18
Bi	2.55	0.076	47.15
B	195.22	10.218	0.46
Cd	156.09	9.695	1.17
Ca	333.33	10.640	0.57
Ce	9.31	9.343	0.68
Cr	37.88	9.612	1.28
Co	0.94	9.280	3.85
Cu	76.35	10.509	0.37
Eu	2.80	0.027	2.37
Fe	84.43	9.982	0.98
La	0.30	0.069	3.49
Pb	0.24	0.065	60.00
Li	160.34	10.600	0.17
Mg	253.86	10.077	0.90
Mn	172.40	9.883	1.11
Hg	3.05	-0.011	-197.06
Mo	1.25	0.016	14.54
Nd	10.76	9.675	2.54
Ni	87.07	9.760	0.95
P	0.86	0.048	34.51
K	9.17	26.402	0.45
Sm	2.29	-0.000	*******
Se	3.20	3.833	1.27
Si	1.83	0.003	210.19
Ag	6.91	0.014	103.56
Na	43.21	26.414	0.33
Sr	394.84	10.473	0.47
S	0.70	0.212	3.35
Ta	1.96	0.029	13.99
Tl	2.08	0.386	9.01
Th	0.66	0.292	9.08
Sn	104.47	45.161	1.05
Ti	2.01	0.003	130.01
W	1.12	0.168	8.94
U	2.71	3.991	4.93
V	2.31	0.006	44.85
Zn	320.71	9.813	1.13
Zr	2.80	0.014	22.83

ICP Analysis - March 30, 1990 LMCS Check Standard

Sample name : 82B38C
Sample code 1 : SST2
Sample code 2 : DIRECT
Programme : SST 30-Mar-90 13:28:05

NAME	MV INT	CONCEN	RSD
Al	3.27	4.230	2.54
Sb	0.36	0.425	15.23
As	2.41	1.257	4.13
Ba	2.23	0.024	6.96
Be	0.54	0.001	31.66
Bi	65.68	52.797	1.58
B	5.49	0.095	9.52
Cd	1.68	0.013	8.10
Ca	0.88	0.018	0.76
Ce	3.04	0.835	9.01
Cr	1.20	0.120	4.70
Co	0.20	0.079	27.35
Cu	3.18	0.230	2.67
Eu	372.71	10.226	0.33
Fe	1.42	0.062	1.34
La	20.46	48.660	1.07
Pb	2.77	49.602	1.98
Li	2.08	0.008	19.80
Mg	0.49	0.008	1.57
Mn	0.73	0.013	6.31
Hg	3.42	0.018	96.83
Mo	1.33	0.028	3.83
Nd	3.45	1.001	9.38
Ni	2.45	0.041	10.44
P	1.18	0.279	9.24
K	1.73	0.247	38.96
Sm	10.12	10.536	0.61
Se	1.29	0.371	8.57
Si	3.03	0.623	2.84
Ag	320.01	10.782	0.80
Na	2.60	0.161	17.28
Sr	2.39	0.010	6.77
S	0.64	0.139	5.65
Ta	2.52	0.253	7.87
Tl	5.46	6.585	1.48
Th	11.83	54.074	0.69
Sn	1.08	0.105	7.72
Ti	2.64	0.053	6.52
W	0.96	0.058	22.59
U	8.97	56.292	0.88
V	5.55	0.278	1.06
Zn	2.27	0.012	5.95
Zr	3.37	0.156	6.48

ICP Analysis - March 30, 1990 LMCS Check Standard

Sample name : 77C11E
Sample code 1 : SST3
Sample code 3 : DIRECT
Programme : SST 30-Mar-90 13:32:32

18029

NAME	MV INT	CONCEN	RSD
Al	29.12	>54.193	0.30
Sb	0.46	1.769	12.27
As	75.36	53.986	1.08
Ba	2.38	0.031	5.49
Be	320.82	10.481	1.22
Bi	3.77	1.096	3.05
B	5.20	0.079	3.67
Cd	1.95	0.029	6.69
Ca	1.02	0.022	0.77
Ce	2.86	0.587	18.95
Cr	1.01	0.072	8.47
Co	0.22	0.249	7.64
Cu	2.10	0.078	5.71
Eu	2.18	0.010	11.57
Fe	1.43	0.064	1.78
La	0.29	0.047	10.77
Pb	0.25	0.404	7.39
Li	2.20	0.016	13.58
Mg	0.46	0.007	3.57
Mn	0.88	0.021	2.65
Hg	351.11	26.502	1.41
Mo	349.81	>53.536	0.80
Nd	3.10	0.579	16.66
Ni	6.68	0.527	3.31
P	69.23	50.189	1.35
K	1.87	0.721	14.02
Sm	2.73	0.603	10.81
Se	30.15	52.864	0.65
Si	87.21	43.931	1.56
Ag	16.99	0.360	2.00
Na	3.02	0.435	7.59
Sr	2.36	0.010	9.72
S	48.22	51.632	0.66
Ta	128.09	50.824	0.93
Tl	31.05	53.588	1.58
Th	0.87	1.273	4.46
Sn	1.49	0.281	0.81
Ti	669.10	51.815	0.41
W	34.08	22.245	1.65
U	4.40	18.125	3.85
V	130.11	10.733	0.49
Zn	3.40	0.047	1.09
Zr	213.32	52.162	0.47

ICP Analysis - March 30, 1990 Acid Digested LMCS Check Standard

Sample name : 81C11A
Sample code 1 : DIGEST
Sample code 2 : DIRECT
Programme : SST 30-Mar-90 13:38:10

NAME	MV INT	CONCEN	RSD
Al	1.29	0.401	3.75
Sb	0.35	0.205	18.04
As	1.06	0.280	5.54
Ba	1.99	0.013	2.35
Be	0.54	0.001	7.87
Bi	13.63	9.331	0.55
B	167.39	8.733	0.37
Cd	143.79	8.924	0.83
Ca	296.64	9.467	0.50
Ce	2.71	0.394	26.21
Cr	0.88	0.037	3.59
Co	0.20	0.100	57.74
Cu	66.58	9.136	0.34
Eu	1.96	0.004	3.70
Fe	1.44	0.065	3.51
La	3.76	8.420	0.52
Pb	0.68	8.703	1.35
Li	2.08	0.008	4.67
Mg	232.20	9.216	0.76
Mn	0.98	0.027	0.99
Hg	2.88	(-0.023	-31.07
Mo	62.43	9.410	1.00
Nd	3.03	0.500	5.69
Ni	2.31	0.025	8.68
P	12.01	8.218	1.80
K	4.29	9.254	0.21
Sm	2.42	0.185	4.55
Se	1.18	0.175	3.94
Si	13.43	5.972	8.20
Ag	223.15	7.451	0.25
Na	16.85	9.375	0.41
Sr	349.68	9.269	0.52
S	0.71	0.222	2.77
Ta	2.84	0.382	144.69
Tl	2.05	0.326	17.95
Th	0.65	0.217	5.13
Sn	1.24	0.173	2.29
Ti	2.73	0.060	1.43
W	1.13	0.174	1.56
U	2.45	1.842	2.83
V	2.41	0.015	19.70
Zn	288.19	8.812	0.38
Zr	2.84	0.024	3.97

Sample name : F988
Sample code 1 : BLANK
Sample code 2 : DIRECT
Programme : SST 30-Mar-90 13:42:21

NAME	MV INT	CONCEN	RSD
Al	1.14	0.110	26.72
Sb	0.33	-0.005	-2615.2
As	0.69	0.010	120.00
Ba	1.79	0.004	110.64

ICP Analysis - March 30, 1990 Reagent Blank

Sample name : F988
Sample code 1 : BLANK
Sample code 2 : DIRECT
Programme : SSI 30-Mar-90 13:42:21

NAME	MV INT	CONCEN	RSD
Al	1.14	0.110	26.72
Sb	0.33	-0.005	-2615.2
As	0.69	0.010	120.00
Ba	1.79	0.004	110.64
Be	0.50	0.000	606.24
Bi	2.58	0.097	67.08
B	5.34	0.087	50.21
Cd	1.55	0.005	49.04
Ca	2.21	0.060	57.10
Ce	2.48	0.071	285.22
Cr	0.80	0.016	10.75
Co	0.20	0.050	203.61
Cu	1.60	0.008	90.11
Eu	1.85	0.001	241.99
Fe	1.20	0.036	43.94
La	0.27	-0.001	-1824.8
Pb	0.23	0.000	
Li	2.01	0.003	156.49
Mg	0.52	0.009	52.80
Mn	0.72	0.012	46.06
Hg	2.90	(-0.022	-70.70
Mo	1.20	0.007	106.17
Nd	2.65	0.053	225.00
Ni	2.19	0.010	100.63
P	0.86	0.041	52.47
K	1.71	0.156	168.24
Sm	2.35	0.087	215.09
Se	1.11	0.035	114.38
Si	2.07	0.127	17.91
Ag	6.87	0.012	158.35
Na	2.66	0.199	5.85
Sr	2.09	0.002	66.72
S	0.56	0.052	49.16
Ta	1.94	0.019	160.05
Tl	1.89	0.031	245.52
Th	0.62	0.056	220.26
Sn	0.92	0.034	16.03
Ti	2.49	0.041	39.68
W	0.89	0.008	259.25
U	2.29	0.510	224.80
V	2.25	0.001	129.79
Zn	2.22	0.011	27.63
Zr	2.79	0.011	211.34

ICP Analysis - March 30, 1990 Core 7 Composite Sample

Sample name : F989
Sample code 1 : 100-10
Sample code 2 : SAMPLE
Programme : SST 30-Mar-90 13:47:30

NAME	MV INT	CONCEN	DILCOR	RSD
Al	11.20	19.543	1973.9	0.47
Sb	0.35	0.168	16.971	17.35
As	0.74	0.049	4.989	11.98
Ba	1.99	0.013	1.264	18.04
Be	0.53	0.001	0.106	7.86
Bi	4.09	1.358	137.14	3.69
B	4.18	0.025	2.531	13.13
Cd	1.59	0.007	0.728	32.69
Ca	1.83	0.048	4.841	1.25
Ce	2.77	0.467	47.193	19.33
Cr	0.97	0.062	6.246	7.37
Co	0.20	0.095	9.645	19.92
Cu	1.95	0.057	5.741	8.30
Eu	2.03	0.006	0.633	24.07
Fe	10.97	1.204	121.61	1.58
La	0.28	0.024	2.433	45.09
Pb	0.24	0.130	13.168	34.64
Li	2.11	0.010	1.057	31.48
Mg	1.53	0.049	4.997	1.31
Mn	6.89	0.367	37.021	1.35
Hg	3.68	0.037	3.757	87.24
Mo	1.27	0.019	1.913	14.96
Nd	1.88	(-0.863	(-87.16	-223.93
Ni	2.38	0.032	3.237	16.66
P	2.46	1.218	123.03	2.69
K	1.82	0.563	56.813	19.10
Sm	2.56	0.372	37.533	23.76
Se	1.21	0.229	23.148	20.72
Si	2.57	0.387	39.110	5.21
Ag	7.36	0.029	2.942	23.02
Na	14.97	8.159	824.11	0.40
Sr	3.91	0.051	5.143	1.65
S	0.62	0.125	12.605	6.09
Ta	2.09	0.081	8.203	25.39
Tl	2.19	0.579	58.488	9.34
Th	0.66	0.284	28.705	20.36
Sn	0.93	0.039	3.917	20.11
Ti	2.19	0.018	1.807	16.09
W	0.98	0.072	7.285	9.93
U	2.60	3.046	307.64	17.72
V	2.55	0.026	2.625	14.27
Zn	8.90	0.216	21.817	17.81
Zr	2.94	0.048	4.820	20.55

Dilution factor : 101.000

ICP Analysis - March 30, 1990 Acid Blank

Sample name : HNO3
Programme : SST 30-Mar-90 13:52:22

NAME	MV INT	CONCEN	RSD
Al	1.20	0.227	16.45
Sb	0.35	0.182	11.75
As	0.73	0.041	15.50
Ba	1.96	0.011	16.75
Be	0.53	0.001	33.38
Bi	2.66	0.169	31.47
B	3.65	-0.003	-136.34
Cd	1.59	0.008	18.43
Ca	0.36	0.001	12.20
Ce	2.75	0.446	17.73
Cr	0.80	0.018	20.51
Co	0.21	0.133	10.83
Cu	1.70	0.022	19.25
Eu	2.08	0.008	17.64
Fe	1.01	0.014	22.63
La	0.28	0.037	18.83
Pb	0.24	0.183	18.56
Li	2.15	0.013	21.01
Mg	0.31	0.001	17.86
Mn	0.55	0.002	11.84
Hg	4.53	0.102	8.96
Mo	1.25	0.016	11.06
Nd	2.88	0.326	17.87
Ni	2.33	0.026	23.92
P	0.85	0.038	27.02
K	1.84	0.629	14.53
Sm	2.62	0.444	17.84
Se	1.18	0.175	20.47
Si	1.94	0.061	28.50
Ag	7.52	0.034	18.20
Na	2.68	0.212	18.01
Sr	2.19	0.005	18.66
S	0.53	0.027	8.22
Ta	2.13	0.099	18.63
Tl	2.13	0.474	15.46
Th	0.67	0.334	18.41
Sn	0.91	0.031	32.40
Ti	2.17	0.016	19.87
W	0.96	0.056	5.19
U	2.56	2.748	17.01
V	2.43	0.017	3.46
Zn	2.00	0.004	14.85
Zr	2.97	0.056	17.56

ICP Analysis - March 30, 1990 Core 7 Composite Sample

Sample name : Y
Sample code 1 : F989
Sample code 2 : 100-1
Programme : SST 30-Mar-90 13:57:03

NAME	MV INT	CONCEN	DILCOR	RSD
Al	11.09	19.347	1954.0	0.43
Sb	0.34	0.047	4.714	141.77
As	0.70	0.019	1.922	34.80
Ba	1.83	0.005	0.525	32.08
Be	0.53	0.001	0.099	134.59
Bi	3.87	1.180	119.15	1.41
B	3.53	-0.010	-0.993	-44.64
Cd	1.49	0.001	0.122	59.95
Ca	1.81	0.047	4.773	0.07
Ce	2.58	0.213	21.472	51.46
Cr	0.91	0.046	4.643	6.34
Co	0.20	0.029	2.935	85.71
Cu	1.83	0.041	4.105	8.89
Eu	1.86	0.001	0.149	77.38
Fe	10.47	1.145	115.63	1.48
La	0.27	0.008	0.811	75.50
Pb	0.24	0.091	9.218	32.73
Li	1.95	-0.001	-0.059	-393.03
Mg	1.45	0.046	4.667	1.32
Mn	6.58	0.349	35.238	0.85
Hg	5.00	0.138	13.930	7.25
Mo	1.20	0.008	0.796	40.22
Nd	2.66	0.058	5.832	142.50
Ni	2.23	0.015	1.524	43.62
P	2.30	1.097	110.79	1.75
K	1.70	0.151	15.269	51.60
Sm	2.34	0.079	8.014	84.56
Se	1.15	0.119	12.064	12.77
Si	2.38	0.287	28.943	6.55
Ag	6.70	0.007	0.659	72.03
Na	14.95	8.148	822.93	0.24
Sr	3.80	0.048	4.835	1.28
S	0.59	0.083	8.416	6.54
Ta	1.93	0.018	1.790	70.43
Tl	1.95	0.133	13.416	33.52
Th	0.62	0.059	6.000	84.65
Sn	0.88	0.016	1.570	29.18
Ti	2.06	0.007	0.748	28.81
W	0.93	0.038	3.857	35.04
U	2.38	1.279	129.19	30.39
V	2.32	0.007	0.667	46.64
Zn	7.45	0.172	17.329	1.31
Zr	2.78	0.010	1.009	82.99

Dilution factor : 101.000

Sample name : F989
Sample code 1 : 500-10
Sample code 2 : SAMPLE
Programme : SST 30-Mar-90 14:01:29

NAME	MV INT	CONCEN	DILCOR	RSD
Al	48.90	)92.437	)1941.2	0.67
Sb	0.34	0.084	1.764	50.92
As	0.77	0.073	1.533	7.02

ICP Analysis - March 30, 1990 Core 7 Composite Sample

Sample name : F989
Sample code 1 : 500-10
Sample code 2 : SAMPLE
Programme : SST 30-Mar-90 14:01:29

NAME	MV INT	CONCEN	DILCOR	RSD
Al	48.90	)92.437	)1941.2	0.67
Sb	0.34	0.084	1.764	50.92
As	0.77	0.073	1.533	7.02
Ba	2.09	0.017	0.363	9.70
Be	0.50	-0.000	-0.000	-1622.4
Bi	9.16	5.594	117.46	1.62
B	3.30	(-0.022	(-0.466	-14.61
Cd	1.53	0.003	0.073	64.41
Ca	5.81	0.175	3.679	0.53
Ce	2.55	0.175	3.676	6.31
Cr	1.53	0.207	4.352	3.02
Co	0.20	0.000	0.000	
Cu	2.87	0.186	3.908	3.33
Eu	1.87	0.002	0.036	66.23
Fe	45.99	5.389	113.17	1.04
La	0.27	0.006	0.135	37.50
Pb	0.24	0.183	3.833	0.00
Li	1.94	-0.001	-0.031	-146.09
Mg	5.16	0.193	4.063	1.18
Mn	28.97	1.636	34.362	1.33
Hg	4.33	0.087	1.825	7.64
Mo	1.32	0.026	0.549	5.45
Nd	2.66	0.066	1.379	48.89
Ni	2.54	0.051	1.073	7.01
P	7.64	5.014	105.30	2.04
K	1.75	0.296	6.226	24.76
Sm	2.35	0.087	1.826	73.62
Se	1.34	0.454	9.524	5.91
Si	4.80	1.533	32.188	1.09
Ag	6.86	0.012	0.251	41.72
Na	61.33	38.129	800.71	0.65
Sr	10.28	0.221	4.636	0.59
S	0.60	0.102	2.144	1.22
Ta	1.95	0.023	0.493	53.47
Tl	2.07	0.367	7.713	24.21
Th	0.62	0.069	1.450	63.94
Sn	0.98	0.061	1.287	4.99
Ti	2.29	0.026	0.539	9.01
W	1.09	0.141	2.969	6.41
U	2.74	4.272	89.714	8.29
V	2.48	0.020	0.430	5.23
Zn	3.36	0.046	0.959	2.10
Zr	2.90	0.039	0.820	19.25

Dilution factor : 21.0000

ICP Analysis - March 30, 1990 Core 7 Composite Duplicate

Sample name : F990
Sample code 1 : DUP
Sample code 2 : 100-10
Programme : SST 30-Mar-90 14:06:32

NAME	MV INT	CONCEN	DILCOR	RSD
Al	7.74	12.862	1299.0	0.19
Sb	0.34	0.131	13.200	6.19
As	0.73	0.040	4.015	7.35
Ba	1.92	0.009	0.930	9.24
Be	0.52	0.001	0.077	12.86
Bi	3.84	1.155	116.70	1.57
B	3.15	(-0.030	(-3.050	-10.88
Cd	1.55	0.004	0.448	23.27
Ca	1.28	0.030	3.064	0.49
Ce	2.63	0.281	28.371	12.91
Cr	0.90	0.042	4.234	1.89
Co	0.20	0.108	10.903	17.63
Cu	1.81	0.038	3.793	5.55
Eu	1.98	0.005	0.498	12.48
Fe	8.07	0.857	86.564	0.56
La	0.28	0.021	2.109	11.54
Pb	0.24	0.078	7.901	14.43
Li	2.06	0.007	0.705	13.83
Mg	1.05	0.030	3.057	0.27
Mn	4.05	0.203	20.510	0.42
Hg	3.99	0.061	6.175	17.61
Mo	1.24	0.015	1.494	6.26
Nd	2.79	0.222	22.410	11.25
Ni	2.30	0.023	2.301	3.43
P	3.16	1.734	175.16	0.61
K	1.77	0.396	40.006	11.41
Sm	2.50	0.287	28.976	10.65
Se	1.19	0.175	17.698	9.90
Si	2.53	0.366	36.945	3.16
Ag	7.18	0.023	2.308	12.00
Na	14.63	7.938	801.71	0.52
Sr	3.17	0.031	3.147	0.77
S	0.54	0.029	2.951	14.97
Ta	2.06	0.067	6.725	3.20
Tl	2.13	0.470	47.483	9.43
Th	0.65	0.220	22.218	9.12
Sn	0.90	0.026	2.641	11.71
Ti	2.14	0.014	1.375	8.07
W	0.95	0.049	4.985	13.93
U	2.50	2.229	225.17	8.86
V	2.46	0.019	1.888	19.42
Zn	2.18	0.009	0.943	2.56
Zr	2.91	0.042	4.211	11.80

Dilution factor : 101.000

ICP Analysis - March 30, 1990 Core 7 Composite Duplicate

Sample name : F990
Sample code 1 : 500-10
Sample code 2 : DUP
Programme : SST 30-Mar-90 14:11:22

NAME	MV INT	CONCEN	DILCOR	RSD
Al	32.83	)61.378	)1288.9	0.27
Sb	0.36	0.303	6.371	9.23
As	0.80	0.091	1.913	3.91
Ba	2.15	0.020	0.415	4.83
Be	0.53	0.001	0.021	25.75
Bi	9.73	6.075	127.58	24.41
B	3.06	(-0.035	(-0.735	-4.68
Cd	1.63	0.010	0.205	15.12
Ca	4.05	0.119	2.492	0.11
Ce	2.79	0.492	10.335	17.55
Cr	1.35	0.159	3.349	0.52
Co	0.21	0.129	2.703	19.35
Cu	2.51	0.136	2.857	1.99
Eu	2.08	0.008	0.158	10.55
Fe	35.17	4.096	86.017	0.79
La	0.28	0.041	0.860	12.25
Pb	0.25	0.306	6.434	3.69
Li	2.13	0.011	0.238	15.42
Mg	3.86	0.142	2.980	0.46
Mn	17.36	0.969	20.339	0.75
Hg	3.90	0.054	1.135	20.76
Mo	1.38	0.035	0.743	7.91
Nd	2.87	0.312	6.545	5.52
Ni	2.60	0.058	1.213	8.04
P	12.24	8.388	176.15	1.32
K	1.87	0.732	15.381	7.07
Sm	2.61	0.432	9.065	10.76
Se	1.35	0.474	9.944	2.90
Si	5.06	1.665	34.969	3.22
Ag	7.57	0.036	0.760	9.24
Na	59.67	37.060	778.26	0.47
Sr	7.17	0.138	2.894	0.17
S	0.61	0.112	2.356	4.42
Ta	2.16	0.108	2.267	28.67
Tl	2.26	0.708	14.873	20.38
Th	0.67	0.320	6.710	9.41
Sn	1.01	0.074	1.556	7.35
Ti	2.38	0.032	0.677	6.10
W	1.11	0.156	3.283	2.85
U	2.80	4.757	99.897	5.18
V	2.58	0.029	0.599	13.40
Zn	3.07	0.037	0.769	1.48
Zr	3.09	0.087	1.822	5.85

