9613479.0668

Westinghouse Hanford Company

P.O. Box 1970 Richland, WA 99352

START

0045362

March 31, 1995

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SEP 1995 RECEIVED EDMC

Mr. O. A. Farabee, Acting Director
Transition Program Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Farabee:

TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT BACKCYCLE WASTE AND NEPTUNIUM PACKAGE VESSELS, LOOP FLUSH ANALYTICAL RESULTS

Attachment 1 is the laboratory analytical and sample results contacted on the final flush for the Plutonium-Uranium Extraction (PUREX) Backcycle Waste and Neptunium Package Vessels. These results are transmitted in accordance with U.S. Department of Energy, Richland Operations Office/Westinghouse Hanford Company agreement with State of Washington Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA).

Analytical results from future flushes will be transmitted as they are obtained.

A copy of the Predetermination Report, designating the final flush solution based on the analytical results is also included in Attachment 1. The final flush for this cell was designated as non-dangerous waste.

Attachment 2 is a letter for your transmittal to Ecology and the EPA to transmit these results.

9613479.1069

If you have any questions, please contact Mr. G. J. LeBaron (373-1792) of my staff.

Very truly yours,

D. G. Hamrick, Director
PUREX Transition Project
Transition Projects Division

jft/leh

Attachmenta 2

DOE-HQ - (w/o attachment)
R. Martinez
B. K. Nelson
D. Schmidt

RL - J. E. Mecca
L. D. Romine
A. H. Wirkkala (w/o attachment)

9613479.1670

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Attachment 1

PUREX Backcycle Waste and Neptunium Package Vessels Loop Flush
Laboratory Analyses and Sample Results

SAMPLE REPORT DESCRIPTION

PUREX CANYON VESSELS - BACKCYCLE WASTE AND NEPTUNIUM PACKAGE VESSELS LOOP FLUSH ANALYTICAL RESULTS

SAMPLE NUMBER	SAMPLE REPORT DESCRIPTION
P3008	Screening sample on final flush from PUREX Laboratory. Used to determine if flush solution meets RCRA criteria.
E9834	Screening sample on final flush from 222-S laboratory tested for total activity. Sample results used to determine if the off-site laboratory criteria for acceptance is met.
R6988 STD	Standard sample results indicating the percent recovery of the analyzed constituents. A tracer was injected to test the instrumentation precision in detecting concentration levels.
R6989 BLANK	Laboratory Quality Control Blank Method.
R6990 BODPS9	RCRA protocol sample results from 22-S Laboratory
R6991 BODPT0	Field Blank Sample results document any contamination attributable to field handling procedures and the sampling environment.
R6992 STD	Standard Sample
VOA Data Sheet (BODPT0/R6991)	Volatile organics analysis results for RCRA sample - BODPT0/R6991
VOA Data Sheet (BODPT0/R6991)	Volatile organics analysis results for Field blank.

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RCRA ANALYTICAL DATA SUMMARY
PUREX BACKCYCLE WASTE & NEPTUNIUM PACKAGE VESSELS
SAMPLE LOCATION: TANK J3
SAMPLE ID# BODPS9 (R6990)

Analyte	Dangerous Waste Designation Threshold (mg/L)	RCRA Sample Results (mg/L)
Cadmium	1.0	<0.01
Chromium	5.0	0.867
Lead	5.0	<0.1
Barium	100.0	0.291
Silver	5.0	<0.01
* Arsenic	5.0	<0.25
* Selenium	1.0	<0.25
Mercury	0.2	<0.005
pH	pH<2 or pH>12.5	2.89
Total Organic Carbon (TOC)	100,000 (10wt% based upon designation limits for tri-butyl phosphate)	171
Benzene	0.5	undetect (U)
Carbon Tetrachloride	0.5	undetect (U)
Chlorobenzene	100	undetect (U)
Chloroform	6.0	undetect (U)
1,2-Dichloroethane	0.5	undetect (U)
1,1 Dichloroethylene	0.7	undetect (U)
2-Butanone	200	undetect (U)
Tetrachloroethylene	0.7	undetect (U)
Trichloroethylene	0.5	undetect (U)
Vinyl Chloride	0.2	undetect (U)

* Note: Arsenic and Selenium data relate to data extension numbers 8705 and 8805 on the attached printout.

861397 J.L. 13

SAMPLE STATUS REPORT FOR P 3008. P-BLANK TK-J3 TIME: 2/ 9/95 14:13
DISPATCHED: 2/ 8/95 9:13 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/ 8/95 15:30

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
1383	Cr	< 8.78700E-01 uG/ML	N	Y	KP32B
1482	Cd	< 6.56500E-01 uG/ML	N	Y	KP32B
3203	pH	3.00000E 00 NONE	N	Y	KP32B
4411	U	INCOMPLETE			KP32B
6016	Cd-STD	COMPLETED			KP32B
6022	Cr-STD	COMPLETED			KP32B
6170	PH-STD	COMPLETED			KP32B
6524	U-STD	INCOMPLETE			KP32B

END OF REPORT

9615479.1[illegible]4

: STATUS REPORT FOR E 9834. E-BLANK BODPS9[illegible]3 TIME: 2/15/95 13:24
ATCHED: 2/14/95 13:36 SAMPLE HAS NOT BEEN SLURPED PAGE 1
IVED: 2/15/95 7:47

DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
********	**********		***	***	******
TB-FLTRT	4.23000E-01 uCi/L		N	Y	KP51T
AT-FLTRT	1.01000E 00 uCi/L		N	Y	KP51T
GEA-LIQ	2.72000E-02 uCi/L	Sb-125	N	Y	KP51T
GEA-LIQ	9.86999E-02 uCi/L	Cs-137	N	Y	KP51T
GEA-LIQ	4.19000E-02 uCi/L	Np-237	N	Y	KP51T
GEA-LIQ	2.48000E-01 uCi/L	Am-241	N	Y	KP51T

END OF REPORT

PRESS ANY KEY TO CONTINUE

9615179.5[illegible]

SAMPLE STATUS REPORT FOR R 6988. PUREX J3/~~B5~~ STD TIME: 3/13/95 10:[illegible]
DISPATCHED: 2/14/95 11:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	****
5513	pH	1.00500E 02 % RECOVERY	N	Y	KP51[illegible]
		5553			
5526	TOC	1.02300E 02 % RECOVERY	N	Y	KP51[illegible]
		5554			
5595	As	1.00360E 02 % RECOVERY Ag	N	Y	KP5[illegible]
		5555			
5595	As	1.07000E 02 % RECOVERY	N	Y	KP51[illegible]
		5566			
5595	As	9.88600E 01 % RECOVERY Al	N	Y	KP51[illegible]
		5555			
5595	As	1.00520E 02 % RECOVERY As	N	Y	KP51[illegible]
		5555			
5595	As	1.00240E 02 % RECOVERY Ba	N	Y	KP51[illegible]
		5555			
5595	As	1.05380E 02 % RECOVERY Be	N	Y	KP51[illegible]
		5555			
5595	As	1.03140E 02 % RECOVERY Ca	N	Y	KP5[illegible]
		5555			
5595	As	1.03760E 02 % RECOVERY Cd	N	Y	KP5[illegible]
		5555			
5595	As	1.04380E 02 % RECOVERY Co	N	Y	KP5[illegible]
		5555			
5595	As	1.04080E 02 % RECOVERY Cr	N	Y	KP51[illegible]
		5555			
5595	As	1.02420E 02 % RECOVERY Cu	N	Y	KP5[illegible]
		5555			
5595	As	1.01880E 02 % RECOVERY Fe	N	Y	KP5[illegible]
		5555			
5595	As	9.91600E 01 % RECOVERY K	N	Y	KP5[illegible]
		5555			
5595	As	9.97200E 01 % RECOVERY Li	N	Y	KP51[illegible]
		5555			
5595	As	9.74600E 01 % RECOVERY Mg	N	Y	KP51[illegible]
		5555			
5595	As	1.01220E 02 % RECOVERY Mn	N	Y	KP51[illegible]
		5555			
5595	As	1.02620E 02 % RECOVERY Mo	N	Y	KP51[illegible]
		5555			
5595	As	9.97000E 01 % RECOVERY Na	N	Y	KP51[illegible]
		5555			
5595	As	1.02320E 02 % RECOVERY Ni	N	Y	KP51[illegible]
		5555			
5595	As	1.04240E 02 % RECOVERY P	N	Y	KP51[illegible]
		5555			
5595	As	1.01480E 02 % RECOVERY Pb	N	Y	KP51[illegible]
		5555			
5595	As	9.77800E 01 % RECOVERY Sb	N	Y	KP51[illegible]
		5555			
5595	As	1.00120E 02 % RECOVERY Se	N	Y	KP51[illegible]
		5555			
5595	As	1.00220E 02 % RECOVERY Sr	N	Y	KP51[illegible]
		5555			

REPORT CONTINUED ON NEXT PAGE

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SAMPLE STATUS REPORT FOR R 6988. PUREX J3/~~E5~~ STD TIME: 3/13/95 10:
DISPATCHED: 2/14/95 11:23 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5595	As	9.94400E 01 % RECOVERY Tl	N	Y	KP51
		5555			
5595	As	1.02260E 02 % RECOVERY V	N	Y	KP5
		5555			
5595	As	1.02760E 02 % RECOVERY Zn	N	Y	KP5
		5555			
5596	Se	1.07000E 02 % RECOVERY	N	Y	KP51
		5565			
5597	Hg	1.09000E 02 % RECOVERY	N	Y	KP51
		5556			
8505	ACD DGST	AS/SE DF=50; ICP DF=20; TOTAL VOL. 100 ML EACH			KP51
		5564			
8595	As	9.37000E 01 % RECOVERY	N	Y	KP51
		5566			
8596	Se	1.02000E 02 % RECOVERY	N	Y	KP51
		5565			

END OF REPORT

SAMPLE STATUS REPORT FOR R 6989. PUREX J3/[redacted] BLANK TIME: 3/13/95 10:43
DISPATCHED: 2/14/95 11:25 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
5626	TOC	< 5.00000E 00 uG C/ML 5554		N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Ag	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Al	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	As	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Ba	N	Y	KP51T
5650	ICP	< 5.00000E-03 uG/ML 5555	Be	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Ca	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Cd	N	Y	KP51T
5650	ICP	< 2.00000E-02 uG/ML 5555	Co	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Cr	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Cu	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Fe	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	K	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Li	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Mg	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Mn	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Mo	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Na	N	Y	KP51T
5650	ICP	< 2.00000E-02 uG/ML 5555	Ni	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5555	P	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Pb	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5555	Sb	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Se	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Sr	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5555	Tl	N	Y	KP51T

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.MPLE STATUS REPORT FOR R 6989. PUREX J3/[redacted] BLANK TIME: 3/13/95 10:43
ISPATCHED: 2/14/95 11:25 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5650	ICP	< 5.00000E-02 uG/ML V 5555	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML Zn 5555	N	Y	KP51T
95	As	< 3.00000E-03 uG/ML 5566	N	Y	KP51T
6	Se	< 3.00000E-03 uG/ML 5565	N	Y	KP51T
697	Hg	< 5.00000E-03 uG/ML 5556	N	Y	KP51T
8605	ACD DGST	COMPLETED, 100 ML FINAL VOL. 5564			KP51T
8695	As	< 2.50000E-01 uG/ML 5566	N	Y	KP51T
8696	Se	< 2.50000E-01 uG/ML 5565	N	Y	KP51T

END OF REPORT

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SAMPLE STATUS REPORT FOR R 6990. PUREX J3/~~B5~~ BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
		5552				
5713	pH	2.89000E 00 NONE		N	Y	KP51T
		5553				
5726	TOC	1.71000E 02 uG C/ML		N	Y	KP51T
		5554				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.36000E-01 uG/ML	Al	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	As	N	Y	KP51T
		5555				
5750	ICP-LIQ	2.91000E-01 uG/ML	Ba	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-03 uG/ML	Be	N	Y	KP51T
		5555				
5750	ICP-LIQ	2.03000E 01 uG/ML	Ca	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Co	N	Y	KP51T
		5555				
5750	ICP-LIQ	8.67000E-01 uG/ML	Cr	N	Y	KP51T
		5555				
5750	ICP-LIQ	3.30000E-02 uG/ML	Cu	N	Y	KP51T
		5555				
5750	ICP-LIQ	7.16000E 00 uG/ML	Fe	N	Y	KP51T
		5555				
5750	ICP-LIQ	9.16000E-01 uG/ML	K	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Li	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.78000E 00 uG/ML	Mg	N	Y	KP51T
		5555				
5750	ICP-LIQ	8.39999E-02 uG/ML	Mn	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Mo	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.07000E 00 uG/ML	Na	N	Y	KP51T
		5555				
5750	ICP-LIQ	3.41000E-01 uG/ML	Ni	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.20000E 01 uG/ML	P	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	Sb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Se	N	Y	KP51T
		5555				
5750	ICP-LIQ	1.08000E-01 uG/ML	Sr	N	Y	KP51T
		5555				

REPORT CONTINUED ON NEXT PAGE

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SAMPLE STATUS REPORT FOR R 6990. PUREX J3/~~E5~~ BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5750	ICP-LIQ	< 2.00000E-01 uG/ML 5555	Tl	N	Y	KP51T
5750	ICP-LIQ	< 5.00000E-02 uG/ML 5555	V	N	Y	KP51T
5750	ICP-LIQ	6.50000E-02 uG/ML 5555	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5556		N	Y	KP51T
5813	pH	2.85000E 00 NONE 5553		N	Y	KP51T
5826	TOC	1.64000E 02 uG C/ML 5554		N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Ag	N	Y	KP51T
5850	ICP-LIQ	4.52000E-01 uG/ML 5555	Al	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	As	N	Y	KP51T
5850	ICP-LIQ	2.96000E-01 uG/ML 5555	Ba	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-03 uG/ML 5555	Be	N	Y	KP51T
5850	ICP-LIQ	2.10000E 01 uG/ML 5555	Ca	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cd	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5555	Co	N	Y	KP51T
5850	ICP-LIQ	8.93000E-01 uG/ML 5555	Cr	N	Y	KP51T
5850	ICP-LIQ	3.30000E-02 uG/ML 5555	Cu	N	Y	KP51T
5850	ICP-LIQ	7.34000E 00 uG/ML 5555	Fe	N	Y	KP51T
5850	ICP-LIQ	1.08000E 00 uG/ML 5555	K	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Li	N	Y	KP51T
5850	ICP-LIQ	4.83000E 00 uG/ML 5555	Mg	N	Y	KP51T
5850	ICP-LIQ	8.60000E-02 uG/ML 5555	Mn	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Mo	N	Y	KP51T
5850	ICP-LIQ	4.10000E 00 uG/ML 5555	Na	N	Y	KP51T
5850	ICP-LIQ	3.53000E-01 uG/ML 5555	Ni	N	Y	KP51T
5850	ICP-LIQ	4.59000E 01 uG/ML 5555	P	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Pb	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

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AMPLE STATUS REPORT FOR R 6990. PUREX J3/~~B5~~ BODPS9 TIME: 3/13/95 10:44
ISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5850	ICP-LIQ	< 2.00000E-01 uG/ML Sb 5555	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML Se 5555	N	Y	KP51T
5850	ICP-LIQ	1.10000E-01 uG/ML Sr 5555	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML Tl 5555	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML V 5555	N	Y	KP51T
5850	ICP-LIQ	6.50000E-02 uG/ML Zn 5555	N	Y	KP51T
5897	Hg-LIQ	< 5.00000E-03 uG/ML 5556	N	Y	KP51T
5926	TOC	9.83000E 01 % RECOVERY 5554	N	Y	KP51T
5950	ICP	1.01970E 02 % RECOVERY Al 5555	N	Y	KP51T
5950	ICP	1.00000E 02 % RECOVERY As 5555	N	Y	KP51T
5950	ICP	1.01560E 02 % RECOVERY Ba 5555	N	Y	KP51T
5950	ICP	1.05740E 02 % RECOVERY Be 5555	N	Y	KP51T
5950	ICP	Ca - SAMPLE > 4X CONCENTRATION OF SPIKE. 5555			KP51T
5950	ICP	1.06560E 02 % RECOVERY Cd 5555	N	Y	KP51T
5950	ICP	1.04920E 02 % RECOVERY Co 5555	N	Y	KP51T
5950	ICP	1.04340E 02 % RECOVERY Cr 5555	N	Y	KP51T
5950	ICP	1.01390E 02 % RECOVERY Cu 5555	N	Y	KP51T
5950	ICP	9.83600E 01 % RECOVERY Fe 5555	N	Y	KP51T
5950	ICP	1.01970E 02 % RECOVERY K 5555	N	Y	KP51T
5950	ICP	1.00000E 02 % RECOVERY Li 5555	N	Y	KP51T
5950	ICP	8.60600E 01 % RECOVERY Mg 5555	N	Y	KP51T
5950	ICP	1.02130E 02 % RECOVERY Mn 5555	N	Y	KP51T
5950	ICP	1.01640E 02 % RECOVERY Mo 5555	N	Y	KP51T
5950	ICP	9.09800E 01 % RECOVERY Na 5555	N	Y	KP51T
5950	ICP	1.05660E 02 % RECOVERY Ni 5555	N	Y	KP51T
5950	ICP	P - SAMPLE > 4X CONCENTRATION OF SPIKE. 5555			KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6990. PUREX J3/E5 BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	1.05740E 02 % RECOVERY Pb	N	Y	KP51T
		5555			
5950	ICP	1.02460E 02 % RECOVERY Sb	N	Y	KP51T
		5555			
5950	ICP	1.01640E 02 % RECOVERY Se	N	Y	KP51T
		5555			
5950	ICP	1.01800E 02 % RECOVERY Sr	N	Y	KP51T
		5555			
5950	ICP	1.04920E 02 % RECOVERY Tl	N	Y	KP51T
		5555			
5950	ICP	1.03280E 02 % RECOVERY V	N	Y	KP51T
		5555			
5950	ICP	1.03690E 02 % RECOVERY Zn	N	Y	KP51T
		5555			
5997	Hg	1.02700E 02 % RECOVERY	N	Y	KP51T
		5556			
8705	ACD DGST	DF=100, FINAL VOL. 100 ML			KP51T
		5564			
*8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5566			
*8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5565			
8805	ACD DGST	DF=100; FINAL VOL.100 ML			KP51T
		5564			
*8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5566			
*8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5565			
8905	ACD DGST	AS/SE DF=50; ICP DF= 20; FINAL VOL. 100 ML EACH			KP51T
		5564			
8995	As	9.45000E 01 % RECOVERY	N	Y	KP51T
		5566			
8996	Se	9.68000E 01 % RECOVERY	N	Y	KP51T
		5565			

END OF REPORT

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/~~E5~~ BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
		5552				
5713	pH	6.28000E 00 NONE		N	Y	KP51T
		5553				
5726	TOC	1.27000E 01 uG C/ML		N	Y	KP51T
		5554				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Al	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	As	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Ba	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-03 uG/ML	Be	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Ca	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Co	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cr	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cu	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Fe	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	K	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Li	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Mg	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Mn	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Mo	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.50000E-01 uG/ML	Na	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Ni	N	Y	KP51T
		5555				
5750	ICP-LIQ	2.70000E-01 uG/ML	P	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	Sb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Se	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Sr	N	Y	KP51T
		5555				

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/~~E5~~ BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5750	ICP-LIQ	< 2.00000E-01 uG/ML 5555	Tl	N	Y	KP51T
5750	ICP-LIQ	< 5.00000E-02 uG/ML 5555	V	N	Y	KP51T
5750	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5556		N	Y	KP51T
5813	pH	6.43000E 00 NONE 5553		N	Y	KP51T
5826	TOC	1.43000E 01 uG C/ML 5554		N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Ag	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Al	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	As	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Ba	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-03 uG/ML 5555	Be	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Ca	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cd	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5555	Co	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cr	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cu	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Fe	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5555	K	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Li	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Mg	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Mn	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Mo	N	Y	KP51T
5850	ICP-LIQ	4.51000E-01 uG/ML 5555	Na	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5555	Ni	N	Y	KP51T
5850	ICP-LIQ	2.45000E-01 uG/ML 5555	P	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Pb	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/~~E5~~ BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5555	Sb	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Se	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Sr	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5555	Tl	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	V	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Zn	N	Y	KP51T
5897	Hg-LIQ	< 5.00000E-03 uG/ML 5556		N	Y	KP51T
5926	TOC	9.89000E 01 % RECOVERY 5554		N	Y	KP51T
5950	ICP	1.08200E 02 % RECOVERY 5555	Ag	N	Y	KP51T
5950	ICP	1.04920E 02 % RECOVERY 5555	Al	N	Y	KP51T
5950	ICP	1.01640E 02 % RECOVERY 5555	As	N	Y	KP51T
5950	ICP	1.02460E 02 % RECOVERY 5555	Ba	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5555	Be	N	Y	KP51T
5950	ICP	1.07380E 02 % RECOVERY 5555	Ca	N	Y	KP51T
5950	ICP	1.09840E 02 % RECOVERY 5555	Cd	N	Y	KP51T
5950	ICP	1.08200E 02 % RECOVERY 5555	Co	N	Y	KP51T
5950	ICP	1.09020E 02 % RECOVERY 5555	Cr	N	Y	KP51T
5950	ICP	1.05740E 02 % RECOVERY 5555	Cu	N	Y	KP51T
5950	ICP	1.07380E 02 % RECOVERY 5555	Fe	N	Y	KP51T
5950	ICP	1.03280E 02 % RECOVERY 5555	K	N	Y	KP51T
5950	ICP	1.02460E 02 % RECOVERY 5555	Li	N	Y	KP51T
5950	ICP	1.03280E 02 % RECOVERY 5555	Mg	N	Y	KP51T
5950	ICP	1.05740E 02 % RECOVERY 5555	Mn	N	Y	KP51T
5950	ICP	1.06560E 02 % RECOVERY 5555	Mo	N	Y	KP51T
5950	ICP	1.03280E 02 % RECOVERY 5555	Na	N	Y	KP51T
5950	ICP	1.08200E 02 % RECOVERY 5555	Ni	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

9613479.0686

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/~~P5~~ BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	1.10660E 02 % RECOVERY P	N	Y	KP51T
		5555			
5950	ICP	1.09020E 02 % RECOVERY Pb	N	Y	KP51T
		5555			
5950	ICP	1.07380E 02 % RECOVERY Sb	N	Y	KP51T
		5555			
5950	ICP	1.05740E 02 % RECOVERY Se	N	Y	KP51T
		5555			
5950	ICP	1.04920E 02 % RECOVERY Sr	N	Y	KP51T
		5555			
5950	ICP	1.07380E 02 % RECOVERY Tl	N	Y	KP51T
		5555			
5950	ICP	1.06560E 02 % RECOVERY V	N	Y	KP51T
		5555			
5950	ICP	1.08200E 02 % RECOVERY Zn	N	Y	KP51T
		5555			
5997	Hg	1.04100E 02 % RECOVERY	N	Y	KP51T
		5556			
8705	ACD DGST	DF= 100; FINAL VOL. 100 ML			KP51T
		5564			
8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5566			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5565			
8805	ACD DGST	DF=100; FINAL VOL. 100 ML			KP51T
		5564			
8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5566			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5565			
8905	ACD DGST	AS/SE DF= 50; ICP DF=20; FINAL VOL. 100 ML EACH			KP51T
		5564			
8995	As	9.42000E 01 % RECOVERY	N	Y	KP51T
		5566			
8996	Se	1.19100E 02 % RECOVERY	N	Y	KP51T
		5565			

END OF REPORT

9613479.0687

SAMPLE STATUS REPORT FOR R 6992. PUREX J3/E5 STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	1.00800E 02 % RECOVERY	N	Y	KP51T
		5553			
5526	TOC	1.03700E 02 % RECOVERY	N	Y	KP51T
		5554			
5550	ICP	1.03980E 02 % RECOVERY Ag	N	Y	KP51T
		5555			
5550	ICP	1.02280E 02 % RECOVERY Al	N	Y	KP51T
		5555			
5550	ICP	1.05980E 02 % RECOVERY As	N	Y	KP51T
		5555			
5550	ICP	1.04480E 02 % RECOVERY Ba	N	Y	KP51T
		5555			
5550	ICP	1.09740E 02 % RECOVERY Be	N	Y	KP51T
		5555			
5550	ICP	1.08740E 02 % RECOVERY Ca	N	Y	KP51T
		5555			
5550	ICP	1.08880E 02 % RECOVERY Cd	N	Y	KP51T
		5555			
5550	ICP	1.09200E 02 % RECOVERY Co	N	Y	KP51T
		5555			
5550	ICP	1.09220E 02 % RECOVERY Cr	N	Y	KP51T
		5555			
5550	ICP	1.05520E 02 % RECOVERY Cu	N	Y	KP51T
		5555			
5550	ICP	1.06540E 02 % RECOVERY Fe	N	Y	KP51T
		5555			
5550	ICP	1.03240E 02 % RECOVERY K	N	Y	KP51T
		5555			
5550	ICP	1.01440E 02 % RECOVERY Li	N	Y	KP51T
		5555			
5550	ICP	1.00700E 02 % RECOVERY Mg	N	Y	KP51T
		5555			
5550	ICP	1.06440E 02 % RECOVERY Mn	N	Y	KP51T
		5555			
5550	ICP	1.07420E 02 % RECOVERY Mo	N	Y	KP51T
		5555			
5550	ICP	1.02320E 02 % RECOVERY Na	N	Y	KP51T
		5555			
5550	ICP	1.06760E 02 % RECOVERY Ni	N	Y	KP51T
		5555			
5550	ICP	1.13060E 02 % RECOVERY P	N	Y	KP51T
		5555			
5550	ICP	1.06100E 02 % RECOVERY Pb	N	Y	KP51T
		5555			
5550	ICP	1.02140E 02 % RECOVERY Sb	N	Y	KP51T
		5555			
5550	ICP	1.04940E 02 % RECOVERY Se	N	Y	KP51T
		5555			
5550	ICP	1.03640E 02 % RECOVERY Sr	N	Y	KP51T
		5555			
5550	ICP	1.04280E 02 % RECOVERY Tl	N	Y	KP51T
		5555			

REPORT CONTINUED ON NEXT PAGE

9613479.0138

SAMPLE STATUS REPORT FOR R 6992. PUREX J3/~~B5~~ STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5550	ICP	1.06940E 02 % RECOVERY V	N	Y	KP51T
		5555			
5550	ICP	1.07100E 02 % RECOVERY Zn	N	Y	KP51T
		5555			
5595	As	8.72000E 01 % RECOVERY	N	Y	KP51T
		5566			
5596	Se	1.13000E 02 % RECOVERY	N	Y	KP51T
		5565			
5597	Hg	1.08000E 02 % RECOVERY	N	Y	KP51T
		5556			

END OF REPORT

9513179.0119

SDG NARRATIVE - PUREX
Sample Point - PUREX J3
March 1, 1995

VOLATILE ORGANIC ANALYSIS (by GC/MS)

The samples were analyzed by method LA-523-405 A-4, using an Hewlett-Packard 5970 GC/MS (WB92426). Data acquisition and reduction were performed on an H.P.-1000 computer, running RTE-A revision F, which includes Aquarius software from Environmental Testing and Certification Corp.

All the samples and the Method blank used a 5 mL sample size. Holding time was met. The specific holding time for volatile organics analysis is 14 days as found in chapter 4, table 4-1 of SW-846.

The System Monitoring Compounds (SMC), Internal Standard Compounds (IS), and Matrix Spike Compounds (MS) were the same as those used in LA-523-401 A-1. Acceptance criteria for each is also contained in LA-523-401 A-1.

LMCS control limits for the VOA compounds were administratively set to the criteria listed in procedure LA-523-401 A-1 for System Monitoring Compounds (SMC). The LMCS standard for VOA is defined as the method blank analyzed at the start of each 12 hour analysis window. The LMCS codes for the SMC's are R256 for 1,2-Dichloroethane-d4, R258 for Toluene-d8, and R260 for Bromofluorobenzene.

INFORMATION	COMMENTS
SMC Recoveries	Meets all requirements
MS/MSD Recoveries	Meets all requirements
Method blank summary	Meets all requirements
Tune/Mass Calibration	Meets all requirements
Initial Calibration	Meets all requirements
Daily Calibration	Meets all requirements
Internal Standards	Meets all requirements

The following is a list of the pertinent GC/MS files, and the sample holding times:

Lab ID	Filename	Holding Time	Comment
R-6889	>AB24C	0	Method blank
R-6990	>AB24D	10	Sample
R-6991	>AB24E	10	Sample
~~R-6995~~	~~>AB24F~~	~~10~~	~~Sample~~ Results from TK-55 Cladding Waste
~~R-6996~~	~~>AB24G~~	~~10~~	~~Sample~~ J (to be submitted with Cladding Waste vessel transmittal)

Cam [illegible] 3/24/95

9618479.1.90

DW 3/24/95

Standards preparation data is kept in a controlled notebook, WHC-N-337 1. ~~Acetone and 1-Butanol was detected in R-6995 sample~~. 1-Butanol was detected and Normal Paraffin Hydrocarbon (NPH) compounds were tentatively identified in R-6990 sample.

To enable interpetation of summary data for VOA compounds, the following table defines the qualifiers, called Q-flags, used in Form I.

Q-Flag	Definition
U	Indicates the compound was analyzed for but not detected; the U-flagged concentration number is the quantitation limit.
J	Indicates an estimated value for the target or tentatively identified compounds; spectra meet criteria but response is below the quantitation limit for the target compounds.
B	Compound was found in the blank.
D	Analysis was performed on a diluted sample.
E	Indicates that quantitation was above the calibration range.
N	Indicates the presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

D.E. Nelson 3/1/95
D.E. NELSON
J.B DELAROSA-CHANG Jackie Rosa-Chang 3/1/95
Organic Chemistry

9613479.0691

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODPS9

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6990

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24D

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U
71-36-3	1-Butanol	320.	J

9613479.0692

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODPS9

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6990

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24D

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	629505	Tridecane	25.46	19.	JN
2.	629594	Tetradecane	27.68	37.	JN
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

9613479.0693

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODPTO

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6991

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24E

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U
71-36-3	1-Butanol	500.	U

9613479.0694

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODPTO

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6991

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24E

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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29.					
30.					

9613479.0695

WESTINGHOUSE HANFORD COMPANY
GENERATOR & WASTE ACCEPTANCE SERVICES

PREDETERMINATION REPORT

REQUEST #: 25903 *DATE:* March 22, 1995

PRODUCT	PREDETERMINATION OF PUREX BACKCYCLE WASTE

TO	Carmen Villalobos	*COMPANY*	WHC
PHONE	373-4753	*ADDRESS*	200E Area
FACILITY	PUREX-MO273/C103	*MSIN*	S6-19

ANALYST	K. W. Chang	*MSIN*	T3-05	*PHONE*	372-0679
REVIEWER	Richard L. Chartier	*MSIN*	T3-05	*PHONE*	
cc	File				

According to current state and Federal laws (WAC 173-303 and 40 CFR 261) and based on the lab data submitted with the request, it has been determined that the above backcycle (flush solution) is not considered as Dangerous Waste.
(Copy of waste analysis worksheet is enclosed for your record.) If you have any questions or comments, please contact me at the above telephone number and reference the request #. Thank you.

********** *DISCLAIMER* **********

This predetermination is believed accurate based on the information provided. Predeterminations are performed to assist generators in selecting less hazardous products. Since solid waste regulations are subject to constant revision, waste status may change without notice. ***Waste designations must be performed on all wastes*** by Generator & Waste Acceptance Services to assure proper disposal in the event products are spilled or contained within a waste matrix.

9615479.0496

9551768

Attachment 2

PUREX Backcycle Waste and Neptunium Package Vessels Loop Flush

Laboratory Analyses and Sample Results

Ghost Letter

9615179.1007

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite
Richland, Washington 99352

Mr. David Lundstrom
200 Area Section Manager
State of Washington
Department of Ecology
1315 W. 4th Avenue
Kennewick, Washington 99336

Dear Messrs. Sherwood and Lundstrom::

References: 1) Letter from O. A. Farabee, RL, to D. R. Sherwood, EPA, and M. N. Jaraysi, Ecology, "Transmittal of Plutonium-Uranium Extraction Plant K Cell and G and R Cell, Part I, Loop Flush Analytical Results," TPD:EJS, dated Feburary 15, 1995.

2) Letter from O. A. Farabee, RL, to D. R. Sherwood, EPA, and D. Lundstrum, Ecology, "Transmittal of Plutonium-Uranium Extraction Plant and G and R Cells, Part II, Loop Flush Analytical Results," TPD:RXG, dated March 15, 1995.

TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT BACKCYCLE WASTE AND NEPTUNIUM PACKAGE VESSELS LOOP FLUSH ANALYTICAL RESULTS

Enclosure 1 contains laboratory analytical and sample results conducted on the final flush for the Plutonium-Uranium Extraction Facility Backcycle Waste and Neptunium Package, Canyon Vessels. These results are transmitted in accordance with U.S. Department of Energy, Richland Operations Office/Westinghouse Hanford Company agreement with State of Washington Department of Ecology and the U.S. Environmental Protection Agency.

Results from the following flushes have been provided:

K-Cell and G & R Cell, Part 1 in reference 1.

G & R Cell, Part II in reference 2.

Analytical results from future flushes will be transmitted as they are obtained.

9615479.0696

A copy of the Predetermination Report, designating the final flush solution based on the analytical results are also included in the Enclosure 2. The final flush was designated as non-dangerous waste.

Sincerely,

O. A. Farabee, Acting Director
Transition Programs Division

jft

Enclosures 2
1) Sample Report Description
2) Predetermination Report

cc: D. G. Hamrick, WHC
G. J. LeBaron, WHC

9513479.0699

APR 24 1995

95-PUREX-030

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington

Mr. David Lundstrom
200 Area Section Manager
State of Washington
Department of Ecology
1315 W. 4th Avenue
Kennewick, Washington

Dear Messrs. Sherwood and Lundstrom:

TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT (PUREX) BACKCYCLE WASTE AND NEPTUNIUM PACKAGE VESSELS LOOP FLUSH ANALYTICAL RESULTS

References:
1) RL letter, O. A. Farabee to D. R. Sherwood, Ecology and M. N. Jaraysi, Ecology, "Transmittal of Plutonium-Uranium Extraction Plant K Cell and G and R Cells, Part I, Loop Flush Analytical Results," dated March 15, 1995.

2) RL letter, O. A. Farabee to D. R. Sherwood, EPA, and David Lundstrom, Ecology, "Transmittal of Plutonium-Uranium Extraction Plant and G. and R Cells, Part II, Loop Flush Analytical Results," dated March 15, 1995

Laboratory analytical and sample results conducted on the final flush for the PUREX backcycle waste and neptunium package, canyon vessels are Enclosure 1. These results are transmitted in accordance with the DOE-RL/WHC agreement with the State of Washington Department of Ecology and the U.S. Environmental Protection Agency.

Results from K Cell and G and R Cells, Part I, and G and R Cells, Part II, were previously provided to you.

Analytical results from future flushes will be transmitted as they are obtained.

A copy of the Predetermination Report, designating the final flush solution based on analytical results, is Enclosure 2. The final flush was designated as non-dangerous waste.

Sincerely,

ORIGINAL SIGNED BY
J.E. MECCA

J. E. Mecca, Director
Transition Program Division

TPD:RXG

cc: D. G. Hamrick, WHC
G. J. LeBaron, WHC

9615479.0701

R 6990 (1)

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
C. N. Villalobos, 373-4753	O. A. Farabee, RL	9551768

Subject: TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT BACKCYCLE WASTE AND NEPTUNIUM PACKAGE CANYON VESSELS, LOOP FLUSH ANALYTICAL RESULTS

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		R. W. Bailey	S5-66	X
		R. J. Bliss	B3-04	
		D G. Hamrick	S6-15	X
		D. G. Harlow	S6-19	
		J. P. Hayfield	S6-18	
	30 MAR 95	G. J. LeBaron	S6-19	X
		L. F. Perkins	S6-15	
		J. R. Robertson	H6-21	X
		M. J. Stephenson	H6-20	
		J. F. Tea	S6-19	X
		C. N. Villalobos	S6-19	X

RECEIVED
APR 03 1995
CORRESPONDENCE CONTROL

Internal + cc

9615479.0012

R66 cu
R6 990 (2)

Westinghouse Hanford Company

Internal Memo

From: Program Support
Phone: 373-3683 T6-20
Date: February 6, 1995
Subject: RESULTS FOR PUREX / J-3 / E-5 TANKS

75725-96-006

To: C.N. Villalobos S6-19

cc: M. D. Rollison T6-20
ADR-File/LB

Attached analytical results have been obtained for the indicated sample which was submitted to the 222-S Laboratory.

LABORATORY ID: R6990, R6991, R6995, R6996

CUSTOMER ID: BODPS9, BODPT0, BODVK8, BODVK9

LABORATORY SUBMITTAL DATE: February 14, 1995

CHAIN OF CUSTODY No.: 008453 & 008455

SAMPLE AUTHORIZATION FORM: 95-013

If there are any questions regarding this data, please feel free to reach me at 373-3683.

Sincerely,

Leslie A. Diaz

Leslie A. Diaz for Michelle D. Rollison
Program Support

Attachments
1) Request for Special Analysis
2) Chain of Custody Forms
3) Volatile Organic Analysis
4) Sample Status Report
5) Analytical Data

9613479.0703

ATTACHMENT 1

REQUEST FOR SPECIAL ANALYSIS

9615979.0394

TABLE OF CONTENTS

Request for Special Analysis - Attachment 1 1

Chain of Custody Forms - Attachment 2 3

Volatile Organic Analysis - Attachment 3 6

Sample Status Report - Attachment 4 17

Analytical Data - Attachment 5 46

This document consists of pages 1 through 259.

