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1997 ANNUAL POST-CLOSURE GROUNDWATER MONITORING REPORT FEDERAL PAPER BOARD COMPANY, INC. WILMINGTON, NORTH CAROLINA

Prepared for:

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1.0 INTRODUCTION

This annual report summarizes the results of the post-closure groundwater monitoring program conducted at the Federal Paper Board facility in Wilmington, North Carolina, during 1997. Groundwater samples were collected and analyzed during February and August of 1997. The results of the seventh semiannual sampling event (first of 1997) were prepared for Federal Paper Board by Radian International, and submitted to the North Carolina Department of Environment, Health, and Natural Resources on March 10, 1997. The results of the eighth semiannual sampling event (second of 1997) are incorporated in this annual report.

The seventh semiannual monitoring episode included analysis of groundwater samples collected from monitoring wells MW-6, MW-7, MW-9, and MW-12. The eighth semiannual monitoring episode included analysis of water samples collected from monitoring wells MW-10, MW-23, and MW-24 in addition to the four well sampled semiannually. All sampling and analytical methods follow procedures described in the Revised Post-Closure Plan (Radian, June 1993). Analytical results were validated for accuracy and precision according to industry-accepted protocols. A discussion of the data quality evaluation results, a summary of the qualified data, and copies of the complete laboratory reports are included in Appendix A.

2.0 GROUNDWATER QUALITY

Figure 2-1 illustrates the locations of all on-site monitoring wells, including monitoring wells that are sampled semiannually for the post-closure groundwater monitoring program. Field measurements recorded during sampling are provided in Tables 2-1 and 2-2 and analytical results are included in Appendix A.

Figure 2-2 illustrates a plan view of the extent of total volatile organic compounds (VOCs) detected in groundwater. Data from the 1997 sampling events indicate a groundwater plume extending to the west and southwest of the former tank farm at reduced concentrations from measurements of analytes reported in 1996 (1996 Annual Post-Closure Groundwater Monitoring Report). The analytical results show a decrease in acetone, MEK, and toluene concentrations from those measured in 1994. Analytical results for other minor organic constituents show little change over the entire monitoring period.

Analytical data from groundwater samples obtained from the lower aquifer system reveal no evidence of contamination. As shown in Figure 2-3, the vertical extent of VOCs is limited to a depth of approximately 15 feet by the presence of a confining layer.

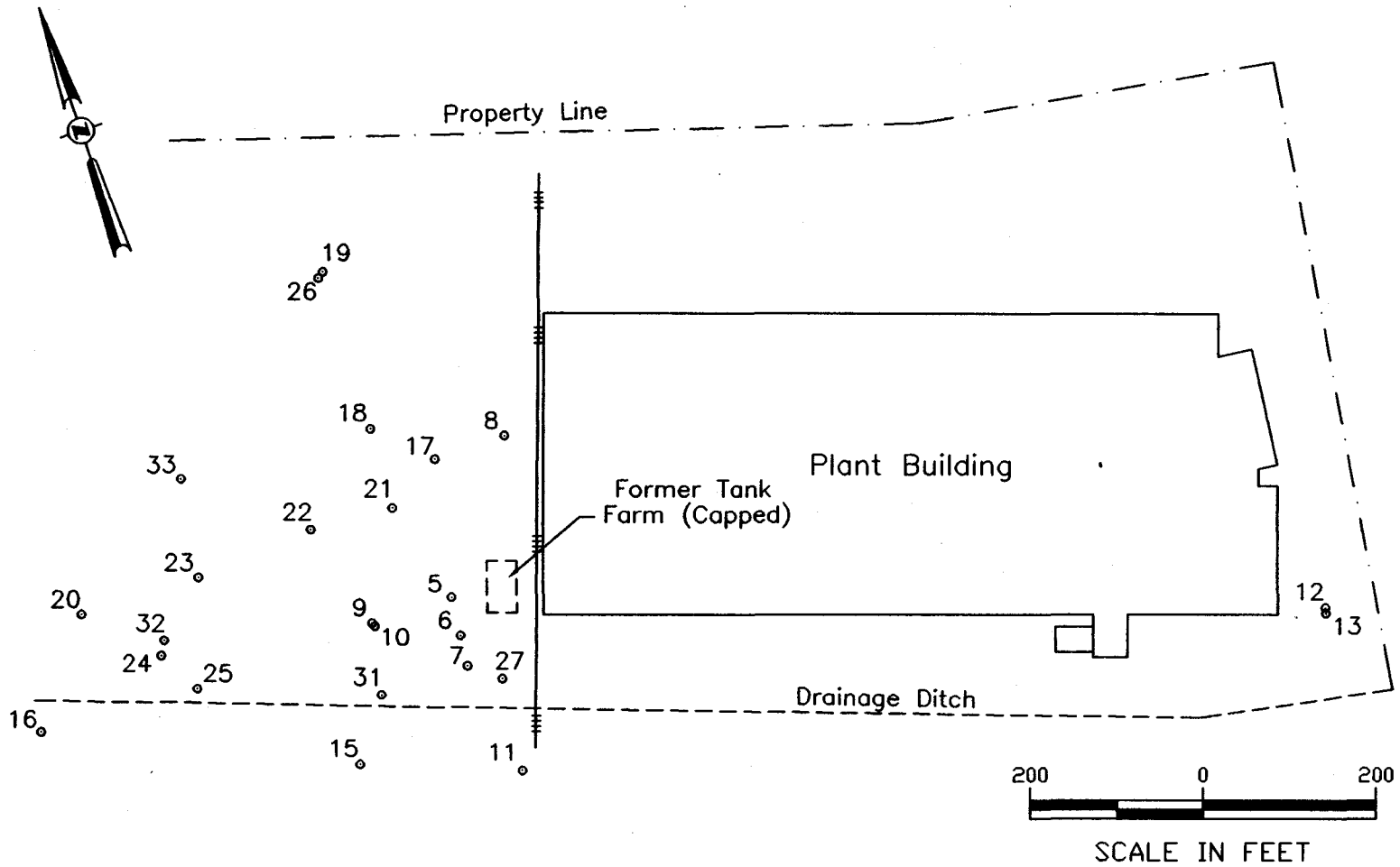


Figure 2–1. Monitoring Well Locations
Federal Paper Board Company, Wilmington, North Carolina

AC–0641

Table 2-1

Field Measurements, Seventh Annual Sampling
Federal Paper Board Company, Wilmington, North Carolina
February 19, 1997

Well	Bailed Volume (gallons)	pH	Specific Conductance (µS)	Temperature (°C)	Time
MW-6	7.0	4.7	1,000	15.5	09:45
MW-7	4.5(dry)	5.9	125	14.5	08:40
MW-9	7.5	6.2	420	16.0	09:15
MW-12	7.5	5.4	195	16.0	08:00

Table 2-2

Field Measurements, Eighth Semiannual Sampling
Federal Paper Board Company, Wilmington, North Carolina
August 6 and 7, 1997

Well	Bailed Volume (gallons)	pH	Specific Conductance (µS)	Temperature (°C)	Time
MW-6	6.0	5.5	750	21.0	09:33
MW-7	5.0 (dry)	6.4	225	20.0	08:16
MW-9	6.5	6.0	525	20.5	08:55
MW-10	25	7.6	200	19.5	12:28
MW-12	7.5	5.5	210	22.0	13:15
MW-23	4.5	6.0	320	20.0	13:55
MW-24	6.0	6.6	440	18.5	14:28

Wells MW-10, -12, -23, and -24 were sampled on August 6, 1997.
Wells MW-6, -7, and -9 were sampled on August 7, 1997.

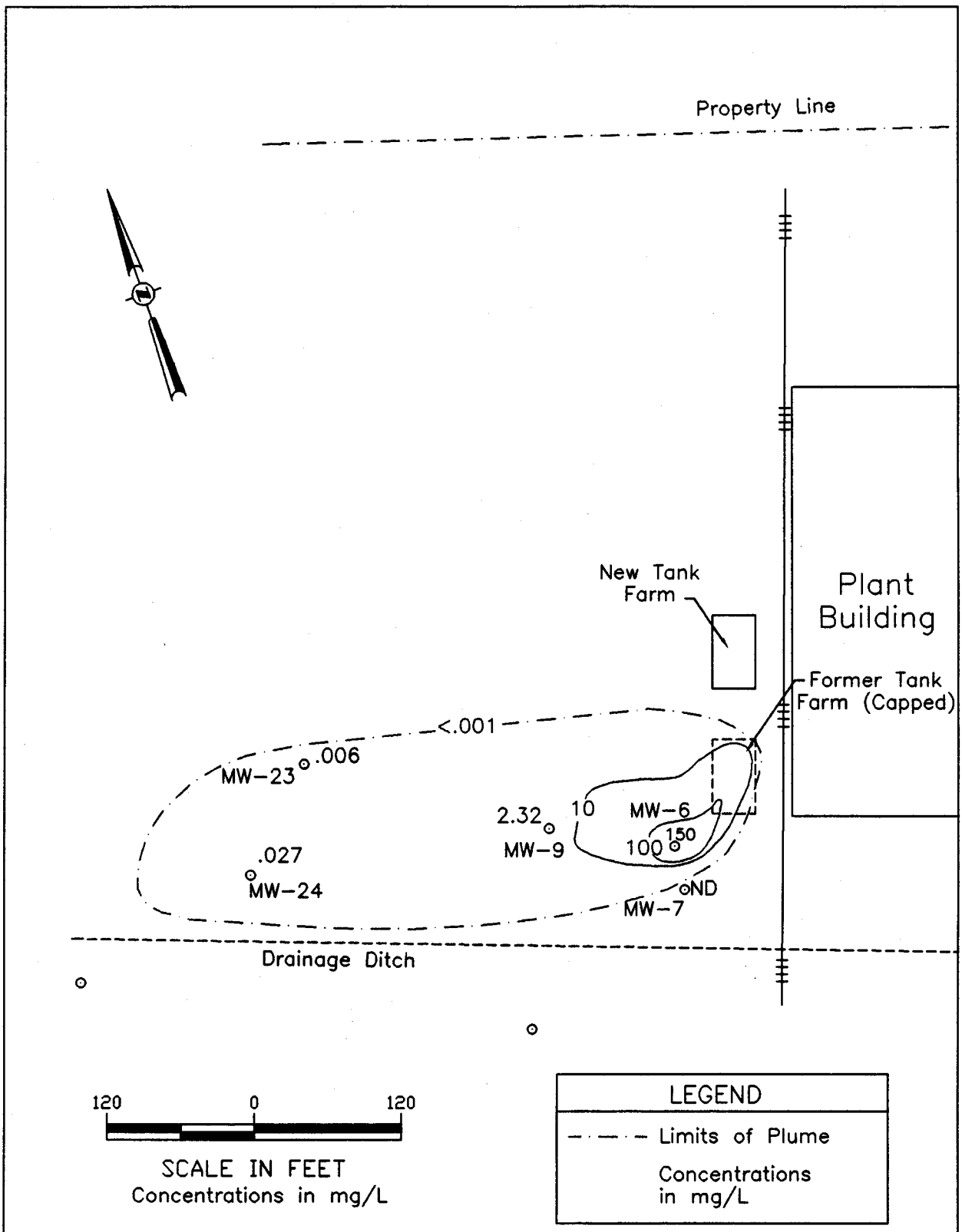
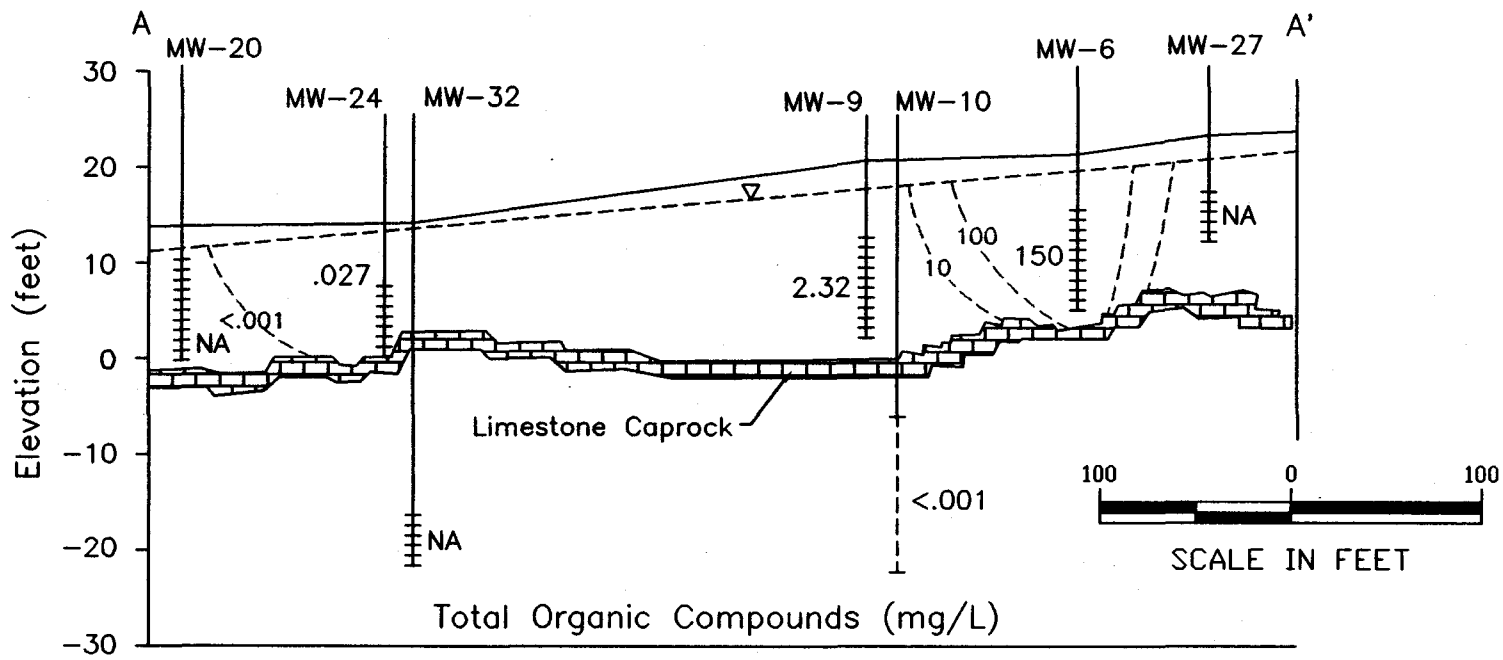
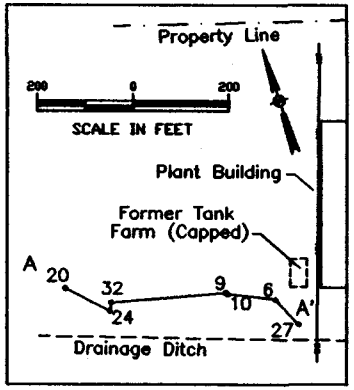


Figure 2-2. Lateral Distribution of Total VOCs in Groundwater, August 1997, Federal Paper Board Co., Wilmington, NC

AC-1390





LEGEND

	Denotes Uncased (open) Interval
	Screened Interval
ND	Not Detected
NA	Not Analyzed
	Approximate Water Table

Figure 2-3. Distribution of Total VOCs Along Cross Section A-A'
August 1997, Federal Paper Board Company, Inc., Wilmington, NC

AC-1391

3.0 GROUNDWATER FLOW

Tables 3-1 and 3-2 provide the static water-level measurements for both sampling events of 1997. Figure 3-1 is a groundwater-level contour map of the upper aquifer system based on data collected during August of 1997. As illustrated in the figure, groundwater flow direction at the site is towards the west-southwest which is consistent with previous measurements. Figure 3-2 provides a groundwater-level contour plot of the measurements collected from wells installed in the lower aquifer.

Groundwater velocity at the site was calculated using values of hydraulic conductivity, hydraulic gradient, and porosity obtained during assessment activities in 1993. An average seepage velocity of 0.8 feet/day was obtained using a value of 10 feet/day for hydraulic conductivity, 0.013 for hydraulic gradient, and 17% for effective porosity. This represents an average velocity for groundwater flow and does not take into account retention characteristics of the substrate which would retard the movement of contaminants. Therefore, this velocity value should be considered a maximum estimate for contaminant migration. Based on an evaluation of analytical results and groundwater flow direction, the present monitoring well system is capable of monitoring groundwater at the site.

Table 3-1

Static Water Level Measurements
Federal Paper Board Company, Wilmington, North Carolina
February 18, 1997

Monitoring Well	Top of Casing Elevation (feet above msl)	Depth to Water (Feet)	Groundwater Elevation (feet above msl)
MW-5	25.95	6.43	19.52
MW-6	25.12	5.60	19.52
MW-7	25.69	6.00	19.69
MW-8	25.70	5.25	20.45
MW-9	22.15	4.24	17.91
MW-10	23.06	6.70	16.36
MW-11	24.80	3.15	21.65
MW-12	29.24	4.73	24.51
MW-13	29.47	5.42	24.05
MW-15	22.34	4.15	18.19
MW-16	16.58	6.15	10.43
MW-17	22.26	2.75	19.51
MW-18	21.54	3.38	18.16
MW-19	20.98	4.63	16.35
MW-20	14.92	3.36	11.56
MW-21	22.20	3.23	18.97
MW-22	20.74	3.54	17.20
MW-23	18.30	2.47	15.83
MW-24	16.30	0.95	15.35
MW-25	17.81	4.83	12.98
MW-26	20.56	5.36	15.20
MW-27	22.85	2.76	20.09
MW-31	22.91	5.62	17.29
MW-32	17.28	5.15	12.13
MW-33	17.32	2.08	15.24

Table 3-2

Static Water Level Measurements
Federal Paper Board Company, Wilmington, North Carolina
August 6, 1997

Monitoring Well	Top of Casing Elevation (feet above msl)	Depth to Water (feet)	Water Level Elevation (feet above msl)
MW-5	25.95	7.57	18.38
MW-6	25.12	6.56	18.56
MW-7	25.69	6.72	18.97
MW-8	25.70	5.60	20.10
MW-9	22.15	5.55	16.60
MW-10	23.06	8.25	14.81
MW-11	24.80	4.58	20.22
MW-12	29.24	4.75	24.49
MW-13	29.47	5.76	23.71
MW-15	22.34	6.42	15.92
MW-16	16.58	7.09	9.49
MW-17	22.26	3.75	18.51
MW-18	21.54	4.53	17.01
MW-19	20.98	4.86	16.12
MW-20	14.92	4.72	10.20
MW-21	22.20	4.63	17.57
MW-22	20.74	5.06	15.68
MW-23	18.30	3.42	14.88
MW-24	16.30	1.95	14.35
MW-25	17.81	5.40	12.41
MW-26	20.56	6.32	14.24
MW-27	22.85	4.25	18.60
MW-31	22.91	6.43	16.48
MW-32	17.28	7.12	10.16
MW-33	17.32	3.29	14.03

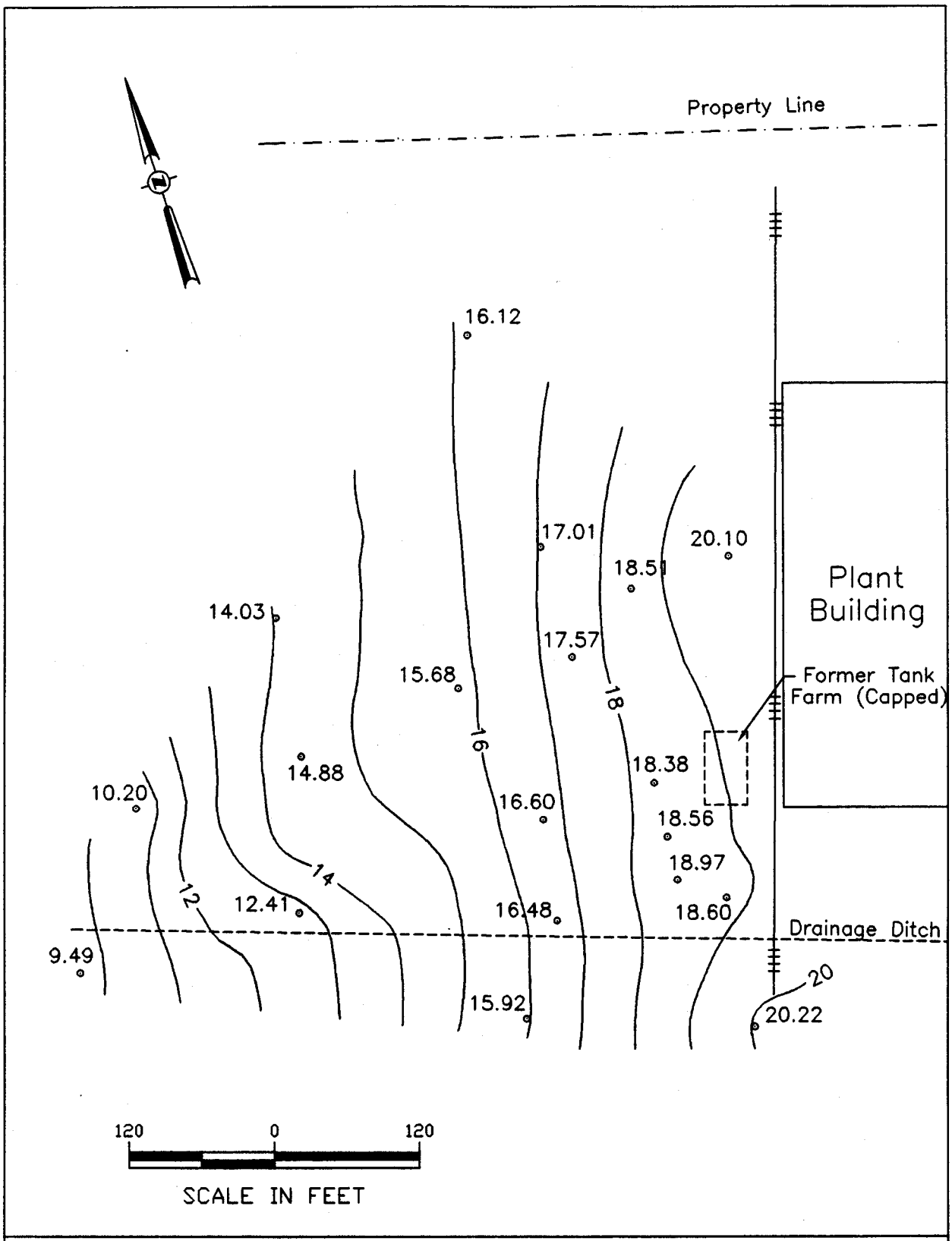


Figure 3–1. Groundwater Elevation Contour Map for Upper Aquifer (8/6/97) Federal Paper Board Co., Wilmington, NC

AC–1384

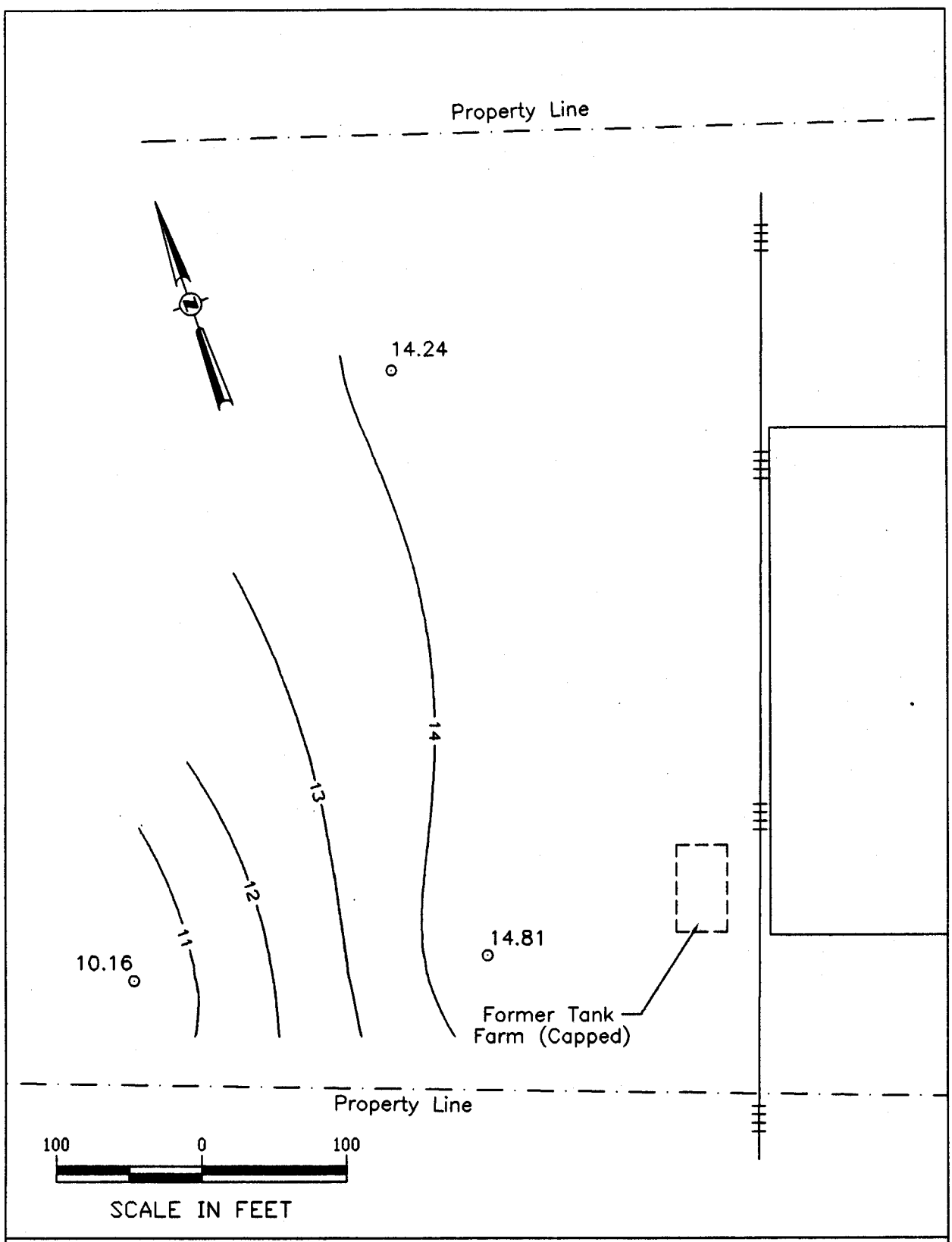


Figure 3–2. Groundwater Contour Map for Deep Wells (8/6/97)
Federal Paper Board Company, Wilmington, NC

AC–1385

ATTACHMENT 1

SUMMARY OF QUALIFIED LABORATORY DATA

Seven water samples (IPW0897W06, 07, 09, 10, 12, 23, and 24) were collected by Radian International at the International Paper facility in Wilmington, NC on August 6 and 7, 1997. The samples were submitted to Radian Analytical Services (RAS) in Austin, Texas for volatile organics (SW-846 8260A), semi-volatile organics (SW-846 8270B), total chromium (SW-846 6010A), and total arsenic (SW-846 7060A). In addition, a trip and field (IFP0897WFB) blank were shipped with the samples to the laboratory for the analysis of volatile organic compounds. The analytical results from the August 1997 sampling event were reported by RAS under work order numbers 9708147-9, 9708155, and 9708171-4.

Accuracy was determined from the review of holding times, spike recoveries, blank contamination, and initial and continuing calibration. Precision was based on the evaluation of laboratory duplicate results.

Except for sample IPW0897W07, all samples were received intact and in good condition by the laboratory. One of the two 1-Liter bottles submitted to the laboratory for the semivolatile organic analysis of sample IPW0897W07 was received broken. The temperature upon receipt for all samples was within the laboratory specification limits of 2-6°C. All of the samples were prepared and analyzed within holding times.

Except for the sample IPW0897W06, surrogate recoveries fell within QC limits during all volatile and semivolatile organic analyses (VOA/SVOA). The surrogate recovery (57%) for toluene-d8 was less than QC limits (87-113%) during the August 13 VOA of IPW0897W06. Acceptable results were obtained upon reanalysis of the sample on August 18. Volatile organic results from the August 13 analysis of sample IPW0897W06 were qualified as estimated (J/UJ) as a result.

The results of the Lab Control Sample (LCS) analyses were reviewed for accuracy and precision. Except for tetrachloroethene, laboratory specifications were met during all LCS and LCSD analyses. The recovery for tetrachloroethene exceeded laboratory and project specification limits during the analysis of LCSD975015 (125%). The LCS result for tetrachloroethene met specification limits; therefore, qualification of the data was not warranted. Project QC limits of 60-140% were also exceeded during the LCS analysis of the following analytes:

Analyte	Sample ID	Result	Action	Associated Samples
Volatile organics --				
Bromomethane	LCSD974559	58%R	None[1]	NA
	LCS975020	55%R	None	NA

[1] No action warranted because only one of the two recoveries did not meet project specification limits.

Analyte	Sample ID	Result	Action	Associated Samples
Chloromethane	LCS974558, LCSD974559	52, 50%R	J positive, R NDs	All samples analyzed under WO# 9708147
	LCSD975017	59%R	None	NA
	LCS975020, LCSD975021	49, 56%R	J positive, R NDs	IPW0897W06 (file B0818717)
Dichlorodifluoromethane	LCS974558, LCSD974559	43, 45%R	J positive, R NDs	All samples analyzed under WO# 9708147
	LCSD975015	57 %R	None	NA
	LCS975016, LCSD975017	57, 55%R	J positive, R NDs	Trip blank, IPWW0897W06, 07, and 09 (files B0814732-735)
	LCS975020, LCSD975021	42, 51%R	J positive, R NDs	IPW0897W06 (file B0818717)
4-Methyl-2-Pentanone	LCS974558	59%R	None	NA
	LCS975020	58%R	None	NA
Vinyl chloride	LCS975020	59%R	None	NA
Semivolatile organics --				
Benzidine	LCS976417, LCSD976417	0, 0%R	J positive, R NDs	All samples analyzed under WO# 9708148
	LCS976382, LCSD976382	5.4, 0%R	J positive, R NDs	All samples analyzed under WO# 9708172
Hexachlorocyclopentadiene	LCS976417, LCSD976417	23, 24%R	J positive, R NDs	All samples analyzed under WO# 9708148
	LCS976382, LCSD976382	53, 52%R	J positive, R NDs	All samples analyzed under WO# 9708172

J Estimated value.
LCS Laboratory Control Sample
LCSD Laboratory Control Sample Duplicate
ND Not detected.
R Rejected data.

Acceptable results were obtained for internal standards during the VOA and SVOA of water samples.

Sample IPW0897W09 was subjected to a matrix spike (MS) and matrix spike duplicate (MSD) analysis for volatile and semivolatile organic compounds, and inorganics. Except for toluene, acceptable MS/MSD results were obtained during the analysis of sample

IPW0897W09. The MS/MSD criteria for accuracy and precision were not met for toluene during the VOA of sample IPW0897W09. The concentration of toluene in the sample was more than four times the concentration of the spike; therefore, qualification of the VOA data is not warranted. Sample IPW0897W12 was also subjected to an arsenic MS/MSD analysis. Accuracy and precision criteria were met during the MS/MSD analysis of IPW0897W12.

All initial calibration laboratory QC criteria were met for target analytes during the volatile and semivolatile organic, and inorganic analyses; however, project specifications were not met. During the July 22, 1997, initial calibration of SVOA instrument MSD2, the percent relative standard deviation (%RSD) between response factors (RFs) exceeded 30% for benzidine. Results for benzidine have already been qualified as unusable (R) due to poor LCS recoveries.

Laboratory specifications were met during the volatile and semivolatile organic, and inorganic continuing calibrations. Project specifications were not met for several analytes during the volatile and semivolatile organic continuing calibrations. Positive results in the associated samples were qualified as estimated (J) whenever the recovery for a continuing calibration standard exceeded project specification limits of 80-120%. Whenever the recovery was less than 80% during the continuing calibration, nondetect results for associated samples were qualified as estimated (UJ).

Chloroform was detected in the field blank above the MDL at a concentration of 6.35 parts per billion. Volatile and semivolatile organic compounds were not detected in the laboratory blanks or trip blank. Arsenic was detected in the method blank below the MDL at a concentration of 0.00007 parts per million. Chromium was detected in the initial calibration and method blanks at a concentration of 0.0001 and 0.00038 parts per million, respectively. Sample results not significantly greater (five times) than that detected in the blanks have been qualified as nondetect (ND), and the sample detection limit elevated to the amount present in the sample and flagged with a "U."

The semivolatile organic compounds 3-methylphenol and 4-methylphenol co-eluted during the analysis of samples IPW0897W06 and W09. The results for these compounds were qualified as estimated (J).

Multiple analyses were performed because of elevated levels of contaminants. When sample concentrations exceeded the calibration range, the results from the reanalysis that are within the calibration range are considered more accurate. The less accurate data have been qualified unusable (R).

Definition of Validation Flags

U.S. EPA-Defined Data Qualifiers:

U	Not detected above associated level.
J	Associated value is an estimated quantity.
UJ	Analyte is not detected and the associated quantitation limit is estimated.
N	Tentatively identified (Organics only).
R	Data is unusable.

08/22/97 14:19:40

RESULTS SUMMARY

Work Order # 9708147

Method Volatile Organics SW8260A

Test Code 826SWAT1

Project Sample ID:	IPW0897W10			IPW0897W12			IPW0897W23			IPW0897W24		
Lab ID:	9708147-04A			9708147-05A			9708147-01B			9708147-02A		
File ID:	B0819710			B0819711			B0819707			B0819708		
Date Collected:	08/06/97			08/06/97			08/06/97			08/06/97		
Date Prepared:												
Date Analyzed:	08/19/97 19:35:00			08/19/97 20:03:00			08/19/97 18:10:00			08/19/97 18:38:00		
Dilution Factor:	1			1			1			1		
Matrix:	Water			Water			Water			Water		
Units:	ug/L			ug/L			ug/L			ug/L		
Report as:	received			received			received			received		
Column:												
Analyte	Conc.		DL	Conc.		DL	Conc.		DL	Conc.		DL
Acetone	ND	UJ	0.488	< DL	UJ	0.488	ND	UJ	0.488	ND	UJ	0.488
Acrolein	ND	UJ	1.02	ND	UJ	1.02	ND	UJ	1.02	ND	UJ	1.02
Acrylonitrile	ND	UJ	0.403	ND	UJ	0.403	ND	UJ	0.403	ND	UJ	0.403
Benzene	0.193		0.0605	ND		0.0605	6.28		0.0605	12.1		0.0605
Bromodichloromethane	ND		0.0366	ND		0.0366	ND		0.0366	ND		0.0366
Bromoform	ND		0.178	ND		0.178	ND		0.178	ND		0.178
Bromomethane	ND		0.160	ND		0.160	ND		0.160	ND		0.160
2-Butanone (MEK)	ND	UJ	0.598	ND	UJ	0.598	ND	UJ	0.598	ND	UJ	0.598
Carbon disulfide	ND		0.226	ND		0.226	ND		0.226	ND		0.226
Carbon tetrachloride	ND		0.0501	ND		0.0501	ND		0.0501	ND		0.0501
Chlorobenzene	ND		0.0935	ND		0.0935	ND		0.0935	14.5		0.0935
Chloroethane	ND		0.162	ND		0.162	ND		0.162	ND		0.162
2-Chloroethyl vinyl ether	ND		0.170	ND		0.170	ND		0.170	ND		0.170
Chloroform	ND		0.0716	ND		0.0716	ND		0.0716	ND		0.0716
Chloromethane	R	~~ND~~	~~0.160~~	R	~~ND~~	~~0.160~~	R	~~ND~~	~~0.160~~	R	~~ND~~	~~0.160~~
Dibromochloromethane	ND		0.108	ND		0.108	ND		0.108	ND		0.108
Dibromomethane	ND		0.132	ND		0.132	ND		0.132	ND		0.132
trans-1,4-Dichloro-2-butene	ND	UJ	0.332	ND	UJ	0.332	ND	UJ	0.332	ND	UJ	0.332
Dichlorodifluoromethane	R	~~ND~~	~~0.168~~	R	~~ND~~	~~0.168~~	R	~~ND~~	~~0.168~~	R	~~ND~~	~~0.168~~
1,1-Dichloroethane	ND		0.0836	ND		0.0836	ND		0.0836	ND		0.0836

ND Not detected
UJ Not detected and the detection limit is estimated.
R Unusable data.
J Estimated value.

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

RESULTS SUMMARY (Cont'd)

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708147-04A		9708147-05A		9708147-01B		9708147-02A	
File ID:	B0819710		B0819711		B0819707		B0819708	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:								
Date Analyzed:	08/19/97 19:35:00		08/19/97 20:03:00		08/19/97 18:10:00		08/19/97 18:38:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloroethane	ND	0.0848	ND	0.0848	ND	0.0848	ND	0.0848
1,1-Dichloroethene	ND	0.144	ND	0.144	ND	0.144	ND	0.144
trans-1,2-Dichloroethene	ND	0.171	ND	0.171	ND	0.171	ND	0.171
1,2-Dichloropropane	ND	0.0843	ND	0.0843	ND	0.0843	ND	0.0843
cis-1,3-Dichloropropene	ND	0.0510	ND	0.0510	ND	0.0510	ND	0.0510
trans-1,3-Dichloropropene	ND	0.0699	ND	0.0699	ND	0.0699	ND	0.0699
Ethyl methacrylate	ND	0.288	ND	0.288	ND	0.288	ND	0.288
Ethylbenzene	ND	0.109	ND	0.109	ND	0.109	ND	0.109
2-Hexanone	ND UJ	0.497	ND UJ	0.497	ND UJ	0.497	ND UJ	0.497
Iodomethane	ND UJ	0.229	ND UJ	0.229	ND UJ	0.229	ND UJ	0.229
4-Methyl-2-pentanone(MIBK)	ND UJ	0.188	ND UJ	0.188	ND UJ	0.188	ND UJ	0.188
Methylene chloride	ND	0.0965	ND	0.0965	ND	0.0965	ND	0.0965
Styrene	ND	0.0832	ND	0.0832	ND	0.0832	ND	0.0832
1,1,2,2-Tetrachloroethane	ND	0.100	ND	0.100	ND	0.100	ND	0.100
Tetrachloroethene	ND	0.0920	ND	0.0920	ND	0.0920	ND	0.0920
Toluene	0.276	0.0581	ND	0.0581	ND	0.0581	0.0956	0.0581
1,1,1-Trichloroethane	ND	0.152	ND	0.152	ND	0.152	ND	0.152
1,1,2-Trichloroethane	ND	0.119	ND	0.119	ND	0.119	ND	0.119
Trichloroethene	ND	0.108	ND	0.108	ND	0.108	ND	0.108
Trichlorofluoromethane	ND	0.136	ND	0.136	ND	0.136	ND	0.136

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

RESULTS SUMMARY (Cont'd)

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708147-04A		9708147-05A		9708147-01B		9708147-02A	
File ID:	B0819710		B0819711		B0819707		B0819708	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:								
Date Analyzed:	08/19/97 19:35:00		08/19/97 20:03:00		08/19/97 18:10:00		08/19/97 18:38:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2,3-Trichloropropane	ND	0.114	ND	0.114	ND	0.114	ND	0.114
Vinyl acetate	ND UJ	0.434	ND UJ	0.434	ND UJ	0.434	ND UJ	0.434
Vinyl chloride	ND	0.169	ND	0.169	ND	0.169	ND	0.169
m&p-Xylene	ND	0.190	ND	0.190	ND	0.190	ND	0.190
o-Xylene	ND	0.0970	ND	0.0970	ND	0.0970	ND	0.0970

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	83	84	87	85
1,2-Dichloroethane-d4	89	88	91	90
Toluene-d8	94	96	95	95

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897WFB							
Lab ID:	9708147-03A							
File ID:	B0819709							
Date Collected:	08/06/97							
Date Prepared:								
Date Analyzed:	08/19/97 19:06:00							
Dilution Factor:	1							
Matrix:	Water							
Units:	ug/L							
Report as:	received							
Column:								
Analyte	Conc.		DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	ND	UJ	0.488						
Acrolein	ND	UJ	1.02						
Acrylonitrile	ND	UJ	0.403						
Benzene	ND		0.0605						
Bromodichloromethane	ND		0.0366						
Bromoform	ND		0.178						
Bromomethane	ND		0.160						
2-Butanone (MEK)	ND	UJ	0.598						
Carbon disulfide	ND		0.226						
Carbon tetrachloride	ND		0.0501						
Chlorobenzene	ND		0.0935						
Chloroethane	ND		0.162						
2-Chloroethyl vinyl ether	ND		0.170						
Chloroform	6.37		0.0716						
Chloromethane	R ~~ND~~		~~0.160~~						
Dibromochloromethane	ND		0.108						
Dibromomethane	ND		0.132						
trans-1,4-Dichloro-2-butene	ND	UJ	0.332						
Dichlorodifluoromethane	R ~~ND~~		~~0.168~~						
1,1-Dichloroethane	ND		0.0836						

Sample results validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

RESULTS SUMMARY (Cont'd)

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897WFB							
Lab ID:	9708147-03A							
File ID:	B0819709							
Date Collected:	08/06/97							
Date Prepared:								
Date Analyzed:	08/19/97 19:06:00							
Dilution Factor:	1							
Matrix:	Water							
Units:	ug/L							
Report as:	received							
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloroethane	ND	0.0848						
1,1-Dichloroethene	ND	0.144						
trans-1,2-Dichloroethene	ND	0.171						
1,2-Dichloropropane	ND	0.0843						
cis-1,3-Dichloropropene	ND	0.0510						
trans-1,3-Dichloropropene	ND	0.0699						
Ethyl methacrylate	ND	0.288						
Ethylbenzene	ND	0.109						
2-Hexanone	ND UJ	0.497						
Iodomethane	ND UJ	0.229						
4-Methyl-2-pentanone(MIBK)	ND UJ	0.188						
Methylene chloride	ND	0.0965						
Styrene	ND	0.0832						
1,1,2,2-Tetrachloroethane	ND	0.100						
Tetrachloroethene	ND	0.0920						
Toluene	ND	0.0581						
1,1,1-Trichloroethane	ND	0.152						
1,1,2-Trichloroethane	ND	0.119						
Trichloroethene	ND	0.108						
Trichlorofluoromethane	ND	0.136						

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897WFB							
Lab ID:	9708147-03A							
File ID:	B0819709							
Date Collected:	08/06/97							
Date Prepared:								
Date Analyzed:	08/19/97 19:06:00							
Dilution Factor:	1							
Matrix:	Water							
Units:	ug/L							
Report as:	received							
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2,3-Trichloropropane	ND	0.114						
Vinyl acetate	ND UJ	0.434						
Vinyl chloride	ND	0.169						
m&p-Xylene	ND	0.190						
o-Xylene	ND	0.0970						

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	84			
1,2-Dichloroethane-d4	90			
Toluene-d8	96			

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W06 B1		IPW0897W06 B3		IPW0897W07 B1		IPW0897W07 B2	
Lab ID:	9708171-01A		9708171-01C		9708171-02A		9708171-02B	
File ID:	B0813716		B0818717		B0813717		B0814733	
Date Collected:	08/07/97		08/07/97		08/07/97		08/07/97	
Date Prepared:								
Date Analyzed:	08/13/97 22:12:00		08/18/97 20:57:00		08/13/97 22:41:00		08/15/97 08:39:00	
Dilution Factor:	1		2000		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	R ~~16900 ER~~	~~0.488~~	41500 J	976	R ~~63.2 R~~	~~0.488~~	ND UJ	0.488
Acrolein	ND UJ	1.02	R ~~ND~~	~~2040~~	ND UJ	1.02	R ~~ND~~	~~1.02~~
Acrylonitrile	ND UJ	0.403	ND	806	ND	0.403	ND	0.403
Benzene	67.4 J	0.0605	ND	121	ND	0.0605	ND	0.0605
Bromodichloromethane	ND UJ	0.0366	ND	73.2	ND	0.0366	ND	0.0366
Bromoform	ND UJ	0.178	ND	356	ND	0.178	ND	0.178
Bromomethane	ND UJ	0.160	~~ND~~	~~320~~	ND	0.160	~~ND~~	~~0.160~~
2-Butanone (MEK)	R ~~33300 ER~~	~~0.598~~	88200 J	1200	R ~~63.2 R~~	~~0.598~~	ND UJ	0.598
Carbon disulfide	ND UJ	0.226	R ~~ND~~	~~452~~	ND	0.226	R ~~ND~~	~~0.226~~
Carbon tetrachloride	ND UJ	0.0501	ND	100	ND	0.0501	ND	0.0501
Chlorobenzene	0.370 J	0.0935	ND	187	ND	0.0935	ND	0.0935
Chloroethane	ND UJ	0.162	ND	324	ND	0.162	ND	0.162
2-Chloroethyl vinyl ether	ND	0.170	ND	340	ND	0.170	ND	0.170
Chloroform	ND	0.0716	ND	143	ND	0.0716	ND	0.0716
Chloromethane	ND	0.160	ND	320	ND	0.160	ND	0.160
Dibromochloromethane	ND	0.108	ND	216	ND	0.108	ND	0.108
Dibromomethane	ND	0.132	ND	264	ND	0.132	ND	0.132
trans-1,4-Dichloro-2-butene	ND	0.332	ND	664	ND UJ	0.332	ND	0.332
Dichlorodifluoromethane	ND	0.168	ND	336	ND	0.168	ND	0.168
1,1-Dichloroethane	1.64 J	0.0836	ND	167	ND	0.0836	ND	0.0836

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W06 B1	IPW0897W06 B3	IPW0897W07 B1	IPW0897W07 B2
Lab ID:	9708171-01A	9708171-01C	9708171-02A	9708171-02B
File ID:	B0813716	B0818717	B0813717	B0814733
Date Collected:	08/07/97	08/07/97	08/07/97	08/07/97
Date Prepared:				
Date Analyzed:	08/13/97 22:12:00	08/18/97 20:57:00	08/13/97 22:41:00	08/15/97 08:39:00
Dilution Factor:	1	2000	1	1
Matrix:	Water	Water	Water	Water
Units:	ug/L	ug/L	ug/L	ug/L
Report as:	received	received	received	received
Column:				

Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloroethane	ND UJ	0.0848	R ~~ND~~	~~170~~	ND	0.0848	R ~~ND~~	~~0.0848~~
1,1-Dichloroethene	ND	0.144	ND	288	ND	0.144	ND	0.144
trans-1,2-Dichloroethene	ND	0.171	ND	342	ND	0.171	ND	0.171
1,2-Dichloropropane	ND	0.0843	ND	169	ND	0.0843	ND	0.0843
cis-1,3-Dichloropropene	ND	0.0510	ND	102	ND	0.0510	ND	0.0510
trans-1,3-Dichloropropene	ND	0.0699	ND	140	ND	0.0699	ND	0.0699
Ethyl methacrylate	ND	0.288	ND	576	ND	0.288	ND	0.288
Ethylbenzene	7.32 J	0.109	ND	218	ND	0.109	ND	0.109
2-Hexanone	4.91 J	0.497	ND	994	ND UJ	0.497	ND	0.497
Iodomethane	ND UJ	0.229	ND	458	ND	0.229	ND	0.229
4-Methyl-2-pentanone (MIBK)	33.4 J	0.188	ND	376	ND UJ	0.188	ND	0.188
Methylene chloride	22.4 J	0.0965	ND	193	ND	0.0965	ND	0.0965
Styrene	ND UJ	0.0832	ND	166	ND	0.0832	ND	0.0832
1,1,2,2-Tetrachloroethane	ND UJ	0.100	ND	200	ND	0.100	ND	0.100
Tetrachloroethene	0.196 Y J	0.0920	~~ND~~	~~184~~	ND	0.0920	~~ND~~	~~0.0920~~
Toluene	R ~~3970 ER~~	~~0.0581~~	19900	116	R ~~6.73 R~~	~~0.0581~~	ND	0.0581
1,1,1-Trichloroethane	ND UJ	0.152	R ~~ND~~	~~304~~	ND	0.152	R ~~ND~~	~~0.152~~
1,1,2-Trichloroethane	ND UJ	0.119	ND	238	ND	0.119	ND	0.119
Trichloroethene	0.512 J	0.108	ND	216	ND	0.108	ND	0.108
Trichlorofluoromethane	ND UJ	0.136	ND	272	ND	0.136	ND	~~0.136~~

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

RESULTS SUMMARY (Cont'd)

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W06 B1		IPW0897W06 B3		IPW0897W07 B1		IPW0897W07 B2	
Lab ID:	9708171-01A		9708171-01C		9708171-02A		9708171-02B	
File ID:	B0813716		B0818717		B0813717		B0814733	
Date Collected:	08/07/97		08/07/97		08/07/97		08/07/97	
Date Prepared:								
Date Analyzed:	08/13/97 22:12:00		08/18/97 20:57:00		08/13/97 22:41:00		08/15/97 08:39:00	
Dilution Factor:	1		2000		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2,3-Trichloropropane	ND UJ	0.114	R ~~ND~~	~~228~~	ND	0.114	R ~~ND~~	~~0.114~~
Vinyl acetate	ND UJ	0.434	~~ND~~	~~868~~	ND	0.434	~~ND~~	~~0.434~~
Vinyl chloride	0.480 J	0.169	~~ND~~	~~338~~	ND	0.169	~~ND~~	~~0.169~~
m&p-Xylene	13.4 J	0.190	~~ND~~	~~380~~	ND	0.190	~~ND~~	~~0.190~~
o-Xylene	4.15 J	0.0970	~~ND~~	~~194~~	ND	0.0970	~~ND~~	~~0.0970~~

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	112	88	92	87
1,2-Dichloroethane-d4	87	91	91	90
Toluene-d8	57 Q	95	97	94

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W09 B1		IPW0897W09 B2		TRIP BLANK B2			
Lab ID:	9708171-03A		9708171-03B		9708171-04B			
File ID:	B0813718		B0814735		B0814732			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:								
Date Analyzed:	08/13/97 23:09:00		08/15/97 09:35:00		08/15/97 08:10:00			
Dilution Factor:	1		100		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	209 E J	0.488	R ~~ND~~	~~48.8~~	ND UJ	0.488		
Acrolein	ND UJ	1.02	ND	102	ND UJ	1.02		
Acrylonitrile	ND	0.403	~~ND~~	~~40.3~~	ND UJ	0.403		
Benzene	R ~~103 ER~~	~~0.0605~~	106	6.05	ND	0.0605		
Bromodichloromethane	ND	0.0366	R ~~ND~~	~~3.66~~	ND	0.0366		
Bromoform	ND	0.178	ND	17.8	ND	0.178		
Bromomethane	ND	0.160	~~ND~~	~~16.0~~	ND	0.160		
2-Butanone (MEK)	R ~~205 ER~~	~~0.598~~	307 J	59.8	ND UJ	0.598		
Carbon disulfide	ND	0.226	R ~~ND~~	~~22.6~~	ND	0.226		
Carbon tetrachloride	ND	0.0501	ND	5.01	ND	0.0501		
Chlorobenzene	ND	0.0935	ND	9.35	ND	0.0935		
Chloroethane	ND	0.162	ND	16.2	ND	0.162		
2-Chloroethyl vinyl ether	ND	0.170	ND	17.0	ND UJ	0.170		
Chloroform	ND	0.0716	ND	7.16	ND	0.0716		
Chloromethane	ND	0.160	ND	16.0	ND UJ	0.160		
Dibromochloromethane	ND	0.108	ND	10.8	ND	0.108		
Dibromomethane	ND	0.132	ND	13.2	ND	0.132		
trans-1,4-Dichloro-2-butene	ND UJ	0.332	ND	33.2	ND UJ	0.332		
Dichlorodifluoromethane	ND	0.168	ND	16.8	R ~~ND~~	~~0.168~~		
1,1-Dichloroethane	ND	0.0836	~~ND~~	~~8.36~~	ND	0.0836		

Sample results validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W09		IPW0897W09		TRIP BLANK			
Lab ID:	9708171-03A		9708171-03B		9708171-04B			
File ID:	B0813718		B0814735		B0814732			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:								
Date Analyzed:	08/13/97 23:09:00		08/15/97 09:35:00		08/15/97 08:10:00			
Dilution Factor:	1		100		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloroethane	ND	0.0848	R ~~ND~~	~~8.48~~	ND	0.0848		
1,1-Dichloroethene	ND	0.144	ND	14.4	ND	0.144		
trans-1,2-Dichloroethene	ND	0.171	ND	17.1	ND	0.171		
1,2-Dichloropropane	ND	0.0843	ND	8.43	ND	0.0843		
cis-1,3-Dichloropropene	ND	0.0510	ND	5.10	ND	0.0510		
trans-1,3-Dichloropropene	ND	0.0699	ND	6.99	ND	0.0699		
Ethyl methacrylate	ND	0.288	ND	28.8	ND	0.288		
Ethylbenzene	37.7	0.109	33.8	10.9	ND	0.109		
2-Hexanone	ND UJ	0.497	ND	49.7	ND UJ	0.497		
Iodomethane	ND	0.229	ND	22.9	ND	0.229		
4-Methyl-2-pentanone (MIBK)	ND UJ	0.188	ND	18.8	ND UJ	0.188		
Methylene chloride	ND	0.0965	ND	9.65	ND	0.0965		
Styrene	ND	0.0832	ND	8.32	ND	0.0832		
1,1,2,2-Tetrachloroethane	ND	0.100	ND	10.0	ND	0.100		
Tetrachloroethene	ND	0.0920	~~ND~~	~~9.20~~	ND	0.0920		
Toluene	R ~~820 ER~~	~~0.0581~~	1660	5.81	ND	0.0581		
1,1,1-Trichloroethane	ND	0.152	R ~~ND~~	~~15.2~~	ND	0.152		
1,1,2-Trichloroethane	ND	0.119	ND	11.9	ND	0.119		
Trichloroethene	ND	0.108	ND	10.8	ND	0.108		
Trichlorofluoromethane	ND	0.136	~~ND~~	~~13.6~~	ND	0.136		

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708148-03A		9708148-04A		9708148-01A		9708148-02A	
File ID:	U9156		U9157		U9154		U9155	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00	
Date Analyzed:	08/15/97 12:52		08/15/97 13:31		08/15/97 11:35		08/15/97 12:14	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
bis(2-Chloroisopropyl)ether	ND	0.298	ND	0.304	ND	0.304	ND	0.304
2-Chloronaphthalene	ND	0.436	ND	0.444	ND	0.444	ND	0.444
2-Chlorophenol	ND	0.203	ND	0.207	ND	0.207	ND	0.207
4-Chlorophenylphenyl ether	ND	0.410	ND	0.418	ND	0.418	ND	0.418
Chrysene	ND	0.289	ND	0.294	ND	0.294	ND	0.294
Di-n-butylphthalate	ND	0.304	ND	0.310	ND	0.310	0.786	0.310
Di-n-octylphthalate	ND	0.207	ND	0.210	ND	0.210	ND	0.210
Dibenz(a,h)anthracene	ND	0.232	ND	0.236	ND	0.236	ND	0.236
Dibenzofuran	ND	0.341	ND	0.348	ND	0.348	ND	0.348
1,2-Dichlorobenzene	ND	0.525	ND	0.535	ND	0.535	ND	0.535
1,3-Dichlorobenzene	ND	0.397	ND	0.405	ND	0.405	ND	0.405
1,4-Dichlorobenzene	ND	0.421	ND	0.429	ND	0.429	ND	0.429
3,3'-Dichlorobenzidine	ND	0.632	ND	0.644	ND	0.644	ND	0.644
2,4-Dichlorophenol	ND	0.388	ND	0.395	ND	0.395	ND	0.395
2,6-Dichlorophenol	ND	0.477	ND	0.486	ND	0.486	ND	0.486
Diethylphthalate	ND	0.308	ND	0.314	ND	0.314	ND	0.314
p-Dimethylaminoazobenzene	ND	0.570	ND	0.581	ND	0.581	ND	0.581
7,12-Dimethylbenz(a)anthracene	ND	3.55	ND	3.62	ND	3.62	ND	3.62
Dimethylphenethylamine	ND	7.45	ND	7.59	ND	7.59	ND	7.59
2,4-Dimethylphenol	ND	0.450	ND	0.458	ND	0.458	ND	0.458

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708148-03A		9708148-04A		9708148-01A		9708148-02A	
File ID:	U9156		U9157		U9154		U9155	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00	
Date Analyzed:	08/15/97 12:52		08/15/97 13:31		08/15/97 11:35		08/15/97 12:14	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Dimethylphthalate	ND	0.299	ND	0.305	ND	0.305	ND	0.305
4,6-Dinitro-2-methylphenol	ND	1.31	ND	1.33	ND	1.33	ND	1.33
2,4-Dinitrophenol	ND	11.5	ND	11.7	ND	11.7	ND	11.7
2,4-Dinitrotoluene	ND	0.356	ND	0.363	ND	0.363	ND	0.363
2,6-Dinitrotoluene	ND	0.953	ND	0.971	ND	0.971	ND	0.971
Diphenylamine/N-NitrosoDPA	ND	0.546	ND	0.556	ND	0.556	ND	0.556
Ethyl methanesulfonate	ND	0.385	ND	0.392	ND	0.392	ND	0.392
bis(2-Ethylhexyl)phthalate	ND	0.963	ND	0.981	ND	0.981	ND	0.981
Fluoranthene	ND	0.292	ND	0.297	ND	0.297	ND	0.297
Fluorene	ND	0.354	ND	0.361	ND	0.361	ND	0.361
Hexachlorobenzene	ND	0.291	ND	0.296	ND	0.296	ND	0.296
Hexachlorobutadiene	ND	1.19	ND	1.21	ND	1.21	ND	1.21
Hexachlorocyclopentadiene	R ~~ND~~	~~3.20~~	R ~~ND~~	~~3.26~~	R ~~ND~~	~~3.26~~	R ~~ND~~	~~3.26~~
Hexachloroethane	ND	0.718	ND	0.731	ND	0.731	ND	0.731
Indeno(1,2,3-cd)pyrene	ND	0.308	ND	0.314	ND	0.314	ND	0.314
Isophorone	ND	0.265	ND	0.270	ND	0.270	ND	0.270
Methyl methanesulfonate	ND	0.785	ND	0.800	ND	0.800	ND	0.800
3-Methylcholanthrene	ND	2.89	ND	2.94	ND	2.94	ND	2.94
2-Methylnaphthalene	ND	0.815	ND	0.830	ND	0.830	ND	0.830
4-Methylphenol/3-Methylphenol	ND	0.440	ND	0.449	ND	0.449	ND	0.449

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708148-03A		9708148-04A		9708148-01A		[illegible]-02A	
File ID:	U9156		U9157		U9154		U9155	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00	
Date Analyzed:	08/15/97 12:52		08/15/97 13:31		08/15/97 11:35		08/15/97 12:14	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
2-Methylphenol	ND	0.342	ND	0.349	ND	0.349	ND	0.349
N-Nitroso-di-n-butylamine	ND	1.40	ND	1.43	ND	1.43	ND	1.43
N-Nitroso-di-n-propylamine	ND	0.343	ND	0.350	ND	0.350	ND	0.350
N-Nitrosodimethylamine	ND	1.10	ND	1.12	ND	1.12	ND	1.12
N-Nitrosopiperidine	ND	0.443	ND	0.451	ND	0.451	ND	0.451
Naphthalene	ND	0.397	ND	0.405	ND	0.405	ND	0.405
1-Naphthylamine	ND	7.59	ND	7.73	ND	7.73	ND	7.73
2-Naphthylamine	ND UJ	4.19	ND UJ	4.27	ND UJ	4.27	ND UJ	4.27
2-Nitroaniline	ND	0.535	ND	0.545	ND	0.545	ND	0.545
3-Nitroaniline	ND	0.836	ND	0.851	ND	0.851	ND	0.851
4-Nitroaniline	ND	2.22	ND	2.27	ND	2.27	ND	2.27
Nitrobenzene	ND	0.293	ND	0.298	ND	0.298	ND	0.298
2-Nitrophenol	ND	0.256	ND	0.261	ND	0.261	ND	0.261
4-Nitrophenol	ND	2.12	ND	2.16	ND	2.16	ND	2.16
Pentachlorobenzene	ND	0.302	ND	0.308	ND	0.308	ND	0.308
Pentachloronitrobenzene	ND	1.82	ND	1.86	ND	1.86	ND	1.86
Pentachlorophenol	ND	7.09	ND	7.23	ND	7.23	ND	7.23
Phenacetin	ND	0.453	ND	0.462	ND	0.462	ND	0.462
Phenanthrene	ND	0.319	ND	0.325	ND	0.325	ND	0.325
Phenol	ND	1.49	ND	1.51	ND	1.51	ND	1.51

Sample results validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708148-03A		9708148-04A		9708148-01A		9708148-02A	
File ID:	U9156		U9157		U9154		U9155	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00	
Date Analyzed:	08/15/97 12:52		08/15/97 13:31		08/15/97 11:35		08/15/97 12:14	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
2-Picoline	ND	1.64	ND	1.68	ND	1.68	ND	1.68
Pronamide	ND	0.562	ND	0.572	ND	0.572	ND	0.572
Pyrene	ND	0.342	ND	0.349	ND	0.349	ND	0.349
Pyridine	ND	1.30	ND	1.32	ND	1.32	ND	1.32
1,2,4,5-Tetrachlorobenzene	ND	0.348	ND	0.354	ND	0.354	ND	0.354
2,3,4,6-Tetrachlorophenol	ND	0.399	ND	0.407	ND	0.407	ND	0.407
1,2,4-Trichlorobenzene	ND	0.383	ND	0.390	ND	0.390	ND	0.390
2,4,5-Trichlorophenol	ND	0.284	ND	0.290	ND	0.290	ND	0.290
2,4,6-Trichlorophenol	ND	0.282	ND	0.288	ND	0.288	ND	0.288

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
2-Fluorobiphenyl	99	99	102	104
2-Fluorophenol	94	92	94	96
Nitrobenzene-d5	100	98	99	99
Phenol-d5	111	109	113	117
Terphenyl-d14	94	94	96	100
2,4,6-Tribromophenol	99	99	103	106

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708172-01A		9708172-02A		9708172-03A			
File ID:	U9140		U9141		U9137			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97 13:40:00		08/11/97 13:40:00		08/11/97 13:40:00			
Date Analyzed:	08/14/97 13:30		08/14/97 14:09		08/14/97 11:33			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acenaphthene	ND	0.497	ND	0.492	ND	0.492		
Acenaphthylene	ND	0.259	ND	0.256	ND	0.256		
Acetophenone	3.25	0.315	ND	0.312	ND	0.312		
4-Aminobiphenyl	ND	1.64	ND	1.63	ND	1.63		
Aniline	ND	0.809	ND	0.801	ND	0.801		
Anthracene	ND	0.239	ND	0.237	ND	0.237		
Benz(a)anthracene	ND	0.212	ND	0.210	ND	0.210		
Benz(a)pyrene	ND	0.261	ND	0.258	ND	0.258		
Benzidine	R ~~ND~~	~~44.8~~	R ~~ND~~	~~44.4~~	R ~~ND~~	~~44.4~~		
Benzo(b)fluoranthene	ND	0.237	ND	0.235	ND	0.235		
Benzo(g,h,i)perylene	ND	0.253	ND	0.250	ND	0.250		
Benzo(k)fluoranthene	ND	0.296	ND	0.293	ND	0.293		
Benzoic acid	218 X J	6.19	ND UJ	6.13	< DL UJ	6.13		
Benzyl alcohol	ND	0.363	ND	0.360	3.53	0.360		
4-Bromophenylphenyl ether	ND	0.271	ND	0.269	ND	0.269		
Butylbenzylphthalate	ND	0.191	ND	0.190	ND	0.190		
4-Chloro-3-methylphenol	ND	0.421	ND	0.417	ND	0.417		
p-Chloroaniline	ND	0.487	ND	0.483	ND	0.483		
bis(2-Chloroethoxy)methane	ND	0.206	ND	0.204	ND	0.204		
bis(2-Chloroethyl)ether	ND	0.366	ND	0.363	ND	0.363		

Sample results validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708172-01A		9708172-02A		9708172-03A			
File ID:	U9140		U9141		U9137			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97 13:40:00		08/11/97 13:40:00		08/11/97 13:40:00			
Date Analyzed:	08/14/97 13:30		08/14/97 14:09		08/14/97 11:33			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
bis(2-Chloroisopropyl)ether	ND	0.307	ND	0.304	ND	0.304		
2-Chloronaphthalene	ND	0.448	ND	0.444	ND	0.444		
2-Chlorophenol	ND	0.209	ND	0.207	ND	0.207		
4-Chlorophenylphenyl ether	ND	0.422	ND	0.418	ND	0.418		
Chrysene	ND	0.297	ND	0.294	ND	0.294		
Di-n-butylphthalate	ND	0.312	ND	0.310	ND	0.310		
Di-n-octylphthalate	ND	0.212	ND	0.210	ND	0.210		
Dibenz(a,h)anthracene	ND	0.238	ND	0.236	ND	0.236		
Dibenzofuran	ND	0.351	ND	0.348	ND	0.348		
1,2-Dichlorobenzene	ND	0.540	ND	0.535	ND	0.535		
1,3-Dichlorobenzene	ND	0.409	ND	0.405	ND	0.405		
1,4-Dichlorobenzene	ND	0.433	ND	0.429	ND	0.429		
3,3'-Dichlorobenzidine	ND	0.650	ND	0.644	ND	0.644		
2,4-Dichlorophenol	ND	0.399	ND	0.395	ND	0.395		
2,6-Dichlorophenol	ND	0.490	ND	0.486	ND	0.486		
Diethylphthalate	0.507	0.317	ND	0.314	ND	0.314		
p-Dimethylaminoazobenzene	ND	0.587	ND	0.581	ND	0.581		
7,12-Dimethylbenz(a)anthracene	ND	3.65	ND	3.62	ND	3.62		
Dimethylphenethylamine	ND	7.66	ND	7.59	ND	7.59		
2,4-Dimethylphenol	ND	0.462	ND	0.458	ND	0.458		

Sample results validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708172-01A		9708172-02A		9708172-03A			
File ID:	U9140		U9141		U9137			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97 13:40:00		08/11/97 13:40:00		08/11/97 13:40:00			
Date Analyzed:	08/14/97 13:30		08/14/97 14:09		08/14/97 11:33			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Dimethylphthalate	ND	0.308	ND	0.305	ND	0.305		
4,6-Dinitro-2-methylphenol	ND	1.35	ND	1.33	ND	1.33		
2,4-Dinitrophenol	ND	11.8	ND	11.7	ND	11.7		
2,4-Dinitrotoluene	ND	0.366	ND	0.363	ND	0.363		
2,6-Dinitrotoluene	ND	0.981	ND	0.971	ND	0.971		
Diphenylamine/N-NitrosoDPA	ND	0.562	ND	0.556	ND	0.556		
Ethyl methanesulfonate	ND	0.396	ND	0.392	ND	0.392		
bis(2-Ethylhexyl)phthalate	2.12	0.990	2.07	0.981	ND	0.981		
Fluoranthene	ND	0.300	ND	0.297	ND	0.297		
Fluorene	ND	0.364	ND	0.361	ND	0.361		
Hexachlorobenzene	ND	0.299	ND	0.296	ND	0.296		
Hexachlorobutadiene	ND	1.22	ND	1.21	ND	1.21		
Hexachlorocyclopentadiene	R ~~ND~~	~~3.29~~	R ~~ND~~	~~3.26~~	R ~~ND~~	~~3.26~~		
Hexachloroethane	ND	0.738	ND	0.731	ND	0.731		
Indeno(1,2,3-cd)pyrene	ND	0.317	ND	0.314	ND	0.314		
Isophorone	ND	0.273	ND	0.270	ND	0.270		
Methyl methanesulfonate	ND	0.808	ND	0.800	ND	0.800		
3-Methylcholanthrene	ND	2.97	ND	2.94	ND	2.94		
2-Methylnaphthalene	ND	0.838	ND	0.830	ND	0.830		
4-Methylphenol/3-Methylphenol	154 J	0.453	ND	0.449	33.8 J	0.449		

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708172-01A		9708172-02A		9708172-03A			
File ID:	U9140		U9141		U9137			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97 13:40:00		08/11/97 13:40:00		08/11/97 13:40:00			
Date Analyzed:	08/14/97 13:30		08/14/97 14:09		08/14/97 11:33			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
2-Methylphenol	208 X	0.352	ND	0.349	21.0	0.349		
N-Nitroso-di-n-butylamine	ND	1.44	ND	1.43	ND	1.43		
N-Nitroso-di-n-propylamine	ND	0.353	ND	0.350	ND	0.350		
N-Nitrosodimethylamine	ND	1.13	ND	1.12	ND	1.12		
N-Nitrosopiperidine	ND	0.456	ND	0.451	ND	0.451		
Naphthalene	0.649	0.409	ND	0.405	1.05	0.405		
1-Naphthylamine	ND	7.81	ND	7.73	ND	7.73		
2-Naphthylamine	ND	4.31	ND	4.27	ND	4.27		
2-Nitroaniline	ND UJ	0.550	ND UJ	0.545	ND UJ	0.545		
3-Nitroaniline	ND	0.860	ND	0.851	ND	0.851		
4-Nitroaniline	ND	2.29	ND	2.27	ND	2.27		
Nitrobenzene	ND	0.301	ND	0.298	ND	0.298		
2-Nitrophenol	ND	0.263	ND	0.261	ND	0.261		
4-Nitrophenol	ND	2.18	ND	2.16	ND	2.16		
Pentachlorobenzene	ND	0.311	ND	0.308	ND	0.308		
Pentachloronitrobenzene	ND	1.87	ND	1.86	ND	1.86		
Pentachlorophenol	ND	7.30	ND	7.23	ND	7.23		
Phenacetin	ND	0.466	ND	0.462	ND	0.462		
Phenanthrene	ND	0.328	ND	0.325	ND	0.325		
Phenol	2.85	1.53	ND	1.51	3.80	1.51		

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708172-01A		9708172-02A		9708172-03A			
File ID:	U9140		U9141		U9137			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97 13:40:00		08/11/97 13:40:00		08/11/97 13:40:00			
Date Analyzed:	08/14/97 13:30		08/14/97 14:09		08/14/97 11:33			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
2-Picoline	ND	1.69	ND	1.68	ND	1.68		
Pronamide	ND	0.578	ND	0.572	ND	0.572		
Pyrene	ND	0.352	ND	0.349	ND	0.349		
Pyridine	ND	1.34	ND	1.32	ND	1.32		
1,2,4,5-Tetrachlorobenzene	ND	0.358	ND	0.354	ND	0.354		
2,3,4,6-Tetrachlorophenol	ND	0.411	ND	0.407	ND	0.407		
1,2,4-Trichlorobenzene	ND	0.394	ND	0.390	ND	0.390		
2,4,5-Trichlorophenol	ND	0.292	ND	0.290	ND	0.290		
2,4,6-Trichlorophenol	ND	0.290	ND	0.288	ND	0.288		

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
2-Fluorobiphenyl	100	100	103	
2-Fluorophenol	90	88	89	
Nitrobenzene-d5	102	102	100	
Phenol-d5	111	104	109	
Terphenyl-d14	90	95	99	
2,4,6-Tribromophenol	105	102	104	

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

08/22/97 10:01:21

RESULTS SUMMARY

Work Order # 9708155

Method Arsenic by SW7060A

Test Code ASGSWA00

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708155-03A		9708155-04A		9708155-01A		9708155-02A	
File ID:	Z4082110-44		Z4082110-37		Z4082110-42		Z4082110-43	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/08/97		08/08/97		08/08/97		08/08/97	
Date Analyzed:	08/21/97 14:41:00		08/21/97 14:00:00		08/21/97 14:30:00		08/21/97 14:36:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	mg/L		mg/L		mg/L		mg/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Arsenic	0.0232	0.00151	0.00669	0.00151	0.0305	0.00151	0.0169	0.00151

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

08/22/97 10:00:21

RESULTS SUMMARY

Work Order # 9708174

Method Arsenic by SW7060A

Test Code ASGSWA00

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708174-01A		9708174-02A		9708174-03A			
File ID:	Z4082110-27		Z4082110-28		Z4082110-13			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/14/97		08/14/97		08/14/97			
Date Analyzed:	08/21/97 12:54:00		08/21/97 13:00:00		08/21/97 11:36:00			
Dilution Factor:	4		1		1			
Matrix:	Water		Water		Water			
Units:	mg/L		mg/L		mg/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Arsenic	0.151	0.00604	0.00350	0.00151	0.0199	0.00151		

Sample results validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708149-03A		9708149-04A		9708149-01A		9708149-02A	
File ID:	J61E0811-25		J61E0811-26		J61E0811-23		J61E0811-24	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/08/97		08/08/97		08/08/97		08/08/97	
Date Analyzed:	08/11/97		08/11/97		08/11/97		08/11/97	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	mg/L		mg/L		mg/L		mg/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Chromium	0.0673 ~~B~~	0.000348	0.0220 ~~B~~	0.000348	ND, 0.000780 ~~B~~ U	~~0.000348~~	0.00223 ~~B~~	0.000348

ND Not detected
U Not present above the associated level; blank contamination.

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

08/13/97 11:09:08

RESULTS SUMMARY

Work Order # 9708173

Method ICP Analysis by SW6010A

Test Code ICTSW1CR

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708173-01A		9708173-02A		9708173-03A			
File ID:	J61E0811-60		J61E0811-61		J61E0811-63			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97		08/11/97		08/11/97			
Date Analyzed:	08/11/97		08/11/97		08/11/97			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	mg/L		mg/L		mg/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Chromium	0.0219	0.000348	ND, 0.00135 u	~~0.000348~~	ND, 0.000690 u	~~0.000348~~		

Sample results, validated in accordance with National Functional Guidelines for Organic and Inorganic Data Review (U.S. EPA, February 1994), have been qualified by Radian International LLC based on the criteria of the data review process.

08/22/97 14:19:40

RADIAN ANALYTICAL SERVICES
FPAS REPORT
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Work Order # 9708147

Client INTERNATIONAL PAPER

Facility

Client Code IP WILM

Certified By

Date 8/22/97

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WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To 3200 E. CHAPEL HILL RD.
RTP, NC 27709
Attention JIM NARKUNAS

Client Code IP WILM
Client INTERNATIONAL PAPER
Facility
Work ID WILMINGTON SEMIANNUA

Work Order # 9708147
Page 1

RCN 258058.1501

Prepared Radian International, LLC
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70117AJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
IPW0897W23	01A	826SWAT1	Volatile Organics by GC/MS
		DISPWA00	Sample Disposal Charge
	01B	SPAREB00	Spare Sample
	01C	SPAREB00	Spare Sample
IPW0897W24	02A	826SWAT1	Volatile Organics by GC/MS
		DISPWA00	Sample Disposal Charge
	02B	SPAREB00	Spare Sample
	02C	SPAREB00	Spare Sample
IPW0897WFB	03A	826SWAT1	Volatile Organics by GC/MS
		DISPWA00	Sample Disposal Charge
	03B	SPAREB00	Spare Sample
	03C	SPAREB00	Spare Sample
IPW0897W10	04A	826SWAT1	Volatile Organics by GC/MS
		DISPWA00	Sample Disposal Charge
	04B	SPAREB00	Spare Sample
	04C	SPAREB00	Spare Sample
IPW0897W12	05A	826SWAT1	Volatile Organics by GC/MS
		DISPWA00	Sample Disposal Charge
	05B	SPAREB00	Spare Sample
	05C	SPAREB00	Spare Sample

WORK ORDER COMMENTS

The standard Method 8260A surrogate tolerances are laboratory derived from historical data. Project specific tolerances may differ.

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

ANALYTICAL PROTOCOL SUMMARY

Work Order # 9708147

Client INTERNATIONAL PAPER

Specification # 826S

Facility

Client Code IP WILM

Method Volatile Organics SW8260A

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
IPW0897W10	9708147-04A	826SWAT1	NA	MSMSDB70819143501
IPW0897W12	9708147-05A	826SWAT1	NA	MSMSDB70819143501
IPW0897W23	9708147-01B	826SWAT1	NA	MSMSDB70819143501
IPW0897W24	9708147-02A	826SWAT1	NA	MSMSDB70819143501
IPW0897WFB	9708147-03A	826SWAT1	NA	MSMSDB70819143501

RESULTS SUMMARY

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708147-04A		9708147-05A		9708147-01B		9708147-02A	
File ID:	B0819710		B0819711		B0819707		B0819708	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:								
Date Analyzed:	08/19/97 19:35:00		08/19/97 20:03:00		08/19/97 18:10:00		08/19/97 18:38:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	ND	0.488	< DL	0.488	ND	0.488	ND	0.488
Acrolein	ND	1.02	ND	1.02	ND	1.02	ND	1.02
Acrylonitrile	ND	0.403	ND	0.403	ND	0.403	ND	0.403
Benzene	0.193	0.0605	ND	0.0605	6.28	0.0605	12.1	0.0605
Bromodichloromethane	ND	0.0366	ND	0.0366	ND	0.0366	ND	0.0366
Bromoform	ND	0.178	ND	0.178	ND	0.178	ND	0.178
Bromomethane	ND	0.160	ND	0.160	ND	0.160	ND	0.160
2-Butanone (MEK)	ND	0.598	ND	0.598	ND	0.598	ND	0.598
Carbon disulfide	ND	0.226	ND	0.226	ND	0.226	ND	0.226
Carbon tetrachloride	ND	0.0501	ND	0.0501	ND	0.0501	ND	0.0501
Chlorobenzene	ND	0.0935	ND	0.0935	ND	0.0935	14.5	0.0935
Chloroethane	ND	0.162	ND	0.162	ND	0.162	ND	0.162
2-Chloroethyl vinyl ether	ND	0.170	ND	0.170	ND	0.170	ND	0.170
Chloroform	ND	0.0716	ND	0.0716	ND	0.0716	ND	0.0716
Chloromethane	ND	0.160	ND	0.160	ND	0.160	ND	0.160
Dibromochloromethane	ND	0.108	ND	0.108	ND	0.108	ND	0.108
Dibromomethane	ND	0.132	ND	0.132	ND	0.132	ND	0.132
trans-1,4-Dichloro-2-butene	ND	0.332	ND	0.332	ND	0.332	ND	0.332
Dichlorodifluoromethane	ND	0.168	ND	0.168	ND	0.168	ND	0.168
1,1-Dichloroethane	ND	0.0836	ND	0.0836	ND	0.0836	ND	0.0836

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708147-04A		9708147-05A		9708147-01B		9708147-02A	
File ID:	B0819710		B0819711		B0819707		B0819708	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:								
Date Analyzed:	08/19/97 19:35:00		08/19/97 20:03:00		08/19/97 18:10:00		08/19/97 18:38:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloroethane	ND	0.0848	ND	0.0848	ND	0.0848	ND	0.0848
1,1-Dichloroethene	ND	0.144	ND	0.144	ND	0.144	ND	0.144
trans-1,2-Dichloroethene	ND	0.171	ND	0.171	ND	0.171	ND	0.171
1,2-Dichloropropane	ND	0.0843	ND	0.0843	ND	0.0843	ND	0.0843
cis-1,3-Dichloropropene	ND	0.0510	ND	0.0510	ND	0.0510	ND	0.0510
trans-1,3-Dichloropropene	ND	0.0699	ND	0.0699	ND	0.0699	ND	0.0699
Ethyl methacrylate	ND	0.288	ND	0.288	ND	0.288	ND	0.288
Ethylbenzene	ND	0.109	ND	0.109	ND	0.109	ND	0.109
2-Hexanone	ND	0.497	ND	0.497	ND	0.497	ND	0.497
Iodomethane	ND	0.229	ND	0.229	ND	0.229	ND	0.229
4-Methyl-2-pentanone(MIBK)	ND	0.188	ND	0.188	ND	0.188	ND	0.188
Methylene chloride	ND	0.0965	ND	0.0965	ND	0.0965	ND	0.0965
Styrene	ND	0.0832	ND	0.0832	ND	0.0832	ND	0.0832
1,1,2,2-Tetrachloroethane	ND	0.100	ND	0.100	ND	0.100	ND	0.100
Tetrachloroethene	ND	0.0920	ND	0.0920	ND	0.0920	ND	0.0920
Toluene	0.276	0.0581	ND	0.0581	ND	0.0581	0.0956	0.0581
1,1,1-Trichloroethane	ND	0.152	ND	0.152	ND	0.152	ND	0.152
1,1,2-Trichloroethane	ND	0.119	ND	0.119	ND	0.119	ND	0.119
Trichloroethene	ND	0.108	ND	0.108	ND	0.108	ND	0.108
Trichlorofluoromethane	ND	0.136	ND	0.136	ND	0.136	ND	0.136

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708147-04A		9708147-05A		9708147-01B		9708147-02A	
File ID:	B0819710		B0819711		B0819707		B0819708	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:								
Date Analyzed:	08/19/97 19:35:00		08/19/97 20:03:00		08/19/97 18:10:00		08/19/97 18:38:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2,3-Trichloropropane	ND	0.114	ND	0.114	ND	0.114	ND	0.114
Vinyl acetate	ND	0.434	ND	0.434	ND	0.434	ND	0.434
Vinyl chloride	ND	0.169	ND	0.169	ND	0.169	ND	0.169
m&p-Xylene	ND	0.190	ND	0.190	ND	0.190	ND	0.190
o-Xylene	ND	0.0970	ND	0.0970	ND	0.0970	ND	0.0970

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	83	84	87	85
1,2-Dichloroethane-d4	89	88	91	90
Toluene-d8	94	96	95	95

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897WFB							
Lab ID:	9708147-03A							
File ID:	B0819709							
Date Collected:	08/06/97							
Date Prepared:								
Date Analyzed:	08/19/97 19:06:00							
Dilution Factor:	1							
Matrix:	Water							
Units:	ug/L							
Report as:	received							
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	ND	0.488						
Acrolein	ND	1.02						
Acrylonitrile	ND	0.403						
Benzene	ND	0.0605						
Bromodichloromethane	ND	0.0366						
Bromoform	ND	0.178						
Bromomethane	ND	0.160						
2-Butanone(MEK)	ND	0.598						
Carbon disulfide	ND	0.226						
Carbon tetrachloride	ND	0.0501						
Chlorobenzene	ND	0.0935						
Chloroethane	ND	0.162						
2-Chloroethyl vinyl ether	ND	0.170						
Chloroform	6.37	0.0716						
Chloromethane	ND	0.160						
Dibromochloromethane	ND	0.108						
Dibromomethane	ND	0.132						
trans-1,4-Dichloro-2-butene	ND	0.332						
Dichlorodifluoromethane	ND	0.168						
1,1-Dichloroethane	ND	0.0836						

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897WFB							
Lab ID:	9708147-03A							
File ID:	B0819709							
Date Collected:	08/06/97							
Date Prepared:								
Date Analyzed:	08/19/97 19:06:00							
Dilution Factor:	1							
Matrix:	Water							
Units:	ug/L							
Report as:	received							
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloroethane	ND	0.0848						
1,1-Dichloroethene	ND	0.144						
trans-1,2-Dichloroethene	ND	0.171						
1,2-Dichloropropane	ND	0.0843						
cis-1,3-Dichloropropene	ND	0.0510						
trans-1,3-Dichloropropene	ND	0.0699						
Ethyl methacrylate	ND	0.288						
Ethylbenzene	ND	0.109						
2-Hexanone	ND	0.497						
Iodomethane	ND	0.229						
4-Methyl-2-pentanone(MIBK)	ND	0.188						
Methylene chloride	ND	0.0965						
Styrene	ND	0.0832						
1,1,2,2-Tetrachloroethane	ND	0.100						
Tetrachloroethene	ND	0.0920						
Toluene	ND	0.0581						
1,1,1-Trichloroethane	ND	0.152						
1,1,2-Trichloroethane	ND	0.119						
Trichloroethene	ND	0.108						
Trichlorofluoromethane	ND	0.136						

Method Volatile Organics SW8260A

Test Code 826SWAT1

Project Sample ID:	IPW0897WFB							
Lab ID:	9708147-03A							
File ID:	B0819709							
Date Collected:	08/06/97							
Date Prepared:								
Date Analyzed:	08/19/97 19:06:00							
Dilution Factor:	1							
Matrix:	Water							
Units:	ug/L							
Report as:	received							
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2,3-Trichloropropane	ND	0.114						
Vinyl acetate	ND	0.434						
Vinyl chloride	ND	0.169						
m&p-Xylene	ND	0.190						
o-Xylene	ND	0.0970						

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	84			
1,2-Dichloroethane-d4	90			
Toluene-d8	96			

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INITIAL CALIBRATION

Work Order # 9708147

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Initial Calibration # MSDB970804000000

Calibration Date 08/04/97 00:00:00

Sol'n # #MS-VOA-STD-6 p.27

Method Volatile Organics SW8260A

Test Code 826SWA00

Instrument MSDB

Analyst TLS

Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
Dichlorodifluoromethane										0.997
Chloromethane SPCC	4.252 0.5	4.426 5	4.150 20	4.200 50	3.847 100			4.18	5.05	
Vinyl chloride CCC	2.510 0.5	3.209 5	3.004 20	3.074 50	2.798 100			2.92	9.34	
Bromomethane	2.044 0.5	2.034 5	1.960 20	1.980 50	1.851 100			1.97	3.91	
Chloroethane	1.499 0.5	1.573 5	1.505 20	1.520 50	1.337 100			1.49	5.96	
Trichlorofluoromethane	2.019 0.5	2.389 5	2.298 20	2.375 50	2.107 100			2.24	7.42	
Acrolein	0.229 2.5	0.233 25	0.220 100	0.210 250	0.230 500			0.224	4.19	
Acetonitrile										0.999
Acetone										0.999
Iodomethane	1.835 0.5	2.716 5	2.664 20	2.743 50	2.582 100			2.51	15.2	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000
Calibration Date 08/04/97 00:00:00

Sol'n # #MS-VOA-STD-6 p.27
Method Volatile Organics SW8260A
Test Code 826SWA00

Instrument MSDB
Analyst TLS
Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
1,1-Dichloroethene CCC	1.269 0.5	1.469 5	1.377 20	1.416 50	1.258 100			1.36	6.79	
Carbon disulfide	7.369 0.5	6.996 5	6.285 20	6.378 50	5.624 100			6.53	10.3	
1,1,2-Trichlorotrifluoroethane	1.289 0.5	1.536 5	1.400 20	1.420 50	1.270 100			1.38	7.81	
Acrylonitrile	0.470 0.5	0.458 5	0.464 20	0.482 50	0.455 100			0.466	2.30	
3-Chloropropene	3.966 0.5	3.806 5	3.375 20	3.441 50	2.988 100			3.52	10.9	
Methylene chloride										0.999
trans-1,2-Dichloroethene	1.643 0.5	1.552 5	1.465 20	1.455 50	1.329 100			1.49	7.88	
Propanenitrile	0.130 2.5	0.148 25	0.153 100	0.151 250	0.146 500			0.146	6.27	
1,1-Dichloroethane SPCC	3.489 0.5	3.204 5	3.016 20	2.967 50	2.729 100			3.08	9.22	
Methyl t-butyl ether	3.083 0.5	3.457 5	3.281 20	3.337 50	3.016 100			3.23	5.63	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000
Calibration Date 08/04/97 00:00:00

Sol'n # #MS-VOA-STD-6 p.27
Method Volatile Organics SW8260A
Test Code 826SWA00

Instrument MSDB
Analyst TLS
Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
Vinyl acetate	3.482 0.5	3.537 5	3.056 20	3.227 50	2.952 100			3.25	7.89	
2-Chloro-1,3-butadiene	1.267 0.5	1.402 5	1.251 20	1.250 50	1.107 100			1.26	8.33	
2-Butanone (MEK)										0.999
Tetrahydrofuran										1.00
cis-1,2-Dichloroethene	1.693 0.5	1.574 5	1.510 20	1.481 50	1.365 100			1.52	7.92	
2,2-Dichloropropane										0.995
Chloroform CCC	2.561 0.5	2.378 5	2.239 20	2.159 50	2.017 100			2.27	9.18	
1,1,1-Trichloroethane	1.957 0.5	1.976 5	1.508 20	1.864 50	1.676 100			1.80	11.1	
1,2-Dichloroethane	2.172 0.5	2.017 5	2.011 20	1.947 50	1.841 100			2.00	6.03	
1,1-Dichloropropene	0.374 0.5	0.439 5	0.416 20	0.419 50	0.378 100			0.405	6.94	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000
Calibration Date 08/04/97 00:00:00

Sol'n # #MS-VOA-STD-6 p.27
Method Volatile Organics SW8260A
Test Code 826SWA00

Instrument MSDB
Analyst TLS
Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
Benzene	1.360 0.5	1.328 5	1.246 20	1.221 50	1.091 100			1.25	8.43	
Carbon tetrachloride	0.272 0.5	0.300 5	0.275 20	0.275 50	0.246 100			0.274	7.00	
2-Hexanone										1.00
4-Methyl-2-pentanone (MIBK)	0.361 0.5	0.312 5	0.308 20	0.311 50	0.307 100			0.320	7.23	
1,2-Dichloropropane CCC	0.406 0.5	0.434 5	0.412 20	0.407 50	0.373 100			0.406	5.38	
Trichloroethene	0.300 0.5	0.299 5	0.292 20	0.292 50	0.272 100			0.291	3.87	
Dibromomethane	0.190 0.5	0.171 5	0.174 20	0.172 50	0.167 100			0.175	5.08	
Bromodichloromethane	0.342 0.5	0.362 5	0.352 20	0.352 50	0.341 100			0.350	2.46	
Methyl methacrylate	0.129 0.5	0.171 5	0.164 20	0.169 50	0.168 100			0.160	11.0	
2-Chloroethyl vinyl ether	0.125 0.5	0.175 5	0.173 20	0.180 50	0.180 100			0.167	14.1	

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INITIAL CALIBRATION Cont'd

Work Order # 9708147

Page 15

Initial Calibration # MSDB970804000000

Calibration Date 08/04/97 00:00:00

Sol'n # #MS-VOA-STD-6 p.27

Method Volatile Organics SW8260A

Test Code 826SWA00

Instrument MSDB

Analyst TLS

Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
trans-1,3-Dichloropropene	0.336 0.5	0.361 5	0.369 20	0.367 50	0.348 100			0.356	3.92	
cis-1,3-Dichloropropene	0.439 0.5	0.487 5	0.473 20	0.479 50	0.458 100			0.467	4.07	
Toluene CCC	0.666 0.5	0.705 5	0.672 20	0.672 50	0.624 100			0.668	4.33	
1,1,2-Trichloroethane	0.414 0.5	0.463 5	0.462 20	0.466 50	0.462 100			0.453	4.87	
Ethyl methacrylate	0.664 0.5	0.715 5	0.723 20	0.734 50	0.739 100			0.715	4.20	
1,3-Dichloropropane	0.760 0.5	0.840 5	0.841 20	0.846 50	0.827 100			0.823	4.35	
Dibromochloromethane	0.431 0.5	0.490 5	0.513 20	0.528 50	0.527 100			0.498	8.11	
1,2-Dibromoethane	0.403 0.5	0.458 5	0.470 20	0.479 50	0.478 100			0.458	6.92	
Tetrachloroethene	0.392 0.5	0.434 5	0.413 20	0.428 50	0.407 100			0.415	4.05	
Chlorobenzene SPCC	1.571 0.5	1.647 5	1.553 20	1.577 50	1.501 100			1.57	3.34	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000

Sol'n # #MS-VOA-STD-6 p.27
Calibration Date 08/04/97 00:00:00
Instrument MSDB
Method Volatile Organics SW8260A
Analyst TLS
Test Code 826SWA00
Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
1,1,1,2-Tetrachloroethane	0.379 0.5	0.473 5	0.478 20	0.496 50	0.492 100			0.464	10.4	
1-Chlorohexane	0.824 0.5	0.890 5	0.814 20	0.831 50	0.772 100			0.826	5.13	
Ethylbenzene	0.777 0.5	0.831 5	0.779 20	0.794 50	0.750 100			0.786	3.77	
m&p-Xylene	0.951 1	1.010 10	0.965 40	0.967 100	0.892 200			0.957	4.44	
Bromoform SPCC										0.999
Styrene	1.446 0.5	1.618 5	1.605 20	1.630 50	1.568 100			1.57	4.76	
o-Xylene	0.940 0.5	1.010 5	0.965 20	0.970 50	0.918 100			0.961	3.60	
trans-1,4-Dichloro-2-butene										1.00
1,1,2,2-Tetrachloroethane SPCC	0.502 0.5	0.510 5	0.528 20	0.551 50	0.549 100			0.528	4.20	
1,2,3-Trichloropropane	0.324 0.5	0.372 5	0.390 20	0.397 50	0.392 100			0.375	8.01	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000
Calibration Date 08/04/97 00:00:00