Dilution factor : 21.0000

ICP Analysis - March 30, 1990 Spike of Core 7 Composite Sample

Sample name : F991
Sample code 1 : 500-10
Sample code 2 : SPIKE
Programme : SST 30-Mar-90 14:20:47

NAME	MV INT	CONCEN	DILCOR	RSD
Al	39.72	)74.695	)1568.6	1.29
Sb	0.37	0.579	12.154	9.78
As	0.80	0.091	1.913	15.36
Ba	12.85	0.512	10.744	1.78
Be	0.51	0.000	0.006	90.60
Bi	10.29	6.537	137.27	2.65
B	11.38	0.409	8.592	2.53
Cd	10.91	0.592	12.422	36.85
Ca	21.48	0.676	14.187	1.67
Ce	2.56	0.178	3.733	59.17
Cr	3.24	0.648	13.615	4.21
Co	0.23	0.457	9.591	4.17
Cu	6.16	0.648	13.606	1.89
Eu	1.93	0.003	0.070	39.63
Fe	47.29	5.544	116.43	2.70
La	0.46	0.459	9.647	2.62
Pb	0.26	0.574	12.047	11.81
Li	9.67	0.516	10.833	1.30
Mg	17.58	0.687	14.433	2.73
Mn	31.37	1.774	37.262	3.12
Hg	3.65	0.035	0.742	11.97
Mo	4.27	0.479	10.064	3.44
Nd	3.05	0.528	11.088	13.92
Ni	6.66	0.524	11.009	4.63
P	4.83	2.958	62.113	4.53
K	1.88	0.754	15.824	16.41
Sm	2.36	0.103	2.156	72.90
Se	1.40	0.574	12.058	8.26
Si	4.25	1.247	26.196	3.17
Ag	10.30	0.130	2.733	5.54
Na	44.86	27.482	577.12	1.19
Sr	26.81	0.661	13.889	1.72
S	0.60	0.102	2.136	9.88
Ta	2.21	0.130	2.729	4.48
Tl	2.11	0.443	9.294	19.77
Th	0.62	0.090	1.888	57.28
Sn	2.03	0.517	10.851	6.10
Ti	8.26	0.489	10.273	2.66
W	1.09	0.144	3.034	8.58
U	2.68	3.779	79.356	13.20
V	2.51	0.023	0.477	25.29
Zn	18.72	0.518	10.887	5.84
Zr	4.00	0.312	6.553	0.35

Dilution factor : 21.0000

ICP Analysis - March 30, 1990 Acid Digested LMCS Check Standard

Sample name : 82C11A
Sample code 1 : DIGESS
Sample code 2 : STD
Sample code 3 : DIREEC
Programme : SST 30-Mar-90 14:25:22

NAME	MV INT	CONCEN	RSD
Al	1.30	0.413	13.31
Sb	0.35	0.191	7.32
As	1.05	0.270	6.30
Ba	2.04	0.015	11.76
Be	0.54	0.001	19.75
Bi	12.63	8.493	3.08
B	149.57	7.782	1.53
Cd	132.83	8.237	2.73
Ca	319.13	10.186	1.27
Ce	2.78	0.480	3.44
Cr	1.62	0.229	137.09
Co	0.20	0.116	10.71
Cu	59.10	8.085	1.22
Eu	2.03	0.006	19.08
Fe	1.50	0.073	3.52
La	3.41	7.568	1.40
Pb	0.64	7.907	3.44
Li	2.09	0.009	33.07
Mg	211.08	8.377	2.50
Mn	0.74	0.013	6.31
Hg	3.01	(-0.014	-58.43
Mo	55.05	8.276	3.22
Nd	3.13	0.620	10.74
Ni	2.36	0.031	12.85
P	10.78	7.322	3.03
K	4.04	8.349	2.47
Sm	2.50	0.292	22.35
Se	1.20	0.204	17.05
Si	11.51	4.987	2.85
Ag	77.80	2.452	1.96
Na	15.02	8.189	1.80
Sr	309.87	8.207	1.54
S	0.71	0.223	7.06
Ta	2.09	0.082	16.12
Tl	2.15	0.504	14.97
Th	0.66	0.284	18.90
Sn	1.20	0.156	6.06
Ti	3.67	0.132	3.03
W	1.12	0.166	6.55
U	2.52	2.436	17.58
V	2.55	0.026	13.01
Zn	263.47	8.051	2.43
Zr	2.90	0.038	19.32

ICP Analysis - March 30, 1990 Acid Blank

Sample name : HNO3
Programme : SST 30-Mar-90 14:29:53

NAME	MV INT	CONCEN	RSD
Al	1.21	0.235	13.14
Sb	0.35	0.182	42.37
As	0.74	0.049	24.39
Ba	1.97	0.012	15.88
Be	0.53	0.001	14.38
Bi	2.68	0.186	22.42
B	3.65	-0.003	-604.64
Cd	1.60	0.008	24.17
Ca	0.46	0.004	19.76
Ce	2.82	0.533	4.10
Cr	0.82	0.021	10.93
Co	0.21	0.179	38.84
Cu	1.72	0.025	20.37
Eu	2.10	0.008	17.47
Fe	1.03	0.016	17.47
La	0.37	0.252	146.46
Pb	0.24	0.163	20.78
Li	2.15	0.013	24.53
Mg	0.31	0.001	15.75
Mn	0.56	0.002	22.94
Hg	2.98	(-0.016	-16.53
Mo	1.27	0.019	20.15
Nd	2.93	0.377	17.41
Ni	2.36	0.031	19.32
P	0.85	0.034	20.66
K	1.85	0.656	19.73
Sm	2.63	0.464	18.14
Se	1.18	0.173	25.44
Si	1.94	0.060	32.46
Ag	7.61	0.038	16.95
Na	2.70	0.229	17.04
Sr	2.21	0.006	15.18
S	0.54	0.031	21.90
Ta	2.14	0.102	21.18
Tl	2.19	0.584	18.72
Th	0.67	0.340	16.34
Sn	0.93	0.036	43.65
Ti	2.18	0.017	18.65
W	0.96	0.056	25.50
U	2.58	2.887	16.91
V	2.51	0.023	28.68
Zn	2.02	0.004	26.06
Zr	2.98	0.058	18.03

ICP Analysis - March 30, 1990 LMCS Check Standard

Sample name : 78C11F
Sample code 1 : SST1
Programme : SST 30-Mar-90 14:33:44

NAME	MV INT	CONCEN	RSD
Al	1.28	0.374	17.60
Sb	1.08	10.422	3.11
As	0.85	0.131	12.13
Ba	225.22	10.272	6.12
Be	0.54	0.001	33.52
Bi	2.74	0.232	38.46
B	194.58	10.184	4.46
Cd	166.09	10.322	1.77
Ca	329.41	10.514	5.48
Ce	9.67	9.838	4.19
Cr	40.19	10.209	2.57
Co	0.95	9.400	4.06
Cu	75.20	10.347	5.55
Eu	2.98	0.032	3.27
Fe	88.44	10.461	3.26
La	0.31	0.095	7.34
Pb	0.24	0.202	16.76
Li	152.92	10.103	6.69
Mg	266.84	10.592	3.11
Mn	180.69	10.360	3.21
Hg	3.00	(-0.015	-16.94
Mo	1.33	0.028	22.64
Nd	11.11	10.082	3.58
Ni	92.85	10.423	2.19
P	0.91	0.080	18.21
K	9.19	26.474	4.65
Sm	2.53	0.322	49.57
Se	3.40	4.201	1.11
Si	1.98	0.082	37.33
Ag	7.49	0.034	36.21
Na	42.59	26.015	5.83
Sr	393.47	10.436	5.68
S	0.74	0.256	0.65
Ta	2.13	0.099	38.30
Tl	2.35	0.872	20.35
Th	0.71	0.514	19.22
Sn	114.75	49.641	1.35
Ti	2.17	0.016	34.03
W	1.21	0.223	3.14
U	2.95	6.044	13.22
V	2.55	0.026	26.08
Zn	337.24	10.322	2.58
Zr	2.97	0.056	37.43

ICP Analysis - March 30, 1990 LMCS Check Standard

Sample name : 82B38C
Sample code 1 : SST2
Sample code 2 : TURING
Programme : SST 30-Mar-90 14:43:19

NAME	MV INT	CONCEN	RSD
Al	3.32	4.323	1.49
Sb	0.38	0.672	1.20
As	2.56	1.364	2.20
Ba	2.47	0.035	3.63
Be	0.58	0.003	1.37
Bi	62.94	50.505	0.98
B	4.70	0.053	3.51
Cd	1.83	0.022	1.58
Ca	0.90	0.018	1.07
Ce	3.38	1.291	4.26
Cr	1.26	0.135	3.27
Co	0.21	0.129	19.35
Cu	3.28	0.244	1.25
Eu	334.08	9.161	0.19
Fe	1.51	0.074	3.47
La	18.56	)44.064	0.56
Pb	2.83	50.756	1.37
Li	2.32	0.024	7.77
Mg	0.53	0.010	1.67
Mn	0.78	0.015	0.78
Hg	3.85	0.050	22.16
Mo	1.46	0.049	1.38
Nd	3.76	1.363	3.47
Ni	2.76	0.076	5.60
P	1.23	0.316	7.98
K	1.94	0.990	7.83
Sm	9.57	9.797	0.60
Se	1.43	0.612	5.86
Si	3.31	0.765	7.69
Ag	299.63	10.081	0.77
Na	2.97	0.401	6.47
Sr	2.59	0.016	3.89
S	0.66	0.166	6.76
Ta	2.78	0.357	4.41
Tl	5.57	6.799	1.35
Th	10.90	49.608	0.61
Sn	1.15	0.134	5.17
Ti	2.87	0.071	2.83
W	1.05	0.119	9.34
U	8.57	53.012	0.72
V	5.61	0.283	1.11
Zn	2.46	0.018	3.88
Zr	3.61	0.214	3.46

ICP Analysis - March 30, 1990 LMCS Check Standard

Sample name : 77C11E
Sample code 1 : SST3
Programme : SST 30-Mar-90 14:47:30

NAME	MV INT	CONCEN	RSD
Al	26.83	49.773	0.57
Sb	0.47	1.881	7.53
As	73.53	52.658	1.55
Ba	2.57	0.039	5.00
Be	302.44	9.880	0.63
Bi	3.99	1.281	2.55
B	4.78	0.057	10.38
Cd	2.05	0.036	10.65
Ca	0.96	0.020	1.05
Ce	3.16	1.004	8.34
Cr	1.05	0.082	7.31
Co	0.22	0.303	14.24
Cu	2.23	0.096	5.12
Eu	2.43	0.017	7.87
Fe	1.49	0.071	6.30
La	0.30	0.075	8.12
Pb	0.26	0.522	5.73
Li	2.40	0.030	9.99
Mg	0.47	0.007	2.87
Mn	0.90	0.022	2.82
Hg	350.49	26.454	2.21
Mo	333.44	51.022	1.29
Nd	3.35	0.886	11.74
Ni	6.90	0.551	2.79
P	66.13	47.916	1.93
K	2.03	1.295	9.77
Sm	3.04	1.013	8.14
Se	28.83	50.466	1.22
Si	82.52	41.515	1.72
Ag	17.39	0.374	2.12
Na	3.30	0.617	6.59
Sr	2.54	0.014	6.91
S	45.53	48.720	0.78
Ta	124.50	49.379	1.52
Tl	29.24	50.265	1.01
Th	0.92	1.506	4.80
Sn	1.53	0.299	3.05
Ti	615.58	47.658	0.85
W	33.00	21.520	2.32
U	4.55	19.387	3.93
V	121.76	10.033	0.34
Zn	3.46	0.049	2.40
Zr	198.26	48.430	0.93

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Perkin-Elmer
Procedure/Rev	LA-355-131/A-2
Technologist	J. A. Hopkins
Date	March 15, 1990
Temperature	70 F
Starting Time	0900
Ending Time	1000
Chemist	R. K. Fuller

Arsenic Analysis

Acid Digestion

	Description	Lab ID
1	Initial LMCs Check Std.	F0951
2	Reagent Blank	F0952
3	Sample Composite 8	F0953
4	Duplicate Sample Composite 8	F0954
5	Spike Composite 8	F0955
6	LMCS Check Std.	F0956
7	Sample Composite 7	F0989
8	Duplicate Sample Composite 7	F0990
9	Spike Composite 7	F0991
10	LMCS Check Std.	F0992
11	Reagent Blank Composite 5	F0910

	Description	Lab ID
12	Sample Composite 5	F0911
13	Duplicate Sample Composite 5	F0912
14	Spike Composite 5	F0913
15	Final LMCS Check Std.	F0914
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	58C11BR/35 uL			35 mL
Spike	58C11BR/35 uL	F0989/100 uL		35 mL

SST-102 Rev. I 10/2/90 Interim

Single Shell Tank
Calibration Record

Analyte:	As		
Procedure:	LA-355-131	Revision:	A-2
Instrument:	Perkin-Elmer AA	Property Number:	WA77479
Technologist:	J. A. Hopkins	Payroll Number:	6A543
Date:	March 15, 1990		

Calibration Standard ID: 38C9-B

Analyte Concentration: 1.00 PPM

Type of Calibration: Linear Regression

Aliquot	Weight	Instrument Reading Units= mm
0	0	2
25 ul	25 ng	43
50 ul	50 ng	82
75 ul	75 ng	116

Comments:

SST-103 Rev. A 9/25/90 Interim

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Perkin-Elmer
Procedure/Rev	LA-325-102/A-1
Technologist	J. Hopkins
Date	February 20, 1990
Temperature	70 F
Starting Time	0800
Ending Time	1100
Chemist	R. K. Fuller

Mercury Analysis

Acid Digestion

	Description	Lab ID
1	Initial LMCS Check Std.	F0987
2	Reagent Blank	F0988
3	Sample Composite 7	F0989
4	Duplicate Sample Composite 7	F0990
5	Spike Composite 7	F0991
6	Final LMCS Check Std.	F0957
7		
8		
9		
10		
11		

	Description	Lab ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	58C11BO/25 uL			25 mL
Spike	58C11BO/25 uL	F0989/1.0 mL		25 mL

SST-102 Rev. I 10/2/90 Interim

Single Shell Tank
Calibration Record

ANALYTE:	Hg		
PROCEDURE:	LA-325-102	REVISION:	A-1
INSTRUMENT:	Perkin-Elmer AA	PROPERTY NUMBER:	WA77479
TECHNOLOGIST:	J. A. Hopkins	PAYROLL NUMBER:	6A543
DATE:	February 22, 1990		

CALIBRATION STANDARD ID: 102C3U

ANALYTE CONCENTRATION: 1.008 ppm

TYPE OF CALIBRATION: Linear Regression

Aliquot	Weight	Instrument Reading Units= mm
0	0 ng	1
10 ul	10.08 ng	27
20 ul	20.16 ng	60
40 ul	40.32 ng	125

COMMENTS:

SST-103 Rev. A 9/25/90 Interim

Analytical Batch

Lab Segment Serial #: F0971

Customer ID: 000007

Instrument	Perkin-Elmer
Procedure/Rev	LA-365-131/A-3
Technologist	S.Riel
Date	March 29, 1990
Temperature	70 F
Starting Time	1430
Ending Time	1450
Chemist	R. K. Fuller

Selenium Analysis

Acid Digestion

	Description	Lab ID
1	Initial LMCS Check Std.	F0987
2	Reagent Blank	F0988
3	Sample Composite 7	F0989
4	Duplicate Sample Composite 7	F0990
5	Spike Composite 7	F0991
6	Final LMCS Check Std.	F0992
7		
8		
9		
10		
11		

	Description	Lab ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std.	58C11BU/35 uL			35 mL
Spike	58C11BU/35 uL	F0989/100 uL		35 mL

SST-102 Rev. I 10/2/90 Interim

Single Shell Tank
Calibration Record

ANALYTE:	Se		
PROCEDURE:	LA-365-131	REVISION:	A-3
INSTRUMENT:	Perkin-Elmer AA	PROPERTY NUMBER:	WA77479
TECHNOLOGIST:	Steve Riel	PAYROLL NUMBER:	6C280
DATE:	March 29, 1990		

CALIBRATION STANDARD ID: 102C3Z

ANALYTE CONCENTRATION: 1.00ppm

TYPE OF CALIBRATION: Linear Regression

Aliquot	Weight	Instrument Reading Units= mm
0	0	4.5
25 ul	25 ng	24.0
50 ul	50 ng	43.0
75 ul	75 ng	65.0

COMMENTS: 000007 - Customer ID

SST-103 Rev. A 9/25/90 Interim

25x cal STD

25x cal STD

4.0

OK BLK 14:50

32.0

992 Sample STD 35x 58CU/BU

28.5

992 Sample STD 35x 58CU/BU

28.5

991 sample 100x + spiked 35x 58CU/BU

4.5

990 DUP sample 100x

4.5

989 sample STD 100x

4.0

988 Sample BLK 100x

39.0

987 sample STD 35x (58CU/BU)

68.0

75x Cal STD

47.0

50x Cal STD

24.0

25x Cal STD

SE SRIEL

10mm
5mV

Cal STD 36CG-B

3-29-90

APPENDIX A
ANALYTICAL ANALYSIS CARDS

UNDIGESTED SAMPLE ANALYSIS

APPENDIX A

Serial No.	Sample Point	Date	Time Issued	Priority
F 971.-5003	SEG.COMP#3	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HOMOGZT	LI-000-200	NONE	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
Homogenization Complete
Jar# 390
WHC N 313 4 pg 23

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
61300 68090				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 2/6/90
Time Completed:
Lab Unit Mgr:

54-8800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 971.-5000	SEG.COMP#3	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
APPR/OTR	LI-000-200	NONE	WB75L	0

Sample Size: ?

Core composite

Customer ID: 000007

Remarks, Calculations, Results:
A. JAR ID# 390
B. JAR TARE WT. 228.5g
C. JAR TOTAL WT. 376.5g
D. C-B= 148g.
E. EST. VOL./LENGTH
F. VISUAL REMARKS

WHC N 313 4 pg 23

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
61300 68090				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 2/6/90
Time Completed:
Lab Unit Mgr:

54-8800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 971.-5002	SEG.COMP#3	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PRT-SIZE	LI-000-200	NONE	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
PARTICLE SIZE DISTRIBUTION

analysis unnecessary

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date:
Time Completed:
Lab Unit Mgr:

54-8800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 971.-5001	SEG.COMP#3	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
~~APPR~~ Semi SAMP	LI-000-200	NONE	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE #265 10.47 gm. 250 mr/hr

Sent to PNL

WHC N 313 4

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
61300 68090				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 2/6/90
Time Completed:
Lab Unit Mgr:

54-8800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 971.-1831	SEG.COMP#3	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
DSC	LA-514-112	EXOTHERMS	E21D1	0

Sample Size: ?

Customer ID: 00007

Remarks, Calculations, Results:

bottle #268

3.02 Mg

dry, dark brown with white pieces; pulverized

see attached (1)

event	begin	peak	end	cal/gm (+ = endo)
H_2O/NPH loss	< 50°	78°	102°	> +245
decomp./fuel loss	238°	313°	357°	+170.3
decomp./fuel loss	357°	> 500°	> 500°	+ —

sample did not fuse

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
TJB 54165				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
3/13/90		DMS

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 971.-5080	SEG.COMP#3	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TGA	LI-000-200	NONE	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:

Bottle # 268

7.90 mg

dry, dark brown with white pieces; pulverized

see attached (1)

event	begin	peak	end	% of sample
H_2O/NPH loss	< 40°	80°	125	5.98 %
decomp. (endothermic)	223°	325°	350°	17.1 %
total to 500°	< 40°	> 500°	> 500°	31.01 %

sample did not fuse

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
TJB 54165				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
3/13/90		DMS

54-6800-061 (R-10-83)

pH Analysis of Solid Sample

Serial No	Sample Point	Date	Time Issued	Priority
F 972.-5115	SEG.COMP#4	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-103	NONE	WB75L	0

Sample Size: ? 2.360g / 2.360 ml

Customer ID: 000007

Remarks, Calculations, Results:
pH 12.99
SAMPLE TEMP 22.9

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC269				RE Bennett
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 974.-5515	SEG.COMP#6	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-103	% RECOVERY	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
pH FOUND 10.02
STD ID 12011
SAMPLE TEMP 23.0

100.2%

10.02/10.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC269				RE Bennett
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 970.-5315	SEG.COMP#2	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-103	NONE	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK
22.1°C

6.72

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC269				RE Bennett
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 971.-5015	SEG.COMP#3	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-103	NONE	WB75L	0

Sample Size: ? 2.488g / 2.488 ml

Customer ID: 000007

Remarks, Calculations, Results:
pH 12.33
SAMPLE TEMP 22.9

#264

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC269				RE Bennett
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 969.-5515	SEG.COMP#1	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
pH	LA-212-103	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 1 mL	000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
pH FOUND 10.07
STD ID 72071
SAMPLE TEMP 22.7

10.07/10.00 = 100.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC269				RESmith
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
2-8-90				

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 972.-5110	SEG.COMP#4	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H2O	LA-564-101	%	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

G. 22.1654
T. 21.2983
W1 21.9241
W2 21.9233

27.83%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				R E Bennett
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 974.-5510	SEG.COMP#6	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H2O	LA-564-101	% RECOVERY	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 11C11 AH

56.48 96.5%
22.8641 G. 22.5789
21.5538 T. 21.2049 56.94%
57.40 22.1120 W1 21.8029
22.1076 W2 21.7954 58.98

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				R E Bennett
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 971.-5010	SEG.COMP#3	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H2O	LA-564-101	%	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
268

G. 22.7192
T. 21.8158
W1 22.5043
W2 22.5036

23.79%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				R E Bennett
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 970.-5710	SEG.COMP#2	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H2O	LA-564-101	%	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

.006
21.6018 G. 21.7077
.0067 21.6018 T. 21.7077
21.5951 W1 21.7017 -.0064
21.5949 W2 21.7016
-6.4 mg

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				R E Bennett
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

54-6800-061 (R-10-83)

Percent Water Analysis

Serial No.	Sample Point	Date	Time Issued	Priority
F 769.-5510	SEG.COMP#1	2- 7-90	10:40	25

Determination	Method/Standard	Result Units	Charge Code	Remarks
% H2O	LA-564-101	% RECOVERY	WB75L	0

Sample Size
?