9613479.0205

REQUEST FOR SPECIAL ANALYSIS (RSA)

RSA No. 2251

1. Sample Origin	2. Date Submitted	4. Requester Name	6. Charge Code/Work Package
IREX 5-3/E-5	2-14-95	C.N. Villalobos	KP51T
SAF 95-013	3. Submitted By: KB Hulse	5. Requester Phone/MSIN: 373-4753/S6-19	7. Date Required: ASAP

8. Customer ID	Collected Date	Collected Time	9. Laboratory ID
BODPS9	2-14-95	0954	R6990
BODPT0	2-14-95	0999	R6991
BODVK8	2-14-95	1015	R6995
BODVK9	2-14-95	1040	R6996

12. Number of Samples: 4 samples 4 bottles per 16 bottles Total

13. Volume of Samples: 20 ml per bottle (4) 1 bottles per sample

14. Protocols: ☐ None ☒ RCRA ☐ NQA-1 ☐ Other ☐ CERCLA

15. Sample Type: ☐ Solid ☐ Soil ☐ Slurry ☐ Gas ☒ Water ☐ Waste ☐ Solution ☐ Sludge ☐ Oil ☐ Other (specify)

16. Storage Requirements: ☐ None ☒ Specify Cool to 4°C. 14 Day Holding Time.

17. Process Knowledge/Known Listed Wastes: ☒ Unknown ☐ Known (Please attach list) ☐ Previously submitted for this Project

18. Survey: Stan Archer (HPT Signature) Dose Rate: 3 mrad/hr

19. Disposition of Waste: ☒ Return to Client/Location ☐ Dispose per 222-S Procedures ☐ Other

10. Determination	11. Expected Range
VOA (LA-523-405)	14 day hold time.
ICP Metals TAL (LA-505-151)	6 Mon. hold time.
As, Se (LA-505-402)	6 Mon. hold time.
Hg (LA-325-104)	28 day hold time.
TOC (LA-344-105)	28 day hold time
pH (LA-212-102)	ASAP.
Acid digest for	As, Se SKM 2-15-95
reported to C.N. Villalobos 3-13-95 MR	
Se to be sent at a later date MR	
3/23 Se sent out MR	

20. Additional Information: Fax Results to Carmen Villalobos at 373-4539.
Std R6988 Std R6993
Blank R6989 Blank R6994
Std R6992 Std R6997

21. Chain of Custody: ☐ No ☒ Yes Number: 008455 + 008453

22. Assigned Custodial Group (select one): ☐ PCL ☒ PDSU ☐ ENV ☐ Process

23. Sample Received By: [signature] Date: 2-14-95 Time: 1450

24. Laboratory Manager (if required): 2 Date:

BC-6700-181 (11/92)

ATTACHMENT 2

CHAIN OF CUSTODY FORMS

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

008453

Collector K.B. Hulse
Company Contact L.D. Zuck/C.N. Villalobos
Telephone 372-3075/373-4753
SAF No. 95-013
Project Designation Flush PUREX Vessels - 2
Sampling Locations PUREX/J-3 Tank
Ice Chest No. SNL-801
Bill of Lading/Airbill No. N/A
ORRSR No. SITE-04-SAMP
Method of Shipment Government Vehicle
Field Logbook No. WHC-N-205 #52
Shipped to 222-S Laboratory/200 West Area.
Possible Sample Hazards/Remarks RADIOACTIVE
Special Handling and/or Storage COOL TO 4 DEG. C.

SPECIAL INSTRUCTIONS
SUMMARY DELIVERABLE.
WORK DONE TO RCRA PROTOCOL.
COOL TO 4 DEGREES CELCIUS.
MINIMUM 14 DAY HOLDING TIME (VOA ANALYSIS).

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
BODPS9	W	2-14-94	0934	(1) 20ml aGs	VOA (LA-523-405) R 6990	4 deg C.
↓	W	2-14-94	0938	(3) 20ml aGs	ICP Metals TAL (LA-505-151), As (LA-505-402), Se (LA-505-402), Hg (LA-325-104). TOC (LA-344-105). pH (LA-212-102).	↓
BODPT0	W	2-14-94	0949	(1) 20ml aGs	VOA (LA-523-405) R 6991	
↓	W	2-14-94	0949	(3) 20ml aGs	ICP Metals TAL (LA-505-151), As (LA-505-402), Se (LA-505-402), Hg (LA-325-104). TOC (LA-344-105). pH (LA-212-102).	↓

KB Hulse 2-14-95

Chain of Possession Relinquished By	(Sign and Print Names)	Date	Time	Received By
KB Hulse	KB Hulse	2-14-95	1450	N Tagaino

*Matrix
A = Air
DL = Drum Liquids
DS = Drum Solids
L = Liquid
O = Oil
S = Soil
SE = Sediment
SL = Sludge
SO = Solid
T = Tissue
W = Water
WI = Wipe
X = Other

Laboratory Section	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

003 222 ANALYTICAL LAB 15:39 02/06/96

9513278.0707

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

008455

Collector K.B. Hulse
Company Contact L.D. Zuck/C.N. Villalobos
Telephone 372-3075/373-4753
SAF No. 95-013
Project Designation Flush PUREX Vessels - 2
Sampling Locations PUREX/E-5 Tank
Ice Chest No. 5mL-801
Bill of Lading/Airbill No. N/A
ORRSR No. SITE-04-SAMP
Method of Shipment Government Vehicle
Field Logbook No. WHC-N-205 #52
Shipped to 222-S Laboratory/200 West Area.
Possible Sample Hazards/Remarks RADIOACTIVE
Special Handling and/or Storage COOL TO 4 DEG. C.

SPECIAL INSTRUCTIONS
SUMMARY DELIVERABLE.
WORK DONE TO RCRA PROTOCOL.
COOL TO 4 DEGREES CELCIUS.
MINIMUM 14 DAY HOLDING TIME (VOA ANALYSIS).

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
BODVK8	W	2-14-95	1015	(1) 20ml aGs	VOA (LA-523-405) R6995	4 deg C.
↓	W	2-14-95	1020	(3) 20ml aGs	ICP Metals TAL (LA-505-151), As (LA-505-402), Se (LA-505-402), Hg (LA-325-104). TOC (LA-344-105). pH (LA-212-102).	↓
BODVK9	W	2-14-95	1040	(1) 20ml aGs	VOA (LA-523-405) R6996	
↓	W	2-14-95	1040	(3) 20ml aGs	ICP Metals TAL (LA-505-151), As (LA-505-402), Se (LA-505-402), Hg (LA-325-104). TOC (LA-344-105). pH (LA-212-102).	↓

KB Hulse 2-14-95

Chain of Possession Relinquished By (Sign and Print Names)	Date	Time	Received By
KB Hulse KB Hulse	2-14-95	1450	N Lapeira

*Matrix
A = Air
DL = Drum Liquids
DS = Drum Solids
L = Liquid
O = Oil
S = Soil
SE = Sediment
SL = Sludge
SO = Solid
T = Tissue
W = Water
WI = Wipe
X = Other

Laboratory Section	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

02/06/96 15:39 222 ANALYTICAL LAB 004

9613579.0709

ATTACHMENT 3

VOLATILE ORGANIC ANALYSIS

9613479.1010

SDG NARRATIVE - PUREX
Sample Point - PUREX J3/E5
March 1, 1995

VOLATILE ORGANIC ANALYSIS (by GC/MS)

The samples were analyzed by method LA-523-405 A-4, using an Hewlett-Packard 5970 GC/MS (WB92426). Data acquisition and reduction were performed on an H.P.-1000 computer, running RTE-A revision F, which includes Aquarius software from Environmental Testing and Certification Corp.

All the samples and the Method blank used a 5 mL sample size. Holding time was met. The specific holding time for volatile organics analysis is 14 days as found in chapter 4, table 4-1 of SW-846.

The System Monitoring Compounds (SMC), Internal Standard Compounds (IS), and Matrix Spike Compounds (MS) were the same as those used in LA-523-401 A-1. Acceptance criteria for each is also contained in LA-523-401 A-1.

LMCS control limits for the VOA compounds were administratively set to the criteria listed in procedure LA-523-401 A-1 for System Monitoring Compounds (SMC). The LMCS standard for VOA is defined as the method blank analyzed at the start of each 12 hour analysis window. The LMCS codes for the SMC's are R256 for 1,2-Dichloroethane-d4, R258 for Toluene-d8, and R260 for Bromofluorobenzene.

INFORMATION	COMMENTS
SMC Recoveries	Meets all requirements
MS/MSD Recoveries	Meets all requirements
Method blank summary	Meets all requirements
Tune/Mass Calibration	Meets all requirements
Initial Calibration	Meets all requirements
Daily Calibration	Meets all requirements
Internal Standards	Meets all requirements

The following is a list of the pertinent GC/MS files, and the sample holding times:

Lab ID	Filename	Holding Time	Comment
R-6889	>AB24C	0	Method blank
R-6990	>AB24D	10	Sample
R-6991	>AB24E	10	Sample
R-6995	>AB24F	10	Sample
R-6996	>AB24G	10	Sample

Standards preparation data is kept in a controlled notebook, WHC-N-337 1. Acetone and 1-Butanol was detected in R-6995 sample. 1-Butanol was detected and Normal Paraffin Hydrocarbon (NPH) compounds were tentatively identified in R-6990 sample.

To enable interpetation of summary data for VOA compounds, the following table defines the qualifiers, called Q-flags, used in Form I.

Q-Flag	Definition
U	Indicates the compound was analyzed for but not detected; the U-flagged concentration number is the quantitation limit.
J	Indicates an estimated value for the target or tentatively identified compounds; spectra meet criteria but response is below the quantitation limit for the target compounds.
B	Compound was found in the blank.
D	Analysis was performed on a diluted sample.
E	Indicates that quantitation was above the calibration range.
N	Indicates the presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

D.E. Nelson 3/1/95
D.E. NELSON
J.B DELAROSA-CHANG J.B. DeLaRosa-Chang 3/1/95
Organic Chemistry

9613479.0712

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODPS9

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6990

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24D

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U
71-36-3	1-Butanol	320.	J

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODPS9

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6990

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24D

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	629505	Tridecane	25.46	19.	JN
2.	629594	Tetradecane	27.68	37.	JN
3.					
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9613479.0714

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODPTO

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6991

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24E

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U
71-36-3	1-Butanol	500.	U

9613479.0215

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODPTO

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6991

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24E

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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9613479.0716.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODVK8

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6995

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24F

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	19.	
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	.5	J
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U
71-36-3	1-Butanol	250.	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODVK8

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6995

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24F

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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9613479.0718

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODVK9

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6996

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24G

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U
71-36-3	1-Butanol	500.	U

9613478.0719

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODVK9

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUREX

Matrix: (soil/water) WATER Lab Sample ID: R6996

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AB24G

Level: (low/med) LOW Date Received: 02/14/95

% Moisture: not dec. Date Analyzed: 2/24/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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9613479.0120

ATTACHMENT 4

SAMPLE STATUS REPORT

9613479.0021

SAMPLE STATUS REPORT FOR R 6988. PUREX J3/E5 STD TIME: 3/13/95 10:43
DISPATCHED: 2/14/95 11:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	1.00500E 02 % RECOVERY	N	Y	KP51T
		5553			
5526	TOC	1.02300E 02 % RECOVERY	N	Y	KP51T
		5554			
5595	As	1.00360E 02 % RECOVERY Ag	N	Y	KP51T
		5555			
5595	As	1.07000E 02 % RECOVERY	N	Y	KP51T
		5566			
5595	As	9.88600E 01 % RECOVERY Al	N	Y	KP51T
		5555			
5595	As	1.00520E 02 % RECOVERY As	N	Y	KP51T
		5555			
5595	As	1.00240E 02 % RECOVERY Ba	N	Y	KP51T
		5555			
5595	As	1.05380E 02 % RECOVERY Be	N	Y	KP51T
		5555			
5595	As	1.03140E 02 % RECOVERY Ca	N	Y	KP51T
		5555			
5595	As	1.03760E 02 % RECOVERY Cd	N	Y	KP51T
		5555			
5595	As	1.04380E 02 % RECOVERY Co	N	Y	KP51T
		5555			
5595	As	1.04080E 02 % RECOVERY Cr	N	Y	KP51T
		5555			
5595	As	1.02420E 02 % RECOVERY Cu	N	Y	KP51T
		5555			
5595	As	1.01880E 02 % RECOVERY Fe	N	Y	KP51T
		5555			
5595	As	9.91600E 01 % RECOVERY K	N	Y	KP51T
		5555			
5595	As	9.97200E 01 % RECOVERY Li	N	Y	KP51T
		5555			
5595	As	9.74600E 01 % RECOVERY Mg	N	Y	KP51T
		5555			
5595	As	1.01220E 02 % RECOVERY Mn	N-	Y	KP51T
		5555			
5595	As	1.02620E 02 % RECOVERY Mo	N	Y	KP51T
		5555			
5595	As	9.97000E 01 % RECOVERY Na	N	Y	KP51T
		5555			
5595	As	1.02320E 02 % RECOVERY Ni	N	Y	KP51T
		5555			
5595	As	1.04240E 02 % RECOVERY P	N	Y	KP51T
		5555			
5595	As	1.01480E 02 % RECOVERY Pb	N	Y	KP51T
		5555			
5595	As	9.77800E 01 % RECOVERY Sb	N	Y	KP51T
		5555			
5595	As	1.00120E 02 % RECOVERY Se	N	Y	KP51T
		5555			
5595	As	1.00220E 02 % RECOVERY Sr	N	Y	KP51T
		5555			

REPORT CONTINUED ON NEXT PAGE

9613479.0722

SAMPLE STATUS REPORT FOR R 6988. PUREX J3/E5 STD TIME: 3/13/95 10:43
DISPATCHED: 2/14/95 11:23 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5595	As	9.94400E 01 % RECOVERY Tl	N	Y	KP51T
		5555			
5595	As	1.02260E 02 % RECOVERY V	N	Y	KP51T
		5555			
5595	As	1.02760E 02 % RECOVERY Zn	N	Y	KP51T
		5555			
5596	Se	1.07000E 02 % RECOVERY	N	Y	KP51T
		5565			
5597	Hg	1.09000E 02 % RECOVERY	N	Y	KP51T
		5556			
8505	ACD DGST	AS/SE DF=50; ICP DF=20; TOTAL VOL. 100 ML EACH			KP51T
		5564			
8595	As	9.37000E 01 % RECOVERY	N	Y	KP51T
		5566			
8596	Se	1.02000E 02 % RECOVERY	N	Y	KP51T
		5565			

END OF REPORT

SAMPLE STATUS REPORT FOR R 6989. PUREX J3/E5 BLANK TIME: 3/13/95 10:43
DISPATCHED: 2/14/95 11:25 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
5626	TOC	< 5.00000E 00 uG C/ML 5554		N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Ag	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Al	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	As	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Ba	N	Y	KP51T
5650	ICP	< 5.00000E-03 uG/ML 5555	Be	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Ca	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Cd	N	Y	KP51T
5650	ICP	< 2.00000E-02 uG/ML 5555	Co	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Cr	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Cu	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Fe	N	Y	KP51T
5650	ICP	< 3.00000E-01 uG/ML 5555	K	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Li	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Mg	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Mn	N	Y	KP51T
5650	ICP	< 5.00000E-02 uG/ML 5555	Mo	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Na	N	Y	KP51T
5650	ICP	< 2.00000E-02 uG/ML 5555	Ni	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5555	P	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Pb	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5555	Sb	N	Y	KP51T
5650	ICP	< 1.00000E-01 uG/ML 5555	Se	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Sr	N	Y	KP51T
5650	ICP	< 2.00000E-01 uG/ML 5555	Tl	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

9615179.0724

SAMPLE STATUS REPORT FOR R 6989. PUREX J3/E5 BLANK TIME: 3/13/95 10:43
DISPATCHED: 2/14/95 11:25 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5650	ICP	< 5.00000E-02 uG/ML 5555	V	N	Y	KP51T
5650	ICP	< 1.00000E-02 uG/ML 5555	Zn	N	Y	KP51T
5695	As	< 3.00000E-03 uG/ML 5566		N	Y	KP51T
5696	Se	< 3.00000E-03 uG/ML 5565		N	Y	KP51T
5697	Hg	< 5.00000E-03 uG/ML 5556		N	Y	KP51T
8605	ACD DGST	COMPLETED, 100 ML FINAL VOL. 5564				KP51T
8695	As	< 2.50000E-01 uG/ML 5566		N	Y	KP51T
8696	Se	< 2.50000E-01 uG/ML 5565		N	Y	KP51T

END OF REPORT

SAMPLE STATUS REPORT FOR R 6990. PUREX J3/E5 BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
		5552				
5713	pH	2.89000E 00 NONE		N	Y	KP51T
		5553				
5726	TOC	1.71000E 02 uG C/ML		N	Y	KP51T
		5554				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.36000E-01 uG/ML	Al	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	As	N	Y	KP51T
		5555				
5750	ICP-LIQ	2.91000E-01 uG/ML	Ba	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-03 uG/ML	Be	N	Y	KP51T
		5555				
5750	ICP-LIQ	2.03000E 01 uG/ML	Ca	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Co	N	Y	KP51T
		5555				
5750	ICP-LIQ	8.67000E-01 uG/ML	Cr	N	Y	KP51T
		5555				
5750	ICP-LIQ	3.30000E-02 uG/ML	Cu	N	Y	KP51T
		5555				
5750	ICP-LIQ	7.16000E 00 uG/ML	Fe	N	Y	KP51T
		5555				
5750	ICP-LIQ	9.16000E-01 uG/ML	K	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Li	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.78000E 00 uG/ML	Mg	N	Y	KP51T
		5555				
5750	ICP-LIQ	8.39999E-02 uG/ML	Mn	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Mo	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.07000E 00 uG/ML	Na	N	Y	KP51T
		5555				
5750	ICP-LIQ	3.41000E-01 uG/ML	Ni	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.20000E 01 uG/ML	P	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	Sb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Se	N	Y	KP51T
		5555				
5750	ICP-LIQ	1.08000E-01 uG/ML	Sr	N	Y	KP51T
		5555				

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6990. PUREX J3/E5 BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED

EXT. ****	DETER. ********	RESULTS OR STATUS **********		OUT OF RANGE? ***	GOOD ANS? ***	CHARGE CODE ******
5750	ICP-LIQ	< 2.00000E-01 uG/ML 5555	Tl	N	Y	KP51T
5750	ICP-LIQ	< 5.00000E-02 uG/ML 5555	V	N	Y	KP51T
5750	ICP-LIQ	6.50000E-02 uG/ML 5555	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5556		N	Y	KP51T
5813	pH	2.85000E 00 NONE 5553		N	Y	KP51T
5826	TOC	1.64000E 02 uG C/ML 5554		N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Ag	N	Y	KP51T
5850	ICP-LIQ	4.52000E-01 uG/ML 5555	Al	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	As	N	Y	KP51T
5850	ICP-LIQ	2.96000E-01 uG/ML 5555	Ba	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-03 uG/ML 5555	Be	N	Y	KP51T
5850	ICP-LIQ	2.10000E 01 uG/ML 5555	Ca	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cd	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5555	Co	N	Y	KP51T
5850	ICP-LIQ	8.93000E-01 uG/ML 5555	Cr	N	Y	KP51T
5850	ICP-LIQ	3.30000E-02 uG/ML 5555	Cu	N	Y	KP51T
5850	ICP-LIQ	7.34000E 00 uG/ML 5555	Fe	N	Y	KP51T
5850	ICP-LIQ	1.08000E 00 uG/ML 5555	K	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Li	N	Y	KP51T
5850	ICP-LIQ	4.83000E 00 uG/ML 5555	Mg	N	Y	KP51T
5850	ICP-LIQ	8.60000E-02 uG/ML 5555	Mn	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Mo	N	Y	KP51T
5850	ICP-LIQ	4.10000E 00 uG/ML 5555	Na	N	Y	KP51T
5850	ICP-LIQ	3.53000E-01 uG/ML 5555	Ni	N	Y	KP51T
5850	ICP-LIQ	4.59000E 01 uG/ML 5555	P	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Pb	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

9613479.0727

SAMPLE STATUS REPORT FOR R 6990. PUREX J3/E5 BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5850	ICP-LIQ	< 2.00000E-01 uG/ML Sb 5555	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML Se 5555	N	Y	KP51T
5850	ICP-LIQ	1.10000E-01 uG/ML Sr 5555	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML Tl 5555	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML V 5555	N	Y	KP51T
5850	ICP-LIQ	6.50000E-02 uG/ML Zn 5555	N	Y	KP51T
5897	Hg-LIQ	< 5.00000E-03 uG/ML 5556	N	Y	KP51T
5926	TOC	9.83000E 01 % RECOVERY 5554	N	Y	KP51T
5950	ICP	1.01970E 02 % RECOVERY Al 5555	N	Y	KP51T
5950	ICP	1.00000E 02 % RECOVERY As 5555	N	Y	KP51T
5950	ICP	1.01560E 02 % RECOVERY Ba 5555	N	Y	KP51T
5950	ICP	1.05740E 02 % RECOVERY Be 5555	N	Y	KP51T
5950	ICP	Ca - SAMPLE > 4X CONCENTRATION OF SPIKE. 5555			KP51T
5950	ICP	1.06560E 02 % RECOVERY Cd 5555	N	Y	KP51T
5950	ICP	1.04920E 02 % RECOVERY Co 5555	N	Y	KP51T
5950	ICP	1.04340E 02 % RECOVERY Cr 5555	N	Y	KP51T
5950	ICP	1.01390E 02 % RECOVERY Cu 5555	N	Y	KP51T
5950	ICP	9.83600E 01 % RECOVERY Fe 5555	N	Y	KP51T
5950	ICP	1.01970E 02 % RECOVERY K 5555	N	Y	KP51T
5950	ICP	1.00000E 02 % RECOVERY Li 5555	N	Y	KP51T
5950	ICP	8.60600E 01 % RECOVERY Mg 5555	N	Y	KP51T
5950	ICP	1.02130E 02 % RECOVERY Mn 5555	N	Y	KP51T
5950	ICP	1.01640E 02 % RECOVERY Mo 5555	N	Y	KP51T
5950	ICP	9.09800E 01 % RECOVERY Na 5555	N	Y	KP51T
5950	ICP	1.05660E 02 % RECOVERY Ni 5555	N	Y	KP51T
5950	ICP	P - SAMPLE > 4X CONCENTRATION OF SPIKE. 5555			KP51T

REPORT CONTINUED ON NEXT PAGE

9613479.0728

SAMPLE STATUS REPORT FOR R 6990. PUREX J3/E5 BODPS9 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:29 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	1.05740E 02 % RECOVERY Pb	N	Y	KP51T
		5555			
5950	ICP	1.02460E 02 % RECOVERY Sb	N	Y	KP51T
		5555			
5950	ICP	1.01640E 02 % RECOVERY Se	N	Y	KP51T
		5555			
5950	ICP	1.01800E 02 % RECOVERY Sr	N	Y	KP51T
		5555			
5950	ICP	1.04920E 02 % RECOVERY Tl	N	Y	KP51T
		5555			
5950	ICP	1.03280E 02 % RECOVERY V	N	Y	KP51T
		5555			
5950	ICP	1.03690E 02 % RECOVERY Zn	N	Y	KP51T
		5555			
5997	Hg	1.02700E 02 % RECOVERY	N	Y	KP51T
		5556			
8705	ACD DGST	DF=100, FINAL VOL. 100 ML			KP51T
		5564			
8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5566			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5565			
8805	ACD DGST	DF=100; FINAL VOL.100 ML			KP51T
		5564			
8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5566			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5565			
8905	ACD DGST	AS/SE DF=50; ICP DF= 20; FINAL VOL. 100 ML EACH			KP51T
		5564			
8995	As	9.45000E 01 % RECOVERY	N	Y	KP51T
		5566			
8996	Se	9.68000E 01 % RECOVERY	N	Y	KP51T
		5565			

END OF REPORT

9613479.0729

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/E5 BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
		5552				
5713	pH	6.28000E 00 NONE		N	Y	KP51T
		5553				
5726	TOC	1.27000E 01 uG C/ML		N	Y	KP51T
		5554				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Al	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	As	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Ba	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-03 uG/ML	Be	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Ca	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Co	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cr	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cu	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Fe	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	K	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Li	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Mg	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Mn	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Mo	N	Y	KP51T
		5555				
5750	ICP-LIQ	4.50000E-01 uG/ML	Na	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Ni	N	Y	KP51T
		5555				
5750	ICP-LIQ	2.70000E-01 uG/ML	P	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	Sb	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Se	N	Y	KP51T
		5555				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Sr	N	Y	KP51T
		5555				

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9613479.0730

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/E5 BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5750	ICP-LIQ	< 2.00000E-01 uG/ML 5555	Tl	N	Y	KP51T
5750	ICP-LIQ	< 5.00000E-02 uG/ML 5555	V	N	Y	KP51T
5750	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5556		N	Y	KP51T
5813	pH	6.43000E 00 NONE 5553		N	Y	KP51T
5826	TOC	1.43000E 01 uG C/ML 5554		N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Ag	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Al	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	As	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Ba	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-03 uG/ML 5555	Be	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Ca	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cd	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5555	Co	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cr	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Cu	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Fe	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5555	K	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Li	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Mg	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5555	Mn	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5555	Mo	N	Y	KP51T
5850	ICP-LIQ	4.51000E-01 uG/ML 5555	Na	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5555	Ni	N	Y	KP51T
5850	ICP-LIQ	2.45000E-01 uG/ML 5555	P	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5555	Pb	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6991. PUREX J3/E5 BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS			OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********			***	***	******
5850	ICP-LIQ	< 2.00000E-01 uG/ML	Sb		N	Y	KP51T
		5555					
5850	ICP-LIQ	< 1.00000E-01 uG/ML	Se		N	Y	KP51T
		5555					
5850	ICP-LIQ	< 1.00000E-02 uG/ML	Sr		N	Y	KP51T
		5555					
5850	ICP-LIQ	< 2.00000E-01 uG/ML	Tl		N	Y	KP51T
		5555					
5850	ICP-LIQ	< 5.00000E-02 uG/ML	V		N	Y	KP51T
		5555					
5850	ICP-LIQ	< 1.00000E-02 uG/ML	Zn		N	Y	KP51T
		5555					
5897	Hg-LIQ	< 5.00000E-03 uG/ML			N	Y	KP51T
		5556					
5926	TOC	9.89000E 01 % RECOVERY			N	Y	KP51T
		5554					
5950	ICP	1.08200E 02 % RECOVERY	Ag		N	Y	KP51T
		5555					
5950	ICP	1.04920E 02 % RECOVERY	Al		N	Y	KP51T
		5555					
5950	ICP	1.01640E 02 % RECOVERY	As		N	Y	KP51T
		5555					
5950	ICP	1.02460E 02 % RECOVERY	Ba		N	Y	KP51T
		5555					
5950	ICP	1.06560E 02 % RECOVERY	Be		N	Y	KP51T
		5555					
5950	ICP	1.07380E 02 % RECOVERY	Ca		N	Y	KP51T
		5555					
5950	ICP	1.09840E 02 % RECOVERY	Cd		N	Y	KP51T
		5555					
5950	ICP	1.08200E 02 % RECOVERY	Co		N	Y	KP51T
		5555					
5950	ICP	1.09020E 02 % RECOVERY	Cr		N	Y	KP51T
		5555					
5950	ICP	1.05740E 02 % RECOVERY	Cu		N	Y	KP51T
		5555					
5950	ICP	1.07380E 02 % RECOVERY	Fe		N	Y	KP51T
		5555					
5950	ICP	1.03280E 02 % RECOVERY	K		N	Y	KP51T
		5555					
5950	ICP	1.02460E 02 % RECOVERY	Li		N	Y	KP51T
		5555					
5950	ICP	1.03280E 02 % RECOVERY	Mg		N	Y	KP51T
		5555					
5950	ICP	1.05740E 02 % RECOVERY	Mn		N	Y	KP51T
		5555					
5950	ICP	1.06560E 02 % RECOVERY	Mo		N	Y	KP51T
		5555					
5950	ICP	1.03280E 02 % RECOVERY	Na		N	Y	KP51T
		5555					
5950	ICP	1.08200E 02 % RECOVERY	Ni		N	Y	KP51T
		5555					

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SAMPLE STATUS REPORT FOR R 6991. PUREX J3/E5 BODPT0 TIME: 3/13/95 10:44
DISPATCHED: 2/14/95 11:30 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	1.10660E 02 % RECOVERY P	N	Y	KP51T
		5555			
5950	ICP	1.09020E 02 % RECOVERY Pb	N	Y	KP51T
		5555			
5950	ICP	1.07380E 02 % RECOVERY Sb	N	Y	KP51T
		5555			
5950	ICP	1.05740E 02 % RECOVERY Se	N	Y	KP51T
		5555			
5950	ICP	1.04920E 02 % RECOVERY Sr	N	Y	KP51T
		5555			
5950	ICP	1.07380E 02 % RECOVERY Tl	N	Y	KP51T
		5555			
5950	ICP	1.06560E 02 % RECOVERY V	N	Y	KP51T
		5555			
5950	ICP	1.08200E 02 % RECOVERY Zn	N	Y	KP51T
		5555			
5997	Hg	1.04100E 02 % RECOVERY	N	Y	KP51T
		5556			
8705	ACD DGST	DF= 100; FINAL VOL. 100 ML			KP51T
		5564			
8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5566			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5565			
8805	ACD DGST	DF=100; FINAL VOL. 100 ML			KP51T
		5564			
8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5566			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5565			
8905	ACD DGST	AS/SE DF= 50; ICP DF=20; FINAL VOL. 100 ML EACH			KP51T
		5564			
8995	As	9.42000E 01 % RECOVERY	N	Y	KP51T
		5566			
8996	Se	1.19100E 02 % RECOVERY	N	Y	KP51T
		5565			

END OF REPORT

9613479.0733

SAMPLE STATUS REPORT FOR R 6992. PUREX J3/E5 STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	1.00800E 02 % RECOVERY	N	Y	KP51T
		5553			
5526	TOC	1.03700E 02 % RECOVERY	N	Y	KP51T
		5554			
5550	ICP	1.03980E 02 % RECOVERY Ag	N	Y	KP51T
		5555			
5550	ICP	1.02280E 02 % RECOVERY Al	N	Y	KP51T
		5555			
5550	ICP	1.05980E 02 % RECOVERY As	N	Y	KP51T
		5555			
5550	ICP	1.04480E 02 % RECOVERY Ba	N	Y	KP51T
		5555			
5550	ICP	1.09740E 02 % RECOVERY Be	N	Y	KP51T
		5555			
5550	ICP	1.08740E 02 % RECOVERY Ca	N	Y	KP51T
		5555			
5550	ICP	1.08880E 02 % RECOVERY Cd	N	Y	KP51T
		5555			
5550	ICP	1.09200E 02 % RECOVERY Co	N	Y	KP51T
		5555			
5550	ICP	1.09220E 02 % RECOVERY Cr	N	Y	KP51T
		5555			
5550	ICP	1.05520E 02 % RECOVERY Cu	N	Y	KP51T
		5555			
5550	ICP	1.06540E 02 % RECOVERY Fe	N	Y	KP51T
		5555			
5550	ICP	1.03240E 02 % RECOVERY K	N	Y	KP51T
		5555			
5550	ICP	1.01440E 02 % RECOVERY Li	N	Y	KP51T
		5555			
5550	ICP	1.00700E 02 % RECOVERY Mg	N	Y	KP51T
		5555			
5550	ICP	1.06440E 02 % RECOVERY Mn	N	Y	KP51T
		5555			
5550	ICP	1.07420E 02 % RECOVERY Mo	N	Y	KP51T
		5555			
5550	ICP	1.02320E 02 % RECOVERY Na	N	Y	KP51T
		5555			
5550	ICP	1.06760E 02 % RECOVERY Ni	N	Y	KP51T
		5555			
5550	ICP	1.13060E 02 % RECOVERY P	N	Y	KP51T
		5555			
5550	ICP	1.06100E 02 % RECOVERY Pb	N	Y	KP51T
		5555			
5550	ICP	1.02140E 02 % RECOVERY Sb	N	Y	KP51T
		5555			
5550	ICP	1.04940E 02 % RECOVERY Se	N	Y	KP51T
		5555			
5550	ICP	1.03640E 02 % RECOVERY Sr	N	Y	KP51T
		5555			
5550	ICP	1.04280E 02 % RECOVERY Tl	N	Y	KP51T
		5555			

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9613479.0799

SAMPLE STATUS REPORT FOR R 6992. PUREX J3/E5 STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5550	ICP	1.06940E 02 % RECOVERY V	N	Y	KP51T
		5555			
5550	ICP	1.07100E 02 % RECOVERY Zn	N	Y	KP51T
		5555			
5595	As	8.72000E 01 % RECOVERY	N	Y	KP51T
		5566			
5596	Se	1.13000E 02 % RECOVERY	N	Y	KP51T
		5565			
5597	Hg	1.08000E 02 % RECOVERY	N	Y	KP51T
		5556			

END OF REPORT

9613479.0735

SAMPLE STATUS REPORT FOR R 6993. PUREX J3/E5 STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	OUT FOR RERUN			KP51T
		5557			
5513	pH	1.00200E 02 % RECOVERY	N	Y	KP51T
		5587			
5526	TOC	9.10000E 01 % RECOVERY	N	Y	KP51T
		5558			
5550	ICP	1.00600E 02 % RECOVERY Ag	N	Y	KP51T
		5559			
5550	ICP	1.00400E 02 % RECOVERY Al	N	Y	KP51T
		5559			
5550	ICP	1.02940E 02 % RECOVERY Sb	N	Y	KP51T
		5559			
5550	ICP	9.98600E 01 % RECOVERY Ba	N	Y	KP51T
		5559			
5550	ICP	1.03120E 02 % RECOVERY Be	N	Y	KP51T
		5559			
5550	ICP	1.03620E 02 % RECOVERY Ca	N	Y	KP51T
		5559			
5550	ICP	1.01580E 02 % RECOVERY Cd	N	Y	KP51T
		5559			
5550	ICP	1.03200E 02 % RECOVERY Co	N	Y	KP51T
		5559			
5550	ICP	1.02240E 02 % RECOVERY Cr	N	Y	KP51T
		5559			
5550	ICP	1.02200E 02 % RECOVERY Cu	N	Y	KP51T
		5559			
5550	ICP	1.01580E 02 % RECOVERY Fe	N	Y	KP51T
		5559			
5550	ICP	1.02900E 02 % RECOVERY K	N	Y	KP51T
		5559			
5550	ICP	1.00520E 02 % RECOVERY Li	N	Y	KP51T
		5559			
5550	ICP	1.00100E 02 % RECOVERY Mg	N	Y	KP51T
		5559			
5550	ICP	1.00160E 02 % RECOVERY Mn	N	Y	KP51T
		5559			
5550	ICP	1.01740E 02 % RECOVERY Mo	N	Y	KP51T
		5559			
5550	ICP	1.01580E 02 % RECOVERY Na	N	Y	KP51T
		5559			
5550	ICP	1.00220E 02 % RECOVERY Ni	N	Y	KP51T
		5559			
5550	ICP	1.02040E 02 % RECOVERY P	N	Y	KP51T
		5559			
5550	ICP	1.02140E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5550	ICP	9.60000E 01 % RECOVERY Sb	N	Y	KP51T
		5559			
5550	ICP	1.00400E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5550	ICP	9.93400E 01 % RECOVERY Sr	N	Y	KP51T
		5559			

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SAMPLE STATUS REPORT FOR R 6993. PUREX J3/E5 STD TIME: 3/13/95 10:45
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5550	ICP	9.98200E 01 % RECOVERY Tl	N	Y	KP51T
		5559			
5550	ICP	1.01720E 02 % RECOVERY V	N	Y	KP51T
		5559			
5550	ICP	1.04060E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5595	As	1.10000E 02 % RECOVERY	N	Y	KP51T
		5568			
5596	Se	INCOMPLETE			KP51T
5597	Hg	1.03000E 02 % RECOVERY	N	Y	KP51T
		5560			
8505	ACD DGST	AS/SE DF=50; ICP DF=20; FINAL VOL.100 ML			KP51T
		5567			
8595	As	9.91000E 01 % RECOVERY	N	Y	KP51T
		5568			
8596	Se	INCOMPLETE			KP51T

END OF REPORT

SAMPLE STATUS REPORT FOR R 6994. PUREX J3/E5 BLANK TIME: 3/13/95 10:46
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5626	TOC	< 5.00000E 00 uG C/ML		N	Y	KP51T
		5558				
5650	ICP	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		5559				
5650	ICP	< 5.00000E-02 uG/ML	Al	N	Y	KP51T
		5559				
5650	ICP	< 5.00000E-02 uG/ML	As	N	Y	KP51T
		5559				
5650	ICP	< 5.00000E-02 uG/ML	Ba	N	Y	KP51T
		5559				
5650	ICP	< 5.00000E-03 uG/ML	Be	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-01 uG/ML	Ca	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		5559				
5650	ICP	< 2.00000E-02 uG/ML	Co	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-02 uG/ML	Cr	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-02 uG/ML	Cu	N	Y	KP51T
		5559				
5650	ICP	< 5.00000E-02 uG/ML	Fe	N	Y	KP51T
		5559				
5650	ICP	< 3.00000E-01 uG/ML	K	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-02 uG/ML	Li	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-01 uG/ML	Mg	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-02 uG/ML	Mn	N	Y	KP51T
		5559				
5650	ICP	< 5.00000E-02 uG/ML	Mo	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-01 uG/ML	Na	N	Y	KP51T
		5559				
5650	ICP	< 2.00000E-02 uG/ML	Ni	N	Y	KP51T
		5559				
5650	ICP	< 2.00000E-01 uG/ML	P	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		5559				
5650	ICP	< 2.00000E-01 uG/ML	Sb	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-01 uG/ML	Se	N	Y	KP51T
		5559				
5650	ICP	< 1.00000E-02 uG/ML	Sr	N	Y	KP51T
		5559				
5650	ICP	< 2.00000E-01 uG/ML	Tl	N	Y	KP51T
		5559				
5650	ICP	< 5.00000E-02 uG/ML	V	N	Y	KP51T
		5559				

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6994. PUREX J3/E5 BLANK TIME: 3/13/95 10:46
DISPATCHED: 2/14/95 11:49 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5650	ICP	< 1.00000E-02 uG/ML Zn	N	Y	KP51T
		5559			
5695	As	< 3.00000E-03 uG/ML	N	Y	KP51T
		5568			
5696	Se	INCOMPLETE			KP51T
5697	Hg	< 5.00000E-03 uG/ML	N	Y	KP51T
		5560			
8605	ACD DGST	COMPLETED, 100 ML FINAL VOL.			KP51T
		5567			
8695	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8696	Se	INCOMPLETE			KP51T

END OF REPORT

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SAMPLE STATUS REPORT FOR R 6995. PUREX J3/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
5713	pH	OUT FOR RERUN				KP51T
		5557				
5713	pH	9.44000E 00 NONE		N	Y	KP51T
		5587				
5726	TOC	2.97000E 01 uG C/ML		N	Y	KP51T
		5558				
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Ag	N	Y	KP51T
		5559				
5750	ICP-LIQ	5.16000E 00 uG/ML	Al	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	As	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Ba	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-02 uG/ML	Be	N	Y	KP51T
		5559				
5750	ICP-LIQ	2.33000E 00 uG/ML	Ca	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Cd	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.20000E-01 uG/ML	Co	N	Y	KP51T
		5559				
5750	ICP-LIQ	3.96000E-01 uG/ML	Cr	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Cu	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Fe	N	Y	KP51T
		5559				
5750	ICP-LIQ	3.03000E 03 uG/ML	K	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Li	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Mg	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Mn	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Mo	N	Y	KP51T
		5559				
5750	ICP-LIQ	3.01000E 01 uG/ML	Na	N	Y	KP51T
		5559				
5750	ICP-LIQ	1.20000E-01 uG/ML	Ni	N	Y	KP51T
		5559				
5750	ICP-LIQ	8.70000E 00 uG/ML	P	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Pb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.20000E 00 uG/ML	Sb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Se	N	Y	KP51T
		5559				