Sol'n # #MS-VOA-STD-6 p.27
Method Volatile Organics SW8260A
Test Code 826SWA00

Instrument MSDB
Analyst TLS
Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
Isopropylbenzene	2.263 0.5	2.429 5	2.296 20	2.325 50	2.157 100			2.29	4.30	
Bromobenzene	0.491 0.5	0.572 5	0.562 20	0.589 50	0.579 100			0.559	6.99	
2-Chlorotoluene	0.537 0.5	0.595 5	0.575 20	0.591 50	0.565 100			0.573	4.07	
n-Propylbenzene	0.495 0.5	0.634 5	0.611 20	0.620 50	0.591 100			0.590	9.40	
4-Chlorotoluene	0.462 0.5	0.585 5	0.574 20	0.589 50	0.563 100			0.555	9.51	
1,3,5-Trimethylbenzene	1.717 0.5	1.897 5	1.809 20	1.833 50	1.730 100			1.80	4.16	
1,2,4-Trimethylbenzene	1.772 0.5	1.934 5	1.901 20	1.895 50	1.759 100			1.85	4.35	
tert-Butylbenzene	1.626 0.5	1.775 5	1.684 20	1.691 50	1.561 100			1.67	4.78	
1,3-Dichlorobenzene	1.043 0.5	1.026 5	1.023 20	1.046 50	1.025 100			1.03	1.06	
sec-Butylbenzene	2.234 0.5	2.534 5	2.397 20	2.412 50	2.211 100			2.36	5.71	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000

Sol'n # #MS-VOA-STD-6 p.27

Calibration Date 08/04/97 00:00:00

Instrument MSDB

Method Volatile Organics SW8260A

Analyst TLS

Test Code 826SWA00

Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
1,4-Dichlorobenzene	1.018 0.5	1.029 5	1.041 20	1.055 50	1.036 100			1.04	1.33	
p-Isopropyltoluene	1.660 0.5	1.844 5	1.792 20	1.841 50	1.750 100			1.78	4.29	
1,2-Dichlorobenzene	0.898 0.5	0.935 5	0.934 20	0.961 50	0.950 100			0.936	2.55	
n-Butylbenzene	1.544 0.5	1.855 5	1.889 20	1.924 50	1.820 100			1.81	8.40	
1,2-Dibromo-3-chloropropane										1.00
1,2,4-Trichlorobenzene										1.00
Naphthalene										0.999
1,2,3-Trichlorobenzene										1.00
Hexachlorobutadiene										1.00

08/22/97 14:19:40

ANALYSIS BATCH SUMMARY

Analysis Batch # MSMSDB70819143501

Work Order # 9708147

Method Volatile Organics SW8260A
Test Code 826SWA00
Initial Calibration # MSDB970804000000
Calibration Date 08/04/97

Analysis Start Date/Time 08/19/97 14:35:00
Analysis Stop Date/Time 08/19/97 16:58:00

Instrument MSDB
Analyst TLS
Reviewer KLZ

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/19/97 14:06:00		SB	Blank, System	B0819701
2	08/19/97 14:35:00		BFB	GC/MS tune files	B0819702
3	08/19/97 14:35:00		VSTDCAL	Continuing Calibration Verification	B0819702
4	08/19/97 15:30:00		LCS974558	Lab Control Sample	B0819703
5	08/19/97 15:59:00		LCSD974559	Lab Control Sample Duplicate	B0819704
6	08/19/97 16:27:00		BLK973803	Blank, Method	B0819705
7	08/19/97 17:40:00		9708227-03A	Sample	B0819706
8	08/19/97 18:10:00	IPW0897W23	9708147-01B	Sample	B0819707
9	08/19/97 18:38:00	IPW0897W24	9708147-02A	Sample	B0819708
10	08/19/97 19:06:00	IPW0897WFB	9708147-03A	Sample	B0819709
11	08/19/97 19:35:00	IPW0897W10	9708147-04A	Sample	B0819710
12	08/19/97 20:03:00	IPW0897W12	9708147-05A	Sample	B0819711
13	08/19/97 20:41:00		9708360-09A	Sample	B0819712
14	08/19/97 21:10:00		9708375-14A	Sample	B0819713
15	08/19/97 21:38:00		9708376-12A	Sample	B0819714
16	08/19/97 22:06:00		9708377-13A	Sample	B0819715
17	08/19/97 22:34:00		9708378-13A	Sample	B0819716
18	08/19/97 23:03:00		9708379-12A	Sample	B0819717
19	08/19/97 23:33:00		9708381-14A	Sample	B0819718
20	08/20/97 00:02:00		9708382-12A	Sample	B0819719
21	08/20/97 00:32:00		9708383-13A	Sample	B0819720
22	08/20/97 01:01:00		9708188-01A	Sample	B0819721
23	08/20/97 01:29:00		9708188-02A	Sample	B0819722
24	08/20/97 01:57:00		9708188-03A	Matrix Spike	B0819723
25	08/20/97 02:25:00		9708188-04A	Matrix Spike Duplicate	B0819724
26	08/19/97 16:58:00				DUMMY.D*

RESULTS

Extraction Batch # _____
Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W23
Lab Sample ID 9708147-01B
File # B0819707
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared _____
Date Analyzed 08/19/97 18:10:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	ND	0.488	0.488
Acrolein	107-02-8	ND	1.02	1.02
Acrylonitrile	107-13-1	ND	0.403	0.403
Benzene	71-43-2	6.28	0.0605	0.0605
Bromodichloromethane	75-27-4	ND	0.0366	0.0366
Bromoform	75-25-2	ND	0.178	0.178
Bromomethane	74-83-9	ND	0.160	0.160
2-Butanone(MEK)	78-93-3	ND	0.598	0.598
Carbon disulfide	75-15-0	ND	0.226	0.226
Carbon tetrachloride	56-23-5	ND	0.0501	0.0501
Chlorobenzene	108-90-7	ND	0.0935	0.0935
Chloroethane	75-00-3	ND	0.162	0.162
2-Chloroethyl vinyl ether	110-75-8	ND	0.170	0.170
Chloroform	67-66-3	ND	0.0716	0.0716
Chloromethane	74-87-3	ND	0.160	0.160
Dibromochloromethane	124-48-1	ND	0.108	0.108
Dibromomethane	74-95-3	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	110-57-6	ND	0.332	0.332
Dichlorodifluoromethane	75-71-8	ND	0.168	0.168
1,1-Dichloroethane	75-34-3	ND	0.0836	0.0836
1,2-Dichloroethane	107-06-2	ND	0.0848	0.0848
1,1-Dichloroethene	75-35-4	ND	0.144	0.144
trans-1,2-Dichloroethene	156-60-5	ND	0.171	0.171
1,2-Dichloropropane	78-87-5	ND	0.0843	0.0843
cis-1,3-Dichloropropene	10061-01-5	ND	0.0510	0.0510

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W23 | Date Collected 08/06/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708147-01B | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0819707 | Date Prepared _____ | Analyst TLS | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/19/97 18:10:00 | Reviewer KLZ

Test Code 826SWAT1

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	0.0699	0.0699
Ethyl methacrylate	97-63-2	ND	0.288	0.288
Ethylbenzene	100-41-4	ND	0.109	0.109
2-Hexanone	591-78-6	ND	0.497	0.497
Iodomethane	74-88-4	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	0.188	0.188
Methylene chloride	75-09-2	ND	0.0965	0.0965
Styrene	100-42-5	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.100	0.100
Tetrachloroethene	127-18-4	ND	0.0920	0.0920
Toluene	108-88-3	ND	0.0581	0.0581
1,1,1-Trichloroethane	71-55-6	ND	0.152	0.152
1,1,2-Trichloroethane	79-00-5	ND	0.119	0.119
Trichloroethene	79-01-6	ND	0.108	0.108
Trichlorofluoromethane	75-69-4	ND	0.136	0.136
1,2,3-Trichloropropane	96-18-4	ND	0.114	0.114
Vinyl acetate	108-05-4	ND	0.434	0.434
Vinyl chloride	75-01-4	ND	0.169	0.169
m&p-Xylene	NO_CAS	ND	0.190	0.190
o-Xylene	95-47-6	ND	0.0970	0.0970

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W23
Lab Sample ID 9708147-01B
File # B0819707
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared _____
Date Analyzed 08/19/97 18:10:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	16.7	14.6	87	77	117
1,2-Dichloroethane-d4	17060-07-0	16.7	15.2	91	61	143
Toluene-d8	2037-26-5	16.7	15.9	95	87	113

RESULTS

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W24 | Date Collected 08/06/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708147-02A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0819708 | Date Prepared _____ | Analyst TLS | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/19/97 18:38:00 | Reviewer KLZ

Test Code 826SWAT1

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	ND	0.488	0.488
Acrolein	107-02-8	ND	1.02	1.02
Acrylonitrile	107-13-1	ND	0.403	0.403
Benzene	71-43-2	12.1	0.0605	0.0605
Bromodichloromethane	75-27-4	ND	0.0366	0.0366
Bromoform	75-25-2	ND	0.178	0.178
Bromomethane	74-83-9	ND	0.160	0.160
2-Butanone(MEK)	78-93-3	ND	0.598	0.598
Carbon disulfide	75-15-0	ND	0.226	0.226
Carbon tetrachloride	56-23-5	ND	0.0501	0.0501
Chlorobenzene	108-90-7	14.5	0.0935	0.0935
Chloroethane	75-00-3	ND	0.162	0.162
2-Chloroethyl vinyl ether	110-75-8	ND	0.170	0.170
Chloroform	67-66-3	ND	0.0716	0.0716
Chloromethane	74-87-3	ND	0.160	0.160
Dibromochloromethane	124-48-1	ND	0.108	0.108
Dibromomethane	74-95-3	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	110-57-6	ND	0.332	0.332
Dichlorodifluoromethane	75-71-8	ND	0.168	0.168
1,1-Dichloroethane	75-34-3	ND	0.0836	0.0836
1,2-Dichloroethane	107-06-2	ND	0.0848	0.0848
1,1-Dichloroethene	75-35-4	ND	0.144	0.144
trans-1,2-Dichloroethene	156-60-5	ND	0.171	0.171
1,2-Dichloropropane	78-87-5	ND	0.0843	0.0843
[illegible]-1,3[illegible]hloro[illegible]ne	10[illegible]1-5	ND	0.0510	0.0510

R E S U L T S (Cont'd)

Work Order # 9708147

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W24 | Date Collected 08/06/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708147-02A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0819708 | Date Prepared _____ | Analyst TLS | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/19/97 18:38:00 | Reviewer KLZ

Test Code 826SWAT1

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	0.0699	0.0699
Ethyl methacrylate	97-63-2	ND	0.288	0.288
Ethylbenzene	100-41-4	ND	0.109	0.109
2-Hexanone	591-78-6	ND	0.497	0.497
Iodomethane	74-88-4	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	0.188	0.188
Methylene chloride	75-09-2	ND	0.0965	0.0965
Styrene	100-42-5	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.100	0.100
Tetrachloroethene	127-18-4	ND	0.0920	0.0920
Toluene	108-88-3	0.0956	0.0581	0.0581
1,1,1-Trichloroethane	71-55-6	ND	0.152	0.152
1,1,2-Trichloroethane	79-00-5	ND	0.119	0.119
Trichloroethene	79-01-6	ND	0.108	0.108
Trichlorofluoromethane	75-69-4	ND	0.136	0.136
1,2,3-Trichloropropane	96-18-4	ND	0.114	0.114
Vinyl acetate	108-05-4	ND	0.434	0.434
Vinyl chloride	75-01-4	ND	0.169	0.169
m&p-Xylene	NO_CAS	ND	0.190	0.190
o-Xylene	95-47-6	ND	0.0970	0.0970

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W24 | Date Collected 08/06/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708147-02A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0819708 | Date Prepared _____ | Analyst TLS | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/19/97 18:38:00 | Reviewer KLZ

Test Code 826SWAT1

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	16.7	14.2	85	77	117
1,2-Dichloroethane-d4	17060-07-0	16.7	15.0	90	61	143
Toluene-d8	2037-26-5	16.7	15.9	95	87	113

RESULTS

Extraction Batch # _____
Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897WFB
Lab Sample ID 9708147-03A
File # B0819709
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared _____
Date Analyzed 08/19/97 19:06:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	ND	0.488	0.488
Acrolein	107-02-8	ND	1.02	1.02
Acrylonitrile	107-13-1	ND	0.403	0.403
Benzene	71-43-2	ND	0.0605	0.0605
Bromodichloromethane	75-27-4	ND	0.0366	0.0366
Bromoform	75-25-2	ND	0.178	0.178
Bromomethane	74-83-9	ND	0.160	0.160
2-Butanone(MEK)	78-93-3	ND	0.598	0.598
Carbon disulfide	75-15-0	ND	0.226	0.226
Carbon tetrachloride	56-23-5	ND	0.0501	0.0501
Chlorobenzene	108-90-7	ND	0.0935	0.0935
Chloroethane	75-00-3	ND	0.162	0.162
2-Chloroethyl vinyl ether	110-75-8	ND	0.170	0.170
Chloroform	67-66-3	6.37	0.0716	0.0716
Chloromethane	74-87-3	ND	0.160	0.160
Dibromochloromethane	124-48-1	ND	0.108	0.108
Dibromomethane	74-95-3	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	110-57-6	ND	0.332	0.332
Dichlorodifluoromethane	75-71-8	ND	0.168	0.168
1,1-Dichloroethane	75-34-3	ND	0.0836	0.0836
1,2-Dichloroethane	107-06-2	ND	0.0848	0.0848
1,1-Dichloroethene	75-35-4	ND	0.144	0.144
trans-1,2-Dichloroethene	156-60-5	ND	0.171	0.171
1,2-Dichloropropane	78-87-5	ND	0.0843	0.0843
cis-1,3-Dichloropropene	10061-01-5	ND	0.0510	0.0510

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897WFB
Lab Sample ID 9708147-03A
File # B0819709
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared _____
Date Analyzed 08/19/97 19:06:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	0.0699	0.0699
Ethyl methacrylate	97-63-2	ND	0.288	0.288
Ethylbenzene	100-41-4	ND	0.109	0.109
2-Hexanone	591-78-6	ND	0.497	0.497
Iodomethane	74-88-4	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	0.188	0.188
Methylene chloride	75-09-2	ND	0.0965	0.0965
Styrene	100-42-5	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.100	0.100
Tetrachloroethene	127-18-4	ND	0.0920	0.0920
Toluene	108-88-3	ND	0.0581	0.0581
1,1,1-Trichloroethane	71-55-6	ND	0.152	0.152
1,1,2-Trichloroethane	79-00-5	ND	0.119	0.119
Trichloroethene	79-01-6	ND	0.108	0.108
Trichlorofluoromethane	75-69-4	ND	0.136	0.136
1,2,3-Trichloropropane	96-18-4	ND	0.114	0.114
Vinyl acetate	108-05-4	ND	0.434	0.434
Vinyl chloride	75-01-4	ND	0.169	0.169
m&p-Xylene	NO_CAS	ND	0.190	0.190
o-Xylene	95-47-6	ND	0.0970	0.0970

R E S U L T S (Cont'd)

Work Order # 9708147

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897WFB
Lab Sample ID 9708147-03A
File # B0819709
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared _____
Date Analyzed 08/19/97 19:06:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	16.7	14.1	84	77	117
1,2-Dichloroethane-d4	17060-07-0	16.7	15.0	90	61	143
Toluene-d8	2037-26-5	16.7	16.0	96	87	113

RESULTS

Extraction Batch # _____
Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W10
Lab Sample ID 9708147-04A
File # B0819710
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared _____
Date Analyzed 08/19/97 19:35:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	ND	0.488	0.488
Acrolein	107-02-8	ND	1.02	1.02
Acrylonitrile	107-13-1	ND	0.403	0.403
Benzene	71-43-2	0.193	0.0605	0.0605
Bromodichloromethane	75-27-4	ND	0.0366	0.0366
Bromoform	75-25-2	ND	0.178	0.178
Bromomethane	74-83-9	ND	0.160	0.160
2-Butanone (MEK)	78-93-3	ND	0.598	0.598
Carbon disulfide	75-15-0	ND	0.226	0.226
Carbon tetrachloride	56-23-5	ND	0.0501	0.0501
Chlorobenzene	108-90-7	ND	0.0935	0.0935
Chloroethane	75-00-3	ND	0.162	0.162
2-Chloroethyl vinyl ether	110-75-8	ND	0.170	0.170
Chloroform	67-66-3	ND	0.0716	0.0716
Chloromethane	74-87-3	ND	0.160	0.160
Dibromochloromethane	124-48-1	ND	0.108	0.108
Dibromomethane	74-95-3	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	110-57-6	ND	0.332	0.332
Dichlorodifluoromethane	75-71-8	ND	0.168	0.168
1,1-Dichloroethane	75-34-3	ND	0.0836	0.0836
1,2-Dichloroethane	107-06-2	ND	0.0848	0.0848
1,1-Dichloroethene	75-35-4	ND	0.144	0.144
trans-1,2-Dichloroethene	156-60-5	ND	0.171	0.171
1,2-Dichloropropane	78-87-5	ND	0.0843	0.0843
[illegible]-1,3-Dichlor[illegible]ne	10061-01-5	ND	0.0510	0.0510

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W10 | Date Collected 08/06/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708147-04A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0819710 | Date Prepared _____ | Analyst TLS | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/19/97 19:35:00 | Reviewer KLZ

Test Code 826SWAT1

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	0.0699	0.0699
Ethyl methacrylate	97-63-2	ND	0.288	0.288
Ethylbenzene	100-41-4	ND	0.109	0.109
2-Hexanone	591-78-6	ND	0.497	0.497
Iodomethane	74-88-4	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	0.188	0.188
Methylene chloride	75-09-2	ND	0.0965	0.0965
Styrene	100-42-5	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.100	0.100
Tetrachloroethene	127-18-4	ND	0.0920	0.0920
Toluene	108-88-3	0.276	0.0581	0.0581
1,1,1-Trichloroethane	71-55-6	ND	0.152	0.152
1,1,2-Trichloroethane	79-00-5	ND	0.119	0.119
Trichloroethene	79-01-6	ND	0.108	0.108
Trichlorofluoromethane	75-69-4	ND	0.136	0.136
1,2,3-Trichloropropane	96-18-4	ND	0.114	0.114
Vinyl acetate	108-05-4	ND	0.434	0.434
Vinyl chloride	75-01-4	ND	0.169	0.169
m&p-Xylene	NO_CAS	ND	0.190	0.190
o-Xylene	95-47-6	ND	0.0970	0.0970

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W10 | Date Collected 08/06/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708147-04A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0819710 | Date Prepared _____ | Analyst TLS | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/19/97 19:35:00 | Reviewer KLZ

Test Code 826SWAT1

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	16.7	13.8	83	77	117
1,2-Dichloroethane-d4	17060-07-0	16.7	14.8	89	61	143
Toluene-d8	2037-26-5	16.7	15.7	94	87	113

RESULTS

Extraction Batch # _____
Analysis Batch # MSMSDB70819143501

Work Order # 9708147

Project Sample ID IPW0897W12
Lab Sample ID 9708147-05A
File # B0819711
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared _____
Date Analyzed 08/19/97 20:03:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	< DL	0.488	0.488
Acrolein	107-02-8	ND	1.02	1.02
Acrylonitrile	107-13-1	ND	0.403	0.403
Benzene	71-43-2	ND	0.0605	0.0605
Bromodichloromethane	75-27-4	ND	0.0366	0.0366
Bromoform	75-25-2	ND	0.178	0.178
Bromomethane	74-83-9	ND	0.160	0.160
2-Butanone(MEK)	78-93-3	ND	0.598	0.598
Carbon disulfide	75-15-0	ND	0.226	0.226
Carbon tetrachloride	56-23-5	ND	0.0501	0.0501
Chlorobenzene	108-90-7	ND	0.0935	0.0935
Chloroethane	75-00-3	ND	0.162	0.162
2-Chloroethyl vinyl ether	110-75-8	ND	0.170	0.170
Chloroform	67-66-3	ND	0.0716	0.0716
Chloromethane	74-87-3	ND	0.160	0.160
Dibromochloromethane	124-48-1	ND	0.108	0.108
Dibromomethane	74-95-3	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	110-57-6	ND	0.332	0.332
Dichlorodifluoromethane	75-71-8	ND	0.168	0.168
1,1-Dichloroethane	75-34-3	ND	0.0836	0.0836
1,2-Dichloroethane	107-06-2	ND	0.0848	0.0848
1,1-Dichloroethene	75-35-4	ND	0.144	0.144
trans-1,2-Dichloroethene	156-60-5	ND	0.171	0.171
1,2-Dichloropropane	78-87-5	ND	0.0843	0.0843
cis-1,3-Dichloropropene	10061-01-5	ND	0.0510	0.0510

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W12 | Date Collected 08/06/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708147-05A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0819711 | Date Prepared _____ | Analyst TLS | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/19/97 20:03:00 | Reviewer KLZ

Test Code 826SWAT1

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	0.0699	0.0699
Ethyl methacrylate	97-63-2	ND	0.288	0.288
Ethylbenzene	100-41-4	ND	0.109	0.109
2-Hexanone	591-78-6	ND	0.497	0.497
Iodomethane	74-88-4	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	0.188	0.188
Methylene chloride	75-09-2	ND	0.0965	0.0965
Styrene	100-42-5	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.100	0.100
Tetrachloroethene	127-18-4	ND	0.0920	0.0920
Toluene	108-88-3	ND	0.0581	0.0581
1,1,1-Trichloroethane	71-55-6	ND	0.152	0.152
1,1,2-Trichloroethane	79-00-5	ND	0.119	0.119
Trichloroethene	79-01-6	ND	0.108	0.108
Trichlorofluoromethane	75-69-4	ND	0.136	0.136
1,2,3-Trichloropropane	96-18-4	ND	0.114	0.114
Vinyl acetate	108-05-4	ND	0.434	0.434
Vinyl chloride	75-01-4	ND	0.169	0.169
m&p-Xylene	NO_CAS	ND	0.190	0.190
o-Xylene	95-47-6	ND	0.0970	0.0970

R E S U L T S (Cont'd)

Work Order # 9708147

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Project Sample ID IPW0897W12
Lab Sample ID 9708147-05A
File # B0819711
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared _____
Date Analyzed 08/19/97 20:03:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	16.7	14.1	84	77	117
1,2-Dichloroethane-d4	17060-07-0	16.7	14.7	88	61	143
Toluene-d8	2037-26-5	16.7	16.0	96	87	113

LABORATORY BLANK INFORMATION

Extraction Batch # _____
Analysis Batch # MSMSDB70819143501

Lab Sample ID BLK973803 | Date Prepared _____ | Instrument MSDB | Reporting Subset ___ | Matrix W
File # B0819705 | Date Analyzed 08/19/97 16:27:00 | Column _____ | Spikes Subset ___
Method Volatile Organics SW8260A | Analyst TLS | Specs Subset ___
Test Code 826SWAT1 | Reviewer KLZ

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	ND	0.488	0.488
Acrolein	ND	1.02	1.02
Acrylonitrile	ND	0.403	0.403
Benzene	ND	0.0605	0.0605
Bromodichloromethane	ND	0.0366	0.0366
Bromoform	ND	0.178	0.178
Bromomethane	ND	0.160	0.160
2-Butanone (MEK)	ND	0.598	0.598
Carbon disulfide	ND	0.226	0.226
Carbon tetrachloride	ND	0.0501	0.0501
Chlorobenzene	ND	0.0935	0.0935
Chloroethane	ND	0.162	0.162
2-Chloroethyl vinyl ether	ND	0.170	0.170
Chloroform	ND	0.0716	0.0716
Chloromethane	ND	0.160	0.160
Dibromochloromethane	ND	0.108	0.108
Dibromomethane	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	ND	0.332	0.332
Dichlorodifluoromethane	ND	0.168	0.168
1,1-Dichloroethane	ND	0.0836	0.0836
1,2-Dichloroethane	ND	0.0848	0.0848
1,1-Dichloroethene	ND	0.144	0.144
trans-1,2-Dichloroethene	ND	0.171	0.171
1,2-Dichloropropane	ND	0.0843	0.0843
cis-1,3-Dichloropropene	ND	0.0510	0.0510

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # _____
Analysis Batch # MSMSDB70819143501

Lab Sample ID BLK973803
File # B0819705
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/19/97 16:27:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	ND	0.0699	0.0699
Ethyl methacrylate	ND	0.288	0.288
Ethylbenzene	ND	0.109	0.109
2-Hexanone	ND	0.497	0.497
Iodomethane	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	ND	0.188	0.188
Methylene chloride	ND	0.0965	0.0965
Styrene	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	ND	0.100	0.100
Tetrachloroethene	ND	0.0920	0.0920
Toluene	ND	0.0581	0.0581
1,1,1-Trichloroethane	ND	0.152	0.152
1,1,2-Trichloroethane	ND	0.119	0.119
Trichloroethene	ND	0.108	0.108
Trichlorofluoromethane	ND	0.136	0.136
1,2,3-Trichloropropane	ND	0.114	0.114
Vinyl acetate	ND	0.434	0.434
Vinyl chloride	ND	0.169	0.169
m&p-Xylene	ND	0.190	0.190
o-Xylene	ND	0.0970	0.0970

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # _____
Analysis Batch # MSMSDB70819143501

Lab Sample ID BLK973803
File # B0819705
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/19/97 16:27:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Surrogate(s)	Spiked Conc. ug/L	Measured Conc. ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	16.7	14.1	84	77	117
1,2-Dichloroethane-d4	16.7	14.8	88	61	143
Toluene-d8	16.7	16.1	96	87	113

08/22/97 14:19:40

LABORATORY CONTROL SAMPLE

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Work Order # 9708147

Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/19/97 15:59:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS974558 File ID B0819703			LCS Duplicate Lab Sample ID LCSD974559 File ID B0819704			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Acetone	20.0	13.8	69	20.0	14.8	74	3	127	7.0	49
Acrylonitrile	20.0	14.8	74	20.0	15.0	75			1.3	
Benzene	20.0	18.7	93	20.0	19.6	98	74	132	5.2	14
Bromodichloromethane	20.0	18.6	93	20.0	19.4	97	64	132	4.2	22
Bromoform	20.0	18.0	90	20.0	18.6	93	41	135	3.3	12
Bromomethane	20.0	11.9	60	20.0	11.7	58	46	152	3.4	18
2-Butanone(MEK)	20.0	16.8	84	20.0	16.6	83	0.1	160	1.2	37
Carbon disulfide	20.0	17.6	88	20.0	18.6	93	29	223	5.5	23
Carbon tetrachloride	20.0	17.4	87	20.0	18.7	93	53	167	6.7	21
Chlorobenzene	20.0	21.1	106	20.0	22.0	110	73	119	3.7	13
Chloroethane	20.0	12.6	63	20.0	12.1	60	50	154	4.9	22
Chloroform	20.0	22.5	112	20.0	23.0	115	64	130	2.6	16
Chloromethane	20.0	10.4	52	20.0	10.0	50	39	135	3.9	25
Dibromochloromethane	20.0	21.1	105	20.0	21.3	106	60	122	0.95	15
Dibromomethane	20.0	17.8	89	20.0	18.3	92			3.3	
Dichlorodifluoromethane	20.0	8.55	43	20.0	9.08	45	5	157	4.6	27
1,1-Dichloroethane	20.0	15.4	77	20.0	16.7	84	65	131	8.7	19
1,2-Dichloroethane	20.0	16.5	82	20.0	17.1	86	68	138	4.8	12
1,1-Dichloroethene	20.0	15.4	77	20.0	16.7	84	51	133	8.7	23
trans-1,2-Dichloroethene	20.0	16.7	83	20.0	17.6	88	58	144	5.8	21

08/22/97 14:19:40

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Work Order # 9708147

Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/19/97 15:59:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

	LCS Lab Sample ID LCS974558 File ID B0819703			LCS Duplicate Lab Sample ID LCSD974559 File ID B0819704			Recovery Spec. Limits		RPD	
Analyte	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
1,2-Dichloropropane	20.0	16.6	83	20.0	17.2	86	77	119	3.6	14
cis-1,3-Dichloropropene	20.0	17.6	88	20.0	18.4	92	75	131	4.4	12
trans-1,3-Dichloropropene	20.0	17.2	86	20.0	17.5	87	64	132	1.2	13
Ethylbenzene	20.0	20.2	101	20.0	21.1	105	72	130	3.9	17
2-Hexanone	20.0	12.8	64	20.0	13.9	70	58	140	9.0	24
4-Methyl-2-pentanone(MIBK)	20.0	11.8	59	20.0	12.4	62	58	142	5.0	16
Methylene chloride	20.0	17.5	87	20.0	17.6	88	49	151	1.1	23
Styrene	20.0	20.4	102	20.0	20.9	105	73	131	2.9	13
1,1,2,2-Tetrachloroethane	20.0	18.2	91	20.0	18.8	94	60	134	3.2	12
Tetrachloroethene	20.0	23.2	116	20.0	24.2	121	62	124	4.2	18
Toluene	20.0	18.6	93	20.0	19.6	98	81	121	5.2	14
1,1,1-Trichloroethane	20.0	18.1	91	20.0	19.0	95	58	144	4.3	21
1,1,2-Trichloroethane	20.0	20.4	102	20.0	21.2	106	68	122	3.8	13
Trichloroethene	20.0	19.3	96	20.0	20.2	101	73	117	5.1	13
Trichlorofluoromethane	20.0	12.7	64	20.0	13.3	66	50	142	3.1	25
Vinyl chloride	20.0	12.8	64	20.0	12.8	64	27	161	0	20
m&p-Xylene	40.0	39.6	99	40.0	41.6	104	74	128	4.9	15
o-Xylene	20.0	20.0	100	20.0	20.8	104	79	125	3.9	16

08/22/97 14:19:40

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # _____

Analysis Batch # MSMSDB70819143501

Work Order # 9708147

Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/19/97 15:59:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer KLZ

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS974558 File ID B0819703			LCS Duplicate Lab Sample ID LCSD974559 File ID B0819704			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %

Surrogate(s)									
1,4-Bromofluorobenzene	16.7	15.9	95	16.7	15.8	95	77	117	
1,2-Dichloroethane-d4	16.7	15.4	92	16.7	15.0	90	61	143	
Toluene-d8	16.7	15.9	95	16.7	16.0	96	87	113	

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70819143501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/19/97 14:35:00
Reporting Subset ___
Instrument MSDB
File # B0819702
Spikes Subset ___
Analyst TLS
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer KLZ
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
1,2-Dibromo-3-chloropropane	15.5	20.0	78		
Dibromochloromethane	19.7	20.0	99		
1,2-Dibromoethane	19.3	20.0	96		
Dibromomethane	17.7	20.0	88		
trans-1,4-Dichloro-2-butene	12.7	20.0	63		
1,2-Dichlorobenzene	19.4	20.0	97		
1,3-Dichlorobenzene	19.6	20.0	98		
1,4-Dichlorobenzene	19.3	20.0	96		
Dichlorodifluoromethane	13.7	20.0	68		
1,1-Dichloroethane	16.5	20.0	82		
1,2-Dichloroethane	16.2	20.0	81		
1,1-Dichloroethene	17.5	20.0	88	80	120
cis-1,2-Dichloroethene	17.8	20.0	89		
trans-1,2-Dichloroethene	18.3	20.0	91		
1,2-Dichloropropane	17.2	20.0	86	80	120
1,3-Dichloropropane	18.5	20.0	92		
2,2-Dichloropropane	23.1	20.0	115		
1,1-Dichloropropene	18.5	20.0	92		
cis-1,3-Dichloropropene	17.8	20.0	89		
trans-1,3-Dichloropropene	17.0	20.0	85		
Ethyl methacrylate	17.2	20.0	86		
Ethylbenzene	19.8	20.0	99	80	120
Hexachlorobutadiene	18.1	20.0	90		
2-Hexanone	13.2	20.0	66		
Iodomethane	15.2	20.0	76		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70819143501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0819702
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/19/97 14:35:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst TLS
Reviewer KLZ

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Isopropylbenzene	18.8	20.0	94		
p-Isopropyltoluene	18.2	20.0	91		
Methyl methacrylate	16.8	20.0	84		
Methyl t-butyl ether	16.5	20.0	82		
4-Methyl-2-pentanone(MIBK)	12.8	20.0	64		
Methylene chloride	18.3	20.0	91		
Naphthalene	14.5	20.0	72		
Propanenitrile	72.1	100	72		
n-Propylbenzene	19.0	20.0	95		
Styrene	19.8	20.0	99		
1,1,1,2-Tetrachloroethane	21.4	20.0	107		
1,1,2,2-Tetrachloroethane	17.6	20.0	88		
Tetrachloroethene	23.7	20.0	119		
Tetrahydrofuran	15.5	20.0	77		
Toluene	19.0	20.0	95	80	120
1,2,3-Trichlorobenzene	14.9	20.0	74		
1,2,4-Trichlorobenzene	15.2	20.0	76		
1,1,1-Trichloroethane	18.5	20.0	93		
1,1,2-Trichloroethane	19.3	20.0	96		
Trichloroethene	19.5	20.0	97		
Trichlorofluoromethane	17.2	20.0	86		
1,2,3-Trichloropropane	17.0	20.0	85		
1,1,2-Trichlorotrifluoroethane	19.3	20.0	96		
1,2,4-Trimethylbenzene	18.3	20.0	92		
1,3,5-Trimethylbenzene	18.5	20.0	93		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70819143501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0819702
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/19/97 14:35:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst TLS
Reviewer KLZ

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Vinyl acetate	14.0	20.0	70		
Vinyl chloride	17.5	20.0	87	80	120
m&p-Xylene	39.2	40.0	98		
o-Xylene	19.5	20.0	97		

Surrogate(s)					
1,4-Bromofluorobenzene	16.4	16.7	98	77	117
1,2-Dichloroethane-d4	15.6	16.7	93	61	143
Toluene-d8	15.8	16.7	95	87	113

ANALYTICAL PROTOCOL SUMMARY
COMMENTS/NARRATIVE

Method Volatile Organics SW8260A Specification# _____

Lab Sample ID File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action

08/21/97 16:57:37

RADIAN ANALYTICAL SERVICES
FPAS REPORT
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Work Order # 9708171

Client INTERNATIONAL PAPER
Facility
Client Code IP WILM

Certified By
Date 8/22/97

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WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To 3200 E. CHAPEL HILL RD.
RTP, NC 27709
Attention JIM NARKUNAS

Client Code IP WILM
Client INTERNATIONAL PAPER
Facility
Work ID WILMINGTON SEMIANNUA

Work Order # 9708171
Page 1
RCN 258058.1501

Prepared Radian International, LLC
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70117AJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
IPW0897W06	01A	826SWAT1	Volatile Organics by GC/MS
	01B	SPAREB00	Spare Sample
	01C	SPAREB00	Spare Sample
IPW0897W07	02A	826SWAT1	Volatile Organics by GC/MS
	02B	SPAREB00	Spare Sample
	02C	SPAREB00	Spare Sample
IPW0897W09	03A	826SWAT1	Volatile Organics by GC/MS
	03B	SPAREB00	Spare Sample
	03C	SPAREB00	Spare Sample
	03D	SPAREB00	Spare Sample
TRIP BLANK	04A	826SWAT1	Volatile Organics by GC/MS
	04B	SPAREB00	Spare Sample
IPW0897W09	05A MS	826SWAMS	Volatile Organics by GC/MS
	06A MSD	826SWAMS	Volatile Organics by GC/MS

The standard Method 8260A surrogate tolerances are laboratory derived from historical data. Project specific tolerances may differ.

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

ANALYTICAL PROTOCOL SUMMARY

Work Order # 9708171

Client INTERNATIONAL PAPER

Specification # 826S

Facility

Client Code IP WILM

Method Volatile Organics SW8260A

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
IPW0897W06	9708171-01A	826SWAT1	NA	MSMSDB70813153401
IPW0897W06	9708171-01C	826SWAT1	NA	MSMSDB70818123501
IPW0897W07	9708171-02A	826SWAT1	NA	MSMSDB70813153401
IPW0897W07	9708171-02B	826SWAT1	NA	MSMSDB70814163701
IPW0897W09	9708171-03A	826SWAT1	NA	MSMSDB70813153401
IPW0897W09	9708171-03B	826SWAT1	NA	MSMSDB70814163701
TRIP BLANK	9708171-04B	826SWAT1	NA	MSMSDB70814163701

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W06		IPW0897W06		IPW0897W07		IPW0897W07	
Lab ID:	9708171-01A		9708171-01C		9708171-02A		9708171-02B	
File ID:	B0813716		B0818717		B0813717		B0814733	
Date Collected:	08/07/97		08/07/97		08/07/97		08/07/97	
Date Prepared:								
Date Analyzed:	08/13/97 22:12:00		08/18/97 20:57:00		08/13/97 22:41:00		08/15/97 08:39:00	
Dilution Factor:	1		2000		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	16900 ER	0.488	41500	976	63.2 R	0.488	ND	0.488
Acrolein	ND	1.02	ND	2040	ND	1.02	ND	1.02
Acrylonitrile	ND	0.403	ND	806	ND	0.403	ND	0.403
Benzene	67.4	0.0605	ND	121	ND	0.0605	ND	0.0605
Bromodichloromethane	ND	0.0366	ND	73.2	ND	0.0366	ND	0.0366
Bromoform	ND	0.178	ND	356	ND	0.178	ND	0.178
Bromomethane	ND	0.160	ND	320	ND	0.160	ND	0.160
2-Butanone (MEK)	23300 ER	0.598	88200	1200	63.3 R	0.598	ND	0.598
Carbon disulfide	ND	0.226	ND	452	ND	0.226	ND	0.226
Carbon tetrachloride	ND	0.0501	ND	100	ND	0.0501	ND	0.0501
Chlorobenzene	0.370	0.0935	ND	187	ND	0.0935	ND	0.0935
Chloroethane	ND	0.162	ND	324	ND	0.162	ND	0.162
2-Chloroethyl vinyl ether	ND	0.170	ND	340	ND	0.170	ND	0.170
Chloroform	ND	0.0716	ND	143	ND	0.0716	ND	0.0716
Chloromethane	ND	0.160	ND	320	ND	0.160	ND	0.160
Dibromochloromethane	ND	0.108	ND	216	ND	0.108	ND	0.108
Dibromomethane	ND	0.132	ND	264	ND	0.132	ND	0.132
trans-1,4-Dichloro-2-butene	ND	0.332	ND	664	ND	0.332	ND	0.332
Dichlorodifluoromethane	ND	0.168	ND	336	ND	0.168	ND	0.168
1,1-Dichloroethane	1.64	0.0836	ND	167	ND	0.0836	ND	0.0836

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W06		IPW0897W06		IPW0897W07		IPW0897W07	
Lab ID:	9708171-01A		9708171-01C		9708171-02A		9708171-02B	
File ID:	B0813716		B0818717		B0813717		B0814733	
Date Collected:	08/07/97		08/07/97		08/07/97		08/07/97	
Date Prepared:								
Date Analyzed:	08/13/97 22:12:00		08/18/97 20:57:00		08/13/97 22:41:00		08/15/97 08:39:00	
Dilution Factor:	1		2000		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloroethane	ND	0.0848	ND	170	ND	0.0848	ND	0.0848
1,1-Dichloroethene	ND	0.144	ND	288	ND	0.144	ND	0.144
trans-1,2-Dichloroethene	ND	0.171	ND	342	ND	0.171	ND	0.171
1,2-Dichloropropane	ND	0.0843	ND	169	ND	0.0843	ND	0.0843
cis-1,3-Dichloropropene	ND	0.0510	ND	102	ND	0.0510	ND	0.0510
trans-1,3-Dichloropropene	ND	0.0699	ND	140	ND	0.0699	ND	0.0699
Ethyl methacrylate	ND	0.288	ND	576	ND	0.288	ND	0.288
Ethylbenzene	7.32	0.109	ND	218	ND	0.109	ND	0.109
2-Hexanone	4.91	0.497	ND	994	ND	0.497	ND	0.497
Iodomethane	ND	0.229	ND	458	ND	0.229	ND	0.229
4-Methyl-2-pentanone(MIBK)	33.4	0.188	ND	376	ND	0.188	ND	0.188
Methylene chloride	22.4	0.0965	ND	193	ND	0.0965	ND	0.0965
Styrene	ND	0.0832	ND	166	ND	0.0832	ND	0.0832
1,1,2,2-Tetrachloroethane	ND	0.100	ND	200	ND	0.100	ND	0.100
Tetrachloroethene	0.196 Y	0.0920	ND	184	ND	0.0920	ND	0.0920
Toluene	3970 ER	0.0581	19900	116	5.73 R	0.0581	ND	0.0581
1,1,1-Trichloroethane	ND	0.152	ND	304	ND	0.152	ND	0.152
1,1,2-Trichloroethane	ND	0.119	ND	238	ND	0.119	ND	0.119
Trichloroethene	0.512	0.108	ND	216	ND	0.108	ND	0.108
Trichlorofluoromethane	ND	0.136	ND	272	ND	0.136	ND	0.136

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W06		IPW0897W06		IPW0897W07		IPW0897W07	
Lab ID:	9708171-01A		9708171-01C		9708171-02A		9708171-02B	
File ID:	B0813716		B0818717		B0813717		B0814733	
Date Collected:	08/07/97		08/07/97		08/07/97		08/07/97	
Date Prepared:								
Date Analyzed:	08/13/97 22:12:00		08/18/97 20:57:00		08/13/97 22:41:00		08/15/97 08:39:00	
Dilution Factor:	1		2000		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2,3-Trichloropropane	ND	0.114	ND	228	ND	0.114	ND	0.114
Vinyl acetate	ND	0.434	ND	868	ND	0.434	ND	0.434
Vinyl chloride	0.480	0.169	ND	338	ND	0.169	ND	0.169
m&p-Xylene	13.4	0.190	ND	380	ND	0.190	ND	0.190
o-Xylene	4.15	0.0970	ND	194	ND	0.0970	ND	0.0970

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	112	88	92	87
1,2-Dichloroethane-d4	87	91	91	90
Toluene-d8	57 Q	95	97	94

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W09		IPW0897W09		TRIP BLANK			
Lab ID:	9708171-03A		9708171-03B		9708171-04B			
File ID:	B0813718		B0814735		B0814732			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:								
Date Analyzed:	08/13/97 23:09:00		08/15/97 09:35:00		08/15/97 08:10:00			
Dilution Factor:	1		100		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	209 E	0.488	ND	48.8	ND	0.488		
Acrolein	ND	1.02	ND	102	ND	1.02		
Acrylonitrile	ND	0.403	ND	40.3	ND	0.403		
Benzene	102 ER	0.0605	106	6.05	ND	0.0605		
Bromodichloromethane	ND	0.0366	ND	3.66	ND	0.0366		
Bromoform	ND	0.178	ND	17.8	ND	0.178		
Bromomethane	ND	0.160	ND	16.0	ND	0.160		
2-Butanone(MEK)	285 ER	0.598	307	59.8	ND	0.598		
Carbon disulfide	ND	0.226	ND	22.6	ND	0.226		
Carbon tetrachloride	ND	0.0501	ND	5.01	ND	0.0501		
Chlorobenzene	ND	0.0935	ND	9.35	ND	0.0935		
Chloroethane	ND	0.162	ND	16.2	ND	0.162		
2-Chloroethyl vinyl ether	ND	0.170	ND	17.0	ND	0.170		
Chloroform	ND	0.0716	ND	7.16	ND	0.0716		
Chloromethane	ND	0.160	ND	16.0	ND	0.160		
Dibromochloromethane	ND	0.108	ND	10.8	ND	0.108		
Dibromomethane	ND	0.132	ND	13.2	ND	0.132		
trans-1,4-Dichloro-2-butene	ND	0.332	ND	33.2	ND	0.332		
Dichlorodifluoromethane	ND	0.168	ND	16.8	ND	0.168		
1,1-Dichloroethane	ND	0.0836	ND	8.36	ND	0.0836		

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W09		IPW0897W09		TRIP BLANK			
Lab ID:	9708171-03A		9708171-03B		9708171-04B			
File ID:	B0813718		B0814735		B0814732			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:								
Date Analyzed:	08/13/97 23:09:00		08/15/97 09:35:00		08/15/97 08:10:00			
Dilution Factor:	1		100		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloroethane	ND	0.0848	ND	8.48	ND	0.0848		
1,1-Dichloroethene	ND	0.144	ND	14.4	ND	0.144		
trans-1,2-Dichloroethene	ND	0.171	ND	17.1	ND	0.171		
1,2-Dichloropropane	ND	0.0843	ND	8.43	ND	0.0843		
cis-1,3-Dichloropropene	ND	0.0510	ND	5.10	ND	0.0510		
trans-1,3-Dichloropropene	ND	0.0699	ND	6.99	ND	0.0699		
Ethyl methacrylate	ND	0.288	ND	28.8	ND	0.288		
Ethylbenzene	37.7	0.109	33.8	10.9	ND	0.109		
2-Hexanone	ND	0.497	ND	49.7	ND	0.497		
Iodomethane	ND	0.229	ND	22.9	ND	0.229		
4-Methyl-2-pentanone(MIBK)	ND	0.188	ND	18.8	ND	0.188		
Methylene chloride	ND	0.0965	ND	9.65	ND	0.0965		
Styrene	ND	0.0832	ND	8.32	ND	0.0832		
1,1,2,2-Tetrachloroethane	ND	0.100	ND	10.0	ND	0.100		
Tetrachloroethene	ND	0.0920	ND	9.20	ND	0.0920		
Toluene	820 ER	0.0581	1660	5.81	ND	0.0581		
1,1,1-Trichloroethane	ND	0.152	ND	15.2	ND	0.152		
1,1,2-Trichloroethane	ND	0.119	ND	11.9	ND	0.119		
Trichloroethene	ND	0.108	ND	10.8	ND	0.108		
Trichlorofluoromethane	ND	0.136	ND	13.6	ND	0.136		

Method Volatile Organics SW8260A
Test Code 826SWAT1

Project Sample ID:	IPW0897W09		IPW0897W09		TRIP BLANK			
Lab ID:	9708171-03A		9708171-03B		9708171-04B			
File ID:	B0813718		B0814735		B0814732			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:								
Date Analyzed:	08/13/97 23:09:00		08/15/97 09:35:00		08/15/97 08:10:00			
Dilution Factor:	1		100		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2,3-Trichloropropane	ND	0.114	ND	11.4	ND	0.114		
Vinyl acetate	ND	0.434	ND	43.4	ND	0.434		
Vinyl chloride	ND	0.169	ND	16.9	ND	0.169		
m&p-Xylene	21.3	0.190	ND	19.0	ND	0.190		
o-Xylene	0.884	0.0970	ND	9.70	ND	0.0970		

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	101	88	88	
1,2-Dichloroethane-d4	98	89	89	
Toluene-d8	95	96	94	