Customer ID
000022

Remarks, Calculations, Results
LMCS CHECK SAMPLE
LMCS ID 112114H

56.65
96.880
57.08
58.08

22.9546 G
21.5778 T
22.1891 W1
22.1815 W2
22.46 04
21.0752
21.6771
21.6719

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Key
2-8-90		

54-8600-081 (R-10-87)

Serial No	Sample Point	Date	Time Issued	Priority
F 972.-5197	SEG.COMP#4	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	PPM	E21D1	0

Sample Size: ? 0.0244g Sample in 25ml used 2ml DF=12.5

Customer ID: #7

Remarks, Calculations, Results:
DUPLICATE SAMPLE
peak Hgt. = 11mm

$$\frac{(2.47ng)(12.5)}{24.4mg} = 1.26ppm$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Lelane Myers				RK Fuller 8-7-90
Hrs 6C823	Hrs	Hrs	Hrs	Hrs

Date: ~~7-18-90~~ 7-17-90 | Time Completed | Lab Unit Mgr

54-6800-081 (R-10-63)

Serial No	Sample Point	Date	Time Issued	Priority
F 974.-5597	SEG.COMP#6	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	% RECOVERY	E21D1	0

Sample Size: ? .025ml

Customer ID: #7

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 58C11-CE
peak Hgt = 75mm

$$27.59/25ml = 1.09/1.25 = 88.2\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Lelane Myers				RK Fuller 8-7-90
Hrs 6C823	Hrs	Hrs	Hrs	Hrs

Date: 7-17-90 | Time Completed | Lab Unit Mgr

54-6800-081 (R-10-63)

Serial No	Sample Point	Date	Time Issued	Priority
F 971.-5097	SEG.COMP#3	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	PPM	E21D1	0

Sample Size: ? 0.0136g Sample is 25ml Used 2ml DF=12.5

Customer ID:

Remarks, Calculations, Results:
Sample peak Hgt = 17mm

$$\frac{(4.82ng)(12.5)}{13.6mg} = 4.43ppm$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Lelane Myers				RK Fuller 8-7-90
Hrs 6C823	Hrs	Hrs	Hrs	Hrs

Date: ~~7-18-90~~ 7-17-90 | Time Completed | Lab Unit Mgr

54-6800-081 (R-10-63)

Serial No.	Sample Point	Date	Time Issued	Priority
F 973.-5297	SEG.COMP#5	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	% RECOVERY	E21D1	0

Sample Size: ? 0.0136g is 25ml Used 2ml + 0.015ml LMCS DF=12.5

Customer ID:

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 58C11-CE
SPIKE VOLUME 0.015ml
peak Hgt = 49mm

$$17.35ng - \left[4.82\left(\frac{0.0136}{0.0136}\right)\left(\frac{12.5}{12.5}\right)\right]$$

$$12.53ng/15ml = 0.8355/1.25 = 66.8\% \text{ Recovery}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Lelane Myers				RK Fuller 8-7-90
Hrs 6C823	Hrs	Hrs	Hrs	Hrs

Date: 7-17-90 | Time Completed | Lab Unit Mgr

54-6800-081 (R-10-63)

Serial No.	Sample Point	Date	Time Issued	Priority
F 969.-5397	SEG.COMP#1	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	% RECOVERY	E21D1	0

Sample Size	Customer ID
? .025 ml	#7

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID SBCU-CE
peak Hgt = 85 mm

31.45/25ml = 1.26/1.25 = 101.6%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Helene Myers				RK Fuller 8-2-90
Hrs	Hrs	Hrs	Hrs	Hrs
66823				
Date	Time Completed	Lab Unit Mgr		
7-16-90				

54-6300-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 970.-5397	SEG.COMP#2	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	PPM	E21D1	0

Sample Size	Customer ID
? 1ml	#7

Remarks, Calculations, Results:

REAGENT BLANK
peak Hgt = 1mm <10ng

<10ng / 1000ml = 0.0x10^-2 ppm

~~18.09~~ 2nd / ~~1000ml~~ 2nd = <~~0.11E-3~~ ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
66823				RK Fuller 8-2-90
Hrs	Hrs	Hrs	Hrs	Hrs
Helene Myers				
Date	Time Completed	Lab Unit Mgr		
7-17-90				

54-6300-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 973.-5278	SEG.COMP#5	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CN	LA-695-101	% RECOVERY	WB75L	0

Sample Size: ? .4042g

Customer ID: 000007

Remarks, Calculations, Results:
SPIKED SAMPLE
SPIKE ID. 75C11-C
SPIKE VOL. 100-10-1mL

ABS .732

$$\frac{[(.732-.018)-.016827]}{.076317} = 9.135 \quad \frac{-(-.04)}{9.97} \times 100 = 93.8\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohen				
Date	Time Completed	Lab Unit Mgr		
3-7-90				

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 974.-5578	SEG.COMP#6	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CN	LA-695-101	% RECOVERY	WB75L	0

Sample Size: ? 100uL-10-1mL

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 75C11-C

ABS .718

$$\frac{[(.718-.018)-.016827]100}{(.076317)(1000)} = \frac{.8952}{.900} \quad 99.5\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohen				
Date	Time Completed	Lab Unit Mgr		
3-7-90				

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 971.-5078	SEG.COMP#3	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CN	LA-695-101	G/L	WB75L	0

Sample Size: ? .5013g

Customer ID: 000007

Remarks, Calculations, Results:

ABS .020

$$\frac{(.02-.018)-.016827}{.076317} = -1.94 \quad \# 263$$

$$\frac{<.5}{.5013} = .997 = <1 \text{ mg CN ug/g}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohen				
Date	Time Completed	Lab Unit Mgr		
3-7-90				

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 972.-5178	SEG.COMP#4	2- 7-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CN	LA-695-101	G/L	WB75L	0

Sample Size: ? .5069g

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

ABS .023

$$\frac{(.023-.018)-.016827}{.076317} = -.155 < .5$$

$$\frac{.5}{.5069} = .986 = <1 \text{ mg CN ug/g}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohen				
Date	Time Completed	Lab Unit Mgr		
3-7-90				

54-6600-061 (R-10-83)

Cyanide Analysis - Undigested Sample

Serial No.	Sample Point	Date	Time Issued	Priority
F 969.-5578	SEG.COMP#1	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CN	LA-695-101	% RECOVERY	WB75L	0

Sample Size: ? 100uL-10-1mL

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 756-11-C

ABS ~~.018~~ .728

$$\frac{[(.728 - .018) - .016827]100}{(.076317)(1000)} = \frac{.9083}{.900}$$

100.9%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80027				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohen				
Date	Time Completed	Lab Unit Mgr		
3-7-90				

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 970.-5378	SEG.COMP#2	2- 7-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CN	LA-695-101	G/L	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

ABS .018

~~0.349~~ 0.349 RLB

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohen				
Date	Time Completed	Lab Unit Mgr		
3-7-90				

54-6800-061 (R-10-83)

KOH FUSION ANALYSIS

APPENDIX A

Serial No	Sample Point	Date	Time Issued	Priority
F 977.-6000	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
FUSION	LA-549-141	G/L	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
GRAMS SAMPLE .6647
VOLUME ON COMPLETION 200 mL
3.02^{-3} g/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-12-90		

54-6800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 978.-6100	SEG.COMP#10	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
FUSION	LA-549-141	G/L	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE ANALYSIS
GRAMS SAMPLE .7142
VOLUME ON COMPLETION 200 mL
~~3.02^{-3} g/ml~~ 3.57^{-3} g/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-12-90		

54-6800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 976.-6300	SEG.COMP#8	2- 7-90	10:42	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
FUSION	LA-549-141	G/L	WB75L	0

Sample Size: ? 200 mL

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-12-90		

54-6800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 979.-6225	SEG.COMP#11	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 100-10-500

Customer ID: 000007

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 102844
SPIKE VOLUME 10 ml

$$\frac{1.905^{1} - 4.06\times10^{-1}}{(202)(10)} \quad \frac{9.19\times10^{-3}}{1.0022\times10^{-2}} = 91.7\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-14-90		SEH

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 980.-6525	SEG.COMP#12	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10 ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 102844

95.5%

$$9.5702^{-3} / 1.0021^{-2}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-14-90		SEH

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 977.-6025	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	uCI/L	WB75L	0

Sample Size: ? 100-10-500

Customer ID: 000007

Remarks, Calculations, Results:

4.96 uCi/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-14-90		SEH

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 978.-6125	SEG.COMP#10	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	uCI/L	WB75L	0

Sample Size: ? 100-10-500

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

7.54 uCi/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-14-90		SEH

54-6600-061 (R-10-83)

14 2" 2-14-90 VR

F 78-1225

438 / 10 - .7

460 / 10 -

Alpha Calculation by VR on 02-14-1990 at 14:53:41
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 1 mL Dilution : 202

Mount # 1

438 / 10 - 0.7 = 1.8578E+01 uCi/L alpha

Mount # 2

460 / 10 - 0.7 = 1.9526E+01 uCi/L alpha

14 2" 2-14-90 VR

F 980-6525

486 / 10 - .7

425 / 10 -

Alpha Calculation by VR on 02-14-1990 at 14:19:45
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

486 / 10 - 0.7 = 1.0221E-02 uCi/L alpha

Mount # 2

425 / 10 - 0.7 = 8.9194E-03 uCi/L alpha

14 2" 2-14-90 VR

F 977-6025

20 / 10 - .7

17 / 10 -

Alpha Calculation by VR on 02-14-1990 at 13:35:45
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 1 mL Dilution : 202

Mount # 1

20 / 10 - 0.7 = 5.6034E-01 uCi/L alpha

Mount # 2

17 / 10 - 0.7 = 4.3103E-01 uCi/L alpha

14 2" 2-14-90 VR

F 978-6125

30 / 10 - .7

19 / 10 -

Alpha Calculation by VR on 02-14-1990 at 13:34:58
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 1 mL Dilution : 202

Mount # 1

30 / 10 - 0.7 = 9.9138E-01 uCi/L alpha

Mount # 2

19 / 10 - 0.7 = 5.1724E-01 uCi/L alpha

Total Alpha Analysis on the Fusion Dissolution

Serial No	Sample Point	Date	Time Issued	Priority
F 975.-6525	SEG.COMP#7	2- 7-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10 ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 102 ~~1~~ 44

102.1%

$1.023^{-2} / 1.0021^{-2}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC269				
Mary Fraing	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-14-90		

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6325	SEG.COMP#8	2- 7-90	10:42	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	uCI/L	WB75L	0

Sample Size: ? 10 ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

~~4.45~~ $^{-4}$ neil

$<1.6 \times 10^{-4}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC269				
Mary Fraing	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-14-90		

54-6600-061 (R-10-83)

14 2" 2-14-90 VR

F 975-6325

$\frac{487}{10} - .7$

$\frac{486}{10} -$

Alpha Calculation by EMB on 02-14-1990 at 16:47:21
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{487}{10} - 0.7 = 1.0242E-02$ uCi/L alpha

Mount # 2

$\frac{486}{10} - 0.7 = 1.0221E-02$ uCi/L alpha

14 2" 2-14-90 VR

F 976-6325

$\frac{4}{10} - \cancel{.26}$ VR

$\frac{8}{10} - .7$

Alpha Calculation by VR on 02-14-1990 at 13:36:44
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{4}{10} - 0.7 < 1.3154E-04$ uCi/L alpha

Mount # 2

$\frac{8}{10} - 0.7 < 1.5770E-04$ uCi/L alpha

9-10

Serial No.	Sample Point	Date	Time Issued	Priority
F 979.-6220	SEG.COMP#11	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ~~500~~ 100-10-500 + 10ml std

Customer ID: 000007

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 102844
SPIKE VOLUME 10ml

Please Count on 13, 14 or 15

150.48%

$\frac{2.268^{3} - 1.85\times10^{-3}}{(202)(10)} = \frac{2.07\times10^{-1}}{1.3756^{-1}}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Frang	Hrs	Hrs	Hrs	Hrs
Date 2-14-90	Time Completed	Lab Unit Mgr		

54-6800-061 (R-10-83)

7-8

Serial No.	Sample Point	Date	Time Issued	Priority
F 980.-6520	SEG.COMP#12	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 102844

Please Count on 13, 14 or 15

1.3886^{-1} / 1.3751^{-1} 100.98%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Frang	Hrs	Hrs	Hrs	Hrs
Date 2-14-90	Time Completed	Lab Unit Mgr		

54-6800-061 (R-10-83)

3-4

Serial No.	Sample Point	Date	Time Issued	Priority
F 977.-6020	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	uCI/L	WB75L	0

Sample Size: ? ~~500~~ 100-10-500

Customer ID: 000007

Remarks, Calculations, Results:

Please Count on 13, 14 or 15

1.85^{3} neill

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Frang	Hrs	Hrs	Hrs	Hrs
Date 2-14-90	Time Completed	Lab Unit Mgr		

54-6800-061 (R-10-83)

5-6

Serial No.	Sample Point	Date	Time Issued	Priority
F 978.-6120	SEG.COMP#10	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	uCI/L	WB75L	0

Sample Size: ? ~~500~~ 100-10-500

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

Please Count on 13, 14 or 15

2.28^{3} neill

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Frang	Hrs	Hrs	Hrs	Hrs
Date 2-14-90	Time Completed	Lab Unit Mgr		

54-6800-061 (R-10-83)

14 2 2-14-90VR

F 979-6220

202E2

69784 / 10 - 26

67000 / 10 -

Beta Calculation by VR on 02-14-1990 at 14:53:39
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 1 mL Dilution : 202

Mount # 1

69784 / 10 - 26.0 = 2.3138E+03 uCi/L beta

Mount # 2

67000 / 10 - 26.0 = 2.2212E+03 uCi/L beta

14 2" 2-14-90VR

F 980-6520

8723 / 10 - 26

8653 / 10 -

Beta Calculation by VR on 02-14-1990 at 14:19:45
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

8723 / 10 - 26.0 = 1.3944E-01 uCi/L beta

Mount # 2

8653 / 10 - 26.0 = 1.3828E-01 uCi/L beta

14 2" 2-14-90VR

F 977-6020

DF 202E2

56845 / 10 - 26

55079 / 10 -

Beta Calculation by VR on 02-14-1990 at 13:35:43
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 1 mL Dilution : 202

Mount # 1

56845 / 10 - 26.0 = 1.8832E+03 uCi/L beta

Mount # 2

55079 / 10 - 26.0 = 1.8244E+03 uCi/L beta

14 2" 2-14-90VR

F 978-6120

DF 202E2

68954 / 10 - 26

68562 / 10 -

Beta Calculation by VR on 02-14-1990 at 13:34:56
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 1 mL Dilution : 202

Mount # 1

68954 / 10 - 26.0 = 2.2862E+03 uCi/L beta

Mount # 2

68562 / 10 - 26.0 = 2.2732E+03 uCi/L beta

1-2

Serial No.	Sample Point	Date	Time Issued	Priority
F 975.-6520	SEG.COMP#7	2- 7-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 102844 Please count on 13,14 or 15
K7

1.423^{-1} / 1.3751^{-1} 103.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-14-90		SEH

54-6800-061 (R-10-83)

1-2

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6320	SEG.COMP#8	2- 7-90	10:42	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	uCI/L	WB75L	0

Sample Size: ? 10ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK Please Count on 13,14 or 15

<1.3 x10^{-3} ~~9.35~~ 9c neil

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-14-90		SEH

54-6800-061 (R-10-83)

14 2 VR 2-14-90

$\frac{8882}{10} - 26$

$\frac{8912}{10}$ –

F-875-6520

Beta Calculation by EMB on 02-14-1990 at 16:47:17
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{8882}{10} - 26.0 = 1.4206E-01$ uCi/L beta

Mount # 2

$\frac{8912}{10} - 26.0 = 1.4255E-01$ uCi/L beta

14 2" 2-14-90 VR

$\frac{297}{10} - 26$

$\frac{257}{10}$ –

F 976-6320

Beta Calculation by VR on 02-14-1990 at 13:36:42
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{297}{10} - 26.0 < 1.2512E-03$ uCi/L beta

Mount # 2

$\frac{257}{10} - 26.0 < 6.1900E-04$ uCi/L beta

3124

Serial No.	Sample Point	Date	Time Issued	Priority
F 970.-6130	SEG.COMP#10	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 100λ

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE
Co^{60} <5.39^{-1} uCi/ml
Cs^{137} 6.21^{1} uCi/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				SU
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date: 2-13-90 | Time Completed | Lab Unit Mgr

54-6800-061 (R-10-83)

2011

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6330	SEG.COMP#8	2- 7-90	10:42	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK
Co^{60} <4.65^{-2} uCi/ml
Cs^{137} <5.19^{-2} uCi/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				SU
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date: 2-13-90 | Time Completed | Lab Unit Mgr

54-6800-061 (R-10-83)

2013

Serial No.	Sample Point	Date	Time Issued	Priority
F 980.-6530	SEG.COMP#12	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? 500λ

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 89849
Co^{60} 2.24^{1}/2.1976^{1} 101.9%
Cs^{137} 3.91^{1}/3.8046^{1} 102.8%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				SU
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date: 2-13-90 | Time Completed | Lab Unit Mgr

54-6800-061 (R-10-83)

3123

Serial No.	Sample Point	Date	Time Issued	Priority
F 977.-6030	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 100λ

Customer ID: 000007

Remarks, Calculations, Results:
Co^{60} <5.39^{1} uCi/ml
Cs^{137} 5.48^{1} uCi/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				SU
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date: 2-13-90 | Time Completed | Lab Unit Mgr

54-6800-061 (R-10-83)

2010

Serial No	Sample Point	Date	Time Issued	Priority
F 975.-6530	SEG.COMP#7	2- 7-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? 500 λ

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 898.44

Co^{60} 2.29'/2.1976' 104.2%

Cs^{137} 3.94'/3.8046' 103.6%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Franz	Hrs	Hrs	Hrs	Hrs
Date 2-13-90	Time Completed	Lab Unit Mgr		

54-5600-061 (R-10-83)

3125

Serial No	Sample Point	Date	Time Issued	Priority
F 979.-6234	SEG.COMP#11	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? 100 λ

Customer ID: 000007

Remarks, Calculations, Results:
SPIKE SAMPLE F970
SPIKE ID 898.44
SPIKE VOLUME 500λ

.0237 - .0055 = .0182×2000

~~1.12² 548⁰ = 1.361²~~ 3.64'/3.81' 95.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Franz	Hrs	Hrs	Hrs	Hrs
Date 2-13-90	Time Completed	Lab Unit Mgr		

54-5600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 978.-6140	SEG.COMP#10	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	G/L	WE75L	0

Sample Size: ? 100-10-25

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

Smpl: .22
Smpl + Spk: .51

Spk vol: 100 λ
Spk ID: 5.113-5

$$\frac{(.22)(5.113^{-5})(.1)(4040)}{(\frac{5.615}{5.51})(.51-.22)} = \cancel{1.57^{-2}}\ g/l$$

1.52×10^{-2}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Trang	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90			DMS

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 980.-6540	SEG.COMP#12	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	% RECOVERY	WB75L	0

Sample Size: ? 100-10-100

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 58B38

Spk vol: 100 λ
Spk ID: 5.62-4

Smpl: .14
Smpl + Spk: .40

$$(.14)(5.62\times10^{-4})(.1)(1010)$$

$$\left(\frac{5.62}{5.4}\right)(.40-.14)$$

99.5%

2.97×10^{-2}

2.99^{-2}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Trang	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90			DMS

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 977.-6040	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	G/L	WB75L	0

Sample Size: 100-10-25

Customer ID: 000007

Remarks, Calculations, Results:

Smpl: .17
Smpl + Spk: .46

Spk vol: 100 λ
Spk ID: 5.113-5

$$\frac{(.17)(5.113^{-5})(.1)(4040)}{(\frac{5.615}{5.529})(.46-.17)} = \cancel{1.26}\ g/l$$

1.18×10^{-2}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Trang	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90			DMS

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6340	SEG.COMP#8	2- 7-90	10:42	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	G/L	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

Blk: .01
Blk + Spk: .30

Spk vol: 100 λ
Spk ID: 5.113-5

$$\frac{(.01)(5.113^{-5})(.1)(1)}{(\frac{5.5}{5.5})(.30-.01)} = \cancel{1.76^{-7}}\ g/l$$

3.59×10^{-7}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Trang	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90			DMS

54-6600-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 975.-6540	SEG.COMP#7	2- 7-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100-10-100	000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 58038

Spk vol: 100 λ
Spk ID: 5.62-4

99.5%

Std: .14
Std+Spk: .40

$(.14)(5.62^{-4})(1000)(.1) = 2.97\times10^{-2}$

$(\frac{5.}{56})$ .40 - .14

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269 Mary Fralz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90			DMS

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 978.-6150	SEG.COMP#10	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? 100-10 E 500-10

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J White				
Date	Time Completed	Lab Unit Mgr		
4-20-90				

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 979.-6250	SEG.COMP#11	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	WB75L	0

Sample Size: ? 500-10 E 500-11

Customer ID: 000007

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 78C11J
SPIKE VOLUME 1mL

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J White				
Date	Time Completed	Lab Unit Mgr		
4-20-90				

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6350	SEG.COMP#8	2- 7-90	10:42	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? ~~Direct~~ 500-10

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J White				
Date	Time Completed	Lab Unit Mgr		
4-20-90				

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 977.-6050	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? 100-10 E 500-10

Customer ID: 000007

Remarks, Calculations, Results:

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J White				
Date	Time Completed	Lab Unit Mgr		
4-20-90				

54-6800-081 (R-10-83)

33 3985

Serial No	Sample Point	Date	Time Issued	Priority
F 1027.-6281	SEG.COMP#11	2-12-90	12:43 26	

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 1mL + 50λ SPIKE 10843-B

Customer ID: 000015

Remarks, Calculations, Results:
SPIKED SAMPLE F1032 STD 16343
1200λ CON HNO_3
"AEA-480 MIN" ATTACH PRINT OUT
1.0692 ~~107.6%~~
1.06 neil
109.9%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90			JMS

54-6800-081 (R-10-83)

#2 2764 8mo

Serial No	Sample Point	Date	Time Issued	Priority
F 1028.-6581	SEG.COMP#12	2-12-90	12:43 26	