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6995. PUREX J3/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5750	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5750	ICP-LIQ	< 1.20000E 00 uG/ML 5559	Tl	N	Y	KP51T
5750	ICP-LIQ	< 3.00000E-01 uG/ML 5559	V	N	Y	KP51T
5750	ICP-LIQ	7.20000E-02 uG/ML 5559	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5560		N	Y	KP51T
5813	pH	OUT FOR RERUN R6996-5713				KP51T
5813	pH	9.45000E 00 NONE 5587		N	Y	KP51T
5826	TOC	3.41000E 01 uG C/ML 5558		N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Ag	N	Y	KP51T
5850	ICP-LIQ	5.33000E 00 uG/ML 5559	Al	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	As	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	Ba	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-02 uG/ML 5559	Be	N	Y	KP51T
5850	ICP-LIQ	2.47000E 00 uG/ML 5559	Ca	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Cd	N	Y	KP51T
5850	ICP-LIQ	< 1.20000E-01 uG/ML 5559	Co	N	Y	KP51T
5850	ICP-LIQ	4.08000E-01 uG/ML 5559	Cr	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Cu	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	Fe	N	Y	KP51T
5850	ICP-LIQ	3.06000E 03 uG/ML 5559	K	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Li	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-01 uG/ML 5559	Mg	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML 5559	Mn	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	Mo	N	Y	KP51T
5850	ICP-LIQ	3.04000E 01 uG/ML 5559	Na	N	Y	KP51T
5850	ICP-LIQ	< 1.20000E-01 uG/ML 5559	Ni	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6995. PUREX J3/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5850	ICP-LIQ	8.64000E 00 uG/ML P 5559	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-01 uG/ML Pb 5559	N	Y	KP51T
5850	ICP-LIQ	< 1.20000E 00 uG/ML Sb 5559	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-01 uG/ML Se 5559	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML Sr 5559	N	Y	KP51T
5850	ICP-LIQ	< 1.20000E 00 uG/ML Tl 5559	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML V 5559	N	Y	KP51T
5850	ICP-LIQ	< 6.00000E-02 uG/ML Zn 5559	N	Y	KP51T
5897	Hg-LIQ	< 5.00000E-03 uG/ML 5560	N	Y	KP51T
5926	TOC	1.03200E 02 % RECOVERY 5558	N	Y	KP51T
5950	ICP	9.58000E 01 % RECOVERY Ag 5559	N	Y	KP51T
5950	ICP	9.84400E 01 % RECOVERY Al 5559	N	Y	KP51T
5950	ICP	1.08520E 02 % RECOVERY As 5559	N	Y	KP51T
5950	ICP	9.89200E 01 % RECOVERY Ba 5559	N	Y	KP51T
5950	ICP	1.03000E 02 % RECOVERY Be 5559	N	Y	KP51T
5950	ICP	1.05880E 02 % RECOVERY Ca 5559	N	Y	KP51T
5950	ICP	1.00720E 02 % RECOVERY Cd 5559	N	Y	KP51T
5950	ICP	9.98800E 01 % RECOVERY Co 5559	N	Y	KP51T
5950	ICP	1.01080E 02 % RECOVERY Cr 5559	N	Y	KP51T
5950	ICP	1.00240E 02 % RECOVERY Cu 5559	N	Y	KP51T
5950	ICP	1.01800E 02 % RECOVERY Fe 5559	N	Y	KP51T
5950	ICP	K - SAMPLE > 4X CONCENTRATION OF SPIKE. 5559			KP51T
5950	ICP	9.77200E 01 % RECOVERY Li 5559	N	Y	KP51T
5950	ICP	9.64000E 01 % RECOVERY Mg 5559	N	Y	KP51T
5950	ICP	9.64000E 01 % RECOVERY Mn 5559	N	Y	KP51T
5950	ICP	9.84400E 01 % RECOVERY Mo 5559	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6995. PUREX J3/E5 BODVK8 TIME: 3/23/95 12:58
DISPATCHED: 2/14/95 11:50 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	8.40300E 01 % RECOVERY Na	N	Y	KP51T
		5559			
5950	ICP	9.78400E 01 % RECOVERY Ni	N	Y	KP51T
		5559			
5950	ICP	1.08040E 02 % RECOVERY P	N	Y	KP51T
		5559			
5950	ICP	1.03960E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5950	ICP	9.34000E 01 % RECOVERY Sb	N	Y	KP51T
		5559			
5950	ICP	1.16450E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5950	ICP	9.89200E 01 % RECOVERY Sr	N	Y	KP51T
		5559			
5950	ICP	9.65200E 01 % RECOVERY Tl	N	Y	KP51T
		5559			
5950	ICP	1.01800E 02 % RECOVERY V	N	Y	KP51T
		5559			
5950	ICP	1.00240E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5997	Hg	9.47000E 01 % RECOVERY	N	Y	KP51T
		5560			
8705	ACD DGST	DF = 100; 100 ML FINAL VOL.			KP51T
		5567			
8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8796	Se	OUT FOR RERUN			KP51T
		5569			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8805	ACD DGST	DF=100, FINAL VOL. 100 ML			KP51T
		5567			
8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8896	Se	OUT FOR RERUN			KP51T
		5569			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8905	ACD DGST	SAMPLE DF=100;ICP SPK DF=20;AS/SE DF=50			KP51T
		5567			
8995	As	8.87000E 01 % RECOVERY	N	Y	KP51T
		5568			
8996	Se	OUT FOR RERUN			KP51T
8996	Se	9.58000E 01 % RECOVERY	N	Y	KP51T
		5691			

END OF REPORT

SAMPLE STATUS REPORT FOR R 6996. PUREX J3/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP51T
5713	pH	OUT FOR RERUN				KP51T
		5557				
5713	pH	8.13000E 00 NONE		N	Y	KP51T
		5587				
5726	TOC	2.15000E 01 uG C/ML		N	Y	KP51T
		5558				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Ag	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Al	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	As	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Ba	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-03 uG/ML	Be	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Ca	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cd	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Co	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cr	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Cu	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Fe	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	K	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Li	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Mg	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-02 uG/ML	Mn	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 5.00000E-02 uG/ML	Mo	N	Y	KP51T
		5559				
5750	ICP-LIQ	2.63000E-01 uG/ML	Na	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-02 uG/ML	Ni	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	P	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Pb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 2.00000E-01 uG/ML	Sb	N	Y	KP51T
		5559				
5750	ICP-LIQ	< 1.00000E-01 uG/ML	Se	N	Y	KP51T
		5559				

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SAMPLE STATUS REPORT FOR R 6996. PUREX J3/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5750	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Sr	N	Y	KP51T
5750	ICP-LIQ	< 2.00000E-01 uG/ML 5559	Tl	N	Y	KP51T
5750	ICP-LIQ	< 5.00000E-02 uG/ML 5559	V	N	Y	KP51T
5750	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Zn	N	Y	KP51T
5797	Hg LIQ	< 5.00000E-03 uG/ML 5560		N	Y	KP51T
5813	pH	OUT FOR RERUN 5557				KP51T
5813	pH	8.12000E 00 NONE 5587		N	Y	KP51T
5826	TOC	8.80000E 00 uG C/ML 5558		N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Ag	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Al	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5559	As	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Ba	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-03 uG/ML 5559	Be	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5559	Ca	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Cd	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-01 uG/ML 5559	Co	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Cr	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Cu	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Fe	N	Y	KP51T
5850	ICP-LIQ	< 3.00000E-01 uG/ML 5559	K	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Li	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-01 uG/ML 5559	Mg	N	Y	KP51T
5850	ICP-LIQ	< 1.00000E-02 uG/ML 5559	Mn	N	Y	KP51T
5850	ICP-LIQ	< 5.00000E-02 uG/ML 5559	Mo	N	Y	KP51T
5850	ICP-LIQ	2.68000E-01 uG/ML 5559	Na	N	Y	KP51T
5850	ICP-LIQ	< 2.00000E-02 uG/ML 5559	Ni	N	Y	KP51T

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6996. PUREX J3/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS			OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********			***	***	******
5850	ICP-LIQ	< 2.00000E-01 uG/ML	P		N	Y	KP51T
		5559					
5850	ICP-LIQ	< 1.00000E-01 uG/ML	Pb		N	Y	KP51T
		5559					
5850	ICP-LIQ	< 2.00000E-01 uG/ML	Sb		N	Y	KP51T
		5559					
5850	ICP-LIQ	< 1.00000E-01 uG/ML	Se		N	Y	KP51T
		5559					
5850	ICP-LIQ	< 1.00000E-02 uG/ML	Sr		N	Y	KP51T
		5559					
5850	ICP-LIQ	< 2.00000E-01 uG/ML	Tl		N	Y	KP51T
		5559					
5850	ICP-LIQ	< 5.00000E-02 uG/ML	V		N	Y	KP51T
		5559					
5850	ICP-LIQ	< 1.00000E-02 uG/ML	Zn		N	Y	KP51T
		5559					
5897	Hg-LIQ	< 5.00000E-03 uG/ML			N	Y	KP51T
		5560					
5926	TOC	9.02000E 01 % RECOVERY			N	Y	KP51T
		5558					
5950	ICP	1.08200E 02 % RECOVERY	Ag		N	Y	KP51T
		5559					
5950	ICP	1.06560E 02 % RECOVERY	Al		N	Y	KP51T
		5559					
5950	ICP	1.04920E 02 % RECOVERY	As		N	Y	KP51T
		5559					
5950	ICP	1.04100E 02 % RECOVERY	Ba		N	Y	KP51T
		5559					
5950	ICP	1.05740E 02 % RECOVERY	Be		N	Y	KP51T
		5559					
5950	ICP	1.07380E 02 % RECOVERY	Ca		N	Y	KP51T
		5559					
5950	ICP	1.07380E 02 % RECOVERY	Cd		N	Y	KP51T
		5559					
5950	ICP	1.06560E 02 % RECOVERY	Co		N	Y	KP51T
		5559					
5950	ICP	1.06560E 02 % RECOVERY	Cr		N	Y	KP51T
		5559					
5950	ICP	1.06560E 02 % RECOVERY	Cu		N	Y	KP51T
		5559					
5950	ICP	1.06560E 02 % RECOVERY	Fe		N	Y	KP51T
		5559					
5950	ICP	1.20490E 02 % RECOVERY	K		N	Y	KP51T
		5559					
5950	ICP	1.06560E 02 % RECOVERY	Li		N	Y	KP51T
		5559					
5950	ICP	1.08200E 02 % RECOVERY	Mg		N	Y	KP51T
		5559					
5950	ICP	1.04920E 02 % RECOVERY	Mo		N	Y	KP51T
		5559					
5950	ICP	1.11230E 02 % RECOVERY	Na		N	Y	KP51T
		5559					

REPORT CONTINUED ON NEXT PAGE

9613479.0746

SAMPLE STATUS REPORT FOR R 6996. PUREX J3/E5 BODVK9 TIME: 3/23/95 12:59
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	1.07380E 02 % RECOVERY Ni	N	Y	KP51T
		5559			
5950	ICP	1.10660E 02 % RECOVERY P	N	Y	KP51T
		5559			
5950	ICP	1.08200E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5950	ICP	1.04920E 02 % RECOVERY Sb	N	Y	KP51T
		5559			
5950	ICP	1.04920E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5950	ICP	1.05740E 02 % RECOVERY Sr	N	Y	KP51T
		5559			
5950	ICP	1.05740E 02 % RECOVERY Tl	N	Y	KP51T
		5559			
5950	ICP	1.05740E 02 % RECOVERY V	N	Y	KP51T
		5559			
5950	ICP	1.09020E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5997	Hg	9.78000E 01 % RECOVERY	N	Y	KP51T
		5560			
8705	ACD DGST	DF=100; FINAL VOL. 100 ML			KP51T
		5567			
8795	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8796	Se	OUT FOR RERUN			KP51T
		5569			
8796	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8805	ACD DGST	DF=100; FINAL VOL. 100 ML			KP51T
		5567			
8895	As	< 2.50000E-01 uG/ML	N	Y	KP51T
		5568			
8896	Se	OUT FOR RERUN			KP51T
		5569			
8896	Se	< 2.50000E-01 uG/ML	N	Y	KP51T
		5691			
8905	ACD DGST	SAMPLE DF=100; ICP SPK DF=20; AS/SE DF=50			KP51T
		5567			
8995	As	9.25000E 01 % RECOVERY	N	Y	KP51T
		5568			
8996	Se	OUT FOR RERUN			KP51T
		5569			
8996	Se	1.03200E 02 % RECOVERY	N	Y	KP51T
		5691			

END OF REPORT

SAMPLE STATUS REPORT FOR R 6997. PUREX J3/E5 STD TIME: 3/23/95 13: 0
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 2/14/95 14:50

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	OUT FOR RERUN			KP51T
		5557			
5513	pH	1.00400E 02 % RECOVERY	N	Y	KP51T
		5587			
5526	TOC	9.43000E 01 % RECOVERY	N	Y	KP51T
		5558			
5550	ICP	1.01940E 02 % RECOVERY Ag	N	Y	KP51T
		5559			
5550	ICP	1.01940E 02 % RECOVERY Al	N	Y	KP51T
		5559			
5550	ICP	1.06760E 02 % RECOVERY As	N	Y	KP51T
		5559			
5550	ICP	1.02240E 02 % RECOVERY Ba	N	Y	KP51T
		5559			
5550	ICP	1.07160E 02 % RECOVERY Be	N	Y	KP51T
		5559			
5550	ICP	1.05980E 02 % RECOVERY Ca	N	Y	KP51T
		5559			
5550	ICP	1.04780E 02 % RECOVERY Cd	N	Y	KP51T
		5559			
5550	ICP	1.05960E 02 % RECOVERY Co	N	Y	KP51T
		5559			
5550	ICP	1.04960E 02 % RECOVERY Cr	N	Y	KP51T
		5559			
5550	ICP	1.04760E 02 % RECOVERY Cu	N	Y	KP51T
		5559			
5550	ICP	1.04280E 02 % RECOVERY Fe	N	Y	KP51T
		5559			
5550	ICP	9.98600E 01 % RECOVERY K	N	Y	KP51T
		5559			
5550	ICP	1.01880E 02 % RECOVERY Li	N	Y	KP51T
		5559			
5550	ICP	1.02060E 02 % RECOVERY Mg	N	Y	KP51T
		5559			
5550	ICP	1.02240E 02 % RECOVERY Mn	N	Y	KP51T
		5559			
5550	ICP	1.04520E 02 % RECOVERY Mo	N	Y	KP51T
		5559			
5550	ICP	1.01800E 02 % RECOVERY Na	N	Y	KP51T
		5559			
5550	ICP	1.03360E 02 % RECOVERY Ni	N	Y	KP51T
		5559			
5550	ICP	1.06780E 02 % RECOVERY P	N	Y	KP51T
		5559			
5550	ICP	1.04700E 02 % RECOVERY Pb	N	Y	KP51T
		5559			
5550	ICP	9.91400E 01 % RECOVERY Sb	N	Y	KP51T
		5559			
5550	ICP	1.03020E 02 % RECOVERY Se	N	Y	KP51T
		5559			
5550	ICP	1.02120E 02 % RECOVERY Sr	N	Y	KP51T
		5559			

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6997. PUREX J3/E5 STD TIME: 3/23/95 13: 0
DISPATCHED: 2/14/95 11:51 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5550	ICP	1.01980E 02 % RECOVERY Tl	N	Y	KP51T
		5559			
5550	ICP	1.04500E 02 % RECOVERY V	N	Y	KP51T
		5559			
5550	ICP	1.05580E 02 % RECOVERY Zn	N	Y	KP51T
		5559			
5595	As	1.01000E 02 % RECOVERY	N	Y	KP51T
		5568			
5596	Se	OUT FOR RERUN			KP51T
5596	Se	1.02600E 02 % RECOVERY	N	Y	KP51T
		5691			
5597	Hg	9.66000E 01 % RECOVERY	N	Y	KP51T
		5560			

END OF REPORT

9613479.0749

ATTACHMENT 5

ANALYTICAL DATA

9613479.0750

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R 6990,R 6991	Customer ID: BODPS9,BODPTO
Analysis: pH	Sample Prep: DIRECT

Instrument: SN 246354	Procedure/ Rev: LA-212-102 / C-5
Technologist: RD MEYERS	Date: 02/19/95
Starting Time: 1140	Temperature 24 C
Ending Time: 1200	Chemist: ROB SCHROEDER

Comments: BATCH #5553

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6988-5513	11		
2	SAMPLE	R6990-5713	12		
3	SAMPLE DUP	R6990-5813	13		
4	SAMPLE	R6991-5713	14		
5	SAMPLE DUP	R6991-5813	15		
6	LMCS	R6992-5513	16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS STD	52N16-B / 5ml			

A-6000-881 (03/92)

pH ANALYSIS

BATCH 5553

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988 -5513	PUREX J3/E5	2-14-95	11:13	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 5ml	STD

Remarks, Calculations, Results.

S350 PH MAT.
STD# RESULT
STD VAL %REC
S353 NBSPH1
STD# 52N16-13 RESULT 4.02
STD VAL 4.00 %REC 100.5

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

Date	Time Completed	Lab Unit Mgr.
2/18/95	1200	2/21/95

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

9613479.0752

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6900.-5713	PUREX J3/E5	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
5 ml	[illegible]

Remarks, Calculations, Results: 2.89

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[signature]				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2/14/95	1200	[signature] 2/21/95	[signature]

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

9613479.0753

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5813	PUREX J3/E5	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
5ml	EODPS9

Remarks, Calculations, Results

DUPLICATE SAMPLE 2.85

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

Date	Time Completed	Lab Unit Mgr.	
2/14/95	1200	2/21/95	

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

9613479.0754

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5713	PUREX J3/E5	2-14-95	11:29	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
? 5ml	BODPTO

Remarks, Calculations, Results

6.28

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

Date	Time Completed	Lab Unit Mgr.
2/14/95	1200	2/21/95

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

9613479.0755

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5813	PUREX J3/E5	2-14-95	11:29	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
? 5m	BODPTO

Remarks, Calculations, Results:
DUPLICATE SAMPLE 6.43

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1200	2/21/95	

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

9613479.0756

pH ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6992.-5513	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 5ml	STD

Remarks, Calculations, Results

S350 PH MAT.
STD# RESULT
STD VAL %REC
S353 NPSPN1
STD# 52N16B RESULT 4.03
STD VAL 4.06 %REC 100.8 WRM 5957

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1200	2/21/95	

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

9613479.0757

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R 6995,R 6996	Customer ID: BODVK8,BODVK9
Analysis: pH	Sample Prep: DIRECT

Instrument: SN 246354	Procedure/ Rev: LA-212-102 / C-5
Technologist: RD MEYERS	Date: 02/19/95
Starting Time: 1120	Temperature 24 C
Ending Time: 1140	Chemist: ROB SCHROEDER

Comments: BATCH #5557

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6993-5513	11		
2	SAMPLE	R6995-5713	12		
3	SAMPLE DUP	R6995-5813	13		
4	SAMPLE	R6996-5713	14		
5	SAMPLE DUP	R6996-5813	15		
6	LMCS	R6997-5513	16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS STD	52N16-B / 5ml			

A-6000-881 (03/92)

9613479.0758

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R 6995.6996	Customer ID: J3/E5
Analysis: PH	Sample Prep: DIRECT

Instrument:	Procedure/ Rev: LA 212-102/
Technologist: R. WENDLAND	Date: 02/21/95
Starting Time: 0800	Temperature 25.0
Ending Time: 1200	Chemist: R. SCHROEDER

Comments:

	Description	Lab ID		Description	Lab ID
1	LMCS	R 6993-5513	11		
2	SAM	R 6995-5713	12		
3	DUP	R 6995-5813	13		
4	SAM	R 6996-5713	14		
5	DUP	R 6996-5813	15		
6	LMCS	R 6997-5513	16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS				

A-6000-881 (03/92)

9613479.0759

pH ANALYSIS

Batch 5557

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-5513	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 5ml	STD

Remarks. Calculations. Results

S350 PH MAT.
STD# RESULT
STD VAL %REC
S35S NPSPH1
STD# 52N4B RESULT 4.04
STD VAL 4.00 %REC 101.0 WR# 5960

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1140	2/21/95	

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

RERUN Batch 5587

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-5513	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	1

Sample Size	Customer ID
5 ML	STD

Remarks. Calculations. Results

S350 PH MAT.
STD# RESULT 8.02
STD VAL 8.00 %REC 100.2
STD# 86N16-C RESULT
STD VAL %REC

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

Date	Time Completed	Lab Unit Mgr	
2-22-95		2-23-95	

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

9613479.0760

pH ANALYSIS

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5713	PUREX J3/E5	2-14-95	11:50	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	1

Sample Size	Customer ID
5 ML	BODVK8

Remarks, Calculations, Results:

9.44

Robby Wendland

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

Date	Time Completed	Lab Unit Mgr	
2-22-95		Ray Schneider 2-23-95	

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

pH 8.02 STD

calibratio
date 95-02-22
pH(S) 1 7.00
pH(S) 2 10.00
t.cal [illegible] °C
sl [illegible] .887
U[illegible] 3.6 mV
electr. input 1

pH 9.44
pH 9.45 95

R6995-5713

pH 8.13
[illegible] 8.12 96

pH 8.03 STD

9613479.0761

pH ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5713	PUREX J3/E5	2-14-95	11:50	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
? 5ml	BODVKo

Remarks, Calculations, Results

9.42

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/15/95	1:14	2/21/95	

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

9613479.0762

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5813	PUREX J3/E5	2-14-95	11:50	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
? 5ml	BODVK8

Remarks, Calculations, Results:
DUPLICATE SAMPLE 9.44

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr.	
2/14/95	1140	2/21/95	

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

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5813	PUREX J3/E5	2-14-95		

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	1

Sample Size	Customer ID
5 ML	BODVK8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

9.45

BOBBY NENDLAND

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

Date	Time Completed	Lab Unit Mgr.	
2-22-95		2-23-95	

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

9613479.0763

pH ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5813	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
? 5ml	BODVK9

Remarks, Calculations, Results

DUPLICATE SAMPLE 6.62

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1140	2/21/95	

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

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
[illegible]	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	[illegible]	-

Sample Size	Customer ID
5 ml	BODVK9

Remarks, Calculations, Results

DUPLICATE SAMPLE

8.12

Bobbie Wendland

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

Date	Time Completed	Lab Unit Mgr	
2-22-95		2-23-95	

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

9613479.0764

pH ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5713	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	0

Sample Size	Customer ID
?5ml	BODVK9

Remarks, Calculations, Results: 7.01

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	1140	2/21/95	

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

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5713	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP51T	1

Sample Size	Customer ID
5 ML	BODVK9

Remarks, Calculations, Results: 8.13

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

Date	Time Completed	Lab Unit Mgr	
2-22-95		2-23-95	

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

9613479.0765

pH ANALYSIS

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R 6997.-5513	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	1

Sample Size	Customer ID
5 ML	STD

Remarks, Calculations, Results

S350 PH MAT.
STD# 86N16C RESULT 8.03
STD VAL %REC 100.4
S353 NBSPH1
STD# RESULT
STD VAL %REC

Bobby Wendland

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

Date	Time Completed	Lab Unit Mgr	
2-22-95		2-23-95 Ray Schroeder	Gary Hamm

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

Serial No	Sample Point	Date	Time Issued	Priority
R 6997.-5513	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	% RECOVERY	KP51T	0

Sample Size	Customer ID
5ml	STD

Remarks, Calculations, Results

S350 PH MAT.
STD# RESULT
STD VAL %REC
S353 NBSPH1
STD# 52N16B RESULT 4.04
STD VAL 4.00 %REC 101.0 WR# 5963

OUT FOR RERUN

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

Date	Time Completed	Lab Unit Mgr	
2/14/95	11 40	2/21/95	Gary Hamm

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

9613479.0766

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6990, R6991	Customer ID: BODPS9
Analysis: TOTAL ORGANIC CARBON	Sample Prep: DIRECT

Instrument: WC16130	Procedure/ Rev: LA-344-105 / B-5
Technologist: DC DUNHAM David C Dunham	Date: 02/21/95
Starting Time: 0500	Temperature N\A
Ending Time: 0645	Chemist: RW SCHROEDER

Comments: BATCH # 5554

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6988-5526	11		
2	REAGENT BLANK	R6989-5626	12		
3	SAMPLE	R6990-5726	13		
4	DUPLICATE	R6990-5826	14		
5	SPIKE	R6990-5926	15		
6	SAMPLE	R6991-5726	16		
7	DUPLICATE	R6991-5826	17		
8	SPIKE	R6991-5926	18		
9	LMCS STD	R6992-5526	19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	10N12F / .200 ML			
SPIKE	11N12E / .400 ML			

A-6000-881 (03/92)

9613479.0767

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5554

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5526	PUREX 3S/DS	2-14-95	1:13	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .200 ml - 2 ml .5 M H_2SO_4	STD

Remarks, Calculations, Results:

S356 CO3TOC

STD# 10N12F RESULT 3.02803

STD VAL 3.00803 %REC 102.3

David Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-21-95	0645	2/22/95 Ruy Schroeder	E C Jones

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

TOC : LA-344-105 (B-3) LIQUIDS

			STANDARD
Sample Volume in mL	(SS)		0.200
H2SO4 Volume in mL	(VR)		2.000
Volume Injected in mL	(VI)		0.200
Dilution Factor	(DF)		11
Digest Dilution Factor	(DDF)		1
µg of Carbon in Sample	(C1)		58.2
µg of Carbon in Blank	(C2)		2.3
g of Carbon/L		=	3.07E+00

Type	Test Code	Matrix	Sample #	Instrument Code	Analyst	Date	Time
STANDARD	5554	LIQUID	R6988-5526		D. DUNHAM	02/21/95	06:45 AM

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

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

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

µg Carbon/mL =	3.07E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	E C Jones	Date:	02/21/95
Approved by:	Ruy Schroeder	Date:	2/22/95

Form 344105_C Rev. 1.1

96139.0.06

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6988 Date: 02/21/95 Time: 05:24:53

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	33.30	99.40
3	1.51	47.00	29.15
4	2.01	51.50	8.74
5	2.51	53.80	4.28
6	3.01	54.80	1.82
7	3.51	55.80	1.79
8	4.01	56.10	0.53
9	4.51	56.50	0.71
10	5.01	56.80	0.53
11	5.51	57.20	0.70
12	6.01	57.50	0.52
13	6.50	57.80	0.52
14	7.00	58.20	0.69

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(58.2 - 2.30006)(11)/(200) = +3.07E+00 g/L Carbon
(58.2 - 2.30006)(11)/(200)(12) = +2.56E-01 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.0769

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6989 -5626	PUREX J3/E5	2-14-95	11:23	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? • 200 ml .5M H_2SO_4	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

5.00E00 ug/ml gwb 2/22/95

~~5.50E00~~ ug C/ML

~~5.50E-03~~ PJ 2-21-95

David C. Dunham

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

Date	Time Completed	Lab Unit Mgr 2/22/95	
2-21-95	0645	RW Schneider	

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

TOC : LA-344-105 (B-3) LIQUIDS

			BLK
Type	Sample Volume in mL	(SS)	0.200
BLK	H2SO4 Volume in mL	(VR)	0.000
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	3.1
Matrix	µg of Carbon in Blank	(C2)	2.3
Liquid	g of Carbon/L =	<	5.00E-03

Sample #
R6989-5626
Instrument Code
Analyst
D. Dunham
Date
02/21/95
Time
06:45 AM

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

$$\text{µg of Carbon/mL} = \text{g of Carbon/L} * 1000000\ \text{µg/g} / 1000\ \text{mL/L}$$

$$\text{Detection Level (µg/mL)} = \frac{1\ \text{µg C} * DF * DDF}{VI}$$

NOTE: Reported Result is Below Detection Level.

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

Data Entry by:		Date:	02/22/95
Approved by:		Date:	2/22/95

Form 344105_C Rev. 1.1

96K479.0770

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6989 Date: 02/21/95 Time: 06:06:23

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.10	0.00	0.00
2	0.60	0.00	0.00
3	1.10	0.30	100.00
4	1.60	0.60	50.00
5	2.10	0.90	33.33
6	2.60	1.10	18.18
7	3.10	1.40	21.43
8	3.60	1.70	17.65
9	4.10	1.90	10.53
10	4.60	2.10	9.52
11	5.10	2.40	12.50
12	5.60	2.60	7.69
13	6.10	2.90	10.34
14	6.60	3.10	6.45

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(3.1 - 2.166566)(1)/(200) = < 5.00 E-3 g/L Carbon
(3.1 - 2.166566)(1)/(200)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: Daniel C Dunham
DC DUNHAM 00000

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

Sample: BLANK Date: 02/21/95 Time: 04:09:30

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

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.30	100.00
3	1.51	0.50	40.00
4	2.00	0.60	16.67
5	2.50	0.80	25.00
6	3.00	1.00	20.00
7	3.51	1.10	9.09
8	4.01	1.30	15.38
9	4.50	1.50	13.33
10	5.00	1.60	6.25
11	5.50	1.80	11.11
12	6.00	2.00	10.00
13	6.50	2.10	4.76
14	7.00	2.30	8.70

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

Sample Run By: DC DUNHAM 00000

9613479.0772

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5726	FUREX J3/E5	2-14-95	11:25	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? 2 ml – .200 ml .5 M H_2SO_4	BUDFS9

Remarks, Calculations, Results:

1.71E02 ug C/ml

D. Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-21-95	0645	2/22/95	

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

TOC : LA-344-105 (B-3) LIQUIDS

Type			Sample
Sample	Sample Volume in mL	(SS)	2.000
	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	33.3
Matrix	µg of Carbon in Blank	(C2)	2.3
liquid	g of Carbon/L	=	1.71E-01

Sample #
R6990-5726
Instrument Code
Analyst
D. Dunham
Date
02/21/95
Time
06:45 AM

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

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

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

µg Carbon/mL =	1.71E+02	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/22/95
Approved by:		Date:	2/22/95

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96150 9.0773

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6990-5726 Date: 02/21/95 Time: 05:51:08

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	19.80	98.48
3	1.51	26.10	24.14
4	2.00	28.60	8.74
5	2.50	29.90	4.35
6	3.00	30.70	2.61
7	3.50	31.20	1.60
8	4.00	31.50	0.95
9	4.50	31.90	1.25
10	5.00	32.20	0.93
11	5.51	32.40	0.62
12	6.01	32.70	0.92
13	6.51	33.00	0.91
14	7.00	33.30	0.90

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(33.3 - 2.300336)(1.1)/(200) = +1.70E-01 g/L Carbon
(33.3 - 2.300336)(1.1)/(200)(12) = +1.42E-02 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.0774

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5826	PUREX J3/F5	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? 2 ml - .200 ml .5M H_2SO_4	BODPS9

Remarks, Calculations, Results:
DUPLICATE SAMPLE

1.64E02 ug C/ML

David C Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-21-95	0645	2/22/95	

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

TOC : LA-344-105 (B-3) LIQUIDS

			Duplicate
Type	Sample Volume in mL	(SS)	2.000
Duplicate	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	32.1
Matrix	µg of Carbon in Blank	(C2)	2.3
liquid	g of Carbon/L	=	1.64E-01

Sample #
R6990-5826
Instrument Code
Analyst
D. Dunham
Date
02/21/95
Time
06:45 AM

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

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

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	1.64E+02	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/22/95
Approved by:		Date:	2/22/95

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96150/9.6.75

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6990-5826 Date: 02/21/95 Time: 05:58:55

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	20.20	98.02
3	1.51	25.90	22.01
4	2.01	27.80	6.83
5	2.51	29.00	4.14
6	3.01	29.60	2.03
7	3.51	29.90	1.00
8	4.01	30.30	1.32
9	4.51	30.70	1.30
10	5.01	30.90	0.65
11	5.51	31.20	0.96
12	6.01	31.60	1.27
13	6.51	31.80	0.63
14	7.00	32.10	0.93

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(32.1 - 2.300326)(1.1)/(200) = +1.64E-01 g/L Carbon
(32.1 - 2.300326)(1.1)/(200)(12) = +1.37E-02 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No	Sample Point	Date	Time Issued	Priority
R 699[illegible] 5926	PUREX J3/[illegible]	[illegible]-14-95	11:25	21

Determination	Method Standard	Result Units	Charge Code	Reruns
[illegible]	LA-344-1[illegible]	RECOVERY	KP[illegible]	0

Sample Size	Customer ID
? .400 ml - .400 ml spike ~~.200 ml~~	[illegible]

Remarks, Calculations, Results:

SAMPLE SPIKED TO R6990-5726
SPIKE ID 11N12E
SPIKE VOLUME .400 ml

~~74.8%~~
98.3% JWB 2/22/95

David C Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-21-95	0645	RW Schroeder 2/22/95	E Jones

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

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	2.000	Sample Size in mL (SS)	0.400
Work List	H2S04 Volume in mL	0.200	Spike Volume in mL	0.400
5554	Volume Injected in mL	0.200	H2S04 Volume in mL	0.000
Test Code	µg of Carbon in Sample	33.3	Volume Injected in mL	0.200
	µg of Carbon in Blank	2.3	Sample Pre-Spike Dil. Factor (PDF)	1.1
Matrix			Spike Value (µg/ml)	747
Liquid			µg C in Sample + Spike	91.2
Sample #			µg C in Blank	2.3
R6990-5926				
Instrument Code				
Analyst				
D. Dunham				
Date				
02/21/95				
Time				
06:45 AM				

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

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

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

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

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

Sample Pre-Spike Dilution Factor = $\frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$

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

Percent Spike Recovery 98.3%

Data Entry by:	JWBoe	Date: 22-Feb-95
Approved by:	JWBoe	Date: 2/22/95

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96154,9E-7

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6990-5926 Date: 02/21/95 Time: 06:59:54

Sample Size = 200 uL
Dil Factor = 2.2
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	58.00	98.45
3	1.51	76.30	23.98
4	2.01	83.30	8.40
5	2.51	86.40	3.59
6	3.01	87.60	1.37
7	3.51	88.20	0.68
8	4.01	88.90	0.79
9	4.50	89.50	0.67
10	5.00	89.80	0.33
11	5.50	90.20	0.44
12	6.00	90.50	0.33
13	6.50	91.00	0.55
14	7.00	91.20	0.22

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(91.2 - 2.300005)(2.2)/(200) = +9.78E-01 g/L Carbon
(91.2 - 2.300005)(2.2)/(200)(12) = +8.15E-02 Molar Carbon

Sample Run By: Dainell Dunham
DC DUNHAM 00000

9613479.0778

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-5726	PUREX J3/E5'	2-14-95	11:29	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? 2ml - .200 ml .5 M H_2SO_4	BODPTO

Remarks, Calculations, Results

1.27E+1 ug/ml gwb 2/22/95

~~L3 8 ozy/ml~~

David Dunham

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

Date	Time Completed	Lab Unit Mgr 2/22/95	
2-21-95	0645	RW Schroeder	R Jones

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

TOC : LA-344-105 (B-3) LIQUIDS

			Sample
Type	Sample Volume in mL	(SS)	2.000
Sample	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	4.6
Matrix	µg of Carbon in Blank	(C2)	2.3
liquid	g of Carbon/L	=	1.27E-02

Sample #	
R6991-5726	
Instrument Code	
Analyst	
D. Dunham	
Date	
02/21/95	
Time	
06:45 AM	

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

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

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	1.27E+01	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/22/95
Approved by:		Date:	2/22/95

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9613479 [illegible]

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6991-5726 Date: 02/21/95 Time: 06:32:55

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	1.10	90.91
3	1.51	1.50	26.67
4	2.00	1.90	21.05
5	2.50	2.20	13.64
6	3.00	2.60	15.38
7	3.50	2.70	3.70
8	4.01	3.00	10.00
9	4.50	3.30	9.09
10	5.00	3.50	5.71
11	5.50	4.00	12.50
12	6.00	4.10	2.44
13	6.50	4.30	4.65
14	7.00	4.60	6.52

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(4.6 - 2.300065)(1.1)/(200) = +1.3E-02 g/L Carbon
(4.6 - 2.300065)(1.1)/(200)(12) = +1.1E-03 Molar Carbon

Sample Run By: Daniel C Dunham
DC DUNHAM 00000

9613479.0780

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-5826	PUREX J3/E5	2-14-95	11:29	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	µG C/ML	KP51T	0

Sample Size	Customer ID
? 2 ml - .200 ml .5 M H_2SO_4	BODPTO

Remarks, Calculations, Results

DUPLICATE SAMPLE

1.43E01 ug/c/ml

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

Date	Time Completed	Lab Unit Mgr 2/22/95	
2-21-95	0645		

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

TOC : LA-344-105 (B-3) LIQUIDS

			Duplicate
Type	Sample Volume in mL	(SS)	2.000
Duplicate	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	4.9
Matrix	µg of Carbon in Blank	(C2)	2.3
liquid	g of Carbon/L	=	1.43E-02
Sample #			
R6991-5826			
Instrument Code			
Analyst			
D. Dunham			
Date			
02/21/95			
Time			
06:45 AM			

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

$$\text{µg of Carbon/mL} = \text{g of Carbon/L} * 1000000\ \text{µg/g} / 1000\ \text{mL/L}$$

$$\text{Detection Level (µg/mL)} = \frac{1\ \text{µg C} * DF * DDF}{VI}$$

µg Carbon/mL =	1.43E+01	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/22/95
Approved by:		Date:	2/22/95

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96(3479.0211

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6991-5826 Date: 02/21/95 Time: 06:40:50

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	1.70	88.24
3	1.51	2.00	15.00
4	2.01	2.30	13.04
5	2.51	2.60	11.54
6	3.01	2.90	10.34
7	3.51	3.10	6.45
8	4.01	3.30	6.06
9	4.51	3.70	10.81
10	5.01	3.80	2.63
11	5.51	4.20	9.52
12	6.01	4.40	4.55
13	6.51	4.70	6.38
14	7.00	4.90	4.08