08/21/97 16:57:37

INITIAL CALIBRATION

Work Order # 9708171

Initial Calibration # MSDB970804000000

Calibration Date 08/04/97 00:00:00

Sol'n # #MS-VOA-STD-6 p.27

Method Volatile Organics SW8260A

Test Code 826SWA00

Instrument MSDB

Analyst TLS

Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	$\overline{RF}$	% RSD	Correlation Coefficient
Dichlorodifluoromethane										0.997
Chloromethane SPCC	4.252 0.5	4.426 5	4.150 20	4.200 50	3.847 100			4.18	5.05	
Vinyl chloride CCC	2.510 0.5	3.209 5	3.004 20	3.074 50	2.798 100			2.92	9.34	
Bromomethane	2.044 0.5	2.034 5	1.960 20	1.980 50	1.851 100			1.97	3.91	
Chloroethane	1.499 0.5	1.573 5	1.505 20	1.520 50	1.337 100			1.49	5.96	
Trichlorofluoromethane	2.019 0.5	2.389 5	2.298 20	2.375 50	2.107 100			2.24	7.42	
Acrolein	0.229 2.5	0.233 25	0.220 100	0.210 250	0.230 500			0.224	4.19	
Acetonitrile										0.999
Acetone										0.999
Iodomethane	1.835 0.5	2.716 5	2.664 20	2.743 50	2.582 100			2.51	15.2	

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INITIAL CALIBRATION Cont'd

Work Order # 9708171

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Initial Calibration # MSDB970804000000

Calibration Date 08/04/97 00:00:00

Sol'n # #MS-VOA-STD-6 p.27

Method Volatile Organics SW8260A

Test Code 826SWA00

Instrument MSDB

Analyst TLS

Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
1,1-Dichloroethene	1.269	1.469	1.377	1.416	1.258			1.36	6.79	
CCC	0.5	5	20	50	100					
Carbon disulfide	7.369	6.996	6.285	6.378	5.624			6.53	10.3	
	0.5	5	20	50	100					
1,1,2-Trichlorotrifluoroethane	1.289	1.536	1.400	1.420	1.270			1.38	7.81	
	0.5	5	20	50	100					
Acrylonitrile	0.470	0.458	0.464	0.482	0.455			0.466	2.30	
	0.5	5	20	50	100					
3-Chloropropene	3.966	3.806	3.375	3.441	2.988			3.52	10.9	
	0.5	5	20	50	100					
Methylene chloride										0.999
trans-1,2-Dichloroethene	1.643	1.552	1.465	1.455	1.329			1.49	7.88	
	0.5	5	20	50	100					
Propanenitrile	0.130	0.148	0.153	0.151	0.146			0.146	6.27	
	2.5	25	100	250	500					
1,1-Dichloroethane	3.489	3.204	3.016	2.967	2.729			3.08	9.22	
SPCC	0.5	5	20	50	100					
Methyl t-butyl ether	3.083	3.457	3.281	3.337	3.016			3.23	5.63	
	0.5	5	20	50	100					

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000
Calibration Date 08/04/97 00:00:00

Sol'n # #MS-VOA-STD-6 p.27
Method Volatile Organics SW8260A
Test Code 826SWA00

Instrument MSDB
Analyst TLS
Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	$\overline{RF}$	% RSD	Correlation Coefficient
Vinyl acetate	3.482 0.5	3.537 5	3.056 20	3.227 50	2.952 100			3.25	7.89	
2-Chloro-1,3-butadiene	1.267 0.5	1.402 5	1.251 20	1.250 50	1.107 100			1.26	8.33	
2-Butanone (MEK)										0.999
Tetrahydrofuran										1.00
cis-1,2-Dichloroethene	1.693 0.5	1.574 5	1.510 20	1.481 50	1.365 100			1.52	7.92	
2,2-Dichloropropane										0.995
Chloroform CCC	2.561 0.5	2.378 5	2.239 20	2.159 50	2.017 100			2.27	9.18	
1,1,1-Trichloroethane	1.957 0.5	1.976 5	1.508 20	1.864 50	1.676 100			1.80	11.1	
1,2-Dichloroethane	2.172 0.5	2.017 5	2.011 20	1.947 50	1.841 100			2.00	6.03	
1,1-Dichloropropene	0.374 0.5	0.439 5	0.416 20	0.419 50	0.378 100			0.405	6.94	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000
Calibration Date 08/04/97 00:00:00

Sol'n # #MS-VOA-STD-6 p.27
Method Volatile Organics SW8260A
Test Code 826SWA00

Instrument MSDB
Analyst TLS
Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
Benzene	1.360 0.5	1.328 5	1.246 20	1.221 50	1.091 100			1.25	8.43	
Carbon tetrachloride	0.272 0.5	0.300 5	0.275 20	0.275 50	0.246 100			0.274	7.00	
2-Hexanone										1.00
4-Methyl-2-pentanone(MIBK)	0.361 0.5	0.312 5	0.308 20	0.311 50	0.307 100			0.320	7.23	
1,2-Dichloropropane CCC	0.406 0.5	0.434 5	0.412 20	0.407 50	0.373 100			0.406	5.38	
Trichloroethene	0.300 0.5	0.299 5	0.292 20	0.292 50	0.272 100			0.291	3.87	
Dibromomethane	0.190 0.5	0.171 5	0.174 20	0.172 50	0.167 100			0.175	5.08	
Bromodichloromethane	0.342 0.5	0.362 5	0.352 20	0.352 50	0.341 100			0.350	2.46	
Methyl methacrylate	0.129 0.5	0.171 5	0.164 20	0.169 50	0.168 100			0.160	11.0	
2-Chloroethyl vinyl ether	0.125 0.5	0.175 5	0.173 20	0.180 50	0.180 100			0.167	14.1	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000

Sol'n # #MS-VOA-STD-6 p.27
Calibration Date 08/04/97 00:00:00

Method Volatile Organics SW8260A
Test Code 826SWA00

Instrument MSDB
Analyst TLS
Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
trans-1,3-Dichloropropene	0.336 0.5	0.361 5	0.369 20	0.367 50	0.348 100			0.356	3.92	
cis-1,3-Dichloropropene	0.439 0.5	0.487 5	0.473 20	0.479 50	0.458 100			0.467	4.07	
Toluene CCC	0.666 0.5	0.705 5	0.672 20	0.672 50	0.624 100			0.668	4.33	
1,1,2-Trichloroethane	0.414 0.5	0.463 5	0.462 20	0.466 50	0.462 100			0.453	4.87	
Ethyl methacrylate	0.664 0.5	0.715 5	0.723 20	0.734 50	0.739 100			0.715	4.20	
1,3-Dichloropropane	0.760 0.5	0.840 5	0.841 20	0.846 50	0.827 100			0.823	4.35	
Dibromochloromethane	0.431 0.5	0.490 5	0.513 20	0.528 50	0.527 100			0.498	8.11	
1,2-Dibromoethane	0.403 0.5	0.458 5	0.470 20	0.479 50	0.478 100			0.458	6.92	
Tetrachloroethene	0.392 0.5	0.434 5	0.413 20	0.428 50	0.407 100			0.415	4.05	
Chlorobenzene SPCC	1.571 0.5	1.647 5	1.553 20	1.577 50	1.501 100			1.57	3.34	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000

Sol'n # #MS-VOA-STD-6 p.27

Calibration Date 08/04/97 00:00:00

Instrument MSDB

Method Volatile Organics SW8260A

Analyst TLS

Test Code 826SWA00

Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
1,1,1,2-Tetrachloroethane	0.379 0.5	0.473 5	0.478 20	0.496 50	0.492 100			0.464	10.4	
1-Chlorohexane	0.824 0.5	0.890 5	0.814 20	0.831 50	0.772 100			0.826	5.13	
Ethylbenzene	0.777 0.5	0.831 5	0.779 20	0.794 50	0.750 100			0.786	3.77	
m&p-Xylene	0.951 1	1.010 10	0.965 40	0.967 100	0.892 200			0.957	4.44	
Bromoform SPCC										0.999
Styrene	1.446 0.5	1.618 5	1.605 20	1.630 50	1.568 100			1.57	4.76	
o-Xylene	0.940 0.5	1.010 5	0.965 20	0.970 50	0.918 100			0.961	3.60	
trans-1,4-Dichloro-2-butene										1.00
1,1,2,2-Tetrachloroethane SPCC	0.502 0.5	0.510 5	0.528 20	0.551 50	0.549 100			0.528	4.20	
1,2,3-Trichloropropane	0.324 0.5	0.372 5	0.390 20	0.397 50	0.392 100			0.375	8.01	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000

Sol'n # #MS-VOA-STD-6 p.27

Calibration Date 08/04/97 00:00:00

Instrument MSDB

Method Volatile Organics SW8260A

Analyst TLS

Test Code 826SWA00

Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	RF	% RSD	Correlation Coefficient
Isopropylbenzene	2.263 0.5	2.429 5	2.296 20	2.325 50	2.157 100			2.29	4.30	
Bromobenzene	0.491 0.5	0.572 5	0.562 20	0.589 50	0.579 100			0.559	6.99	
2-Chlorotoluene	0.537 0.5	0.595 5	0.575 20	0.591 50	0.565 100			0.573	4.07	
n-Propylbenzene	0.495 0.5	0.634 5	0.611 20	0.620 50	0.591 100			0.590	9.40	
4-Chlorotoluene	0.462 0.5	0.585 5	0.574 20	0.589 50	0.563 100			0.555	9.51	
1,3,5-Trimethylbenzene	1.717 0.5	1.897 5	1.809 20	1.833 50	1.730 100			1.80	4.16	
1,2,4-Trimethylbenzene	1.772 0.5	1.934 5	1.901 20	1.895 50	1.759 100			1.85	4.35	
tert-Butylbenzene	1.626 0.5	1.775 5	1.684 20	1.691 50	1.561 100			1.67	4.78	
1,3-Dichlorobenzene	1.043 0.5	1.026 5	1.023 20	1.046 50	1.025 100			1.03	1.06	
sec-Butylbenzene	2.234 0.5	2.534 5	2.397 20	2.412 50	2.211 100			2.36	5.71	

INITIAL CALIBRATION Cont'd

Initial Calibration # MSDB970804000000

Sol'n # #MS-VOA-STD-6 p.27
Calibration Date 08/04/97 00:00:00
Instrument MSDB

Method Volatile Organics SW8260A
Analyst TLS

Test Code 826SWA00
Reviewer APS

Analytes	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response Factor / Reference Conc. ug/L	Response / Reference Conc.	Response / Reference Conc.	$\overline{RF}$	% RSD	Correlation Coefficient
1,4-Dichlorobenzene	1.018 0.5	1.029 5	1.041 20	1.055 50	1.036 100			1.04	1.33	
p-Isopropyltoluene	1.660 0.5	1.844 5	1.792 20	1.841 50	1.750 100			1.78	4.29	
1,2-Dichlorobenzene	0.898 0.5	0.935 5	0.934 20	0.961 50	0.950 100			0.936	2.55	
n-Butylbenzene	1.544 0.5	1.855 5	1.889 20	1.924 50	1.820 100			1.81	8.40	
1,2-Dibromo-3-chloropropane										1.00
1,2,4-Trichlorobenzene										1.00
Naphthalene										0.999
1,2,3-Trichlorobenzene										1.00
Hexachlorobutadiene										1.00

08/21/97 16:57:37

ANALYSIS BATCH SUMMARY

Analysis Batch # MSMSDB70813153401

Work Order # 9708171

Method Volatile Organics SW8260A

Test Code 826SWA00

Initial Calibration # MSDB970804000000

Calibration Date 08/04/97

Analysis Start Date/Time 08/13/97 15:34:00

Analysis Stop Date/Time 08/14/97 14:27:00

Instrument MSDB

Analyst MER

Reviewer APS

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/13/97 15:34:00			GC/MS tune files	B0813702
2	08/13/97 15:34:00		VSTDCAL	Continuing Calibration Verification	B0813702
3	08/13/97 16:03:00		BLK972946	Blank, Method	B0813703
4	08/13/97 16:31:00		9708164-03A	Sample	B0813704
5	08/13/97 16:59:00		9708164-02A	Sample	B0813705
6	08/13/97 17:28:00		9708164-01A	Sample	B0813706
7	08/13/97 17:56:00		LCS975014	Lab Control Sample	B0813707
8	08/13/97 18:24:00		LCSD975015	Lab Control Sample Duplicate	B0813708
9	08/13/97 18:54:00		9708164-01B	Sample	B0813709
10	08/13/97 19:22:00		9708165-03A	Sample	B0813710
11	08/13/97 19:51:00		9708165-04A	Sample	B0813711
12	08/13/97 20:19:00		9708165-05A	Sample	B0813712
13	08/13/97 20:47:00		9708165-06A	Sample	B0813713
14	08/13/97 21:16:00		9708165-07A	Sample	B0813714
15	08/13/97 21:44:00		9708165-08A	Sample	B0813715
16	08/13/97 22:12:00	IPW0897W06	9708171-01A	Sample	B0813716
17	08/13/97 22:41:00	IPW0897W07	9708171-02A	Sample	B0813717
18	08/13/97 23:09:00	IPW0897W09	9708171-03A	Sample	B0813718
19	08/13/97 23:37:00	IPW0897W09	9708171-05A	Matrix Spike	B0813719
20	08/14/97 00:06:00	IPW0897W09	9708171-06A	Matrix Spike Duplicate	B0813720
21	08/14/97 00:34:00		9708211-01A	Sample	B0813721
22	08/14/97 01:02:00		9708211-02A	Sample	B0813722
23	08/14/97 01:31:00		9708211-03A	Sample	B0813723
24	08/14/97 02:00:00		9708208-05B	Sample	B0813724
25	08/14/97 02:29:00		9708141-02A	Sample	B0813725
26	08/14/97 02:57:00		9708141-03A	Sample	B0813726
27	08/14/97 03:25:00		9708165-01A	Sample	B0813727
28	08/14/97 12:49:00		BFB	GC/MS tune files	B0813729
29	08/14/97 12:49:00		VSTDCAL	Continuing Calibration Verification	B0813729
30	08/14/97 13:58:00		9708208-05C	Sample	B0813730

ANALYSIS BATCH SUMMARY (cont'd)

Analysis Batch # MSMSDB70813153401

Work Order # 9708171

Method Volatile Organics SW8260A
Test Code 826SWA00
Initial Calibration # MSDB970804000000
Calibration Date 08/04/97

Analysis Start Date/Time 08/13/97 15:34:00
Analysis Stop Date/Time 08/14/97 14:27:00

Instrument MSDB
Analyst MER
Reviewer APS

Sequence/Analysis Time	Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
31 08/14/97 14:27:00		9708211-01B	Sample	B0813731

RESULTS

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Project Sample ID IPW0897W06 | Date Collected 08/07/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708171-01A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0813716 | Date Prepared _____ | Analyst MER | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/13/97 22:12:00 | Reviewer APS

Test Code 826SWAT1

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	16900 ER	0.488	0.488
Acrolein	107-02-8	ND	1.02	1.02
Acrylonitrile	107-13-1	ND	0.403	0.403
Benzene	71-43-2	67.4	0.0605	0.0605
Bromodichloromethane	75-27-4	ND	0.0366	0.0366
Bromoform	75-25-2	ND	0.178	0.178
Bromomethane	74-83-9	ND	0.160	0.160
2-Butanone(MEK)	78-93-3	23300 ER	0.598	0.598
Carbon disulfide	75-15-0	ND	0.226	0.226
Carbon tetrachloride	56-23-5	ND	0.0501	0.0501
Chlorobenzene	108-90-7	0.370	0.0935	0.0935
Chloroethane	75-00-3	ND	0.162	0.162
2-Chloroethyl vinyl ether	110-75-8	ND	0.170	0.170
Chloroform	67-66-3	ND	0.0716	0.0716
Chloromethane	74-87-3	ND	0.160	0.160
Dibromochloromethane	124-48-1	ND	0.108	0.108
Dibromomethane	74-95-3	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	110-57-6	ND	0.332	0.332
Dichlorodifluoromethane	75-71-8	ND	0.168	0.168
1,1-Dichloroethane	75-34-3	1.64	0.0836	0.0836
1,2-Dichloroethane	107-06-2	ND	0.0848	0.0848
1,1-Dichloroethene	75-35-4	ND	0.144	0.144
trans-1,2-Dichloroethene	156-60-5	ND	0.171	0.171
1,2-Dichloropropane	78-87-5	ND	0.0843	0.0843
cis-1,3-Dichloropropene	10061-01-5	ND	0.0510	0.0510

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Project Sample ID IPW0897W06 | Date Collected 08/07/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708171-01A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0813716 | Date Prepared _____ | Analyst MER | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/13/97 22:12:00 | Reviewer APS

Test Code 826SWAT1

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	0.0699	0.0699
Ethyl methacrylate	97-63-2	ND	0.288	0.288
Ethylbenzene	100-41-4	7.32	0.109	0.109
2-Hexanone	591-78-6	4.91	0.497	0.497
Iodomethane	74-88-4	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	108-10-1	33.4	0.188	0.188
Methylene chloride	75-09-2	22.4	0.0965	0.0965
Styrene	100-42-5	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.100	0.100
Tetrachloroethene	127-18-4	0.196 Y	0.0920	0.0920
Toluene	108-88-3	3970 ER	0.0581	0.0581
1,1,1-Trichloroethane	71-55-6	ND	0.152	0.152
1,1,2-Trichloroethane	79-00-5	ND	0.119	0.119
Trichloroethene	79-01-6	0.512	0.108	0.108
Trichlorofluoromethane	75-69-4	ND	0.136	0.136
1,2,3-Trichloropropane	96-18-4	ND	0.114	0.114
Vinyl acetate	108-05-4	ND	0.434	0.434
Vinyl chloride	75-01-4	0.480	0.169	0.169
m&p-Xylene	NO_CAS	13.4	0.190	0.190
o-Xylene	95-47-6	4.15	0.0970	0.0970

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Project Sample ID IPW0897W06
Lab Sample ID 9708171-01A
File # B0813716
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/13/97 22:12:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	16.7	18.7	112	77	117
1,2-Dichloroethane-d4	17060-07-0	16.7	14.5	87	61	143
Toluene-d8	2037-26-5	16.7	9.49	57 Q	87	113

RESULTS

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Project Sample ID IPW0897W07
Lab Sample ID 9708171-02A
File # B0813717
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/13/97 22:41:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	63.2 R	0.488	0.488
Acrolein	107-02-8	ND	1.02	1.02
Acrylonitrile	107-13-1	ND	0.403	0.403
Benzene	71-43-2	ND	0.0605	0.0605
Bromodichloromethane	75-27-4	ND	0.0366	0.0366
Bromoform	75-25-2	ND	0.178	0.178
Bromomethane	74-83-9	ND	0.160	0.160
2-Butanone(MEK)	78-93-3	63.3 R	0.598	0.598
Carbon disulfide	75-15-0	ND	0.226	0.226
Carbon tetrachloride	56-23-5	ND	0.0501	0.0501
Chlorobenzene	108-90-7	ND	0.0935	0.0935
Chloroethane	75-00-3	ND	0.162	0.162
2-Chloroethyl vinyl ether	110-75-8	ND	0.170	0.170
Chloroform	67-66-3	ND	0.0716	0.0716
Chloromethane	74-87-3	ND	0.160	0.160
Dibromochloromethane	124-48-1	ND	0.108	0.108
Dibromomethane	74-95-3	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	110-57-6	ND	0.332	0.332
Dichlorodifluoromethane	75-71-8	ND	0.168	0.168
1,1-Dichloroethane	75-34-3	ND	0.0836	0.0836
1,2-Dichloroethane	107-06-2	ND	0.0848	0.0848
1,1-Dichloroethene	75-35-4	ND	0.144	0.144
trans-1,2-Dichloroethene	156-60-5	ND	0.171	0.171
1,2-Dichloropropane	78-87-5	ND	0.0843	0.0843
cis-1,3-Dichloropropene	10061-01-5	ND	0.0510	0.0510

R E S U L T S (Cont'd)

Work Order # 9708171

Page 25

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Project Sample ID IPW0897W07 | Date Collected 08/07/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708171-02A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0813717 | Date Prepared _____ | Analyst MER | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/13/97 22:41:00 | Reviewer APS

Test Code 826SWAT1

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	0.0699	0.0699
Ethyl methacrylate	97-63-2	ND	0.288	0.288
Ethylbenzene	100-41-4	ND	0.109	0.109
2-Hexanone	591-78-6	ND	0.497	0.497
Iodomethane	74-88-4	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	0.188	0.188
Methylene chloride	75-09-2	ND	0.0965	0.0965
Styrene	100-42-5	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.100	0.100
Tetrachloroethene	127-18-4	ND	0.0920	0.0920
Toluene	108-88-3	5.73 R	0.0581	0.0581
1,1,1-Trichloroethane	71-55-6	ND	0.152	0.152
1,1,2-Trichloroethane	79-00-5	ND	0.119	0.119
Trichloroethene	79-01-6	ND	0.108	0.108
Trichlorofluoromethane	75-69-4	ND	0.136	0.136
1,2,3-Trichloropropane	96-18-4	ND	0.114	0.114
Vinyl acetate	108-05-4	ND	0.434	0.434
Vinyl chloride	75-01-4	ND	0.169	0.169
m&p-Xylene	NO_CAS	ND	0.190	0.190
o-Xylene	95-47-6	ND	0.0970	0.0970

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Project Sample ID IPW0897W07 | Date Collected 08/07/97 | Instrument MSDB | Reporting Subset ___ | Matrix W

Lab Sample ID 9708171-02A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # B0813717 | Date Prepared _____ | Analyst MER | Specs Subset ___ | % Moisture _____

Method Volatile Organics SW8260A | Date Analyzed 08/13/97 22:41:00 | Reviewer APS

Test Code 826SWAT1

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	16.7	15.3	92	77	117
1,2-Dichloroethane-d4	17060-07-0	16.7	15.2	91	61	143
Toluene-d8	2037-26-5	16.7	16.1	97	87	113

RESULTS

Extraction Batch # _____
Analysis Batch # MSMSDB70813153401

Project Sample ID IPW0897W09
Lab Sample ID 9708171-03A
File # B0813718
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/13/97 23:09:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	209 E	0.488	0.488
Acrolein	107-02-8	ND	1.02	1.02
Acrylonitrile	107-13-1	ND	0.403	0.403
Benzene	71-43-2	102 ER	0.0605	0.0605
Bromodichloromethane	75-27-4	ND	0.0366	0.0366
Bromoform	75-25-2	ND	0.178	0.178
Bromomethane	74-83-9	ND	0.160	0.160
2-Butanone (MEK)	78-93-3	285 ER	0.598	0.598
Carbon disulfide	75-15-0	ND	0.226	0.226
Carbon tetrachloride	56-23-5	ND	0.0501	0.0501
Chlorobenzene	108-90-7	ND	0.0935	0.0935
Chloroethane	75-00-3	ND	0.162	0.162
2-Chloroethyl vinyl ether	110-75-8	ND	0.170	0.170
Chloroform	67-66-3	ND	0.0716	0.0716
Chloromethane	74-87-3	ND	0.160	0.160
Dibromochloromethane	124-48-1	ND	0.108	0.108
Dibromomethane	74-95-3	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	110-57-6	ND	0.332	0.332
Dichlorodifluoromethane	75-71-8	ND	0.168	0.168
1,1-Dichloroethane	75-34-3	ND	0.0836	0.0836
1,2-Dichloroethane	107-06-2	ND	0.0848	0.0848
1,1-Dichloroethene	75-35-4	ND	0.144	0.144
trans-1,2-Dichloroethene	156-60-5	ND	0.171	0.171
1,2-Dichloropropane	78-87-5	ND	0.0843	0.0843
cis-1,3-Dichloropropene	10061-01-5	ND	0.0510	0.0510

R E S U L T S (Cont'd)

Work Order # 9708171

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Project Sample ID IPW0897W09
Lab Sample ID 9708171-03A
File # B0813718
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/13/97 23:09:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	0.0699	0.0699
Ethyl methacrylate	97-63-2	ND	0.288	0.288
Ethylbenzene	100-41-4	37.7	0.109	0.109
2-Hexanone	591-78-6	ND	0.497	0.497
Iodomethane	74-88-4	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	0.188	0.188
Methylene chloride	75-09-2	ND	0.0965	0.0965
Styrene	100-42-5	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.100	0.100
Tetrachloroethene	127-18-4	ND	0.0920	0.0920
Toluene	108-88-3	820 ER	0.0581	0.0581
1,1,1-Trichloroethane	71-55-6	ND	0.152	0.152
1,1,2-Trichloroethane	79-00-5	ND	0.119	0.119
Trichloroethene	79-01-6	ND	0.108	0.108
Trichlorofluoromethane	75-69-4	ND	0.136	0.136
1,2,3-Trichloropropane	96-18-4	ND	0.114	0.114
Vinyl acetate	108-05-4	ND	0.434	0.434
Vinyl chloride	75-01-4	ND	0.169	0.169
m&p-Xylene	NO_CAS	21.3	0.190	0.190
o-Xylene	95-47-6	0.884	0.0970	0.0970

R E S U L T S (Cont'd)

Work Order # 9708171

Extraction Batch #

Analysis Batch # MSMSDB70813153401

Project Sample ID IPW0897W09
Lab Sample ID 9708171-03A
File # B0813718
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared
Date Analyzed 08/13/97 23:09:00

Instrument MSDB
Column
Analyst MER
Reviewer APS

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	16.7	16.9	101	77	117
1,2-Dichloroethane-d4	17060-07-0	16.7	16.4	98	61	143
Toluene-d8	2037-26-5	16.7	15.8	95	87	113

LABORATORY BLANK INFORMATION

Extraction Batch # _____
Analysis Batch # MSMSDB70813153401

Lab Sample ID BLK972946
File # B0813703
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/13/97 16:03:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	ND	0.488	0.488
Acrolein	ND	1.02	1.02
Acrylonitrile	ND	0.403	0.403
Benzene	ND	0.0605	0.0605
Bromodichloromethane	ND	0.0366	0.0366
Bromoform	ND	0.178	0.178
Bromomethane	ND	0.160	0.160
2-Butanone (MEK)	ND	0.598	0.598
Carbon disulfide	ND	0.226	0.226
Carbon tetrachloride	ND	0.0501	0.0501
Chlorobenzene	ND	0.0935	0.0935
Chloroethane	ND	0.162	0.162
2-Chloroethyl vinyl ether	ND	0.170	0.170
Chloroform	ND	0.0716	0.0716
Chloromethane	ND	0.160	0.160
Dibromochloromethane	ND	0.108	0.108
Dibromomethane	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	ND	0.332	0.332
Dichlorodifluoromethane	ND	0.168	0.168
1,1-Dichloroethane	ND	0.0836	0.0836
1,2-Dichloroethane	ND	0.0848	0.0848
1,1-Dichloroethene	ND	0.144	0.144
trans-1,2-Dichloroethene	ND	0.171	0.171
1,2-Dichloropropane	ND	0.0843	0.0843
cis-1,3-Dichloropropene	ND	0.0510	0.0510

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # _____
Analysis Batch # MSMSDB70813153401

Lab Sample ID BLK972946
File # B0813703
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/13/97 16:03:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	ND	0.0699	0.0699
Ethyl methacrylate	ND	0.288	0.288
Ethylbenzene	ND	0.109	0.109
2-Hexanone	ND	0.497	0.497
Iodomethane	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	ND	0.188	0.188
Methylene chloride	ND	0.0965	0.0965
Styrene	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	ND	0.100	0.100
Tetrachloroethene	ND	0.0920	0.0920
Toluene	ND	0.0581	0.0581
1,1,1-Trichloroethane	ND	0.152	0.152
1,1,2-Trichloroethane	ND	0.119	0.119
Trichloroethene	ND	0.108	0.108
Trichlorofluoromethane	ND	0.136	0.136
1,2,3-Trichloropropane	ND	0.114	0.114
Vinyl acetate	ND	0.434	0.434
Vinyl chloride	ND	0.169	0.169
m&p-Xylene	ND	0.190	0.190
o-Xylene	ND	0.0970	0.0970

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # _____
Analysis Batch # MSMSDB70813153401

Lab Sample ID BLK972946
File # B0813703
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/13/97 16:03:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Surrogate(s)	Spiked Conc. ug/L	Measured Conc. ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	16.7	14.5	87	77	117
1,2-Dichloroethane-d4	16.7	15.9	95	61	143
Toluene-d8	16.7	16.0	96	87	113

08/21/97 16:57:37

LABORATORY CONTROL SAMPLE

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Work Order # 9708171

Method Volatile Organics SW8260A
Test Code 826SWAT1
Date Prepared _____
Date Analyzed 08/13/97 18:24:00
Instrument MSDB
Column _____
Analyst MER
Reviewer APS
Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___
Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS975014 File ID B0813707			LCS Duplicate Lab Sample ID LCSD975015 File ID B0813708			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Acetone	20.0	13.0	65	20.0	13.5	68	3	127	4.5	49
Acrylonitrile	20.0	17.4	87	20.0	18.0	90			3.4	
Benzene	20.0	20.5	102	20.0	20.5	102	74	132	0	14
Bromodichloromethane	20.0	20.2	101	20.0	20.3	102	64	132	0.98	22
Bromoform	20.0	18.1	91	20.0	18.3	91	41	135	0	12
Bromomethane	20.0	14.5	73	20.0	14.4	72	46	152	1.4	18
2-Butanone (MEK)	20.0	17.1	86	20.0	17.5	88	0.1	160	2.3	37
Carbon disulfide	20.0	20.7	103	20.0	20.6	103	29	223	0	23
Carbon tetrachloride	20.0	19.8	99	20.0	19.9	99	53	167	0	21
Chlorobenzene	20.0	22.1	110	20.0	22.5	113	73	119	2.7	13
Chloroethane	20.0	15.9	80	20.0	15.6	78	50	154	2.5	22
Chloroform	20.0	25.2	126	20.0	25.2	126	64	130	0	16
Chloromethane	20.0	12.9	65	20.0	12.6	63	39	135	3.1	25
Dibromochloromethane	20.0	21.8	109	20.0	21.7	109	60	122	0	15
Dibromomethane	20.0	19.6	98	20.0	19.9	99			1.0	
Dichlorodifluoromethane	20.0	12.0	60	20.0	11.4	57	5	157	5.1	27
1,1-Dichloroethane	20.0	18.6	93	20.0	18.7	94	65	131	1.1	19
1,2-Dichloroethane	20.0	19.0	95	20.0	19.3	96	68	138	1.0	12
1,1-Dichloroethene	20.0	18.2	91	20.0	18.4	92	51	133	1.1	23
trans-1,2-Dichloroethene	20.0	19.6	98	20.0	19.7	98	58	144	0	21

08/21/97 16:57:37

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Work Order # 9708171

Method Volatile Organics SW8260A
Test Code 826SWAT1
Date Prepared _____
Date Analyzed 08/13/97 18:24:00
Instrument MSDB
Column _____
Analyst MER
Reviewer APS
Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___
Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS975014 File ID B0813707			LCS Duplicate Lab Sample ID LCSD975015 File ID B0813708			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
1,2-Dichloropropane	20.0	18.5	92	20.0	18.8	94	77	119	2.2	14
cis-1,3-Dichloropropene	20.0	19.0	95	20.0	19.1	95	75	131	0	12
trans-1,3-Dichloropropene	20.0	18.6	93	20.0	18.4	92	64	132	1.1	13
Ethylbenzene	20.0	21.5	108	20.0	21.5	108	72	130	0	17
2-Hexanone	20.0	14.6	73	20.0	14.9	74	58	140	1.4	24
4-Methyl-2-pentanone(MIBK)	20.0	13.8	69	20.0	13.8	69	58	142	0	16
Methylene chloride	20.0	19.7	99	20.0	19.4	97	49	151	2.0	23
Styrene	20.0	21.5	108	20.0	21.6	108	73	131	0	13
1,1,2,2-Tetrachloroethane	20.0	19.1	96	20.0	19.1	95	60	134	1.0	12
Tetrachloroethene	20.0	24.2	121	20.0	25.0	125 Q	62	124	3.2	18
Toluene	20.0	20.8	104	20.0	20.7	104	81	121	0	14
1,1,1-Trichloroethane	20.0	21.0	105	20.0	21.2	106	58	144	0.95	21
1,1,2-Trichloroethane	20.0	21.8	109	20.0	22.1	110	68	122	0.91	13
Trichloroethene	20.0	21.4	107	20.0	21.7	108	73	117	0.93	13
Trichlorofluoromethane	20.0	16.8	84	20.0	15.8	79	50	142	6.1	25
Vinyl chloride	20.0	16.4	82	20.0	15.7	78	27	161	5.0	20
m&p-Xylene	40.0	42.2	106	40.0	42.8	107	74	128	0.94	15
o-Xylene	20.0	21.4	107	20.0	21.2	106	79	125	0.94	16

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Work Order # 9708171

Method Volatile Organics SW8260A
Test Code 826SWAT1
Date Prepared _____
Date Analyzed 08/13/97 18:24:00
Instrument MSDB
Column _____
Analyst MER
Reviewer APS
Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___
Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS975014 File ID B0813707			LCS Duplicate Lab Sample ID LCSD975015 File ID B0813708			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %

Surrogate(s)										
1,4-Bromofluorobenzene	16.7	16.3	98	16.7	16.2	97	77	117		
1,2-Dichloroethane-d4	16.7	16.2	97	16.7	16.4	98	61	143		
Toluene-d8	16.7	16.0	96	16.7	16.0	96	87	113		

08/21/97 16:57:37

MATRIX SPIKE(S)

Extraction Batch # _____

Analysis Batch # MSMSDB70813153401

Work Order # 9708171

Project Sample ID IPW0897W09
Method Volatile Organics SW8260A
Test Code 826SWAMS

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/14/97 00:06:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix W
Report As received
% Moisture _____

Spike Sol'n #	Vol. Added
Matrix Spike	1.2 uL

Surrogate Sol'n	Vol. Added
1,2-DCA-d4	1 uL
Toluene-d8	1 uL
1,4-BFB	1 uL

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID	Lab Sample ID	Lab Sample ID
9708171-03A	9708171-05A MS	9708171-06A MSD
File # B0813718	File # B0813719	File # B0813720
Aliquot Mass/Vol 15.0 (mL)	Aliquot Mass/Vol 15.0 (mL)	Aliquot Mass/Vol 15.0 (mL)
Extract Mass/Vol 15.0 (mL)	Extract Mass/Vol 15.0 (mL)	Extract Mass/Vol 15.0 (mL)
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1

Analyte	Spike Sol'n Conc. ug/L	Measured Conc. ug/L	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %
Benzene	250000	102 ER	20.0	117 ER	76	20.0	118 ER	77	74	132	1.3	14
Chlorobenzene	250000	ND	20.0	23.1	115	20.0	23.2	116	73	119	0.87	13
1,1-Dichloroethene	250000	ND	20.0	18.2	91	20.0	18.8	94	51	133	3.2	23
Toluene	250000	820 ER	20.0	787 ER	-163 Q	20.0	836 ER	81	81	121	595 Q	14
Trichloroethene	250000	ND	20.0	22.5	112	20.0	23.0	115	73	117	2.6	13

Surrogate(s)											
1,4-Bromofluorobenzene	250000	16.9	16.7	17.4	104	16.7	17.1	102	77	117	
1,2-Dichloroethane-d4	250000	16.4	16.7	16.2	97	16.7	16.0	96	61	143	
Toluene-d8	250000	15.8	16.7	15.7	94	16.7	15.7	94	87	113	

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSDB70813153401
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/13/97 15:34:00
Reporting Subset ___
Instrument MSDB
File # B0813702
Spikes Subset ___
Analyst MER
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acetone	13.3	20.0	67		
Acetonitrile	82.4	100	82		
Acrolein	75.6	100	76		
Acrylonitrile	18.0	20.0	90		
Benzene	19.7	20.0	99		
Bromobenzene	21.5	20.0	107		
Bromodichloromethane	18.8	20.0	94		
Bromoform	18.7	20.0	94		
Bromomethane	20.9	20.0	105		
2-Butanone (MEK)	16.2	20.0	81		
n-Butylbenzene	17.8	20.0	89		
sec-Butylbenzene	18.7	20.0	94		
tert-Butylbenzene	18.9	20.0	95		
Carbon disulfide	19.4	20.0	97		
Carbon tetrachloride	20.0	20.0	100		
2-Chloro-1,3-butadiene	20.8	20.0	104		
Chlorobenzene	21.0	20.0	105		
Chloroethane	20.0	20.0	100		
2-Chloroethyl vinyl ether	17.4	20.0	87		
Chloroform	23.9	20.0	120	80	120
1-Chlorohexane	21.6	20.0	108		
Chloromethane	19.6	20.0	98		
3-Chloropropene	15.7	20.0	78		
2-Chlorotoluene	20.6	20.0	103		
4-Chlorotoluene	20.5	20.0	102		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70813153401
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/13/97 15:34:00
Reporting Subset ___
Instrument MSDB
File # B0813702
Spikes Subset ___
Analyst MER
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
1,2-Dibromo-3-chloropropane	15.8	20.0	79		
Dibromochloromethane	20.3	20.0	101		
1,2-Dibromoethane	19.3	20.0	97		
Dibromomethane	17.8	20.0	89		
trans-1,4-Dichloro-2-butene	14.7	20.0	74		
1,2-Dichlorobenzene	19.4	20.0	97		
1,3-Dichlorobenzene	19.4	20.0	97		
1,4-Dichlorobenzene	19.2	20.0	96		
Dichlorodifluoromethane	20.4	20.0	102		
1,1-Dichloroethane	18.3	20.0	91		
1,2-Dichloroethane	17.8	20.0	89		
1,1-Dichloroethene	20.0	20.0	100	80	120
cis-1,2-Dichloroethene	19.1	20.0	96		
trans-1,2-Dichloroethene	20.4	20.0	102		
1,2-Dichloropropane	18.1	20.0	91	80	120
1,3-Dichloropropane	18.9	20.0	94		
2,2-Dichloropropane	25.8	20.0	129		
1,1-Dichloropropene	20.3	20.0	102		
cis-1,3-Dichloropropene	18.4	20.0	92		
trans-1,3-Dichloropropene	17.9	20.0	89		
Ethyl methacrylate	17.8	20.0	89		
Ethylbenzene	20.7	20.0	103	80	120
Hexachlorobutadiene	18.4	20.0	92		
2-Hexanone	14.0	20.0	70		
Iodomethane	19.8	20.0	99		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70813153401
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0813702
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/13/97 15:34:00
Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst MER
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Isopropylbenzene	19.6	20.0	98		
p-Isopropyltoluene	18.4	20.0	92		
Methyl methacrylate	17.6	20.0	88		
Methyl t-butyl ether	17.7	20.0	88		
4-Methyl-2-pentanone(MIBK)	13.8	20.0	69		
Methylene chloride	19.1	20.0	95		
Naphthalene	13.4	20.0	67		
Propanenitrile	82.6	100	83		
n-Propylbenzene	19.9	20.0	100		
Styrene	19.8	20.0	99		
1,1,1,2-Tetrachloroethane	22.1	20.0	111		
1,1,2,2-Tetrachloroethane	18.4	20.0	92		
Tetrachloroethene	24.0	20.0	120		
Tetrahydrofuran	18.8	20.0	94		
Toluene	19.7	20.0	98	80	120
1,2,3-Trichlorobenzene	14.8	20.0	74		
1,2,4-Trichlorobenzene	15.1	20.0	76		
1,1,1-Trichloroethane	20.8	20.0	104		
1,1,2-Trichloroethane	20.0	20.0	100		
Trichloroethene	20.3	20.0	102		
Trichlorofluoromethane	20.6	20.0	103		
1,2,3-Trichloropropane	17.3	20.0	86		
1,1,2-Trichlorotrifluoroethane	23.3	20.0	116		
1,2,4-Trimethylbenzene	18.9	20.0	94		
1,3,5-Trimethylbenzene	19.3	20.0	96		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70813153401
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0813702
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/13/97 15:34:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst MER
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Vinyl acetate	16.0	20.0	80		
Vinyl chloride	21.4	20.0	107	80	120
m&p-Xylene	41.0	40.0	102		
o-Xylene	20.2	20.0	101		

Surrogate(s)					
1,4-Bromofluorobenzene	16.6	16.7	99	77	117
1,2-Dichloroethane-d4	16.0	16.7	96	61	143
Toluene-d8	15.9	16.7	96	87	113

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSDB70813153401
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/14/97 12:49:00
Reporting Subset ___
Instrument MSDB
File # B0813729
Spikes Subset ___
Analyst MER
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acetone	11.2	20.0	56		
Acetonitrile	72.5	100	72		
Acrolein	66.8	100	67		
Acrylonitrile	16.7	20.0	83		
Benzene	19.9	20.0	100		
Bromobenzene	22.6	20.0	113		
Bromodichloromethane	19.1	20.0	95		
Bromoform	19.2	20.0	96		
Bromomethane	16.4	20.0	82		
2-Butanone (MEK)	16.5	20.0	82		
n-Butylbenzene	18.3	20.0	91		
sec-Butylbenzene	19.4	20.0	97		
tert-Butylbenzene	19.6	20.0	98		
Carbon disulfide	16.8	20.0	84		
Carbon tetrachloride	20.2	20.0	101		
2-Chloro-1,3-butadiene	19.3	20.0	96		
Chlorobenzene	21.3	20.0	107		
Chloroethane	17.3	20.0	86		
2-Chloroethyl vinyl ether	16.4	20.0	82		
Chloroform	22.9	20.0	114	80	120
1-Chlorohexane	21.6	20.0	108		
Chloromethane	15.7	20.0	78		
3-Chloropropene	15.5	20.0	77		
2-Chlorotoluene	21.1	20.0	106		
4-Chlorotoluene	20.9	20.0	104		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70813153401
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/14/97 12:49:00
Reporting Subset ___
Instrument MSDB
File # B0813729
Spikes Subset ___
Analyst MER
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
1,2-Dibromo-3-chloropropane	16.9	20.0	85		
Dibromochloromethane	21.6	20.0	108		
1,2-Dibromoethane	20.7	20.0	104		
Dibromomethane	18.3	20.0	92		
trans-1,4-Dichloro-2-butene	13.4	20.0	67		
1,2-Dichlorobenzene	20.3	20.0	101		
1,3-Dichlorobenzene	20.7	20.0	103		
1,4-Dichlorobenzene	20.2	20.0	101		
Dichlorodifluoromethane	16.8	20.0	84		
1,1-Dichloroethane	17.4	20.0	87		
1,2-Dichloroethane	16.9	20.0	84		
1,1-Dichloroethene	18.7	20.0	93	80	120
cis-1,2-Dichloroethene	18.4	20.0	92		
trans-1,2-Dichloroethene	19.1	20.0	95		
1,2-Dichloropropane	18.5	20.0	92	80	120
1,3-Dichloropropane	19.8	20.0	99		
2,2-Dichloropropane	26.0	20.0	130		
1,1-Dichloropropene	20.2	20.0	101		
cis-1,3-Dichloropropene	18.9	20.0	95		
trans-1,3-Dichloropropene	18.3	20.0	92		
Ethyl methacrylate	18.6	20.0	93		
Ethylbenzene	20.7	20.0	103	80	120
Hexachlorobutadiene	19.1	20.0	96		
2-Hexanone	14.5	20.0	72		
Iodomethane	15.9	20.0	80		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70813153401
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/14/97 12:49:00
Reporting Subset ___
Instrument MSDB
File # B0813729
Spikes Subset ___
Analyst MER
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Isopropylbenzene	20.3	20.0	101		
p-Isopropyltoluene	19.2	20.0	96		
Methyl methacrylate	18.1	20.0	90		
Methyl t-butyl ether	16.9	20.0	84		
4-Methyl-2-pentanone (MIBK)	14.2	20.0	71		
Methylene chloride	18.6	20.0	93		
Naphthalene	14.1	20.0	70		
Propanenitrile	77.6	100	78		
n-Propylbenzene	20.7	20.0	103		
Styrene	20.5	20.0	103		
1,1,1,2-Tetrachloroethane	22.8	20.0	114		
1,1,2,2-Tetrachloroethane	19.3	20.0	97		
Tetrachloroethene	24.2	20.0	121		
Tetrahydrofuran	18.9	20.0	95		
Toluene	19.8	20.0	99	80	120
1,2,3-Trichlorobenzene	15.4	20.0	77		
1,2,4-Trichlorobenzene	15.9	20.0	79		
1,1,1-Trichloroethane	20.0	20.0	100		
1,1,2-Trichloroethane	20.9	20.0	104		
Trichloroethene	20.6	20.0	103		
Trichlorofluoromethane	17.5	20.0	87		
1,2,3-Trichloropropane	18.8	20.0	94		
1,1,2-Trichlorotrifluoroethane	22.1	20.0	111		
1,2,4-Trimethylbenzene	19.5	20.0	97		
1,3,5-Trimethylbenzene	19.9	20.0	99		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70813153401
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0813729
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/14/97 12:49:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst MER
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Vinyl acetate	14.0	20.0	70		
Vinyl chloride	17.1	20.0	86	80	120
m&p-Xylene	42.1	40.0	105		
o-Xylene	20.8	20.0	104		

Surrogate(s)					
1,4-Bromofluorobenzene	16.6	16.7	100	77	117
1,2-Dichloroethane-d4	15.3	16.7	91	61	143
Toluene-d8	16.1	16.7	96	87	113

08/21/97 16:57:37

ANALYSIS BATCH SUMMARY

Analysis Batch # MSMSDB70814163701

Work Order # 9708171

Method Volatile Organics SW8260A

Test Code 826SWA00

Initial Calibration # MSDB970804000000

Calibration Date 08/04/97

Analysis Start Date/Time 08/14/97 16:37:00

Analysis Stop Date/Time 08/15/97 10:32:00

Instrument MSDB

Analyst MER

Reviewer APS

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/14/97 16:37:00		BFB	GC/MS tune files	B0814702
2	08/14/97 16:37:00		VSTDCAL	Continuing Calibration Verification	B0814702
3	08/14/97 17:05:00		LCS975016	Lab Control Sample	B0814703
4	08/14/97 17:34:00		LCSD975017	Lab Control Sample Duplicate	B0814704
5	08/14/97 18:02:00		BLK972947	Blank, Method	B0814705
6	08/14/97 18:31:00		9708287-01A	Sample	B0814706
7	08/14/97 18:59:00		9708287-02A	Sample	B0814707
8	08/14/97 19:27:00		9708287-03A	Sample	B0814708
9	08/14/97 19:55:00		9708287-04A	Sample	B0814709
10	08/14/97 20:24:00		9708287-05A	Sample	B0814710
11	08/14/97 20:52:00		9708287-06A	Sample	B0814711
12	08/14/97 21:21:00		9708287-07A	Sample	B0814712
13	08/14/97 23:00:00		SB	Blank, System	B0814713
14	08/14/97 23:28:00		BFB	GC/MS tune files	B0814714
15	08/14/97 23:28:00		VSTDCAL	Continuing Calibration Verification	B0814714
16	08/14/97 23:57:00		9708287-08A	Sample	B0814715
17	08/15/97 00:25:00		9708287-01B	Sample	B0814716
18	08/15/97 00:54:00		9708288-01A	Sample	B0814717
19	08/15/97 01:23:00		9708287-03B	Sample	B0814718
20	08/15/97 01:53:00		9708288-03A	Sample	B0814719
21	08/15/97 02:23:00		9708287-02B	Sample	B0814720
22	08/15/97 02:53:00		9708288-02A	Sample	B0814721
23	08/15/97 03:23:00		9708287-04B	Sample	B0814722
24	08/15/97 03:52:00		9708288-04A	Sample	B0814723
25	08/15/97 04:22:00		9708287-07B	Sample	B0814724
26	08/15/97 04:52:00		9708288-07A	Sample	B0814725
27	08/15/97 05:20:00		9708287-06B	Sample	B0814726
28	08/15/97 05:49:00		9708288-06A	Sample	B0814727
29	08/15/97 06:17:00		9708287-05B	Sample	B0814728
30	08/15/97 06:45:00		9708288-05A	Sample	B0814729