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 100-10-100 + 50λ SPIKE 10843-B

Customer ID: 000015

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 16343
"AEA-480 MIN" ATTACH PRINT OUT
9.976
9.9389 102.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90			JMS

54-6800-081 (R-10-83)

4.2 6045

Serial No	Sample Point	Date	Time Issued	Priority
F 977.-6081	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 250 + 50λ SPIKE 10843-B

Customer ID: 000007

Remarks, Calculations, Results:
380λ CON HNO_3
5.51 neil

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90			JMS

54-6800-081 (R-10-83)

4.4 8094

Serial No.	Sample Point	Date	Time Issued	Priority
F 978.-6181	SEG.COMP#10	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 250 + 50λ SPIKE 10843-B

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE
380λ CON HNO_3
7.44 neil

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90			JMS

54-6800-081 (R-10-83)

F 978.-6181

F 977.-6081

F 1028.-6581

F 1027.-6281

3.4 ~~3742~~ 4738

Serial No.	Sample Point	Date	Time Issued	Priority
F 975.-6581	SEG.COMP#7	2- 7-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 100 to 100 + 50l SPIKE 10343B

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 16643

1.12²/9.7329' 115.1%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90		GW	MMS

54-6600-061 (R-10-83)

4.1 5610

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6581	SEG.COMP#8	2- 7-90	10:42	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1mL + 50l SPIKE 10343-B

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK
100% CONHNO3

2.45⁻² neile

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
uB598/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90		GW	MMS

54-6600-061 (R-10-83)

Plutonium Analysis of the Fusion Dissolution

#1 2-21-90 @ 1755 BM

$\frac{1077}{5} - 8$

#2 2-21-90 @ 1355 BM

$\frac{657}{5} - 14$

F 975-6581

F 975-6381

*5 5627 8hrs

Serial No	Sample Point	Date	Time Issued	Priority
F 1033.-7282	SEG.COMP#17	2-12-90	12:48 26	

Determination	Method/Standard	Result Units	Charge Code	Reruns
Am241	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? ml + (STD 16843 100-10-1000 ml) + 100λ spike 9843 — Customer ID: 000015

Remarks, Calculations, Results: F1032

SPIKED SAMPLE

12000λ CON HNO_3

"AEA-480 MIN" ATTACH PRINT OUT

17.01 / 15.711 108.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90			BMS

54-6800-081 (R-10-83)

N 2769 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 1034.-7582	SEG.COMP#18	2-12-90	12:50 26	

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	% RECOVERY	WB75L	0

Sample Size: 100-10-1000 + 100λ spike 9843 — Customer ID: 000015

Remarks, Calculations, Results: KH

LMCS CHECK SAMPLE

LMCS ID 16843

"AEA-480 MIN" ATTACH PRINT OUT

16.99 / 15.711 108.1%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90			BMS

54-6800-081 (R-10-83)

4 4760 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 977.-6082	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 250 + 100λ SPIKE 9843 — Customer ID: 000007

Remarks, Calculations, Results: 380λ CON HNO_3

1.86^{-1} mrem

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90			BMS

54-6800-081 (R-10-83)

4.4 8114

Serial No.	Sample Point	Date	Time Issued	Priority
F 978.-6182	SEG.COMP#10	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 250 + 100λ SPIKE 9843 — Customer ID: 000007

Remarks, Calculations, Results:

DUPLICATE SAMPLE

380λ CON HNO_3

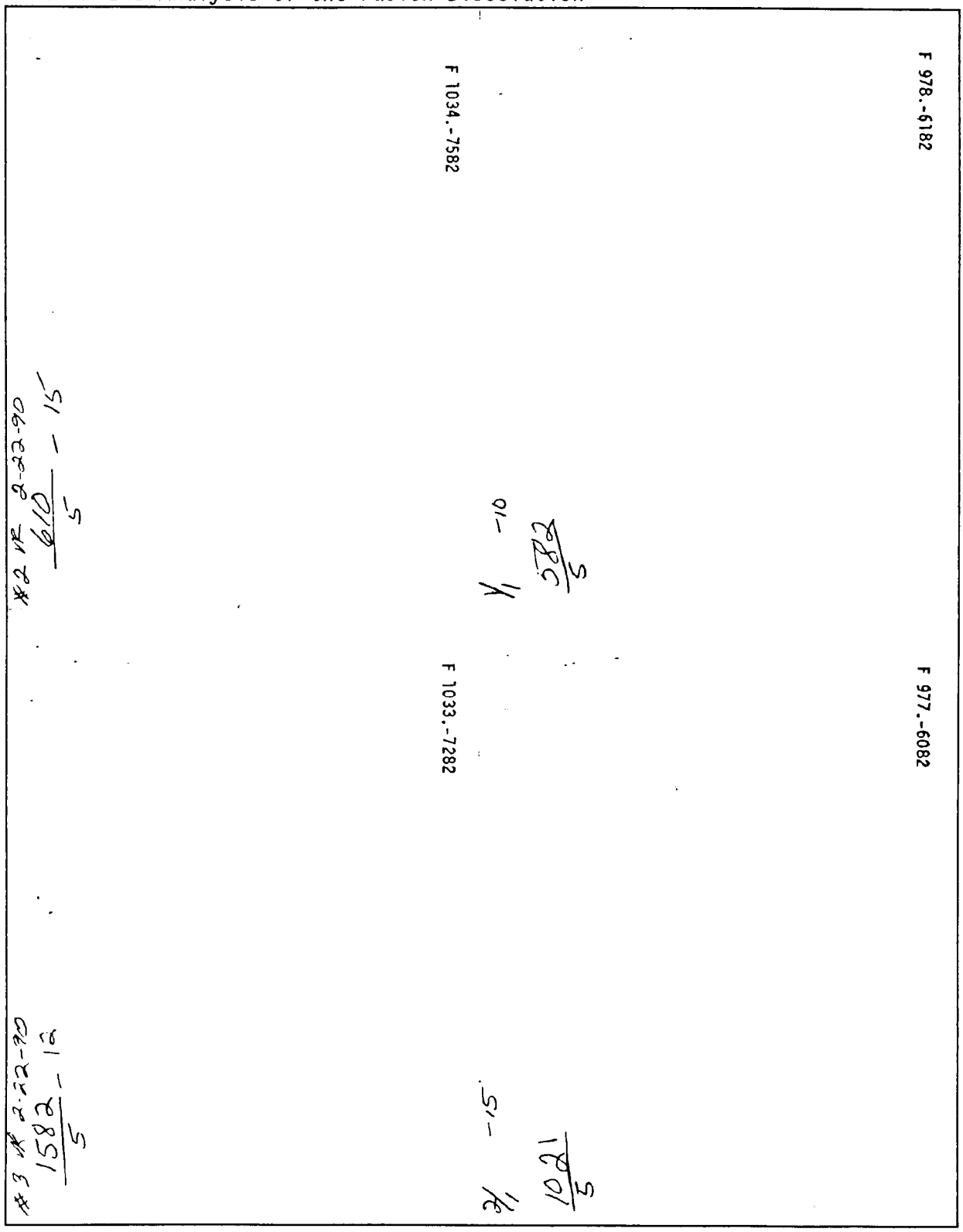
2.44^{-1} mrem

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90			BMS

54-6800-081 (R-10-83)

Americium 241 Analysis of the Fusion Dissolution



3 3001 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 975.-6582	SEG.COMP#7	2- 7-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100 -10-1mL +100λ SPIKE 9843	000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 16843

107.1%

16.82/15.711'

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6.8598/RH				SW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90		[signature]	DMS

54-6800-061 (R-10-83)

9 8116 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6582	SEG.COMP#8	2- 7-90	10:42	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size	Customer ID
? 1mL +100λ SPIKE 9843	000007

Remarks, Calculations, Results:
REAGENT BLANK
1200λ Co(NO3)3

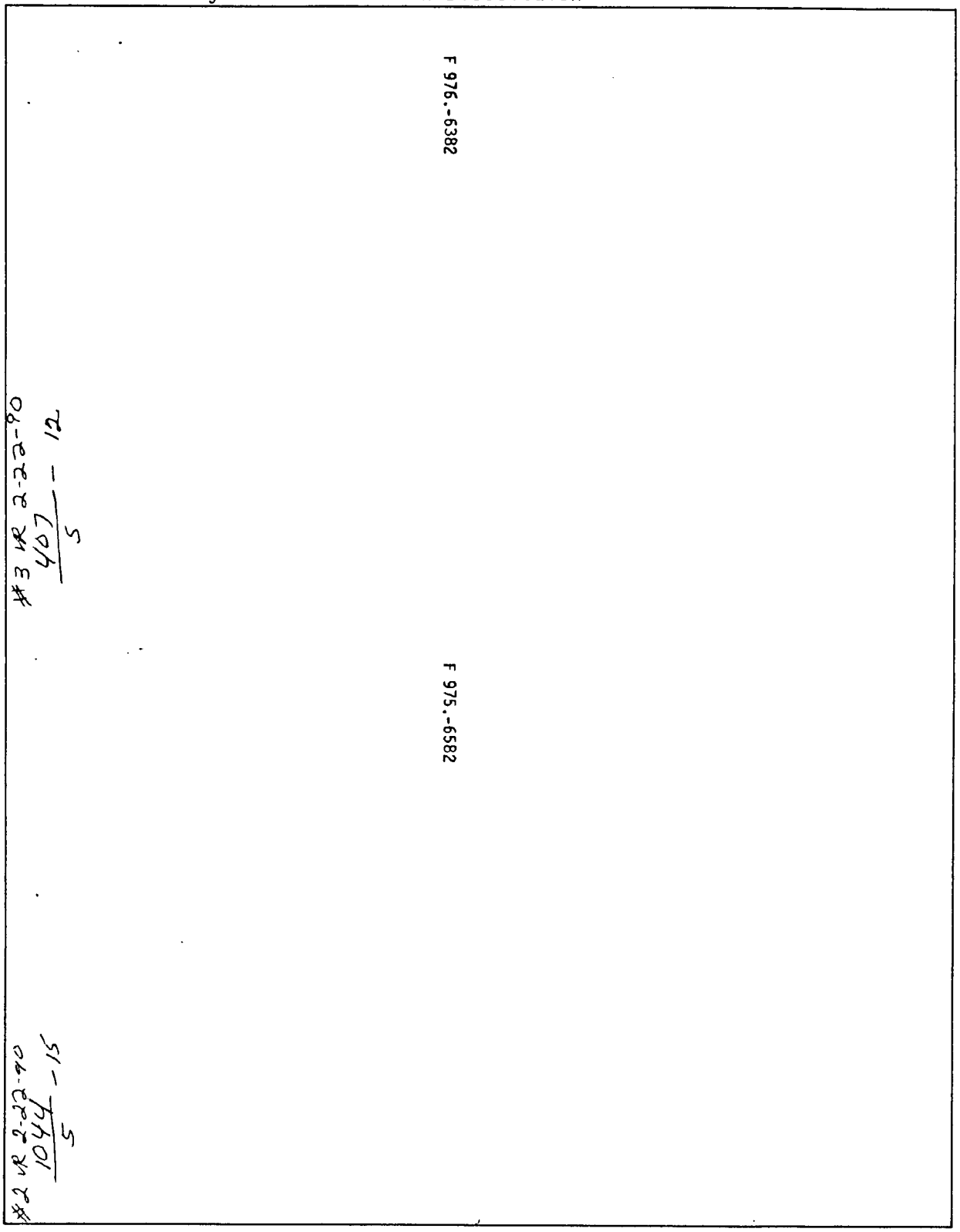
<3.52 -2 uCi/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6.8598/RH				SW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90		[signature]	DMS

54-6800-061 (R-10-83)

Americium 241 Analysis of the Fusion Dissoltuion



Serial No.	Sample Point	Date	Time Issued	Priority
F 979.-6283	SEG.COMP#11	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	% RECOVERY	WB75L	0

Sample Size: ? 250 mT500

Customer ID: 000007

Remarks, Calculations, Results:
SPIKED SAMPLE 550 100λ 148833
F 947
9.125 / 1.2811 E2
71.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-12-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 980.-6583	SEG.COMP#12	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	% RECOVERY	WB75L	0

Sample Size: ? 100λ mT500

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 148833
8.104 / 1.2811²
63.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-12-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 977.-6083	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	uCI/L	WB75L	0

Sample Size: ? 250 mT500

Customer ID: 000007

Remarks, Calculations, Results:
<1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-12-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 978.-6183	SEG.COMP#10	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	uCI/L	WB75L	0

Sample Size: ? 250 mT500

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE
<1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-12-90		

54-6800-061 (R-10-83)

Neptunium 241 Analysis of the Fusion Dissolution

#1 3-12-90 EMB F0977-6083

78/5 -7

#1 3-12-90 EMB F0978-6183

7/5 -7

#1 3-12-90 EMB F0979-6283

8476/5 -7

#1 3-12-90 EMB F0980-6583

753/5 -7

Serial No.	Sample Point	Date	Time Issued	Priority
F 897.-6583	SEG.COMP#7	1-24-90	8: 5	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100 ℓ m T 500	

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 148633

1.031²/1.2811² 80.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-12-90		

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 898.-6383	SEG.COMP#8	1-24-90	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	uCI/L	WB75L	0

Sample Size	Customer ID
? 250 ℓ m T 5 ml	000005

Remarks, Calculations, Results:

REAGENT BLANK

<1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-12-90		

54-6800-061 (R-10-83)

#1 3-12-90 EMB. FO897-6583

$\frac{9523}{5} \rightarrow$

$$\frac{(1907)(1000)(2)(3)(10)}{(.5)(222E^{6})}$$

#1 3-12-90 EMB FO898-6383

$\frac{67}{5} \rightarrow$

3,4

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6384	SEG.COMP#8	2- 7-90	10:43	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 100λ Tc^{99} spike
Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK 49B39
DK 20.0
D+S 2907.17
$< 1.83^{-2}$ neil

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6c916				
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-6-90	1110 3/8	

54-6800-081 (R-10-83)

1,2

Serial No.	Sample Point	Date	Time Issued	Priority
F 975.-6584	SEG.COMP#7	2- 7-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: ? 250λ + 100λ Tc^{99} spike
Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE 49B39
LMCS ID 68B39
116.0% K1
D 186.385
D+S 2864.28
$7.37^{-1} / 6.3521^{-1}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6c916				
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-6-90	3/8 1110	

54-6800-081 (R-10-83)

7,8

Serial No.	Sample Point	Date	Time Issued	Priority
F 978.-6184	SEG.COMP#10	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 100λ Tc^{99} spike
Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE 49B39
D 16.494 < 20.00
D+S 2845.72
$< 1.87^{-2}$ neil

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6c916				
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-6-90	8/8 1112	

54-6800-081 (R-10-83)

5/6

Serial No.	Sample Point	Date	Time Issued	Priority
F 977.-6084	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 100λ Tc^{99} spike
Customer ID: 000007

Remarks, Calculations, Results:
49B39
D 17.768 < 20.00
D+S 2835.31
$< 1.88^{-2}$ neil

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6c916				
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-6-90	3/8 1111	

54-6800-081 (R-10-83)

11,12

Serial No.	Sample Point	Date	Time Issued	Priority
F 980.-6584	SEG.COMP#12	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: ? 250λ + 100λ Tc^{99} spike

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 68B39 49B39 112.4% KT
Q 187.99
Q+S 2977.6 7.139^{-1}/6.3521^{-1}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C916				
Hrs	Hrs	Hrs	Hrs	Hrs
Sue Lai				

Date	Time Completed	Lab Unit Mgr	
3-6-90	3/8 1113		

54-6600-061 (R-10-83)

9,10

Serial No	Sample Point	Date	Time Issued	Priority
F 979.-6284	SEG.COMP#11	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: ? 1ml + 250λ std + 100λ Tc^{99} spike

Customer ID: 000007

Remarks, Calculations, Results:
SPIKED SAMPLE
49B39 114.7%
Q 190.9
Q+S 2966.18 7.287^{-1}/6.3521^{-1}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C916				
Hrs	Hrs	Hrs	Hrs	Hrs
Sue Lai				

Date	Time Completed	Lab Unit Mgr	
3-6-90	3/8 1112		

54-6600-061 (R-10-83)

6173

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6385	SEG.COMP#8	2- 7-90	10:43	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
1129	LA-378-103	uCI/L	WB75L	1

Sample Size: ? Customer ID: 000007

Remarks, Calculations, Results:

REAGENT BLANK
F198

RERUN

GROSS 2.0931
TARE 2.0844
NET .0087 / .0305

$\frac{(<9.18E^{-6})(1000)(1)}{.2853} = <3.22E^{-2}$ uCi/L

$<3.22\times10^{-2}$ uCi/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs 60823	Hrs. 5 81407	Hrs	Hrs	Hrs

Date 6/20/90 | Time Completed 6-21-90 | Lab Unit Mgr

54-5800-061 (R-10-83)

6172

Serial No.	Sample Point	Date	Time Issued	Priority
F 975.-6585	SEG.COMP#7	2- 7-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I-129	LA-378-103	% RECOVERY	WB75L	1

Sample Size: ? Customer ID: 000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 38846

RERUN

95.7%

GROSS 2.1153
TARE 2.0985
NET .0168 / .0305

$\frac{(3.26E^{-4})(1000)(1)}{.55082} = 5.918E^{-1}$ / .61816

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs 60823	Hrs. 5 81407	Hrs	Hrs	Hrs

Date 6-21-90 | Time Completed 6-21-90 | Lab Unit Mgr

54-5800-061 (R-10-83)

6176

Serial No.	Sample Point	Date	Time Issued	Priority
F 978.-6185	SEG.COMP#10	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	uCI/L	WB75L	1

Sample Size: ? Customer ID: 000007

Remarks, Calculations, Results

DUPLICATE SAMPLE

RERUN

GROSS 2.1195
TARE 2.1107
NET .0088 / .0305

$\frac{(<9.74E^{-6})(1000)(1)}{.2885} = <3.38E^{-2}$ uCi/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs 60823	Hrs. 5 81407	Hrs	Hrs	Hrs

Date 6-20-90 | Time Completed 6-21-90 | Lab Unit Mgr

54-5800-061 (R-10-83)

6174

Serial No.	Sample Point	Date	Time Issued	Priority
F 977.-6085	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	uCI/L	WB75L	1

Sample Size: ? Customer ID: 000007

Remarks, Calculations, Results:

RERUN

GROSS 2.1306
TARE 2.1214
NET .0092 / .0305

$\frac{(<7.80E^{-6})(1000)(1)}{.3016} = <2.59E^{-2}$ uCi/L

$<3.22\times10^{-2}$ uCi/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs 60823	Hrs. 5 81407	Hrs	Hrs	Hrs

Date 6-20-90 | Time Completed 6-21-90 | Lab Unit Mgr

54-5800-061 (R-10-83)

6178

Serial No.	Sample Point	Date	Time Issued	Priority
F 980.-6585	SEG.COMP#12	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I-129	LA-378-103	% RECOVERY	WB75L	1

Sample Size: ? [illegible]

Customer ID: 000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 38846

RERUN 90.3%

GROSS 2.1323
TARE 2.1176
NET .0147
.0205

$\frac{(2.69E^{-4})(1000)(1)}{.48197} = 5.58^{-1}$

6.1816E1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hrs 6.0823	Hrs .5 8.1407	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
6-21-90	6-21-90	[illegible]

LA-4800-081 (R-10-83)

6177

Serial No.	Sample Point	Date	Time Issued	Priority
F 979.-6285	SEG.COMP#11	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	% RECOVERY	WB75L	1

Sample Size: ? [illegible] + 1mL STD LMCS 38846

Customer ID: 000007

Remarks, Calculations, Results:

SPIKED SAMPLE
F977

RERUN

$\frac{(2.04E^{-4})(1000)(1)}{.3377} = 6.041E^{-1}$

6.1816E-1

GROSS 2.1203
TARE 2.1100
NET .0103

97.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[illegible]	[illegible]		[illegible]	
Hrs 6.0823	Hrs .5 8.1407	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
6-20-90	6-21-90	[illegible]

LA-4800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 977.-6086	SEG.COMP#9	2- 7-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	WB75L	0

Sample Size: ? 100-10-500 ¢ 1 ml Sr Carrier

Customer ID: RERUN

Remarks, Calculations, Results:

Time 1015 Date 4-18-90

#1 G 7.9565 T 7.8633 N .0932 .932

#26 T 8.0235 7.9274 N .0961 .961

8.79 uci/l 8.79×10^2 uCi/l

Analyst - 1: 6A543 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5

Hrs | Hrs | Hrs | Hrs | Hrs

J Hopkins

Date: 4-18-90 | Time Completed | Lab Unit Mgr

54-8600-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 978.-6186	SEG.COMP#10	2- 7-90	10:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	WB75L	0

Sample Size: ? 100-10-500 ¢ 1 ml Sr Carrier

Customer ID: RERUN

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Time of Sep 1010 Date Sep 4-18-90

#6 T 8.0871 7.9932 N .0938 .938

#26 T 7.9246 7.8308 N .0938 .938

8.79 uci/l 8.79×10^2 uCi/l

Analyst - 1: 6A543 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5

Hrs | Hrs | Hrs | Hrs | Hrs

J Hopkins

Date: 4-18-90 | Time Completed | Lab Unit Mgr

54-8600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 975.-6586	SEG.COMP#7	2- 7-90	10:42	28

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	WB75L	3

Sample Size: ? 1 ml 1 ml Sr Carrier

Customer ID: 106344

Remarks, Calculations, Results:

LMCS CHECK SAMPLE

LMCS ID

Sep time 1015 Date 4-18-90

#1 7.9913 G 7.9078 T ~~7.8623~~ N .0835 .835

#2 G 7.9434 T 7.8513 N .0921 .921

RERUN 15 / 1.381

102.5%

Analyst - 1: 6A543 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5

Hrs | Hrs | Hrs | Hrs | Hrs

J. Hopkins

Date: 4-18-90 | Time Completed | Lab Unit Mgr

54-8600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6386	SEG.COMP#8	2- 7-90	10:43	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	WB75L	3

Sample Size: (1 ml) ¢ 1 ml Sr Carrier

Customer ID: RERUN

Remarks, Calculations, Results:

REAGENT BLANK

Time Of Sep 1008 Date 4-18-90

#1 G 7.9404 T ~~7.8502~~ N .0902 .902

#2 7.9486 C 7.8623 T ~~7.9078~~ N .0863 .863

0.63 uci/l 6.36×10^{-2} uCi/l

Analyst - 1: 6A543 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5

Hrs | Hrs | Hrs | Hrs | Hrs

J Hopkins

Date: 4-18-90 | Time Completed | Lab Unit Mgr

54-8600-081 (R-10-83)