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(4.9 - 2.300326)(1.1)/(200) = +1.4E-02 g/L Carbon
(4.9 - 2.300326)(1.1)/(200)(12) = +1.2E-03 Molar Carbon

Sample Run By: Daniel C Dunham
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5926	PUREX J3/E5	2-14-95	11:29	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .400 ml - .400 ml spike - .200 ml injection	BODPTO

Remarks, Calculations, Results

SAMPLE SPIKED ID R6991-5726
SPIKE ID 11N12E
SPIKE VOLUME .400 ml

~~147.9%~~
98.9% JWB 2/22/95

Daniel Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-21-95	0645	RW Schroeder 2/22/95	L. Jones

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

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	2.000	Sample Size in mL (SS)	0.400
Work List	H2S04 Volume in mL	0.200	Spike Volume in mL	0.400
5554	Volume Injected in mL	0.200	H2S04 Volume in mL	0.000
Test Code	µg of Carbon in Sample	4.6	Volume Injected in mL	0.200
	µg of Carbon in Blank	2.3	Sample Pre-Spike Dil. Factor (PDF)	1.1
Matrix			Spike Value (µg/ml)	747
Liquid			µg C in Sample + Spike	77.3
Sample #			µg C in Blank	2.3
R6991-5926				
Instrument Code				
Analyst				
D. Dunham				
Date				
02/21/95				
Time				
06:45 AM				

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

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

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

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

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

$$\text{Sample Pre-Spike Dilution Factor} = \frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$$

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

Percent Spike Recovery 98.9%

Data Entry by:		Date: 22-Feb-95
Approved by:		Date: 2/22/95

Form X Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6991-5926 Date: 02/21/95 Time: 06:48:39

Sample Size = 200 uL
Dil Factor = 2.2
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	45.40	99.78
3	1.51	63.10	28.05
4	2.01	70.10	9.99
5	2.51	72.30	3.04
6	3.01	73.90	2.17
7	3.51	74.60	0.94
8	4.01	75.20	0.80
9	4.50	75.50	0.40
10	5.00	76.00	0.66
11	5.50	76.40	0.52
12	6.00	76.70	0.39
13	6.50	77.00	0.39
14	7.00	77.30	0.39

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(77.3 - 2.300055)(2.2)/(200) = +8.25E-01 g/L Carbon
(77.3 - 2.300055)(2.2)/(200)(12) = +6.87E-02 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.0784

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 69[illegible]2.-5526	PUREX, J3/E5	2-14-95	11:49	51

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP51T	0

Sample Size	Customer ID
? • 200 ml - 2ml .5M H_2SO_4	STD

Remarks. Calculations. Results

S356 CO3TOC

STD# 10 N12-F RESULT 3.11E03

STD VAL 3.00E03 %REC 103.7

David C. Dunham

WR# 6324

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs
				R. Jones

Date	Time Completed	Lab Unit Mgr 2/22/95	
2-21-95	0645	R.W. Schroeder	R. Jones

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

TOC : LA-344-105 (B-3) LIQUIDS

			STANDARD
Type	Sample Volume in mL	(SS)	0.200
STANDARD	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
5554	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	58.9
Matrix	µg of Carbon in Blank	(C2)	2.3
LIQUID	g of Carbon/L	=	3.11E+00

Sample #
R6992-5526
Instrument Code
Analyst
D. DUNHAM
Date
02/21/95
Time
06:45 AM

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

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

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

µg Carbon/mL =	3.11E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	R. Jones	Date:	02/21/95
Approved by:	[illegible]	Date:	2/22/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6992-5526 Date: 02/21/95 Time: 07:07:56

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLANK
Blank Value = .3283918 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	31.90	100.00
3	1.51	48.40	34.09
4	2.01	53.40	9.36
5	2.50	55.70	4.13
6	3.01	56.70	1.76
7	3.51	57.20	0.87
8	4.00	57.60	0.69
9	4.50	58.00	0.69
10	5.01	58.40	0.68
11	5.51	58.60	0.34
12	6.01	58.60	0.00
13	6.50	58.90	0.51
14	7.00	58.90	0.00

BLANK VALUE = 2.3 micrograms carbon
BLANK FACTOR = 2.3 / 7.00383 = +3.3E-01 ug/min Carbon

SAMPLE RESULTS:
(58.9 - 2.300326)(11)/(200) = +3.11E+00 g/L Carbon
(58.9 - 2.300326)(11)/(200)(12) = +2.59E-01 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.0786

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6995, R6996	Customer ID: BODVK8, BODVK9
Analysis: TOTAL ORGANIC CARBON	Sample Prep: DIRECT

Instrument: WC16130	Procedure/ Rev: LA-344-105 / B-5
Technologist: DC DUNHAM David C Dunham	Date: 02/23/95
Starting Time: 0500	Temperature N\A
Ending Time: 0730	Chemist: RW SCHROEDER

Comments: BATCH # 5558

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6993-5526	11		
2	REAGENT BLANK	R6994-5626	12		
3	SAMPLE	R6995-5726	13		
4	DUPLICATE	R6995-5826	14		
5	SPIKE	R6995-5926	15		
6	SAMPLE	R6996-5726	16		
7	DUPLICATE	R6996-5826	17		
8	SPIKE	R6996-5926	18		
9	LMCS STD	R6997-5526	19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	10N12F / .200 ML			
SPIKE	11N12E / .400 ML			

A-6000-881 (03/92)

9613479.0787

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5558

Serial No	Sample Point	Date	Time Issued	Priority
R 6993 -5526	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP51T	0

Sample Size	Customer ID
.200 ml - 2 ml .5 M H_2SO_4	STD

Remarks, Calculations, Results:
C356 CO3TOC
STD# 10N12-F RESULT 2.73803 ug/ML
STD. VAL 3.00803 ug/ML %REC 91.0

David C. Dunham id# 6956

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

Date	Time Completed	Lab Unit Mgr
2-23-95	0730	2/27/95

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

TOC : LA-344-105 (B-3) LIQUIDS

			STANDARD
Sample Volume in mL	(SS)		0.200
H2SO4 Volume in mL	(VR)		2.000
Volume Injected in mL	(VI)		0.200
Dilution Factor	(DF)		11
Digest Dilution Factor	(DDF)		1
µg of Carbon in Sample	(C1)		53.6
µg of Carbon in Blank	(C2)		3.9
g of Carbon/L		=	2.73E+00

Type	Work List	Test Code	Matrix	Sample #	Instrument Code	Analyst	Date	Time
STANDARD	5558		LIQUID	R6993-5526		D. DUNHAM	02/23/95	07:30 AM

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

$$\text{µg of Carbon/mL} = \text{g of Carbon/L} * 1000000\ \text{µg/g} / 1000\ \text{mL/L}$$

$$\text{Detection Level (µg/mL)} = \frac{1\ \text{µg C} * DF * DDF}{VI}$$

µg Carbon/mL =	2.73E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

961349.0108

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6993-5526 Date: 02/23/95 Time: 05:54:43

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	31.20	99.36
3	1.51	40.80	23.53
4	2.01	44.40	8.11
5	2.51	46.80	5.13
6	3.01	48.40	3.31
7	3.51	49.60	2.42
8	4.01	50.60	1.98
9	4.51	51.30	1.36
10	5.01	52.00	1.35
11	5.51	52.50	0.95
12	6.01	52.80	0.57
13	6.51	53.20	0.75
14	7.00	53.60	0.75

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(53.6 - 3.900476)(11)/(200) = +2.73E+00 g/L Carbon
(53.6 - 3.900476)(11)/(200)(12) = +2.28E-01 Molar Carbon

Sample Run By: DC DUNHAM 00000

261579.0789

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

Sample: BLANK Date: 02/23/95 Time: 05:47:01

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

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	0.50	80.00
3	1.51	1.00	50.00
4	2.01	1.30	23.08
5	2.51	1.50	13.33
6	3.01	1.80	16.67
7	3.51	2.10	14.29
8	4.01	2.40	12.50
9	4.50	2.70	11.11
10	5.00	2.90	6.90
11	5.50	3.20	9.37
12	6.00	3.40	5.88
13	6.51	3.60	5.56
14	7.00	3.90	7.69

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

Sample Run By: David Dunham
DC DUNHAM 00000

9613479.0790

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6994.-5626	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? . 200 ml direct .5 M H_2SO_4	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

<5.00E00 ug C/ml

GWB 2/24/95 ~~<5.50 E00 ug C/ML~~

David C. Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	2/27/95	

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

TOC : LA-344-105 (B-3) LIQUIDS

Type			BLANK
BLANK	Sample Volume in mL	(SS)	0.200
Work List	H2SO4 Volume in mL	(VR)	2.000
5558	Volume Injected in mL	(VI)	0.200
Test Code	Dilution Factor	(DF)	1
	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	4.1
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L =	<	5.00E-03

Sample #
R6994-5626
Instrument Code
Analyst
D. DUNHAM
Date
02/23/95
Time
07:30 AM

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

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

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

NOTE: Reported Result is Below Detection Level.

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

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

9613479.0791

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6994-5626 Date: 02/23/95 Time: 06:02:57

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.60	100.00
3	1.51	0.90	33.33
4	2.01	1.30	30.77
5	2.51	1.60	18.75
6	3.01	2.00	20.00
7	3.51	2.30	13.04
8	4.01	2.60	11.54
9	4.51	2.80	7.14
10	5.01	3.00	6.67
11	5.51	3.40	11.76
12	6.01	3.60	5.56
13	6.51	3.90	7.69
14	7.01	4.10	4.88

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(4.1 - 3.900935)(1)/(200) = < 5.00 E-3 g/L Carbon
(4.1 - 3.900935)(1)/(200)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.0792

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5726	PUREX J3/E5	2-14-95	11:50	1

Determination	Method Standard	Result Units	Charge Code	Reruns
490	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? 2 ml - .200 ml .5 M H_2SO_4	BODVK8

Remarks, Calculations, Results:

David C Dunham 2.97E01 ug C/ML

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	2/27/95	

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

TOC : LA-344-105 (B-3) LIQUIDS

			SAMPLE
Type	Sample Volume in mL	(SS)	2.000 ~~0.200~~
SAMPLE	H2SO4 Volume in mL	(VR)	0.200 ~~2.000~~
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	9.3
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	2.97E-02

MWB 2/24/95
JWB 2/20/95

Sample #
R6995-5726
Instrument Code
Analyst
D. DUNHAM
Date
02/23/95
Time
07:30 AM

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

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

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

µg Carbon/mL =	2.97E+01	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6995-5726 Date: 02/23/95 Time: 07:04:15

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	3.40	82.35
3	1.51	4.30	20.93
4	2.01	4.90	12.24
5	2.51	5.40	9.26
6	3.01	6.20	12.90
7	3.51	6.50	4.62
8	4.01	6.90	5.80
9	4.51	7.30	5.48
10	5.01	7.80	6.41
11	5.51	8.20	4.88
12	6.01	8.50	3.53
13	6.51	9.00	5.56
14	7.00	9.30	3.23

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(9.3 - 3.900476)(1.1)/(200) = +3.0E-02 g/L Carbon
(9.3 - 3.900476)(1.1)/(200)(12) = +2.5E-03 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.0794

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5826	PUREX J3/E5	2-14-95	11:50	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? 2 ml - .200 ml .5M H_2SO_4	BODVK8

Remarks, Calculations, Results:
DUPLICATE SAMPLE

David C. Dunham 3.41E01 ug C/ML

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	GWBall 2/27/95	

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

TOC : LA-344-105 (B-3) LIQUIDS

			DUPLICATE
Type	Sample Volume in mL	(SS)	2.000 ~~0.200~~ GWB 2/24/95
DUPLICATE	H2SO4 Volume in mL	(VR)	0.200 ~~2.000~~ GWB 2/24/95
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	10.1
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	3.41E-02
Sample #			
R6995-5826			
Instrument Code			
Analyst			
D. DUNHAM			
Date			
02/23/95			
Time			
07:30 AM			

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

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

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

µg Carbon/mL =	3.41E+01	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/23/95
Approved by:	GWBall	Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6995-5826 Date: 02/23/95 Time: 07:11:45

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	3.60	86.11
3	1.51	4.60	21.74
4	2.01	5.40	14.81
5	2.51	6.00	10.00
6	3.01	6.50	7.69
7	3.51	7.10	8.45
8	4.01	7.60	6.58
9	4.51	8.10	6.17
10	5.01	8.50	4.71
11	5.51	8.90	4.49
12	6.01	9.30	4.30
13	6.50	9.90	6.06
14	7.00	10.10	1.98

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(10.1 - 3.900442)(1.1)/(200) = +3.41E-02 g/L Carbon
(10.1 - 3.900442)(1.1)/(200)(12) = +2.84E-03 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5926	PUREX J3/PF	2-14-95	11:50	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	M551T	0

Sample Size	Customer ID
? .400 ml - .400 ml spike	BODVK8

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6995-5726
SPIKE ID 11N12-E
SPIKE VOLUME .400 ml

103.2%
~~43.8%~~ JWB 2/24/95
~~168.9%~~ JWB 2/24/95

David C. Dunham

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

Date	Time Completed	Sec Unit Mgr	
2-23-95	0730	2/27/95	

54-6800-061

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	2.000	Sample Size in mL (SS)	0.400
Work List	H2SO4 Volume in mL	0.200	Spike Volume in mL	0.400
5558	Volume Injected in mL	0.200	H2SO4 Volume in mL	0.000
Test Code	µg of Carbon in Sample	9.3	Volume Injected in mL	0.200
	µg of Carbon in Blank	3.9	Sample Pre-Spike Dil. Factor (PDF)	1.1
Matrix			Spike Value (µg/ml)	747
Liquid			µg C in Sample + Spike	83.7
Sample #			µg C in Blank	3.9
R6995-5926				
Instrument Code				
Analyst				
D. Dunham				
Date				
02/23/95				
Time				
07:30 AM				

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

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

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

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

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

$$\text{Sample Pre-Spike Dilution Factor} = \frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$$

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

Percent Spike Recovery 103.2%

Data Entry by:		Date: 27-Feb-95
Approved by:		Date: 2/27/95

Form X Rev. 1.1

9615979.1297

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6995-5926 Date: 02/23/95 Time: 06:27:25

Sample Size = 200 uL
Dil Factor = 2.2
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	44.70	98.66
3	1.51	62.80	28.82
4	2.01	68.80	8.72
5	2.51	72.80	5.49
6	3.01	75.40	3.45
7	3.51	77.60	2.84
8	4.01	79.00	1.77
9	4.50	80.20	1.50
10	5.00	81.30	1.35
11	5.51	81.90	0.73
12	6.01	82.60	0.85
13	6.51	83.20	0.72
14	7.00	83.70	0.60

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(83.7 - 3.900476)(2.2)/(200) = +8.78E-01 g/L Carbon
(83.7 - 3.900476)(2.2)/(200)(12) = +7.31E-02 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.0798

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5726	PUREX J3/E5	2-14-95	11:51	11

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? 2ml - .200 ml .5M H_2SO_4	BODVK9

Remarks, Calculations, Results:

2.15E01 ug C/ML

David C Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	2/27/95	

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

TOC : LA-344-105 (B-3) LIQUIDS

Type			SAMPLE
SAMPLE	Sample Volume in mL	(SS)	2.000 ~~0.200~~
	H2SO4 Volume in mL	(VR)	0.200 ~~2.000~~
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	7.8
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	2.15E-02

GWB 2/24/95
JWB 2/24/95

Sample #
R6996-5726
Instrument Code
Analyst
D. DUNHAM
Date
02/23/95
Time
07:30 AM

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

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

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	2.15E+01	DETECTION LEVEL in µg/mL
		5.00E+00

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6996-5726 Date: 02/23/95 Time: 06:48:21

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	2.40	50.00
3	1.51	3.10	22.58
4	2.01	3.80	18.42
5	2.51	4.30	11.63
6	3.01	4.70	8.51
7	3.51	5.20	9.62
8	4.01	5.60	7.14
9	4.50	6.00	6.67
10	5.00	6.40	6.25
11	5.50	6.80	5.88
12	6.00	7.10	4.23
13	6.50	7.50	5.33
14	7.00	7.80	3.85

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(7.8 - 3.900476)(1.1)/(200) = +2.1E-02 g/L Carbon
(7.8 - 3.900476)(1.1)/(200)(12) = +1.8E-03 Molar Carbon

Sample Run By: David C Dunham
DC DUNHAM 00000

9613479.0800

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5826	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP51T	0

Sample Size	Customer ID
? 2 ml - .200 ml .5 M H_2SO_4	BODVK9

Remarks, Calculations, Results

DUPLICATE SAMPLE

David Dunham 8.80600 ug C/ML

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	2/27/95	

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

TOC : LA-344-105 (B-3) LIQUIDS

			DUPLICATE
Type	Sample Volume in mL	(SS)	2.000 ~~0.200~~ JWB 2/24/95
DUPLICATE	H2SO4 Volume in mL	(VR)	0.200 ~~2.000~~ JWB 2/24/95
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	5.5
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	8.80E-03
Sample #			
R6996-5826			
Instrument Code			
Analyst			
D. DUNHAM			
Date			
02/23/95			
Time			
07:30 AM			

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

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

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	8.80E+00	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6996-5826 Date: 02/23/95 Time: 06:56:30

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.70	100.00
3	1.51	1.10	36.36
4	2.01	1.30	15.38
5	2.51	1.80	27.78
6	3.01	2.00	10.00
7	3.50	2.40	16.67
8	4.01	2.80	14.29
9	4.50	3.20	12.50
10	5.01	3.70	13.51
11	5.50	3.90	5.13
12	6.00	4.80	18.75
13	6.50	5.20	7.69
14	7.00	5.50	5.45

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(5.5 - 3.899915)(1.1)/(200) = +8.8E-03 g/L Carbon
(5.5 - 3.899915)(1.1)/(200)(12) = +7.3E-04 Molar Carbon

Sample Run By: David R Dunham
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5926	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP51T	0

Sample Size	Customer ID
.400 ml - .400 ml spike	[illegible]

Remarks, Calculations, Results

SAMPLE SPIKED ID R6996-5726
SPIKE ID 11N12-E
SPIKE VOLUME .400 ml

90.2%
~~49.0~~ % fwb 2/27/95
~~[illegible]~~ % fwb 2/27/95

David C. Dunham

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0730	[illegible] 2/27/95	[illegible]

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

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	2.000	Sample Size in mL (SS)	0.400
Work List	H2SO4 Volume in mL	0.200	Spike Volume in mL	0.400
5558	Volume Injected in mL	0.200	H2SO4 Volume in mL	0.000
Test Code	µg of Carbon in Sample	7.8	Volume Injected in mL	0.200
	µg of Carbon in Blank	3.9	Sample Pre-Spike Dil. Factor (PDF)	1.1
Matrix			Spike Value (µg/ml)	747
Liquid			µg C in Sample + Spike	73.2
Sample #			µg C in Blank	3.9
R6996-5926				
Instrument Code				
Analyst				
D. Dunham				
Date				
02/23/95				
Time				
07:30 AM				

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

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

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

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

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

Sample Pre-Spike Dilution Factor = $\frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$

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

Percent Spike Recovery 90.2%

Data Entry by:	[illegible]	Date: 27-Feb-95
Approved by:	[illegible]	Date: 2/27/95

Form X Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6996-5926 Date: 02/23/95 Time: 07:21:21

Sample Size = 200 uL
Dil Factor = 2.2
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	47.20	98.73
3	1.51	57.40	17.77
4	2.01	61.80	7.12
5	2.51	64.70	4.48
6	3.01	66.90	3.29
7	3.51	68.40	2.19
8	4.01	69.40	1.44
9	4.50	70.40	1.42
10	5.00	71.10	0.98
11	5.50	71.70	0.84
12	6.00	72.40	0.97
13	6.50	72.80	0.55
14	7.00	73.20	0.55

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(73.2 - 3.899898)(2.2)/(200) = +7.62E-01 g/L Carbon
(73.2 - 3.899898)(2.2)/(200)(12) = +6.35E-02 Molar Carbon

Sample Run By: Daniel C. Dunham
DC DUNHAM 00000

9613479.0804

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6997.-5526	PUREX J3/E5	2-14-95	11:51	21

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 0.200 ml - 2ml .5M H_2SO_4	STD

Remarks, Calculations, Results:
S356 CO3TOC
STD# 10N12-F RESULT 283E03 ug/mL
STD VAL 300E03 %REC 94.3

WR# 6959

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

Date	Time Completed	Lab Unit Mgr
2-23-95	0730	2/27/95

(R-10-83)

TOC : LA-344-105 (B-3) LIQUIDS

Type			STANDARD
STANDARD	Sample Volume in mL	(SS)	0.200
	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
5558	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	55.3
Matrix	µg of Carbon in Blank	(C2)	3.9
LIQUID	g of Carbon/L	=	2.83E+00

Sample #
R6997-5526
Instrument Code
Analyst
D. DUNHAM
Date
02/23/95
Time
07:30 AM

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

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

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	2.83E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:		Date:	02/23/95
Approved by:		Date:	2/24/95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6997-5526 Date: 02/23/95 Time: 07:29:57

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLANK
Blank Value = .5568249 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.60	0.00
2	1.01	36.90	95.66
3	1.51	43.10	14.39
4	2.01	46.20	6.71
5	2.51	48.20	4.15
6	3.01	49.80	3.21
7	3.51	51.00	2.35
8	4.01	51.90	1.73
9	4.50	52.70	1.52
10	5.00	53.40	1.31
11	5.50	54.00	1.11
12	6.01	54.40	0.74
13	6.51	54.80	0.73
14	7.00	55.30	0.90

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 7.003998 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(55.3 - 3.900476)(11)/(200) = +2.83E+00 g/L Carbon
(55.3 - 3.900476)(11)/(200)(12) = +2.36E-01 Molar Carbon

Sample Run By: Daniel C Dunham
DC DUNHAM 00000

9613479.0806

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6990, R6991	Customer ID: BODPS9, BODPT0
Analysis: ICP	Sample Prep: undigested

Instrument: WC38935	Procedure/ Rev: LG-505-161 /G-1
Technologist: D.K. Sato	Date: 2-16-95
Starting Time: 1230	Temperature N/a
Ending Time: 1530	Chemist: B. Wells, S. Parong

Comments:

	Description	Lab ID		Description	Lab ID
1	LMCS Check Std	R6988-5550	11		
2	Reagent Blank	R6989-5650	12		
3	Sample	R6990-5750	13		
4	Duplicate	R6990-5850	14		
5	Spike	R6990-5950	15		
6	Sample	R6991-5750	16		
7	Duplicate	R6991-5850	17		
8	Spike	R6991-5950	18		
9	Reagent Blank	- - - -	19		
10	LMCS Check Std	R6992-5550	20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS Check Std SST5	38B48 /direct			
Spike	XWHC29/.1mL			
Spike	XWHC35/.1mL			

A-6000-881 (03/92)

9613479.0807

INDUCTIVELY COUPLED PLASMA ANALYSIS

Batch 5555

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5550	PUREX J3/E5	2-14-95	11:13	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-605-161 2-16-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 5515 38848 Direct	STD

Remarks, Calculations, Results

LMCS CHECK SAMPLE

Ag (5.018/5)(100) = 100.36 %
Al 4.943 = 98.86 %
As 5.016 = 100.52 %
Ba 5.012 = 100.24 %
Be 5.269 = 105.38 %
Ca 5.157 = 103.14 %
Cd 5.188 = 103.76 %
Co 5.219 = 104.38 %
Cr 5.204 = 104.08 %
Cu 5.121 = 102.42 %
Fe 5.094 = 101.88 %

Over

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK				
Hrs	Hrs	Hrs	Hrs	Hrs
				JK 2-21-95
Date	Time Completed	Lab Unit Mgr		
2-16-95	1530	02/21/95 S. Parry	JK 2-21-95	

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

K (4.958/5)(100) = 99.16 %
Li 4.986 = 99.72 %
Mg 4.873 = 97.46 %
Mn 5.061 = 101.22 %
Mo 5.131 = 102.62 %
Na 4.985 = 99.70 %
Ni 5.116 = 102.32 %
P 5.212 = 104.24 %
Pb 5.074 = 101.48 %
Sb 4.889 = 97.78 %
Se 5.006 = 100.12 %
Sr 5.011 = 100.22 %
Tl 4.972 = 99.44 %
V 5.113 = 102.26 %
Zn 5.138 = 102.76 %

R6988-5550

9613479.0808

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989.-5650	PUREX J3/E5	2-14-95	11:23	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~231~~/41 JK 2-14-95	uG/ML	KP51T	0

Sample Size	Customer ID
Direct	BLANK

Remarks, Calculations, Results

Target analyte List

REAGENT BLANK

Ag <.01 ug/ml	Ca <.10	Li <.01	Pb <.10
Al <.05	Cd <.01	Mg <.10	Sb <.20
As <.05	Co <.02	Mn <.01	Se <.10
Ba <.05	Cr <.01	Mo <.05	Sr <.01
Be <.005	Cu <.01	Na <.10	Tl <.20
	Fe <.05	Ni <.02	V <.05
	K <.30	P <.20	Zn <.01

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	02/21/95 S. Parry	JK 2-21-95

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

9613479.0809

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5750	PUREX J3/E5	2-14-95	11:25	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~ 161 DK 2-16-95	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODPS9

Remarks. Calculations. Results

Ag <.01 ug/ml	Cd <.01	Mg 4.78	Sb <.20
Al .436	Co <.02	Mn .084	Se <.10
As <.05	Cr .867	Mo <.05	Sr .108
Ba .291	Cu .033	Na 4.07	Tl <.20
Be <.005	Fe 7.16	Ni ~~3.41~~ .341	V <.05
Ca 20.3	K .916	P 42.0	Zn .045
	Li <.01	Pb <.10 / DK 2-17-95	

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	02/21/95 S. Pang	DK Lgto 2-21-95

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

Analysis Report Summary Thu 02-16-95 03:11:15 PM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	R6988 SST5 38B48	950216A	ICP2	02/16/95	13:18	DKS	Q	CONC
2	R6989 REAG BLK	950216A	ICP2	02/16/95	13:22	DKS	Q	CONC
3	R6990 SAMPLE	950216A	ICP2	02/16/95	13:26	DKS	S	CONC
4	R6990 DUPLICATE	950216A	ICP2	02/16/95	13:30	DKS	S	CONC
5	R6990 SPIKE	950216A	ICP2	02/16/95	13:37	DKS	S	CONC
6	R6991 SAMPLE	950216A	ICP2	02/16/95	14:27	DKS	S	CONC
7	R6991 DUPLICATE	950216A	ICP2	02/16/95	14:30	DKS	S	CONC
8	R6991 SPIKE	950216A	ICP2	02/16/95	14:35	DKS	S	CONC
9	HNO3 REAG BLK	950216A	ICP2	02/16/95	14:58	DKS	Q	CONC
10	R6992 SST5 38B48	950216A	ICP2	02/16/95	15:06	DKS	Q	CONC

DK [illegible]

2-16-95

Purex J3/E5 R6988-R6992

961579.GM1

#	Sample Name	Ag	Al	As	B	Ba	Be
1	R6988 SST5 38B48	5.018	4.943	5.026	4.959	5.012	5.269
2	R6989 REAG BLK	-.0002	.0043	-.0034	-.0026	-.0001	.0002
3	R6990 SAMPLE	.0007	.4364	.0171	.6908	.2909	.0006
4	R6990 DUPLICATE	.0004	.4520	.0046	.6987	.2956	.0006
5	R6990 SPIKE	.8099	1.685	1.218	1.983	1.531	1.291
6	R6991 SAMPLE	-.0013	.0106	-.0097	.4093	.0002	.0004
7	R6991 DUPLICATE	-.0011	.0048	-.0061	.4114	.0002	.0003
8	R6991 SPIKE	1.315	1.277	1.242	1.683	1.254	1.298
9	HNO3 REAG BLK	.0005	.0114	-.0004	-.0031	.0000	.0003
10	R6992 SST5 38B48	5.199	5.114	5.299	5.136	5.224	5.487

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	R6988 SST5 38B48	5.013	5.157	5.188	5.129	5.219	5.204
2	R6989 REAG BLK	.0404	.0038	.0003	.0072	.0006	.0021
3	R6990 SAMPLE	-.0216	20.33	.0048	.0035	.0054	.8666
4	R6990 DUPLICATE	-.0110	21.03	.0061	.0129	.0038	.8934
5	R6990 SPIKE	1.090	21.24	1.299	1.264	1.281	2.140
6	R6991 SAMPLE	.0562	.0094	.0009	.0011	.0016	.0013
7	R6991 DUPLICATE	.0327	.0101	.0001	.0018	.0006	.0011
8	R6991 SPIKE	1.175	1.306	1.335	1.290	1.325	1.329
9	HNO3 REAG BLK	.0124	.0010	.0006	.0000	-.0015	.0017
10	R6992 SST5 38B48	5.215	5.437	5.444	5.339	5.460	5.461

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	R6988 SST5 38B48	5.121	.0257	5.094	4.958	5.092	4.986
2	R6989 REAG BLK	.0005	.0009	.0022	-.0935	-.0004	.0005
3	R6990 SAMPLE	.0326	.0362	7.157	.9160	.0026	.0076
4	R6990 DUPLICATE	.0330	.0373	7.344	1.081	.0043	.0084
5	R6990 SPIKE	1.272	.0416	8.363	2.156	1.263	1.217
6	R6991 SAMPLE	-.0008	.0019	.0025	.0812	-.0006	.0045
7	R6991 DUPLICATE	-.0005	.0019	.0034	.1413	-.0012	.0041
8	R6991 SPIKE	1.286	.0070	1.307	1.257	1.290	1.246
9	HNO3 REAG BLK	-.0007	.0002	.0013	-.0812	-.0015	.0001
10	R6992 SST5 38B48	5.276	.0274	5.327	5.162	5.287	5.072

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	R6988 SST5 38B48	4.873	5.061	5.131	4.985	4.887	5.116
2	R6989 REAG BLK	-.0040	.0006	.0051	.0037	.0030	-.0049
3	R6990 SAMPLE	4.775	.0837	-.0035	4.073	.0011	.3414
4	R6990 DUPLICATE	4.827	.0863	-.0030	4.095	.0009	.3534
5	R6990 SPIKE	5.830	1.328	1.242	5.182	1.166	1.627
6	R6991 SAMPLE	.0007	.0008	.0040	.4498	.0009	-.0067
7	R6991 DUPLICATE	-.0063	.0009	.0038	.4506	.0011	-.0096
8	R6991 SPIKE	1.260	1.286	1.298	1.714	1.191	1.323
9	HNO3 REAG BLK	-.0068	.0002	.0030	.0034	.0015	-.0100
10	R6992 SST5 38B48	5.035	5.322	5.371	5.116	5.046	5.338

#	Sample Name	P	Pb	S	Sb	Se	Si
1	R6988 SST5 38B48	5.212	5.074	5.120	4.889	5.006	4.745
2	R6989 REAG BLK	.0315	.0312	.0131	.0184	.0322	.0054
3	R6990 SAMPLE	41.99	.0073	11.06	.0080	-.0218	2.198
4	R6990 DUPLICATE	45.90	.0241	11.26	.0279	-.0197	2.245
5	R6990 SPIKE	48.24	1.289	12.05	1.253	1.238	3.347
6	R6991 SAMPLE	.2696	.0549	.0050	.0100	.0452	.3239
7	R6991 DUPLICATE	.2451	.0565	-.0075	.0052	.0593	.3246
8	R6991 SPIKE	1.617	1.329	1.332	1.312	1.293	1.550
9	HNO3 REAG BLK	.1826	.0258	.0114	.0232	.0418	.0011
10	R6992 SST5 38B48	Q5.653	5.305	5.367	5.107	5.247	4.940

#	Sample Name	Sm	Sr	Ti	Tl	U	V
1	R6988 SST5 38B48	5.038	5.011	4.951	4.972	9.860	5.113
2	R6989 REAG BLK	.0093	-.0006	.0005	.0076	.0237	.0023
3	R6990 SAMPLE	.0058	.1079	.0400	.0198	9.321	.0045
4	R6990 DUPLICATE	.0123	.1096	.0407	.0135	9.436	.0074
5	R6990 SPIKE	1.242	1.347	1.286	1.279	11.34	1.255
6	R6991 SAMPLE	.0214	.0004	.0000	-.0104	.0833	.0049
7	R6991 DUPLICATE	.0229	.0004	.0000	.0075	.0856	.0049
8	R6991 SPIKE	1.266	1.277	1.287	1.307	2.500	1.298
9	HNO3 REAG BLK	.0067	-.0006	-.0002	.0087	.0128	.0010
10	R6992 SST5 38B48	5.236	5.182	5.157	5.214	10.22	5.347

#	Sample Name	Y	Zn	Zr
1	R6988 SST5 38B48	.0102	5.138	5.042
2	R6989 REAG BLK	.0003	.0002	.0021
3	R6990 SAMPLE	.0042	.0653	.0092
4	R6990 DUPLICATE	.0046	.0653	.0105
5	R6990 SPIKE	.0068	1.333	1.253
6	R6991 SAMPLE	.0009	.0012	.0042
7	R6991 DUPLICATE	.0010	.0017	.0042
8	R6991 SPIKE	.0027	1.324	1.285
9	HNO3 REAG BLK	.0002	.0014	.0010
10	R6992 SST5 38B48	.0110	5.355	5.258

JK Lato

2-16-95

Purex J5/E5 R6988-R6992

9613479.0813

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5850	PUREX J3/E5	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~154~~/161	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODPSC

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Ag <.01 gs/ml	Al 21.0	K 1.08	P 45.7	Zn .065
Al .454	Ca <.01	Li <.01	Pb <.10	
As <.05	Co <.01	Mg 4.83	Sb <.20	
Ba .296	Cr .523	Mn .086	Se <.10	
Be <.005	Cu .033	Mo <.05	Sr .110	
	Fe 7.34	Na 4.10	Tl <.20	
		Ni .353	V <.05	

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	2/21/95 S. Parry	DK Lado 2-21-95

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

9613479.0814

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5950	PUREX J3/E5	2-14-95	11:25	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~/161 2-14-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 8 ml	BODPS9

Remarks, Calculations, Results

SAMPLE SPIKED
SPIKE XUHC 28+35
SPIKE VOLUME .1 ml each

.1 ml x 100 ppm = 8.2 ml x X ppm X = 1.22 ppm.