ANALYSIS BATCH SUMMARY (cont'd)

Analysis Batch # MSMSDB70814163701

Method Volatile Organics SW8260A
Test Code 826SWA00
Initial Calibration # MSDB970804000000
Calibration Date 08/04/97

Analysis Start Date/Time 08/14/97 16:37:00
Analysis Stop Date/Time 08/15/97 10:32:00

Instrument MSDB
Analyst MER
Reviewer APS

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
31	08/15/97 07:14:00		9708141-02B	Sample	B0814730
32	08/15/97 07:42:00		9708165-02A	Sample	B0814731
33	08/15/97 08:10:00	TRIP BLANK	9708171-04B	Sample	B0814732
34	08/15/97 08:39:00	IPW0897W07	9708171-02B	Sample	B0814733
35	08/15/97 09:07:00	IPW0897W06	9708171-01B	Sample	B0814734
36	08/15/97 09:35:00	IPW0897W09	9708171-03B	Sample	B0814735
37	08/15/97 10:04:00	IPW0897W09	9708171-05A	Matrix Spike	B0814736
38	08/15/97 10:32:00	IPW0897W09	9708171-06A	Matrix Spike Duplicate	B0814737

RESULTS

Extraction Batch # _____

Analysis Batch # MSMSDB70814163701

Project Sample ID TRIP BLANK
Lab Sample ID 9708171-04B
File # B0814732
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/15/97 08:10:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	ND	0.488	0.488
Acrolein	107-02-8	ND	1.02	1.02
Acrylonitrile	107-13-1	ND	0.403	0.403
Benzene	71-43-2	ND	0.0605	0.0605
Bromodichloromethane	75-27-4	ND	0.0366	0.0366
Bromoform	75-25-2	ND	0.178	0.178
Bromomethane	74-83-9	ND	0.160	0.160
2-Butanone(MEK)	78-93-3	ND	0.598	0.598
Carbon disulfide	75-15-0	ND	0.226	0.226
Carbon tetrachloride	56-23-5	ND	0.0501	0.0501
Chlorobenzene	108-90-7	ND	0.0935	0.0935
Chloroethane	75-00-3	ND	0.162	0.162
2-Chloroethyl vinyl ether	110-75-8	ND	0.170	0.170
Chloroform	67-66-3	ND	0.0716	0.0716
Chloromethane	74-87-3	ND	0.160	0.160
Dibromochloromethane	124-48-1	ND	0.108	0.108
Dibromomethane	74-95-3	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	110-57-6	ND	0.332	0.332
Dichlorodifluoromethane	75-71-8	ND	0.168	0.168
1,1-Dichloroethane	75-34-3	ND	0.0836	0.0836
1,2-Dichloroethane	107-06-2	ND	0.0848	0.0848
1,1-Dichloroethene	75-35-4	ND	0.144	0.144
trans-1,2-Dichloroethene	156-60-5	ND	0.171	0.171
1,2-Dichloropropane	78-87-5	ND	0.0843	0.0843
cis-1,3-Dichloropropene	10061-01-5	ND	0.0510	0.0510

R E S U L T S (Cont'd)

Extraction Batch # _____

Analysis Batch # MSMSDB70814163701

Project Sample ID TRIP BLANK
Lab Sample ID 9708171-04B
File # B0814732
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/15/97 08:10:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	0.0699	0.0699
Ethyl methacrylate	97-63-2	ND	0.288	0.288
Ethylbenzene	100-41-4	ND	0.109	0.109
2-Hexanone	591-78-6	ND	0.497	0.497
Iodomethane	74-88-4	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	0.188	0.188
Methylene chloride	75-09-2	ND	0.0965	0.0965
Styrene	100-42-5	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.100	0.100
Tetrachloroethene	127-18-4	ND	0.0920	0.0920
Toluene	108-88-3	ND	0.0581	0.0581
1,1,1-Trichloroethane	71-55-6	ND	0.152	0.152
1,1,2-Trichloroethane	79-00-5	ND	0.119	0.119
Trichloroethene	79-01-6	ND	0.108	0.108
Trichlorofluoromethane	75-69-4	ND	0.136	0.136
1,2,3-Trichloropropane	96-18-4	ND	0.114	0.114
Vinyl acetate	108-05-4	ND	0.434	0.434
Vinyl chloride	75-01-4	ND	0.169	0.169
m&p-Xylene	NO_CAS	ND	0.190	0.190
o-Xylene	95-47-6	ND	0.0970	0.0970

R E S U L T S (Cont'd)

Work Order # 9708171

Extraction Batch # _____

Analysis Batch # MSMSDB70814163701

Project Sample ID TRIP BLANK
Lab Sample ID 9708171-04B
File # B0814732
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/15/97 08:10:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	16.7	14.7	88	77	117
1,2-Dichloroethane-d4	17060-07-0	16.7	14.8	89	61	143
Toluene-d8	2037-26-5	16.7	15.8	94	87	113

RESULTS

Extraction Batch # _____
Analysis Batch # MSMSDB70814163701

Project Sample ID IPW0897W07
Lab Sample ID 9708171-02B
File # B0814733
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/15/97 08:39:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	ND	0.488	0.488
Acrolein	107-02-8	ND	1.02	1.02
Acrylonitrile	107-13-1	ND	0.403	0.403
Benzene	71-43-2	ND	0.0605	0.0605
Bromodichloromethane	75-27-4	ND	0.0366	0.0366
Bromoform	75-25-2	ND	0.178	0.178
Bromomethane	74-83-9	ND	0.160	0.160
2-Butanone(MEK)	78-93-3	ND	0.598	0.598
Carbon disulfide	75-15-0	ND	0.226	0.226
Carbon tetrachloride	56-23-5	ND	0.0501	0.0501
Chlorobenzene	108-90-7	ND	0.0935	0.0935
Chloroethane	75-00-3	ND	0.162	0.162
2-Chloroethyl vinyl ether	110-75-8	ND	0.170	0.170
Chloroform	67-66-3	ND	0.0716	0.0716
Chloromethane	74-87-3	ND	0.160	0.160
Dibromochloromethane	124-48-1	ND	0.108	0.108
Dibromomethane	74-95-3	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	110-57-6	ND	0.332	0.332
Dichlorodifluoromethane	75-71-8	ND	0.168	0.168
1,1-Dichloroethane	75-34-3	ND	0.0836	0.0836
1,2-Dichloroethane	107-06-2	ND	0.0848	0.0848
1,1-Dichloroethene	75-35-4	ND	0.144	0.144
trans-1,2-Dichloroethene	156-60-5	ND	0.171	0.171
1,2-Dichloropropane	78-87-5	ND	0.0843	0.0843
cis-1,3-Dichloropropene	10061-01-5	ND	0.0510	0.0510

R E S U L T S (Cont'd)

Work Order # 9708171

Extraction Batch #

Analysis Batch # MSMSDB70814163701

Project Sample ID IPW0897W07
Lab Sample ID 9708171-02B
File # B0814733
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared
Date Analyzed 08/15/97 08:39:00

Instrument MSDB
Column
Analyst MER
Reviewer APS

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	0.0699	0.0699
Ethyl methacrylate	97-63-2	ND	0.288	0.288
Ethylbenzene	100-41-4	ND	0.109	0.109
2-Hexanone	591-78-6	ND	0.497	0.497
Iodomethane	74-88-4	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	0.188	0.188
Methylene chloride	75-09-2	ND	0.0965	0.0965
Styrene	100-42-5	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.100	0.100
Tetrachloroethene	127-18-4	ND	0.0920	0.0920
Toluene	108-88-3	ND	0.0581	0.0581
1,1,1-Trichloroethane	71-55-6	ND	0.152	0.152
1,1,2-Trichloroethane	79-00-5	ND	0.119	0.119
Trichloroethene	79-01-6	ND	0.108	0.108
Trichlorofluoromethane	75-69-4	ND	0.136	0.136
1,2,3-Trichloropropane	96-18-4	ND	0.114	0.114
Vinyl acetate	108-05-4	ND	0.434	0.434
Vinyl chloride	75-01-4	ND	0.169	0.169
m&p-Xylene	NO_CAS	ND	0.190	0.190
o-Xylene	95-47-6	ND	0.0970	0.0970

R E S U L T S (Cont'd)

Work Order # 9708171

Extraction Batch # _____

Analysis Batch # MSMSDB70814163701

Project Sample ID IPW0897W07
Lab Sample ID 9708171-02B
File # B0814733
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/15/97 08:39:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	16.7	14.5	87	77	117
1,2-Dichloroethane-d4	17060-07-0	16.7	15.0	90	61	143
Toluene-d8	2037-26-5	16.7	15.7	94	87	113

R E S U L T S (Cont'd)

Work Order # 9708171

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Extraction Batch #

Analysis Batch # MSMSDB70814163701

Project Sample ID IPW0897W09
Lab Sample ID 9708171-03B
File # B0814735
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared
Date Analyzed 08/15/97 09:35:00

Instrument MSDB
Column
Analyst MER
Reviewer APS

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	1670	1460	88	77	117
1,2-Dichloroethane-d4	17060-07-0	1670	1490	89	61	143
Toluene-d8	2037-26-5	1670	1590	96	87	113

LABORATORY BLANK INFORMATION

Extraction Batch # _____
Analysis Batch # MSMSDB70814163701

Lab Sample ID BLK972947
File # B0814705
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/14/97 18:02:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	ND	0.488	0.488
Acrolein	ND	1.02	1.02
Acrylonitrile	ND	0.403	0.403
Benzene	ND	0.0605	0.0605
Bromodichloromethane	ND	0.0366	0.0366
Bromoform	ND	0.178	0.178
Bromomethane	ND	0.160	0.160
2-Butanone (MEK)	ND	0.598	0.598
Carbon disulfide	ND	0.226	0.226
Carbon tetrachloride	ND	0.0501	0.0501
Chlorobenzene	ND	0.0935	0.0935
Chloroethane	ND	0.162	0.162
2-Chloroethyl vinyl ether	ND	0.170	0.170
Chloroform	ND	0.0716	0.0716
Chloromethane	ND	0.160	0.160
Dibromochloromethane	ND	0.108	0.108
Dibromomethane	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	ND	0.332	0.332
Dichlorodifluoromethane	ND	0.168	0.168
1,1-Dichloroethane	ND	0.0836	0.0836
1,2-Dichloroethane	ND	0.0848	0.0848
1,1-Dichloroethene	ND	0.144	0.144
trans-1,2-Dichloroethene	ND	0.171	0.171
1,2-Dichloropropane	ND	0.0843	0.0843
cis-1,3-Dichloropropene	ND	0.0510	0.0510

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # _____
Analysis Batch # MSMSDB70814163701

Lab Sample ID BLK972947
File # B0814705
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/14/97 18:02:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	ND	0.0699	0.0699
Ethyl methacrylate	ND	0.288	0.288
Ethylbenzene	ND	0.109	0.109
2-Hexanone	ND	0.497	0.497
Iodomethane	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	ND	0.188	0.188
Methylene chloride	ND	0.0965	0.0965
Styrene	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	ND	0.100	0.100
Tetrachloroethene	ND	0.0920	0.0920
Toluene	ND	0.0581	0.0581
1,1,1-Trichloroethane	ND	0.152	0.152
1,1,2-Trichloroethane	ND	0.119	0.119
Trichloroethene	ND	0.108	0.108
Trichlorofluoromethane	ND	0.136	0.136
1,2,3-Trichloropropane	ND	0.114	0.114
Vinyl acetate	ND	0.434	0.434
Vinyl chloride	ND	0.169	0.169
m&p-Xylene	ND	0.190	0.190
o-Xylene	ND	0.0970	0.0970

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # _____
Analysis Batch # MSMSDB70814163701

Lab Sample ID BLK972947
File # B0814705
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/14/97 18:02:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Surrogate(s)	Spiked Conc. ug/L	Measured Conc. ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	16.7	14.2	85	77	117
1,2-Dichloroethane-d4	16.7	14.9	89	61	143
Toluene-d8	16.7	15.9	95	87	113

08/21/97 16:57:37

LABORATORY CONTROL SAMPLE

Extraction Batch # _____

Analysis Batch # MSMSDB70814163701

Work Order # 9708171

Method Volatile Organics SW8260A
Test Code 826SWAT1
Date Prepared _____
Date Analyzed 08/14/97 17:34:00
Instrument MSDB
Column _____
Analyst MER
Reviewer APS
Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___
Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS975016 File ID B0814703			LCS Duplicate Lab Sample ID LCSD975017 File ID B0814704			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Acetone	20.0	16.5	83	20.0	16.4	82	3	127	1.2	49
Acrylonitrile	20.0	15.4	77	20.0	15.5	78			1.3	
Benzene	20.0	19.9	100	20.0	19.6	98	74	132	2.0	14
Bromodichloromethane	20.0	19.9	99	20.0	19.5	98	64	132	1.0	22
Bromoform	20.0	18.9	95	20.0	17.9	89	41	135	6.5	12
Bromomethane	20.0	13.1	66	20.0	13.2	66	46	152	0	18
2-Butanone (MEK)	20.0	19.2	96	20.0	19.1	95	0.1	160	1.0	37
Carbon disulfide	20.0	19.3	96	20.0	18.8	94	29	223	2.1	23
Carbon tetrachloride	20.0	19.6	98	20.0	19.0	95	53	167	3.1	21
Chlorobenzene	20.0	22.0	110	20.0	21.4	107	73	119	2.8	13
Chloroethane	20.0	15.4	77	20.0	15.0	75	50	154	2.6	22
Chloroform	20.0	22.9	114	20.0	22.7	113	64	130	0.88	16
Chloromethane	20.0	12.0	60	20.0	11.8	59	39	135	1.7	25
Dibromochloromethane	20.0	22.1	111	20.0	21.0	105	60	122	5.6	15
Dibromomethane	20.0	19.6	98	20.0	18.7	93			5.2	
Dichlorodifluoromethane	20.0	11.4	57	20.0	10.9	55	5	157	3.6	27
1,1-Dichloroethane	20.0	17.1	86	20.0	16.8	84	65	131	2.4	19
1,2-Dichloroethane	20.0	17.6	88	20.0	17.2	86	68	138	2.3	12
1,1-Dichloroethene	20.0	16.9	85	20.0	16.7	83	51	133	2.4	23
trans-1,2-Dichloroethene	20.0	18.0	90	20.0	17.9	89	58	144	1.1	21

08/21/97 16:57:37

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # _____

Analysis Batch # MSMSDB70814163701

Work Order # 9708171

Method Volatile Organics SW8260A
Test Code 826SWAT1
Date Prepared _____
Date Analyzed 08/14/97 17:34:00
Instrument MSDB
Column _____
Analyst MER
Reviewer APS
Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___
Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS975016 File ID B0814703			LCS Duplicate Lab Sample ID LCSD975017 File ID B0814704			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
1,2-Dichloropropane	20.0	18.0	90	20.0	17.5	88	77	119	2.2	14
cis-1,3-Dichloropropene	20.0	18.8	94	20.0	18.1	91	75	131	3.2	12
trans-1,3-Dichloropropene	20.0	18.3	91	20.0	17.8	89	64	132	2.2	13
Ethylbenzene	20.0	21.4	107	20.0	21.0	105	72	130	1.9	17
2-Hexanone	20.0	15.2	76	20.0	14.5	73	58	140	4.0	24
4-Methyl-2-pentanone(MIBK)	20.0	13.8	69	20.0	13.4	67	58	142	2.9	16
Methylene chloride	20.0	18.0	90	20.0	17.4	87	49	151	3.4	23
Styrene	20.0	21.6	108	20.0	20.9	104	73	131	3.8	13
1,1,2,2-Tetrachloroethane	20.0	19.7	99	20.0	19.1	95	60	134	4.1	12
Tetrachloroethene	20.0	24.0	120	20.0	24.1	120	62	124	0	18
Toluene	20.0	20.3	102	20.0	19.6	98	81	121	4.0	14
1,1,1-Trichloroethane	20.0	19.4	97	20.0	19.1	96	58	144	1.0	21
1,1,2-Trichloroethane	20.0	21.7	109	20.0	21.5	108	68	122	0.92	13
Trichloroethene	20.0	20.8	104	20.0	20.3	101	73	117	2.9	13
Trichlorofluoromethane	20.0	15.6	78	20.0	15.0	75	50	142	3.9	25
Vinyl chloride	20.0	15.1	76	20.0	14.7	73	27	161	4.0	20
m&p-Xylene	40.0	42.9	107	40.0	41.4	104	74	128	2.8	15
o-Xylene	20.0	21.4	107	20.0	20.6	103	79	125	3.8	16

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # _____

Analysis Batch # MSMSDB70814163701

Work Order # 9708171

Method Volatile Organics SW8260A
Test Code 826SWAT1
Date Prepared _____
Date Analyzed 08/14/97 17:34:00
Instrument MSDB
Column _____
Analyst MER
Reviewer APS
Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___
Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS975016 File ID B0814703			LCS Duplicate Lab Sample ID LCSD975017 File ID B0814704			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %

Surrogate(s)									
1,4-Bromofluorobenzene	16.7	16.3	98	16.7	16.3	98	77	117	
1,2-Dichloroethane-d4	16.7	15.5	93	16.7	15.3	91	61	143	
Toluene-d8	16.7	15.8	94	16.7	15.9	95	87	113	

08/21/97 16:57:37

MATRIX SPIKE(S)

Extraction Batch # _____

Analysis Batch # MSMSDB70814163701

Work Order # 9708171

Project Sample ID IPW0897W09
Method Volatile Organics SW8260A
Test Code 826SWAMS

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/15/97 10:32:00

Instrument MSDB
Column _____
Analyst MER
Reviewer APS

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix W
Report As received
% Moisture _____

Spike Sol'n #	Vol. Added
Matrix Spike	1.2 uL

Surrogate Sol'n	Vol. Added
1,2-DCA-d4	1 uL
Toluene-d8	1 uL
1,4-BFB	1 uL

Sample Lab Sample ID 9708171-03B, File # B0814735, Aliquot Mass/Vol 15.0 (mL), Extract Mass/Vol 15.0 (mL), Dil Fact. 100

Spiked Sample Lab Sample ID 9708171-05A MS, File # B0814736, Aliquot Mass/Vol 15.0 (mL), Extract Mass/Vol 15.0 (mL), Dil Fact. 100

Spiked Sample Dup Lab Sample ID 9708171-06A MSD, File # B0814737, Aliquot Mass/Vol 15.0 (mL), Extract Mass/Vol 15.0 (mL), Dil Fact. 100

Analyte	Spike Sol'n Conc. ug/L	Sample Measured Conc. ug/L	Spiked Sample Spiked Conc. ug/L	Spiked Sample Measured Conc. ug/L	Spiked Sample Rec. %	Spiked Sample Dup Spiked Conc. ug/L	Spiked Sample Dup Measured Conc. ug/L	Spiked Sample Dup Rec. %	Recovery Specification Limits Low %	Recovery Specification Limits High %	RPD Result %	RPD Specification Limit %
Benzene	250000	106	2000	2090	99	2000	2120	101	74	132	2.0	14
Chlorobenzene	250000	ND	2000	2220	111	2000	2270	114	73	119	2.7	13
1,1-Dichloroethene	250000	ND	2000	1680	84	2000	1750	87	51	133	3.5	23
Toluene	250000	1660	2000	3680	101	2000	3670	101	81	121	0	14
Trichloroethene	250000	ND	2000	2080	104	2000	2160	108	73	117	3.8	13

Surrogate(s)											
1,4-Bromofluorobenzene	250000	1460	1670	1620	97	1670	1610	97	77	117	
1,2-Dichloroethane-d4	250000	1490	1670	1520	91	1670	1540	92	61	143	
Toluene-d8	250000	1590	1670	1600	96	1670	1590	95	87	113	

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSDB70814163701
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/14/97 16:37:00
Reporting Subset ___
Instrument MSDB
File # B0814702
Spikes Subset ___
Analyst MER
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acetone	10.4	20.0	52		
Acetonitrile	73.8	100	74		
Acrolein	70.2	100	70		
Acrylonitrile	15.9	20.0	80		
Benzene	19.6	20.0	98		
Bromobenzene	21.8	20.0	109		
Bromodichloromethane	18.6	20.0	93		
Bromoform	18.7	20.0	93		
Bromomethane	15.8	20.0	79		
2-Butanone (MEK)	17.7	20.0	89		
n-Butylbenzene	18.4	20.0	92		
sec-Butylbenzene	18.9	20.0	95		
tert-Butylbenzene	19.6	20.0	98		
Carbon disulfide	16.5	20.0	83		
Carbon tetrachloride	20.0	20.0	100		
2-Chloro-1,3-butadiene	18.7	20.0	93		
Chlorobenzene	21.1	20.0	105		
Chloroethane	16.1	20.0	80		
2-Chloroethyl vinyl ether	15.2	20.0	76		
Chloroform	22.5	20.0	113	80	120
1-Chlorohexane	21.2	20.0	106		
Chloromethane	14.6	20.0	73		
3-Chloropropene	14.6	20.0	73		
2-Chlorotoluene	21.1	20.0	105		
4-Chlorotoluene	21.1	20.0	105		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70814163701
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0814702
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/14/97 16:37:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst MER
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
1,2-Dibromo-3-chloropropane	16.6	20.0	83		
Dibromochloromethane	20.3	20.0	102		
1,2-Dibromoethane	20.1	20.0	100		
Dibromomethane	18.0	20.0	90		
trans-1,4-Dichloro-2-butene	12.3	20.0	61		
1,2-Dichlorobenzene	19.8	20.0	99		
1,3-Dichlorobenzene	20.2	20.0	101		
1,4-Dichlorobenzene	19.9	20.0	100		
Dichlorodifluoromethane	15.6	20.0	78		
1,1-Dichloroethane	17.0	20.0	85		
1,2-Dichloroethane	16.7	20.0	84		
1,1-Dichloroethene	18.4	20.0	92	80	120
cis-1,2-Dichloroethene	18.0	20.0	90		
trans-1,2-Dichloroethene	18.8	20.0	94		
1,2-Dichloropropane	18.0	20.0	90	80	120
1,3-Dichloropropane	19.3	20.0	96		
2,2-Dichloropropane	23.6	20.0	118		
1,1-Dichloropropene	19.8	20.0	99		
cis-1,3-Dichloropropene	18.4	20.0	92		
trans-1,3-Dichloropropene	17.8	20.0	89		
Ethyl methacrylate	18.0	20.0	90		
Ethylbenzene	20.3	20.0	101	80	120
Hexachlorobutadiene	19.0	20.0	95		
2-Hexanone	14.0	20.0	70		
Iodomethane	16.1	20.0	81		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70814163701
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0814702
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/14/97 16:37:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst MER
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Isopropylbenzene	20.1	20.0	101		
p-Isopropyltoluene	19.2	20.0	96		
Methyl methacrylate	17.4	20.0	87		
Methyl t-butyl ether	15.7	20.0	79		
4-Methyl-2-pentanone(MIBK)	13.8	20.0	69		
Methylene chloride	17.6	20.0	88		
Naphthalene	13.9	20.0	70		
Propanenitrile	75.2	100	75		
n-Propylbenzene	20.4	20.0	102		
Styrene	20.0	20.0	100		
1,1,1,2-Tetrachloroethane	22.4	20.0	112		
1,1,2,2-Tetrachloroethane	18.5	20.0	92		
Tetrachloroethene	23.5	20.0	118		
Tetrahydrofuran	18.3	20.0	92		
Toluene	19.6	20.0	98	80	120
1,2,3-Trichlorobenzene	15.2	20.0	76		
1,2,4-Trichlorobenzene	15.6	20.0	78		
1,1,1-Trichloroethane	19.4	20.0	97		
1,1,2-Trichloroethane	20.4	20.0	102		
Trichloroethene	20.3	20.0	101		
Trichlorofluoromethane	16.6	20.0	83		
1,2,3-Trichloropropane	18.1	20.0	90		
1,1,2-Trichlorotrifluoroethane	22.2	20.0	111		
1,2,4-Trimethylbenzene	19.3	20.0	97		
1,3,5-Trimethylbenzene	19.7	20.0	98		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70814163701
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/14/97 16:37:00
Reporting Subset ___
Instrument MSDB
File # B0814702
Spikes Subset ___
Analyst MER
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Vinyl acetate	13.0	20.0	65		
Vinyl chloride	16.5	20.0	82	80	120
m&p-Xylene	41.4	40.0	103		
o-Xylene	20.9	20.0	104		

Surrogate(s)					
1,4-Bromofluorobenzene	16.6	16.7	99	77	117
1,2-Dichloroethane-d4	15.0	16.7	90	61	143
Toluene-d8	16.1	16.7	96	87	113

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSDB70814163701
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0814714
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/14/97 23:28:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst MER
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acetone	10.8	20.0	54		
Acetonitrile	72.7	100	73		
Acrolein	68.9	100	69		
Acrylonitrile	15.7	20.0	78		
Benzene	18.9	20.0	94		
Bromobenzene	21.2	20.0	106		
Bromodichloromethane	18.0	20.0	90		
Bromoform	18.3	20.0	92		
Bromomethane	17.6	20.0	88		
2-Butanone (MEK)	15.7	20.0	79		
n-Butylbenzene	18.0	20.0	90		
sec-Butylbenzene	18.6	20.0	93		
tert-Butylbenzene	19.1	20.0	96		
Carbon disulfide	16.0	20.0	80		
Carbon tetrachloride	19.1	20.0	96		
2-Chloro-1,3-butadiene	19.2	20.0	96		
Chlorobenzene	20.8	20.0	104		
Chloroethane	16.5	20.0	82		
2-Chloroethyl vinyl ether	15.0	20.0	75		
Chloroform	22.2	20.0	111	80	120
1-Chlorohexane	21.0	20.0	105		
Chloromethane	15.6	20.0	78		
3-Chloropropene	13.0	20.0	65		
2-Chlorotoluene	20.6	20.0	103		
4-Chlorotoluene	20.2	20.0	101		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70814163701
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0814714
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/14/97 23:28:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst MER
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
1,2-Dibromo-3-chloropropane	15.7	20.0	79		
Dibromochloromethane	20.0	20.0	100		
1,2-Dibromoethane	19.4	20.0	97		
Dibromomethane	17.1	20.0	86		
trans-1,4-Dichloro-2-butene	13.7	20.0	69		
1,2-Dichlorobenzene	19.7	20.0	98		
1,3-Dichlorobenzene	19.9	20.0	100		
1,4-Dichlorobenzene	19.6	20.0	98		
Dichlorodifluoromethane	16.8	20.0	84		
1,1-Dichloroethane	16.4	20.0	82		
1,2-Dichloroethane	16.0	20.0	80		
1,1-Dichloroethene	18.2	20.0	91	80	120
cis-1,2-Dichloroethene	17.5	20.0	87		
trans-1,2-Dichloroethene	18.3	20.0	91		
1,2-Dichloropropane	17.5	20.0	88	80	120
1,3-Dichloropropane	18.8	20.0	94		
2,2-Dichloropropane	24.7	20.0	124		
1,1-Dichloropropene	19.1	20.0	96		
cis-1,3-Dichloropropene	17.6	20.0	88		
trans-1,3-Dichloropropene	17.1	20.0	85		
Ethyl methacrylate	17.4	20.0	87		
Ethylbenzene	20.0	20.0	100	80	120
Hexachlorobutadiene	19.2	20.0	96		
2-Hexanone	13.8	20.0	69		
Iodomethane	16.0	20.0	80		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70814163701
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0814714
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/14/97 23:28:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst MER
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Isopropylbenzene	19.5	20.0	97		
p-Isopropyltoluene	19.0	20.0	95		
Methyl methacrylate	17.1	20.0	86		
Methyl t-butyl ether	15.0	20.0	75		
4-Methyl-2-pentanone(MIBK)	13.7	20.0	68		
Methylene chloride	17.2	20.0	86		
Naphthalene	16.0	20.0	80		
Propanenitrile	73.1	100	73		
n-Propylbenzene	20.1	20.0	100		
Styrene	19.9	20.0	99		
1,1,1,2-Tetrachloroethane	22.0	20.0	110		
1,1,2,2-Tetrachloroethane	17.9	20.0	90		
Tetrachloroethene	23.5	20.0	117		
Tetrahydrofuran	17.9	20.0	89		
Toluene	19.1	20.0	96	80	120
1,2,3-Trichlorobenzene	16.2	20.0	81		
1,2,4-Trichlorobenzene	16.8	20.0	84		
1,1,1-Trichloroethane	19.3	20.0	97		
1,1,2-Trichloroethane	19.9	20.0	99		
Trichloroethene	19.5	20.0	97		
Trichlorofluoromethane	16.7	20.0	84		
1,2,3-Trichloropropane	17.5	20.0	88		
1,1,2-Trichlorotrifluoroethane	22.0	20.0	110		
1,2,4-Trimethylbenzene	18.9	20.0	95		
1,3,5-Trimethylbenzene	19.2	20.0	96		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70814163701
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0814714
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/14/97 23:28:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst MER
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Vinyl acetate	11.9	20.0	60		
Vinyl chloride	17.8	20.0	89	80	120
m&p-Xylene	40.1	40.0	100		
o-Xylene	19.9	20.0	99		

Surrogate(s)					
1,4-Bromofluorobenzene	16.1	16.7	97	77	117
1,2-Dichloroethane-d4	14.8	16.7	89	61	143
Toluene-d8	15.8	16.7	95	87	113

ANALYSIS BATCH SUMMARY

Analysis Batch # MSMSDB70818123501

Work Order # 9708171

Method Volatile Organics SW8260A
Test Code 826SWA00
Initial Calibration # MSDB970804000000
Calibration Date 08/04/97

Analysis Start Date/Time 08/18/97 12:35:00
Analysis Stop Date/Time 08/19/97 13:07:00

Instrument MSDB
Analyst TLS
Reviewer APS

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/18/97 12:35:00		BFB	GC/MS tune files	B0818702
2	08/18/97 12:35:00		VSTDCAL	Continuing Calibration Verification	B0818702
3	08/18/97 13:20:00		LCS975020	Lab Control Sample	B0818703
4	08/18/97 13:48:00		LCSD975021	Lab Control Sample Duplicate	B0818704
5	08/18/97 14:17:00		BLK973802	Blank, Method	B0818705
6	08/18/97 15:37:00		9708114-05B	Sample	B0818706
7	08/18/97 16:05:00		9708114-06B	Sample	B0818707
8	08/18/97 16:34:00		9708280-02B	Sample	B0818708
9	08/18/97 17:02:00		9708325-21B	Sample	B0818709
10	08/18/97 17:32:00		9708280-01B	Sample	B0818710
11	08/18/97 18:02:00		9708326-21B	Sample	B0818711
12	08/18/97 18:32:00		9708328-20A	Sample	B0818712
13	08/18/97 19:01:00		9708329-20A	Sample	B0818713
14	08/18/97 19:30:00		9708330-20A	Sample	B0818714
15	08/18/97 19:58:00		BFB	GC/MS tune files	B0818715
16	08/18/97 19:58:00		VSTDCAL	Continuing Calibration Verification	B0818715
17	08/18/97 20:29:00		9708331-20A	Sample	B0818716
18	08/18/97 20:57:00	IPW0897W06	9708171-01C	Sample	B0818717
19	08/18/97 21:25:00		9708343-09A	Sample	B0818718
20	08/18/97 21:54:00		9708343-01A	Sample	B0818719
21	08/18/97 22:24:00		9708343-03A	Sample	B0818720
22	08/18/97 22:53:00		9708343-02A	Sample	B0818721
23	08/18/97 23:23:00		9708343-04A	Sample	B0818722
24	08/18/97 23:53:00		9708343-07A	Sample	B0818723
25	08/19/97 00:21:00		9708343-05A	Sample	B0818724
26	08/19/97 00:49:00		9708343-10A	Matrix Spike	B0818725
27	08/19/97 01:18:00		9708343-11A	Matrix Spike Duplicate	B0818726
28	08/19/97 01:46:00		9708343-06A	Sample	B0818727
29	08/19/97 02:16:00		9708343-08A	Sample	B0818728
30	08/19/97 09:22:00		SB	Blank, System	B0818729

ANALYSIS BATCH SUMMARY (cont'd)

Analysis Batch # MSMSDB70818123501

Method Volatile Organics SW8260A
Test Code 826SWA00
Initial Calibration # MSDB970804000000
Calibration Date 08/04/97

Analysis Start Date/Time 08/18/97 12:35:00
Analysis Stop Date/Time 08/19/97 13:07:00

Instrument MSDB
Analyst TLS
Reviewer APS

Sequence/Analysis Time	Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
31 08/19/97 09:50:00		BFB	GC/MS tune files	B0818730
32 08/19/97 09:50:00		VSTDCAL	Continuing Calibration Verification	B0818730
33 08/19/97 10:39:00		9708343-04B	Sample	B0818731
34 08/19/97 11:09:00		9708343-08B	Sample	B0818732
35 08/19/97 11:41:00		9708343-06B	Sample	B0818733

RESULTS

Extraction Batch # _____
Analysis Batch # MSMSDB70818123501

Project Sample ID IPW0897W06
Lab Sample ID 9708171-01C
File # B0818717
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/18/97 20:57:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 2000

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	67-64-1	41500	976	976
Acrolein	107-02-8	ND	2040	2040
Acrylonitrile	107-13-1	ND	806	806
Benzene	71-43-2	ND	121	121
Bromodichloromethane	75-27-4	ND	73.2	73.2
Bromoform	75-25-2	ND	356	356
Bromomethane	74-83-9	ND	320	320
2-Butanone (MEK)	78-93-3	88200	1200	1200
Carbon disulfide	75-15-0	ND	452	452
Carbon tetrachloride	56-23-5	ND	100	100
Chlorobenzene	108-90-7	ND	187	187
Chloroethane	75-00-3	ND	324	324
2-Chloroethyl vinyl ether	110-75-8	ND	340	340
Chloroform	67-66-3	ND	143	143
Chloromethane	74-87-3	ND	320	320
Dibromochloromethane	124-48-1	ND	216	216
Dibromomethane	74-95-3	ND	264	264
trans-1,4-Dichloro-2-butene	110-57-6	ND	664	664
Dichlorodifluoromethane	75-71-8	ND	336	336
1,1-Dichloroethane	75-34-3	ND	167	167
1,2-Dichloroethane	107-06-2	ND	170	170
1,1-Dichloroethene	75-35-4	ND	288	288
trans-1,2-Dichloroethene	156-60-5	ND	342	342
1,2-Dichloropropane	78-87-5	ND	169	169
cis-1,3-Dichloropropene	10061-01-5	ND	102	102

R E S U L T S (Cont'd)

Work Order # 9708171

Extraction Batch # _____

Analysis Batch # MSMSDB70818123501

Project Sample ID IPW0897W06
Lab Sample ID 9708171-01C
File # B0818717
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared _____
Date Analyzed 08/18/97 20:57:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received
% Moisture _____

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 2000

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	10061-02-6	ND	140	140
Ethyl methacrylate	97-63-2	ND	576	576
Ethylbenzene	100-41-4	ND	218	218
2-Hexanone	591-78-6	ND	994	994
Iodomethane	74-88-4	ND	458	458
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	376	376
Methylene chloride	75-09-2	ND	193	193
Styrene	100-42-5	ND	166	166
1,1,2,2-Tetrachloroethane	79-34-5	ND	200	200
Tetrachloroethene	127-18-4	ND	184	184
Toluene	108-88-3	19900	116	116
1,1,1-Trichloroethane	71-55-6	ND	304	304
1,1,2-Trichloroethane	79-00-5	ND	238	238
Trichloroethene	79-01-6	ND	216	216
Trichlorofluoromethane	75-69-4	ND	272	272
1,2,3-Trichloropropane	96-18-4	ND	228	228
Vinyl acetate	108-05-4	ND	868	868
Vinyl chloride	75-01-4	ND	338	338
m&p-Xylene	NO_CAS	ND	380	380
o-Xylene	95-47-6	ND	194	194

R E S U L T S (Cont'd)

Work Order # 9708171

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Extraction Batch #

Analysis Batch # MSMSDB70818123501

Project Sample ID IPW0897W06
Lab Sample ID 9708171-01C
File # B0818717
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared
Date Analyzed 08/18/97 20:57:00

Instrument MSDB
Column
Analyst TLS
Reviewer APS

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	33400	29500	88	77	117
1,2-Dichloroethane-d4	17060-07-0	33400	30400	91	61	143
Toluene-d8	2037-26-5	33400	31700	95	87	113

LABORATORY BLANK INFORMATION

Extraction Batch # _____
Analysis Batch # MSMSDB70818123501

Lab Sample ID BLK973802
File # B0818705
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/18/97 14:17:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acetone	ND	0.488	0.488
Acrolein	ND	1.02	1.02
Acrylonitrile	ND	0.403	0.403
Benzene	ND	0.0605	0.0605
Bromodichloromethane	ND	0.0366	0.0366
Bromoform	ND	0.178	0.178
Bromomethane	ND	0.160	0.160
2-Butanone(MEK)	ND	0.598	0.598
Carbon disulfide	ND	0.226	0.226
Carbon tetrachloride	ND	0.0501	0.0501
Chlorobenzene	ND	0.0935	0.0935
Chloroethane	ND	0.162	0.162
2-Chloroethyl vinyl ether	ND	0.170	0.170
Chloroform	ND	0.0716	0.0716
Chloromethane	ND	0.160	0.160
Dibromochloromethane	ND	0.108	0.108
Dibromomethane	ND	0.132	0.132
trans-1,4-Dichloro-2-butene	ND	0.332	0.332
Dichlorodifluoromethane	ND	0.168	0.168
1,1-Dichloroethane	ND	0.0836	0.0836
1,2-Dichloroethane	ND	0.0848	0.0848
1,1-Dichloroethene	ND	0.144	0.144
trans-1,2-Dichloroethene	ND	0.171	0.171
1,2-Dichloropropane	ND	0.0843	0.0843
cis-1,3-Dichloropropene	ND	0.0510	0.0510

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # _____
Analysis Batch # MSMSDB70818123501

Lab Sample ID BLK973802
File # B0818705
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/18/97 14:17:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
trans-1,3-Dichloropropene	ND	0.0699	0.0699
Ethyl methacrylate	ND	0.288	0.288
Ethylbenzene	ND	0.109	0.109
2-Hexanone	ND	0.497	0.497
Iodomethane	ND	0.229	0.229
4-Methyl-2-pentanone(MIBK)	ND	0.188	0.188
Methylene chloride	ND	0.0965	0.0965
Styrene	ND	0.0832	0.0832
1,1,2,2-Tetrachloroethane	ND	0.100	0.100
Tetrachloroethene	ND	0.0920	0.0920
Toluene	ND	0.0581	0.0581
1,1,1-Trichloroethane	ND	0.152	0.152
1,1,2-Trichloroethane	ND	0.119	0.119
Trichloroethene	ND	0.108	0.108
Trichlorofluoromethane	ND	0.136	0.136
1,2,3-Trichloropropane	ND	0.114	0.114
Vinyl acetate	ND	0.434	0.434
Vinyl chloride	ND	0.169	0.169
m&p-Xylene	ND	0.190	0.190
o-Xylene	ND	0.0970	0.0970

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # _____
Analysis Batch # MSMSDB70818123501

Lab Sample ID BLK973802
File # B0818705
Method Volatile Organics SW8260A
Test Code 826SWAT1

Date Prepared _____
Date Analyzed 08/18/97 14:17:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer APS

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Surrogate(s)	Spiked Conc. ug/L	Measured Conc. ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	16.7	14.3	86	77	117
1,2-Dichloroethane-d4	16.7	14.8	89	61	143
Toluene-d8	16.7	16.1	96	87	113

08/21/97 16:57:37

LABORATORY CONTROL SAMPLE

Extraction Batch # _____

Analysis Batch # MSMSDB70818123501

Work Order # 9708171

Method Volatile Organics SW8260A
Test Code 826SWAT1
Date Prepared _____
Date Analyzed 08/18/97 13:48:00
Instrument MSDB
Column _____
Analyst TLS
Reviewer APS
Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___
Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS975020 File ID B0818703			LCS Duplicate Lab Sample ID LCSD975021 File ID B0818704			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Acetone	20.0	14.4	72	20.0	15.2	76	3	127	5.4	49
Acrylonitrile	20.0	14.9	74	20.0	15.7	78			5.3	
Benzene	20.0	17.8	89	20.0	19.4	97	74	132	8.6	14
Bromodichloromethane	20.0	18.1	91	20.0	19.6	98	64	132	7.4	22
Bromoform	20.0	18.0	90	20.0	19.1	96	41	135	6.4	12
Bromomethane	20.0	11.1	55	20.0	13.0	65	46	152	17	18
2-Butanone (MEK)	20.0	14.9	75	20.0	17.4	87	0.1	160	15	37
Carbon disulfide	20.0	17.2	86	20.0	19.1	95	29	223	9.9	23
Carbon tetrachloride	20.0	17.6	88	20.0	19.3	97	53	167	9.7	21
Chlorobenzene	20.0	19.8	99	20.0	21.6	108	73	119	8.7	13
Chloroethane	20.0	12.4	62	20.0	13.7	69	50	154	11	22
Chloroform	20.0	21.5	108	20.0	23.3	117	64	130	8.0	16
Chloromethane	20.0	9.78	49	20.0	11.1	56	39	135	13	25
Dibromochloromethane	20.0	20.6	103	20.0	21.9	109	60	122	5.7	15
Dibromomethane	20.0	16.8	84	20.0	19.2	96			13	
Dichlorodifluoromethane	20.0	8.38	42	20.0	10.2	51	5	157	19	27
1,1-Dichloroethane	20.0	15.9	80	20.0	17.1	85	65	131	6.1	19
1,2-Dichloroethane	20.0	16.1	81	20.0	17.4	87	68	138	7.1	12
1,1-Dichloroethene	20.0	15.2	76	20.0	17.3	87	51	133	14	23
trans-1,2-Dichloroethene	20.0	16.5	83	20.0	18.0	90	58	144	8.1	21

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LABORATORY CONTROL SAMPLE Cont'd

Work Order # 9708171

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Extraction Batch #

Analysis Batch # MSMSDB70818123501

Method Volatile Organics SW8260A
Test Code 826SWAT1
Date Prepared
Date Analyzed 08/18/97 13:48:00
Instrument MSDB
Column
Analyst TLS
Reviewer APS
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS975020 File ID B0818703			LCS Duplicate Lab Sample ID LCSD975021 File ID B0818704			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
1,2-Dichloropropane	20.0	15.8	79	20.0	17.5	87	77	119	9.6	14
cis-1,3-Dichloropropene	20.0	17.0	85	20.0	18.8	94	75	131	10	12
trans-1,3-Dichloropropene	20.0	16.5	83	20.0	18.2	91	64	132	9.2	13
Ethylbenzene	20.0	19.1	95	20.0	21.0	105	72	130	10	17
2-Hexanone	20.0	12.4	62	20.0	13.8	69	58	140	11	24
4-Methyl-2-pentanone(MIBK)	20.0	11.6	58	20.0	12.9	64	58	142	9.8	16
Methylene chloride	20.0	16.6	83	20.0	18.2	91	49	151	9.2	23
Styrene	20.0	19.2	96	20.0	20.6	103	73	131	7.0	13
1,1,2,2-Tetrachloroethane	20.0	17.1	86	20.0	18.8	94	60	134	8.9	12
Tetrachloroethene	20.0	22.0	110	20.0	24.3	122	62	124	10	18
Toluene	20.0	18.0	90	20.0	19.7	99	81	121	9.5	14
1,1,1-Trichloroethane	20.0	18.3	92	20.0	20.0	100	58	144	8.3	21
1,1,2-Trichloroethane	20.0	19.2	96	20.0	20.7	104	68	122	8.0	13
Trichloroethene	20.0	18.5	93	20.0	20.5	103	73	117	10	13
Trichlorofluoromethane	20.0	12.7	63	20.0	15.3	76	50	142	19	25
Vinyl chloride	20.0	11.8	59	20.0	14.1	70	27	161	17	20
m&p-Xylene	40.0	37.4	94	40.0	41.2	103	74	128	9.1	15
o-Xylene	20.0	19.2	96	20.0	20.8	104	79	125	8.0	16

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LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # _____

Analysis Batch # MSMSDB70818123501

Work Order # 9708171

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Method Volatile Organics SW8260A
Test Code 826SWAT1
Date Prepared _____
Date Analyzed 08/18/97 13:48:00
Instrument MSDB
Column _____
Analyst TLS
Reviewer APS
Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___
Matrix W
Report As received
% Moisture _____
Aliquot Mass or Vol 15.0 (mL)
Extract Mass or Vol 15.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS1	1.2 uL	1,2-DCA-d4	1 uL
LCS2	1.2 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS975020 File ID B0818703			LCS Duplicate Lab Sample ID LCSD975021 File ID B0818704			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Surrogate(s)										
1,4-Bromofluorobenzene	16.7	15.9	95	16.7	16.2	97	77	117		
1,2-Dichloroethane-d4	16.7	15.3	91	16.7	15.5	93	61	143		
Toluene-d8	16.7	16.0	96	16.7	16.1	96	87	113		

08/21/97 16:57:37

MATRIX SPIKE(S)

Extraction Batch # _____

Analysis Batch # MSMSDB70818123501

Work Order # 9708171

Project Sample ID _____
Method Volatile Organics SW8260A
Test Code 826SWAMS

Date Collected 08/13/97
Date Received 08/15/97
Date Prepared _____
Date Analyzed 08/19/97 01:18:00

Instrument MSDB
Column _____
Analyst TLS
Reviewer APS

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix W
Report As received
% Moisture _____