10/2 4-18-90 @ 1900 PM

ΔT = 8.75

1

202

1

① 37765 / 10 - 11

② 38777 / 10

Sr Calculation by DM on 04-18-1990 at 19:44:46
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 202 Method : 1

Mount # 1 Decay time = 8.75 hrs

37765 / 10 - 11.0 = 8.2110E+02 uCi/L strontium

881.0

.932

Mount # 2 Decay time = 8.75 hrs

38777 / 10 - 11.0 = 8.4517E+02 uCi/L strontium

877.4

.961

F0977-6086

10/2 4-18-90 @ 1925 PM

ΔT = 8.25

1

202

1

① 37271 / 10 - 11

② 38182 / 10

Sr Calculation by DM on 04-18-1990 at 19:42:27
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 202 Method : 1

Mount # 1 Decay time = 8.25 hrs

37271 / 10 - 11.0 = 8.1439E+02 uCi/L strontium

868.2

.938

Mount # 2 Decay time = 8.25 hrs

38182 / 10 - 11.0 = 8.3436E+02 uCi/L strontium

889.5

.938

F0978-6186

10/2 4-18-90 @ 1945 PM

ΔT = 9.50

F0975-6586

DF 1

MF 1

SS 1

① 11116 / 10 - 11

② 12301 / 10

Sr Calculation by AJ on 04-19-1990 at 10:03:31
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 9.5 hrs

11116 / 10 - 11.0 = 1.1793E+00 uCi/L strontium

1.412

.835

Mount # 2 Decay time = 9.5 hrs

12301 / 10 - 11.0 = 1.3863E+00 uCi/L strontium

1.4183

.921

10/2 4-18-90 @ 1925 PM

ΔT = 9.28

DF 1

MF 1

SS 1

① 639 / 10 - 11

② 626 / 10

Sr Calculation by AJ on 04-19-1990 at 10:02:49
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 9.28 hrs

639 / 10 - 11.0 = 5.6807E-02 uCi/L strontium

.0630

.902

Mount # 2 Decay time = 9.28 hrs

626 / 10 - 11.0 = 5.5411E-02 uCi/L strontium

.0642

.863

F0976-6386

Strontium 90 Analysis of the Fusion Dissolution

Serial No.	Sample Point	Date	Time Issued	Priority
F 980.-6586	SEG.COMP#12	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	WB75L	2

Sample Size: ? Lmd Sr Carrier

Customer ID: 106844

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID

#1 C 7.9753
T 7.8803
N .0950
.950

#2 C 7.4159
T 7.3214
N .0945
.943

Sep-7 1015 Date 4-18-90
1.4033 Zero
1.4098
101.6
102.1
1.381

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4
6854 3			
Hrs	Hrs	Hrs	Hrs
Date 4-18-90	Time Completed	Lab Unit Mgr	

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 979.-6286	SEG.COMP#11	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	WB75L	0

Sample Size: ? Lmd + 1m SR Carrier + 1ml std

Customer ID: 106844

Remarks, Calculations, Results:
SPIKED SAMPLE

#1 C 7.9740
T 7.8797
N .0943
.943

1.583 / #2 C 8.0468
1.381 T 7.9532
N .0936
.936

114.0%

Sep 1015 Date 4-18-90

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4
6854 3			
Hrs	Hrs	Hrs	Hrs
Date 4-18-90	Time Completed	Lab Unit Mgr	

54-6600-081 (R-10-83)

10/2 4-18-90 @ 1605 PM F0979-6286

① 49594 / 10 - 11

② 50795 / 10

Sr Calculation by DM on 04-18-1990 at 19:40:58
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 5.83 hrs

49594 / 10 - 11.0 = 5.5042E+00 uCi/L strontium 5.881 .936

Mount # 2 Decay time = 5.83 hrs

50795 / 10 - 11.0 = 5.6778E+00 uCi/L strontium .943 5.979

5.9298 - 4.3515 = 1.5783

ΔT=5.83

10/2 4-18-90 @ 1640 PM F0980-6586

① 11862 / 10 - 11

② 12413 / 10

ΔT=6.42
DF 1
MF 1
SS 1

Sr Calculation by AJ on 04-19-1990 at 10:02:02
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 6.42 hrs 1.36747 ~~1.3880~~

11862 / 10 - 11.0 = 1.2991E+00 uCi/L strontium ~~.936~~ .950

Mount # 2 Decay time = 6.42 hrs 1.43915 ~~1.4316~~

12413 / 10 - 11.0 = 1.3600E+00 uCi/L strontium ~~.950~~ .985

WATER DIGESTION ANALYSIS

APPENDIX A

Serial No	Sample Point	Date	Time Issued	Priority
F 983.-7000	SEG.COMP#15	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	G/L	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
GRAMS SAMPLE .9521 #966 #983
VOLUME ON COMPLETION 100 ml
9.52^{-3} g/ml
l DF = .1050

Analyst - 1	Analyst - 2	Analyst - 3		
80725	94171			
Hrs	Hrs	Hrs	Hrs	Hrs
Shelly Cavanaugh				
Date	Time Completed	Lab Unit Mgr		
2-9-90				

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7100	SEG.COMP#16	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	G/L	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE ANALYSIS #984
GRAMS SAMPLE 1.0058
VOLUME ON COMPLETION 100 ml
1.005^{-2} g/ml
l DF = .0995

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725	94171			
Hrs	Hrs	Hrs	Hrs	Hrs
Shelly Cavanaugh				
Date	Time Completed	Lab Unit Mgr		
2-9-90				

54-6800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 985.-7200	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	% RECOVERY	WB75L	0

Sample Size: ?

Customer ID: 000007

Remarks, Calculations, Results:
SPIKED ANALYSIS #985
GRAMS SAMPLE .9839
VOLUME ON COMPLETION 100 ml
VOLUME SPIKE
SPIKE ID
9.84^{-3} g/ml
l DF = .1016

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725	94171			
Hrs	Hrs	Hrs	Hrs	Hrs
Shelly Cavanaugh				
Date	Time Completed	Lab Unit Mgr		
2-9-90				

54-6800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 984.-7100	SEG.COMP#16	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
H2O-DGST	LA-504-101	G/L	E21D1	0

Sample Size: ?

Customer ID: 2nd LEACH 00007

Remarks, Calculations, Results:

DUPLICATE ANALYSIS
GRAMS SAMPLE 1.0098
VOLUME ON
COMPLETION 100 ml

1.005^{-2} g/ml

#269

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-20-90		

54-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7200	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
H2O-DGST	LA-504-101	% RECOVERY	E21D1	0

Sample Size: ?

Customer ID: 2nd LEACH 00007

Remarks, Calculations, Results:

SPIKED ANALYSIS
GRAMS SAMPLE 1.0159
VOLUME ON
COMPLETION 100 ml
VOLUME SPIKE
SPIKE ID 1.0118 g/l

1.016^{-2} g/ml

#269

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-20-90		

54-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7000	SEG.COMP#15	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
H2O-DGST	LA-504-101	G/L	E21D1	0

Sample Size: ?

Customer ID: 2nd LEACH 00007

Remarks, Calculations, Results

GRAMS SAMPLE 1.9886
VOLUME ON
COMPLETION 100 ml

9.89^{-3} g/ml

#269

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-20-90		

54-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7000	SEG.COMP#15	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	G/L	E21D1	1

Sample Size: ? 1.0280 g

Customer ID: Comp-2 #7 - 379

Remarks, Calculations, Results:

GRAMS SAMPLE 1.0280g
VOLUME ON
COMPLETION 100 ml

1.028 E -2 g/ml

1.028 E 1 g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
5-29-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7100	SEG.COMP#16	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	G/L	E21D1	1

Sample Size: ? 1.0007g

Customer ID: Comp-2 #7 - 379

Remarks, Calculations, Results:

DUPLICATE ANALYSIS
GRAMS SAMPLE 1.0007g
VOLUME ON
COMPLETION 100 ml

1.001 E -2 g/ml

1.001 E 1 g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
5-29-90		

54-6600-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 985.-7200	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	% RECOVERY	E21D1	1

Sample Size: ? 1.0096g

Customer ID: Comp-2 #7 - 379

Remarks, Calculations, Results:

SPIKED ANALYSIS
GRAMS SAMPLE 1.0096 g
VOLUME ON
COMPLETION 100 ml
VOLUME SPIKE
SPIKE ID

1.01 E -2 g/ml

1.01 E 1 g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
5-29-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7314	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PH	LA-211-102	% RECOVERY	WB75L	0

Sample Size: ? 1ml

Customer ID: 000007

Remarks, Calculations, Results:
Blk
26.7°C
6.38

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7514	SEG.COMP#13	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PH	LA-211-102	% RECOVERY	WB75L	0

Sample Size: ? 1ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
pH FOUND 10.04
STD ID 22011
SAMPLE TEMP 26.7
100.4%
Nms

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7114	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PH	LA-211-102	NONE	WB75L	0

Sample Size: ? 1ml

Customer ID: 000007

Remarks, Calculations, Results:
pH 10.55
SAMPLE TEMP 26.7

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7014	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PH	LA-211-102	NONE	WB75L	0

Sample Size: ? 1ml

Customer ID: 000007

Remarks, Calculations, Results:
26.7°C
10.97

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-6600-081 (R-10-83)

pH Analysis on the Water Digestion - First Leach

Seal No.	Sample Point	Date	Time Issued	Priority
F 986.-7514	SEG.COMF#18	2- 7-90	10:51	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PH	A-211-102	% RECOVERY	WB75L	0

Sample Size: 1 ml

Customer ID: 000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
pH FOUND 10.04
STD ID 7201
SAMPLE TEMP 25.2

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
LC269				
	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7371	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	PPM	WB75L	1

Sample Size: ? direct

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK

Comp. 2

<1.0E-1 ppm

<1.00 X 10^{-1} ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
7-25-90				

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7571	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	% RECOVERY	WB75L	1

Sample Size: ? 100 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID B011A3

Comp. 2

Col. 36/64 = 96.0%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
7-25-90				

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7171	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	PPM	WB75L	1

Sample Size: ? 5 mL - 10 mL

Customer ID:

Remarks, Calculations, Results:
DUPLICATE SAMPLE

Comp. 2

5.795E1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
7-25-90				

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7071	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	PPM	WB75L	1

Sample Size: ? 5 mL - 10 mL

Customer ID:

Remarks, Calculations, Results:

Comp. 2

6.13E1 ppm.

7.59

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
7-25-90				

54-6600-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 1005.-7571	SEG.COMP#13	2-12-90	11:18	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
F	LA-533-105	% RECOVERY	E21D1	0

Sample Size: ? 100 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 72C11A8

Comp. 2

101.24 / 104 = 95.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-5800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 985.-7271	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
F	LA-533-105	% RECOVERY	WB75L	1

Sample Size: ? ~~100 ml~~ 5 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
SPIKE SAMPLE F985-
SPIKE ID 35C9-87
SPIKE VOLUME .200 ml - 5 ml

Comp. 2

$$\frac{\left(\frac{5.3}{5.0}\right)(\cancel{100.0}) - \left[\left(\frac{10.16}{9.84}\right)(61.8)\right]}{\left(\frac{.3}{5.0}\right)(59.0)(68)} = \frac{44.81}{\cancel{11.34}} \quad \cancel{66.5\%} \quad 63.9\%$$

10.16 ZMP

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-5800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7372	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	PPM	WB75L	1

Sample Size: ? 1 ml

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK

Comp. 2

<1.0E-1 ppm
<1.00 x10⁻¹ ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

LA-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7572	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	% RECOVERY	WB75L	1

Sample Size: ? 100 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 7361183

Comp. 2

83.32/86 = 96.9%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

LA-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7172	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	PPM	WB75L	1

Sample Size: ? .5 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
DUPLICATE SAMPLE

Comp. 2

1.115E1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

LA-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7072	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	PPM	WB75L	1

Sample Size: ? .5 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:

Comp. 2

7.832 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

LA-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1005.-7572	SEG.COMP#13	2-12-90	11:18	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	% RECOVERY	E21D1	0

Sample Size: ? 100ml - 10ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 7211AB

Comp. 2

83.72/81 = 97.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
7-25-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7272	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Cl.	LA-533-105	% RECOVERY	WB75L	1

Sample Size: ? 5.5-10ml

Customer ID:

Remarks, Calculations, Results:
SPIKE SAMPLE F9A5
SPIKE ID 25C9-87
SPIKE VOLUME .322mL - 5mL

Comp. 2

$$\frac{\left(\frac{5.3}{5.0}\right)(80.24) - \left[\left(\frac{10.16}{9.89}\right)(7.8)\right]}{\left(\frac{.3}{5.0}\right)(64.0)(2)} = \frac{77.04}{80.64} = 95.5\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
7-25-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7373	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	PPM	WB75L	1

Sample Size: ? direct

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK
Comp. 2
<1.0 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7573	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	% RECOVERY	WB75L	1

Sample Size: ? 100 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 73611A3
Comp. 2
136.6/142 = 99.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7173	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	PPM	WB75L	1

Sample Size: ? 5 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
DUPLICATE SAMPLE
Comp. 2
2.828(E) ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7073	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	PPM	WB75L	1

Sample Size: ? 5 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
Comp. 2
2.886 Ed ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1005.-7573	SEG.COMP#13	2-12-90	11:18	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	% RECOVERY	E21D1	0

Sample Size: ? 100 ul - 10 ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 73 CHAS

Comp. 2

738.6 / 742 = 99.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
63598				
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7273	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	% RECOVERY	E21D1	0

Sample Size: ? .5ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 35C9-87
SPIKE VOLUME .3ml - 5ml

Comp. 2

$$\frac{\left(\frac{5.3}{5.0}\right)(814.0) - \left[\left(\frac{10.16}{9.89}\right)(288.6)\right]}{\left(\frac{.3}{5.0}\right)(543.0)(2.5)} = \frac{566.36}{684.18} = 82.8\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
63598				
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7374	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PO4	LA-533-105	PPM	WB75L	1

Sample Size: ? direct

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK

Comp. 2

<1.0ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
7-25-90				

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7574	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PO4	LA-533-105	% RECOVERY	WB75L	1

Sample Size: ? 10ml -10ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 73C11A8

Comp. 2

571.2/586 = 97.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
7-25-90				

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7174	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PO4	LA-533-105	PPM	WB75L	1

Sample Size: ? 5mL -10mL

Customer ID:

Remarks, Calculations, Results:
DUPLICATE SAMPLE

Comp. 2

3.299E2 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
7-25-90				

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7074	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PO4	LA-533-105	PPM	WB75L	1

Sample Size: ? 5mL -10ml

Customer ID:

Remarks, Calculations, Results:

Comp. 2

4.055E0 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
7-25-90				

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1005.-7574	SEG.COMP#13	2-12-90	11:18	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
P04	LA-533-105	% RECOVERY	E21D1	0

Sample Size: ? 100mL-10mL

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 73C11AB

Comp. 2

574.7 / 586 = 98.1%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald Pak			Kathy Smith	Stefan Rick

Date	Time Completed	Lab Unit Mgr
7-25-90		Ted M. Pool / Kathy Lomedico

S4-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7274	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
P04	LA-533-105	% RECOVERY	E21D1	0

Sample Size: ? .5mL -10mL

Customer ID:

Remarks, Calculations, Results:

SPIKE SAMPLE F985
SPIKE ID 3SC9-87
SPIKE VOLUME .500mL -5mL

Comp. 2

$$\frac{\left(\frac{5.3}{5.0}\right)(874.7) - \left[\left(\frac{10.16}{9.59}\right)(405.3)\right]}{\left(\frac{13}{5.0}\right)(540.1)} = \frac{511.8}{680.4} = 75.1\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald Pak				Stefan Rick

Date	Time Completed	Lab Unit Mgr
7-25-90		Ted M. Pool / Kathy Lomedico

S4-6600-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 982.-7375	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	PPM	WB75L	1

Sample Size: ? dust

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK

Comp. 2

<1.0 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7575	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	% RECOVERY	WB75L	1

Sample Size: ? 100 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 72C1148

Comp. 2

689.3/696 = 99.0%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7175	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	PPM	WB75L	1

Sample Size: ? .5 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
DUPLICATE SAMPLE

Comp. 2

~~<3 ppm~~ ZAP <2.1E' ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7075	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	PPM	WB75L	1

Sample Size: ? .5 ml - 10 ml

Customer ID:

Remarks, Calculations, Results:

Comp. 2

~~<3 ppm~~ ZAP <2.1E' ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-25-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1005.-7575	SEG.COMP#13	2-12-90	11:18	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	% RECOVERY	E21D1	0

Sample Size: ? 100ml - 10 ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 75C11A8

Comp. 2

690.5 / 696 = 99.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
63598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit-No.
7-25-90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7275	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	% RECOVERY	E21D1	0

Sample Size: ? .5ml - 10ml

Customer ID:

Remarks, Calculations, Results:
SPIKE SAMPLE F285
SPIKE ID 35C9-87
SPIKE VOLUME 300ml - 5ml

Comp. 2

$$\frac{\left(\frac{5.3}{5.0}\right)(689.2) - \left[\left(\frac{10.16}{9.89}\right)(0)\right]}{\left(\frac{.3}{5.0}\right)(596.4)(.73)} = \frac{730.55}{750.96} = 97.3\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
63598				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit-No.
7-25-90		

54-6800-061 (R-10-83)

ICP Analysis on the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-8150	SEG.COMP#16	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E2101	1

Sample Size	Customer ID
.5mL-10mL	000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice G. White				
Date	Time Completed	Lab Unit Mgr		
07-09-90		Kathy Thomdike		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-8050	SEG.COMP#15	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E2101	1

Sample Size	Customer ID
.5mL-10mL	000007

Remarks, Calculations, Results:

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice G. White				
Date	Time Completed	Lab Unit Mgr		
07-09-90		Kathy Thomdike		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 904.-8350	SEG.COMP#14	1-24-90	8:8	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E2101	1

Sample Size	Customer ID
.5mL-10mL	

Remarks, Calculations, Results:
REAGENT BLANK

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice G. White				
Date	Time Completed	Lab Unit Mgr		
07-09-90		Kathy Thomdike		

54-6800-081 (R-10-83)

Total Organic Carbon Analysis on the Water Digestion - First Leach

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7326	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	0

Sample Size: ? 200uL

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

.471 ug/min

3.3 ug

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-22-90		

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7526	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	WB75L	0

Sample Size: ? 200uL-2mL-200uL

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 70611C

94.2%

2.825/3.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-22-90		

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7126	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	0

Sample Size: ? 1mL + 100uL .5m H_2SO_4 - 200uL

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

8.8^{-3} g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-22-90		

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7026	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	0

Sample Size: ? 1mL + 100uL .5m H_2SO_4 - 200uL

Customer ID: 000007

Remarks, Calculations, Results:

1.04^{-2} g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-22-91		

54-6600-061 (R-10-83)

Total Organic Carbon Analysis on the Water Digestion - First Leach

Serial No.	Sample Point	Date	Time Issued	Priority
F 986.-7526	SEG.COMP#18	2- 7-90	10:51	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
TOC	LA-344-105	% RECOVERY	WB75L	0

Sample Size: ? 200uL - 2mL - 200uL

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 70C11 C

K1

2.981 / 3.00 99.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				RKBrandt
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				

Date	Time Completed	Lab Unit Mgr	
2-22-90		[illegible]	KSH

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7226	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
TOC	LA-344-105	% RECOVERY	WB75L	0

Sample Size: ? 200uL + 100uL H_2SO_4 - 200uL.

Customer ID: 000007

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 80C11
SPIKE VOLUME 200uL

94.91% RKB
~~94.9%~~

RKB.
~~115.7 - 1.898~~ / ~~119.9 149.9~~ * ~~100~~ = ~~75.9%~~

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				RKBrandt
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				

Date	Time Completed	Lab Unit Mgr	
2-22-90		[illegible]	KSH

54-6800-081 (R-10-83)

Total Organic Carbon Analysis on the Water Digestion - First Leach

F0985.-7226

$$\%\,Recovery = \frac{(119.0-3.3)-(5.2-3.3)}{119.9} \times 100$$

$$= \frac{115.7-1.9}{119.9} \times 100 = 94.91\%$$

RFB

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7328	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	M	WB75L	0

Sample Size: ? 1ml 0.0971 N HCl

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK
(2x2)

Blk: 27
Sampl: 26 } 10

~~<5.24-3~~ m

$M = \frac{(10)(0.0971)}{1000} = <9.71^{-4} \times 17000 = <16.5 ppm$ R&B

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R&Bennett
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90		[signature]	DMS

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7528	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	% RECOVERY	WB75L	0

Sample Size: ? 250λ 0.0971 N HCl

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 4021105

Std: 141
Blk: 27

$5.205^{-2} / 5.00^{-2}$

104.1%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R&Bennett
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90		[signature]	DMS

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7128	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	M	WB75L	0

Sample Size: ? 1ml 0.0971 N HCl

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

Sampl: 29
Blk: 27 } 10

~~<5.24-3~~ m

$M = \frac{(10)(0.0971)}{1000} = <9.71^{-4} \times 17000 = <16.5 ppm$ R&B.