~~Cs (.810-0)/1.22 x 100 = 66.39%~~ 2-14-95
Al (1.68-.436)/1.22 x 100 = 101.97%
As (1.22-0)/1.22 x 100 = 100.00%
Ba (1.53-.291)/1.22 x 100 = 101.56%
Be (1.24-0)/1.22 x 100 = 105.74%
Ca Sample > 4X concentration of spike.
Cd (1.30-0)/1.22 x 100 = 106.56%
Co (1.28-0)/1.22 x 100 = 104.92%
Cr (2.14-.867)/1.22 x 100 = 104.34%
Cu (1.27-.033)/1.22 x 100 = 101.39% over

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	2/21/95 S. Parry	JK 2-21-95

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

Fe (8.36-7.16)/1.22 x 100 = 98.36%
K (2.14-.914)/1.22 x 100 = 101.97%
Li (1.22-0)/1.22 x 100 = 100.00%
Mg (5.83-4.78)/1.22 x 100 = 86.06%
Mn (1.33-.084)/1.22 x 100 = 102.13%
Mo (1.24-0)/1.22 x 100 = 101.64%
Na (5.18-4.07)/1.22 x 100 = 90.98%
Ni (1.63-.391)/1.22 x 100 = 105.66%
P Sample > 4X concentration of sample
Pb (1.24-0)/1.22 x 100 = 105.74%
Sb (1.25-0)/1.22 x 100 = 102.46%
Se (1.24-0)/1.22 x 100 = 101.64%
Sr (1.35-.108)/1.22 x 100 = 101.80%
Tl (1.28-0)/1.22 x 100 = 104.92%
V (1.26-0)/1.22 x 100 = 103.28%
Zn (1.33-.045)/1.22 x 100 = 103.67%

R6990 -5950

9613479.0815

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-5750	PUREX J3/E5	2-14-95	11:29	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~/41 2-14-95	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODPTO

Remarks, Calculations, Results

Ag <.01 ug/ml	Cd <.01	Mg <.10	Sb <.20
Al <.05	Co <.02	Mn <.01	Se <.10
As <.05	Cr <.01	Mo <.05	Sr <.01
Ba <.05	Cu <.01	Na .450	Tl ~~Ti~~ <.20 2-17-95
Be <.005	Fe <.05	Ni <.02	V <.05
Ca <.10	K <.30	P .270	Zn <.01
	Li <.01	Pb <.10	

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	S. Parry 2/21/95	JK JGD 2-21-95

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

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5850	PUREX J3/E5	2-14-95	11:29	21

Determination	Method Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~/41	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODPTO

Remarks, Calculations, Results

DUPLICATE SAMPLE

Ag <.01 ug/ml	Cd <.01	Mg <.10	Se <.10
Al <.05	Co <.02	Mn <.01	Sr <.01
Cs <.05	Cr <.01	Mo <.05	Tl <.20
Ba <.05	Cu <.01	Na .451	V <.05
Be <.005	Fe <.05	Ni <.02	Zn <.01
Ca <.10	K <.30	P .245	
	Li <.01	Pb <.10	
		Sb <.20	

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

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	02/21/95 S. Parry	JK Lo 2-21-95

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

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-5950	PUREX J3/E5	2-14-95	11:29	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~ 141 2-16-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 8 ml	BODPTO

Remarks, Calculations, Results

.1ml x 100 ppm = 8.2ml x X ppm X = 1.22 ppm

SAMPLE SPIKED ID
SPIKE ID XWHC 28+35
SPIKE VOLUME .1 ml each

Ag (1.32-0)/1.22 x 100 = 108.20%
Al (1.28-0)/1.22 x 100 = 104.92%
As (1.24-0)/1.22 x 100 = 101.64%
Ba (1.25-0)/1.22 x 100 = 102.46%
Be (1.30-0)/1.22 x 100 = 106.56%
Ca (1.31-0)/1.22 x 100 = 107.38%
Cd (1.34-0)/1.22 x 100 = 109.84%
Co (1.32-0)/1.22 x 100 = 108.20%
Cr (1.33-0)/1.22 x 100 = 109.02%
Cu (1.29-0)/1.22 x 100 = 105.74%
Fe (1.31-0)/1.22 x 100 = 107.38%

over

Analyst	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-16-95	1530	S. Parry 2/21/95	JK 2-21-95

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

K (1.26-0)/1.22 x 100 = 103.28%
Li (1.25-0)/1.22 x 100 = 102.46%
Mg (1.26-0)/1.22 x 100 = 103.28%
Mn (1.29-0)/1.22 x 100 = 105.74%
Mo (1.30-0)/1.22 x 100 = 106.56%
Na (1.71-.450)/1.22 x 100 = 103.28%
Ni (1.32-0)/1.22 x 100 = 108.20%
P (1.42-.470)/1.22 x 100 = 110.66%
Pb (1.33-0)/1.22 x 100 = 109.02%
Sb (1.31-0)/1.22 x 100 = 107.38%
Se (1.29-0)/1.22 x 100 = 105.74%
Sr (1.28-0)/1.22 x 100 = 104.92%
Tl (1.31-0)/1.22 x 100 = 107.38%
V (1.30-0)/1.22 x 100 = 106.56%
Zn (1.32-0)/1.22 x 100 = 108.20%

R 6991-5950

9613479.0818

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6992.-5550	PUREX J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~ 161 JK 2-16-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 5575 38B48 Direct	STD

Remarks. Calculations. Results:

LMCS CHECK SAMPLE

Ag (5.199/5)(100) = 103.98 %
Al 5.114 = 102.28 %
As 5.499 = 105.98 %
Be 5.224 = 104.48 %
Bi 5.487 = 109.74 %
Ca 5.437 = 108.74 %
Cd 5.444 = 108.88 %
Co 5.460 = 109.20 %
Cr 5.461 = 109.22 %
Cu 5.274 = 105.52 %
Fe 5.347 = 106.94 %

over

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

Date	Time Completed	Lab Unit Mgr	
2-14-95	1530	S. Parry 2/21/95	JK Lato 2-21-95

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

K (5.142/5)(100) = 103.24 %
Li 5.072 = 101.44 %
Mg 5.035 = 100.70 %
Mn 5.323 = 106.44 %
Mo 5.371 = 107.42 %
Na 5.114 = 102.34 %
Ni 5.338 = 106.76 %
P 5.453 = 113.06 %
Pb 5.305 = 106.10 %
Sb 5.107 = 102.14 %
Se 5.247 = 104.94 %
Sr 5.182 = 103.64 %
Tl 5.214 = 104.28 %
V 5.347 = 106.94 %
Zn 5.355 = 107.10 %

R6992-5550

9613479.0819

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6995, R6996	Customer ID: BODVK8, BODVK9
Analysis: ICP	Sample Prep: Undigested

Instrument: WC38935	Procedure/ Rev: LQ-505-161/G-1
Technologist: JK Sato	Date: 2-17-95
Starting Time: 0830	Temperature N/a
Ending Time: 1530	Chemist: B. Wels, S. Parony

Comments:

	Description	Lab ID		Description	Lab ID
1	LMCS Check Std	R6993-5550	11		
2	Reagent Blank	R6994-5650	12		
3	Sample	R6995-5750	13		
4	Duplicate	R6995-5850	14		
5	Spike	R6995-5950	15		
6	Sample	R6996-5750	16		
7	Duplicate	R6996-5850	17		
8	Spike	R6996-5950	18		
9	Reagent Blank	~ -----	19		
10	LMCS Check Std	R6997-5550	20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS Check Std 5575	38848 / direct			
Spike	38848 / 2ml	XWHC 28+35 / .1 ml each		
~~St~~ JK 2-21-95				

A-6000-881 (03/92)

9613479.0820

INDUCTIVELY COUPLED PLASMA ANALYSIS

Batch 5559

Serial No.	Sample Point	Date	Time Issued	Priority
R 6993.-5550	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~/41 2-17-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? SST5 38848 Direct	STD

Remarks, Calculations, Results

LMCS CHECK SAMPLE

Ag (5.030/5)(100) = 100.60 %
Al 5.02 = 100.40 %
As 5.147 = 102.94 %
Ba 4.983 = 99.86 %
Be 5.156 = 103.12 %
Ca 5.181 = 103.62 %
Cd 5.079 = 101.58 %
Co 5.160 = 103.20 %
Cr 5.112 = 102.24 %
Cu 5.110 = 102.20 %
Fe 5.079 = 101.58 %
K 5.145 = 102.90 %
Li 5.026 = 100.52 %

Over

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs
				2-21-95
Date: 2-17-95	Time Completed: 1530	Lab Unit Mgr: 02/21/95		2-21-95

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

Mg (5.005/5)(100) = 100.10 %
Mn 5.008 = 100.16 %
Mo 5.087 = 101.74 %
Na 5.079 = 101.58 %
Ni 5.011 = 100.22 %
P 5.102 = 102.04 %
Pb 5.107 = 102.14 %
Sb 4.800 = 96.00 %
Se 5.020 = 100.40 %
Sr 4.967 = 99.34 %
Tl 4.991 = 99.82 %
V 5.084 = 101.72 %
Zn 5.203 = 104.06 %

R6993 5550

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6994.-5650	PUREX J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~ 141 DK 2-17-95	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BLANK

Remarks, Calculations, Results

Trace Image List

REAGENT BLANK

Ag <.01 ug/ml	Cd <.01	Mn <.01	Se <.10
Al <.05	Co <.02	Mo <.05	Sr <.01
As <.05	Cr <.01	Na <.10	Tl <.20
Ba <.05	Cu <.01	Ni <.02	V <.05
Be <.005	Fe <.05	P <.20	Zn <.01
Ca <.10	K <.30	Pb <.10	
	Li <.01	Sb <.20	
	Mg <.10		

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
DK Lab				
Hrs	Hrs	Hrs	Hrs	Hrs
				DK 2-17-95

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	2/21/95 S. Parry	DK Lab 2-21-95

LA 6893 061 (R-10-83)

9613479.0822

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5750	PUREX J3/E5	2-14-95	11:50	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~ 141 JK 2-17-95	uG/ML	KP51T	0

Sample Size	Customer ID
? 2-10 ml JF 6	BODVK8

Remarks, Calculations, Results

Ag <.01 x 6 = <6.00 E-1 ug/ml
Al .860 = 5.14
As <.05 = <3.00 E-1
Ba <.05 = <3.00 E-1
Be <.005 = <3.00 E-2
Ca .388 = 2.33
Cd <.01 = <6.00 E-1
Co <.02 = <1.20 E-1
Cr .066 = 3.96 E-1
Cu <.01 = <6.00 E-1
Fe <.05 = <3.00 E-1
K 505 = 3.03 E+3
Li <.01 = <6.00 E-1

over

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

Date	Time Completed	Mgr	
2-17-95	1530	02/21/95 S. Parry	JK Lato 2-21-95

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

Mg <.10 x 6 = <6.00 E-1 ug/ml
Mn <.01 = <1.00 E-2
Mo <.05 = <3.00 E-1
Na 5.02 = 3.01 E+1
Ni .020 = 1.20 E-1
P 1.45 = 8.70
Pb <.10 = <6.00 E-1
Sb <.20 = <1.20
Se <.10 = <6.00 E-1
Sr <.01 = <6.00 E-2
Tl <.20 = <1.20
V <.05 = <3.00 E-1
Zn .012 = 7.20 E-2

R6995-5750

9613479.0823

Analysis Report Summary Fri 02-17-95 09:46:47 AM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	R6993 SST5 38B48	950217A	ICP2	02/17/95	08:58	DKS	Q	CONC
2	R6994 REAG BLK	950217A	ICP2	02/17/95	09:02	DKS	Q	CONC
3	R6995 SAMDIL	950217A	ICP2	02/17/95	09:06	DKS	S	CONC
4	R6995 DUPDIL	950217A	ICP2	02/17/95	09:11	DKS	S	CONC
5	R6995 SPIKE	950217A	ICP2	02/17/95	09:16	DKS	S	CONC
6	R6996 SAMPLE	950217A	ICP2	02/17/95	09:24	DKS	S	CONC
7	R6996 DUPLICATE	950217A	ICP2	02/17/95	09:27	DKS	S	CONC
8	R6996 SPIKE	950217A	ICP2	02/17/95	09:31	DKS	S	CONC
9	HNO3 REAG BLK	950217A	ICP2	02/17/95	09:37	DKS	Q	CONC
10	R6997 SST5 38B48	950217A	ICP2	02/17/95	09:41	DKS	Q	CONC

JK

2-17-95

Place J3/E5 R6993-R6997

#	Sample Name	Ag	Al	As	B	Ba	Be
1	R6993 SST5 38B48	5.030	5.020	5.147	4.939	4.993	5.156
2	R6994 REAG BLK	.0016	.0073	-.0033	.0098	.0003	.0003
3	R6995 SAMDIL	.0015	.8600	.0170	.0169	.0123	.0037
4	R6995 DUPDIL	.0027	.8878	.0212	.0160	.0125	.0037
5	R6995 SPIKE	.7981	1.680	.9043	.8194	.8243	.8584
6	R6996 SAMPLE	.0003	.0078	-.0029	.1014	.0008	.0001
7	R6996 DUPLICATE	.0003	.0001	-.0118	.0994	.0007	.0002
8	R6996 SPIKE	1.321	1.304	1.283	1.478	1.274	1.289
9	HNO3 REAG BLK	-.0002	.0100	-.0099	.0031	.0001	.0002
10	R6997 SST5 38B48	5.097	5.097	5.338	5.080	5.112	5.358

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	R6993 SST5 38B48	5.025	5.181	5.079	5.078	5.160	5.112
2	R6994 REAG BLK	.0014	.0053	.0001	.0089	-.0028	-.0006
3	R6995 SAMDIL	-.3784	.3876	.0077	.0034	-.0091	.0662
4	R6995 DUPDIL	-.3617	.4107	.0069	.0020	-.0092	.0677
5	R6995 SPIKE	.4858	1.272	.8389	.8473	.8322	.9080
6	R6996 SAMPLE	.0049	.0158	.0010	.0031	.0006	.0001
7	R6996 DUPLICATE	.0088	.0134	-.0003	.0034	-.0034	.0003
8	R6996 SPIKE	1.145	1.313	1.311	1.299	1.304	1.302
9	HNO3 REAG BLK	.0044	.0082	.0016	.0061	.0009	-.0002
10	R6997 SST5 38B48	5.094	5.299	5.239	5.220	5.298	5.248

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	R6993 SST5 38B48	5.110	.0251	5.079	5.145	5.024	5.026
2	R6994 REAG BLK	-.0000	.0009	.0016	.0716	.0014	.0007
3	R6995 SAMDIL	.0020	-.0144	.0089	504.7	.0206	.0031
4	R6995 DUPDIL	.0035	-.0137	.0100	510.4	.0221	.0032
5	R6995 SPIKE	.8346	-.0090	.8483	494.3	.8492	.8143
6	R6996 SAMPLE	-.0008	.0016	.0032	.2565	.0006	.0014
7	R6996 DUPLICATE	.0002	.0013	.0016	.0694	.0001	.0010
8	R6996 SPIKE	1.303	.0069	1.304	1.471	1.296	1.299
9	HNO3 REAG BLK	-.0005	.0014	.0022	.0143	.0008	.0014
10	R6997 SST5 38B48	5.238	.0252	5.214	4.993	5.167	5.094

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	R6993 SST5 38B48	5.005	5.008	5.087	5.022	5.196	5.011
2	R6994 REAG BLK	.0061	.0005	.0002	.0033	.0012	-.0046
3	R6995 SAMDIL	-.0142	-.0039	-.0198	5.019	-.0145	.0203
4	R6995 DUPDIL	.0098	-.0037	-.0245	5.062	-.0120	.0065
5	R6995 SPIKE	.8030	.8026	.8198	5.720	.8417	.8347
6	R6996 SAMPLE	.0029	.0008	.0013	.2627	.0004	-.0114
7	R6996 DUPLICATE	.0042	.0008	-.0013	.2679	.0001	-.0025
8	R6996 SPIKE	1.321	1.265	1.280	1.625	1.299	1.309
9	HNO3 REAG BLK	.0031	.0004	.0013	.0138	-.0006	-.0004
10	R6997 SST5 38B48	5.103	5.112	5.226	5.090	5.322	5.168

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#	Sample Name	P	Pb	S	Sb	Se	Si
1	R6993 SST5 38B48	5.102	5.106	5.122	4.800	5.020	4.781
2	R6994 REAG BLK	.0287	.0070	-.0158	.0015	-.0020	.0137
3	R6995 SAMDIL	1.451	.0153	.2444	.0174	-.0188	.0840
4	R6995 DUPDIL	1.435	.0396	.2532	.0013	-.0248	.0899
5	R6995 SPIKE	2.350	.8663	1.078	.7782	.9705	.9023
6	R6996 SAMPLE	.0192	.0233	-.0205	-.0162	.0012	.0404
7	R6996 DUPLICATE	.0041	.0339	-.0146	.0044	.0041	.0392
8	R6996 SPIKE	1.354	1.323	1.284	1.279	1.276	1.374
9	HNO3 REAG BLK	.0324	.0185	-.0096	.0004	.0236	.0101
10	R6997 SST5 38B48	5.339	5.235	5.192	4.957	5.151	4.870

#	Sample Name	Sm	Sr	Ti	Tl	U	V
1	R6993 SST5 38B48	5.042	4.967	4.909	4.991	10.07	5.086
2	R6994 REAG BLK	.0093	.0002	.0005	.0154	.0277	.0018
3	R6995 SAMDIL	-.0288	.0058	.0313	-.0144	63.81	.0026
4	R6995 DUPDIL	-.0215	.0058	.0316	-.0273	64.72	.0046
5	R6995 SPIKE	.8160	.8245	.8464	.8042	64.07	.8482
6	R6996 SAMPLE	.0177	.0004	.0000	-.0202	.0706	.0037
7	R6996 DUPLICATE	.0111	.0004	.0000	.0210	.0505	.0027
8	R6996 SPIKE	1.294	1.293	1.286	1.286	2.599	1.288
9	HNO3 REAG BLK	.0115	.0000	.0000	-.0114	.0420	.0035
10	R6997 SST5 38B48	5.183	5.106	5.053	5.099	10.34	5.225

#	Sample Name	Y	Zn	Zr
1	R6993 SST5 38B48	.0109	5.203	5.008
2	R6994 REAG BLK	.0004	-.0010	.0021
3	R6995 SAMDIL	.0201	.0119	1.831
4	R6995 DUPDIL	.0211	.0069	1.869
5	R6995 SPIKE	.0221	.8472	2.649
6	R6996 SAMPLE	.0009	.0016	.0021
7	R6996 DUPLICATE	.0006	.0022	.0021
8	R6996 SPIKE	.0031	1.333	1.282
9	HNO3 REAG BLK	.0007	-.0005	.0021
10	R6997 SST5 38B48	.0110	5.279	5.150

JK Lott
2-17-95
Purch J3/E5 R6993-R6997

9613479.0826

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-5850	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~/61	uG/ML	KP51T	0

Sample Size	Customer ID
? 2-10 ml DF 6	BODVK8

Remarks, Calculations, Results

DUPLICATE SAMPLE

Ag <.01 x 6 = <6.00 E-2 ug/ml
Al .888 = 5.33
As <.05 = <3.60 E-1
Ba <.05 = <3.60 E-1
Be <.005 = <3.00 E-2
Ca .411 = 2.47
Cd <.01 = <6.00 E-2
Co <.02 = <1.20 E-1
Cr .068 = 4.08 E-1
Cu <.01 = <6.00 E-2
Fe <.05 ~~= <3.00 E-1~~ <3.00 E-1
K 510 = 3.06 E+3

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

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	02/21/95 S. Parry	DK 2-21-95

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

Li <.01 x 6 = <6.00 E-2 ug/ml
Mg <.10 = <6.00 E-1
Mn <.01 = <6.00 E-2
Mo <.05 = <3.00 E-1
Na 5.06 = ~~1.53 E+1~~ 3.04 E+1
Ni <.02 = <1.20 E-1
P 1.44 = 8.64
Pb <.10 = <6.00 E-1
Sb <.10 = <1.20
Se <.10 = <4.08 E-1
Sr <.01 = <6.00 E-2
Tl <.10 = <1.20
V <.05 = <3.00 E-1
Zn <.01 = <6.00 E-2

R 6995 - 5850

9613479.0827

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5950	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-508-~~121~~ 141 JK 2-17-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2-10 ml	BODVK8

Remarks, Calculations, Results

2ml x 5ppm = 12ml x Xppm X=.833ppm

SAMPLE SPIKED II
SPIKE ID 35848
SPIKE VOLUME 2ml

Ag (.778-0)/.833 x100 = 93.40%
Al (1.48-.840)/.833 x100 = 98.44%
As (.904-0)/.833 x100 = 108.52%
Ba (.824-0)/.833 x100 = 98.92%
Be (.858-0)/.833 x100 = 103.00%
Ca (1.27-.388)/.833 x100 = 105.88%
Cd (.839-0)/.833 x100 = 100.72%
Co (.832-0)/.833 x100 = 99.88%
Cr (.908-.066)/.833 x100 = 101.08%
Cu (.835-0)/.833 x100 = 100.24%
Fe (.848-0)/.833 x100 = 101.80%

over

Analyst	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	02/21/95 S. Fang	JK 2-21-95

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

K Sample > 4x concentration of spike.
Li (.814-0)/.833 x100 = 97.72%
Mg (.803-0)/.833 x100 = 96.40%
Mn (.803-0)/.833 x100 = 96.40%
Mo (.820-0)/.833 x100 = 98.44%
Na (5.72-3.02)/.833 x100 = 84.03%
Ni (.835-.021)/.833 x100 = 97.84%
P (2.35-1.45)/.833 x100 = 108.04%
Pb (.866-0)/.833 x100 = 103.96%
Sb (.778-0)/.833 x100 = 93.40%
Se (.970-0)/.833 x100 = 116.45%
Sr (.824-0)/.833 x100 = 98.92%
Tl (.804-0)/.833 x100 = 96.52%
V (.848-0)/.833 x100 = 101.80%
Zn (.847-.012)/.833 x100 = 100.24%

R6995-5950

9613479.0828

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5750	PUREX J3/E5	2-14-95	11:51	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~/4/ 2-17-95	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODVK9

Remarks, Calculations, Results

Ag <.01 ug/ml	Co <.02	Mo <.05	Tl <.20
Al <.05	Cr <.01	Na .263	V <.05
As <.05	Cu <.01	Ni <.02	Zn <.01
Be <.05	Fe <.05	P <.20	
Bi <.005	K <.30	Pb <.10	
Ca <.10	Li <.01	Sb <.20	
Cd <.01	Mg <.10	Se <.10	
	Mn <.01	Si <.01	

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

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	02/21/95 S. Fang	2-21-95

EA 6800-061 (R-10-83)

9615379.1829

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5850	PUREX J3/E5	2-14-95	11:51	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~151~~/41 JK 2-17-95	uG/ML	KP51T	0

Sample Size	Customer ID
? Direct	BODVK9

Remarks, Calculations Results

DUPLICATE SAMPLE

Ag <.01 ug/ml	Cd <.01	Mg <.10	Se <.10
Al <.05	Co <.20	Mn <.01	Sr <.01
As <.05	Cr <.01	Mo <.05	Tl <.20
Ba <.05	Cu <.01	Na .248	V <.05
Be <.005	Fe <.05	Ni <.02	Zn <.01
Ca <.10	K <.50	P <.20	
	Li <.01	Pb <.10	
		Sb <.20	

Analyst	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK Lab				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	02/21/95 S. Pang	JK Lab 2-21-95

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

9613479.0830

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-5950	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~151~~141 JR 2-17-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 8 ml	BODVK9

Remarks, Calculations, Results

SAMPLE SPIKED ID
SPIKE ID XUHC 28+35
SPIKE VOLUME .1 ml each

.1 ml x 100 ppm = 8.2 ml x X ppm X = 1.22 ppm

Cs (1.32-0)/1.22 x100 = 108.20%
Ge (1.30-0)/1.22 x100 = 106.56%
Cs (1.28-0)/1.22 x100 = 104.92%
Ba (1.27-0)/1.22 x100 = 104.10%

Be (1.29-0)/1.22 x100 = 105.74%
Ca (1.31-0)/1.22 x100 = 107.38%
Cd (1.31-0)/1.22 x100 = 107.38%
Co (1.30-0)/1.22 x100 = 106.56%
Cr (1.30-0)/1.22 x100 = 106.56%
Cu (1.30-0)/1.22 x100 = 106.56%

over

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

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	2/21/95 S. Parry	JK LcA 2-21-95

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

Fe (1.30-0)/1.22 x100 = 106.56%
K (1.47-0)/1.22 x100 = 120.49%
Li (1.30-0)/1.22 x100 = 106.56%
Mg (1.32-0)/1.22 x100 = 108.20%
Mo (1.28-0)/1.22 x100 = 104.92%
Na (1.42-.263)/1.22 x100 = 111.23%
Ni (1.31-0)/1.22 x100 = 107.38%
P (1.35-0)/1.22 x100 = 110.66%
Pb (1.32-0)/1.22 x100 = 108.20%

Sb (1.28-0)/1.22 x100 = 104.92%
Se (1.28-0)/1.22 x100 = 104.92%
Sr (1.29-0)/1.22 x100 = 105.74%
Tl (1.29-0)/1.22 x100 = 105.74%
V (1.29-0)/1.22 x100 = 105.74%
Zn (1.33-0)/1.22 x100 = 108.02%

R6996-5950

9613479.0831

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6997.-5550	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~161~~ 161 JK 2-17-95	% RECOVERY	KP51T	0

Sample Size	Customer ID
? SSTS 38848 Direct	STD

Remarks, Calculations, Results

LMCS CHECK SAMPLE

Ag (5.097/5)(100) = 101.94 %
Al 5.097 = 101.94 %
As 5.338 = 106.76 %
Ba 5.112 = 102.24 %
Be 5.358 = 107.16 %
Ca 5.299 = 105.98 %
Cd 5.239 = 104.78 %
Co 5.298 = 105.96 %
Cr 5.248 = 104.96 %
Cu 5.238 = 104.76 %
Fe 5.214 = 104.28 %
K 4.993 = 99.86 %

over

Analyst	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK Lab				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-17-95	1530	02/21/95 S. Pang	JK Lab 2-21-95

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

Li (5.094/5)(100) = 101.88 %
Mg 5.103 = 102.06 %
Mn 5.112 = 102.24 %
Mo 5.226 = 104.52 %
Na 5.090 = 101.80 %
Ni 5.168 = 103.36 %
P 5.339 = 106.78 %
Pb 5.235 = 104.70 %
Sb 4.957 = 99.14 %
Se 5.151 = 103.02 %
Sr 5.106 = 102.12 %
Tl 5.099 = 101.98 %
V 5.225 = 104.50 %
Zn 5.279 = 105.58 %

R6997-5550

9613479.0832

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6995, R6996	Customer ID: B0DVK8, B0DVK9
Analysis: HG	Sample Prep: DIRECT

Instrument: WB26847	Procedure/ Rev: LA-325-104 B-1
Technologist: SUSIE FULTON	Date: 03/07/95
Starting Time:	Temperature N/A
Ending Time: 15:15	Chemist: NOEL SMITH

Comments:

BATCH 5560

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6993-5597	11		
2	BLANK	R6984-5697	12		
3	SAMPLE	R6995-5797	13		
4	DUPLICATE	R6995-5897	14		
5	SPIKE	R6995-5997	15		
6	SAMPLE	R6996-5797	16		
7	DUPLICATE	R6996-5897	17		
8	SPIKE	R6996-5997	18		
9	LMCS STD	R6997-5597	19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	43N11F			

A-6000-881 (03/92)

9613479.0833

MERCURY ANALYSIS

Batch 5560

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-5597	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
Hg	[illegible]	[illegible]	KP51T	0

Sample Size	Customer ID
? .300 ml	STD

Remarks. Calculations. Results:

EDP R715 HG/HYDRID

STD # 51N11-A RESULT 1.03E-01 pk ht .349

STD VA. .100 % ~~103.0~~ nos 3/9/95 30.99 ng

103.0%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Dalton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Noel Smith 3/9/95	

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

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-5697	PUREX J3/E5	2-14-95	11:49	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0 ml	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

pk ht .014
.16 ng

< 0.005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Sutton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.	
3-7-95	1515	Neil Smith 3/9/95	

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

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5797	PUREX J3/E5	2-14-95	11:50	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg LIQ	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0 ml	[illegible]VK8

Remarks, Calculations, Results

pk ht .025

1.18 ng

<0.005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Fulton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Phil Smith 3/9/95	[illegible]

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

222-S LABORATORY
CALIBRATION RECORD
Hg LIQUIDS-DIRECT: LA-325-104 (B-1)

LINEAR REGRESSION

Analyte:	Hg	Date of Calibration:	03/07/95
Procedure No:	LA-325-104 (B-1)	Instrument:	PE2380
Analyst:	S. FULTON	Property No:	WB26847

Calib. Standard ID:	50N11A	
Analyte Conc:	0.147	µg/mL (ppm)

	Standard Volume (mL)	Instrument Reading	Concentration ng	% Recovery
1	0.000	0.008	0.00	0.0%
2	0.034	0.061	5.00	89.8%
3	0.100	0.165	14.70	95.6%
4	0.250	0.439	36.75	106.9%
5	0.500	0.842	73.50	103.9%
6	0.750	1.129	110.25	93.2%
7	1.000	1.649	147.00	102.5%
8				
9				
10				

Y-Intercept (b)	Slope (m)	Corr. Coefficient
0.0122	0.0109	0.9978

Data Entry by:	[illegible]	Date:	03/08/95
Approved by:	Noel Smith	Date:	3/9/95

9613479.0837

LAB LEADER INFO:

Method:	LA-325-104 (B-1)
Matrix:	LIQUID
Test Code	
Work List #	
Batch #	5560
Prepared By:	RC JONES
Date Complete:	03/08/95
Chemist:	R. ESCH
Analyst:	S. FULTON
Analysis Date:	03/07/95
Time Analysis Complete:	03:15 PM
Instrument Code:	WB26847
Rerun:	0
Sample Prep:	DIRECT
Sample Point:	PUREX J3/E5

Sample Type	Sample #
STANDARD	R6993-5597
BLANK	R6994-5697
SAMPLE 1	R6995-5797
DUPLICATE 1	R6995-5897
SPIKE 1	R6995-5997
SPIKE DUP 1	
SAMPLE 2	R6996-5797
DUPLICATE 2	R6996-5897
SPIKE 2	R6996-5997
SAMPLE 3	
ST-END	R6997-5597

Sample #	Customer ID
R6993-5597	STD
R6994-5697	BLANK
R6995-5797	BODVK8
R6995-5897	BODVK8
R6995-5997	BODVK8
R6996-5797	BODVK9
R6996-5897	BODVK9
R6996-5997	BODVK9
R6997-5597	STD

Print

TECH INFO:

Standard Run:

INPUT

Sample Size in mL	0.300
Peak height (pkht)	0.349
Hg ng (Nanograms)	30.99
Std Value µg/mL	0.100
Std ID:	51N11A

RESULT

Conc Hg µg/mL	1.03E-01

Blank Run:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.014
Hg ng (Nanograms)	0.16

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000

The Result is < Detection Limit

Sample Run 1:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.025
Hg ng (Nanograms)	1.18

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000

The Result is < Detection Limit

Duplicate Run 1:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.011
Hg ng (Nanograms)	-0.11

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000
Average Conc (µg/mL)	N/A
Average Conc (µg/L)	N/A
Relative % Difference	N/A

Both Results are < Detection Limit

Sample Run 2:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.012
Hg ng (Nanograms)	-0.02

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000

The Result is < Detection Limit

Duplicate Run 2:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.014
Hg ng (Nanograms)	0.16

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000
Average Conc (µg/mL)	N/A
Average Conc (µg/L)	N/A
Relative % Difference	N/A

The Duplicate Result is < Detection Limit

Sample Run 3:

INPUT

Sample Size in mL	
Peak height (pkht)	
Hg ng (Nanograms)	

RESULT

Conc Hg µg/mL	
Conc Hg µg/L (PPB)	

SPIKE 1

INPUT

Spike Std Volume (mL)	0.300
Peak height (pkht)	0.321
Hg ng of Spike+Sample	28.42
Hg ng of Sample	1.18
Spike Std ID	51N11A
Spike Std Value (ppm)	0.100

RESULT

% Recovery	94.7%

SPIKE 2

INPUT

Spike Std Volume (mL)	0.300
Peak height (pkht)	0.331
Hg ng of Spike + Sample	29.34
Hg ng of Sample	-0.02
Spike Std ID	51N11A
Spike Std Value (ppm)	0.100

RESULT

% Recovery	97.8%

SPIKE DUP 1

INPUT

Spike Std Volume (mL)	
Sample Size in mL	
Peak height (pkht)	
Hg ng SpikeDup + Sample	
Hg ng of Sample	
Spike Std ID	
Spike Std Value (ppm)	

RESULT

Conc Hg µg/mL	
Conc Hg µg/L (PPB)	
Relative % Difference	
% Recovery	

ST-END

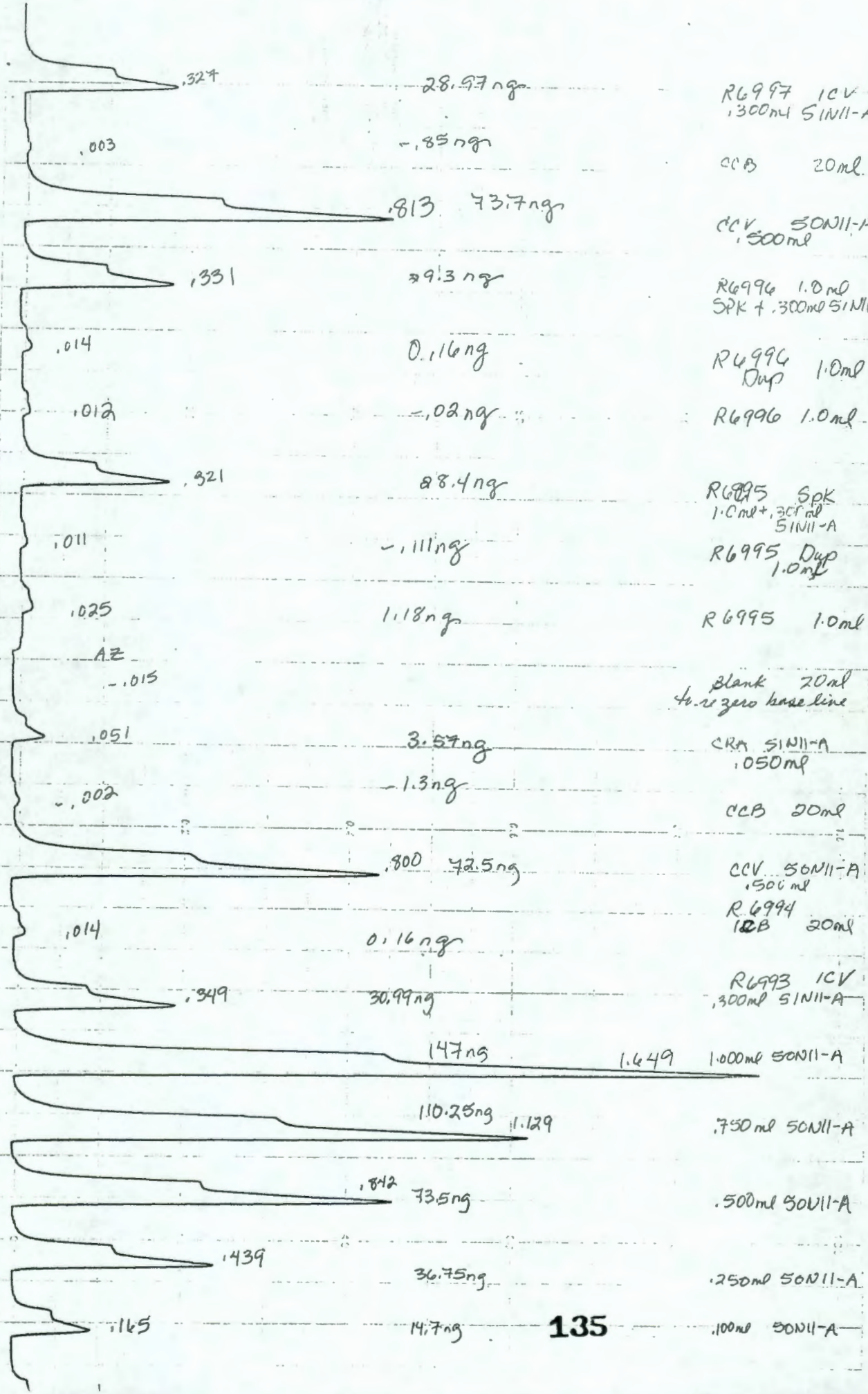
INPUT

Sample Size in mL	0.300
Peak height (pkht)	0.327
Hg ng (Nanograms)	28.97
Std Value µg/mL	0.100

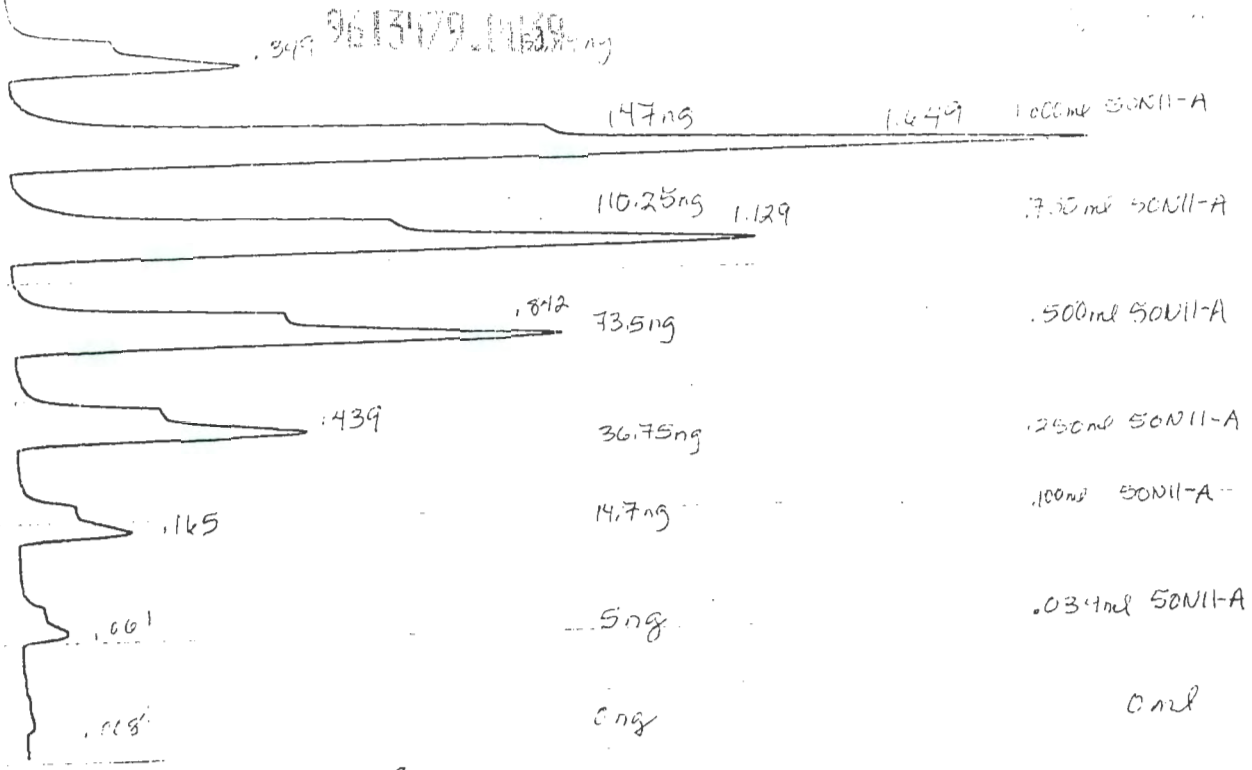
RESULT

Conc Hg µg/mL	9.66E-02

Form Completed By:	RC JONES	Signature:	RC Jones	Date:	03/08/95
Chemist Approval:	R. ESCH	Signature:	Noel Smith	Date:	3/9/95



PERKIN-ELMER
Chart No. CPS3402-G
BEST AVAILABLE COPY
PERK



Analyte: Hg
Date: 3-7-95

Analyst: Susie M. Dalton
Start Time: 0800 **End Time:** 1515

Batch #5560

MHS 20 Data:

Signal: Concentration
Mode: PKHT
Recorder: TC3
Time: 55 sec.
Expansion: 10

Purge I: 40
Purge II: 90
Reaction: 16 sec.
Temperature: 175 C
EDL Power: 5 Watts

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: .0122 absorbance units
Slope: .0109 abs. units / concentration
Correlation: .9978 (unitless)

Intercept:	0.0100
Slope:	0.0109
	0.9978
	30.9932
	-0.1646
	72.4968
	-1.3078
	3.5696
	1.1769
	-0.1114
	28.4165
	-0.0194
	0.1646
	29.5336
	29.6041
	29.6147
	29.9687

BEST AVAILABLE COPY

BEST AVAILABLE COPY

Atomic Absorption Runlog: Hg Cold Vapor Analysis

Analyst: Susie M. Sutton Date: 3-7-95
Instrument: PE 2380 Property #: WB26847 Batch#: 5560
Cal. Data: Intercept: .0122 Slope: .0109 Correlation: .9978

Sample Name (Std. ID#)	Sample Point	Sam. Size, mL	D or A*	PKHT (Abs.)	ng Result	% Rec.	Time	Comments	CC **
50N11-A	N/A	0.000	D	.008	0	N/A	:		
"	"	0.034	D	.061	5	"	:		
"	"	0.100	D	.165	14.7	"	:		
"	"	0.250	D	.439	36.75	"	:		
"	"	0.500	D	.842	73.5	"	:		
"	"	0.750	D	1.129	110.25	"	:		
"	"	1.000	D	1.649	147.75	"	:		
R6993 ICV	5IN11-A	.300	D	.349	30.99	103%	:		
R6994 ICB		1.0	D	.014	.16		:		
CCV	50N11-A	.500	D	.800	72.5	99%	:		
CCB		1.0	D	-.002	-1.3		:		
CRA	5IN11-A	.050	D	.051	3.57	71%	:	* Ran Blank & rezeroed baseline SMF	
R6995	Purex J3/E5	1.0	D	.025	1.18		:		
R6995D	" Dup	1.0	D	.011	-.111		:		
R6995S	" Spk +300mL 5IN11-A	1.0	D	.321	28.4		:		
R6996	Purex J3/E5	1.0	D	.012	-.02		:		
R6996D	" Dup	1.0	D	.014	.16		:		
R6996S	" Spk +300mL 5IN11-A	1.0	D	.331	29.3		:		
CCV	50N11-A	.500	D	.813	73.7	100%	:		
CCB		1.0	D	.003	-.85		:		
R6997 CCV	5IN11-A	.300	D	.327	28.97	97%	:		
							:		
							:		
							:		
							:		
							:		
							:		
							:		
							:		
							:		

* Sample prep. descriptors: D=direct, A=acid digest
** CC=control chart. Check off when control chart entries are made.