Spike Sol'n #	Vol. Added		Sample Lab Sample ID	Spiked Sample Lab Sample ID	Spiked Sample Dup Lab Sample ID	Recovery Specification Limits	RPD
Matrix Spike	1.2	uL	9708343-05A	9708343-10A MS	9708343-11A MSD		
			File # B0818724	File # B0818725	File # B0818726		
Surrogate Sol'n	Vol. Added		Aliquot Mass/Vol	Aliquot Mass/Vol	Aliquot Mass/Vol		
1,2-DCA-d4	1	uL	15.0 (mL)	15.0 (mL)	15.0 (mL)		
Toluene-d8	1	uL	Extract Mass/Vol	Extract Mass/Vol	Extract Mass/Vol		
1,4-BFB	1	uL	15.0 (mL)	15.0 (mL)	15.0 (mL)		
			Dil Fact. 2000	Dil Fact. 2000	Dil Fact. 2000		

Analyte	Spike Sol'n Conc. ug/L	Measured Conc. ug/L	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Specification Limit %
Benzene	250000	117000	40000	154000	93	40000	155000	95	74	132	2.1	14
Chlorobenzene	250000	ND	40000	42300	106	40000	43400	109	73	119	2.8	13
1,1-Dichloroethene	250000	ND	40000	32800	82	40000	32700	82	51	133	0	23
Toluene	250000	24600	40000	63500	97	40000	64400	99	81	121	2.0	14
Trichloroethene	250000	ND	40000	39200	98	40000	38900	97	73	117	1.0	13

Surrogate(s)											
1,4-Bromofluorobenzene	250000	32600	33400	33400	100	33400	33100	99	77	117	
1,2-Dichloroethane-d4	250000	31400	33400	31500	94	33400	31800	95	61	143	
Toluene-d8	250000	32600	33400	32000	96	33400	32000	96	87	113	

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0818702
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/18/97 12:35:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst TLS
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acetone	11.1	20.0	56		
Acetonitrile	65.5	100	66		
Acrolein	64.2	100	64		
Acrylonitrile	14.8	20.0	74		
Benzene	18.8	20.0	94		
Bromobenzene	20.8	20.0	104		
Bromodichloromethane	18.0	20.0	90		
Bromoform	18.9	20.0	94		
Bromomethane	18.9	20.0	95		
2-Butanone (MEK)	15.1	20.0	76		
n-Butylbenzene	16.5	20.0	83		
sec-Butylbenzene	17.8	20.0	89		
tert-Butylbenzene	18.4	20.0	92		
Carbon disulfide	18.1	20.0	91		
Carbon tetrachloride	19.3	20.0	97		
2-Chloro-1,3-butadiene	19.3	20.0	96		
Chlorobenzene	20.3	20.0	102		
Chloroethane	19.7	20.0	98		
2-Chloroethyl vinyl ether	14.5	20.0	72		
Chloroform	22.6	20.0	113	80	120
1-Chlorohexane	20.3	20.0	101		
Chloromethane	18.3	20.0	92		
3-Chloropropene	12.9	20.0	64		
2-Chlorotoluene	20.3	20.0	102		
4-Chlorotoluene	20.0	20.0	100		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/18/97 12:35:00
Reporting Subset ___
Instrument MSDB
File # B0818702
Spikes Subset ___
Analyst TLS
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
1,2-Dibromo-3-chloropropane	15.5	20.0	78		
Dibromochloromethane	20.0	20.0	100		
1,2-Dibromoethane	18.9	20.0	94		
Dibromomethane	16.8	20.0	84		
trans-1,4-Dichloro-2-butene	12.5	20.0	62		
1,2-Dichlorobenzene	18.4	20.0	92		
1,3-Dichlorobenzene	19.1	20.0	95		
1,4-Dichlorobenzene	18.7	20.0	94		
Dichlorodifluoromethane	18.3	20.0	92		
1,1-Dichloroethane	16.0	20.0	80		
1,2-Dichloroethane	16.2	20.0	81		
1,1-Dichloroethene	18.7	20.0	94	80	120
cis-1,2-Dichloroethene	22.2	20.0	111		
trans-1,2-Dichloroethene	19.1	20.0	95		
1,2-Dichloropropane	16.9	20.0	85	80	120
1,3-Dichloropropane	18.0	20.0	90		
2,2-Dichloropropane	24.7	20.0	123		
1,1-Dichloropropene	18.8	20.0	94		
cis-1,3-Dichloropropene	17.6	20.0	88		
trans-1,3-Dichloropropene	16.8	20.0	84		
Ethyl methacrylate	15.7	20.0	79		
Ethylbenzene	19.7	20.0	98	80	120
Hexachlorobutadiene	18.3	20.0	92		
2-Hexanone	12.6	20.0	63		
Iodomethane	14.4	20.0	72		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/18/97 12:35:00
Reporting Subset ___
Instrument MSDB
File # B0818702
Spikes Subset ___
Analyst TLS
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Isopropylbenzene	18.9	20.0	94		
p-Isopropyltoluene	17.7	20.0	88		
Methyl methacrylate	15.2	20.0	76		
Methyl t-butyl ether	14.9	20.0	74		
4-Methyl-2-pentanone(MIBK)	11.9	20.0	60		
Methylene chloride	19.2	20.0	96		
Naphthalene	11.5	20.0	58		
Propanenitrile	69.2	100	69		
n-Propylbenzene	19.2	20.0	96		
Styrene	19.2	20.0	96		
1,1,1,2-Tetrachloroethane	21.9	20.0	110		
1,1,2,2-Tetrachloroethane	16.6	20.0	83		
Tetrachloroethene	24.0	20.0	120		
Tetrahydrofuran	16.1	20.0	81		
Toluene	18.7	20.0	94	80	120
1,2,3-Trichlorobenzene	13.1	20.0	66		
1,2,4-Trichlorobenzene	14.0	20.0	70		
1,1,1-Trichloroethane	19.9	20.0	100		
1,1,2-Trichloroethane	18.8	20.0	94		
Trichloroethene	19.6	20.0	98		
Trichlorofluoromethane	20.0	20.0	100		
1,2,3-Trichloropropane	16.2	20.0	81		
1,1,2-Trichlorotrifluoroethane	21.7	20.0	109		
1,2,4-Trimethylbenzene	18.1	20.0	90		
1,3,5-Trimethylbenzene	18.5	20.0	92		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0818702
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/18/97 12:35:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst TLS
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Vinyl acetate	13.8	20.0	69		
Vinyl chloride	19.9	20.0	100	80	120
m&p-Xylene	39.1	40.0	98		
o-Xylene	19.6	20.0	98		

Surrogate(s)					
1,4-Bromofluorobenzene	16.1	16.7	97	77	117
1,2-Dichloroethane-d4	15.2	16.7	91	61	143
Toluene-d8	15.8	16.7	95	87	113

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/18/97 19:58:00
Reporting Subset ___
Instrument MSDB
File # B0818715
Spikes Subset ___
Analyst TLS
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acetone	10.8	20.0	54		
Acetonitrile	72.4	100	72		
Acrolein	69.3	100	69		
Acrylonitrile	15.4	20.0	77		
Benzene	19.5	20.0	98		
Bromobenzene	21.3	20.0	106		
Bromodichloromethane	18.6	20.0	93		
Bromoform	17.8	20.0	89		
Bromomethane	17.3	20.0	86		
2-Butanone (MEK)	14.2	20.0	71		
n-Butylbenzene	16.7	20.0	84		
sec-Butylbenzene	17.7	20.0	88		
tert-Butylbenzene	18.3	20.0	91		
Carbon disulfide	17.7	20.0	88		
Carbon tetrachloride	18.5	20.0	93		
2-Chloro-1,3-butadiene	18.9	20.0	95		
Chlorobenzene	20.4	20.0	102		
Chloroethane	18.2	20.0	91		
2-Chloroethyl vinyl ether	13.2	20.0	66		
Chloroform	22.5	20.0	113	80	120
1-Chlorohexane	19.9	20.0	99		
Chloromethane	17.1	20.0	85		
3-Chloropropene	13.3	20.0	66		
2-Chlorotoluene	20.0	20.0	100		
4-Chlorotoluene	20.0	20.0	100		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/18/97 19:58:00
Reporting Subset ___
Instrument MSDB
File # B0818715
Spikes Subset ___
Analyst TLS
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
1,2-Dibromo-3-chloropropane	16.0	20.0	80		
Dibromochloromethane	19.4	20.0	97		
1,2-Dibromoethane	19.4	20.0	97		
Dibromomethane	17.7	20.0	88		
trans-1,4-Dichloro-2-butene	10.2	20.0	51		
1,2-Dichlorobenzene	19.3	20.0	96		
1,3-Dichlorobenzene	19.8	20.0	99		
1,4-Dichlorobenzene	19.1	20.0	96		
Dichlorodifluoromethane	18.1	20.0	91		
1,1-Dichloroethane	17.0	20.0	85		
1,2-Dichloroethane	16.8	20.0	84		
1,1-Dichloroethene	18.4	20.0	92	80	120
cis-1,2-Dichloroethene	18.2	20.0	91		
trans-1,2-Dichloroethene	18.7	20.0	94		
1,2-Dichloropropane	17.8	20.0	89	80	120
1,3-Dichloropropane	18.7	20.0	93		
2,2-Dichloropropane	24.2	20.0	121		
1,1-Dichloropropene	19.3	20.0	96		
cis-1,3-Dichloropropene	18.2	20.0	91		
trans-1,3-Dichloropropene	17.3	20.0	87		
Ethyl methacrylate	16.8	20.0	84		
Ethylbenzene	19.6	20.0	98	80	120
Hexachlorobutadiene	18.0	20.0	90		
2-Hexanone	13.0	20.0	65		
Iodomethane	15.6	20.0	78		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0818715
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/18/97 19:58:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst TLS
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Isopropylbenzene	18.7	20.0	93		
p-Isopropyltoluene	18.0	20.0	90		
Methyl methacrylate	16.6	20.0	83		
Methyl t-butyl ether	15.6	20.0	78		
4-Methyl-2-pentanone(MIBK)	12.6	20.0	63		
Methylene chloride	18.4	20.0	92		
Naphthalene	12.6	20.0	63		
Propanenitrile	69.8	100	70		
n-Propylbenzene	19.3	20.0	97		
Styrene	19.6	20.0	98		
1,1,1,2-Tetrachloroethane	21.6	20.0	108		
1,1,2,2-Tetrachloroethane	17.8	20.0	89		
Tetrachloroethene	22.9	20.0	114		
Tetrahydrofuran	17.1	20.0	86		
Toluene	19.5	20.0	98	80	120
1,2,3-Trichlorobenzene	13.8	20.0	69		
1,2,4-Trichlorobenzene	14.9	20.0	74		
1,1,1-Trichloroethane	19.1	20.0	95		
1,1,2-Trichloroethane	19.5	20.0	98		
Trichloroethene	20.0	20.0	100		
Trichlorofluoromethane	18.8	20.0	94		
1,2,3-Trichloropropane	17.1	20.0	85		
1,1,2-Trichlorotrifluoroethane	21.6	20.0	108		
1,2,4-Trimethylbenzene	18.3	20.0	91		
1,3,5-Trimethylbenzene	18.5	20.0	92		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
Date Analyzed 08/18/97 19:58:00
Reporting Subset ___
Instrument MSDB
File # B0818715
Spikes Subset ___
Analyst TLS
Method Volatile Organics SW8260A
Specs Subset ___
Reviewer APS
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Vinyl acetate	14.5	20.0	72		
Vinyl chloride	19.5	20.0	98	80	120
m&p-Xylene	39.2	40.0	98		
o-Xylene	20.0	20.0	100		

Surrogate(s)					
1,4-Bromofluorobenzene	16.4	16.7	98	77	117
1,2-Dichloroethane-d4	15.3	16.7	92	61	143
Toluene-d8	16.1	16.7	96	87	113

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0818730
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/19/97 09:50:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst TLS
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acetone	11.4	20.0	57		
Acetonitrile	72.1	100	72		
Acrolein	72.9	100	73		
Acrylonitrile	16.1	20.0	80		
Benzene	18.3	20.0	92		
Bromobenzene	21.1	20.0	105		
Bromodichloromethane	17.8	20.0	89		
Bromoform	19.0	20.0	95		
Bromomethane	18.8	20.0	94		
2-Butanone (MEK)	16.3	20.0	81		
n-Butylbenzene	16.4	20.0	82		
sec-Butylbenzene	17.3	20.0	86		
tert-Butylbenzene	17.7	20.0	88		
Carbon disulfide	16.2	20.0	81		
Carbon tetrachloride	17.6	20.0	88		
2-Chloro-1,3-butadiene	17.8	20.0	89		
Chlorobenzene	19.6	20.0	98		
Chloroethane	17.9	20.0	90		
2-Chloroethyl vinyl ether	15.4	20.0	77		
Chloroform	22.2	20.0	111	80	120
1-Chlorohexane	18.8	20.0	94		
Chloromethane	16.8	20.0	84		
3-Chloropropene	12.4	20.0	62		
2-Chlorotoluene	19.2	20.0	96		
4-Chlorotoluene	19.2	20.0	96		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0818730
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/19/97 09:50:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst TLS
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
1,2-Dibromo-3-chloropropane	16.3	20.0	82		
Dibromochloromethane	19.7	20.0	99		
1,2-Dibromoethane	19.3	20.0	97		
Dibromomethane	17.6	20.0	88		
trans-1,4-Dichloro-2-butene	13.4	20.0	67		
1,2-Dichlorobenzene	19.3	20.0	97		
1,3-Dichlorobenzene	19.2	20.0	96		
1,4-Dichlorobenzene	19.0	20.0	95		
Dichlorodifluoromethane	17.9	20.0	90		
1,1-Dichloroethane	16.3	20.0	82		
1,2-Dichloroethane	16.8	20.0	84		
1,1-Dichloroethene	17.7	20.0	88	80	120
cis-1,2-Dichloroethene	17.2	20.0	86		
trans-1,2-Dichloroethene	17.7	20.0	88		
1,2-Dichloropropane	16.9	20.0	84	80	120
1,3-Dichloropropane	18.3	20.0	92		
2,2-Dichloropropane	22.3	20.0	112		
1,1-Dichloropropene	17.9	20.0	90		
cis-1,3-Dichloropropene	17.6	20.0	88		
trans-1,3-Dichloropropene	17.5	20.0	87		
Ethyl methacrylate	17.2	20.0	86		
Ethylbenzene	18.8	20.0	94	80	120
Hexachlorobutadiene	17.2	20.0	86		
2-Hexanone	13.9	20.0	70		
Iodomethane	14.8	20.0	74		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0818730
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/19/97 09:50:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst TLS
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Isopropylbenzene	17.9	20.0	89		
p-Isopropyltoluene	17.4	20.0	87		
Methyl methacrylate	16.7	20.0	84		
Methyl t-butyl ether	15.8	20.0	79		
4-Methyl-2-pentanone(MIBK)	13.6	20.0	68		
Methylene chloride	18.2	20.0	91		
Naphthalene	15.7	20.0	78		
Propanenitrile	73.2	100	73		
n-Propylbenzene	18.2	20.0	91		
Styrene	19.1	20.0	95		
1,1,1,2-Tetrachloroethane	21.5	20.0	107		
1,1,2,2-Tetrachloroethane	17.7	20.0	88		
Tetrachloroethene	21.7	20.0	109		
Tetrahydrofuran	17.9	20.0	89		
Toluene	18.1	20.0	91	80	120
1,2,3-Trichlorobenzene	15.5	20.0	78		
1,2,4-Trichlorobenzene	15.9	20.0	79		
1,1,1-Trichloroethane	18.5	20.0	93		
1,1,2-Trichloroethane	19.4	20.0	97		
Trichloroethene	18.8	20.0	94		
Trichlorofluoromethane	19.3	20.0	96		
1,2,3-Trichloropropane	17.2	20.0	86		
1,1,2-Trichlorotrifluoroethane	20.3	20.0	101		
1,2,4-Trimethylbenzene	17.8	20.0	89		
1,3,5-Trimethylbenzene	18.1	20.0	90		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSDB70818123501
Initial Calibration # MSDB970804000000

Lab Sample ID VSTDCAL
File # B0818730
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 08/19/97 09:50:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument MSDB
Analyst TLS
Reviewer APS

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Vinyl acetate	13.8	20.0	69		
Vinyl chloride	18.9	20.0	94	80	120
m&p-Xylene	37.6	40.0	94		
o-Xylene	19.3	20.0	96		

Surrogate(s)					
1,4-Bromofluorobenzene	16.6	16.7	99	77	117
1,2-Dichloroethane-d4	15.3	16.7	92	61	143
Toluene-d8	16.1	16.7	96	87	113

Method Volatile Organics SW8260A Specification# _____

Lab Sample ID File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action
9708171-06A B0813720	IPW0897W09	Toluene	Q	A very high concentration of toluene was present in the parent sample for this MS/MSD yielding the failing recovery for toluene in the MS and the failing RPD.	
9708171-01A B0813716	IPW0897W06	Tetrachloroethene	Y	The recovery for this analyte was high in the LCSD. The sample had high concentrations of other targets and it was only reanalyzed at a higher dilution. Tetrachloroethene was diluted out in that analysis.	
9708171-02A B0813717	IPW0897W07	Acetone, MEK & Toluene	R	Results indicate the possible presence of instrument carryover.	The sample will be reanalyzed to confirm the results.
9708171-03A B0813718	IPW0897W09	Acetone	E	The concentration for this analyte is outside of the calibration range. The sample was reanalyzed at a higher dilution but acetone was diluted out.	Due to the presence of high concentrations of other targets, the sample was not reanalyzed at an intermediate dilution.

QCER #	Analysis Batch Number
970813-12	MSMSDB70813153401

QUALITY CONTROL EXCEPTION REPORT **REPORT COPY 9708171**
LEVEL 2 - ANALYTICAL

QCER # 970813-12 **Revised: 08/21/97**

Analyst: MICHAEL RYNES Instrument: MSDB Date Analyzed: 08/13/97
Batch #: MSMSDB70813153401 Matrix: aqueous Status: C
Prot Spec: 826S Analysis File #: B0813708

Lab Sample ID:	Client ID:	CSC:	Project Sample ID:
9708171-01A	IP_WILM	JAL	IPW0897W06

SAMPLE PREPARATION:

PROBLEM IDENTIFICATION
- Sample Went Dry _
- Loss of ____ % of Sample _
- Emulsion Formed _
- Blank Contamination _
- Instrument _
- Hold Time _
- MS/MSD Not Available _
- Instrument _
- Other (Describe) _

CORRECTIVE ACTION TAKEN
- Reprepare Sample _
- Sample Sent for Analysis _
- Resample _
- Other (Describe) _

Comments:

SAMPLE ANALYSIS:

PROBLEM IDENTIFICATION
- Surrogate Recovery _
- MS/MSD Recovery _
- LCS/LCSD Recovery X
- MS/MSD Precision _
- LCS/LCSD Precision _
- Standard _
- Blank Contamination _
- Instrument _
- Hold Time _
- No MS/MSD Available for Batch _
- Sample pH _
- Dil. Due to Hi-Level Non-Target Analytes _
- Serial Dilution _
- Analytical Spike _
- Internal Standard _
- Other (Describe) _

PROBABLE CAUSE
- Matrix Effect _
- Instrument _
- Spiking Error _
- Contamination _
- Coelution _
- Unknown X
- Other(Describe) _

CORRECTIVE ACTION TAKEN
- Reprepare Sample _
- Reanalyze Sample X
- Reanalyze LCS/LCSD _
- Recalibrate Instrument _
- Analyze Out of Hold Time _
- Prepare New Standard _
- Flag Data X
- Resample _
- Analyze by MSA _
- Perform Analytical Spike _
- No Action Required _
- Level 3 QCER to Follow _
- Other (Describe) _

Comments: The tetrachloroethene failed high in the LCSD at 125%. The upper tolerance is 124%. The LCS was in tolerance. This sample is the only one with a hit of tetra and it was rerun at a much higher dilution in another batch. The tetra was lost in the dilution.

Distribution: CSC, Lab, Report

08/18/97 13:41:17

RADIAN ANALYTICAL SERVICES
FPAS REPORT
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Work Order # 9708148

Client INTERNATIONAL PAPER
Facility
Client Code IP WILM

Certified By
Date 8/18/97

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WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To 3200 E. CHAPEL HILL RD.
RTP, NC 27709
Attention JIM NARKUNAS

Client Code IP WILM
Client INTERNATIONAL PAPER
Facility
Work ID WILMINGTON SEMIANNUA

Work Order # 9708148
Page 1
RCN 258058.1501

Prepared Radian International, LLC
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70117AJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
IPW0897W23	01A	352SWA00	Liquid/Liq Extract SW846
		827SWATX	Semivolatiles by GC/MS
		CK1SWA00	Primary KD conc. SW846
	01B	SPAREB00	Spare Sample
IPW0897W24	02A	352SWA00	Liquid/Liq Extract SW846
		827SWATX	Semivolatiles by GC/MS
		CK1SWA00	Primary KD conc. SW846
	02B	SPAREB00	Spare Sample
IPW0897W10	03A	352SWA00	Liquid/Liq Extract SW846
		827SWATX	Semivolatiles by GC/MS
		CK1SWA00	Primary KD conc. SW846
	03B	SPAREB00	Spare Sample
IPW0897W12	04A	352SWA00	Liquid/Liq Extract SW846
		827SWATX	Semivolatiles by GC/MS
		CK1SWA00	Primary KD conc. SW846
	04B	SPAREB00	Spare Sample

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

ANALYTICAL PROTOCOL SUMMARY

Client INTERNATIONAL PAPER
Facility
Client Code IP WILM
Method Semivolatiles by SW8270B

Specification # 827S

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
IPW0897W10	9708148-03A	827SWATX	3520970812142000	MSMSD270815083201
IPW0897W12	9708148-04A	827SWATX	3520970812142000	MSMSD270815083201
IPW0897W23	9708148-01A	827SWATX	3520970812142000	MSMSD270815083201
IPW0897W24	9708148-02A	827SWATX	3520970812142000	MSMSD270815083201

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708148-03A		9708148-04A		9708148-01A		9708148-02A	
File ID:	U9156		U9157		U9154		U9155	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00	
Date Analyzed:	08/15/97 12:52		08/15/97 13:31		08/15/97 11:35		08/15/97 12:14	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		receive		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acenaphthene	ND	0.483	ND	0.492	ND	0.492	ND	0.492
Acenaphthylene	ND	0.251	ND	0.256	ND	0.256	ND	0.256
Acetophenone	ND	0.307	ND	0.312	ND	0.312	ND	0.312
4-Aminobiphenyl	ND	1.60	ND	1.63	ND	1.63	ND	1.63
Aniline	ND	0.786	ND	0.801	ND	0.801	ND	0.801
Anthracene	ND	0.233	ND	0.237	ND	0.237	ND	0.237
Benz(a)anthracene	ND	0.206	ND	0.210	ND	0.210	ND	0.210
Benz(a)pyrene	ND	0.253	ND	0.258	ND	0.258	ND	0.258
Benzidine	ND	43.6	ND	44.4	ND	44.4	ND	44.4
Benzo(b)fluoranthene	ND	0.231	ND	0.235	ND	0.235	ND	0.235
Benzo(g,h,i)perylene	ND	0.246	ND	0.250	ND	0.250	ND	0.250
Benzo(k)fluoranthene	ND	0.288	ND	0.293	ND	0.293	ND	0.293
Benzoic acid	ND	6.02	ND	6.13	ND	6.13	ND	6.13
Benzyl alcohol	ND	0.353	ND	0.360	ND	0.360	ND	0.360
4-Bromophenylphenyl ether	ND	0.264	ND	0.269	ND	0.269	ND	0.269
Butylbenzylphthalate	ND	0.186	ND	0.190	ND	0.190	ND	0.190
4-Chloro-3-methylphenol	ND	0.409	ND	0.417	ND	0.417	ND	0.417
p-Chloroaniline	ND	0.474	ND	0.483	ND	0.483	ND	0.483
bis(2-Chloroethoxy)methane	ND	0.200	ND	0.204	ND	0.204	ND	0.204
bis(2-Chloroethyl)ether	ND	0.356	ND	0.363	ND	0.363	ND	0.363

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708148-03A		9708148-04A		9708148-01A		9708148-02A	
File ID:	U9156		U9157		U9154		U9155	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00	
Date Analyzed:	08/15/97 12:52		08/15/97 13:31		08/15/97 11:35		08/15/97 12:14	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
bis(2-Chloroisopropyl)ether	ND	0.298	ND	0.304	ND	0.304	ND	0.304
2-Chloronaphthalene	ND	0.436	ND	0.444	ND	0.444	ND	0.444
2-Chlorophenol	ND	0.203	ND	0.207	ND	0.207	ND	0.207
4-Chlorophenylphenyl ether	ND	0.410	ND	0.418	ND	0.418	ND	0.418
Chrysene	ND	0.289	ND	0.294	ND	0.294	ND	0.294
Di-n-butylphthalate	ND	0.304	ND	0.310	ND	0.310	0.786	0.310
Di-n-octylphthalate	ND	0.207	ND	0.210	ND	0.210	ND	0.210
Dibenz(a,h)anthracene	ND	0.232	ND	0.236	ND	0.236	ND	0.236
Dibenzofuran	ND	0.341	ND	0.348	ND	0.348	ND	0.348
1,2-Dichlorobenzene	ND	0.525	ND	0.535	ND	0.535	ND	0.535
1,3-Dichlorobenzene	ND	0.397	ND	0.405	ND	0.405	ND	0.405
1,4-Dichlorobenzene	ND	0.421	ND	0.429	ND	0.429	ND	0.429
3,3'-Dichlorobenzidine	ND	0.632	ND	0.644	ND	0.644	ND	0.644
2,4-Dichlorophenol	ND	0.388	ND	0.395	ND	0.395	ND	0.395
2,6-Dichlorophenol	ND	0.477	ND	0.486	ND	0.486	ND	0.486
Diethylphthalate	ND	0.308	ND	0.314	ND	0.314	ND	0.314
p-Dimethylaminoazobenzene	ND	0.570	ND	0.581	ND	0.581	ND	0.581
7,12-Dimethylbenz(a)anthracene	ND	3.55	ND	3.62	ND	3.62	ND	3.62
Dimethylphenethylamine	ND	7.45	ND	7.59	ND	7.59	ND	7.59
2,4-Dimethylphenol	ND	0.450	ND	0.458	ND	0.458	ND	0.458

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708148-03A		9708148-04A		9708148-01A		9708148-02A	
File ID:	U9156		U9157		U9154		U9155	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00	
Date Analyzed:	08/15/97 12:52		08/15/97 13:31		08/15/97 11:35		08/15/97 12:14	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Dimethylphthalate	ND	0.299	ND	0.305	ND	0.305	ND	0.305
4,6-Dinitro-2-methylphenol	ND	1.31	ND	1.33	ND	1.33	ND	1.33
2,4-Dinitrophenol	ND	11.5	ND	11.7	ND	11.7	ND	11.7
2,4-Dinitrotoluene	ND	0.356	ND	0.363	ND	0.363	ND	0.363
2,6-Dinitrotoluene	ND	0.953	ND	0.971	ND	0.971	ND	0.971
Diphenylamine/N-NitrosoDPA	ND	0.546	ND	0.556	ND	0.556	ND	0.556
Ethyl methanesulfonate	ND	0.385	ND	0.392	ND	0.392	ND	0.392
bis(2-Ethylhexyl)phthalate	ND	0.963	ND	0.981	ND	0.981	ND	0.981
Fluoranthene	ND	0.292	ND	0.297	ND	0.297	ND	0.297
Fluorene	ND	0.354	ND	0.361	ND	0.361	ND	0.361
Hexachlorobenzene	ND	0.291	ND	0.296	ND	0.296	ND	0.296
Hexachlorobutadiene	ND	1.19	ND	1.21	ND	1.21	ND	1.21
Hexachlorocyclopentadiene	ND	3.20	ND	3.26	ND	3.26	ND	3.26
Hexachloroethane	ND	0.718	ND	0.731	ND	0.731	ND	0.731
Indeno(1,2,3-cd)pyrene	ND	0.308	ND	0.314	ND	0.314	ND	0.314
Isophorone	ND	0.265	ND	0.270	ND	0.270	ND	0.270
Methyl methanesulfonate	ND	0.785	ND	0.800	ND	0.800	ND	0.800
3-Methylcholanthrene	ND	2.89	ND	2.94	ND	2.94	ND	2.94
2-Methylnaphthalene	ND	0.815	ND	0.830	ND	0.830	ND	0.830
4-Methylphenol/3-Methylphenol	ND	0.440	ND	0.449	ND	0.449	ND	0.449

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708148-03A		9708148-04A		9708148-01A		[illegible]-02A	
File ID:	U9156		U9157		U9154		U9155	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00	
Date Analyzed:	08/15/97 12:52		08/15/97 13:31		08/15/97 11:35		08/15/97 12:14	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
2-Methylphenol	ND	0.342	ND	0.349	ND	0.349	ND	0.349
N-Nitroso-di-n-butylamine	ND	1.40	ND	1.43	ND	1.43	ND	1.43
N-Nitroso-di-n-propylamine	ND	0.343	ND	0.350	ND	0.350	ND	0.350
N-Nitrosodimethylamine	ND	1.10	ND	1.12	ND	1.12	ND	1.12
N-Nitrosopiperidine	ND	0.443	ND	0.451	ND	0.451	ND	0.451
Naphthalene	ND	0.397	ND	0.405	ND	0.405	ND	0.405
1-Naphthylamine	ND	7.59	ND	7.73	ND	7.73	ND	7.73
2-Naphthylamine	ND	4.19	ND	4.27	ND	4.27	ND	4.27
2-Nitroaniline	ND	0.535	ND	0.545	ND	0.545	ND	0.545
3-Nitroaniline	ND	0.836	ND	0.851	ND	0.851	ND	0.851
4-Nitroaniline	ND	2.22	ND	2.27	ND	2.27	ND	2.27
Nitrobenzene	ND	0.293	ND	0.298	ND	0.298	ND	0.298
2-Nitrophenol	ND	0.256	ND	0.261	ND	0.261	ND	0.261
4-Nitrophenol	ND	2.12	ND	2.16	ND	2.16	ND	2.16
Pentachlorobenzene	ND	0.302	ND	0.308	ND	0.308	ND	0.308
Pentachloronitrobenzene	ND	1.82	ND	1.86	ND	1.86	ND	1.86
Pentachlorophenol	ND	7.09	ND	7.23	ND	7.23	ND	7.23
Phenacetin	ND	0.453	ND	0.462	ND	0.462	ND	0.462
Phenanthrene	ND	0.319	ND	0.325	ND	0.325	ND	0.325
Phenol	ND	1.49	ND	1.51	ND	1.51	ND	1.51

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708148-03A		9708148-04A		9708148-01A		9708148-02A	
File ID:	U9156		U9157		U9154		U9155	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00		08/12/97 14:20:00	
Date Analyzed:	08/15/97 12:52		08/15/97 13:31		08/15/97 11:35		08/15/97 12:14	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
2-Picoline	ND	1.64	ND	1.68	ND	1.68	ND	1.68
Pronamide	ND	0.562	ND	0.572	ND	0.572	ND	0.572
Pyrene	ND	0.342	ND	0.349	ND	0.349	ND	0.349
Pyridine	ND	1.30	ND	1.32	ND	1.32	ND	1.32
1,2,4,5-Tetrachlorobenzene	ND	0.348	ND	0.354	ND	0.354	ND	0.354
2,3,4,6-Tetrachlorophenol	ND	0.399	ND	0.407	ND	0.407	ND	0.407
1,2,4-Trichlorobenzene	ND	0.383	ND	0.390	ND	0.390	ND	0.390
2,4,5-Trichlorophenol	ND	0.284	ND	0.290	ND	0.290	ND	0.290
2,4,6-Trichlorophenol	ND	0.282	ND	0.288	ND	0.288	ND	0.288

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
2-Fluorobiphenyl	99	99	102	104
2-Fluorophenol	94	92	94	96
Nitrobenzene-d5	100	98	99	99
Phenol-d5	111	109	113	117
Terphenyl-d14	94	94	96	100
2,4,6-Tribromophenol	99	99	103	106

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INITIAL CALIBRATION

Work Order # 9708148

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Initial Calibration # MSD2970722093900

Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33

Method Semivolatiles by GC/MS

Test Code 827SWX00

Instrument MSD2

Analyst MCL

Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	$\overline{RF}$	% RSD	Correlation Coefficient
Pyridine	1.556 10	1.424 20	1.502 50	1.504 75	1.611 100	1.569 150	1.675 200	1.55	5.27	
N-Nitrosodimethylamine	0.843 10	0.801 20	0.830 50	0.898 75	0.937 100	0.909 150	0.940 200	0.880	6.25	
2-Picoline	1.388 10	1.405 20	1.438 50	1.473 75	1.544 100	1.545 150	1.566 200	1.48	4.91	
Methyl methanesulfonate	1.048 10	1.020 20	1.044 50	1.072 75	1.109 100	1.098 150	1.106 200	1.07	3.25	
N-Nitrosomethylethylamine	0.634 10	0.610 20	0.648 50	0.667 75	0.682 100	0.696 150	0.707 200	0.663	5.25	
N-Nitrosodiethylamine	0.593 10	0.578 20	0.597 50	0.602 75	0.629 100	0.634 150	0.636 200	0.610	3.76	
Ethyl methanesulfonate	1.413 10	1.386 20	1.425 50	1.477 75	1.530 100	1.516 150	1.554 200	1.47	4.40	
Aniline	1.775 10	1.684 20	1.820 50	1.849 75	1.858 100	1.801 150	1.785 200	1.80	3.24	
Phenol CCC	1.812 10	1.738 20	1.744 50	1.753 75	1.784 100	1.756 150	1.755 200	1.76	1.47	
bis(2-Chloroethyl)ether	1.502 10	1.560 20	1.480 50	1.499 75	1.463 100	1.527 150	1.548 200	1.51	2.34	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Pentachloroethane	0.561 10	0.527 20	0.522 50	0.545 75	0.553 100	0.537 150	0.536 200	0.540	2.57	
2-Chlorophenol	1.358 10	1.307 20	1.326 50	1.355 75	1.391 100	1.368 150	1.382 200	1.36	2.20	
1,3-Dichlorobenzene	1.505 10	1.455 20	1.457 50	1.467 75	1.484 100	1.435 150	1.416 200	1.46	2.03	
1,4-Dichlorobenzene CCC	1.489 10	1.461 20	1.461 50	1.464 75	1.488 100	1.419 150	1.394 200	1.45	2.42	
Benzyl alcohol	0.793 10	0.788 20	0.806 50	0.826 75	0.851 100	0.810 150	0.786 200	0.809	2.90	
1,2-Dichlorobenzene	1.442 10	1.398 20	1.393 50	1.391 75	1.405 100	1.281 150	1.204 200	1.36	6.22	
bis(2-Chloroisopropyl)ether	2.281 10	2.244 20	2.271 50	2.377 75	2.436 100	2.401 150	2.391 200	2.34	3.23	
2-Methylphenol	1.135 10	1.096 20	1.098 50	1.102 75	1.137 100	1.123 150	1.117 200	1.12	1.54	
N-Nitroso-di-n-propylamine SPCC	1.042 10	1.017 20	0.995 50	0.996 75	1.004 100	0.925 150	0.924 200	0.986	4.57	
4-Methylphenol/3-Methylphenol	1.252 10	1.216 20	1.196 50	1.146 75	1.120 100	0.994 150	0.876 200	1.11	12.1	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Hexachloroethane	0.634 10	0.630 20	0.651 50	0.653 75	0.664 100	0.574 150	0.485 200	0.613	10.4	
o-Toluidine	1.884 10	1.824 20	1.820 50	1.780 75	1.780 100	1.634 150	1.564 200	1.76	6.50	
Nitrobenzene	0.456 10	0.446 20	0.449 50	0.468 75	0.474 100	0.468 150	0.459 200	0.460	2.28	
N-Nitrosopyrrolidine	0.581 10	0.572 20	0.584 50	0.581 75	0.598 100	0.613 150	0.581 200	0.587	2.35	
N-Nitrosomorpholine	0.851 10	0.853 20	0.875 50	0.885 75	0.927 100	0.926 150	0.922 200	0.891	3.78	
Acetophenone	1.873 10	1.858 20	1.833 50	1.843 75	1.900 100	1.864 150	1.923 200	1.87	1.69	
N-Nitrosopiperidine	0.415 10	0.412 20	0.410 50	0.423 75	0.434 100	0.435 150	0.427 200	0.422	2.43	
Isophorone	0.997 10	0.961 20	0.958 50	0.976 75	0.997 100	0.993 150	0.980 200	0.980	1.67	
2-Nitrophenol CCC	0.213 10	0.220 20	0.218 50	0.233 75	0.239 100	0.237 150	0.235 200	0.228	4.62	
2,4-Dimethylphenol	0.443 10	0.427 20	0.416 50	0.423 75	0.423 100	0.413 150	0.401 200	0.421	3.09	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
bis(2-Chloroethoxy)methane	0.579 10	0.560 20	0.544 50	0.560 75	0.562 100	0.546 150	0.537 200	0.555	2.55	
Benzoic acid	0.224 50	0.245 75	0.265 100	0.263 150	0.281 200			0.256	8.52	
2,4-Dichlorophenol CCC	0.361 10	0.348 20	0.336 50	0.334 75	0.336 100	0.317 150	0.308 200	0.334	5.32	
Dimethylphenethylamine	1.264 50	1.353 75	1.310 100	1.394 150	1.334 200			1.33	3.64	
1,2,4-Trichlorobenzene	0.420 10	0.390 20	0.382 50	0.377 75	0.382 100	0.354 150	0.340 200	0.378	6.80	
Naphthalene	1.128 10	1.080 20	1.022 50	1.004 75	1.004 100	0.959 150	0.923 200	1.02	6.82	
2,6-Dichlorophenol	0.357 10	0.343 20	0.329 50	0.321 75	0.319 100	0.303 150	0.284 200	0.322	7.53	
Hexachloropropene	0.213 10	0.213 20	0.225 50	0.233 75	0.235 100	0.230 150	0.222 200	0.224	4.00	
p-Chloroaniline	0.454 10	0.435 20	0.458 50	0.456 75	0.449 100	0.423 150	0.403 200	0.440	4.68	
Hexachlorobutadiene CCC	0.248 10	0.245 20	0.235 50	0.235 75	0.228 100	0.215 150	0.200 200	0.229	7.39	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

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INITIAL CALIBRATION Cont'd

Work Order # 9708148

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Initial Calibration # MSD2970722093900

Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33

Method Semivolatiles by GC/MS

Test Code 827SWX00

Instrument MSD2

Analyst MCL

Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
N-Nitroso-di-n-butylamine	0.255 10	0.264 20	0.260 50	0.264 75	0.272 100	0.272 150	0.269 200	0.265	2.39	
Safrole	0.144 10	0.147 20	0.139 50	0.138 75	0.138 100	0.132 150	0.128 200	0.138	[illegible]	
4-Chloro-3-methylphenol CCC	0.373 10	0.368 20	0.367 50	0.374 75	0.372 100	0.365 150	0.348 200	0.367	2.46	
2-Methylnaphthalene	0.703 10	0.651 20	0.630 50	0.620 75	0.615 100	0.585 150	0.563 200	0.624	7.32	
Hexachlorocyclopentadiene SPCC	0.339 10	0.353 20	0.391 50	0.409 75	0.414 100	0.395 150	0.370 200	0.382	7.44	
2,4,6-Trichlorophenol CCC	0.481 10	0.481 20	0.478 50	0.492 75	0.500 100	0.474 150	0.466 200	0.482	2.34	
2,4,5-Trichlorophenol	0.524 10	0.506 20	0.516 50	0.532 75	0.533 100	0.507 150	0.463 200	0.512	4.70	
Isosafrole	0.201 10	0.197 20	0.195 50	0.198 75	0.202 100	0.188 150	0.180 200	0.194	4.04	
2-Chloronaphthalene	0.542 10	0.528 20	0.510 50	0.522 75	0.531 100	0.493 150	0.469 200	0.514	4.91	
1,2,4,5-Tetrachlorobenzene	0.792 10	0.766 20	0.761 50	0.749 75	0.760 100	0.711 150	0.677 200	0.745	5.18	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
1,4-Naphthoquinone	0.553 10	0.535 20	0.517 50	0.509 75	0.497 100	0.442 150	0.401 200	0.493	10.9	
2-Nitroaniline	0.454 10	0.495 20	0.536 50	0.568 75	0.604 100	0.591 150	0.584 200	0.547	10.1	
Dimethylphthalate	1.640 10	1.611 20	1.572 50	1.598 75	1.619 100	1.459 150	1.264 200	1.54	8.74	
1,3-Dinitrobenzene	0.222 20	0.262 50	0.289 75	0.307 100	0.301 150	0.286 200		0.278	11.3	
Acenaphthylene	2.025 10	1.967 20	1.956 50	1.940 75	1.937 100	1.790 150	1.619 200	1.89	7.38	
2,6-Dinitrotoluene	0.334 10	0.351 20	0.375 50	0.392 75	0.405 100	0.395 150	0.378 200	0.376	6.74	
3-Nitroaniline	0.326 50	0.376 75	0.413 100	0.426 150	0.410 200			0.390	10.3	
Dibenzofuran	1.872 10	1.813 20	1.745 50	1.750 75	1.761 100	1.649 150	1.550 200	1.73	6.11	
Pentachlorobenzene	0.736 10	0.715 20	0.697 50	0.683 75	0.680 100	0.641 150	0.599 200	0.679	6.79	
2,4-Dinitrotoluene	0.408 10	0.454 20	0.514 50	0.544 75	0.563 100	0.538 150	0.492 200	0.502	11.0	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900

Sol'n # 31736-33

Calibration Date 07/22/97 09:39:00

Instrument MSD2

Method Semivolatiles by GC/MS

Analyst MCL

Test Code 827SWX00

Reviewer SDK

Analytes	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
1-Naphthylamine	0.683 50	0.917 75	1.038 100	1.005 150	0.950 200			0.919	15.2	
Acenaphthene CCC	1.255 10	1.223 20	1.183 50	1.173 75	1.182 100	1.105 150	1.046 200	1.17	6.05	
2,4-Dinitrophenol SPCC	0.156 50	0.189 75	0.211 100	0.225 150	0.230 200			0.202	15.0	
4-Nitrophenol SPCC	0.212 10	0.225 20	0.238 50	0.241 75	0.253 100	0.258 150	0.254 200	0.240	7.02	
2-Naphthylamine	0.250 50	0.572 75	0.816 100	0.919 150	0.884 200			0.688	40.7	
2,3,4,6-Tetrachlorophenol	0.413 10	0.415 20	0.429 50	0.437 75	0.437 100	0.409 150	0.377 200	0.417	5.02	
Diethylphthalate	1.744 10	1.692 20	1.615 50	1.604 75	1.605 100	1.370 150	1.308 200	1.56	10.4	
Fluorene	1.340 10	1.248 20	1.182 50	1.174 75	1.191 100	1.109 150	1.036 200	1.18	8.18	
4-Chlorophenylphenyl ether	0.685 10	0.670 20	0.639 50	0.637 75	0.618 100	0.509 150	0.458 200	0.602	14.2	
5-Nitro-o-toluidine	0.404 50	0.440 75	0.472 100	0.464 150	0.455 200			0.447	6.00	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900

Sol'n # 31736-33
Calibration Date 07/22/97 09:39:00
Instrument MSD2
Method Semivolatiles by GC/MS
Analyst MCL
Test Code 827SWX00
Reviewer SDK

Analytes	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
4-Nitroaniline	0.296 10	0.315 20	0.358 50	0.388 75	0.415 100	0.426 150	0.417 200	0.374	13.9	
4,6-Dinitro-2-methylphenol	0.135 50	0.152 75	0.166 100	0.164 150	0.153 200			0.154	8.02	
Diphenylamine/N-NitrosoDPA CCC	0.591 20	0.545 40	0.512 100	0.493 150	0.505 200	0.474 300	0.469 400	0.513	8.36	
4-Bromophenylphenyl ether	0.251 10	0.242 20	0.225 50	0.219 75	0.216 100	0.199 150	0.201 200	0.222	8.76	
Phenacetin	0.513 10	0.504 20	0.498 50	0.509 75	0.538 100	0.543 150	0.544 200	0.521	3.78	
Hexachlorobenzene	0.362 10	0.340 20	0.326 50	0.329 75	0.337 100	0.326 150	0.331 200	0.336	3.78	
4-Aminobiphenyl										0.999
Pentachlorophenol CCC	0.196 10	0.200 20	0.209 50	0.211 75	0.220 100	0.223 150	0.225 200	0.212	5.32	
Pentachloronitrobenzene	0.054 10	0.057 20	0.056 50	0.059 75	0.059 100	0.058 150	0.058 200	0.0573	3.14	
Pronamide	0.287 5	0.299 10	0.289 25	0.291 37.5	0.291 50	0.279 75	0.267 100	0.286	3.61	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900

Sol'n # 31736-33
Calibration Date 07/22/97 09:39:00
Instrument MSD2
Method Semivolatiles by GC/MS
Analyst MCL
Test Code 827SWX00
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Phenanthrene	1.123 10	1.060 20	1.003 50	0.987 75	1.004 100	0.978 150	0.995 200	1.02	5.09	
Anthracene	1.124 10	1.079 20	1.024 50	1.002 75	1.017 100	0.985 150	0.988 200	1.03	5.01	
Di-n-butylphthalate	1.785 10	1.681 20	1.613 50	1.631 75	1.641 100	1.606 150	1.617 200	1.65	3.82	
Methapyrilene	0.697 10	0.675 20	0.684 50	0.710 75	0.727 100	0.724 150	0.713 200	0.704	2.80	
4-Nitroquinoline-1-oxide	0.079 50	0.089 75	0.100 100	0.102 150	0.101 200			0.0942	10.6	
Fluoranthene CCC	1.178 10	1.128 20	1.069 50	1.055 75	1.093 100	1.053 150	1.063 200	1.09	4.26	
Benzidine	0.097 50	0.101 75	0.125 100	0.169 150	0.224 200			0.143	37.3	
Pyrene	1.415 10	1.342 20	1.340 50	1.352 75	1.431 100	1.431 150	1.397 200	1.39	2.98	
p-Dimethylaminoazobenzene	0.462 10	0.447 20	0.454 50	0.470 75	0.501 100	0.514 150	0.497 200	0.478	5.43	
Chlorobenzilate	0.445 10	0.421 20	0.440 50	0.447 75	0.470 100	0.473 150	0.452 200	0.450	3.97	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Butylbenzylphthalate	0.878 10	0.843 20	0.851 50	0.888 75	0.928 100	0.938 150	0.908 200	0.891	4.09	
3,3'-Dimethylbenzidine	0.342 50	0.380 75	0.444 100	0.474 150	0.465 200			0.421	13.6	
2-Acetylaminofluorene	0.519 10	0.525 20	0.565 50	0.598 75	0.650 100	0.669 150	0.664 200	0.599	10.7	
Benz(a)anthracene	1.288 10	1.206 20	1.212 50	1.238 75	1.306 100	1.309 150	1.263 200	1.26	3.40	
3,3'-Dichlorobenzidine	0.369 10	0.356 20	0.407 50	0.448 75	0.500 100	0.503 150	0.496 200	0.440	14.4	
Chrysene	1.217 10	1.149 20	1.147 50	1.157 75	1.228 100	1.235 150	1.170 200	1.19	3.29	
bis(2-Ethylhexyl)phthalate	1.300 10	1.252 20	1.251 50	1.275 75	1.317 100	1.326 150	1.263 200	1.28	2.41	
7,12-Dimethylbenz(a)anthracene	0.504 10	0.474 20	0.440 50	0.431 75	0.430 100	0.407 150	0.386 200	0.439	9.03	
Di-n-octylphthalate CCC	1.894 10	1.888 20	1.874 50	1.859 75	1.835 100	1.738 150	1.686 200	1.82	4.43	
3-Methylcholanthrene	0.479 10	0.456 20	0.449 50	0.441 75	0.455 100	0.438 150	0.415 200	0.448	4.39	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900