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R&Bennett
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90		[signature]	DMS

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7028	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	M	WB75L	0

Sample Size: ? 1ml 0.0971 N HCl

Customer ID: 000007

Remarks, Calculations, Results:

Sampl: 31
Blk: 27 } 10

~~<5.24-3~~ m

$M = \frac{(10)(0.0971)}{1000} = <9.71^{-4} \times 17000$ R&B <16.5ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R&Bennett
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90		[signature]	DMS

54-6800-081 (R-10-83)

Ammonia Analysis of the Water Digestion - First Leach

Serial No.	Sample Point	Date	Time Issued	Priority
F 986.-7528	SEG.COMP#18	2- 7-90	10:51	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	% RECOVERY	WB75L	0

Sample Size		Customer ID
250λ	0.0971 M HCl	000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 4C1105

102.5%

STD: 159
BLK: 27

$5.127^{-2} / 5.00^{-2}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				RBrunk
Mary Fraizy	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90		[illegible]	DMS

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7228	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	% RECOVERY	WB75L	0

Sample Size		Customer ID
? 1 ml	0.0971 M HCl	000007

Remarks, Calculations, Results:
SPIKED SAMPLE

250 λ 4C1105 spk

Sampl: 159
Blk: 27

5.127^{-2} /

102.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				RBrunk
Mary Fraizy	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-14-90		[illegible]	DMS

54-6800-081 (R-10-83)

Blank

Serial No.	Sample Point	Date	Time Issued	Priority
F 987.-7327	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CO3	LA-622-102	G/L	WB75L	0

Sample Size: ? 200uL

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

2.6 ug/~~mililiter~~ KJ

.371 ug/min

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				RLBrooks
Hrs: Ed Cole	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-23-90		[signature]	DMS

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7527	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CO3	LA-622-102	% RECOVERY	WB75L	0

Sample Size: ? 50uL

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 89C11C

KJ

103.5%

2.07^{-1} m / 2.00^{-1}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				RLBrooks
Hrs: Ed Cole	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-23-90		[signature]	DMS

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7127	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CO3	LA-622-102	G/L	WB75L	0

Sample Size: ? 200uL

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

4.29^{-3} m 5.15^{-2} g/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				RLBrooks
Hrs: Ed Cole	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-23-90		[signature]	DMS

54-6800-081 (R-10-83)

Sample

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7027	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CO3	LA-622-102	G/L	WB75L	0

Sample Size: ? 200uL

Customer ID: 000007

Remarks, Calculations, Results:

~~5.00~~ 5.00^{-2} g/L

4.17^{-3} m

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				RLBrooks
Hrs: Ed Cole	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-23-90		[signature]	DMS

54-6800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 986 -7527	SEG.COMP#18	2- 7-90	10:31	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
C03	LA-622-102	% RECOVERY	WB75L	0

Sample Size	Customer ID
50uL	000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 69C11C

103.5%

2.07 / 2.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				
Date	Time Completed	Lab Unit Mgr		
2-23-90				

54-6600-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 985.-7227	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
C03	LA-622-102	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 200uL	000007

Remarks, Calculations, Results:

SPIKED SAMPLE
SPIKE ID. 69C11C
SPIKE VOL. 100uL

~~121.4%~~

~~159.9 - 10.00~~ / ~~122.7~~ R&B.

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				
Date	Time Completed	Lab Unit Mgr		
2-23-90				

54-6600-081 (R-10-83)

Carbonate Analysis on the Water Digestion - First Leach

Carbonate Analysis on the Water Digestion - First Leach

E0985.-7227

$$\%\,Recovery = \frac{(162.5-2.6)-(12.6-2.6)}{\frac{(2400\times0.1)(0.2)}{0.3}}\times100$$

$$= 93.69\%$$

RED

Serial No	Sample Point	Date	Time Issued	Priority
F 982.-7379	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	M	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

<7.8 -6 m or 3.59 -1 ppm

.001

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - Supervisor
6C269				R.K. Fields 2-16-90
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date: 2-13-90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7579	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	% RECOVERY	WB75L	0

Sample Size: ? 100-10-50

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 8C11AU

98.4% DMS

4.922 -1 m / 5.00 -1

1.694

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - Supervisor
6C269				R.K. Fields 2-16-90
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date: 2-13-90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7179	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	M	WB75L	0

Sample Size: ? 100λ

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

1.30 -3 m or 5.97 1 ppm

.590

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - Supervisor
6C269				R.K. Fields 2-16-90
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date: 2-13-90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7079	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	M	WB75L	0

Sample Size: ? 100λ

Customer ID: 000007

Remarks, Calculations, Results:

7.78 -4 m or 3.58 1 ppm

.363

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - Supervisor
6C269				R.K. Fields 2-16-90
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date: 2-13-90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 986.-7579	SEG.COMP#18	2- 7-90	10:51	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	% RECOVERY	WB75L	0

Sample Size: ? 100-10-50

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 8C11A4

99.0%
DMS

4.95 m/5,000

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R.K. 2-16-90
Mary Fraley	Hrs	Hrs	Hrs	Hrs
Date 2-13-90	Time Completed	Lab Unit Mgr		

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7279	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	% RECOVERY	WB75L	0

Sample Size: ? 100 1

Customer ID: 000007

Remarks, Calculations, Results:
SPIKED SAMPLE
8C11A4-100-10-50
1.370
4.681
~~4.50~~ m/5,000
93.6%
~~90.4%~~
1.37

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R.K. 2-15-90
Mary Fraley	Hrs	Hrs	Hrs	Hrs
Date 2-13-90	Time Completed	Lab Unit Mgr		

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7325	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	uCI/L	WB75L	0

Sample Size: ?10ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK Please count on 13, 14 or 15

<1.315^{-4} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7525	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ?10ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE Please Count on 13, 14 or 15
LMCS ID 102B44

9.987^{-3} uci/l / 1.0021^{-2} 99.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7225	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? ~~200λ~~ 500λ

Customer ID: 000007

Remarks, Calculations, Results:
SPIKED SAMPLE Please Count on 13, 14 or 15
10 ml 102B44

94.4% 2.03^{-1} uci/l (2)(10) $\frac{-1.39\times10^{-2}}{1.021\times10^{-2}}$ $\frac{9.46\times10^{-3}}{}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7125	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	uCI/L	WB75L	0

Sample Size: ? ~~200λ~~ 500λ

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE Please Count on 13, 14 or 15

7.04^{-3} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-5800-061 (R-10-83)

14/2

$\frac{1}{10} - .7$

$\frac{3}{10}$

F 982-7325

Alpha Calculation by DM on 02-13-1990 at 14:03:57
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{1}{10} - 0.7 < 1.3154E-04$ uCi/L alpha

Mount # 2

$\frac{3}{10} - 0.7 < 1.3154E-04$ uCi/L alpha

14/2

$\frac{474}{10} - .7$

$\frac{476}{10}$

F 981-7525

Alpha Calculation by DM on 02-13-1990 at 14:05:00
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{474}{10} - 0.7 = 9.9650E-03$ uCi/L alpha

Mount # 2

$\frac{476}{10} - 0.7 = 1.0008E-02$ uCi/L alpha

14/2

$\frac{468}{10} - .7$

$\frac{498}{10}$

F 983-7325

Alpha Calculation by EMB on 02-13-1990 at 14:15:06
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 1 mL Dilution : 2

Mount # 1

$\frac{468}{10} - 0.7 = 1.9674E-01$ uCi/L alpha

Mount # 2

$\frac{498}{10} - 0.7 = 2.0954E-01$ uCi/L alpha

14/2

$\frac{26}{10} - .7$

$\frac{21}{10}$

F 984-7125

Alpha Calculation by DM on 02-13-1990 at 15:15:38
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : .5 mL Dilution : 1

Mount # 1

$\frac{26}{10} - 0.7 = 8.1085E-03$ uCi/L alpha

Mount # 2

$\frac{21}{10} - 0.7 = 5.9747E-03$ uCi/L alpha

Total Alpha Analysis on the Water Digestion - First Leach

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7025	SEG.COMP#15	2- 7-90	10:48	2

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	uCI/L	WB75L	0

Sample Size: ? ~~200~~ 500l

Customer ID: 000007

Remarks, Calculations, Results:

1.39-2 neff

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

84-5800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 986.-7525	SEG.COMP#18	2- 7-90	10:51	2

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10ml

Customer ID: 000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 102 P44

Please Count on 13, 14 or 15

104.58

1.047-2 / 1.0021-2

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

84-5800-061 (R-10-83)

14/2

$\frac{41}{10} - .7$

$\frac{38}{10}$

F 983-7025

Alpha Calculation by DM on 02-13-1990 at 15:16:30
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : .5 mL Dilution : 1

Mount # 1

$\frac{41}{10} - 0.7 = 1.4510E-02$ uCi/L alpha

Mount # 2

$\frac{38}{10} - 0.7 = 1.3230E-02$ uCi/L alpha

14/2

$\frac{504}{10}$

$\frac{491}{10}$

F 983-7025

Alpha Calculation by EMB on 02-13-1990 at 16:52:11
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{504}{10} - 0.7 = 1.9605E-02$ uCi/L alpha

Mount # 2

$\frac{491}{10} - 0.7 = 1.9328E-02$ uCi/L alpha

J-4

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7320	SEG.COMP#14	2- 7-90	10:47	2

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	uCI/L	WB75L	0

Sample Size: ? 10ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK Please Count on 13,14 or 15

9.968 -4 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-6600-061 (R-10-83)

1-2

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7520	SEG.COMP#13	2- 7-90	10:45	2

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE Please count on 13, 14 or 15
LMCS ID 102B44

1.388 -1 uci/l / 1.3756 -1 100.9%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-6600-061 (R-10-83)

7-8

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7120	SEG.COMP#16	2- 7-90	10:49	2

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	uCI/L	WB75L	0

Sample Size: ? ~~200ml~~ 500 l

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE Please Count on 13, 14 or 15

4.06 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-6600-061 (R-10-83)

5-6

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7020	SEG.COMP#15	2- 7-90	10:48	2

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	uCI/L	WB75L	0

Sample Size: ? ~~200ml~~ 500 l

Customer ID: 000007

Remarks, Calculations, Results:
Please Count on 13, 14 or 15

3.32 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-6600-061 (R-10-83)

14/2

$\frac{272}{10} - 22$

F 982-7320

$\frac{289}{10}$

Beta Calculation by DM on 02-13-1990 at 14:03:54
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{272}{10} - 22.0 = 8.5675E-04$ uCi/L beta

Mount # 2

$\frac{289}{10} - 22.0 = 1.1368E-03$ uCi/L beta

14/2

$\frac{8725}{10} - 22$

F 981-7520

$\frac{8569}{10}$

Beta Calculation by DM on 02-13-1990 at 14:04:58
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{8725}{10} - 22.0 = 1.4013E-01$ uCi/L beta

Mount # 2

$\frac{8569}{10} - 22.0 = 1.3756E-01$ uCi/L beta

14/2

$\frac{129556}{10} - 22$

F 984-7120

$\frac{117411}{10}$

Beta Calculation by DM on 02-13-1990 at 15:15:36
Det #14 2 -inch mount Beta eff. : .2734
Sample size : .5 mL Dilution : 1

Mount # 1

$\frac{129556}{10} - 22.0 = 4.2618E+01$ uCi/L beta

Mount # 2

$\frac{117411}{10} - 22.0 = 3.8616E+01$ uCi/L beta

4.06

14/2

$\frac{104465}{10} - 22$

F 983-7020

$\frac{97557}{10}$

Beta Calculation by DM on 02-13-1990 at 15:16:28
Det #14 2 -inch mount Beta eff. : .2734
Sample size : .5 mL Dilution : 1

Mount # 1

$\frac{104465}{10} - 22.0 = 3.4351E+01$ uCi/L beta

Mount # 2

$\frac{97557}{10} - 22.0 = 3.2074E+01$ uCi/L beta

Total Beta Analysis on the Water Digestion - First Leach

Serial No.	Sample Point	Date	Time Issued	Priority
F 986.-7520	SEG.COMP#18	2- 7-90	0:51	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 102B44

Please Count on 13, 14 or 15

1.423 / 1.37756 = 103.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC269				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-0600-061 (R-10-83)

9-10

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7220	SEG.COMP#17	2- 7-90	0:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? ~~200λ~~ 500λ

Customer ID: 000007

Remarks, Calculations, Results:
SPIKED SAMPLE
10 ml 102B44

Please Count on 13, 14 or 15

3.41 well spiked too low

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC269				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-13-90		

54-0600-061 (R-10-83)

14/2

F 986-7520

8691
18

9025
10

Beta Calculation by EMB on 02-13-1990 at 16:52:08
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

$$\frac{8691}{10} - 22.0 = 1.3957E-01 \text{ uCi/L beta}$$

Mount # 2

$$\frac{9025}{10} - 22.0 = 1.4507E-01 \text{ uCi/L beta}$$

14/2

F 985-7220

103747 22
10

103750
10

Beta Calculation by EMB on 02-13-1990 at 16:15:03
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 1 mL Dilution : 2

Mount # 1

$$\frac{103747}{10} - 22.0 = 3.4114E+01 \text{ uCi/L beta}$$

Mount # 2

$$\frac{103750}{10} - 22.0 = 3.4115E+01 \text{ uCi/L beta}$$

3164

Serial No.	Sample Point	Date	Time Issued	Priority
F 952.-7030	SEG.COMP#14	1-30-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 1 ml 1 L

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK

<6.34^{-2} uci/l Cs-137

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs
Date: 2-20-90	Time Completed	Lab Unit Mgr		

54-5600-081 (R-10-83)

1904

Serial No.	Sample Point	Date	Time Issued	Priority
F 201.-6530	SEGMENT-F	11-17-89	10:35	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? 500 L 1.1 2

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 122B44

2.05 (2.10) uci/l Co-60 97.0%
2.78 (2.90) uci/l Cs-137 95.8%

GM8

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs
Date: 2-20-90	Time Completed	Lab Unit Mgr		

54-5600-081 (R-10-83)

1908

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7130	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 500 L

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

2.10 uci/l Cs-137

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs
Date: 2-20-90	Time Completed	Lab Unit Mgr		

54-5600-081 (R-10-83)

3167

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7030	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 500 L

Customer ID: 000007

Remarks, Calculations, Results:

2.06 uci/l Cs-137

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs
Date: 2-20-90	Time Completed	Lab Unit Mgr		

54-5600-081 (R-10-83)

Gamma Energy Analysis on the Water Digestion - First Leach

3166

Serial No.	Sample Point	Date	Time Issued	Priority
F 956.-7530	SEG.COMP#18	1-30-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
GEA	LA-548-121	% RECOVERY	W875L	0

Sample Size: 500 l

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 122844
Co-60 = 2.16 x E 1 / 21.0 = 102.7%
Cs-137 = 2.35 x E 0 / 2.401 = 98.6%

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
60269				
	Hrs	Hrs	Hrs	Hrs

Date: 2-20-90 | Time Completed | Lab Unit Mgr

S4-6800-081 (R-10-87)

Serial No.	Sample Point	Date	Time Issued	Priority
F 956.-7530	SEG.COMP#17	1-30-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
GEA	LA-548-121	% RECOVERY	W875L	0

Sample Size: 500 l

Customer ID: 100008

Remarks, Calculations, Results:
SPIKED SAMPLE
122844 spk
3.03 mi/l - 1.85 = 2.845 / 2.9581

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
60269				
	Hrs	Hrs	Hrs	Hrs

Date: 2-20-90 | Time Completed | Lab Unit Mgr

S4-6800-081 (R-10-87)

4.1 5610

Serial No	Sample Point	Date	Time Issued	Priority
F 976.-6381	SEG.COMP#8	2- 7-90	10:42	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1mL + 50λ SPIKE 10343-B
Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK
1200λ Con HNO3
2.45^{-2} neill

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90		[signature]	RM's

54-6800-081 (R-10-83)

3.4 ~~3740~~ 4738

Serial No.	Sample Point	Date	Time Issued	Priority
F 975.-6581	SEG.COMP#7	2- 7-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 100 70-100 + 50λ SPIKE 10343-B
Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 16343
$1.12^{2}/9.7329$ 115.1%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90		[signature]	RM's

54-6800-081 (R-10-83)

#8 8104 8Mo.

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7161	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1mL + 50λ SPIKE 10343-B
Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE
1200λ Con HNO3
$<8.62^{-3}$ neill

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90		[signature]	RM's

54-6800-081 (R-10-83)

4753 8Mo.

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7081	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1mL + 50λ SPIKE 10343-B
Customer ID: 000007

Remarks, Calculations, Results:
1200λ Con HNO3
1.47^{-2} neill

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90		[signature]	RM's

54-6800-081 (R-10-83)

Plutonium Analysis on the Water Digestion - First Leach

#2 2-21-90 @ 1355 BM

$\frac{653}{5}$ -14

#1 2-21-90 @ 1355 BM

$\frac{1077}{5}$ -8

F 975.-6581

#2 2-21-90 @ 1410 BM

$\frac{487}{5}$ -14

#1 2-21-90 @ 1410 BM

$\frac{613}{5}$ -8

F 976.-6381

F 983.-7081

F 984.-7181

#2 2764 8mo

Serial No.	Sample Point	Date	Time Issued	Priority
F 1028.-6581	SEG.COMP#12	2-12-90	12:43 26	

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 100-10-100 +50λ SPIKE 10343-B

Customer ID: 000015

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 16343

"AEA 480 MIN"
ATTACH PRINT OUT

9.976 / 9.9389 102.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RA				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90			DM 8

54-5800-081 (R-10-83)

33 3985

Serial N	Sample Point	Date	Time Issued	Priority
F 1027.-6281	SEG.COMP#11	2-12-90	12:43 26	

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 1mL +50λ SPIKE 10343-B

Customer ID: 000015

Remarks, Calculations, Results:

SPIKED SAMPLE F1032 STD 16343
1200λ CONC HNO3

"AEA 480 MIN"
ATTACH PRINT OUT

1.0692 ~~107.6%~~ 1.06 109.9%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RA				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-21-90			DM 8

54-5800-081 (R-10-83)

Plutonium Analysis on the Water Digestion - First Leach

#2 2-21-90 @ 1415 DM

1104/5 -14

#3 2-21-90 @ 1835 DM

816/5 12

F 1027.-6281

F 1028.-6581

8116 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 976.-6382	SEG.COMP#8	2- 7-90	10:42	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1mL +100λ SPIKE 9843

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK
1200λ Con HNO3
$<3.52^{-2}$ neill

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				gw
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90			DMS

54-6600-061 (R-10-83)

3001 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 975.-6582	SEG.COMP#7	2- 7-90	10:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 100 %-1mL +100λ SPIKE 9843

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 16843
107.1%
16.82/15.711

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				gw
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90			DMS

54-6600-061 (R-10-83)

8110

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7182	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1mL + 100λ SPIKE 9843

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE
1200λ CON HNO3
$<1.50^{-2}$ neill

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				gw
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90			DMS

54-6600-061 (R-10-83)

6065

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7082	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1mL + 100λ SPIKE 9843

Customer ID: 000007

Remarks, Calculations, Results:
1200λ Con HNO3
$<2.20^{-2}$ neill

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				gw
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90			DMS

54-6600-061 (R-10-83)

Americium 241 Analysis on the Water Digestion - First Leach

F 983.-7082	F 975.-6582	#2 WR 2-22-90 $\frac{1044}{5}$ - 15
F 984.-7182	F 976.-6382	#3 WR 2-22-90 $\frac{473}{5}$ - 12
		#3 WR 2-22-90 $\frac{949}{5}$ - 12
		#3 WR 2-22-90 $\frac{407}{5}$ - 12

N 2769 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 1034.-7582	SEG.COMP#18	2-12-90	12:50 26	

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	% RECOVERY	WB75L	0

Sample Size	Customer ID
100+10-1000 +100λ spike 9843	000015

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 16843

"AEA-480 MIN"
ATTACH PRINT OUT

16.99 / 15.711 108.1%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90			BMS

84-6800-061 (R-10-83)

*5 5627 8hrs.

Serial No	Sample Point	Date	Time Issued	Priority
F 1033.-7282	SEG.COMP#17	2-12-90	12:48 26	

Determination	Method/Standard	Result Units	Charge Code	Reruns
Am241	LA-503-156	% RECOVERY	WB75L	0

Sample Size	Customer ID
? ml + (STD 16843 100+10-1000 ~~spk~~) +100λ spike F1032 9843	000015

Remarks, Calculations, Results:

SPIKED SAMPLE
1200λ CONHNO3

"AEA-480 MIN"
ATTACH PRINT OUT

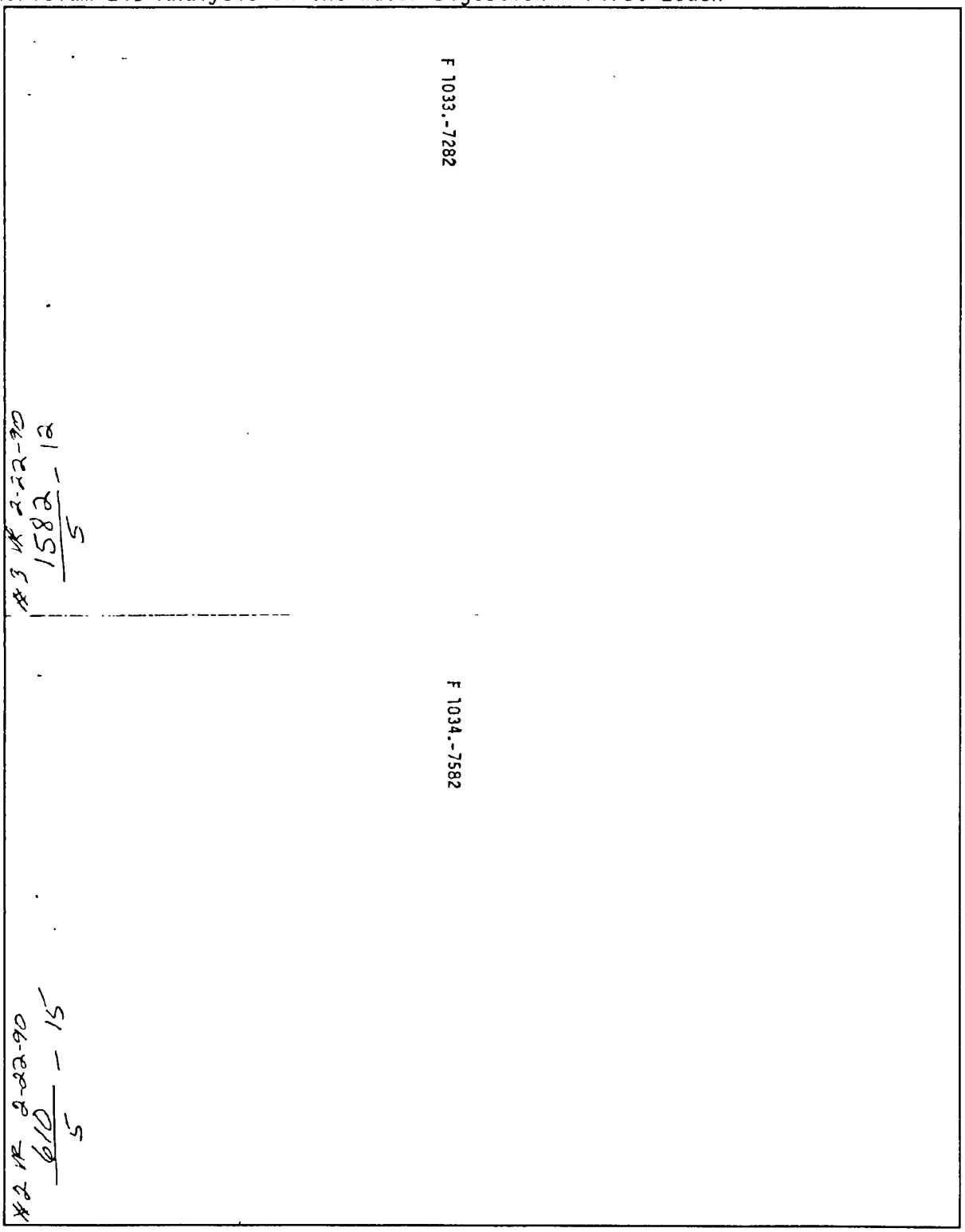
17.01 / 15.711 108.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90			BMS