Analyte Concentration: 0.147ppm

9613479.0841

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5897	PUREX J3/E5	2-14-95	11:50	21

Determination	Method Standard	Result Units	Charge Code	Reruns
Hg-LIQ	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
1.0 ml	BOLWE

Remarks, Calculations, Results

DUPLICATE SAMPLE

pk ht .011

-.11 ng

<0.005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Felton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	3/9/95	

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

9613479.0842

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-5997	PUREX J3/E5	2-14-95	11:50	21

Determination	Method Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KP51T	0

Sample Size	Customer ID
1.0 ml	BCDVK8

Remarks, Calculations, Results

SAMPLE SPIKED ID 51N11-A

SPIKE VOLUME .300 ml

pk ht .321

28.4 ng

94.7%

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

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	3/9/95	

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

9613479.0843

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5797	PUREX J3/E5	2-14-95	11:51	31

Determination	Method Standard	Result Units	Charge Code	Reruns
Hg LIQ	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0 ml	BODVK9

Remarks. Calculations. Results

pk ht .012

-.02 ng

<0.05 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Dalton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515		

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

9613479.0844

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-5897	PUREX J3/E5	2-14-95	11:51	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG-LIQ	LA-325-104	µG/ML	KP51T	0

Sample Size	Customer ID
1.0ml	BODVK9

Remarks, Calculations, Results

DUPLICATE SAMPLE

pkht .014

-.016ng

<0.005ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Fulton				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Nell Smith 3/9/95	

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

9613479.0845

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-5997	PUREX J3/E5	2-14-95	11:51	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 1.0 ml	BODVK9

Remarks, Calculations, Results

SAMPLE SPIKED ID
SPIKE ID 51N11-A
SPIKE VOLUME .300 ml

pk ht .331
29.3 ng
97.8%

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

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Neil Smith 3/9/95	L C Jones

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

9613479.0846

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6997.-5597	PUREX J3/E5	2-14-95	11:51	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .300 ml	STD

Remarks, Calculations, Results

ELP R715 HG/HYDRID
STD # SIMI-A RESULT 9.66E-02 pk ht .327
STD VAL .100 % REC 96.6 28.97 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Susie M. Gilstar				
Hrs	Hrs	Hrs	Hrs	Hrs
				R L Jones

Date	Time Completed	Lab Unit Mgr	
3-7-95	1515	Noel Shutts 3/9/95	R L Jones

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

9613479.0847

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6990, R6991	Customer ID: B0DPS9, B0DPT0
Analysis: HG	Sample Prep: DIRECT

Instrument: WB26847	Procedure/ Rev: LA-325-104 B-1
Technologist: VALERIE MASSIE	Date: 03/03/95
Starting Time:	Temperature N/A
Ending Time: 11:20	Chemist: NOEL SMITH

Comments:

BATCH 5556

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6988-5597	11		
2	BLANK	R6989-5697	12		
3	SAMPLE	R6990-5797	13		
4	DUPLICATE	R6990-5897	14		
5	SPIKE	R6990-5997	15		
6	SAMPLE	R6991-5797	16		
7	DUPLICATE	R6991-5897	17		
8	SPIKE	R6991-5997	18		
9	LMCS STD	R6992-5597	19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	43N11F			

A-6000-881 (03/92)

WESTINGHOUSE HANFORD COMPANY
222-S LABORATORY
INORGANIC ANALYTICAL BATCH AND SUMMARY SHEET

Hg LIQUIDS-DIRECT: LA-325-104 (B-1)

SAMPLE #:	R6990-5797 & R6991-5797	BATCH ID:	5556
TEST CODE:		SAMPLE POINT:	PUREX J3/E5
INSTRUMENT:	WB26847	SAMPLE PREP:	DIRECT
ANALYST:	Valerie Massie	ANALYSIS DATE:	03/03/95

SAMPLE TYPE	SAMPLE #	SAMPLE ID	CONC HG µg/mL	AVERAGE µg/mL	RPD%	% REC	DET LIM µg/mL
STANDARD	R6988-5597	STD	1.09E-01			109.1%	
BLANK	R6989-5697	BLANK	< 0.005				0.005
SAMPLE 1	R6990-5797	BODPS9	< 0.005				0.005
DUPLICATE 1	R6990-5897	BODPS9	< 0.005	N/A	N/A		0.005
SPIKE 1	R6990-5997	BODPS9				102.7%	
SAMPLE 2	R6991-5797	BODPT0	< 0.005				0.005
DUPLICATE 2	R6991-5897	BODPT0	< 0.005	N/A	N/A		0.005
SPIKE 2	R6991-5997	BODPT0				104.1%	
ST-END	R6992-5597	STD	1.08E-01			107.8%	

STD TYPE:	STD ID:	STD VOL:
STANDARD	43N11F	0.300 mL
SPIKE 1	43N11F	0.300 mL
SPIKE 2	43N11F	0.300 mL

NARRATIVE: **Analyst Comments:**

Chemist Comments:

DETECTION LIMITS ARE ADJUSTED FOR DIFFERENT SAMPLE SIZES.

Form Completed By:	Gary Hammitt	Signature:	Gary Hammitt	Date:	03/03/95
Chemist Approval:	Noel Smith	Signature:	Noel Smith	Date:	3/6/95

9613479.0849

MERCURY ANALYSIS

Batch 5556

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5597	PUREX J3/E5	2-14-95	11:13	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .300ml	STD

Remarks, Calculations, Results:

EDP R715 HG/HYDRID
STD #43N11F RESULT 1.09E-01
STD VAL/.00E-1% REC 109.0

PKHT = .324
ng = ~~31.84~~ng 3-3-95
32.73ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-3-95	11:20	Joel Smith 3/6/95	

84-6800-061 (R-10-83)

9613479.0850

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989.-5697	PUREX J3/E5	2-14-95	11:23	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-322-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0 ml	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

PRHT= .009
ng= ~~0.92ng~~ 3/4 3-3-95
~~0.009ng~~
1.05

< 0.005 µg/mL

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

Date	Time Completed	Lab Unit Mgr	
3-3-95	11:20	Noel Smith 3/6/95	Larry Hamm

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

9613479.0851

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5797	PUREX J3/E5	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg LIQ	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0 ml	BODPS9

Remarks, Calculations, Results

PKHT= -.005
ng= ~~-0.005 ng~~
-0.36 ng

< 0.005 µg/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst 5
[illegible] Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-3-95	11:20	Noel Smith 3/6/95	[illegible]

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

222-S LABORATORY
CALIBRATION RECORD
Hg LIQUIDS-DIRECT: LA-325-104 (B-1)

LINEAR REGRESSION

Analyte:	Hg	Date of Calibration:	03/03/95
Procedure No:	LA-325-104 (B-1)	Instrument:	PE2380
Analyst:	Valerie Massie	Property No:	WB26847

Calib. Standard ID:	42N11F	
Analyte Conc:	0.147	µg/mL (ppm)

	Standard Volume (mL)	Instrument Reading	Concentration ng	% Recovery
1	0.000	-0.003	0.00	0.0%
2	0.034	0.050	5.00	103.5%
3	0.100	0.135	14.70	93.3%
4	0.250	0.356	36.75	97.8%
5	0.500	0.752	73.50	103.1%
6	0.750	1.108	110.25	101.2%
7	1.000	1.442	147.00	98.8%
8				
9				
10				

Y-intercept (b)	Slope (m)	Corr. Coefficient
-0.0015	0.0099	0.9997

Data Entry by:	[signature]	Date:	03/03/95
Approved by:	Joel Smith	Date:	3/6/95

LAB LEADER INFO:

Method:	LA-325-104 (B-1)
Matrix:	LIQUID
Test Code	
Work List #	
Batch #	5556
Prepared By:	Gary Hammitt
Date Complete:	03/03/95
Chemist:	Noel Smith
Analyst:	Valerie Massie
Analysis Date:	03/03/95
Time Analysis Complete:	11:20 AM
Instrument Code:	WB26847
Rerun:	0
Sample Prep:	DIRECT
Sample Point:	PUREX J3/E5

Sample Type	Sample #
STANDARD	R6988-5597
BLANK	R6989-5697
SAMPLE 1	R6990-5797
DUPLICATE 1	R6990-5897
SPIKE 1	R6990-5997
SPIKE DUP 1	
SAMPLE 2	R6991-5797
DUPLICATE 2	R6991-5897
SPIKE 2	R6991-5997
SAMPLE 3	
ST-END	R6992-5597

Sample #	Customer ID
R6988-5597	STD
R6989-5697	BLANK
R6990-5797	BODPS9
R6990-5897	BODPS9
R6990-5997	BODPS9
R6991-5797	BODPT0
R6991-5897	BODPT0
R6991-5997	BODPT0
R6992-5597	STD

Print

TECH INFO:

Standard Run:

INPUT

Sample Size in mL	0.300
Peak height (pkht)	0.324
Hg ng (Nanograms)	32.73
Std Value µg/mL	0.100
Std ID:	43N11F

RESULT

Conc Hg µg/mL	1.09E-01

Blank Run:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	0.009
Hg ng (Nanograms)	1.05

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000

The Result is < Detection Limit

Sample Run 1:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	-0.005
Hg ng (Nanograms)	-0.36

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000

The Result is < Detection Limit

Duplicate Run 1:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	-0.006
Hg ng (Nanograms)	-0.46

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000
Average Conc (µg/mL)	N/A
Average Conc (µg/L)	N/A
Relative % Difference	N/A

Both Results are < Detection Limit

Sample Run 2:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	-0.009
Hg ng (Nanograms)	-0.76

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000

The Result is < Detection Limit

Duplicate Run 2:

INPUT

Sample Size in mL	1.000
Peak height (pkht)	-0.012
Hg ng (Nanograms)	-1.06

RESULT

Conc Hg µg/mL	< 0.005
Conc Hg µg/L (PPB)	<5.000
Average Conc (µg/mL)	N/A
Average Conc (µg/L)	N/A
Relative % Difference	N/A

Both Results are < Detection Limit

Sample Run 3:

INPUT

Sample Size in mL	
Peak height (pkht)	
Hg ng (Nanograms)	

RESULT

Conc Hg µg/mL	
Conc Hg µg/L (PPB)	

SPIKE 1

INPUT

Spike Std Volume (mL)	0.300
Peak height (pkht)	0.305
Hg ng of Spike+Sample	30.82
Hg ng of Sample	-0.36
Spike Std ID	43N11F
Spike Std Value (ppm)	0.100

RESULT

% Recovery	102.7%

SPIKE 2

INPUT

Spike Std Volume (mL)	0.300
Peak height (pkht)	0.309
Hg ng of Spike + Sample	31.22
Hg ng of Sample	-0.76
Spike Std ID	43N11F
Spike Std Value (ppm)	0.100

RESULT

% Recovery	104.1%

SPIKE DUP 1

INPUT

Spike Std Volume (mL)	
Sample Size in mL	
Peak height (pkht)	
Hg ng SpikeDup + Sample	
Hg ng of Sample	
Spike Std ID	
Spike Std Value (ppm)	

RESULT

Conc Hg µg/mL	
Conc Hg µg/L (PPB)	
Relative % Difference	
% Recovery	

ST-END

INPUT

Sample Size in mL	0.300
Peak height (pkht)	0.320
Hg ng (Nanograms)	32.33
Std Value µg/mL	0.100

RESULT

Conc Hg µg/mL	1.08E-01

Form Completed By:	Gary Hammitt	Signature:	Gary Hammitt	Date:	03/03/95
Chemist Approval:	Noel Smith	Signature:	Noel Smith	Date:	3/6/95

9613479.0854

Atomic Absorption Runlog: Hg Cold Vapor Analysis

Analyst: Valerie L Massie Date: 3-3-95
Instrument: PE 2380 Property #: WB26847 Batch#: 5556
Cal. Data: Intercept: -0.0015 Slope: 0.0099 Correlation: 0.9997

Sample Name (Std. ID#)	Sample Point	Sam. Size, mL	D or A*	PKHT (Abs.)	ng Result	% Rec.	Time	Comments	CC **
42N11F	N/A	0.000	D	-.003	0	N/A	:		
"	"	0.034	D	.050	5	"	:		
"	"	0.100	D	.135	14.7	"	:		
"	"	0.250	D	.356	36.75	"	:		
"	"	0.500	D	.752	73.5	"	:		
"	"	0.750	D	1.108	110.25	"	:		
"	"	1.000	D	1.442	147.00	"	:		
R6988 ICV	43N11F	.300	D	.324	32.73	109.10	:		
R6989 ICB	Blank	1.0	D	.009	1.05	.	:		
CCV	42N11F	.500	D	.728	73.36	99.81	:		
CCB	Blank	1.0	D	-.004	-0.26		:		
MB-345 CRA	43N11F	.050	D	.045	4.67	93.40	:		
R6990	Purex sample J3/E5	1.0	D	-.005	-0.36		:		
R6990D	Purex J3/E5 Dup	1.0	D	-.006	-0.46	~~30.82~~ vms 3-9-95			
R6990S	Purex sample + 43N11F	1.0 + .300mL	D	.305	30.82	102.73	:		
R6991	Purex sample	1.0	D	-.009	-0.76		:		
R6991D	Purex sample Dup	1.0	D	-.012	-1.06		:		
R6991S	Purex sample + 43N11F	1.0 + .300mL	D	.309	31.22	104.07	:		
S1393	102LW	.050	D	.268	27.10		:		
S1393	102LW	.100	D	.527	53.14		:		
CCV	42N11F	.500	D	.769	77.48	105.42	:		
CCB	Blank	1.0	D	-.010	1.15		:		
R6992 ICV	43N11F	.300	D	.320	32.33	107.76	:		
							:		
							:		
							:		
							:		
							:		
							:		
							:		

* Sample prep. descriptors: D=direct, A=acid digest
** CC=control chart. Check off when control chart entries are made.

9613479.0855

.320 32.33 ng .300 ml 43NHF ICV R6992

-.010 1.15 ng ~~-0.94 ng~~ vm3-3-95 1.0 ml CCB

.769 77.46 ng ~~75.52 ng~~ vm3-3-95 .500 ml 42NHF CCV

.527 53.14 ng ~~51.77 ng~~ vm3-3-95 0.100 ml S1393 102LW

.268 27.10 ng ~~26.35 ng~~ vm3-3-95 .050 ml S1393 102LW

.309 31.22 ng ~~30.37 ng~~ vm-3-3-95 R6991 spike 1.0 ml R6991 sample + .300 ml 43NHF

-0.012 -1.06 ng ~~-1.14 ng~~ vm3-3-95 1.0 ml R6991 Dup

-.009 -0.76 ng ~~-0.84 ng~~ vm3-3-95 1.0 ml R6991

.305 30.62 ng ~~29.98 ng~~ vm3-3-95 R6990 spike 1.0 ml R6990 + .300 ml 43NHF

-.006 -0.46 ng ~~-0.55 ng~~ vm3-3-95 1.0 ml R6990 Dup

-.005 -0.36 ng ~~-0.45 ng~~ vm3-3-95 1.0 ml R6990

.045 4.67 ng ~~4.40 ng~~ vm3-3-95 .050 ml 43NHF CRA

-.004 -0.26 ng ~~-0.35 ng~~ vm3-3-95 1.0 ml CCB

.728 73.36 ng ~~71.50 ng~~ vm3-3-95 .500 ml 42NHF CCV

.009 1.05 ng ~~0.92 ng~~ vm3-3-95 1.0 ml ICB R6989

.324 32.73 ng ~~31.84 ng~~ vm3-3-95 .300 ml 43NHF ICCV vm3-3-95 R6988

1.442 147 ng 1.0 ml 42NHF Cal std

1.108 110.25 ng .750 ml 42NHF Cal std

.752 73.5 ng .500 ml 42NHF Cal std

.356 36.75 ng .250 ml 42NHF Cal std

.135 14.7 ng .100 ml 42NHF Cal std

.050 5 ng .034 ml 42NHF Cal std

-.003 0 ng

11:20 3-3-95 Hg Valerie L Mosare

PERKIN-ELMER
PERKIN-ELMER
BEST AVAILABLE COPY

9615179.0056

.050 5 ng .034 ml 42N4F Cal std

-.003 0 ng

11:20 3-3-95 Hg Valerie L Massie

Analyte: Hg
Date: 3-3-95

Analyst: Valerie L Massie
Start Time: 10:00 3-2-95
End Time: 11:20 3-3-95

MHS 20 Data:

Signal: Concentration
Mode: PKHT
Recorder: TC3
Time: 55 sec.
Expansion: 10

Purge I: ~~35 sec.~~ 40 JM 3-3-95
Purge II: ~~87.5 sec.~~ 60 JM 3-3-95
Reaction: 16 sec.
Temperature: 175 C
EDL Power: 5 Watts

Valerie L Massie 3-3-95

Intercept:	-0.0015
Slope:	0.0099
19:	0.9997
18:	32.7300
17:	1.0516
16:	73.3588
15:	-0.2558
14:	4.6720
13:	-0.3564
12:	-0.4569
11:	30.8192
10:	-0.7586
9:	-1.0603
8:	31.2215
7:	27.0983
6:	53.1449
5:	77.4320
4:	1.1521
3:	32.3277
2:	
1:	

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: -0.0015 absorbance units
Slope: 0.0099 abs. units / concentration
Correlation: 0.9997 (unitless)

PERKIN-ELMER

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MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5897	PUREX J3/E5	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg-LIQ	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
1.0ml	BODPS9

Remarks, Calculations, Results

DUPLICATE SAMPLE

PKHT= -.006

ng= ~~.055ng~~ DH 3-3-95 -0.46

<0.005 ug/mL

Analyst - 1	Apalyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-3-95	11:20	Joel Smith 3/6/95	[signature]

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

9613479.0858

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-5997	PUREX J3/E5	2-14-95	11:25	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 1.0ml + .300ml spike	BODPSS

Remarks. Calculations. Results

SAMPLE SPIKED ID R6990
SPIKE ID 43N11F
SPIKE VOLUME

PKHT = .305
ng = ~~29.98mg~~ 30.82

102.7
~~104.1 %~~ Rec.
DH
3-4-95

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

Date	Time Completed	Lab Unit Mgr	
3-3-95	11:20	Neil Smith 3/6/95	

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

9613479.0859

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5797	PUREX J3/E5	2-14-95	11:29	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg LIQ	LA-325-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0ml	BODPTO

Remarks, Calculations, Results:

PKHT= -.009
ng= ~~0.84ng~~ 3/13/95
-0.76

< 0.005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-3-95	11:20	Rd Smith 3/10/95

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

9613479.0860

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-5897	PUREX J3/E5	2-14-95	11:29	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG-LIQ	LA-825-104	uG/ML	KP51T	0

Sample Size	Customer ID
? 1.0ml	BODPTO

Remarks, Calculations, Results

DUPLICATE SAMPLE

PKHT = -.012

ng = ~~-1.14ng~~ 3-3-95 -1.06

< 0.005 ug/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massale				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-3-95	11:20	Noel Smith 3/6/95	[signature]

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

9613479.0861

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-5997	PUREX J3/E5	2-14-95	11:29	21

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 1.0ml + .300ml spike	BODPTO

Remarks, Calculations, Results

SAMPLE SPIKED ID R6991
SPIKE ID 43N11F
SPIKE VOLUME

PKHT= .309
ng= ~~30.37ng~~ 3-3-95 214
31.22

104.1 % Recovery

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Mazzi				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-3-95	11:20	Joel Smith 3/6/95	[signature]

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

9615459.0042

MERCURY ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6992.-5597	PUREX J3/E5	2-14-95	11:49	21

Determination	Method Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .300 ml	STD

Remarks, Calculations, Results

EDF [illegible]
STD #43N11F RESULT 108E-01
STD VAL 100E-1 % REC 108.0

PKHT= .320
ng= ~~31.45ng~~ 32.33

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-3-95	11:20	Noel Smith 3/6/95

9613479.0863

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6990, R6991	Customer ID: B0DPS9, B0DPT0
Analysis: ACID DIGEST	Sample Prep: N/A

Instrument:	Procedure/ Rev: LA-505-158 A-4
Technologist: LISA HUGHS-STANDLEY	Date: 02/22/95
Starting Time: 0730	Temperature N/A
Ending Time: 1600	Chemist: BERTRAND GRIFFIN II

Comments: _____

BATCH 5564

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6988-8505	11		
2	BLANK	R6989-8605	12		
3	SAMPLE	R6990-8705	13		
4	DUPLICATE	R6990-8805	14		
5	SPIKE	R6990-8905	15		
6	SAMPLE	R6991-8705	16		
7	DUPLICATE	R6991-8805	17		
8	SPIKE	R6991-8905	18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	48N11C			

A-6000-881 (03/92)

ANALYTICAL BATCH SUMMARY SHEET

METHOD	LA-505-158 A-4	RERUN# 0	ANALYSIS START DATE 02/22/95
PREPARED BY LM HUGHES-STANDLEY		SUMMARY DATE 02/22/95	
SAMPLE POINT	PUREX J3/E5	TIME START 0730	TIME COMPLETE 1600

SPL ID	SERIAL NO	RESULT #1	G OR ML ->	MLS	COMMENTS
STD	R 6988 8505	20 50	5 ML 2 ML	100	WHC1A / G4JWHC1AN10 WHC2 / G3MWHC2N1G 5 ML -> 100 ML 48N11-C 2 ML -> 100 ML
BLK	R 6989 8605	-	-	100	100 ML TOTAL VOLUME
SAM	R 6990 8705	D.F. = 100	1 ML	100	1 ML -> 100 ML
DUP	R 6990 8805	D.F. = 100	1 ML	100	1 ML -> 100 ML
SPIKE	R 6990 8905	D.F. = 100	1 ML	100	1 ML -> 100 ML SPIKES ARE ADDED JUST LIKE THE STANDARD.
SAM	R 6991 8705	D.F. = 100	1 ML	100	1 ML -> 100 ML
DUP	R 6991 8805	D.F. = 100	1 ML	100	1 ML -> 100 ML
SPIKE	R 6991 8905	D.F. = 100	1 ML	100	1 ML -> 100 ML SPIKES ARE ADDED JUST LIKE THE STANDARD.

Bertram L. Griffin II
2-28-95

ACID DIGESTION ANALYSIS

Batch 5564

Serial No	Sample Point	Date	Time Issued	Priority
R 6888.-8505	PUREX J3/E5	2-14-95	11:23	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? LOOK BELOW	SLL

Remarks, Calculations, Results

for Ase
LMCS CHECK SAMPLE
LMCS ID 48UII-C
2 ml → 100 ml

$DF = \frac{100\ ml}{2\ ml} = 50$

WHC1A / Y4JWHC1AN10
WHC2 / G3MWHC2N1G
5 ml → 100 ml

$DF = \frac{100\ ml}{5\ ml} = 20$

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

Date	Time Completed	Lab Unit Mgr	
2-22-95	1600	Bernard Griffith	

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

9613479.0866

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989.-8605	PUREX J3/E5	2-14-95.	11:25	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	NONE	KP51T	0

Sample Size	Customer ID
?	BLANK

Remarks, Calculations, Results

REAGENT BLANK
VOLUME ON
COMPLETION 100ml

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

Date	Time Completed	Lab Unit Mgr
2-22-95	1600	Bernard Hill

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

9613479.0867

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-8705	PUREX J3/E5	2-14-95	11:29	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACID DIGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BODPS9

Remarks, Calculations, Results

DF $\frac{100ml}{1ml}$ = 100

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

Date	Time Completed	Lab Unit Mgr.	
2-22-95	1600	Bertrand Griffin II	

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6990.-8805	PUREX J3/E5	2-14-95	11:29	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1 mL = 100 mL	[illegible]

Remarks, Calculations, Results

DUPLICATE SAMPLE

DF: $\frac{100\,mL}{1\,mL} = 100$

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

Date	Time Completed	Lab Unit Mgr	
2-22-95	1600	Bertram Duffin III	[illegible]

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

9615479.3869

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-8905	PUREX J3/E5	2-14-95	11:29	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
1 ml → 100 ml	BODPS9

Remarks, Calculations, Results

SAMPLE SPIKED ID AS/SE
SPIKE ID 48U11-C
SPIKE VOLUME 2 ml

$DF = \frac{100 ml}{2 ml} = 50$

WHC1A / Y4JWHC1AU10
WHC2 / G3MWHC2U1G
5 ml → 100 ml

$DF \frac{100 ml}{5 ml} = 20$

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

Date	Time Completed	Lab Unit Mgr	
2-22-95	1600	Bethard Griffin II	

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

9613479.0870

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-8705	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1 ml → 100 ml	BODPTO

Remarks, Calculations, Results

$$DF = \frac{100\,ml}{1\,ml} = 100$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[signature]				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-22-95	1600	Bertrand Griffin II [signature]

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

9613479.0871

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-8805	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100mg	BODPTO

Remarks, Calculations, Results:

DUPLICATE SAMPLE

$DF = \frac{100ml}{1ml} = 100$

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

Date	Time Completed	Lab Unit Mgr
2-22-95	1600	Bertrand Griffin II

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

9613479.0872

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-8905	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1 ml → 100 ml	BODPTO

Remarks, Calculations, Results

SAMPLE SPIKED ID
SPIKE ID AS/SE / 48N11-C
SPIKE VOLUME 2 ml

$DF = \frac{100 ml}{2 ml} = 50$

Bottle 1

WHC1A/ Y4JWHC1AN10
WHC-2/ G3MWHC2N1G
5 ml of eq. → 100 ml

$DF = \frac{100 ml}{5 ml} = 20$

Bottle 2

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

Date	Time Completed	Lab Unit Mgr
2-22-95	1600	Bertrand Giffin II

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

9613479.0873

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6995, R6996	Customer ID: B0DVK8, B0DVK9
Analysis: ACID DIGEST	Sample Prep: N/A

Instrument:	Procedure/ Rev: LA-505-158 A-4
Technologist: LISA HUGHS-STANDLEY	Date: 02/23/95
Starting Time: 0730	Temperature N/A
Ending Time: 0925	Chemist: BERTRAND GRIFFIN II

Comments: _____

BATCH 5567

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6993-8505	11		
2	BLANK	R6994-8605	12		
3	SAMPLE	R6995-8705	13		
4	DUPLICATE	R6995-8805	14		
5	SPIKE	R6995-8905	15		
6	SAMPLE	R6996-8705	16		
7	DUPLICATE	R6996-8805	17		
8	SPIKE	R6996-8905	18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	48N11C			

A-6000-881 (03/92)

ANALYTICAL BATCH SUMMARY SHEET

METHOD LA-505-158 A-4 RERUN# 0 ANALYSIS START DATE 02/23/95

PREPARED BY LM HUGHES-STANDLEY SUMMARY DATE 02/23/95

SAMPLE POINT PUREX J3/E5 TIME START 0730 TIME COMPLETE 0925

SPL ID	SERIAL NO	RESULT #1	G OR ML ->	MLS	COMMENTS
STD	R 6993 8505	20 50	5 ML 2 ML	100	WHC1A / G4JWHC1AN10 WHC2 / G3MWHC2N1G 5 ML -> 100 ML 48N11-C 2 ML -> 100 ML
BLK	R 6994 8605	-	-	100	100 ML TOTAL VOLUME
SAM	R 6995 8705	D.F. = 100	1 ML	100	1 ML -> 100 ML
DUP	R 6995 8805	D.F. = 100	1 ML	100	1 ML -> 100 ML
SPIKE	R 6995 8905	D.F. = 100	1 ML	100	1 ML -> 100 ML SPIKES ARE ADDED JUST LIKE THE STANDARD.
SAM	R 6996 8705	D.F. = 100	1 ML	100	1 ML -> 100 ML
DUP	R 6996 8805	D.F. = 100	1 ML	100	1 ML -> 100 ML
SPIKE	R 6996 8905	D.F. = 100	1 ML	100	1 ML -> 100 ML SPIKES ARE ADDED JUST LIKE THE STANDARD.

ACID DIGESTION ANALYSIS

Batch 5567

Serial No	Sample Point	Date	Time Issued	Priority
R 8993.-8505	PUREX J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACID DIGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? SEE VARIOUS SIZES	STD

Remarks, Calculations, Results

LMCS CHECK SAMPLE
LMCS ID 45011-C

2mL → 100mL

$DF = \frac{100mL}{2mL} = 50$

WHCIA/Y4JWHCIAN10
WHC-2/C3MWHC2N1G
5mL of eq. in 100mL

$\frac{100mL}{5mL} = 20$

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	09:25	Bertrand Williams II	

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

9613479.0876

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-8605	PUREX J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	NONE	KP51T	0

Sample Size	Customer ID
?	BLANK

Remarks, Calculations, Results

REAGENT BLANK
VOLUME ON
COMPLETION 100mL

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0225	Bertha J. Griffin II	

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

9615979.0977

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-8705	PUREX J3/E5	2-14-95	11:50	26

Determination	Method Standard	Result Units	Charge Code	Reruns
ACID DGST	LA-505-158	DF	KF51T	0

Sample Size	Customer ID
1 mL → 100 mL	[illegible]

Remarks Calculations Results

$$DF = \frac{100\ mL}{1\ mL} = 100$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[signature]	[signature]			
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-23-95	0925	Bertrand Griffin III	[signature]

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-6805	PUREX J8/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BOTVK8

Remarks, Calculations, Results

DUPLICATE SAMPLE

$$DF = \frac{100ml}{1ml} = 100$$

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

Date	Time Completed	Lab Unit Mgr
2-23-95	0925	

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-2405	PUREX JS/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DIGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
1 mL → 100 mL	FOINKE

Remarks, Calculations, Results

SAME - SPIKED ID
SPIKE ID WHC1A/Y4JWHC1A2U1C & WHC-2/G3MWHC2U1G
SPIKE VOLUME 5 mL of each in 100 mL

DF = $\frac{100\ mL}{1\ mL}$ = (100) AF = $\frac{100\ mL}{5\ mL}$ = (20)

ASSE SPIKE LISTED ON BACK →

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

Date	Time Completed	Lab Unit Mgr
2-23-95	09[illegible]	Bertrand Huff III

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

9613479.0880

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8705	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD DGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BODVK9

Remarks. Calculations. Results:

$$DF = \frac{100ml}{1ml} = 100$$

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

Date	Time Completed	Lab Unit Mgr
2-23-95	0925	Bertrand Hoffman II

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

9613679.0801

ACID DIGESTION ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8805	PUREX J3/E5	2-14-95	11:51	25

Determination	Method Standard	Result Units	Charge Code	Reruns
ACID DIGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1ml → 100ml	BODVK9

Remarks, Calculations, Results

DUPLICATE SAMPLE

$$DF = \frac{100\,ml}{1\,ml} = 100$$

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0925	Bertrand Griffin II	

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

ACID DIGESTION ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-6906	PUREX J3/E5	2-14-95	11:51	2F

Determination	Method Standard	Result Units	Charge Code	Reruns
ACID DIGST	LA-505-158	DF	KP51T	0

Sample Size	Customer ID
? 1 mL → 100 mL DF: 100 mL / 1 mL = (100)	BODVK9

Remarks, Calculations, Results

SAMPLE SPIKED
SPIKE ID 48ul
SPIKE VOLUME 2 mL
DF = 100 mL / 2 mL (50)

WHC 1A / W4JWHCANIO
WHC 2 / G3MWHC2NIG
5 mL of ea. in 100 mL
DF = 100 mL / 5 mL = ~~50~~ 20
2-23-95

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

Date	Time Completed	Lab Unit Mgr	
2-23-95	0925	Bertrand Griffin III	

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

9613479.0883

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6988-R6992	Customer ID: BODPS9
Analysis: Se	Sample Prep: ACID DIGEST

Instrument: PE2280(Hydride) WB27979	Procedure/ Rev: LA 365-131 / C-0
Technologist: Valerie L. Massie Valerie L Massie	Date: 03/08/95
Starting Time: 07:40	Temperature 975 C
Ending Time: 13:50	Chemist: N. D. Smith

Comments: Batch #: 5565

	Description	Lab ID		Description	Lab ID
1	LMCS STANDARD	R6988-5596	11	END STANDARD	R6992-5596
2	BLANK	R6989-5696	12		
3	DIGESTED STANDARD	R6988-8596	13		
4	DIGESTED BLANK	R6989-8696	14		
5	DIGESTED SAMPLE	R6990-8796	15		
6	DUPLICATE	R6990-8896	16		
7	SPIKE	R6990-8996	17		
8	DIGESTED SAMPLE	R6991-8796	18		
9	DUPLICATE	R6991-8896	19		
10	SPIKE	R6991-8996	20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	44N11G 0.500mL			
DIGEST STANDARD	48N11C DF=50			
SPIKE	48N11C DF=100			

A-6000-881 (03/92)

9613479.0090

ANALYTICAL BATCH SUMMARY SHEET

METHOD:	DATE START:	BATCH #5565
LA-365-131	3/8/95	
PREPARED BY:	DATE COMPLETE:	
N.D. Smith	3/9/95	

	UNITS:		ug/mL	ug/mL	ug/mL			ug/mL	
SPL NAME	SPL ID	ANALYTE	RESULT #1	RESULT #2	AVERAGE	RPD%	%REC	DET LIM	% CT ER
STD/44N11G	R6988	Se	0.107				107.0		
UNDIGESTED									
STD/48N11C	R6988	Se	0.102				102.0		
DIGESTED									
REAGENT BLK	R6989	Se	<0.003					0.003	
PREP BLK	R6989	Se	<0.250					0.250	
PUREX J3/E5	R6990	Se	<0.250	<0.250	N/A	N/A	96.8	0.250	
SAM BLNK	R6991	Se	<0.250	<0.250	N/A	N/A	119.1	0.250	
STD/44N11G	R6992	Se	0.113				113.0		
UNDIGESTED									

NARRATIVE: [✓] NO SPECIAL PROBLEMS/METHOD VARIATIONS IN THIS BATCH
LIST SPECIFIC PROBLEMS/VARIATIONS FOR THIS BATCH:

ND Smith 3/9/95

9613479.0885

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5565

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5596	PUREX J3/E5	2-14-95	11:13	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .500 ml	STD

Remarks, Calculations, Results

EDP R743 VM3-8-95 SE/HYDRD

STD# ~~45N11E~~ 44N11G RESULT 1.07E-01 ug/mL

STD VAL 1.00-1 %REC 107 %

PKHT= .524
ng= 53.63ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith 3/9/95	

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	53.63	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.107	N/A
5565	Conc Se µg/L (PPB)	107.3	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6988-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/08/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/08/95	Conc Se µg/mL	1.07E-01	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_1 Rev. 1.1

9613479.0886

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-8596	PUREX J3/E5	2-14-95	11:23	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0ml AF=50	STD

Remarks, Calculations, Results:

EDP R748 SE/DGST PKHT=.405

STD# 48N11C RESULT 1.02E00 ng=40.85ng

STD VAL 1.00E00 %REC 102%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit/Mgr		
3-8-95	13:50	Noel Smith 3/9/95		

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST		STANDARD	DUPLICATE
Type	Sample Size in mL SS	2.000	
STANDARD	Se ng (Nanograms)	40.85	
Work List	Acid Digest Dilution Factor DF	50.0	
5565	Conc Se µg/mL (or mg/L or PPM)	1.021	N/A
Test Code	Conc Se µg/L (PPB)	1021.3	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6988-8596	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/08/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/08/95	Conc Se (µg/mL)	1.02E+00	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

9613479.0887

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6989.-5696	PUREX J3/E5	2-14-95	11:23	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

PKHT= -.007
ng= -3.38 ng

<0.003 ug/ML

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-8-95	13:50	Noel Smith 3/9/95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	Se ng (Nanograms)	-3.38	
Work List	Conc Se µg/mL (or mg/L or PPM)	-0.002	N/A
5565	Conc Se µg/L (PPB)	-1.7	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6989-5696	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
03/08/95	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) = 0.003		
Analyst	Detection Limit (µg/L) = 2.5		
V. MASSIE			
Date		BLANK	DUPLICATE
03/08/95	Conc Se µg/mL	<0.003	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:	RL Jones	Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_1 Rev. 1.1

9613479.0888

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989.-8696	PUREX J3/E5	2-14-95	11:25	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml DF=100	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

PKHT= .001
ng= -2.52ng

20.250 ug/ML

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

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith 3/9/95	R S Jones

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

Type		BLANK	DUPLICATE
BLANK	Sample Size in mL SS	2.000	
	Se ng (Nanograms)	-2.52	
Work List	Acid Digest Dilution Factor DF	100.0	
5565	Conc Se µg/mL (or mg/L or PPM)	-0.126	N/A
Test Code	Conc Se µg/L (PPB)	-126.0	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	

Sample #	
R6989-8696	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF
Calibration Date	Average Conc.=(Sample + Duplicate)/2
03/08/95	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
Instrument Code	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
WB27979	
Analyst	
V. MASSIE	

Detection Limit (µg/mL)	0.250
Detection Limit (µg/L)	250.00

Date		BLANK	DUPLICATE
03/08/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:	R S Jones	Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

9613479.0889

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6990.-8796	PUREX J3/E5	2-14-95	11:29	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPS9

Remarks, Calculations, Results

PKHT = -.007
ng = -3.38 ng

<0.250 ug/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-8-95	13:50	Noel Smith 3/9/95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	Se ng (Nanograms)	-3.38	
Work List	Acid Digest Dilution Factor DF	100.0	
5565	Conc Se µg/mL (or mg/L or PPM)	-0.169	N/A
Test Code	Conc Se µg/L (PPB)	-169.0	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6990-8796	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/08/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27972	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			
Date		SAMPLE	DUPLICATE
03/08/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

9613479.0890

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

CALIBRATION RECORD

Analyte:	Se		
Procedure:	LA 365-131	Revision:	C-0
Instrument:	PE2280 (Hydride)	Property No.:	WB27979
Technologist	Valerie Massie Valerie L Massie	Payroll No.: XXXXX	Date: 03/08/95

Calibration Standard ID:	45N11E
Analyte Concentration:	.100ppm
Type of Calibration:	LINEAR

	Dilution	Concentration	Instrument Reading Unit
1	.000mL	0 ng	.000
2	.050mL	5 ng	.052
3	.250mL	25 ng	.277
4	.500mL	50 ng	.546
5	1.00mL	100ng	.924
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Comments: Intercept = 0.0245, Slope = 0.0093, Correlation = 0.9953

A-6000-882 (03/92)

9613479.0891

.552 56.64ng .500ml direct LMCS 44N11G R6992

.468 47.62ng 2.0ml R6991 spike (48N11C)

.012 -1.34ng 2.0ml R6991 Dup

.009 -1.67ng 2.0ml R6991

.385 38.71ng 2.0ml R6990 spike (48N11C)

.007 -1.88ng 2.0ml R6990 Dup

-.007 -3.38ng 2.0ml R6990

.001 -2.52ng 2.0ml digested Blank R6989

.405 40.85ng 2.0ml digested std 48N11C R6988

-.007 -3.38ng 2.0ml direct Blank R6989

.524 53.63ng .500ml direct LMCS 44N11G R6988

.924 100ng 1.0ml 45N11E Cal std

.546 50ng .500ml 45N11E Cal std

.277 25ng .250ml 45N11E Cal std

.052 5ng .050ml 45N11E Cal std

.000 0ng

13:50 3-8-95 Se Valerie L Massie

Analyte: Se Analyst: Valerie L Massie
Date: 3-8-95 Start Time: 07:40 End Time: 13:50

MHS 20 Data:

Signal: Concentration Purge I: 40
Mode: PKHT Reaction: 10 sec.
Recorder: TC3 Purge II: 50
Time: 30 sec. Temperature: 975 C
Expansion: 10 EDL Power: 6 Watts

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: 0.0245 absorbance units
Slope: 0.0093 abs. units / concentration
Correlation: 0.9953 (unitless)

14: Intercept:	0.0245
13: Slope:	0.0093
12:	0.9953
11:	53.6303
10:	-3.3837
9:	40.8532
8:	-2.5248
7:	-3.3837
6:	-1.8805
5:	38.7058
4:	-1.6658
3:	-1.3437
2:	47.6176
1:	56.6367

Valerie L Massie 3-8-95

BEST AVAILABLE COPY

Atomic Absorption Runlog: Se Hydride Analysis

Analyst: Valerie L Massie Date: 3-8-95
Instrument: PE 2280 Property #: WB27979
Analyte: Se Batch #: 5565 Start Time: 07:40 End Time: 13:50

Calibration Data: Intercept: 0.0245 absorbance units
Slope: 0.0093 abs. units / concentration
Correlation: 0.9953 (unitless)

Room temp 86°F during run!