Sol'n # 31736-33

Calibration Date 07/22/97 09:39:00

Instrument MSD2

Method Semivolatiles by GC/MS

Analyst MCL

Test Code 827SWX00

Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	$\overline{RF}$	% RSD	Correlation Coefficient
Benzo(b)fluoranthene	1.253 10	1.198 20	1.141 50	1.250 75	1.389 100	1.307 150	1.179 200	1.25	6.72	
Benzo(k)fluoranthene	1.166 10	1.107 20	0.966 50	1.121 75	1.124 100	1.173 150	1.115 200	1.11	6.17	
Benz(a)pyrene CCC	1.027 10	0.987 20	0.978 50	0.970 75	0.988 100	0.961 150	0.904 200	0.974	3.81	
Indeno(1,2,3-cd)pyrene	1.194 10	1.165 20	1.177 50	1.170 75	1.203 100	1.162 150	1.111 200	1.17	2.54	
Dibenz(a,h)anthracene	0.964 10	0.942 20	0.929 50	0.923 75	0.933 100	0.881 150	0.836 200	0.915	4.70	
Benzo(g,h,i)perylene	1.009 10	0.977 20	0.989 50	0.984 75	1.014 100	0.987 150	0.941 200	0.986	2.43	
p-Phenylenediamine	0.041 50	0.045 75	0.043 100	0.039 150	0.029 200			0.0394	15.8	
Diallate	0.382 10	0.364 20	0.338 50	0.335 75	0.333 100	0.310 150	0.305 200	0.338	8.12	
sym-Trinitrobenzene										0.997
Kepone	0.212 10	0.195 20	0.168 50	0.168 75	0.181 100	0.183 150	0.182 200	0.184	8.39	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900

Sol'n # 31736-33
Calibration Date 07/22/97 09:39:00
Instrument MSD2
Method Semivolatiles by GC/MS
Analyst MCL
Test Code 827SWX00
Reviewer SDK

Analytes	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Carbazole	0.927 10	0.894 20	0.966 50	0.968 75	0.987 100	0.975 150	0.965 200	0.955	3.40	
2-Fluorophenol Surrogate	1.307 20	1.248 40	1.255 100	1.273 150	1.289 200	1.254 300	1.249 400	1.27	1.80	
Phenol-d5 Surrogate	1.409 20	1.334 40	1.302 100	1.295 150	1.319 200	1.284 300	1.264 400	1.32	3.59	
Nitrobenzene-d5 Surrogate	0.424 10	0.423 20	0.439 50	0.455 75	0.462 100	0.466 150	0.459 200	0.447	4.05	
2-Fluorobiphenyl Surrogate	1.393 10	1.361 20	1.317 50	1.317 75	1.317 100	1.203 150	1.165 200	1.30	6.36	
2,4,6-Tribromophenol Surrogate	0.294 20	0.301 40	0.301 100	0.312 150	0.314 200	0.293 300	0.276 400	0.299	4.30	
Terphenyl-d14 Surrogate	0.906 10	0.853 20	0.843 50	0.864 75	0.894 100	0.880 150	0.858 200	0.871	2.64	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

EXTRACTION BATCH SUMMARY

Extraction Batch # 3520970812142000

Work Order # 9708148

Method Liquid/liq Extract SW3520B
Test Code 352SWA00

Extraction Start Date/Time 08/12/97 14:20:00
Extraction Stop Date/Time 08/14/97 06:37:00

Analyst JC
Reviewer TCH

Sample	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
1	IPW0897W23	9708148-01A	1050	
2	IPW0897W24	9708148-02A	1050	
3	IPW0897W10	9708148-03A	1070	
4	IPW0897W12	9708148-04A	1050	
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Quality Control	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
Blank		BLK973754	1000	
Detectability Check Sample		DCS976418	1000	
Laboratory Control Sample		LCS976417	1000	
Laboratory Control Sample Duplicate		LCSD976417	1000	

ANALYSIS BATCH SUMMARY

Analysis Batch # MSMSD270815083201

Work Order # 9708148

Method Semivolatiles by SW8270B
Test Code 827SWATX
Initial Calibration # MSD2970722093900
Calibration Date 07/22/97

Analysis Start Date/Time 08/15/97 08:32:00
Analysis Stop Date/Time 08/15/97 14:10:00

Instrument MSD2
Analyst MCL
Reviewer SDK

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/15/97 08:32		TUNE	GC/MS tune files	U9149
2	08/15/97 08:53		SSTD050	Continuing Calibration Verification	U9150
3	08/15/97 09:38		LCS976417	Lab Control Sample	U9151
4	08/15/97 10:17		LCSD976417	Lab Control Sample Duplicate	U9152
5	08/15/97 10:56		BLK973754	Blank, Method	U9153
6	08/15/97 11:35	IPW0897W23	9708148-01A	Sample	U9154
7	08/15/97 12:14	IPW0897W24	9708148-02A	Sample	U9155
8	08/15/97 12:52	IPW0897W10	9708148-03A	Sample	U9156
9	08/15/97 13:31	IPW0897W12	9708148-04A	Sample	U9157
10	08/15/97 14:10		DCS976418	Detectability Check Sample	U9158

RESULTS

Extraction Batch # 3520970812142000
Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W23
Lab Sample ID 9708148-01A
File # U9154
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 11:35

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acenaphthene	83-32-9	ND	0.492	0.492
Acenaphthylene	208-96-8	ND	0.256	0.256
Acetophenone	98-86-2	ND	0.312	0.312
4-Aminobiphenyl	92-67-1	ND	1.63	1.63
Aniline	62-53-3	ND	0.801	0.801
Anthracene	120-12-7	ND	0.237	0.237
Benz(a)anthracene	56-55-3	ND	0.210	0.210
Benz(a)pyrene	50-32-8	ND	0.258	0.258
Benzidine	92-87-5	ND	44.4	44.4
Benzo(b)fluoranthene	205-99-2	ND	0.235	0.235
Benzo(g,h,i)perylene	191-24-2	ND	0.250	0.250
Benzo(k)fluoranthene	207-08-9	ND	0.293	0.293
Benzoic acid	65-85-0	ND	6.13	6.13
Benzyl alcohol	100-51-6	ND	0.360	0.360
4-Bromophenylphenyl ether	101-55-3	ND	0.269	0.269
Butylbenzylphthalate	85-68-7	ND	0.190	0.190
4-Chloro-3-methylphenol	59-50-7	ND	0.417	0.417
p-Chloroaniline	106-47-8	ND	0.483	0.483
bis(2-Chloroethoxy)methane	111-91-1	ND	0.204	0.204
bis(2-Chloroethyl)ether	111-44-4	ND	0.363	0.363
bis(2-Chloroisopropyl)ether	108-60-1	ND	0.304	0.304
2-Chloronaphthalene	91-58-7	ND	0.444	0.444
2-Chlorophenol	95-57-8	ND	0.207	0.207
4-Chlorophenylphenyl ether	7005-72-3	ND	0.418	0.418
Chrysene	218-01-9	ND	0.294	0.294

R E S U L T S (Cont'd)

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W23 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-01A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9154 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 11:35 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	84-74-2	ND	0.310	0.310
Di-n-octylphthalate	117-84-0	ND	0.210	0.210
Dibenz(a,h)anthracene	53-70-3	ND	0.236	0.236
Dibenzofuran	132-64-9	ND	0.348	0.348
1,2-Dichlorobenzene	95-50-1	ND	0.535	0.535
1,3-Dichlorobenzene	541-73-1	ND	0.405	0.405
1,4-Dichlorobenzene	106-46-7	ND	0.429	0.429
3,3'-Dichlorobenzidine	91-94-1	ND	0.644	0.644
2,4-Dichlorophenol	120-83-2	ND	0.395	0.395
2,6-Dichlorophenol	87-65-0	ND	0.486	0.486
Diethylphthalate	84-66-2	ND	0.314	0.314
p-Dimethylaminoazobenzene	60-11-7	ND	0.581	0.581
7,12-Dimethylbenz(a)anthracene	57-97-6	ND	3.62	3.62
Dimethylphenethylamine	122-09-8	ND	7.59	7.59
2,4-Dimethylphenol	105-67-9	ND	0.458	0.458
Dimethylphthalate	131-11-3	ND	0.305	0.305
4,6-Dinitro-2-methylphenol	534-52-1	ND	1.33	1.33
2,4-Dinitrophenol	51-28-5	ND	11.7	11.7
2,4-Dinitrotoluene	121-14-2	ND	0.363	0.363
2,6-Dinitrotoluene	606-20-2	ND	0.971	0.971
Diphenylamine/N-NitrosoDPA	122-39-4	ND	0.556	0.556
Ethyl methanesulfonate	62-50-0	ND	0.392	0.392
bis(2-Ethylhexyl)phthalate	117-81-7	ND	0.981	0.981
Fluoranthene	206-44-0	ND	0.297	0.297
Fluorene	86-73-7	ND	0.361	0.361

R E S U L T S (Cont'd)

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W23 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-01A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9154 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 11:35 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	118-74-1	ND	0.296	0.296
Hexachlorobutadiene	87-68-3	ND	1.21	1.21
Hexachlorocyclopentadiene	77-47-4	ND	3.26	3.26
Hexachloroethane	67-72-1	ND	0.731	0.731
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.314	0.314
Isophorone	78-59-1	ND	0.270	0.270
Methyl methanesulfonate	66-27-3	ND	0.800	0.800
3-Methylcholanthrene	56-49-5	ND	2.94	2.94
2-Methylnaphthalene	91-57-6	ND	0.830	0.830
4-Methylphenol/3-Methylphenol	NO_CAS	ND	0.449	0.449
2-Methylphenol	95-48-7	ND	0.349	0.349
N-Nitroso-di-n-butylamine	924-16-3	ND	1.43	1.43
N-Nitroso-di-n-propylamine	621-64-7	ND	0.350	0.350
N-Nitrosodimethylamine	62-75-9	ND	1.12	1.12
N-Nitrosopiperidine	100-75-4	ND	0.451	0.451
Naphthalene	91-20-3	ND	0.405	0.405
1-Naphthylamine	134-32-7	ND	7.73	7.73
2-Naphthylamine	91-59-8	ND	4.27	4.27
2-Nitroaniline	88-74-4	ND	0.545	0.545
3-Nitroaniline	99-09-2	ND	0.851	0.851
4-Nitroaniline	100-01-6	ND	2.27	2.27
Nitrobenzene	98-95-3	ND	0.298	0.298
2-Nitrophenol	88-75-5	ND	0.261	0.261
4-Nitrophenol	100-02-7	ND	2.16	2.16
Pentachlorobenzene	608-93-5	ND	0.308	0.308

R E S U L T S (Cont'd)

Work Order # 9708148

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W23 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-01A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9154 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 11:35 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	82-68-8	ND	1.86	1.86
Pentachlorophenol	87-86-5	ND	7.23	7.23
Phenacetin	62-44-2	ND	0.462	0.462
Phenanthrene	85-01-8	ND	0.325	0.325
Phenol	108-95-2	ND	1.51	1.51
2-Picoline	109-06-8	ND	1.68	1.68
Pronamide	23950-58-5	ND	0.572	0.572
Pyrene	129-00-0	ND	0.349	0.349
Pyridine	110-86-1	ND	1.32	1.32
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	0.354	0.354
2,3,4,6-Tetrachlorophenol	58-90-2	ND	0.407	0.407
1,2,4-Trichlorobenzene	120-82-1	ND	0.390	0.390
2,4,5-Trichlorophenol	95-95-4	ND	0.290	0.290
2,4,6-Trichlorophenol	88-06-2	ND	0.288	0.288

R E S U L T S (Cont'd)

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W23 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-01A | Date Received 08/07/97 | Column ___ | Spikes Subset ___ | Report As received

File # U9154 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture ___

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 11:35 | Reviewer SDK

Test Code 827SWATX

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	321-60-8	95.2	96.9	102	43	116
2-Fluorophenol	367-12-4	190	179	94	60	124
Nitrobenzene-d5	4165-60-0	95.2	94.6	99	45	114
Phenol-d5	4165-62-2	190	216	113	28	122
Terphenyl-d14	1718-51-0	95.2	91.7	96	66	122
2,4,6-Tribromophenol	118-79-6	190	196	103	26	123

RESULTS

Extraction Batch # 3520970812142000
Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W24
Lab Sample ID 9708148-02A
File # U9155
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 12:14

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acenaphthene	83-32-9	ND	0.492	0.492
Acenaphthylene	208-96-8	ND	0.256	0.256
Acetophenone	98-86-2	ND	0.312	0.312
4-Aminobiphenyl	92-67-1	ND	1.63	1.63
Aniline	62-53-3	ND	0.801	0.801
Anthracene	120-12-7	ND	0.237	0.237
Benz(a)anthracene	56-55-3	ND	0.210	0.210
Benz(a)pyrene	50-32-8	ND	0.258	0.258
Benzidine	92-87-5	ND	44.4	44.4
Benzo(b)fluoranthene	205-99-2	ND	0.235	0.235
Benzo(g,h,i)perylene	191-24-2	ND	0.250	0.250
Benzo(k)fluoranthene	207-08-9	ND	0:293	0.293
Benzoic acid	65-85-0	ND	6.13	6.13
Benzyl alcohol	100-51-6	ND	0.360	0.360
4-Bromophenylphenyl ether	101-55-3	ND	0.269	0.269
Butylbenzylphthalate	85-68-7	ND	0.190	0.190
4-Chloro-3-methylphenol	59-50-7	ND	0.417	0.417
p-Chloroaniline	106-47-8	ND	0.483	0.483
bis(2-Chloroethoxy)methane	111-91-1	ND	0.204	0.204
bis(2-Chloroethyl)ether	111-44-4	ND	0.363	0.363
bis(2-Chloroisopropyl)ether	108-60-1	ND	0.304	0.304
2-Chloronaphthalene	91-58-7	ND	0.444	0.444
2-Chlorophenol	95-57-8	ND	0.207	0.207
4-Chlorophenylphenyl ether	7005-72-3	ND	0.418	0.418
Chrysene	218-01-9	ND	0.294	0.294

R E S U L T S (Cont'd)

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W24 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-02A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9155 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 12:14 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	84-74-2	0.786	0.310	0.310
Di-n-octylphthalate	117-84-0	ND	0.210	0.210
Dibenz(a,h)anthracene	53-70-3	ND	0.236	0.236
Dibenzofuran	132-64-9	ND	0.348	0.348
1,2-Dichlorobenzene	95-50-1	ND	0.535	0.535
1,3-Dichlorobenzene	541-73-1	ND	0.405	0.405
1,4-Dichlorobenzene	106-46-7	ND	0.429	0.429
3,3'-Dichlorobenzidine	91-94-1	ND	0.644	0.644
2,4-Dichlorophenol	120-83-2	ND	0.395	0.395
2,6-Dichlorophenol	87-65-0	ND	0.486	0.486
Diethylphthalate	84-66-2	ND	0.314	0.314
p-Dimethylaminoazobenzene	60-11-7	ND	0.581	0.581
7,12-Dimethylbenz(a)anthracene	57-97-6	ND	3.62	3.62
Dimethylphenethylamine	122-09-8	ND	7.59	7.59
2,4-Dimethylphenol	105-67-9	ND	0.458	0.458
Dimethylphthalate	131-11-3	ND	0.305	0.305
4,6-Dinitro-2-methylphenol	534-52-1	ND	1.33	1.33
2,4-Dinitrophenol	51-28-5	ND	11.7	11.7
2,4-Dinitrotoluene	121-14-2	ND	0.363	0.363
2,6-Dinitrotoluene	606-20-2	ND	0.971	0.971
Diphenylamine/N-NitrosoDPA	122-39-4	ND	0.556	0.556
Ethyl methanesulfonate	62-50-0	ND	0.392	0.392
bis(2-Ethylhexyl)phthalate	117-81-7	ND	0.981	0.981
Fluoranthene	206-44-0	ND	0.297	0.297
Fluorene	86-73-7	ND	0.361	0.361

R E S U L T S (Cont'd)

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W24 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-02A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9155 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 12:14 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	118-74-1	ND	0.296	0.296
Hexachlorobutadiene	87-68-3	ND	1.21	1.21
Hexachlorocyclopentadiene	77-47-4	ND	3.26	3.26
Hexachloroethane	67-72-1	ND	0.731	0.731
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.314	0.314
Isophorone	78-59-1	ND	0.270	0.270
Methyl methanesulfonate	66-27-3	ND	0.800	0.800
3-Methylcholanthrene	56-49-5	ND	2.94	2.94
2-Methylnaphthalene	91-57-6	ND	0.830	0.830
4-Methylphenol/3-Methylphenol	NO_CAS	ND	0.449	0.449
2-Methylphenol	95-48-7	ND	0.349	0.349
N-Nitroso-di-n-butylamine	924-16-3	ND	1.43	1.43
N-Nitroso-di-n-propylamine	621-64-7	ND	0.350	0.350
N-Nitrosodimethylamine	62-75-9	ND	1.12	1.12
N-Nitrosopiperidine	100-75-4	ND	0.451	0.451
Naphthalene	91-20-3	ND	0.405	0.405
1-Naphthylamine	134-32-7	ND	7.73	7.73
2-Naphthylamine	91-59-8	ND	4.27	4.27
2-Nitroaniline	88-74-4	ND	0.545	0.545
3-Nitroaniline	99-09-2	ND	0.851	0.851
4-Nitroaniline	100-01-6	ND	2.27	2.27
Nitrobenzene	98-95-3	ND	0.298	0.298
2-Nitrophenol	88-75-5	ND	0.261	0.261
4-Nitrophenol	100-02-7	ND	2.16	2.16
Pentachlorobenzene	608-93-5	ND	0.308	0.308

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W24
Lab Sample ID 9708148-02A
File # U9155
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 12:14

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	82-68-8	ND	1.86	1.86
Pentachlorophenol	87-86-5	ND	7.23	7.23
Phenacetin	62-44-2	ND	0.462	0.462
Phenanthrene	85-01-8	ND	0.325	0.325
Phenol	108-95-2	ND	1.51	1.51
2-Picoline	109-06-8	ND	1.68	1.68
Pronamide	23950-58-5	ND	0.572	0.572
Pyrene	129-00-0	ND	0.349	0.349
Pyridine	110-86-1	ND	1.32	1.32
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	0.354	0.354
2,3,4,6-Tetrachlorophenol	58-90-2	ND	0.407	0.407
1,2,4-Trichlorobenzene	120-82-1	ND	0.390	0.390
2,4,5-Trichlorophenol	95-95-4	ND	0.290	0.290
2,4,6-Trichlorophenol	88-06-2	ND	0.288	0.288

R E S U L T S (Cont'd)

Work Order # 9708148

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Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W24
Lab Sample ID 9708148-02A
File # U9155
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 12:14

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	321-60-8	95.2	99.5	104	43	116
2-Fluorophenol	367-12-4	190	182	96	60	124
Nitrobenzene-d5	4165-60-0	95.2	94.6	99	45	114
Phenol-d5	4165-62-2	190	223	117	28	122
Terphenyl-d14	1718-51-0	95.2	95.2	100	66	122
2,4,6-Tribromophenol	118-79-6	190	203	106	26	123

RESULTS

Extraction Batch # 3520970812142000
Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W10
Lab Sample ID 9708148-03A
File # U9156
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 12:52

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 1070 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acenaphthene	83-32-9	ND	0.483	0.483
Acenaphthylene	208-96-8	ND	0.251	0.251
Acetophenone	98-86-2	ND	0.307	0.307
4-Aminobiphenyl	92-67-1	ND	1.60	1.60
Aniline	62-53-3	ND	0.786	0.786
Anthracene	120-12-7	ND	0.233	0.233
Benz(a)anthracene	56-55-3	ND	0.206	0.206
Benz(a)pyrene	50-32-8	ND	0.253	0.253
Benzidine	92-87-5	ND	43.6	43.6
Benzo(b)fluoranthene	205-99-2	ND	0.231	0.231
Benzo(g,h,i)perylene	191-24-2	ND	0.246	0.246
Benzo(k)fluoranthene	207-08-9	ND	0.288	0.288
Benzoic acid	65-85-0	ND	6.02	6.02
Benzyl alcohol	100-51-6	ND	0.353	0.353
4-Bromophenylphenyl ether	101-55-3	ND	0.264	0.264
Butylbenzylphthalate	85-68-7	ND	0.186	0.186
4-Chloro-3-methylphenol	59-50-7	ND	0.409	0.409
p-Chloroaniline	106-47-8	ND	0.474	0.474
bis(2-Chloroethoxy)methane	111-91-1	ND	0.200	0.200
bis(2-Chloroethyl)ether	111-44-4	ND	0.356	0.356
bis(2-Chloroisopropyl)ether	108-60-1	ND	0.298	0.298
2-Chloronaphthalene	91-58-7	ND	0.436	0.436
2-Chlorophenol	95-57-8	ND	0.203	0.203
4-Chlorophenylphenyl ether	7005-72-3	ND	0.410	0.410
Chrysene	218-01-9	ND	0.289	0.289

R E S U L T S (Cont'd)

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W10 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-03A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9156 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 12:52 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1070 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	84-74-2	ND	0.304	0.304
Di-n-octylphthalate	117-84-0	ND	0.207	0.207
Dibenz(a,h)anthracene	53-70-3	ND	0.232	0.232
Dibenzofuran	132-64-9	ND	0.341	0.341
1,2-Dichlorobenzene	95-50-1	ND	0.525	0.525
1,3-Dichlorobenzene	541-73-1	ND	0.397	0.397
1,4-Dichlorobenzene	106-46-7	ND	0.421	0.421
3,3'-Dichlorobenzidine	91-94-1	ND	0.632	0.632
2,4-Dichlorophenol	120-83-2	ND	0.388	0.388
2,6-Dichlorophenol	87-65-0	ND	0.477	0.477
Diethylphthalate	84-66-2	ND	0.308	0.308
p-Dimethylaminoazobenzene	60-11-7	ND	0.570	0.570
7,12-Dimethylbenz(a)anthracene	57-97-6	ND	3.55	3.55
Dimethylphenethylamine	122-09-8	ND	7.45	7.45
2,4-Dimethylphenol	105-67-9	ND	0.450	0.450
Dimethylphthalate	131-11-3	ND	0.299	0.299
4,6-Dinitro-2-methylphenol	534-52-1	ND	1.31	1.31
2,4-Dinitrophenol	51-28-5	ND	11.5	11.5
2,4-Dinitrotoluene	121-14-2	ND	0.356	0.356
2,6-Dinitrotoluene	606-20-2	ND	0.953	0.953
Diphenylamine/N-NitrosoDPA	122-39-4	ND	0.546	0.546
Ethyl methanesulfonate	62-50-0	ND	0.385	0.385
bis(2-Ethylhexyl)phthalate	117-81-7	ND	0.963	0.963
Fluoranthene	206-44-0	ND	0.292	0.292
Fluorene	86-73-7	ND	0.354	0.354

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W10 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-03A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9156 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 12:52 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1070 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	118-74-1	ND	0.291	0.291
Hexachlorobutadiene	87-68-3	ND	1.19	1.19
Hexachlorocyclopentadiene	77-47-4	ND	3.20	3.20
Hexachloroethane	67-72-1	ND	0.718	0.718
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.308	0.308
Isophorone	78-59-1	ND	0.265	0.265
Methyl methanesulfonate	66-27-3	ND	0.785	0.785
3-Methylcholanthrene	56-49-5	ND	2.89	2.89
2-Methylnaphthalene	91-57-6	ND	0.815	0.815
4-Methylphenol/3-Methylphenol	NO_CAS	ND	0.440	0.440
2-Methylphenol	95-48-7	ND	0.342	0.342
N-Nitroso-di-n-butylamine	924-16-3	ND	1.40	1.40
N-Nitroso-di-n-propylamine	621-64-7	ND	0.343	0.343
N-Nitrosodimethylamine	62-75-9	ND	1.10	1.10
N-Nitrosopiperidine	100-75-4	ND	0.443	0.443
Naphthalene	91-20-3	ND	0.397	0.397
1-Naphthylamine	134-32-7	ND	7.59	7.59
2-Naphthylamine	91-59-8	ND	4.19	4.19
2-Nitroaniline	88-74-4	ND	0.535	0.535
3-Nitroaniline	99-09-2	ND	0.836	0.836
4-Nitroaniline	100-01-6	ND	2.22	2.22
Nitrobenzene	98-95-3	ND	0.293	0.293
2-Nitrophenol	88-75-5	ND	0.256	0.256
4-Nitrophenol	100-02-7	ND	2.12	2.12
Pentachlorobenzene	608-93-5	ND	0.302	0.302

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W10 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-03A | Date Received 08/07/97 | Column ___ | Spikes Subset ___ | Report As received

File # U9156 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture ___

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 12:52 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1070 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	82-68-8	ND	1.82	1.82
Pentachlorophenol	87-86-5	ND	7.09	7.09
Phenacetin	62-44-2	ND	0.453	0.453
Phenanthrene	85-01-8	ND	0.319	0.319
Phenol	108-95-2	ND	1.49	1.49
2-Picoline	109-06-8	ND	1.64	1.64
Pronamide	23950-58-5	ND	0.562	0.562
Pyrene	129-00-0	ND	0.342	0.342
Pyridine	110-86-1	ND	1.30	1.30
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	0.348	0.348
2,3,4,6-Tetrachlorophenol	58-90-2	ND	0.399	0.399
1,2,4-Trichlorobenzene	120-82-1	ND	0.383	0.383
2,4,5-Trichlorophenol	95-95-4	ND	0.284	0.284
2,4,6-Trichlorophenol	88-06-2	ND	0.282	0.282

R E S U L T S (Cont'd)

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W10 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-03A | Date Received 08/07/97 | Column ___ | Spikes Subset ___ | Report As received

File # U9156 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture ___

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 12:52 | Reviewer SDK

Test Code 827SWATX

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	321-60-8	93.5	92.8	99	43	116
2-Fluorophenol	367-12-4	187	175	94	60	124
Nitrobenzene-d5	4165-60-0	93.5	93.7	100	45	114
Phenol-d5	4165-62-2	187	207	111	28	122
Terphenyl-d14	1718-51-0	93.5	88.0	94	66	122
2,4,6-Tribromophenol	118-79-6	187	184	99	26	123

R E S U L T S

Extraction Batch # 3520970812142000
Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W12
Lab Sample ID 9708148-04A
File # U9157
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 13:31

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acenaphthene	83-32-9	ND	0.492	0.492
Acenaphthylene	208-96-8	ND	0.256	0.256
Acetophenone	98-86-2	ND	0.312	0.312
4-Aminobiphenyl	92-67-1	ND	1.63	1.63
Aniline	62-53-3	ND	0.801	0.801
Anthracene	120-12-7	ND	0.237	0.237
Benz(a)anthracene	56-55-3	ND	0.210	0.210
Benz(a)pyrene	50-32-8	ND	0.258	0.258
Benzidine	92-87-5	ND	44.4	44.4
Benzo(b)fluoranthene	205-99-2	ND	0.235	0.235
Benzo(g,h,i)perylene	191-24-2	ND	0.250	0.250
Benzo(k)fluoranthene	207-08-9	ND	0.293	0.293
Benzoic acid	65-85-0	ND	6.13	6.13
Benzyl alcohol	100-51-6	ND	0.360	0.360
4-Bromophenylphenyl ether	101-55-3	ND	0.269	0.269
Butylbenzylphthalate	85-68-7	ND	0.190	0.190
4-Chloro-3-methylphenol	59-50-7	ND	0.417	0.417
p-Chloroaniline	106-47-8	ND	0.483	0.483
bis(2-Chloroethoxy)methane	111-91-1	ND	0.204	0.204
bis(2-Chloroethyl)ether	111-44-4	ND	0.363	0.363
bis(2-Chloroisopropyl)ether	108-60-1	ND	0.304	0.304
2-Chloronaphthalene	91-58-7	ND	0.444	0.444
2-Chlorophenol	95-57-8	ND	0.207	0.207
4-Chlorophenylphenyl ether	7005-72-3	ND	0.418	0.418
Chrysene	218-01-9	ND	0.294	0.294

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W12 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-04A | Date Received 08/07/97 | Column ___ | Spikes Subset ___ | Report As received

File # U9157 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture ___

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 13:31 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	84-74-2	ND	0.310	0.310
Di-n-octylphthalate	117-84-0	ND	0.210	0.210
Dibenz(a,h)anthracene	53-70-3	ND	0.236	0.236
Dibenzofuran	132-64-9	ND	0.348	0.348
1,2-Dichlorobenzene	95-50-1	ND	0.535	0.535
1,3-Dichlorobenzene	541-73-1	ND	0.405	0.405
1,4-Dichlorobenzene	106-46-7	ND	0.429	0.429
3,3'-Dichlorobenzidine	91-94-1	ND	0.644	0.644
2,4-Dichlorophenol	120-83-2	ND	0.395	0.395
2,6-Dichlorophenol	87-65-0	ND	0.486	0.486
Diethylphthalate	84-66-2	ND	0.314	0.314
p-Dimethylaminoazobenzene	60-11-7	ND	0.581	0.581
7,12-Dimethylbenz(a)anthracene	57-97-6	ND	3.62	3.62
Dimethylphenethylamine	122-09-8	ND	7.59	7.59
2,4-Dimethylphenol	105-67-9	ND	0.458	0.458
Dimethylphthalate	131-11-3	ND	0.305	0.305
4,6-Dinitro-2-methylphenol	534-52-1	ND	1.33	1.33
2,4-Dinitrophenol	51-28-5	ND	11.7	11.7
2,4-Dinitrotoluene	121-14-2	ND	0.363	0.363
2,6-Dinitrotoluene	606-20-2	ND	0.971	0.971
Diphenylamine/N-NitrosoDPA	122-39-4	ND	0.556	0.556
Ethyl methanesulfonate	62-50-0	ND	0.392	0.392
bis(2-Ethylhexyl)phthalate	117-81-7	ND	0.981	0.981
Fluoranthene	206-44-0	ND	0.297	0.297
Fluorene	86-73-7	ND	0.361	0.361

R E S U L T S (Cont'd)

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W12 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-04A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9157 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 13:31 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	118-74-1	ND	0.296	0.296
Hexachlorobutadiene	87-68-3	ND	1.21	1.21
Hexachlorocyclopentadiene	77-47-4	ND	3.26	3.26
Hexachloroethane	67-72-1	ND	0.731	0.731
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.314	0.314
Isophorone	78-59-1	ND	0.270	0.270
Methyl methanesulfonate	66-27-3	ND	0.800	0.800
3-Methylcholanthrene	56-49-5	ND	2.94	2.94
2-Methylnaphthalene	91-57-6	ND	0.830	0.830
4-Methylphenol/3-Methylphenol	NO_CAS	ND	0.449	0.449
2-Methylphenol	95-48-7	ND	0.349	0.349
N-Nitroso-di-n-butylamine	924-16-3	ND	1.43	1.43
N-Nitroso-di-n-propylamine	621-64-7	ND	0.350	0.350
N-Nitrosodimethylamine	62-75-9	ND	1.12	1.12
N-Nitrosopiperidine	100-75-4	ND	0.451	0.451
Naphthalene	91-20-3	ND	0.405	0.405
1-Naphthylamine	134-32-7	ND	7.73	7.73
2-Naphthylamine	91-59-8	ND	4.27	4.27
2-Nitroaniline	88-74-4	ND	0.545	0.545
3-Nitroaniline	99-09-2	ND	0.851	0.851
4-Nitroaniline	100-01-6	ND	2.27	2.27
Nitrobenzene	98-95-3	ND	0.298	0.298
2-Nitrophenol	88-75-5	ND	0.261	0.261
4-Nitrophenol	100-02-7	ND	2.16	2.16
Pentachlorobenzene	608-93-5	ND	0.308	0.308

R E S U L T S (Cont'd)

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W12 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-04A | Date Received 08/07/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9157 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 13:31 | Reviewer SDK

Test Code 827SWATX

Analyte	CAS #	Aliquot Mass/Volume 1050 (mL) Extract/Digestate Volume 1.0 (mL) Dilution Factor 1 Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	82-68-8	ND	1.86	1.86
Pentachlorophenol	87-86-5	ND	7.23	7.23
Phenacetin	62-44-2	ND	0.462	0.462
Phenanthrene	85-01-8	ND	0.325	0.325
Phenol	108-95-2	ND	1.51	1.51
2-Picoline	109-06-8	ND	1.68	1.68
Pronamide	23950-58-5	ND	0.572	0.572
Pyrene	129-00-0	ND	0.349	0.349
Pyridine	110-86-1	ND	1.32	1.32
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	0.354	0.354
2,3,4,6-Tetrachlorophenol	58-90-2	ND	0.407	0.407
1,2,4-Trichlorobenzene	120-82-1	ND	0.390	0.390
2,4,5-Trichlorophenol	95-95-4	ND	0.290	0.290
2,4,6-Trichlorophenol	88-06-2	ND	0.288	0.288

R E S U L T S (Cont'd)

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Project Sample ID IPW0897W12 | Date Collected 08/06/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708148-04A | Date Received 08/07/97 | Column ___ | Spikes Subset ___ | Report As received

File # U9157 | Date Prepared 08/12/97 14:20: | Analyst MCL | Specs Subset ___ | % Moisture ___

Method Semivolatiles by SW8270B | Date Analyzed 08/15/97 13:31 | Reviewer SDK

Test Code 827SWATX

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	321-60-8	95.2	94.3	99	43	116
2-Fluorophenol	367-12-4	190	175	92	60	124
Nitrobenzene-d5	4165-60-0	95.2	93.0	98	45	114
Phenol-d5	4165-62-2	190	207	109	28	122
Terphenyl-d14	1718-51-0	95.2	89.9	94	66	122
2,4,6-Tribromophenol	118-79-6	190	189	99	26	123

LABORATORY BLANK INFORMATION

Extraction Batch # 3520970812142000
Analysis Batch # MSMSD270815083201

Lab Sample ID BLK973754
File # U9153
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 10:56

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acenaphthene	ND	0.517	0.517
Acenaphthylene	ND	0.269	0.269
Acetophenone	ND	0.328	0.328
4-Aminobiphenyl	ND	1.71	1.71
Aniline	ND	0.841	0.841
Anthracene	ND	0.249	0.249
Benz(a)anthracene	ND	0.220	0.220
Benz(a)pyrene	ND	0.271	0.271
Benzidine	ND	46.6	46.6
Benzo(b)fluoranthene	ND	0.247	0.247
Benzo(g,h,i)perylene	ND	0.263	0.263
Benzo(k)fluoranthene	ND	0.308	0.308
Benzoic acid	ND	6.44	6.44
Benzyl alcohol	ND	0.378	0.378
4-Bromophenylphenyl ether	ND	0.282	0.282
Butylbenzylphthalate	ND	0.199	0.199
4-Chloro-3-methylphenol	ND	0.438	0.438
p-Chloroaniline	ND	0.507	0.507
bis(2-Chloroethoxy)methane	ND	0.214	0.214
bis(2-Chloroethyl)ether	ND	0.381	0.381
bis(2-Chloroisopropyl)ether	ND	0.319	0.319
2-Chloronaphthalene	ND	0.466	0.466
2-Chlorophenol	ND	0.217	0.217
4-Chlorophenylphenyl ether	ND	0.439	0.439
Chrysene	ND	0.309	0.309

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970812142000
Analysis Batch # MSMSD270815083201

Lab Sample ID BLK973754
File # U9153
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 10:56

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	ND	0.325	0.325
Di-n-octylphthalate	ND	0.221	0.221
Dibenz(a,h)anthracene	ND	0.248	0.248
Dibenzofuran	ND	0.365	0.365
1,2-Dichlorobenzene	ND	0.562	0.562
1,3-Dichlorobenzene	ND	0.425	0.425
1,4-Dichlorobenzene	ND	0.450	0.450
3,3'-Dichlorobenzidine	ND	0.676	0.676
2,4-Dichlorophenol	ND	0.415	0.415
2,6-Dichlorophenol	ND	0.510	0.510
Diethylphthalate	ND	0.330	0.330
p-Dimethylaminoazobenzene	ND	0.610	0.610
7,12-Dimethylbenz(a)anthracene	ND	3.80	3.80
Dimethylphenethylamine	ND	7.97	7.97
2,4-Dimethylphenol	ND	0.481	0.481
Dimethylphthalate	ND	0.320	0.320
4,6-Dinitro-2-methylphenol	ND	1.40	1.40
2,4-Dinitrophenol.	ND	12.3	12.3
2,4-Dinitrotoluene	ND	0.381	0.381
2,6-Dinitrotoluene	ND	1.02	1.02
Diphenylamine/N-NitrosoDPA	ND	0.584	0.584
Ethyl methanesulfonate	ND	0.412	0.412
bis(2-Ethylhexyl)phthalate	ND	1.03	1.03
Fluoranthene	ND	0.312	0.312
Fluorene	ND	0.379	0.379

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970812142000
Analysis Batch # MSMSD270815083201

Lab Sample ID BLK973754
File # U9153
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 10:56

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	ND	0.311	0.311
Hexachlorobutadiene	ND	1.27	1.27
Hexachlorocyclopentadiene	ND	3.42	3.42
Hexachloroethane	ND	0.768	0.768
Indeno(1,2,3-cd)pyrene	ND	0.330	0.330
Isophorone	ND	0.284	0.284
Methyl methanesulfonate	ND	0.840	0.840
3-Methylcholanthrene	ND	3.09	3.09
2-Methylnaphthalene	ND	0.872	0.872
4-Methylphenol/3-Methylphenol	ND	0.471	0.471
2-Methylphenol	ND	0.366	0.366
N-Nitroso-di-n-butylamine	ND	1.50	1.50
N-Nitroso-di-n-propylamine	ND	0.367	0.367
N-Nitrosodimethylamine	ND	1.18	1.18
N-Nitrosopiperidine	ND	0.474	0.474
Naphthalene	ND	0.425	0.425
1-Naphthylamine	ND	8.12	8.12
2-Naphthylamine	ND	4.48	4.48
2-Nitroaniline	ND	0.572	0.572
3-Nitroaniline	ND	0.894	0.894
4-Nitroaniline	ND	2.38	2.38
Nitrobenzene	ND	0.313	0.313
2-Nitrophenol	ND	0.274	0.274
4-Nitrophenol	ND	2.27	2.27
Pentachlorobenzene	ND	0.323	0.323

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970812142000
Analysis Batch # MSMSD270815083201

Lab Sample ID BLK973754 | Date Prepared 08/12/97 14:20: | Instrument MSD2 | Reporting Subset ___ | Matrix W
File # U9153 | Date Analyzed 08/15/97 10:56 | Column _____ | Spikes Subset ___
Method Semivolatiles by SW8270B | Analyst MCL | Specs Subset ___
Test Code 827SWATX | Reviewer SDK

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	ND	1.95	1.95
Pentachlorophenol	ND	7.59	7.59
Phenacetin	ND	0.485	0.485
Phenanthrene	ND	0.341	0.341
Phenol	ND	1.59	1.59
2-Picoline	ND	1.76	1.76
Pronamide	ND	0.601	0.601
Pyrene	ND	0.366	0.366
Pyridine	ND	1.39	1.39
1,2,4,5-Tetrachlorobenzene	ND	0.372	0.372
2,3,4,6-Tetrachlorophenol	ND	0.427	0.427
1,2,4-Trichlorobenzene	ND	0.410	0.410
2,4,5-Trichlorophenol	ND	0.304	0.304
2,4,6-Trichlorophenol	ND	0.302	0.302

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970812142000
Analysis Batch # MSMSD270815083201

Lab Sample ID BLK973754
File # U9153
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 10:56

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Surrogate(s)	Spiked Conc. ug/L	Measured Conc. ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	100	102	102	43	116
2-Fluorophenol	200	189	94	60	124
Nitrobenzene-d5	100	98.0	98	45	114
Phenol-d5	200	222	111	28	122
Terphenyl-d14	100	99.2	99	66	122
2,4,6-Tribromophenol	200	201	100	26	123

08/18/97 13:41:17

LABORATORY CONTROL SAMPLE

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Work Order # 9708148

Method Semivolatiles by SW8270B
Test Code 827SWATX
Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 10:17
Instrument MSD2
Column
Analyst MCL
Reviewer SDK
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

LCS Lab Sample ID LCS976417, File ID U9151

LCS Duplicate Lab Sample ID LCSD976417, File ID U9152

Analyte	LCS Spiked Conc. ug/L	LCS Measured Conc. ug/L	LCS Rec. %	LCSD Spiked Conc. ug/L	LCSD Measured Conc. ug/L	LCSD Rec. %	Recovery Spec. Limits Low %	Recovery Spec. Limits High %	RPD Result %	RPD Spec. Limit %
Acenaphthene	100	112	112	100	109	109	76	133	2.7	21
Acenaphthylene	100	108	108	100	106	106	74	134	1.9	21
Aniline	100	61.5	61	100	62.4	62	22	113	1.6	32
Anthracene	100	107	107	100	102	102	68	128	4.8	21
Benz(a)anthracene	100	107	107	100	101	101	82	132	5.8	21
Benz(a)pyrene	100	107	107	100	104	104	77	141	2.8	19
Benzidine	100	ND	NC	100	ND	NC	0.1	75	NC	263
Benzo(b)fluoranthene	100	97.2	97	100	97.9	98	73	135	1.0	28
Benzo(g,h,i)perylene	100	117	117	100	112	112	74	144	4.4	20
Benzo(k)fluoranthene	100	107	107	100	96.4	96	64	148	11	26
Benzoic acid	100	94.6	95	100	83.9	84	0.1	230	12	140
Benzyl alcohol	100	101	101	100	101	101	66	138	0	19
4-Bromophenylphenyl ether	100	118	118	100	109	109	69	127	7.9	18
Butylbenzylphthalate	100	103	103	100	98.1	98	69	150	5.0	25
4-Chloro-3-methylphenol	100	109	109	100	105	105	64	141	3.7	19
p-Chloroaniline	100	83.8	84	100	83.8	84	50	134	0	26
bis(2-Chloroethoxy)methane	100	103	103	100	100.0	100	75	137	3.0	21
bis(2-Chloroethyl)ether	100	97.5	97	100	98.0	98	76	124	1.0	21
bis(2-Chloroisopropyl)ether	100	84.9	85	100	87.1	87	68	128	2.3	23
2-Chloronaphthalene	100	111	111	100	108	108	72	118	2.7	16

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 10:17

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

LCS Lab Sample ID LCS976417 File ID U9151

LCS Duplicate Lab Sample ID LCSD976417 File ID U9152

Analyte	LCS Spiked Conc. ug/L	LCS Measured Conc. ug/L	LCS Rec. %	LCSD Spiked Conc. ug/L	LCSD Measured Conc. ug/L	LCSD Rec. %	Recovery Spec. Limits Low %	Recovery Spec. Limits High %	RPD Result %	RPD Spec. Limit %
2-Chlorophenol	100	101	101	100	101	101	81	117	0	17
4-Chlorophenylphenyl ether	100	116	116	100	112	112	79	133	3.5	18
Chrysene	100	110	110	100	106	106	85	133	3.7	21
Di-n-butylphthalate	100	105	105	100	99.9	100	68	135	4.9	21
Di-n-octylphthalate	100	107	107	100	102	102	54	146	4.8	22
Dibenz(a,h)anthracene	100	119	119	100	114	114	73	145	4.3	20
Dibenzofuran	100	105	105	100	102	102	82	130	2.9	16
1,2-Dichlorobenzene	100	106	106	100	106	106	73	121	0	22
1,3-Dichlorobenzene	100	102	102	100	104	104	70	120	1.9	27
1,4-Dichlorobenzene	100	103	103	100	105	105	70	120	1.9	24
3,3'-Dichlorobenzidine	100	102	102	100	99.2	99	49	140	3.0	33
2,4-Dichlorophenol	100	109	109	100	104	104	60	135	4.7	19
Diethylphthalate	100	110	110	100	107	107	83	123	2.8	15
2,4-Dimethylphenol	100	76.5	77	100	73.2	73	32	119	5.3	33
Dimethylphthalate	100	112	112	100	110	110	84	130	1.8	21
4,6-Dinitro-2-methylphenol	100	128	128	100	114	114	53	163	12	18
2,4-Dinitrophenol	100	125	125	100	116	116	24	191	7.5	23
2,4-Dinitrotoluene	100	123	123	100	119	119	72	139	3.3	20
2,6-Dinitrotoluene	100	113	113	100	108	108	76	140	4.5	18
Diphenylamine/N-NitrosoDPA	100	97.7	98	100	92.9	93	47	117	5.2	21