84-6800-061 (R-10-83)

Americium 241 Analysis on the Water Digestion - First Leach



2

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7383	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
C14	LA-348-104	uCI/L	WB75L	0

Sample Size: ? 10 ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

$$\frac{(<25)(1000)}{(2.22E6)(10)} = <1.13E-3 \text{ uci/l}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Lai				
Hrs: 6c916	Hrs	Hrs	Hrs	Hrs

Date: 7-20-90 | Time Completed | Lab Unit Mgr

54-6800-081 (R-10-83)

1

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7588	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
C14	LA-348-104	% RECOVERY	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 31846

90.9% ~~15 mL~~

$$\frac{(1796.581)(1000)}{2.22E6} = 8.09E-1 / 8.8916E^{-1}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Lai				
Hrs: 6c916	Hrs	Hrs	Hrs	Hrs

Date: 7-20-90 | Time Completed | Lab Unit Mgr

54-6800-081 (R-10-83)

4

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7188	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
C14	LA-348-104	uCI/L	WB75L	0

Sample Size: ? 10 ml

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

$$\frac{(<25)(1000)}{(2.22E6)(10)} = <1.13E-3 \text{ uci/l}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Lai				
Hrs: 6c916	Hrs	Hrs	Hrs	Hrs

Date: 7-20-90 | Time Completed | Lab Unit Mgr

54-6800-081 (R-10-83)

3

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7088	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
C14	LA-348-104	uCI/L	WB75L	0

Sample Size: ? 10 ml

Customer ID: 000007

Remarks, Calculations, Results:

$$\frac{(<25)(1000)}{(2.22E6)(10)} = <1.13E-3 \text{ uci/l}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Lai				
Hrs: 6c916	Hrs	Hrs	Hrs	Hrs

Date: 7-20-90 | Time Completed | Lab Unit Mgr

54-6800-081 (R-10-83)

6

Serial No	Sample Point	Date	Time Issued	Priority
F 986.-7588	SEG.COMP#18	2- 7-90	10:52	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
C14	LA-348-104	% RECOVERY	WB75L	0

Sample Size: 1 ml

Customer ID: 000007

Remarks, Calculations, Results:

95.9%

LMCS CHECK SAMPLE
LMCS ID 31B46

$\frac{(1893.415)(1000)}{2.22E6} = 8.53E-1 / 8.916E^{-1}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Lai				
Hrs 6c916	Hrs	Hrs		Hrs
Date 7-20-90	Time Completed	Lab Unit Mgr		

54-6806-081 (R-10-83)

5

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7289	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
C14	LA-348-104	% RECOVERY	WB75L	0

Sample Size: ? 10 ml + 1 ml STD

Customer ID: 000007

Remarks, Calculations, Results:

spiked

STD: 31B46

$\frac{(1875.890)(1000)}{2.22E6} = 8.45E-1 / 8.8916E^{-1}$

95.03%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Lai				
Hrs 6c916	Hrs	Hrs	Hrs	Hrs
Date 7-20-90	Time Completed	Lab Unit Mgr		

54-6806-081 (R-10-83)

Iodine 129 Analysis on the Water Digestion - First Leach

A5013

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7385	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	uCI/L	WB75L	0

Sample Size: ? 1ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK

$\frac{(<.111^{-4})(1000)}{.20828} = <.0546$

g. 2.1286
t. 2.1224
n. .0062 / .0305

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/dc				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-28-90		

54-6800-061 (R-10-83)

A5012

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7585	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	% RECOVERY	WB75L	0

Sample Size: ? 1ml

Customer ID: 000007

Remarks, Calculations, Results
LMCS CHECK SAMPLE
LMCS ID 124844

96.7%

$\frac{.113^{3}\ 1000}{.2000} = 5.66^{-1}$ / 5.8524^{-1}

g. 2.1583
t. 2.1522
n. .0061 / .0305

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/dc				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-28-90		

54-6800-061 (R-10-83)

A5015

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7185	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	uCI/L	WB75L	0

Sample Size: 1ml

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

$\frac{(<.121^{-4})(1000)}{.23607} = <5.13^{-2}$ mill

g. 2.1241
t. 2.1169
n. .0072 / .0305

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/dc				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-28-90		

54-6800-061 (R-10-83)

A5014

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7085	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	uCI/L	WB75L	0

Sample Size: ? 1ml

Customer ID: 000007

Remarks, Calculations, Results:

$\frac{<.115^{-4}\ 1000}{.42295} = <2.72^{-2}$ mill

g. 2.1263
t. 2.1134
n. .0129 / .0305

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/dc				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-28-90		

54-6800-061 (R-10-83)

A-5017

Serial No.	Sample Point	Date	Time Issued	Priority
F 986.-7585	SEG.COMP#18	2- 7-90	10:52	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	% RECOVERY	WB75L	0

Sample Size: 1ml

Customer ID: 000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 124644

g. 2.1363
+. 2.1298
n. .0065
.0305 = .21311

97.02%

$\frac{.1213}{.21311} \frac{1000}{} = .5678$ / .58524

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/1.C				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-28-90		

54-6600-061 (R-10-83)

A5016

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7285	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	% RECOVERY	WB75L	0

Sample Size: 1ml + 1ml STD (124644)

Customer ID: 000007

Remarks, Calculations, Results:
SPIKED SAMPLE

g. 2.1459
+. 2.1324
n. .0135
.0305 = .44262

$\frac{.2413}{} \frac{1000}{}$

.5445 / .58524

93.0%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/1.C				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-28-90		

54-6600-061 (R-10-83)

Neptunium 237 Analysis on the Water Digestion - First Leach

Serial No.	Sample Point	Date	Time Issued	Priority
F 1054.-7383	SEG.COMP#14	2-15-90	14: 1	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
NP	LA-933-141	uCI/L		0

Sample Size	Customer ID
? 250 λ mT 500 λ	000012

Remarks, Calculations, Results:
REAGENT BLANK

< 1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 8598/RH				GL
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-8-90		QL

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1029.-7583	SEG.COMP#13	2-12-90	12:44	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
NP	LA-933-141	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100 λ mT 500 λ	000015

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 148833

62.8%

80.454

128.11

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 8598/RH				GL
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-8-90		QL

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7183	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
NP	LA-933-141	uCI/L	WB75L	0

Sample Size	Customer ID
? 250 λ mT 500 λ	000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE

< 1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 8598/RH				GL
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-8-90		QL

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7083	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
NP	LA-933-141	uCI/L	WB75L	0

Sample Size	Customer ID
? 250 λ mT 500 λ	000007

Remarks, Calculations, Results:

< 1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 8598/RH				GL
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-8-90		QL

54-6600-081 (R-10-83)

#2 3-8-90 DM

$\frac{96}{5}$ -16

F 1054

FO1054.-7383

#2 3-8-90 DM

$\frac{2522}{5}$ -16

F 1029

FO1029.-7583

#2 3-8-90 DM

$\frac{70}{5}$ -16

FO984.-7183

#2 3-8-90 DM

$\frac{83}{5}$ -16

FO983.-7083

Serial No	Sample Point	Date	Time Issued	Priority
F 1053.-7583	SEG.COMP#13	2-15-90	13:56	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	% RECOVERY		0

Sample Size	Customer ID
? 100λ mT 500λ	000012

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 148833

90.34 / 128.11

70.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-8-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1057.-7283	SEG.COMP#17	2-15-90	14: 8	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	% RECOVERY		0

Sample Size	Customer ID
? 250λ + 100λ std mT 500λ	000012

Remarks, Calculations, Results:
SPIKED SAMPLE

75.784 / 128.11

59.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-8-90		

54-6800-081 (R-10-83)

Neptunium 237 Analysis on the Water Digestion - First Leach

#1 3-8-90 DH
8416/5 - 12

F 1053
F01053.-7583

#1 3-8-90 DH
7070/5 - 12

F 1057
F01057.-7283

Serial No	Sample Point	Date	Time Issued	Priority
F 982.-7386	SEG.COMP#14	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	E21D1	0

Sample Size: ? 1mL + 1ml Sr carrier
Customer ID: 00007

Remarks, Calculations, Results:
REAGENT BLANK
comp. 2.
Sep Date: 6-14-90
Sep Time: 10:30
<6.22E-3 wet

	A	B
Gross:	7.8823	7.9435
Tare:	7.7862	7.8488
net:	0.0961 / .1	0.0947 / .1

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
Sue Lai	Raymond			
Hrs 1c916	Hrs	Hrs	Hrs	Hrs

Date: 6-14-90
Time Completed:
Lab Unit Mgr: [signature]

54-6600-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 981.-7586	SEG.COMP#13	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	E21D1	0

Sample Size: ? 1mL & 1ml Sr Carrier
Customer ID: 00007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID
18646
1.1758 / 1.2554 RERUN
93.7%
Sep Date: 6-14-90
Sep Time: 10:30

	A	B
Gross:	8.1575	8.1660
Tare:	8.0613	8.0714
net:	0.0962 / .1	0.0946 / .1

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
1c916	Raymond			
Hrs Sue Lai	Hrs	Hrs	Hrs	Hrs

Date: 6-14-90
Time Completed:
Lab Unit Mgr: [signature]

54-6600-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 984.-7186	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	WB75L	0

Sample Size: ? 250L + 1ml Sr carrier
Customer ID: 00007

Remarks, Calculations, Results:
DUPLICATE SAMPLE
Comp. 2.
2.725 wet
RERUN
Sep Date: 6-14-90
Sep Time: 10:35.

	A	B
Gross:	8.0393	7.8824
Tare:	7.9452	7.7896
net:	0.0941 / .1	0.0928 / .1

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
Sue Lai	Raymond			
Hrs 1c916	Hrs	Hrs	Hrs	Hrs

Date: 6-14-90
Time Completed:
Lab Unit Mgr: [signature]

54-6600-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 983.-7086	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	WB75L	0

Sample Size: ? 250L + 1ml Sr carrier
Customer ID: 00007

Remarks, Calculations, Results:
Comp. 2
4.314 wet
RERUN
Sep Date: 6-14-90
Sep Time: 10:35

	A	B
Gross:	8.0180	8.0998
Tare:	7.9232	8.0059
net:	0.0948 / .1	0.0939 / .1

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
Sue Lai	Raymond			
Hrs 1c916	Hrs	Hrs	Hrs	Hrs

Date: 6-14-90
Time Completed:
Lab Unit Mgr: [signature]

54-6600-081 (R-10-83)

10 2" 6-14-90 VR 1925 FO982.-7386 ΔT 8.92

153/10 - 12

145/10 -

Sr Calculation by VR on 06-14-1990 at 19:41:43
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 8.92 hrs

153/10 - 12.0 = 3.5864E-03 uCi/L strontium / .961 — 3.70E-3 uCi/ml

Mount # 2 Decay time = 8.92 hrs

145/10 - 12.0 (3.5889E-03 uCi/L strontium / .947 — <6.22E-3 uCi/ml

10 2" 6-14-90 VR 1943 FO981.-7586 ΔT 9.22

10470/10 - 12

10647/10

Sr Calculation by VR on 06-14-1990 at 22:06:11
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 9.22 hrs

10470/10 - 12.0 = 1.1121E+00 uCi/L strontium / .962 — 1.156 uCi/ml

Mount # 2 Decay time = 9.22 hrs

10647/10 - 12.0 = 1.1131E+00 uCi/L strontium / .946 — 1.1957

10 2" 6-14-90 VR 1830 FO984.-7186 ΔT 7.92 DF 4

6043/10 - 12

5893/10 -

Sr Calculation by VR on 06-14-1990 at 19:23:52
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 4 Method : 1

Mount # 1 Decay time = 7.92 hrs

6043/10 - 12.0 = 2.5789E+00 uCi/L strontium / .941 — 2.741 uCi/ml

Mount # 2 Decay time = 7.92 hrs

5893/10 - 12.0 = 2.5116E+00 uCi/L strontium / .928 — 2.709 uCi/ml

10 2" 6-14-90 VR 1900 FO983.-7086 ΔT 8.42 DF 4

9554/10 - 12

9475/10 -

Sr Calculation by VR on 06-14-1990 at 19:23:12
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 4 Method : 1

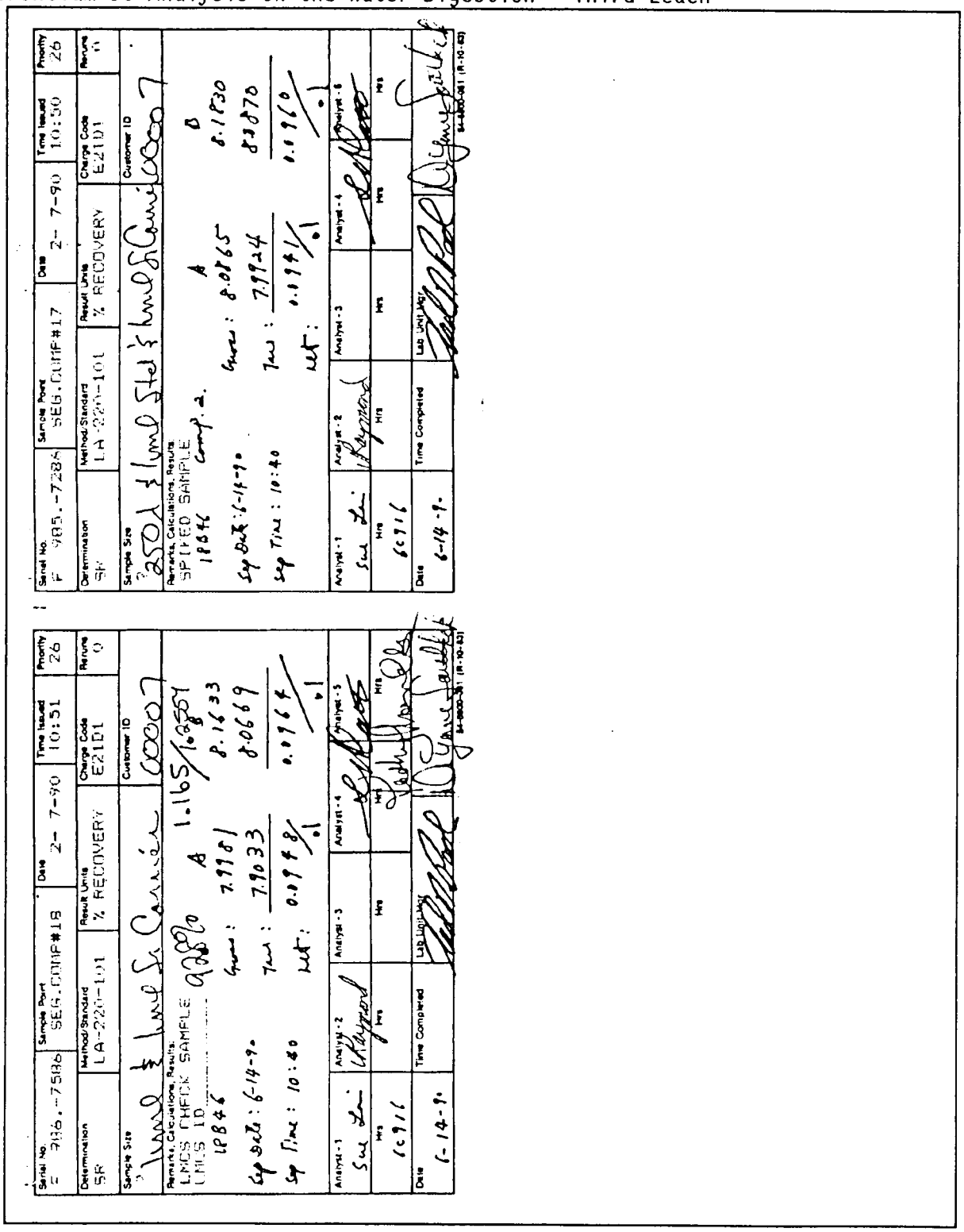
Mount # 1 Decay time = 8.42 hrs

9554/10 - 12.0 = 4.0870E+00 uCi/L strontium / .948 — 4.3112 uCi/ml

Mount # 2 Decay time = 8.42 hrs

9475/10 - 12.0 = 4.0528E+00 uCi/L strontium / .939 — 4.3161

Strontium 90 Analysis on the Water Digestion - Third Leach



Serial No.	Sample Point	Date	Time Issued	Priority
E 986.-7586	SEG.COMP#18	2- 7-90	10:51	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
SR	LA-220-101	% RECOVERY	E2101	0

Sample Size: 250 ml Std & Lmd Sd Carrier

Customer ID: 60007

Remarks, Calculations, Results:
LMDS CHECK SAMPLE
LMDS ID
18846

Sp Date: 6-14-90
Sp Time: 10:40

A 1.165/1.0250 = 8.1633
Gross: 7.9101
Tare: 7.9033
Net: 0.0669 / .1 = 0.6669

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
Hrs	Hrs	Hrs	Hrs	Hrs
6916				

Date	Time Completed	Lab Unit No.
6-14-90		

84-8800-301 (R-10-82)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7284	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
SR	LA-220-101	% RECOVERY	E2101	0

Sample Size: 250 ml Std & Lmd Sd Carrier

Customer ID: 60007

Remarks, Calculations, Results:
SPIKED SAMPLE
Comp. 2.
18847

Sp Date: 6-14-90
Sp Time: 10:40

A 8.0865
Gross: 7.9924
Tare: 7.9075
Net: 0.0849 / .1 = 0.8490

B 8.1830
8.0875
0.0955 / .1

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
Hrs	Hrs	Hrs	Hrs	Hrs
6916				

Date	Time Completed	Lab Unit No.
6-14-90		

84-8800-301 (R-10-82)

10 2" 6-14-90 VR 1620 F0986.-7586 ΔT 5.67

10089 / 10 — 12

10132 / 10 —

Sr Calculation by VR on 06-14-1990 at 19:22:18
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 5.67 hrs

10089 / 10 - 12.0 = 1.1107E+00 uCi/L strontium (1.172 / .948)

Mount # 2 Decay time = 5.67 hrs

10132 / 10 - 12.0 = 1.1155E+00 uCi/L strontium (1.157 / .964)

10 2" 6-14-90 VR 1645 F0985.-7286 ΔT 6.08 DF 4

13401 / 10 — 12

13492 / 10 —

Sr Calculation by VR on 06-14-1990 at 19:24:33
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 4 Method : 1

Mount # 1 Decay time = 6.08 hrs

13401 / 10 - 12.0 = 5.8505E-00 uCi/L strontium (6.263 / .941)

Mount # 2 Decay time = 6.08 hrs

13492 / 10 - 12.0 = 5.9559E+00 uCi/L strontium (6.1811 / .960)

$$\left[\frac{\left(\frac{6.222}{4}\right) - \left(\frac{2.725}{4}\right)\left(\frac{10.10}{10.28}\right)}{1.225}\right] \times 100 \quad 70.3\%$$

3-4

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7384	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 100 λ spike

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK 49839

A 16.8288 < 20.00

DPS 2655.6 <2.01 -2 uCi/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6c916				Gal
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-90		AP	DMS

54-6600-061 (R-10-83)

1-2

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7584	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: ? 250 λ + 100 λ spike

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE 49839 KF
LMCS ID 68839

120.2%

A 186.0903 7.632 -1 / 6.3521 -1

DPS 2769.14

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6c916				Gal
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-90		AP	DMS

54-6600-061 (R-10-83)

7-8

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7184	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 100 λ spike

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE 49839

A 32.9986

DPS 2712.05 3.26 -2 uCi/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6c916				gal
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-90		AP	DMS

54-6600-061 (R-10-83)

5-6

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7084	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 100 λ spike

000007

Remarks, Calculations, Results:
49839

A 26.433

DPS 2597.59 2.72 -2 uCi/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6c916				gal
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-90		AP	DMS

54-6600-061 (R-10-83)

11-12

Serial No.	Sample Point	Date	Time Issued	Priority
F 986.-7584	SEG.COMP#18	2- 7-90	10:52	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: 250 λ + 100 λ spike

Customer ID: 000007

Remarks, Calculations, Results:

49839 7.662 / 6.3521

LMCS CHECK SAMPLE
LMCS ID 68B39 Q 165.822
~~DS~~ 2548.42 120.6%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
lc 916				Sue
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-90			DMS

54-6800-061 (R-10-83)

9-10

Serial No	Sample Point	Date	Time Issued	Priority
F 985.-7284	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: ? 1ml + 250 λ STD + 100 λ spike

Customer ID: 000007

Remarks, Calculations, Results:

SPIKED SAMPLE 49839

Q ~~DS~~ 178.2534 out 167.290

Q DS 2562.53

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
lc 916				Sue
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-90			DMS

54-6800-061 (R-10-83)

F0985.-7284

$$\frac{2597.59 - 26.433}{5.8795^3} = .4373$$

$$\frac{2569.53 - 178.2534}{5.8795^3} = .4067$$

$$\frac{178.2534}{.4067} - \frac{26.433}{.4373} = \frac{377.846 \times 4 \times 1000}{2.226} =$$

$$6.81^{-1} / 6.3521^{-1}$$

107.280

2

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7387	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	uCI/L	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
REAGENT BLANK
<25.00
$<1.13^{-2}$ uCi/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3/28/90		

54-6800-081 (R-10-83)

1 3/26

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7587	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	% RECOVERY	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 140 BKK
1606.61
102.3%
7.337^{-1} / 7.076^{-1}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3/28/90		

54-6800-081 (R-10-83)

4 + 5

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7187	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	uCI/L	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
DUPLICATE SAMPLE
22.806
19.397
<25.0
$<1.13^{-2}$ uCi/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3/28/90		

54-6800-081 (R-10-83)

3

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7087	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	uCI/L	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
~~<28~~
8.578
<25.0
$<1.13^{-2}$ uCi/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3/28/90		

54-6800-081 (R-10-83)

7

Serial No.	Sample Point	Date	Time Issued	Priority
F 986.-7587	SEG.COMP#18	2- 7-90	10:52	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	% RECOVERY	WB75L	0

Sample Size: 1 ml

Customer ID: 000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 140844
1531.122

6.897^{-1} / 7.0758^{-1} 97.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545				GM
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
3/28/90				

54-8800-081 (R-10-83)

6

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7287	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	% RECOVERY	WB75L	0

Sample Size: ? 2x2 ml 140844 = 1 ml

Customer ID: 000007

Remarks, Calculations, Results:
SPIKED SAMPLE
788.51

7.104^{-1} / 7.076^{-1} 100.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545/11				GM
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
3/28/91				

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7395	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: ? 1 mL

Customer ID: 000007

Remarks, Calculations, Results: REAGENT BLANK pk Hgt: 5.0 mm 2nd Leach

$<5ng/1000 = <5.0^{-3}$ ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC280				RK Fitts 4-11-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4-10-90	4/7	

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7595	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size: ? 35 L

Customer ID: 000007

Remarks, Calculations, Results: LMCS CHECK SAMPLE pk Hgt: 81.0 2nd Leach
LMCS ID 5 PC11 Su

102.8%

$40.659/35 = 1.162/1.13$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC280				RK Fitts 4-11-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4-10-90	4/7	

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7195	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: ? 1 mL

Customer ID: 000007

Remarks, Calculations, Results: DUPLICATE SAMPLE pk Hgt: 14.0 mm 2nd Leach

$3.846/1000 = 3.85^{-3}$ ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC290				RK Fitts 4-11-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4-10-90	4/7	

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7095	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: ? 1 mL

Customer ID: 000007

Remarks, Calculations, Results: pk Hgt: 11.5 2nd Leach

$2.472/1000 = 2.47^{-3}$ ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC280				RK Fitts 4-11-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4-10-90	4/7	

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 986.-7595	SEG.COMP#18	2- 7-90	10:52	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size	Customer ID
35x	000007

Remarks, Calculations, Results:

pk Hgt. 72.0mm 2nd Leach

98.7%

LMCS CHECK SAMPLE
LMCS ID 58C11BU

39.011/35 = 1.115/1.13

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
UC290				RP 4/11/90
Hrs 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4-10-90	4/17	

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7295	SEG.COMP#17	2- 7-90	10:50	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 1mL	000007

Remarks, Calculations, Results:
SPIKED SAMPLE
58C11BU 35x

pk Hgt. 82.0mm 2nd Leach

34.89
~~41.209~~/35 = ~~1.177~~ .9969/1.13

88.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
UC290				RP 4/11/90
Hrs 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4-10-90	4/17	

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7097	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
Hg	LA-325-102	PPM	WB75L	0

Sample Size: ? 3ml

Customer ID: 000007

Remarks, Calculations, Results:

PKHT 11.0038 ### 1.0000 ### 3.50 X 10^-4 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - Supervisor
LA543				RK Fuller 3-5-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date: 2-20-90	Time Completed	Lab Unit Mgr		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 988.-8397	SEG.COMP#20	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
HG	LA-325-102	PPM	WB75L	1

Sample Size: ?