Sample Name (Std. ID#)	Sample Point	Sam. Size, (mL)	D or A*	PKHT (Abs.)	ng result	% Rec.	Comments	CC **
45N11E	N/A	0.000	D	.000	0	N/A		
	"	0.050	D	.052	5	"		
	"	0.250	D	.277	25	"		
	"	0.500	D	.546	50	"		
	"	1.000	D	.924	100	"		
R6988	direct LMCS 44N11G	.500	D	.524	53.63	107.26		
R6989	direct Blank	2.0	D	-.007	-3.38			
R6988	digested LMCS 48N11C	2.0	A	.405	40.85	102.13		
R6989	digested Blank	2.0	A	.001	-2.52			
R6990	Purex J3/E5 sample	2.0	A	-.007	-3.38			
R6990D	Purex J3/E5 dup	2.0	A	.007	-1.88			
R6990S	Purex J3/E5 spike (48N11C)	2.0	A	.385	38.71	96.76		
R6991	Purex J3/E5 sample	2.0	A	.009	-1.67			
R6991D	Purex J3/E5 dup.	2.0	A	.012	-1.34			
R6991S	Purex J3/E5 spike (48N11C)	2.0	A	.468	47.62	119.04		
R6992	direct LMCS 44N11G	.500	D	.552	56.64	113.28		

* Sample prep. descriptors: D=direct, A=acid digest
** CC=control chart. Check off when control chart entries are made.

9613479.0893

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6990.-8896	PUREX J3/E5	2-14-95	11:29	25

Determination	Method Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPS9

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PKHT= .007
ng= -1.88 ng

<0.250 ug/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith	

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

Type		SAMPLE	DUPLICATE
DUPLICATE	Sample Size in mL SS	2.000	2.000
	Se ng (Nanograms)	-3.38	-1.88
Work List	Acid Digest Dilution Factor DF	100.0	100.0
5565	Conc Se µg/mL (or mg/L or PPM)	-0.169	-0.094
Test Code	Conc Se µg/L (PPB)	-169.0	-94.0
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
ACID DIGEST	Relative % Difference	N/A	N/A
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6990-8796	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/08/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			
Date		SAMPLE	DUPLICATE
03/08/95	Conc Se (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
01:50 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

9613479.0894

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6990.-8996	PUREX J3/E5	2-14-95	11:29	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0ml	BODPS9

Remarks, Calculations, Results

SAMPLE SPIKED ID R6990
SPIKE ID 48N11C
SPIKE VOLUME
2 ML → FINAL 100ML

PKHT= .385
ng= 38.71ng

96.8%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
3-8-95	13:50 3-8-95	Noel Smith 3/9/95		

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-ACID DIGEST

Type		SAMPLE	SPIKE
SPIKE	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
Work List	Spike Std Volume (mL) SSVOL	N/A	2.000
5565	ng of Spike + Sample ngSSAM	N/A	38.71
Test Code	ng of Sample ngSAM	-3.38	N/A
	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6990-8996	% Recovery	N/A	96.8%
Calibration Date			
03/08/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27575	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
V. MASSIE	% Recovery = {([((ngSSAM/SAVOL)*(1/1000))-((0/SAVOL)*(1/1000))]*SPDF)/SS VAL}*100		
Date			
03/08/95			
Time	% Recovery =		96.8%
01:50 PM			

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

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9613479.0895

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6991.-8796	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPTO

Remarks, Calculations, Results

PKHT= .009
ng= -1.67ng

RO.250 ug/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith 3/9/95	

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	Se ng (Nanograms)	-1.67	
Work List	Acid Digest Dilution Factor DF	100.0	
5565	Conc Se µg/mL (or mg/L or PPM)	-0.084	N/A
Test Code	Conc Se µg/L (PPB)	-83.5	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	

Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF
R6991-8796	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
03/08/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
Instrument Code	
WB27979	Detection Limit (µg/mL) 0.250
Analyst	Detection Limit (µg/L) 250.00
V. MASSIE	

Date		SAMPLE	DUPLICATE
03/08/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

Page 1 of 1

9613479.0896

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-8896	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPTO

Remarks, Calculations, Results
DUPLICATE SAMPLE

PKHT= .012
ng= -1.34ng

<0.250ug/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith 3/9/95	

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

Type		SAMPLE	DUPLICATE
DUPLICATE	Sample Size in mL SS	2.000	
Work List	Se ng (Nanograms)	-1.34	
5565	Acid Digest Dilution Factor DF	100.0	
Test Code	Conc Se µg/mL (or mg/L or PPM)	-0.067	N/A
	Conc Se µg/L (PPB)	-67.0	N/A
		N/A	
Matrix		N/A	
ACID DIGEST		N/A	

Sample #	
R6991-8896	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF
Calibration Date	Average Conc.=(Sample + Duplicate)/2
03/08/95	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
Instrument Code	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
WB27979	
Analyst	
V. MASSIE	

Detection Limit (µg/mL)	0.250	
Detection Limit (µg/L)	250.00	

Date		SAMPLE	DUPLICATE
03/08/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_3 Rev. 2.2

9613479.0897

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-8996	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPTO

Remarks, Calculations, Results

SAMPLE SPIKED ID R6991
SPIKE ID 48N11C
SPIKE VOLUME
2 ML → 100 ML FINAL VOL.

PKHT = .468
ng = 47.62 ng

119.1%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith 3/9/95	

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-ACID DIGEST

Type		SAMPLE	SPIKE
SPIKE	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	47.62
5565	ng of Sample ngSAM	-1.67	N/A
Test Code	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6991-8996	% Recovery	N/A	119.1%
Calibration Date			
03/08/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
V. MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/08/95			
Time	% Recovery =	119.1%	
01:50 PM			

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_4 Rev. 1.1

9613479.0898

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6992.-5596	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .500 ml	STD

Remarks, Calculations, Results

EDP R743 SE/HYDRD PKHT= .552

STD# 44N11G RESULT 1.13E-01ug/mL ng= 56.64ng

STD VAL 1.00-1 %REC 113.0 %

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-8-95	13:50	Noel Smith 3/9/95	

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	56.64	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.113	N/A
5565	Conc Se µg/L (PPB)	113.3	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6992-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/08/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/08/95	Conc Se µg/mL	1.13E-01	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/09/95
Approved by:	Noel Smith	Date:	3/9/95

Form 365131_1 Rev. 1.1

9613479.0899

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6993-R6997	Customer ID: BODVK8
Analysis: Se	Sample Prep: ACID DIGEST

Instrument: PE2280(Hydride) WB27979	Procedure/ Rev: LA 365-131 / C-0
Technologist: Valerie L. Massie Valerie L Massie	Date: 03/22/95
Starting Time: 07:35	Temperature 975 C
Ending Time: 13:50	Chemist: N. D. Smith

Comments: Batch #: 5691

	Description	Lab ID		Description	Lab ID
1	LMCS STANDARD	R6993-5596	11	END STANDARD	R6997-5596
2	BLANK	R6994-5696	12		
3	DIGESTED STANDARD	R6993-8596	13		
4	DIGESTED BLANK	R6994-8696	14		
5	DIGESTED SAMPLE	R6995-8796	15		
6	DUPLICATE	R6995-8896	16		
7	SPIKE	R6995-8996	17		
8	DIGESTED SAMPLE	R6996-8796	18		
9	DUPLICATE	R6996-8896	19		
10	SPIKE	R6996-8996	20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	44N11H 0.500mL			
DIGEST STANDARD	48N11C DF=50			
SPIKE	48N11C DF=100			

A-6000-881 (03/92)

ANALYTICAL BATCH SUMMARY SHEET

METHOD: LA-365-131	DATE START: 3/22/95	BATCH #5691
PREPARED BY: N.D. Smith	DATE COMPLETE: 3/23/95	

	UNITS:		ug/mL	ug/mL	ug/mL			ug/mL	
SPL NAME	SPL ID	ANALYTE	RESULT #1	RESULT #2	AVERAGE	RPD%	%REC	DET LIM	% CT ER
STD/44N11H	R6993	Se	0.103				103.0		
UNDIGESTED									
STD/48N11C	R6993	Se	0.0955				95.5		
DIGESTED									
REAGENT BLK	R6994	Se	0.003					0.003	
PREP BLK	R6994	Se	<0.250					0.250	
PUREX J3/E5	R6995	Se	<0.250	<0.250	N/A	N/A	95.8	0.250	
SAM BLNK	R6996	Se	<0.250	<0.250	N/A	N/A	103.2	0.250	
STD/44N11H	R6997	Se	0.0126				102.6		
UNDIGESTED									

NARRATIVE: ✓ NO SPECIAL PROBLEMS/METHOD VARIATIONS IN THIS BATCH

LIST SPECIFIC PROBLEMS/VARIATIONS FOR THIS BATCH:

Noel Smith 3/23/95

9613479.0901

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point		Time Issued	Priority
R 6993.-8596	PUREX'J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	1

Sample Size	Customer ID
2 ML	STD

Remarks, Calculations, Results

EDP R748 SE/DGST

STD# 48N11C RESULT .955

STD VAL 1.000 REC 95.5%

PKHT= .328

ng= 38.21 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie H Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-22-95	13:50	Joel Smith 3/23/95

3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

Type		STANDARD	DUPLICATE
STANDARD	Sample Size in mL SS	2.000	
	Se ng (Nanograms)	38.21	
Work List	Acid Digest Dilution Factor DF	50.0	
5691	Conc Se µg/mL (or mg/L or PPM)	0.955	N/A
Test Code	Conc Se µg/L (PPB)	955.3	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	
R6993-8596	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF
Calibration Date	Average Conc.=(Sample + Duplicate)/2
03/22/95	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
Instrument Code	
WB27979	
Analyst	
MASSIE	

Date		STANDARD	DUPLICATE
03/22/95	Conc Se (µg/mL)	9.55E-01	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/23/95
Approved by:	Joel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

9613479.0902

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN Batch 5691

Serial No.	Sample Point	Date	Time Issued	Priority
R 6993.-5596	PUREX J3/E5	2-14-95	11:48	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP01T	1

Sample Size	Customer ID
.500 ML	STD

Remarks, Calculations, Results

EDP R743 SE/HYDRD

STD# 44N11H RESULT .103

STD VAL .100 %REC 103.0%

PKHT= .467

ng= 55.22ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-22-95	13:50	Phil Smith 3/23/95

vm 3-22-95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	51.31	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.103	N/A
5691	Conc Se µg/L (PPB)	102.6	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6997-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/22/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/22/95	Conc Se µg/mL	1.03E 01	
Time		N/A	
01:50 PM		N/A	

LAD 2/28/96

Data Entry by:		Date:	03/22/95
Approved by:	Phil Smith	Date:	3/23/95

Form 365131_1 Rev. 1.1

9613479.0903

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-6696	PUREX J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	1

Sample Size	Customer ID
2 ML	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

PKHT= .014
ng= -0.22ng

<2.50 E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-22-95	13:50	Noel Smith 3/23/95	

VM 3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	Se ng (Nanograms)	-0.02	
Work List	Acid Digest Dilution Factor DF	100.0	
5691	Conc Se µg/mL (or mg/L or PPM)	-0.001	N/A
Test Code	Conc Se µg/L (PPB)	-1.1	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6994-8696	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/22/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		BLANK	DUPLICATE
03/22/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/23/95
Approved by:	Noel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

Page 1 of 1

9613479.0904

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-5696	PUREX-J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	1

Sample Size	Customer ID
2 ML	BLANK

Remarks, Calculations, Results

REAGENT BLANK

PKHT= .067

ng= 6.27ng

3.14 E-3

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst 5
Valerie L Massey				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-22-95	13:50	Joel Smith 3/23/95	

VM 3-22-95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	Se ng (Nanograms)	6.27	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.003	N/A
5691	Conc Se µg/L (PPB)	3.1	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6994-5696	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
03/22/95	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.003	
Analyst	Detection Limit (µg/L) =	2.5	
MASSIE			
Date		BLANK	DUPLICATE
03/22/95	Conc Se µg/mL	3.14E-03	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/23/95
Approved by:	Joel Smith	Date:	3/23/95

Form 365131_1 Rev. 1.1

9613479.0905

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8796	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	1

Sample Size	Customer ID
2 ML	BODVK8

Remarks, Calculations, Results:

PKHT= .010
ng= -0.71 ng

<.250

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date 3-22-95	Time Completed 13:50	Lab Unit Noel Smith 3/23/95		

RM3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	Se ng (Nanograms)	-0.71	
Work List	Acid Digest Dilution Factor DF	100.0	
5691	Conc Se µg/mL (or mg/L or PPM)	-0.036	N/A
Test Code	Conc Se µg/L (PPB)	-35.5	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6995-8796	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/22/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		SAMPLE	DUPLICATE
03/22/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/23/95
Approved by:	Noel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

9613479.0906

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

CALIBRATION RECORD

Analyte:	Se		
Procedure:	LA 365-131	Revision:	C-0
Instrument:	PE2280 (Hydride)	Property No.:	WB27979
Technologist	Valerie Massie Valerie L Massie	Payroll No.: XXXXX	Date: 03/22/95

Calibration Standard ID:	45N11F
Analyte Concentration:	.100ppm
Type of Calibration:	LINEAR

	Dilution	Concentration	Instrument Reading Unit
1	.000mL	0 ng	.012
2	.050mL	5 ng	.022
3	.250mL	25 ng	.246
4	.500mL	50 ng	.393
5	1.00mL	100 ng	.842
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Comments: Intercept = 0.0158, Slope = 0.0082, Correlation = 0.9976

A-6000-882 (03/92)

9613479.0907

.435 51.31ng .500ml direct LMCS 44N11H R6997

.353 41.27ng 2.0ml R6996 spike (48N11C)

.005 -1.32ng 2.0ml R6996 dup

.004 -1.44ng 2.0ml R6996

.329 38.33ng 2.0ml R6995 spike (48N11C)

.015 -0.10ng 2.0ml R6995 dup

.010 -0.71ng 2.0ml R6995

.014 -0.22ng 2.0ml digesting Blank R6994

.328 38.21ng 2.0ml digested std 48N11C R6993

~~0.27~~ .067 6.27ng 2.0ml direct Blank R6994 tm 3-22-95

.467 55.22ng .500ml 44N11H LMCS std direct LMCS R6993

.403 47.39ng .500ml 44N11H LMCS std

.403 47.39ng .500ml 44N11H LMCS std

.842 100ng 1.0ml 45N11F Cal std

.393 50ng .500ml 45N11F Cal std

.246 25ng .250ml 45N11F Cal std

.022 5ng (deleted from Cal Curve! Reaction flasks tip come off!)

.012 0ng

13:50 3-22-95 Se Valerie L Massie

clean Oacr #6937

Analyte: Se **Analyst:** Valerie L Massie
Date: 3-22-95 **Start Time:** 07:35 **End Time:** 13:50

MHS 20 Data:

Signal: Concentration
Mode: PKHT
Recorder: TC3
Time: 30 sec.
Expansion: 10

Purge I: 40
Reaction: 10 sec.
Purge II: 50
Temperature: 975 C
EDL milliamps: 280

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: 0.0158 absorbance units
Slope: 0.0082 abs. units / concentration
Correlation: 0.9976 (unitless)

16:	Intercept: 0.0158
15:	Slope: 0.0082
14:	0.9976
13:	47.3912
12:	47.3912
11:	55.2245
10:	6.2666
9:	38.2116
8:	-0.2203
7:	-0.7099
6:	-0.0979
5:	38.3340
4:	-1.4443
3:	-1.3219
2:	41.2715
1:	51.3079

Valerie L Massie 3-22-95

BEST AVAILABLE COPY

Atomic Absorption Runlog: Se Hydride Analysis

Analyst: Valerie L Massie Date: 3-22-95
Instrument: PE 2280 Property #: WB27979
Analyte: Se Batch #: 5691 Start Time: 07:35 End Time: 13:50

Calibration Data: Intercept: 0.0158 absorbance units
Slope: 0.0082 abs. units / concentration
Correlation: 0.9976 (unitless)

Sample Name (Std. ID#)	Sample Point	Sam. Size, (mL)	D or A*	PKHT (Abs.)	ng result	% Rec.	Comments	CC **
45N11F	N/A	0.000	D	.012	0	N/A		
	"	0.050		.022	5	"	found Reaction	
	"	0.250		.246	25	"	flask tip off.	
	"	0.500		.393	50	"	deleted from	
	"	1.000		.842	100	"	Cal Curve	
LMCS	LMCS std 44N11H	.500	D	.403	47.39	94.78	to clean OSCR	
LMCS	LMCS std 44N11H	.500	D	.403	47.39	94.78	#6937.	
R6993	direct LMCS 44N11H	.500	D	.467	55.22	110.45		
R6994	direct Blk	2.0	D	.067	6.27		found reaction tip off!	
R6993	digested std 48N11C	2.0	~~D~~ A	.328	38.21	95.53	inserted new reaction flask	
R6994	digested Blk	2.0	A	.014	-0.22		tip. fell off	
R6995	Purex J3/E5 samp.	2.0	A	.010	-0.71		at tips spot	
R6995D	Purex J3/E5 dup	2.0	A	.015	-0.10		again!	
R6995S	Purex J3/E5 (spike 48N11C)	2.0	A	.329	38.33	95.84%		
R6996	Purex J3/E5 samp.	2.0	A	.004	-1.44			
R6996D	Purex J3/E5 dup.	2.0	A	.005	-1.32			
R6996S	Purex spike J3/E5 48N11C	2.0	A	.353	41.27	103.18		
R6997	direct LMCS 44N11H	.500	D	.435	51.31	102.62		

* Sample prep. descriptors: D=direct, A=acid digest
** CC=control chart. Check off when control chart entries are made.

9613479.0909

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8896	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	1

Sample Size	Customer ID
2 ML	BODVK8

Remarks, Calculations, Results

DUPLICATE SAMPLE

PKHT= .015
ng= ~~[illegible]~~ = 0.10ng
JM 3-22-95

<0.250

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie T Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-22-95	13:50	Joel Smith 3/23/95	

JM 3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
DUPLICATE	Se ng (Nanograms)	-0.10	
Work List	Acid Digest Dilution Factor DF	100.0	
5691	Conc Se µg/mL (or mg/L or PPM)	-0.005	N/A
Test Code	Conc Se µg/L (PPB)	-5.0	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6995-8896	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/22/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		SAMPLE	DUPLICATE
03/22/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/23/95
Approved by:	Joel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

9613479.0910

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8996	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	1

Sample Size	Customer ID
2 mL	BODVK8

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6995
SPIKE ID 48N11C
SPIKE VOLUME
2mL of std → 100mL final vol.
spk std. value = 1 ppm

PKHT = .329
ng = 38.33ng

95.8%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
22 3-22-95	13:50	Joel Smith 3/23/95

VM 3-22-95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-ACID DIGEST

Type		SAMPLE	SPIKE
SPIKE	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	38.33
5691	ng of Sample ngSAM	-0.71	N/A
Test Code	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6995-8996	% Recovery	N/A	95.8%
Calibration Date			
03/22/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
MASSIE	% Recovery = {([[(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/22/95			
Time	% Recovery =		95.8%
01:50 PM			

Data Entry by: Date: 03/23/95
Approved by: Joel Smith Date: 3/23/95

Form 365131_4 Rev. 1.1

9613479.0911

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8796	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	1

Sample Size	Customer ID
2 ML	BODVK9

Remarks, Calculations, Results

PKHT= .004
ng= -1.44ng

<0.250

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

Date	Time Completed	Lab Unit Mgr	
3-22-95	13:50	Noel Smith 3/23/95	

tm 3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	Se ng (Nanograms)	-1.44	
Work List	Acid Digest Dilution Factor DF	100.0	
5691	Conc Se µg/mL (or mg/L or PPM)	-0.072	N/A
Test Code	Conc Se µg/L (PPB)	-72.0	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF
R6996-8796	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
03/22/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
Instrument Code	
WB27979	Detection Limit (µg/mL) 0.250
Analyst	Detection Limit (µg/L) 250.00
MASSIE	

		SAMPLE	DUPLICATE
Date			
03/22/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date: 03/23/95
Approved by:	Noel Smith	Date: 3/23/95

Form 365131_3 Rev. 2.2

9613479.0912

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8896	PUREX 05/E5'	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	1

Sample Size	Customer ID
2 ML	BODVK9

Remarks, Calculations, Results

DUPLICATE SAMPLE

PKHT= .005
ng= -1.32ng

<0.250

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Mason				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
3-22-95	13:50	Joel Smith 3/23/95

VM 3-22-95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
DUPLICATE	Se ng (Nanograms)	-1.32	
Work List	Acid Digest Dilution Factor DF	100.0	
5691	Conc Se µg/mL (or mg/L or PPM)	-0.066	N/A
Test Code	Conc Se µg/L (PPB)	-66.0	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF		
R6996-8896	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/22/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		SAMPLE	DUPLICATE
03/22/95	Conc Se (µg/mL)	<0.250	
Time		N/A	
01:50 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/23/95
Approved by:	Joel Smith	Date:	3/23/95

Form 365131_3 Rev. 2.2

9613479.0913

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-8996	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	1

Sample Size	Customer ID
2 ML	BODVK9

Remarks, Calculations, Results

SAMPLE SPIKED ID R6996
SPIKE ID 48N11C
SPIKE VOLUME

PK HT= .353
ng= 41.27ng

103.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-22-95	13:50	Noel Smith 3/23/95

VM 3-22-95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-ACID DIGEST

Type		SAMPLE	SPIKE
	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
SPIKE	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	41.27
5691	ng of Sample ngSAM	-1.44	N/A
Test Code	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6996-8996	% Recovery	N/A	103.2%
Calibration Date			
03/22/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/22/95			
Time	% Recovery =	103.2%	
01:50 PM			

Data Entry by:		Date:	03/23/95
Approved by:	Noel Smith	Date:	3/23/95

Form 365131_4 Rev. 1.1

9613479.0914

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

KEKUN Batch 5691

Serial No.	Sample Point	Date	Time Issued	Priority
R 6997 -5596	PUREX 3/3/95	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	1

Sample Size	Customer ID
.500 ML	STD

Remarks, Calculations, Results

EDP R743 SE/HYDRD

STD# 44N11H RESULT .1026

STD VAL .100 %REC 102.6%

PKHT= .435

ng= 51.31 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr.		
3-17-95	13:50	Joel Smith 3/23/95		

VM3-22-95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	51.31	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.103	N/A
5691	Conc Se µg/L (PPB)	102.6	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6997-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/22/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/22/95	Conc Se µg/mL	1.03E-01	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/23/95
Approved by:	Joel Smith	Date:	3/23/95

Form 365131_1 Rev. 1.1

9613479.0915

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

KEKUN Batch 5691

Serial No.	Sample Point	Date	Time Issued	Priority
R 6997 -5596	PUREX .T3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	1

Sample Size	Customer ID
.500 ML	STD

Remarks, Calculations, Results:

EDP R743 SE/HYDRD

STD# 44N11H RESULT .1026

STD VAL .100 %REC 102.6%

PKHT= .435
ng= 51.31 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date 3-22-95	Time Completed 13:50	Lab Unit Mgr. 3/23/95		

VM3-22-95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	51.31	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.103	N/A
5691	Conc Se µg/L (PPB)	102.6	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6997-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/22/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/22/95	Conc Se µg/mL	1.03E-01	
Time		N/A	
01:50 PM		N/A	

Data Entry by:		Date:	03/23/95
Approved by:		Date:	3/23/95

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9613479.0916

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6995, R6996	Customer ID: B0DVK8, B0DVK9
Analysis: SE	Sample Prep: DIRECT

Instrument: WB26847	Procedure/ Rev: LA-325-104 B-1
Technologist: VALERIE MASSIE	Date: 03/15/95
Starting Time:	Temperature N/A
Ending Time: 14:00	Chemist: NOEL SMITH

Comments: OUT FOR RERUN

BATCH 5569

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6993-5596	11		
2	BLANK	R6984-5696	12		
3	SAMPLE	R6995-5796	13		
4	DUPLICATE	R6995-5896	14		
5	SPIKE	R6995-5996	15		
6	SAMPLE	R6996-5796	16		
7	DUPLICATE	R6996-5896	17		
8	SPIKE	R6996-5996	18		
9	LMCS STD	R6997-5596	19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	44N11H			

A-6000-881 (03/92)

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5569

Serial No.	Sample Point	Date	Time Issued	Priority
R 6993.-5596	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .500ml	STD

Remarks, Calculations, Results

EDP R743 SE/HYDRD

STD# 44N11 # RESULT .102

STD VAL .100 %REC 102.0%

PKHT= .366

ng= 51.04ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massa				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-15-95	14:00	Joel Smith 3/16/95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	51.04	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.102	N/A
5569	Conc Se µg/L (PPB)	102.1	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6993-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/15/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/15/95	Conc Se µg/mL	1.02E-01	
Time		N/A	
02:00 PM		N/A	

Data Entry by: Date: 03/16/95

Approved by: Joel Smith Date: 3/16/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6993.-8596	TREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml	STD

Remarks. Calculations. Results

EDP R748 SE/DGST

STD#48N11C RESULT 1.04

STD VAL 1.00 %REC 104 %

PKHT= .300

ng= 41.75ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-15-95	14:00	Noel Smith 3/16/95

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

Selenium : LA-365-131 (C-0) Se LIQUID-ACID DIGEST

Type		STANDARD	DUPLICATE
STANDARD	Sample Size in mL SS	2.000	
	Se ng (Nanograms)	41.75	
Work List	Acid Digest Dilution Factor DF	50.0	
5500	Conc Se µg/mL (or mg/L or PPM)	1.044	N/A
Test Code	Conc Se µg/L (PPB)	1043.8	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	
R6993-8596	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)*DF
	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
03/15/95	
Instrument Code	
WB27979	
Analyst	
MASSIE	

Date		STANDARD	DUPLICATE
03/15/95	Conc Se (µg/mL)	1.04E+00	
Time		N/A	
02:00 PM		N/A	

Data Entry by:		Date:	03/16/95
Approved by:	Noel Smith	Date:	3/16/95

Form 365131_3 Rev. 2.2

9613479.0919

SELENIUM ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-8696	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
?2.0 ml	BLANK

Remarks, Calculations, Results

REAGENT BLANK

PKHT: ~~.020~~ .020 VM 3-15-95

ng: 2.31 ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Moore				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-15-95	14:00	Neil Smith 3/16/95	

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

9613479.0920

ARSENIC ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6994.-5696	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-885-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BLANK

Remarks, Calculations, Results

REAGENT BLANK

PKHT= -.002
ng= -0.78 ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Mason				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-15-95	14:00	Joel Smith 3/16/95

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

9613479.0921

SELENIUM ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8796	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODVK8

Remarks, Calculations, Results:

PK HT= .018
ng= 2.03ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massey				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-15-95	14:00	Joe Smith 3/16/95

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

9613479.0922 3-15-95

.480 67.09ng .500ml direct LMCS 44N11H

.377 52.59ng 2.0ml R6996 spike (48N11C)

.016 1.75ng 2.0ml R6996 Dup

.008 0.62ng 2.0ml R6996

.311 43.29ng 2.0ml R6995 spike (48N11C)

.024 2.88ng 2.0ml R6995 Dup

.018 2.03ng 2.0ml R6995

.020 2.31ng 2.0ml digested Blank R6994

.300 41.75ng 2.0ml digested std R6993

-.002 -0.78ng 2.0ml direct Blank R6994

.366 51.04ng .500ml direct LMCS 44N11H R6993

.714 100ng 1.0ml 44N11H Cal std

.346 50ng .500ml 44N11H Cal std

.206 25ng .250ml 44N11H Cal std

.034 5ng .050ml 44N11H Cal std

-.004 0ng

14:00 03-15-95 Se Valerie L Massie

Analyte: Se **Analyst:** Valerie L Massie
Date: 3-15-95 **Start Time:** 07:40 **End Time:** 14:00

MHS 20 Data:

Signal: Concentration
Mode: PKHT
Recorder: TC3
Time: 30 sec.
Expansion: 10

Purge I: 40
Reaction: 10 sec.
Purge II: 50
Temperature: 975 C
EDL Power: 6 Watts

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: 0.0036 absorbance units
Slope: 0.0071 abs. units / concentration
Correlation: 0.9987 (unitless)

14:	Intercept: 0.0036
13:	Slope: 0.0071
12:	0.9987
11:	1.0208
9:	-0.7833
8:	41.7456
7:	2.3148
6:	2.0332
5:	2.8781
4:	43.2947
3:	0.6249
2:	1.7515
1:	52.5891
	67.0940

Valerie L Massie 3-15-95

PERKIN-ELMER

Chart No. CP57-02-0

BEST AVAILABLE COPY

Atomic Absorption Runlog: Se Hydride Analysis

Analyst: Valerie Massie Date: 3-15-95
Instrument: PE 2280 Property #: WB27979
Analyte: Se Batch #: 5569 Start Time: 07:40 End Time: 14:00

Calibration Data: Intercept: 0.0036 absorbance units
Slope: 0.0071 abs. units / concentration
Correlation: 0.9987 (unitless)

Sample Name (Std. ID#)	Sample Point	Sam. Size, (mL)	D or A*	PKHT (Abs.)	ng result	% Rec.	Comments	CC **
44N11 H	N/A	0.000	D	-.004	0	N/A		
	"	0.050	D	.034	5	"		
	"	0.250	D	.206	25	"		
	"	0.500	D	.346	50	"		
	"	1.000	D	.714	100	"		
R6993	direct LMCS 44N11 H	.500	D	.366	51.04	102.08		
R6994	direct Blank	2.0	D	-.002	-0.78			
R6993	digest std 48N11C	2.0	D	.300	41.75	104.36		
R6994	digest Blank	2.0	D	.020	2.31			
R6995	Purex J3/E5	2.0	D	.018	2.03			
R6995D	Purex J3/E5 Dup	2.0	D	.024	2.88			
R6995S	Purex J3/E5 spike 48N11C	2.0	D	.311	43.29	108.24		
R6996	Purex J3/E5 sample	2.0	D	.008	0.62			
R6996D	Purex J3/E5 Dup	2.0	D	.016	1.75			
R6996S	Purex J3/E5 spike 48N11C	2.0	D	.377	52.59	131.47		
R6997	direct LMCS 44N11 H	.500	D	.480	67.09	134.19		

* Sample prep. descriptors: D=direct, A=acid digest
** CC=control chart. Check off when control chart entries are made.

9613479.0924

SELENIUM ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8896	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-865-181	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODVK8

Remarks, Calculations, Results

DUPLICATE SAMPLE

PKHT= .024
ng= 2.88ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Mason				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-15-95	11:00	Joe Smith 3/10/95	

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

9613479.0925

SELENIUM ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-8996	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
2.0 ml	BODVK8

Remarks, Calculations, Results

SAMPLE ...KED ID R6995
SPIKE ID 48N11C
SPIKE VOLUME

PKHT= .311
ng= 43.29ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Mason				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-15-95	14:00	Joel Smith 3/16/95	

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

9613479.0926

SELENIUM ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-8796	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0ml	BODVK9

Remarks, Calculations, Results:

PK HT = .008
ng = 0.62ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-15-95	14:00	Joel Smith 3/16/95	

54-6800-061 (R-10 83)

9613479.0927

SELENIUM ANALYSIS

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-8896	PUREX J3/E5	2-14-95	11:51	25

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0ml	[illegible]

Remarks Calculations Results

DUPLICATE SAMPLE

PKHT= .016
ng= 1.75ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-15-95	14:00	[illegible] 3/16/95	[illegible]

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

SELENIUM ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8996	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-885-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0ml	BODVK9

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6996
SPIKE ID 48 N11C
SPIKE VOLUME

PKHT= .377
ng= 52.59ng

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massey				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-15-95	14:00	Noel Smith 3/16/95	

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

9613479.0929

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6997.-5596	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .500 ml	STD

Remarks, Calculations, Results

EDP R743 SE/HYDRD

STD# 44N11H RESULT .134

STD VAL .100 %REC 134%

PKHT= .480
ng= 67.09ng

OUT FOR RERUN

OSCR #6937

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Calvin L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-15-95	14:00	Noel Smith 3/16/95

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

Selenium: LA-365-131 (C-0) Se LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.500	
STANDARD	Se ng (Nanograms)	67.09	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.134	N/A
5569	Conc Se µg/L (PPB)	134.2	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6997-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/15/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			

		STANDARD	DUPLICATE
Date			
03/15/95	Conc Se µg/mL	1.34E-01	
Time		N/A	
02:00 PM		N/A	

Data Entry by:		Date:	03/16/95
Approved by:	Noel Smith	Date:	3/16/95

Form 365131_1 Rev. 1.0

9613479.0930

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R 6988- R 6992	Customer ID: BODPS9 PUREX J3/E5
Analysis: As	Sample Prep: ACID DIGEST

Instrument: PE2280(Hydride AA) WB27979	Procedure/ Rev: LA 355-131 / C-0
Technologist: Valerie Massie	Date: 03/02/95
Starting Time: 07:40	Temperature 900 C
Ending Time: 14:15	Chemist: R.A. Esch

Comments: Batch # 5566

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R 6988-5595	11	END STANDARD	R 6992-5595
2	REAGENT BLANK	R 6989-5695	12		
3	DIGESTED LMCS	R 6988-8595	13		
4	DIGESTED BLANK	R 6989-8695	14		
5	DIGESTED SAMPLE	R 6990-8795	15		
6	DUPLICAATE SAMPLE	R 6990-8895	16		
7	SPIKED SAMPLE	R 6990-8995	17		
8	DIGESTED SAMPLE	R 6991-8795	18		
9	DUPLICATE SAMPLE	R 6991-8895	19		
10	SPIKED SAMPLE	R 6991-8995	20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	44N11G .250ml			
DIGESTED LMCS	48N11C DF=50			
DIGESTED SPIKE	48N11C DF=50			

A-6000-881 (03/92)

ANALYTICAL BATCH SUMMARY SHEET

METHOD:	DATE START:	BATCH #5566
LA-355-131	3/2/95	
PREPARED BY:	DATE COMPLETE:	
R. A. Esch	3/3/95	

	UNITS:		ug/mL	ug/mL	ug/mL			ug/mL	
SPL NAME	SPL ID	ANALYTE	RESULT #1	RESULT #2	AVERAGE	RPD%	%REC	DET LIM	% CT ER
STD/44N11G	R6988	As	0.107				107.0		
UNDIGESTED									
STD/48N11C	R6988	As	0.937				93.7		
DIGESTED									
REAGENT BLK	R6989	As	<0.003					0.003	
DIGESTED BLK	R6989	As	<0.250					0.250	
PUREX J3/E5	R6990	As	<0.250	<0.250	N/A	N/A	94.5	0.250	
BODPS9									
PUREX J3/E5	R6991	As	<0.250	<0.250	N/A	N/A	94.2	0.250	
BODPT0									
TRIP BLK	R6933	As	<0.250					0.250	
STD/44N11G	R6934	As	0.0872				87.2		
UNDIGESTED									

NARRATIVE: [X] NO SPECIAL PROBLEMS/METHOD VARIATIONS IN THIS BATCH
LIST SPECIFIC PROBLEMS/VARIATIONS FOR THIS BATCH:

RAEsch
3/6/95

9613479.0932

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5566

Serial No.	Sample Point	Date	Time Issued	Priority
R 6988.-5595	PUREX J3/E5	2-14-95	11:13	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .250 ml	STD

Remarks, Calculations, Results

EDP R741 AS/HYDRD

STD# 44N11G RESULT .107

STD VAL .100 %REC 107 %

PHT = .639

ng = 26.74ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
3-2-95	14:15	MD Smith 3/3/95

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	26.74	
Work List	Conc As µg/mL (or mg/L or PPM)	0.107	N/A
5566	Conc As µg/L (PPB)	107.0	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6988-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/02/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/02/95	Conc As µg/mL	1.07E-01	
Time		N/A	
02:15 PM		N/A	

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Data Entry by:		Date:	03/03/95
Approved by:	MD Smith	Date:	3/3/95

Form 355131_1 Rev. 1.2

9613479 0933

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6988.-8595	PUREX J3/E5	2-14-95	11:23	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml Acid dig DF=50	STD

Remarks, Calculations, Results:

EDP R747 AS/DGST

STD# 48N11C RESULT .937

STD 1.000 %REC 93.7%

PK HT= .852
ng= 37.49ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-2-95	14:15	ND Smith 3/3/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	2.000	
STANDARD	As ng (Nanograms)	37.49	
Work List	Acid Digest Dilution Factor DF	50.0	
5566	Conc As µg/mL (or mg/L or PPM)	0.937	N/A
Test Code	Conc As µg/L (PPB)	937.3	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6988-8595	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/02/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/02/95	Conc As (µg/mL)	9.37E-01	
Time		N/A	
02:15 PM		N/A	