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

Calculated in Blank Peak height) .829 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - Supervisor
LA543				RK Fuller 3-5-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date: ~~2-22-90~~ 2-20-90 S.C.	Time Completed	Lab Unit Mgr	4 1178	

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7297	SEG.COMP#17	2- 7-90	10:51	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
HG	LA-325-102	% RECOVERY	WB75L	0

Sample Size: ? 3ml + 25l 58C1186

Customer ID: 000007

Remarks, Calculations, Results:

SPIKED SAMPLE

126.0000 ### 34.0812 ### 105.66% spike Rec.

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - Supervisor
LA543				RK Fuller 3-5-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date: 2-20-90	Time Completed	Lab Unit Mgr		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7197	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
Hg	LA-325-102	PPM	WB75L	0

Sample Size: ? 3ml

Customer ID: 000007

Remarks, Calculations, Results:

DUPLICATE SAMPLE

~~-2.89 X 10^-5~~ ppm

7.0000 ### -0.0851 ### ← less than $\frac{5ng}{3000 l}$ = <1.70 X 10^-3 ppm RKFuller

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - Supervisor
LA543				RK Fuller 3-5-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date: 2-20-90	Time Completed	Lab Unit Mgr		

54-6800-061 (R-10-83)

Mercury Analysis on the Water Digestion - First Leach

Serial No.	Sample Point	Date	Time Issued	Priority
E 981.-7597	SEG.COMP#13	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	% RECOVERY	WB75L	0

Sample Size: ? 25.1

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID _____

.67.3668 ###
28.2222 ###

108.02%

1.145

LOSS

Analyst-1	Analyst-2	Analyst-3	Analyst-4
LA543			RR Rhodes 3-5-90
Hrs	Hrs	Hrs	Hrs
J. Hopkins			
Time Completed		Lab Unit Mgr	
2-20-90			

54-6609-361 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 909.-8597	SEG.COMP#19	1-24-90	8:14	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	% RECOVERY	WB75L	0

Sample Size: ? 25.1

Customer ID

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID SPC1184

.67.3668 ###
28.2222 ###

101.56%

1.076

Analyst-1	Analyst-2	Analyst-3	Analyst-4
LA543			RR Rhodes 3-5-90
Hrs	Hrs	Hrs	Hrs
J. Hopkins			
Time Completed		Lab Unit Mgr	
2-20-90			

54-6609-361 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 982.-7396	SEG.COMP#14	2- 7-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: ? 1 mL

Customer ID: 000007

Remarks, Calculations, Results: REAGENT BLANK pk Hgt: 3.0 mm 2nd Leach

<5 ng / 1000 = <.005

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C280				RK Fuller 4-2-90
Hrs: 25 m				

Date: 3-30-90 Time Completed: Lab Unit Mgr: [signature]

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 981.-7596	SEG.COMP#13	2- 7-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size: ? 35 n

Customer ID: 000007

Remarks, Calculations, Results: LMCS CHECK SAMPLE pk Hgt: 36.0 mm 2nd Leach
LMCS ID 58011 Bu

38.098 / 35 = 1.088 / 1.13 96.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C280				RK Fuller 4-2-90
Hrs: 25 m				

Date: 3-30-90 Time Completed: Lab Unit Mgr: [signature]

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 984.-7196	SEG.COMP#16	2- 7-90	10:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: ? 1 mL

Customer ID: 000007

Remarks, Calculations, Results: DUPLICATE SAMPLE pk Hgt: 3.5 mm 2nd Leach

<5 / 1000 = <.005 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C280				RK Fuller 4-2-90
Hrs: 25 m				

Date: 3-30-90 Time Completed: Lab Unit Mgr: [signature]

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 983.-7096	SEG.COMP#15	2- 7-90	10:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: ? 1 mL

Customer ID: 000007

Remarks, Calculations, Results: pk Hgt: 3.0 mm 2nd Leach

<5 / 1000 = <.005 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C280				RK Fuller 4-2-90
Hrs: 25 m				

Date: 3-30-90 Time Completed: Lab Unit Mgr: [signature]

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 986.-7596	SEG.COMP#18	2- 7-90	10:52	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size	Customer ID
35 L	000007

Remarks, Calculations, Results:

pk Hgt: 35.0 mm 2nd Leach

LMCS CHECK SAMPLE
LMCS ID 58C11BU

93.3%

36.902 / 35 = 1.054 / 1.13

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
61280				RK 4-2-90
Hrs 2.5 m	Hrs	Hrs	Hrs	Hrs
Date 3-30-90	Time Completed	Lab Unit Mgr		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 985.-7296	SEG.COMP#17	2- 7-90	10:51	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 1 mL 35% spike	000007

Remarks, Calculations, Results:

SPIKED SAMPLE pk Hgt: 35.0 mm 2nd Leach
58C11BU

93.3%

36.902 / 35 = 1.054 / 1.13

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
61280				RK 4-2-90
Hrs 2.5 m	Hrs	Hrs	Hrs	Hrs
Date 3-30-90	Time Completed	Lab Unit Mgr		

54-6800-061 (R-10-83)

ACID DIGESTION ANALYSIS

APPENDIX A

Serial No.	Sample Point	Date	Time Issued	Priority
F 989.-8000	SEG.COMP#21	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD-DGST	LA-505-159	G/L	WB75L	0

Sample Size

Customer ID: 000007

Remarks, Calculations, Results:

GRAMS SAMPLE _____
VOLUME ON
COMPLETION 50ml

~~1.35 g/ml~~
1.35x10⁻¹ g/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
69769				
Hrs	Hrs	Hrs	Hrs	Hrs
D. Sawhney				

Date	Time Completed	Lab Unit Mgr
2/13/90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 910.-8300	SEG.COMP#20	1-24-90	8:14	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD-DGST	LA-505-159	G/L	WB75L	0

Sample Size

Customer ID: 000005

Remarks, Calculations, Results:

REAGENT BLANK
VOLUME ON
COMPLETION 50ml

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
69769				
Hrs	Hrs	Hrs	Hrs	Hrs
D. Sawhney				

Date	Time Completed	Lab Unit Mgr
2/13/90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 991.-8200	SEG.COMP#23	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD-DGST	LA-505-158	~~% RECOVERY~~ g/L	WB75L	0

Sample Size

Customer ID: 000007

Remarks, Calculations, Results:

1.02x10¹ g/L ~~1.02 g/ml~~

SPIKED ANALYSIS
GRAMS SAMPLE _____
VOLUME ON
COMPLETION 50ml
VOLUME SPIKES 1ml each
SPIKE ID 163515 D 104515 B

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
69769				
Hrs	Hrs	Hrs	Hrs	Hrs
D. Sawhney				

Date	Time Completed	Lab Unit Mgr
2/13/90		

54-6800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 990.-8100	SEG.COMP#22	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD-DGST	LA-505-159	G/L	WB75L	0

Sample Size

Customer ID: 000007

Remarks, Calculations, Results:

DUPLICATE ANALYSIS
GRAMS SAMPLE _____
VOLUME ON
COMPLETION 50ml

9.6g/L ~~9.6 g/ml~~

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
69769				
Hrs	Hrs	Hrs	Hrs	Hrs
D. Sawhney				

Date	Time Completed	Lab Unit Mgr
2/13/90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 988.-8350	SEG.COMP#20	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size

Customer ID 000007

Remarks, Calculations, Results:

REAGENT BLANK

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J. White				
Date	Time Completed	Lab Unit Mgr		
3-30-90				

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 987.-8550	SEG.COMP#19	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	WB75L	0

Sample Size

Customer ID 000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE 78C11F
LMCS ID 82B38C
77C11F

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J. White				
Date	Time Completed	Lab Unit Mgr		
3-30-90				

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 990.-8150	SEG.COMP#22	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size

Customer ID 000007

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J. White				
Date	Time Completed	Lab Unit Mgr		
3-30-90				

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 989.-8050	SEG.COMP#21	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size

Customer ID 000007

Remarks, Calculations, Results:

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J. White				
Date	Time Completed	Lab Unit Mgr		
3-30-90				

54-6800-081 (R-10-83)

ICP Analysis on the Acid Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 992.-6550	SEG.COMP#24	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	WB75L	0

Sample Size

Customer ID 000007

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID_____

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J. White				
Date	Time Completed	Lab Unit Mgr		
3-30-90				

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 991.-8250	SEG.COMP#23	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size

Customer ID 000007

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID_____
SPIKE VOLUME_____

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J. White				
Date	Time Completed	Lab Unit Mgr		
3-30-90				

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 989.-8095	SEG.COMP#21	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: 1ml

Customer ID: 000007

Remarks, Calculations, Results:
PK HT 10, 4.24ng, .0042ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RKFuller 3-26-90
J. Hopkins				

Date: 3-15-90 | Time Completed | Lab Unit Mgr | DMS

54-6600-061 (R-10-63)

Serial No.	Sample Point	Date	Time Issued	Priority
F 952.-7395	SEG.COMP#14	1-30-90	10:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: ? 2ml

Customer ID: 000008

Remarks, Calculations, Results:
REAGENT BLANK
.3268ng

REAGENT BLANK

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RKFuller 3-26-90
J. Hopkins				

Date: 3-15-90 | Time Completed | Lab Unit Mgr | DMS

54-6600-061 (R-10-63)

Serial No.	Sample Point	Date	Time Issued	Priority
F 991.-8295	SEG.COMP#23	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size: 1ml

Customer ID: 000007

Remarks, Calculations, Results:
PK HT-37, ~~27~~ 17.65ng, .5044ppm, 43.49%

SPIKE SAMPLE
SPIKE ID S8C11BR
SPIKE VOLUME 35λ
Reran sample at 100λ+35λ 58C11BR spike
31.91ng, 78.60%, .911ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J. Hopkins				RKFuller 3-26-90
6A543				

Date: 3-15-90 | Time Completed | Lab Unit Mgr | DMS

54-6600-061 (R-10-63)

Serial No.	Sample Point	Date	Time Issued	Priority
F 990.-8195	SEG.COMP#22	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: 1ml

Customer ID: 000007

Remarks, Calculations, Results:
PK HT-10, 4.24ng, .0042ppm

DUPLICATE SAMPLE

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RKFuller 3-26-90
J. Hopkins				

Date: 3-15-90 | Time Completed | Lab Unit Mgr | DMS

54-6600-061 (R-10-63)

Serial No.	Sample Point	Date	Time Issued	Priority
F 914.-8595	SEG.COMP#24	1-24-90	8:15	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 35	

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID S8C11BR

pk HT 65, 40.20ng, 99.14%, 1.15ppm DMS

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Fell 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr	
3-15-90			DMS

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 951.-7595	SEG.COMP#13	1-30-90	10:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 35	000001

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID S8C11BR

peak height 65, 40.19ng, 99.13%, 1.148ppm DMS

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Fell 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr	
3-15-90			DMS

54-6800-081 (R-10-83)

Arsenic Analysis on the Acid Digestion

```
 0.0000  ***
 2.2000  ***

25.0000  ***
43.0000  ***

56.0000  ***
62.0000  ***

75.0000  ***
116.5000  ***

 0.9965  ***
 3.5000  ***
 1.5300  ***
```

F 951.-7595 AS

Serial No.	Sample Point	Date	Time Issued	Priority
F 989.-8097	SEG.COMP#21	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	PPM	WB75L	1

Sample Size: ? 1ml

Customer ID:

Remarks, Calculations, Results:

peak height 43
14.23 ng
1.42×10^{-2} ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Tillis 3-5-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date: 2-23-90	Time Completed	Lab Unit Mgr		

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 988.-8397	SEG.COMP#20	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	PPM	WB75L	1

Sample Size: ?

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

Calculated in B Blank
peak height 1, .829 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Tillis 3-5-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date: ~~2-22-90~~ 2-20-90 S.C.	Time Completed	Lab Unit Mgr		

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 991.-8297	SEG.COMP#23	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	% RECOVERY	WD75L	1

Sample Size: ? ~~250 l~~ 1ml + 25 l

Customer ID:

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 58CH80
SPIKE VOLUME ~~25 l~~

peak ht 117 ~~125~~ - 40.39 ng
84 74.85%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Tillis 3-5-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date: 2-22-90	Time Completed	Lab Unit Mgr		

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 990.-8197	SEG.COMP#22	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	PPM	WB75L	1

Sample Size: ? 1ml

Customer ID:

Remarks, Calculations, Results:

DUPLICATE SAMPLE

peak height - 45
14.66 ng
1.47×10^{-2} ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Tillis 3-5-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date: 2-22-90	Time Completed	Lab Unit Mgr		

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 957.-8597	SEG.COMP#19	1-30-90	10:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 25 l	000008

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 58C11BN

K1

31.8600 ***
34.6550 ***

.960

90.69%

F304

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Miller 3-5-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date 2-20-90	Time Completed	Lab Unit Mgr		

84-8600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
957.-8597	SEG.COMP#19	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	% RECOVERY	WB75L	1

Sample Size	Customer ID
? 25 l	

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 58C11BO

ph height 100-32.42 = 103.73%
1.2968 / 1.25

K1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Miller 3-5-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date ~~2-22-90~~ 2-20-90	Time Completed	Lab Unit Mgr		

A.C.

84-8600-061 (R-10-83)

Mercury Analysis on the Acid Digestion

F 987.-8597

F 957.-8597

Serial No.	Sample Point	Date	Time Issued	Priority
F 989.-8096	SEG.COMP#21	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: 100 λ

Customer ID: 000007

Remarks, Calculations, Results: ~~pk Height = 30 mm = 0.8773 ng~~ pK Height = 4.5 mm

~~4.5ng / 100λ = 40.05 ppm~~

<.05 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC290				RK Fuller 3-29-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date: 3-29-90 | Time Completed | Lab Unit Mgr

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 988.-8396	SEG.COMP#20	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: 100 λ

Customer ID: 000007

Remarks, Calculations, Results: pK Height = ~~4.0 mm = 0.8773 ng~~

REAGENT BLANK

~~4.5ng / 100λ = <0.05 ppm~~

<5/100 = <.05 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC290				RK Fuller 3-29-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date: 3-29-90 | Time Completed | Lab Unit Mgr

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 991.-8296	SEG.COMP#23	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size: 100 λ + 35 λ 58C118D

Customer ID: 000007

Remarks, Calculations, Results: ~~pk Height = 30.0 mm = 28.73 ng = 0.8603 ng/λ~~

SPIKE SAMPLE
SPIKE ID 58C118D
SPIKE VOLUME 35λ

~~0.8603 ng / 1.15 ppm~~ ~~x 100 = 74.84% / 50~~

pK Height = 28.5 mm

30.486/35 = .871

75.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC280				RK Fuller 3-29-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date: 3-29-90 | Time Completed | Lab Unit Mgr

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 990.-8196	SEG.COMP#22	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: 100 λ

Customer ID: 000007

Remarks, Calculations, Results: pK Height = 4.5 mm

DUPLICATE SAMPLE

~~pk Height = 30 mm = 0.8773 ng~~

<.05 ppm

~~4.5ng / 100λ = 40.05 ppm~~

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC280				RK Fuller 3-29-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date: 3-29-90 | Time Completed | Lab Unit Mgr

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 992.-8596	SEG.COMP#24	2- 7-90	10:54	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size: 35λ 58C11BU

Customer ID: 000007

Remarks, Calculations, Results: ~~pk Height = 32.5 mm = 34.47 ng = 0.9957 ppm~~ 6%

LMCS CHECK SAMPLE
LMCS ID 58C11B4

~~0.993 ppm~~ ~~x 100~~ ~~99.7%~~ ~~7.15 ppm~~

pk Height = 32.0 mm 34.850/35 = .9957 / 1.15

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC 290				RK 3-29-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-29-90		

54-8800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 987.-8596	SEG.COMP#19	2- 7-90	10:53	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size: 35λ

Customer ID: 000007

Remarks, Calculations, Results: pk Height = 39.0 mm

LMCS CHECK SAMPLE
LMCS ID 58C11B9

43.5786/35 = 1.245 / 1.15 108.3%

~~pk Height = 35.5 mm = 34.46 ng = 0.993 ppm~~

~~0.993 ppm / 7.15 ppm x 100 = 86.30% recovery~~

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC 290				RK 3-29-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-29-90		

54-8800-061 (R-10-83)

APPENDIX B
ANALYTICAL DETECTION LIMITS

SINGLE SHELL TANK PROJECT
Analytical Detection Limits
October 12, 1990

The following detection limits are derived on ideal matrices. These values were derived by using either calibration standards or pure matrix standards. Detection limits on actual single shell tank samples are likely to be much higher. No information regarding procedure detection limits is available for procedures not listed in this report.

Procedure LA-355-131
Arsenic Analysis by Hydride Generation Atomic Absorption

Detection Limit = 0.005 ppm in solution
Typical sample dilution for the Fusion Dissolution was 0.0025g/mL.
Typical sample dilution for the Water Digestion was 0.010g/mL.
Typical sample dilution for the acid Digestion was 0.010g/mL.

Procedure LA-325-102
Mercury Analysis by Atomic Absorption Manual Cold Vapor Technique

Detection Limit = 0.002 ppm in solution
Typical sample dilution for the Fusion Dissolution was 0.0025g/mL.
Typical sample dilution for the Water Digestion was 0.010g/mL.
Typical sample dilution for the acid Digestion was 0.010g/mL.
Solids were analyzed directly.

Procedure LA-362-131
Selenium Analysis by Hydride Generation Atomic Absorption

Detection Limit = 0.005 ppm in solution
Typical sample dilution for the Fusion Dissolution was 0.0025g/mL.
Typical sample dilution for the Water Digestion was 0.010g/mL.
Typical sample dilution for the acid Digestion was 0.010g/mL.

Procedure LA-533-105
Anion Analysis on Dionex Model 4000i

Typical sample dilution was 0.000099g/mL

Fluoride
Detection Limit in solution = 0.09 ppm.

Chloride
Detection Limit in solution = 0.04 ppm.

Nitrate
Detection Limit in solution = 0.24 ppm.

Phosphate
Detection Limit in solution = 0.13 ppm.

Sulfate
Detection Limit in solution = 0.13 ppm.

Procedure LA-622-102
Determination of Carbonate in Solutions by Coulometry

Detection Limit = 5 ppm in solution
Typical sample dilution was 0.01g/mL

Procedure LA-344-105
Total Organic Carbon
Determination of Carbon Insolation by Combustion and Coulometry

Detection Limit = 5.5 ppm in solution
Typical sample dilution was 0.01g/mL

Procedure LA-505-151
Inductively Coupled Plasma (ICP) Emission Spectrometer Operations and Analysis

Typical sample dilution for the Fusion Dissolution was 0.00019g/mL.

Typical sample dilution for the Water Digestion was 0.000476g/mL.

Typical sample dilution for the acid Digestion was 0.000476g/mL.

Instrument Detection Limit ppm.

Aluminum	0.0745	Antimony	0.1424
Arsenic	0.0223	Barium	0.0026
Beryllium	0.0006	Bismuth	0.0839
Boron	0.0083	Cadmium	0.0039
Calcium	0.0002	Cerium	0.1359
Chromium	0.0039	Cobalt	0.0246
Copper	0.0158	Europium	0.0024
Iron	0.0073	Lanthanum	0.0141
Lead	0.0273	Lithium	0.0032
Magnesium	0.0001	Manganese	0.0011
Mercury	0.0036	Molybdenum	0.0049
Neodymium	0.2130	Nickel	0.0147
Phosphorous	0.0308	Potassium	0.2122
Samarium	0.1525	Selenium	0.0631
Silicon	0.0314	Silver	0.0183
Sodium	0.0483	Strontium	0.0010
Sulfur	0.0163	Tantalum	0.0273
Thallium	0.0646	Thorium	0.0122
Tin	0.0144	Titanium	0.0035
Tungsten	0.0273	Uranium	1.1405
Vanadium	0.0186	Zinc	0.0017
Zirconium	0.0141		