Data Entry by:		Date:	03/03/95
Approved by:	ND Smith	Date:	3/3/95

Form 355131_3 Rev. 2.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6989.-8695	PUREX J3/E5	2-14-95	11:25	35

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0ml Acid dig DF = 100	BLANK

Remarks, Calculations, Results:
REAGENT BLANK for comparison to sample PKHT= .025 ng= -4.25ng

<2.50 E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-2-95	14:15	MD Smith 3/3/95	

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

Arsenic: LA 355-131 (C-0) As LIQUID-ACID DIGEST

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	As ng (Nanograms)	-4.25	
Work List	Acid Digest Dilution Factor DF	100.0	
5566	Conc As µg/mL (or mg/L or PPM)	-0.213	N/A
Test Code	Conc As µg/L (PPB)	-212.5	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6989-8695	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/02/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		BLANK	DUPLICATE
03/02/95	Conc As (µg/mL)	<0.250	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/03/95
Approved by:	MD Smith	Date:	3/3/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6989.-5695	PUREX J3/E5	2-14-95	11:23	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

PKHT= .054
ng= -2.79ng

< 3.00 E-3

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Masse				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-2-95	14:15	ND Smith 3/3/95	

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	As ng (Nanograms)	-2.79	
Work List	Conc As µg/mL (or mg/L or PPM)	-0.001	N/A
5566	Conc As µg/L (PPB)	-1.4	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	

LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)
Sample #	Average Conc.=(Sample + Duplicate)/2
R6989-5695	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)
03/02/95	Detection Limit is Corrected for Sample Prep/Dilution
Instrument Code	
WB27979	Detection Limit (µg/mL) = 0.003
Analyst	Detection Limit (µg/L) = 2.5
MASSIE	

		BLANK	DUPLICATE
Date			
03/02/95	Conc As µg/mL	<0.003	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/03/95
Approved by:	ND Smith	Date:	3/3/95

Form 355131_1 Rev. 1.2

9613479 0936

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6990.-8795	PUREX J3/E5	2-14-95	11:29	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml Acid dig DF=100	BODPS9

Remarks, Calculations, Results:

PKHT= .038
ng= -3.59 ng

<2.50 E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-2-95	14:15	ND Smith 3/3/95	

54-6800-051 (R-10-83)

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	As ng (Nanograms)	-3.59	
Work List	Acid Digest Dilution Factor DF	100.0	
5566	Conc As µg/mL (or mg/L or PPM)	-0.180	N/A
Test Code	Conc As µg/L (PPB)	-179.5	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF
R6990-8795	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
03/02/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
Instrument Code	
WB27979	Detection Limit (µg/mL) 0.250
Analyst	Detection Limit (µg/L) 250.00
MASSIE	

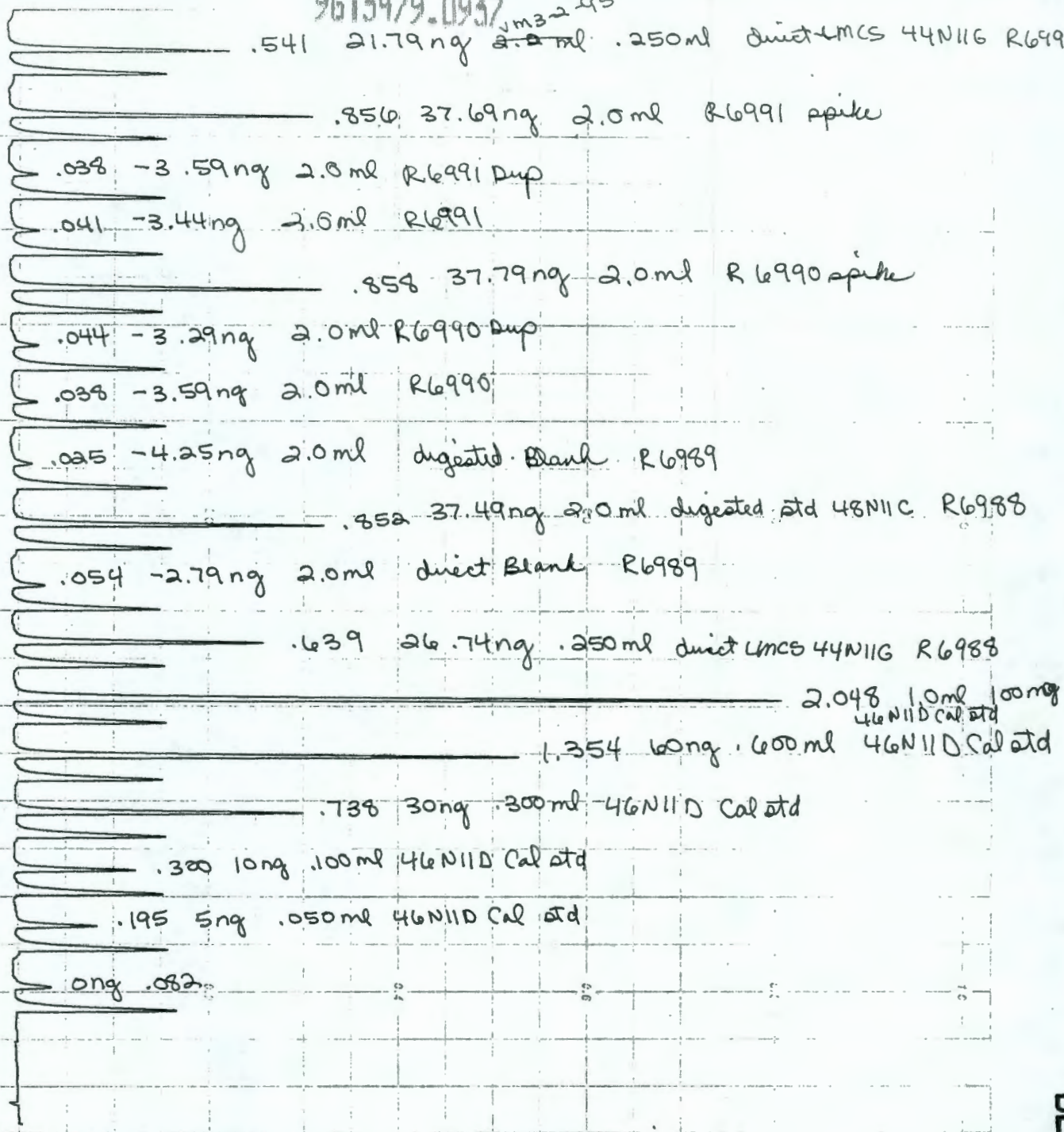
		SAMPLE	DUPLICATE
Date			
03/02/95	Conc As (µg/mL)	<0.250	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/03/95
Approved by:	ND Smith	Date:	3/3/95

233

9613479.0937 vm3-2-95



14:15 3-2-95 AS Valerie Massie

Analyte: As Analyst: Valerie L Massie
Date: 3-2-95 Start Time: 07:40 End Time: 14:15

MHS 20 Data:

Signal: Concentration Purge I: 50 sec.
Mode: PKHT vm3-2-95 Reaction: 24 sec.
Recorder: TC3 Purge II: ~~60~~ 55 sec.
Time: 40 sec. Temperature: 900 C
Expansion: 4 EDL Power: 8 Watts

Valerie L Massie 3-2-95

14:	Intercept: 0.1092
13:	Slope: 0.0198
12:	0.9988
11:	26.7388
10:	-2.7874
9:	37.4894
8:	-4.2511
7:	-3.5949
6:	-3.2921
5:	37.7923
4:	-3.4435
3:	-3.5949
2:	37.6913
1:	21.7926

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: 0.1092 absorbance units
Slope: 0.0198 abs. units / concentration
Correlation: 0.9988 (unitless)

PERKIN-ELMER
BEST AVAILABLE COPY
PERK

Atomic Absorption Runlog: As Hydride Analysis

Analyst: Valerie L Massie Date: 3-2-95
Instrument: PE 2280 Property #: WB27979
Analyte: As Batch #: 5566 Start Time: 07:40 End Time: 14:15

Calibration Data: Intercept: 0.1092 absorbance units
Slope: 0.0198 abs. units / concentration
Correlation: 0.9988 (unitless)

Sample Name (Std. ID#)	Sample Point	Sam. Size, mL	D or A*	PKHT (Abs.)	ng result	% Rec.	Comments	CC **
Cal. Std. ID	N/A	0.000	D	.082	0	N/A		
#: 46N11D	"	0.050	D	.195	5	"		
	"	0.100	D	.300	10	"		
	"	0.300	D	.738	30	"		
	"	0.600	D	1.354	60	"		
	"	1.000	D	2.048	100	"		
R6988	direct LMCS 44N11G	.250	D	.639	26.74	106.96		
R6989	direct Blank	2.0	D	.054	-2.79			
R6988	digested std 48N11C	2.0	A	.852	37.49	93.72		
R6989	digested Blk	2.0	A	.025	-4.25			
R6990	Purex J3/E5 comp.	2.0	A	.038	-3.59			
R6990D	Purex J3/E5 dup	2.0	A	.044	-3.29			
R6990S	Purex J3/E5 spike 48N11C	2.0	A	.858	37.79	94.48		
R6991	Purex J3/E5 sample	2.0	A	.041	-3.44			
R6991D	Purex J3/E5 dup	2.0	A	.038	-3.59			
R6991S	Purex J3/E5 sam spike 48N11C	2.0	A	.856	37.69	94.23		
R6992	direct LMCS 44N11G	.250	D	.541	21.79	87.17		

* Sample prep. descriptors: D=direct, A=acid digest
** CC=control chart. Check off when control chart entries are made.

9613479.0939

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

CALIBRATION RECORD

Analyte:	As		
Procedure:	LA 355-131	Revision:	C-0
Instrument:	PE2280 (Hydride AA)	Property No.:	WB27979
Technologist	Valerie Massie	Payroll No.: N/A	Date: 03/02/95

Calibration Standard ID:	46N11D
Analyte Concentration:	.100ppm
Type of Calibration:	LINEAR

	Dilution	Concentration	Instrument Reading Unit
1	.000mL	0 ng	.082
2	.050mL	5 ng	.195
3	.100mL	10 ng	.300
4	.300mL	30 ng	.738
5	.600mL	60 ng	1.354
6	1.000ml	100 ng	2.048
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Comments: r=.9988

Y intercept= .1092

slope=.0198

A-6000-882 (03/92)

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6990.-8895	PUREX J3/E5	2-14-95	11:29	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml Acid dig DF=100	BODPS9

Remarks, Calculations, Results
DUPLICATE SAMPLE
PKHT= .044
ng= -3.29ng
<2.50E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-2-95	14:15	MD Smith 3/3/95

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		DUPLICATE	DUPLICATE
Type	Sample Size in mL SS	2.000	2.000
DUPLICATE	As ng (Nanograms)	-3.59	-3.29
Work List	Acid Digest Dilution Factor DF	100.0	100.0
5566	Conc As µg/mL (or mg/L or PPM)	-0.180	-0.165
Test Code	Conc As µg/L (PPB)	-179.5	-164.5
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
LIQUID	Relative % Difference	N/A	N/A
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6990-8895	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/02/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		DUPLICATE	DUPLICATE
03/02/95	Conc As (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
02:15 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:		Date:	03/03/95
Approved by:	MD Smith	Date:	3/8/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6990.-8995	UREX J3/E5	[illegible]	11:29	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml Samp. Acid dig DF=100	BODPS9

Remarks, Calculations, Results:
SAMPLE SPIKED ID R6990
SPIKE ID 48N11C
SPIKE VOLUME
2.0 ml → 100 ml final vol.
DF=50

PKHT= .858
ng= 37.79 ng

94.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie R Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-2-95	14:15	ND Smith 3/3/95

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

Arsenic: LA-355-131 (C-0) As LIQUIDS-ACID DIGEST

		SAMPLE	SPIKE
Type	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
SPIKE	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	37.79
5566	ng of Sample ngSAM	-3.59	N/A
Test Code	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6990-8995	% Recovery	N/A	94.5%
Calibration Date			
03/02/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/02/95			
Time	% Recovery =	94.5%	
02:15 PM			

Data Entry by: [signature] Date: 03/03/95
Approved by: ND Smith 3/3/95 Date: 3/3/95

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PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-8895	PUREX J3/E5	2-14-95	11:30	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPTO

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PKHT= ~~.041~~ .038 VM3-295
ng= ~~-3.44 ng~~ VM3-295
-3.59 ng

< 2.50 E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-2-95	14:15	MD Smith 3/3/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		DUPLICATE	DUPLICATE
Type	Sample Size in mL SS	2.000	2.000
DUPLICATE	As ng (Nanograms)	-3.44	-3.59
Work List	Acid Digest Dilution Factor DF	100.0	100.0
5566	Conc As µg/mL (or mg/L or PPM)	-0.172	-0.180
Test Code	Conc As µg/L (PPB)	-172.0	-179.5
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
LIQUID	Relative % Difference	N/A	N/A
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6991-8895	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/02/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		DUPLICATE	DUPLICATE
03/02/95	Conc As (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
02:15 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:		Date:	03/03/95
Approved by:	MD Smith	Date:	3/3/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991..-8795	PUREX J3/E5	2-14-95	11:30	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml acid dig DF=100	BODPTO

Remarks, Calculations, Results

PKHT= .041
ng= -3.44ng

<2.50 E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-2-95		NO Smith 3/3/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	As ng (Nanograms)	-3.44	
Work List	Acid Digest Dilution Factor DF	100.0	
5566	Conc As µg/mL (or mg/L or PPM)	-0.172	ERR
Test Code	Conc As µg/L (PPB)	-172.0	ERR
	Average Conc (µg/mL)	N/A	ERR
Matrix	Average Conc (µg/L)	N/A	ERR
LIQUID	Relative % Difference	N/A	ERR
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6991-8795	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/02/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
MASSIE			
Date		SAMPLE	DUPLICATE
03/02/95	Conc As (µg/mL)	<0.250	ERR
Time	Average Conc (µg/mL)	N/A	ERR
02:15 PM	Relative % Difference	N/A	ERR

ERR

Data Entry by:		Date:	03/03/95
Approved by:	NO Smith	Date:	3/3/95

Form 355131_3 Rev. 2.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6991.-8995	PUREX J3/E5	2-14-95	11:30	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODPTO

Remarks, Calculations, Results

SAMPLE SPIKED ID R6991
SPIKE ID 48N11C
SPIKE VOLUME

PKHT= .856
ng= 37.69ng

94.2%

~~92.4%~~ 2-3-95

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-2-95	14:15	ND Smith

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

Arsenic: LA-355-131 (C-0) As LIQUIDS-ACID DIGEST

		SAMPLE	SPIKE
Type	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
SPIKE	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	37.69
5566	ng of Sample ngSAM	-3.44	N/A
Test Code	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6991-8995	% Recovery	N/A	94.2%
Calibration Date			
03/02/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/02/95			
Time	% Recovery =		94.2%
02:15 PM			

Data Entry by:		Date:	03/03/95
Approved by:	ND Smith	Date:	3/3/95

Form 355131_4 Rev. 1.1

9613479 0015

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6992.-5595	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .250 ml	STD

Remarks, Calculations, Results

EDP R741 AS/HYDRD

STD# 44N11C RESULT 8.72E-2

STD VAL .100 %REC 87.2 %

PKHT= .541

ng= 21.79ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-2-95	14:15	ND Smith 3/3/95

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	21.79	
Work List	Conc As µg/mL (or mg/L or PPM)	0.087	N/A
5566	Conc As µg/L (PPB)	87.2	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6992-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/02/95			
Instrument Code			
WB27979			
Analyst			
MASSIE			
Date		STANDARD	DUPLICATE
03/02/95	Conc As µg/mL	8.72E-02	
Time		N/A	
02:15 PM		N/A	

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Data Entry by:		Date:	03/03/95
Approved by:	ND Smith	Date:	3/3/95

Form 355131_1 Rev. 1.2

9613479.0946

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R 6995, R 6996	Customer ID: PUREX J3/E5
Analysis: As	Sample Prep: ACID DIGEST

Instrument: PE2280(Hydride AA) WB27979	Procedure/ Rev: LA 355-131 / C-0
Technologist: Valerie L Massie	Date: 03/06/95
Starting Time: 07:40	Temperature 900 C
Ending Time: 14:15	Chemist: R.A. Esch

Comments: Batch # 5568

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R 6993-5595	11	ENDING LMCS STD	R 6997-5595
2	REAGENT BLANK	R 6994-5695	12		
3	DIGESTED LMCS	R 6993-8595	13		
4	DIGESTED BLANK	R 6994-8695	14		
5	SAMPLE	R 6995-8795	15		
6	DUPLICAATE SAMPLE	R 6995-8895	16		
7	SPIKED SAMPLE	R 6995-8995	17		
8	SAMPLE	R 6996-8795	18		
9	DUPLICATE SAMPLE	R 6996-8895	19		
10	SPIKED SAMPLE	R 6996-8995	20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	44N11G .250ml			
DIGESTED LMCS	48N11C DF=50			
DIGESTED SPIKE	48N11C DF=50			

A-6000-881 (03/92)

9613479.0947

WESTINGHOUSE HANFORD COMPANY
222-S LABORATORY
INORGANIC ANALYTICAL BATCH AND SUMMARY SHEET

Hg LIQUIDS-DIRECT: LA-325-104 (B-1)

SAMPLE #:	R6995-5797 & R6996-5797	BATCH ID:	5560
TEST CODE:		SAMPLE POINT:	PUREX J3/E5
INSTRUMENT:	WB26847	SAMPLE PREP:	DIRECT
ANALYST:	S. FULTON	ANALYSIS DATE:	03/07/95

SAMPLE TYPE	SAMPLE #	SAMPLE ID	CONC HG µg/mL	AVERAGE µg/mL	RPD%	% REC	DET LIM µg/mL
STANDARD	R6993-5597	STD	1.03E-01			103.3%	
BLANK	R6994-5697	BLANK	< 0.005				0.005
SAMPLE 1	R6995-5797	BODVK8	< 0.005				0.005
DUPLICATE 1	R6995-5897	BODVK8	< 0.005	N/A	N/A		0.005
SPIKE 1	R6995-5997	BODVK8				94.7%	
SAMPLE 2	R6996-5797	BODVK9	< 0.005				0.005
DUPLICATE 2	R6996-5897	BODVK9	< 0.005	N/A	N/A		0.005
SPIKE 2	R6996-5997	BODVK9				97.8%	
ST-END	R6997-5597	STD	9.66E-02			96.6%	

STD TYPE:	STD ID:	STD VOL:
STANDARD	51N11A	0.300 mL
SPIKE 1	51N11A	0.300 mL
SPIKE 2	51N11A	0.300 mL

NARRATIVE: **Analyst Comments:**

Chemist Comments:

DETECTION LIMITS ARE ADJUSTED FOR DIFFERENT SAMPLE SIZES.

Form Completed By:	RC JONES	Signature:	RC Jones	Date:	03/08/95
Chemist Approval:	R. ESCH	Signature:	Rael Smith	Date:	3/9/95

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9613479.0948

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 5568

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-5595	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .250 ml	STD

Remarks, Calculations, Results

EDP R741 AS/HYDRD

STD# 44N11G RESULT 1.10E-01 ppm

STD VAL 1.00-1 ppm %REC 110.0 %

PKHT= .736

ng = 27.58 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	27.58	
Work List	Conc As µg/mL (or mg/L or PPM)	0.110	N/A
5568	Conc As µg/L (PPB)	110.3	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6993-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/06/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/06/95	Conc As µg/mL	1.10E-01	
Time		N/A	
02:15 PM		N/A	

Data Entry by:	RL Jones	Date:	03/07/95
Approved by:	RAE	Date:	3/8/95

Form 355131_1 Rev. 1.2

9613479.0949

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6993.-8595	PUREX J6/L6	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml Acid dig DF = ~~100~~ 50 RJ 3-7-95	STD

Remarks. Calculations. Results

EDP R747 AS/DGST .991 ug/mL PKHT = 1.007

STD# 48N11C RESULT ~~1.98E00~~ RJ 3-7-95 ng = 39.62ng

STD 1.00 ppm %REC 99.1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
				RJ Jones
Date	Time Completed	Lab Unit Mgr		
3-6-95	14:15	3/8/95	RJ Jones	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST		STANDARD	DUPLICATE
Type	Sample Size in mL SS	2.000	
STANDARD	As ng (Nanograms)	39.62	
Work List	Acid Digest Dilution Factor DF	50.0	
5568	Conc As µg/mL (or mg/L or PPM)	0.991	N/A
Test Code	Conc As µg/L (PPB)	990.5	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6993-8595	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/06/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/06/95	Conc As (µg/mL)	9.91E-01	
Time		N/A	
02:15 PM		N/A	

Data Entry by:	RJ Jones	Date:	03/07/95
Approved by:	CB Keck	Date:	3/8/95

Form 355131_3 Rev. 2.1

9613479.0950

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6994.-8695	PUREX J3/E5	2-14-95	11:49	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml Acid dig DF=100	BLANK

Remarks, Calculations, Results:
REAGENT BLANK used for calculation PKHT= .061
for comparison w/sample ng= -2.40ng

20.250ug/ML

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie F Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

Type		BLANK	DUPLICATE
BLANK	Sample Size in mL SS	2.000	
	As ng (Nanograms)	-2.40	
Work List	Acid Digest Dilution Factor DF	100.0	
5568	Conc As µg/mL (or mg/L or PPM)	-0.120	N/A
Test Code	Conc As µg/L (PPB)	-120.0	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	

Sample #	
R6994-8695	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF
Calibration Date	Average Conc.=(Sample + Duplicate)/2
03/06/95	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
Instrument Code	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF
WB27979	

Detection Limit (µg/mL)	0.250
Detection Limit (µg/L)	250.00

Analyst		BLANK	DUPLICATE
V. MASSIE			
Date			
03/06/95	Conc As (µg/mL)	<0.250	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

9613479.8951

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6994.-5695	PUREX J3/E5	2-14-95	11:49	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
?2.0 ml	BLANK

Remarks, Calculations, Results
REAGENT BLANK

PKHT= .086
ng= -1.29 ng

<0.003 ug/ML

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT

		BLANK	DUPLICATE
Type	Sample Size in mL SS	2.000	
BLANK	As ng (Nanograms)	-1.29	
Work List	Conc As µg/mL (or mg/L or PPM)	-0.001	N/A
5568	Conc As µg/L (PPB)	-0.6	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6994-5695	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
03/06/95	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.003	
Analyst	Detection Limit (µg/L) =	2.5	
V. MASSIE			
Date		BLANK	DUPLICATE
03/06/95	Conc As µg/mL	<0.003	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_1 Rev. 1.2

9613479.0952

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-8795	PUREX J3/E5	2-14-95	11:50	25

Determination	Method-Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml Acid deg DF=100	BODVK8

Remarks, Calculations, Results

PKHT= .072
ng= -1.91 ng

<0.250 ug/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie T. Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	As ng (Nanograms)	-1.91	
Work List	Acid Digest Dilution Factor DF	100.0	
5568	Conc As µg/mL (or mg/L or PPM)	-0.096	N/A
Test Code	Conc As µg/L (PPB)	-95.5	N/A
		N/A	
Matrix		N/A	
LIQUID		N/A	
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6995-8795	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/06/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			
Date		SAMPLE	DUPLICATE
03/06/95	Conc As (µg/mL)	<0.250	
Time		N/A	
02:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_3 Rev. 2.1

9613478.0863

ANALYTICAL BATCH SUMMARY SHEET

METHOD:			DATE START:					BATCH #5568	
LA-355-131			3/6/95						
PREPARED BY:			DATE COMPLETE:						
R. A. Esch			3/8/95						
	UNITS:		ug/mL	ug/mL	ug/mL			ug/mL	
SPL NAME	SPL ID	ANALYTE	RESULT #1	RESULT #2	AVERAGE	RPD%	%REC	DET LIM	% CT ER
STD/44N11G	R6993	As	0.110				110.0		
UNDIGESTED									
STD/48N11C	R6993	As	0.991				99.1		
DIGESTED									
REAGENT BLK	R6994	As	<0.003					0.003	
DIGESTED BLK	R6994	As	<0.250					0.250	
PUREX J3/E5	R6995	As	<0.250	<0.250	N/A	N/A	88.7	0.250	
BODVK8									
PUREX J3/E5	R6996	As	<0.250	<0.250	N/A	N/A	92.5	0.250	
BODVK9									
STD/44N11G	R6997	As	0.101				101.0		
UNDIGESTED									

NARRATIVE: [X] NO SPECIAL PROBLEMS/METHOD VARIATIONS IN THIS BATCH
LIST SPECIFIC PROBLEMS/VARIATIONS FOR THIS BATCH:

RAEsch
3/8/95

BEST AVAILABLE COPY

9613479.0954

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

CALIBRATION RECORD

Analyte:	As		
Procedure:	LA 355-131	Revision:	C-0
Instrument:	PE2280 (Hydride AA)	Property No.:	WB27979
Technologist	Valerie L Massie	Payroll No.: N/A	Date: 03/06/95

Calibration Standard ID:	46N11D
Analyte Concentration:	.100ppm
Type of Calibration:	LINEAR

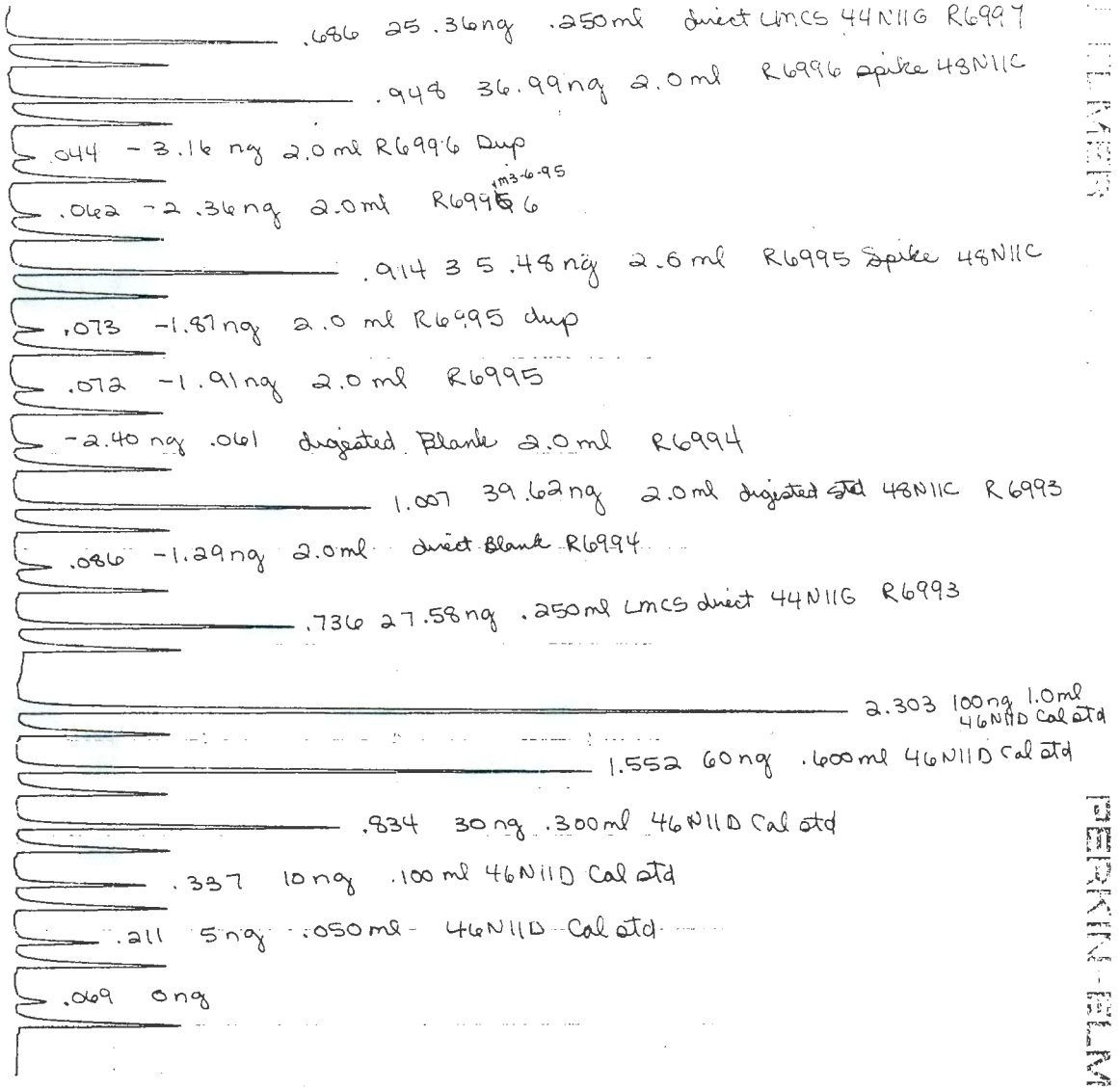
	Dilution	Concentration	Instrument Reading Unit
1	.000mL	0 ng	.069
2	.050mL	5 ng	.211
3	.100mL	10 ng	.337
4	.300mL	30 ng	.834
5	.600mL	60 ng	1.552
6	1.000ml	100 ng	2.303
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Comments: r=.9980

Y intercept= .1151

slope=.0225

A-6000-882 (03/92)



Analyte: As Analyst: Valerie L Massie
Date: 3-6-95 Start Time: 07:40 End Time: 14:15

MHS 20 Data:

Signal: Concentration Purge I: 50 sec.
Mode: PKHT Reaction: 24 sec.
Recorder: TC3 Purge II: 60 sec.
Time: 40 sec. Temperature: 900 C
Expansion: 4 EDL Power: 8 Watts

Valerie L Massie 3-6-95

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: 0.1151 absorbance units
Slope: 0.0225 abs. units / concentration
Correlation: 0.9980 (unitless)

14:	Intercept: 0.1151
13:	Slope: 0.0225
12:	0.9980
11:	27.5782
10:	-1.2925
9:	39.6151
8:	-2.4029
7:	-1.9143
6:	-1.8699
5:	35.4844
4:	-2.3585
3:	-3.1580
2:	36.9945
1:	25.3574

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Atomic Absorption Runlog: As Hydride Analysis

Analyst: Valerie M Massie Date: 3-6-95
Instrument: PE 2280 Property #: WB27979
Analyte: As Batch #: 5568 Start Time: 07:40 End Time: 14:15

Calibration Data: Intercept: 0.1151 absorbance units
Slope: 0.0225 abs. units / concentration
Correlation: 0.9980 (unitless)

Room Temp. during Run 88°F.

Sample Name (Std. ID#)	Sample Point	Sam. Size, mL	D or A*	PKHT (Abs.)	ng result	% Rec.	Comments	CC **
Cal. Std. ID	N/A	0.000	D	.069	0	N/A		
#46N11D	"	0.050	D	.211	5	"		
	"	0.100	D	.337	10	"		
	"	0.300	D	.834 JM 3-6-95	30	"		
	"	0.600	D	1.552	60	"		
	"	1.000	D	2.303	100	"		
R6993	direct LMCS 44N11G	.250	D	.736	27.58	110.31		
R6994	direct Blank	2.0	D	.086	-1.29			
R6993	digested std 48N11C	2.0	JM3-6-95 DA	1.007	39.62	99.04		
R6994	digested Blank	2.0	JM3-6-95 DA	.061	-2.40			
R6995	Purex J3/E5 samp	2.0	A	.072	-1.91			
R6995 D	Purex J3/E5 Dup	2.0	A	.073	-1.87			
R6995 S	Purex J3/E5 spike 48N11C	2.0	A	.914	35.48	88.71		
R6996	Purex J3/E5 samp	2.0	A	.062	-2.36			
R6996D	Purex J3/E5 Dup	2.0	A	.044	-3.16			
R6996S	Purex J3/E5 spike 48N11C	2.0	A	.948	36.99	92.49		
R6997	direct LMCS 44N11G	.250	D	.686	25.36	101.43		

* Sample prep. descriptors: D=direct, A=acid digest
** CC=control chart. Check off when control chart entries are made.

9613479.0957

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6995.-8895	PUREX J3/E5	2-14-95	11:50	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml Acid dig DF= 100	BODVK8

Remarks, Calculations, Results
DUPLICATE SAMPLE

PKHT= .073
ng= -1.87ng

RPD N/A-samp and Dup with < Det. Lim.

LO.250ug/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie H Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	2.000
SAMPLE	As ng (Nanograms)	-1.91	-1.87
Work List	Acid Digest Dilution Factor DF	100.0	100.0
5568	Conc As µg/mL (or mg/L or PPM)	-0.096	-0.094
Test Code	Conc As µg/L (PPB)	-95.5	-93.5
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
LIQUID	Relative % Difference	N/A	N/A
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6995-8895	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/06/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			
Date		SAMPLE	DUPLICATE
03/06/95	Conc As (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
02:15 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

9613479.0958

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6995.-6995	PUREX J3/E5	2-14-95	11:50	25

Determination	Method Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml Semp. Acid dig DF = 100	BODVK8

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6995 PKHT= .914
SPIKE ID 48N11C ng= 35.48 ng
SPIKE VOLUME 2 ML-
FINAL VOL 100ML
spk DF = 50
Spk Val. = 1.0 ppm
88.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.	
3-6-95	14:15	3/8/95	

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

Arsenic: LA-355-131 (C-0) As LIQUIDS-ACID DIGEST

Type		SAMPLE	SPIKE
SPIKE	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	35.48
5568	ng of Sample ngSAM	-1.91	N/A
Test Code	Final Acid Digest vol. (mL) ADVOL	N/A	100.00
		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6995-8995	% Recovery	N/A	88.7%
Calibration Date			
03/06/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
V. MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/06/95			
Time	% Recovery =	88.7%	
02:15 PM			

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_4 Rev. 1.1

9613479.0959

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-8795	PUREX J3/E5	2-14-95	11:51	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml Acid dig DF = 100	BODVK9

Remarks, Calculations, Results:

PKHT= .062
ng= -2.36ng

LO. 250ug/ml

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

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

54 (8300-061 (R-10-83)

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	
SAMPLE	As ng (Nanograms)	-2.36	
Work List	Acid Digest Dilution Factor DF	100.0	
5568	Conc As µg/mL (or mg/L or PPM)	-0.118	ERR
Test Code	Conc As µg/L (PPB)	-118.0	ERR
	Average Conc (µg/mL)	N/A	ERR
Matrix	Average Conc (µg/L)	N/A	ERR
LIQUID	Relative % Difference	N/A	ERR
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6996-8795	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/06/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			
Date		SAMPLE	DUPLICATE
03/06/95	Conc As (µg/mL)	<0.250	
Time	Average Conc (µg/mL)	N/A	ERR
02:15 PM	Relative % Difference	N/A	ERR

ERR

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_3 Rev. 2.1

9613479.0960

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6996.-8895	PUREX. J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	KP51T	0

Sample Size	Customer ID
? 2.0 ml Acid dig DF = 100	BODVK9

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PKHT = .044
ng: -3.16 ng

RPD N/A samp. & Dup both < Det Lim

<0.250 ug/mL

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

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic: LA-355-131 (C-0) As LIQUID-ACID DIGEST

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	2.000	2.000
SAMPLE	As ng (Nanograms)	-2.95	-3.16
Work List	Acid Digest Dilution Factor DF	100.0	100.0
5568	Conc As µg/mL (or mg/L or PPM)	-0.118	-0.158
Test Code	Conc As µg/L (PPB)	-118.0	-158.0
	Average Conc (µg/mL)	N/A	N/A
Matrix	Average Conc (µg/L)	N/A	N/A
LIQUID	Relative % Difference	N/A	N/A
Sample #	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)*DF		
R6996-8895	Average Conc.=(Sample + Duplicate)/2		
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
03/06/95	Detection Limit = (5 ng/SS)*(1µg/1000ng)*DF		
Instrument Code			
WB27979	Detection Limit (µg/mL)	0.250	
Analyst	Detection Limit (µg/L)	250.00	
V. MASSIE			
Date		SAMPLE	DUPLICATE
03/06/95	Conc As (µg/mL)	<0.250	<0.250
Time	Average Conc (µg/mL)	N/A	N/A
02:15 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_3 Rev. 2.1

9613479.0961

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6996.-8995	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? 2.0 ml	BODVK9

Remarks, Calculations, Results

SAMPLE SPIKED ID R6996
SPIKE ID 48N11C
SPIKE VOLUME 2 mL
FINAL 100 mL

PKHT = .948
ng = 36.99 ng

92.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic: LA-355-131 (C-0) As LIQUIDS-ACID DIGEST

		SAMPLE	SPIKE
Type	Sample (mL)Vol. Acid Dig. Used SAVOL	2.00	N/A
SPIKE	Spike Std Volume (mL) SSVOL	N/A	2.000
Work List	ng of Spike + Sample ngSSAM	N/A	36.99
5568	ng of Sample ngSAM	-2.36	N/A
Test Code	Final Acid Digest Vol. (mL) ADVOL	N/A	100.00
		N/A	N/A
Matrix	Spike Std Dilution Factor SPDF	N/A	50.0
LIQUID	Spike Std ID	N/A	48N11C
Sample #	Spike Std Value (ppm) SS VAL	N/A	1.000
R6996-8995	% Recovery	N/A	92.5%
Calibration Date			
03/06/95	Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery		
Instrument Code			
WB27979	Spike Std. Dilution Factor = ADVOL/SSVOL		
Analyst			
V. MASSIE	% Recovery = {([{(ngSSAM/SAVOL)*(1/1000)}-{(0/SAVOL)*(1/1000)}]*SPDF)/SS VAL}*100		
Date			
03/06/95			
Time	% Recovery =	92.5%	
02:15 PM			

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_4 Rev. 1.1

9613479.0962

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6997.-5595	PUREX J3/E5	2-14-95	11:51	25

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP51T	0

Sample Size	Customer ID
? .250 ml	STD

Remarks, Calculations, Results

EDP R741 AS/HYDRD

STD# 44N116 RESULT 1.01E-01 ug/mL

STD VAL 1.00-1 ug/mL %REC 101 %

PKHT= .686

ng= 25.36ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-6-95	14:15	3/8/95	

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

Arsenic : LA-355-131 (C-0) As LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	25.36	
Work List	Conc As µg/mL (or mg/L or PPM)	0.101	N/A
5568	Conc As µg/L (PPB)	101.4	N/A
Test Code		N/A	
		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6997-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
03/06/95			
Instrument Code			
WB27979			
Analyst			
V. MASSIE			
Date		STANDARD	DUPLICATE
03/06/95	Conc As µg/mL	1.01E-01	
Time		N/A	
02:15 PM		N/A	

Data Entry by:		Date:	03/07/95
Approved by:		Date:	3/8/95

Form 355131_1 Rev. 1.2