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 10:17

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

LCS Lab Sample ID LCS976417 File ID U9151

LCS Duplicate Lab Sample ID LCSD976417 File ID U9152

Analyte	LCS Spiked Conc. ug/L	LCS Measured Conc. ug/L	LCS Rec. %	LCSD Spiked Conc. ug/L	LCSD Measured Conc. ug/L	LCSD Rec. %	Recovery Spec. Limits Low %	Recovery Spec. Limits High %	RPD Result %	RPD Spec. Limit %
bis(2-Ethylhexyl)phthalate	100	103	103	100	98.3	98	74	144	5.0	22
Fluoranthene	100	111	111	100	107	107	77	129	3.7	19
Fluorene	100	110	110	100	106	106	79	121	3.7	17
Hexachlorobenzene	100	107	107	100	102	102	66	126	4.8	19
Hexachlorobutadiene	100	108	108	100	107	107	51	147	0.93	20
Hexachlorocyclopentadiene	100	22.6	23	100	24.0	24	0.1	148	4.3	49
Hexachloroethane	100	108	108	100	108	108	62	127	0	28
Indeno(1,2,3-cd)pyrene	100	116	116	100	112	112	75	141	3.5	19
Isophorone	100	93.3	93	100	90.5	91	81	133	2.2	18
2-Methylnaphthalene	100	100.0	100	100	98.1	98	63	134	2.0	21
4-Methylphenol/3-Methylphenol	100	105	105	100	103	103	62	126	1.9	17
2-Methylphenol	100	99.6	100	100	98.9	99	72	126	1.0	19
N-Nitroso-di-n-propylamine	100	103	103	100	104	104	68	128	0.97	21
N-Nitrosodimethylamine	100	109	109	100	109	109	27	155	0	24
Naphthalene	100	109	109	100	107	107	70	133	1.8	17
2-Nitroaniline	100	107	107	100	104	104	69	140	2.8	24
3-Nitroaniline	100	94.7	95	100	94.0	94	69	133	1.1	22
4-Nitroaniline	100	105	105	100	99.8	100	59	137	4.9	19
Nitrobenzene	100	109	109	100	109	109	74	142	0	22
2-Nitrophenol	100	113	113	100	108	108	67	149	4.5	19

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # 3520970812142000

Analysis Batch # MSMSD270815083201

Method Semivolatiles by SW8270B
Test Code 827SWATX
Date Prepared 08/12/97 14:20:
Date Analyzed 08/15/97 10:17
Instrument MSD2
Column
Analyst MCL
Reviewer SDK
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Mo e
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

LCS Lab Sample ID LCS976417 File ID U9151

LCS Duplicate Lab Sample ID LCSD976417 File ID U9152

Analyte	LCS Spiked Conc. ug/L	LCS Measured Conc. ug/L	LCS Rec. %	LCSD Spiked Conc. ug/L	LCSD Measured Conc. ug/L	LCSD Rec. %	Recovery Spec. Limits Low %	Recovery Spec. Limits High %	RPD Result %	RPD Spec. Limit %
4-Nitrophenol	100	117	117	100	111	111	56	131	5.3	20
Pentachlorophenol	100	107	107	100	101	101	47	143	5.8	18
Phenanthrene	100	111	111	100	107	107	74	132	3.7	17
Phenol	100	97.7	98	100	96.4	96	70	123	2.1	18
Pyrene	100	109	109	100	104	104	74	148	4.7	21
1,2,4-Trichlorobenzene	100	107	107	100	105	105	71	129	1.9	16
2,4,5-Trichlorophenol	100	116	116	100	111	111	80	132	4.4	15
2,4,6-Trichlorophenol	100	111	111	100	107	107	76	128	3.7	15

Surrogate(s)									
2-Fluorobiphenyl	100	104	104	100	104	104	43	116	
2-Fluorophenol	200	186	93	200	193	97	60	124	
Nitrobenzene-d5	100	98.8	99	100	100	100	45	114	
Phenol-d5	200	217	108	200	229	114	28	122	
Terphenyl-d14	100	102	102	100	101	101	66	122	
2,4,6-Tribromophenol	200	200	100	200	207	104	26	123	

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSD270815083201
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/15/97 08:53 Reporting Subset ___ Instrument MSD2
File # U9150 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acenaphthene	52.0	50.0	104	80	120
Acenaphthylene	52.8	50.0	106		
Acetophenone	48.6	50.0	97		
2-Acetylaminofluorene	48.5	50.0	97		
4-Aminobiphenyl	69.8	50.0	140		
Aniline	51.1	50.0	102		
Anthracene	52.6	50.0	105		
Benz(a)anthracene	48.3	50.0	97		
Benz(a)pyrene	52.2	50.0	104	80	120
Benzidine	< DL	50.0	85		
Benzo(b)fluoranthene	45.3	50.0	91		
Benzo(g,h,i)perylene	52.3	50.0	105		
Benzo(k)fluoranthene	48.2	50.0	96		
Benzoic acid	9.62	50.0	19		
Benzyl alcohol	48.7	50.0	97		
4-Bromophenylphenyl ether	53.2	50.0	106		
Butylbenzylphthalate	46.8	50.0	94		
Carbazole	54.0	50.0	108		
4-Chloro-3-methylphenol	50.3	50.0	101	80	120
p-Chloroaniline	56.0	50.0	112		
Chlorobenzilate	46.3	50.0	92		
bis(2-Chloroethoxy)methane	47.0	50.0	94		
bis(2-Chloroethyl)ether	45.0	50.0	90		
bis(2-Chloroisopropyl)ether	39.4	50.0	79		
2-Chloronaphthalene	52.2	50.0	104		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270815083201
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/15/97 08:53 Reporting Subset ___ Instrument MSD2
File # U9150 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
2-Chlorophenol	49.1	50.0	98		
4-Chlorophenylphenyl ether	54.2	50.0	108		
Chrysene	49.8	50.0	100		
Di-n-butylphthalate	49.3	50.0	98		
Di-n-octylphthalate	49.3	50.0	99	80	120
Diallate	49.9	50.0	100		
Dibenz(a,h)anthracene	53.6	50.0	107		
Dibenzofuran	51.9	50.0	104		
1,2-Dichlorobenzene	51.0	50.0	102		
1,3-Dichlorobenzene	49.5	50.0	99		
1,4-Dichlorobenzene	50.8	50.0	102	80	120
3,3'-Dichlorobenzidine	51.6	50.0	103		
2,4-Dichlorophenol	52.7	50.0	105	80	120
2,6-Dichlorophenol	54.6	50.0	109		
Diethylphthalate	52.6	50.0	105		
p-Dimethylaminoazobenzene	47.1	50.0	94		
7,12-Dimethylbenz(a)anthracene	51.8	50.0	104		
3,3'-Dimethylbenzidine	48.4	50.0	97		
Dimethylphenethylamine	42.1	50.0	84		
2,4-Dimethylphenol	51.8	50.0	104		
Dimethylphthalate	51.6	50.0	103		
4,6-Dinitro-2-methylphenol	51.2	50.0	102		
1,3-Dinitrobenzene	51.7	50.0	103		
2,4-Dinitrophenol	47.1	50.0	94		
2,4-Dinitrotoluene	52.6	50.0	105		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270815083201
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/15/97 08:53 Reporting Subset ___ Instrument MSD2
File # U9150 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
2,6-Dinitrotoluene	50.2	50.0	100		
Diphenylamine/N-NitrosoDPA	109	100	109	80	120
Ethyl methanesulfonate	46.6	50.0	93		
bis(2-Ethylhexyl)phthalate	46.3	50.0	92		
Fluoranthene	51.1	50.0	102	80	120
Fluorene	52.2	50.0	104		
Hexachlorobenzene	49.4	50.0	99		
Hexachlorobutadiene	52.1	50.0	104	80	120
Hexachlorocyclopentadiene	55.1	50.0	110		
Hexachloroethane	51.8	50.0	104		
Hexachlorophene	ND	50.0	NC		
Hexachloropropene	55.3	50.0	111		
Indeno(1,2,3-cd)pyrene	52.3	50.0	105		
Isophorone	47.1	50.0	94		
Isosafrole	51.2	50.0	102		
Methapyrilene	44.7	50.0	89		
Methyl methanesulfonate	50.0	50.0	100		
3-Methylcholanthrene	51.7	50.0	103		
2-Methylnaphthalene	51.6	50.0	103		
4-Methylphenol/3-Methylphenol	53.6	50.0	107		
2-Methylphenol	47.8	50.0	96		
N-Nitroso-di-n-butylamine	48.4	50.0	97		
N-Nitroso-di-n-propylamine	50.3	50.0	101		
N-Nitrosodiethylamine	48.9	50.0	98		
N-Nitrosodimethylamine	53.4	50.0	107		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270815083201
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/15/97 08:53 Reporting Subset ___ Instrument MSD2
File # U9150 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
N-Nitrosomethylethylamine	48.1	50.0	96		
N-Nitrosomorpholine	49.8	50.0	100		
N-Nitrosopiperidine	48.8	50.0	98		
N-Nitrosopyrrolidine	52.4	50.0	105		
Naphthalene	52.2	50.0	104		
1,4-Naphthoquinone	51.4	50.0	103		
1-Naphthylamine	47.4	50.0	95		
2-Naphthylamine	33.9	50.0	68		
5-Nitro-o-toluidine	49.0	50.0	98		
2-Nitroaniline	48.2	50.0	96		
3-Nitroaniline	48.0	50.0	96		
4-Nitroaniline	56.9	50.0	114		
Nitrobenzene	50.7	50.0	101		
2-Nitrophenol	51.9	50.0	104	80	120
4-Nitrophenol	57.7	50.0	115		
4-Nitroquinoline-1-oxide	45.0	50.0	90		
Pentachlorobenzene	50.7	50.0	101		
Pentachloroethane	48.4	50.0	97		
Pentachloronitrobenzene	48.4	50.0	97		
Pentachlorophenol	47.7	50.0	95	80	120
Phenacetin	49.6	50.0	99		
Phenanthrene	51.8	50.0	104		
Phenol	50.6	50.0	101	80	120
p-Phenylenediamine	ND	50.0	NC		
2-Picoline	46.4	50.0	93		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270815083201
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/15/97 08:53 Reporting Subset ___ Instrument MSD2
File # U9150 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Pronamide	25.5	25.0	102		
Pyrene	49.3	50.0	99		
Pyridine	51.0	50.0	102		
Safrole	52.0	50.0	104		
1,2,4,5-Tetrachlorobenzene	51.7	50.0	103		
2,3,4,6-Tetrachlorophenol	50.8	50.0	102		
o-Toluidine	51.9	50.0	104		
1,2,4-Trichlorobenzene	52.1	50.0	104		
2,4,5-Trichlorophenol	52.0	50.0	104		
2,4,6-Trichlorophenol	51.0	50.0	102	80	120
sym-Trinitrobenzene	53.7	50.0	107		

Surrogate(s)					
2-Fluorobiphenyl	52.3	50.0	105		
2-Fluorophenol	99.8	100	100		
Nitrobenzene-d5	51.1	50.0	102		
Phenol-d5	103	100	103		
Terphenyl-d14	48.1	50.0	96		
2,4,6-Tribromophenol	95.0	100	95		

ANALYTICAL PROTOCOL SUMMARY
COMMENTS/NARRATIVE

Method Semivolatiles by SW8270B Specification# 827S

Lab Sample ID File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action
LCSD976417 U9152		Benzidine		Benzidine was not recovered in the LCS/LCSD. Benzidine is subject to oxidative loss and may not be recovered according to method 8270B.	No corrective action taken.

QUALITY CONTROL EXCEPTION REPORT
SUMMARY

QCER #	Analysis Batch Number
970812-01	MSD2970812080500

QUALITY CONTROL EXCEPTION REPORT
LEVEL 2 - ANALYTICAL

REPORT COPY 9708148

QCER # 970812-01

Revised: 08/12/97

Analyst: CAROL LOVETT Instrument: msd#2 Date Analyzed: 08/12/97
Batch #: MSD2970812080500 Matrix: liquid Status: C
Prot Spec: 827S 03.000 Analysis File #:

Lab Sample ID:	Client ID:	CSC:	Project Sample ID:
9708148	IP_WILM	JAL	

SAMPLE PREPARATION:

PROBLEM IDENTIFICATION

- Sample Went Dry _
- Loss of ____ % of Sample _
- Emulsion Formed _
- Blank Contamination _
- Instrument _
- Hold Time _
- MS/MSD Not Available _
- Instrument _
- Other (Describe) _

CORRECTIVE ACTION TAKEN

- Reprepare Sample _
- Sample Sent for Analysis _
- Resample _
- Other (Describe) _

Comments:

SAMPLE ANALYSIS:

PROBLEM IDENTIFICATION		PROBABLE CAUSE		CORRECTIVE ACTION TAKEN	
Surrogate Recovery	_	Matrix Effect	_	Reprepare Sample	X
MS/MSD Recovery	_	Instrument	_	Reanalyze Sample	_
LCS/LCSD Recovery	X	Spiking Error	_	Reanalyze LCS/LCSD	_
MS/MSD Precision	_	Contamination	_	Recalibrate Instrument	_
LCS/LCSD Precision	X	Coelution	_	Analyze Out of Hold Time	_
Standard	_	Unknown	_	Prepare New Standard	_
Blank Contamination	_	Other(Describe)	X	Flag Data	_
Instrument	_	EXT PROBLEM		Resample	_
Hold Time	_			Analyze by MSA	_
No MS/MSD Available for Batch	_			Perform Analytical Spike	_
Sample pH	_			No Action Required	_
Dil. Due to Hi-Level Non-Target Analytes	_			Level 3 QCER to Follow	_
Serial Dilution	_			Other (Describe)	_
Analytical Spike	_				
Internal Standard	_				
Other (Describe)	_				

Comments: lcs976373: Some anilines and benzidines were recovered low with rpds out high. This is due to a known problem in the extraction step. Per CSC, samples will be reextracted within hold times.

Distribution: CSC, Lab, Report

08/18/97 09:22:47

RADIAN ANALYTICAL SERVICES
FPAS REPORT
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Work Order # 9708172

Client INTERNATIONAL PAPER
Facility
Client Code IP WILM

Certified By
Date 08/18/97

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08/18/97 09:22:47

WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To 3200 E. CHAPEL HILL RD.
RTP, NC 27709
Attention JIM NARKUNAS

Client Code IP WILM
Client INTERNATIONAL PAPER
Facility
Work ID WILMINGTON SEMIANNUA

Work Order # 9708172
Page 1

RCN 258058.1501

Prepared Radian International, LLC
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70117AJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
IPW0897W06	01A	352SWA00	Liquid/Liq Extract SW846
		827SWATX	Semivolatiles by GC/MS
		CK1SWA00	Primary KD conc. SW846
	01B	SPAREB00	Spare Sample
IPW0897W07	02A	352SWA00	Liquid/Liq Extract SW846
		827SWATX	Semivolatiles by GC/MS
		CK1SWA00	Primary KD conc. SW846
IPW0897W09	03A	352SWA00	Liquid/Liq Extract SW846
		827SWATX	Semivolatiles by GC/MS
		CK1SWA00	Primary KD conc. SW846
	04A MS	352SWA00	Liquid/Liq Extract SW846
		827SWAMS	Semivolatiles by GC/MS
		CK1SWA00	Primary KD conc. SW846
	05A MSD	352SWA00	Liquid/Liq Extract SW846
		827SWAMS	Semivolatiles by GC/MS
		CK1SWA00	Primary KD conc. SW846

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

ANALYTICAL PROTOCOL SUMMARY

Client INTERNATIONAL PAPER

Specification # 827S

Facility

Client Code IP WILM

Method Method SW8270B plus extras

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
IPW0897W06	9708172-01A	827SWATX	3520970811134000	MSMSD270814082701
IPW0897W07	9708172-02A	827SWATX	3520970811134000	MSMSD270814082701
IPW0897W09	9708172-03A	827SWATX	3520970811134000	MSMSD270814082701

RESULTS SUMMARY

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708172-01A		9708172-02A		9708172-03A			
File ID:	U9140		U9141		U9137			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97 13:40:00		08/11/97 13:40:00		08/11/97 13:40:00			
Date Analyzed:	08/14/97 13:30		08/14/97 14:09		08/14/97 11:33			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acenaphthene	ND	0.497	ND	0.492	ND	0.492		
Acenaphthylene	ND	0.259	ND	0.256	ND	0.256		
Acetophenone	3.25	0.315	ND	0.312	ND	0.312		
4-Aminobiphenyl	ND	1.64	ND	1.63	ND	1.63		
Aniline	ND	0.809	ND	0.801	ND	0.801		
Anthracene	ND	0.239	ND	0.237	ND	0.237		
Benz(a)anthracene	ND	0.212	ND	0.210	ND	0.210		
Benz(a)pyrene	ND	0.261	ND	0.258	ND	0.258		
Benzidine	ND	44.8	ND	44.4	ND	44.4		
Benzo(b)fluoranthene	ND	0.237	ND	0.235	ND	0.235		
Benzo(g,h,i)perylene	ND	0.253	ND	0.250	ND	0.250		
Benzo(k)fluoranthene	ND	0.296	ND	0.293	ND	0.293		
Benzoic acid	218 X	6.19	ND	6.13	< DL	6.13		
Benzyl alcohol	ND	0.363	ND	0.360	3.53	0.360		
4-Bromophenylphenyl ether	ND	0.271	ND	0.269	ND	0.269		
Butylbenzylphthalate	ND	0.191	ND	0.190	ND	0.190		
4-Chloro-3-methylphenol	ND	0.421	ND	0.417	ND	0.417		
p-Chloroaniline	ND	0.487	ND	0.483	ND	0.483		
bis(2-Chloroethoxy)methane	ND	0.206	ND	0.204	ND	0.204		
bis(2-Chloroethyl)ether	ND	0.366	ND	0.363	ND	0.363		

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708172-01A		9708172-02A		9708172-03A			
File ID:	U9140		U9141		U9137			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97 13:40:00		08/11/97 13:40:00		08/11/97 13:40:00			
Date Analyzed:	08/14/97 13:30		08/14/97 14:09		08/14/97 11:33			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
bis(2-Chloroisopropyl)ether	ND	0.307	ND	0.304	ND	0.304		
2-Chloronaphthalene	ND	0.448	ND	0.444	ND	0.444		
2-Chlorophenol	ND	0.209	ND	0.207	ND	0.207		
4-Chlorophenylphenyl ether	ND	0.422	ND	0.418	ND	0.418		
Chrysene	ND	0.297	ND	0.294	ND	0.294		
Di-n-butylphthalate	ND	0.312	ND	0.310	ND	0.310		
Di-n-octylphthalate	ND	0.212	ND	0.210	ND	0.210		
Dibenz(a,h)anthracene	ND	0.238	ND	0.236	ND	0.236		
Dibenzofuran	ND	0.351	ND	0.348	ND	0.348		
1,2-Dichlorobenzene	ND	0.540	ND	0.535	ND	0.535		
1,3-Dichlorobenzene	ND	0.409	ND	0.405	ND	0.405		
1,4-Dichlorobenzene	ND	0.433	ND	0.429	ND	0.429		
3,3'-Dichlorobenzidine	ND	0.650	ND	0.644	ND	0.644		
2,4-Dichlorophenol	ND	0.399	ND	0.395	ND	0.395		
2,6-Dichlorophenol	ND	0.490	ND	0.486	ND	0.486		
Diethylphthalate	0.507	0.317	ND	0.314	ND	0.314		
p-Dimethylaminoazobenzene	ND	0.587	ND	0.581	ND	0.581		
7,12-Dimethylbenz(a)anthracene	ND	3.65	ND	3.62	ND	3.62		
Dimethylphenethylamine	ND	7.66	ND	7.59	ND	7.59		
2,4-Dimethylphenol	ND	0.462	ND	0.458	ND	0.458		

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708172-01A		9708172-02A		9708172-03A			
File ID:	U9140		U9141		U9137			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97 13:40:00		08/11/97 13:40:00		08/11/97 13:40:00			
Date Analyzed:	08/14/97 13:30		08/14/97 14:09		08/14/97 11:33			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Dimethylphthalate	ND	0.308	ND	0.305	ND	0.305		
4,6-Dinitro-2-methylphenol	ND	1.35	ND	1.33	ND	1.33		
2,4-Dinitrophenol	ND	11.8	ND	11.7	ND	11.7		
2,4-Dinitrotoluene	ND	0.366	ND	0.363	ND	0.363		
2,6-Dinitrotoluene	ND	0.981	ND	0.971	ND	0.971		
Diphenylamine/N-NitrosoDPA	ND	0.562	ND	0.556	ND	0.556		
Ethyl methanesulfonate	ND	0.396	ND	0.392	ND	0.392		
bis(2-Ethylhexyl)phthalate	2.12	0.990	2.07	0.981	ND	0.981		
Fluoranthene	ND	0.300	ND	0.297	ND	0.297		
Fluorene	ND	0.364	ND	0.361	ND	0.361		
Hexachlorobenzene	ND	0.299	ND	0.296	ND	0.296		
Hexachlorobutadiene	ND	1.22	ND	1.21	ND	1.21		
Hexachlorocyclopentadiene	ND	3.29	ND	3.26	ND	3.26		
Hexachloroethane	ND	0.738	ND	0.731	ND	0.731		
Indeno(1,2,3-cd)pyrene	ND	0.317	ND	0.314	ND	0.314		
Isophorone	ND	0.273	ND	0.270	ND	0.270		
Methyl methanesulfonate	ND	0.808	ND	0.800	ND	0.800		
3-Methylcholanthrene	ND	2.97	ND	2.94	ND	2.94		
2-Methylnaphthalene	ND	0.838	ND	0.830	ND	0.830		
4-Methylphenol/3-Methylphenol	154 F	0.453	ND	0.449	33.8 F	0.449		

Method Semivolatiles by SW8270B
Test Code 827SWATX

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708172-01A		9708172-02A		9708172-03A			
File ID:	U9140		U9141		U9137			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97 13:40:00		08/11/97 13:40:00		08/11/97 13:40:00			
Date Analyzed:	08/14/97 13:30		08/14/97 14:09		08/14/97 11:33			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
2-Methylphenol	208 X	0.352	ND	0.349	21.0	0.349		
N-Nitroso-di-n-butylamine	ND	1.44	ND	1.43	ND	1.43		
N-Nitroso-di-n-propylamine	ND	0.353	ND	0.350	ND	0.350		
N-Nitrosodimethylamine	ND	1.13	ND	1.12	ND	1.12		
N-Nitrosopiperidine	ND	0.456	ND	0.451	ND	0.451		
Naphthalene	0.649	0.409	ND	0.405	1.05	0.405		
1-Naphthylamine	ND	7.81	ND	7.73	ND	7.73		
2-Naphthylamine	ND	4.31	ND	4.27	ND	4.27		
2-Nitroaniline	ND	0.550	ND	0.545	ND	0.545		
3-Nitroaniline	ND	0.860	ND	0.851	ND	0.851		
4-Nitroaniline	ND	2.29	ND	2.27	ND	2.27		
Nitrobenzene	ND	0.301	ND	0.298	ND	0.298		
2-Nitrophenol	ND	0.263	ND	0.261	ND	0.261		
4-Nitrophenol	ND	2.18	ND	2.16	ND	2.16		
Pentachlorobenzene	ND	0.311	ND	0.308	ND	0.308		
Pentachloronitrobenzene	ND	1.87	ND	1.86	ND	1.86		
Pentachlorophenol	ND	7.30	ND	7.23	ND	7.23		
Phenacetin	ND	0.466	ND	0.462	ND	0.462		
Phenanthrene	ND	0.328	ND	0.325	ND	0.325		
Phenol	2.85	1.53	ND	1.51	3.80	1.51		

Method Semivolatiles by SW8270B

Test Code 827SWATX

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708172-01A		9708172-02A		9708172-03A			
File ID:	U9140		U9141		U9137			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97 13:40:00		08/11/97 13:40:00		08/11/97 13:40:00			
Date Analyzed:	08/14/97 13:30		08/14/97 14:09		08/14/97 11:33			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	ug/L		ug/L		ug/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
2-Picoline	ND	1.69	ND	1.68	ND	1.68		
Pronamide	ND	0.578	ND	0.572	ND	0.572		
Pyrene	ND	0.352	ND	0.349	ND	0.349		
Pyridine	ND	1.34	ND	1.32	ND	1.32		
1,2,4,5-Tetrachlorobenzene	ND	0.358	ND	0.354	ND	0.354		
2,3,4,6-Tetrachlorophenol	ND	0.411	ND	0.407	ND	0.407		
1,2,4-Trichlorobenzene	ND	0.394	ND	0.390	ND	0.390		
2,4,5-Trichlorophenol	ND	0.292	ND	0.290	ND	0.290		
2,4,6-Trichlorophenol	ND	0.290	ND	0.288	ND	0.288		

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
2-Fluorobiphenyl	100	100	103	
2-Fluorophenol	90	88	89	
Nitrobenzene-d5	102	102	100	
Phenol-d5	111	104	109	
Terphenyl-d14	90	95	99	
2,4,6-Tribromophenol	105	102	104	

08/18/97 09:22:47

INITIAL CALIBRATION

Work Order # 9708172

Initial Calibration # MSD2970722093900

Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33

Method Semivolatiles by GC/MS

Test Code 827SWX00

Instrument MSD2

Analyst MCL

Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Pyridine	1.556 10	1.424 20	1.502 50	1.504 75	1.611 100	1.569 150	1.675 200	1.55	5.27	
N-Nitrosodimethylamine	0.843 10	0.801 20	0.830 50	0.898 75	0.937 100	0.909 150	0.940 200	0.880	6.25	
2-Picoline	1.388 10	1.405 20	1.438 50	1.473 75	1.544 100	1.545 150	1.566 200	1.48	4.91	
Methyl methanesulfonate	1.048 10	1.020 20	1.044 50	1.072 75	1.109 100	1.098 150	1.106 200	1.07	3.25	
N-Nitrosomethylethylamine	0.634 10	0.610 20	0.648 50	0.667 75	0.682 100	0.696 150	0.707 200	0.663	5.25	
N-Nitrosodiethylamine	0.593 10	0.578 20	0.597 50	0.602 75	0.629 100	0.634 150	0.636 200	0.610	3.76	
Ethyl methanesulfonate	1.413 10	1.386 20	1.425 50	1.477 75	1.530 100	1.516 150	1.554 200	1.47	4.40	
Aniline	1.775 10	1.684 20	1.820 50	1.849 75	1.858 100	1.801 150	1.785 200	1.80	3.24	
Phenol CCC	1.812 10	1.738 20	1.744 50	1.753 75	1.784 100	1.756 150	1.755 200	1.76	1.47	
bis(2-Chloroethyl)ether	1.502 10	1.560 20	1.480 50	1.499 75	1.463 100	1.527 150	1.548 200	1.51	2.34	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Pentachloroethane	0.561 10	0.527 20	0.522 50	0.545 75	0.553 100	0.537 150	0.536 200	0.540	2.57	
2-Chlorophenol	1.358 10	1.307 20	1.326 50	1.355 75	1.391 100	1.368 150	1.382 200	1.36	2.20	
1,3-Dichlorobenzene	1.505 10	1.455 20	1.457 50	1.467 75	1.484 100	1.435 150	1.416 200	1.46	2.03	
1,4-Dichlorobenzene CCC	1.489 10	1.461 20	1.461 50	1.464 75	1.488 100	1.419 150	1.394 200	1.45	2.42	
Benzyl alcohol	0.793 10	0.788 20	0.806 50	0.826 75	0.851 100	0.810 150	0.786 200	0.809	2.90	
1,2-Dichlorobenzene	1.442 10	1.398 20	1.393 50	1.391 75	1.405 100	1.281 150	1.204 200	1.36	6.22	
bis(2-Chloroisopropyl)ether	2.281 10	2.244 20	2.271 50	2.377 75	2.436 100	2.401 150	2.391 200	2.34	3.23	
2-Methylphenol	1.135 10	1.096 20	1.098 50	1.102 75	1.137 100	1.123 150	1.117 200	1.12	1.54	
N-Nitroso-di-n-propylamine SPCC	1.042 10	1.017 20	0.995 50	0.996 75	1.004 100	0.925 150	0.924 200	0.986	4.57	
4-Methylphenol/3-Methylphenol	1.252 10	1.216 20	1.196 50	1.146 75	1.120 100	0.994 150	0.876 200	1.11	12.1	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Hexachloroethane	0.634 10	0.630 20	0.651 50	0.653 75	0.664 100	0.574 150	0.485 200	0.613	10.4	
o-Toluidine	1.884 10	1.824 20	1.820 50	1.780 75	1.780 100	1.634 150	1.564 200	1.76	6.50	
Nitrobenzene	0.456 10	0.446 20	0.449 50	0.468 75	0.474 100	0.468 150	0.459 200	0.460	2.28	
N-Nitrosopyrrolidine	0.581 10	0.572 20	0.584 50	0.581 75	0.598 100	0.613 150	0.581 200	0.587	2.35	
N-Nitrosomorpholine	0.851 10	0.853 20	0.875 50	0.885 75	0.927 100	0.926 150	0.922 200	0.891	3.78	
Acetophenone	1.873 10	1.858 20	1.833 50	1.843 75	1.900 100	1.864 150	1.923 200	1.87	1.69	
N-Nitrosopiperidine	0.415 10	0.412 20	0.410 50	0.423 75	0.434 100	0.435 150	0.427 200	0.422	2.43	
Isophorone	0.997 10	0.961 20	0.958 50	0.976 75	0.997 100	0.993 150	0.980 200	0.980	1.67	
2-Nitrophenol CCC	0.213 10	0.220 20	0.218 50	0.233 75	0.239 100	0.237 150	0.235 200	0.228	4.62	
2,4-Dimethylphenol	0.443 10	0.427 20	0.416 50	0.423 75	0.423 100	0.413 150	0.401 200	0.421	3.09	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
bis(2-Chloroethoxy)methane	0.579 10	0.560 20	0.544 50	0.560 75	0.562 100	0.546 150	0.537 200	0.555	2.55	
Benzoic acid	0.224 50	0.245 75	0.265 100	0.263 150	0.281 200			0.256	8.52	
2,4-Dichlorophenol CCC	0.361 10	0.348 20	0.336 50	0.334 75	0.336 100	0.317 150	0.308 200	0.334	5.32	
Dimethylphenethylamine	1.264 50	1.353 75	1.310 100	1.394 150	1.334 200			1.33	3.64	
1,2,4-Trichlorobenzene	0.420 10	0.390 20	0.382 50	0.377 75	0.382 100	0.354 150	0.340 200	0.378	6.80	
Naphthalene	1.128 10	1.080 20	1.022 50	1.004 75	1.004 100	0.959 150	0.923 200	1.02	6.82	
2,6-Dichlorophenol	0.357 10	0.343 20	0.329 50	0.321 75	0.319 100	0.303 150	0.284 200	0.322	7.53	
Hexachloropropene	0.213 10	0.213 20	0.225 50	0.233 75	0.235 100	0.230 150	0.222 200	0.224	4.00	
p-Chloroaniline	0.454 10	0.435 20	0.458 50	0.456 75	0.449 100	0.423 150	0.403 200	0.440	4.68	
Hexachlorobutadiene CCC	0.248 10	0.245 20	0.235 50	0.235 75	0.228 100	0.215 150	0.200 200	0.229	7.39	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
N-Nitroso-di-n-butylamine	0.255 10	0.264 20	0.260 50	0.264 75	0.272 100	0.272 150	0.269 200	0.265	2.39	
Safrole	0.144 10	0.147 20	0.139 50	0.138 75	0.138 100	0.132 150	0.128 200	0.138	4.71	
4-Chloro-3-methylphenol CCC	0.373 10	0.368 20	0.367 50	0.374 75	0.373 100	0.365 150	0.348 200	0.367	2.46	
2-Methylnaphthalene	0.703 10	0.654 20	0.630 50	0.620 75	0.615 100	0.585 150	0.563 200	0.624	7.32	
Hexachlorocyclopentadiene SPCC	0.339 10	0.353 20	0.391 50	0.409 75	0.414 100	0.395 150	0.370 200	0.382	7.44	
2,4,6-Trichlorophenol CCC	0.481 10	0.481 20	0.478 50	0.492 75	0.500 100	0.474 150	0.466 200	0.482	2.34	
2,4,5-Trichlorophenol	0.524 10	0.506 20	0.516 50	0.532 75	0.533 100	0.507 150	0.463 200	0.512	4.70	
Isosafrole	0.201 10	0.197 20	0.195 50	0.198 75	0.202 100	0.188 150	0.180 200	0.194	4.04	
2-Chloronaphthalene	0.542 10	0.528 20	0.510 50	0.522 75	0.531 100	0.493 150	0.469 200	0.514	4.91	
1,2,4,5-Tetrachlorobenzene	0.792 10	0.766 20	0.761 50	0.749 75	0.760 100	0.711 150	0.677 200	0.745	5.18	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
1,4-Naphthoquinone	0.553 10	0.535 20	0.517 50	0.509 75	0.497 100	0.442 150	0.401 200	0.493	10.9	
2-Nitroaniline	0.454 10	0.495 20	0.536 50	0.568 75	0.604 100	0.591 150	0.584 200	0.547	10.1	
Dimethylphthalate	1.640 10	1.611 20	1.572 50	1.598 75	1.619 100	1.459 150	1.264 200	1.54	8.74	
1,3-Dinitrobenzene	0.222 20	0.262 50	0.289 75	0.307 100	0.301 150	0.286 200		0.278	11.3	
Acenaphthylene	2.025 10	1.967 20	1.956 50	1.940 75	1.937 100	1.790 150	1.619 200	1.89	7.38	
2,6-Dinitrotoluene	0.334 10	0.351 20	0.375 50	0.392 75	0.405 100	0.395 150	0.378 200	0.376	6.74	
3-Nitroaniline	0.326 50	0.376 75	0.413 100	0.426 150	0.410 200			0.390	10.3	
Dibenzofuran	1.872 10	1.813 20	1.745 50	1.750 75	1.761 100	1.649 150	1.550 200	1.73	6.11	
Pentachlorobenzene	0.736 10	0.715 20	0.697 50	0.683 75	0.680 100	0.641 150	0.599 200	0.679	6.79	
2,4-Dinitrotoluene	0.408 10	0.454 20	0.514 50	0.544 75	0.563 100	0.538 150	0.492 200	0.502	11.0	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	Response Factor Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
1-Naphthylamine	0.683 50	0.917 75	1.038 100	1.005 150	0.950 200			0.919	15.2	
Acenaphthene CCC	1.255 10	1.223 20	1.183 50	1.173 75	1.182 100	1.105 150	1.046 200	1.17	6.05	
2,4-Dinitrophenol SPCC	0.156 50	0.189 75	0.211 100	0.225 150	0.230 200			0.202	15.0	
4-Nitrophenol SPCC	0.212 10	0.225 20	0.238 50	0.241 75	0.253 100	0.258 150	0.254 200	0.240	7.02	
2-Naphthylamine	0.250 50	0.572 75	0.816 100	0.919 150	0.884 200			0.688	40.7	
2,3,4,6-Tetrachlorophenol	0.413 10	0.415 20	0.429 50	0.437 75	0.437 100	0.409 150	0.377 200	0.417	5.02	
Diethylphthalate	1.744 10	1.692 20	1.615 50	1.604 75	1.605 100	1.370 150	1.308 200	1.56	10.4	
Fluorene	1.340 10	1.248 20	1.182 50	1.174 75	1.191 100	1.109 150	1.036 200	1.18	8.18	
4-Chlorophenylphenyl ether	0.685 10	0.670 20	0.639 50	0.637 75	0.618 100	0.509 150	0.458 200	0.602	14.2	
5-Nitro-o-toluidine	0.404 50	0.440 75	0.472 100	0.464 150	0.455 200			0.447	6.00	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
4-Nitroaniline	0.296 10	0.315 20	0.358 50	0.388 75	0.415 100	0.426 150	0.417 200	0.374	13.9	
4,6-Dinitro-2-methylphenol	0.135 50	0.152 75	0.166 100	0.164 150	0.153 200			0.154	8.02	
Diphenylamine/N-NitrosoDPA CCC	0.591 20	0.545 40	0.512 100	0.493 150	0.505 200	0.474 300	0.469 400	0.513	8.36	
4-Bromophenylphenyl ether	0.251 10	0.242 20	0.225 50	0.219 75	0.216 100	0.199 150	0.201 200	0.222	8.76	
Phenacetin	0.513 10	0.504 20	0.498 50	0.509 75	0.538 100	0.543 150	0.544 200	0.521	3.78	
Hexachlorobenzene	0.362 10	0.340 20	0.326 50	0.329 75	0.337 100	0.326 150	0.331 200	0.336	3.78	
4-Aminobiphenyl										0.999
Pentachlorophenol CCC	0.196 10	0.200 20	0.209 50	0.211 75	0.220 100	0.223 150	0.225 200	0.212	5.32	
Pentachloronitrobenzene	0.054 10	0.057 20	0.056 50	0.059 75	0.059 100	0.058 150	0.058 200	0.0573	3.14	
Pronamide	0.287 5	0.299 10	0.289 25	0.291 37.5	0.291 50	0.279 75	0.267 100	0.286	3.61	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Phenanthrene	1.123 10	1.060 20	1.003 50	0.987 75	1.004 100	0.978 150	0.995 200	1.02	5.09	
Anthracene	1.124 10	1.079 20	1.024 50	1.002 75	1.017 100	0.985 150	0.988 200	1.03	5.01	
Di-n-butylphthalate	1.785 10	1.681 20	1.613 50	1.631 75	1.641 100	1.606 150	1.617 200	1.65	3.82	
Methapyrilene	0.697 10	0.675 20	0.684 50	0.710 75	0.727 100	0.724 150	0.713 200	0.704	2.80	
4-Nitroquinoline-1-oxide	0.079 50	0.089 75	0.100 100	0.102 150	0.101 200			0.0942	10.6	
Fluoranthene CCC	1.178 10	1.128 20	1.069 50	1.055 75	1.093 100	1.053 150	1.063 200	1.09	4.26	
Benzidine	0.097 50	0.101 75	0.125 100	0.169 150	0.224 200			0.143	37.3	
Pyrene	1.415 10	1.342 20	1.340 50	1.352 75	1.431 100	1.431 150	1.397 200	1.39	2.98	
p-Dimethylaminoazobenzene	0.462 10	0.447 20	0.454 50	0.470 75	0.501 100	0.514 150	0.497 200	0.478	5.43	
Chlorobenzilate	0.445 10	0.421 20	0.440 50	0.447 75	0.470 100	0.473 150	0.452 200	0.450	3.97	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Butylbenzylphthalate	0.878 10	0.843 20	0.851 50	0.888 75	0.928 100	0.938 150	0.908 200	0.891	4.09	
3,3'-Dimethylbenzidine	0.342 50	0.380 75	0.444 100	0.474 150	0.465 200			0.421	13.6	
2-Acetylaminofluorene	0.519 10	0.525 20	0.565 50	0.598 75	0.650 100	0.669 150	0.664 200	0.599	10.7	
Benz(a)anthracene	1.288 10	1.206 20	1.212 50	1.238 75	1.306 100	1.309 150	1.263 200	1.26	3.40	
3,3'-Dichlorobenzidine	0.369 10	0.356 20	0.407 50	0.448 75	0.500 100	0.503 150	0.496 200	0.440	14.4	
Chrysene	1.217 10	1.149 20	1.147 50	1.157 75	1.228 100	1.235 150	1.170 200	1.19	3.29	
bis(2-Ethylhexyl)phthalate	1.300 10	1.252 20	1.251 50	1.275 75	1.317 100	1.326 150	1.263 200	1.28	2.41	
7,12-Dimethylbenz(a)anthracene	0.504 10	0.474 20	0.440 50	0.431 75	0.430 100	0.407 150	0.386 200	0.439	9.03	
Di-n-octylphthalate CCC	1.894 10	1.888 20	1.874 50	1.859 75	1.835 100	1.738 150	1.686 200	1.82	4.43	
3-Methylcholanthrene	0.479 10	0.456 20	0.449 50	0.441 75	0.455 100	0.438 150	0.415 200	0.448	4.39	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900
Calibration Date 07/22/97 09:39:00

Sol'n # 31736-33
Method Semivolatiles by GC/MS
Test Code 827SWX00

Instrument MSD2
Analyst MCL
Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Benzo(b)fluoranthene	1.253 10	1.198 20	1.141 50	1.250 75	1.389 100	1.307 150	1.179 200	1.25	6.72	
Benzo(k)fluoranthene	1.166 10	1.107 20	0.966 50	1.121 75	1.124 100	1.173 150	1.115 200	1.11	6.17	
Benz(a)pyrene CCC	1.027 10	0.987 20	0.978 50	0.970 75	0.988 100	0.961 150	0.904 200	0.974	3.81	
Indeno(1,2,3-cd)pyrene	1.194 10	1.165 20	1.177 50	1.170 75	1.203 100	1.162 150	1.111 200	1.17	2.54	
Dibenz(a,h)anthracene	0.964 10	0.942 20	0.929 50	0.923 75	0.933 100	0.881 150	0.836 200	0.915	4.70	
Benzo(g,h,i)perylene	1.009 10	0.977 20	0.989 50	0.984 75	1.014 100	0.987 150	0.941 200	0.986	2.43	
p-Phenylenediamine	0.041 50	0.045 75	0.043 100	0.039 150	0.029 200			0.0394	15.8	
Diallate	0.382 10	0.364 20	0.338 50	0.335 75	0.333 100	0.310 150	0.305 200	0.338	8.12	
sym-Trinitrobenzene										0.997
Kepone	0.212 10	0.195 20	0.168 50	0.168 75	0.181 100	0.183 150	0.182 200	0.184	8.39	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

INITIAL CALIBRATION Cont'd

Initial Calibration # MSD2970722093900

Sol'n # 31736-33

Calibration Date 07/22/97 09:39:00

Instrument MSD2

Method Semivolatiles by GC/MS

Analyst MCL

Test Code 827SWX00

Reviewer SDK

Analytes	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	Response Factor / Reference Conc. ug/mL	RF	% RSD	Correlation Coefficient
Carbazole	0.927 10	0.894 20	0.966 50	0.968 75	0.987 100	0.975 150	0.965 200	0.955	3.40	
2-Fluorophenol Surrogate	1.307 20	1.248 40	1.255 100	1.273 150	1.289 200	1.254 300	1.249 400	1.27	1.80	
Phenol-d5 Surrogate	1.409 20	1.334 40	1.302 100	1.295 150	1.319 200	1.284 300	1.264 400	1.32	3.59	
Nitrobenzene-d5 Surrogate	0.424 10	0.423 20	0.439 50	0.455 75	0.462 100	0.466 150	0.459 200	0.447	4.05	
2-Fluorobiphenyl Surrogate	1.393 10	1.361 20	1.317 50	1.317 75	1.317 100	1.203 150	1.165 200	1.30	6.36	
2,4,6-Tribromophenol Surrogate	0.294 20	0.301 40	0.301 100	0.312 150	0.314 200	0.293 300	0.276 400	0.299	4.30	
Terphenyl-d14 Surrogate	0.906 10	0.853 20	0.843 50	0.864 75	0.894 100	0.880 150	0.858 200	0.871	2.64	

Specification Limits for avg. RF of SPCC, system performance check compounds, ≥ 0.050(8270); ≥ 0.300

EXTRACTION BATCH SUMMARY

Extraction Batch # 3520970811134000

Work Order # 9708172

Method Liquid/liq Extract SW3520B
Test Code 352SWA00

Extraction Start Date/Time 08/11/97 13:40:00
Extraction Stop Date/Time 08/13/97 06:35:00

Analyst KPW
Reviewer JC

Sample	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
1	IPW0897W06	9708172-01A	1040	
2	IPW0897W07	9708172-02A	1050	
3	IPW0897W09	9708172-03A	1050	
4		9708175-01A	1010	
5		9708175-02A	1070	
6		9708215-01A	1070	
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Quality Control	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
Blank		BLK973729	1000	
Detectability Check Sample		DCS976383	1000	
Laboratory Control Sample		LCS976382	1000	
Laboratory Control Sample Duplicate		LCSD976382	1000	
Matrix Spike	IPW0897W09	9708172-04A	1070	
Matrix Spike Duplicate	IPW0897W09	9708172-05A	1070	
Matrix Spike		9708175-03A	1030	
Matrix Spike Duplicate		9708175-04A	1000	

ANALYSIS BATCH SUMMARY

Analysis Batch # MSMSD270814082701

Work Order # 9708172

Method Method SW8270B plus extras
Test Code 827SWXIX
Initial Calibration # MSD2970722093900
Calibration Date 07/22/97

Analysis Start Date/Time 08/14/97 08:27:00
Analysis Stop Date/Time 08/14/97 18:02:00

Instrument MSD2
Analyst MCL
Reviewer SDK

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/14/97 08:27		TUNE	GC/MS tune files	U9132
2	08/14/97 08:47		SSTD050	Continuing Calibration Verification	U9133
3	08/14/97 09:37		LCS976382	Lab Control Sample	U9134
4	08/14/97 10:16		LCSD976382	Lab Control Sample Duplicate	U9135
5	08/14/97 10:54		BLK973729	Blank, Method	U9136
6	08/14/97 11:33	IPW0897W09	9708172-03A	Sample	U9137
7	08/14/97 12:12	IPW0897W09	9708172-04A	Matrix Spike	U9138
8	08/14/97 12:51	IPW0897W09	9708172-05A	Matrix Spike Duplicate	U9139
9	08/14/97 13:30	IPW0897W06	9708172-01A	Sample	U9140
10	08/14/97 14:09	IPW0897W07	9708172-02A	Sample	U9141
11	08/14/97 14:48		9708215-01A	Sample	U9142
12	08/14/97 15:26		9708175-01A	Sample	U9143
13	08/14/97 16:05		9708175-03A	Matrix Spike	U9144
14	08/14/97 16:44		9708175-04A	Matrix Spike Duplicate	U9145
15	08/14/97 17:23		9708175-02A	Sample	U9146
16	08/14/97 18:02		DCS976383	Detectability Check Sample	U9147

RESULTS

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W09
Lab Sample ID 9708172-03A
File # U9137
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 11:33

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acenaphthene	83-32-9	ND	0.492	0.492
Acenaphthylene	208-96-8	ND	0.256	0.256
Acetophenone	98-86-2	ND	0.312	0.312
4-Aminobiphenyl	92-67-1	ND	1.63	1.63
Aniline	62-53-3	ND	0.801	0.801
Anthracene	120-12-7	ND	0.237	0.237
Benz(a)anthracene	56-55-3	ND	0.210	0.210
Benz(a)pyrene	50-32-8	ND	0.258	0.258
Benzidine	92-87-5	ND	44.4	44.4
Benzo(b)fluoranthene	205-99-2	ND	0.235	0.235
Benzo(g,h,i)perylene	191-24-2	ND	0.250	0.250
Benzo(k)fluoranthene	207-08-9	ND	0.293	0.293
Benzoic acid	65-85-0	< DL	6.13	6.13
Benzyl alcohol	100-51-6	3.53	0.360	0.360
4-Bromophenylphenyl ether	101-55-3	ND	0.269	0.269
Butylbenzylphthalate	85-68-7	ND	0.190	0.190
4-Chloro-3-methylphenol	59-50-7	ND	0.417	0.417
p-Chloroaniline	106-47-8	ND	0.483	0.483
bis(2-Chloroethoxy)methane	111-91-1	ND	0.204	0.204
bis(2-Chloroethyl)ether	111-44-4	ND	0.363	0.363
bis(2-Chloroisopropyl)ether	108-60-1	ND	0.304	0.304
2-Chloronaphthalene	91-58-7	ND	0.444	0.444
2-Chlorophenol	95-57-8	ND	0.207	0.207
4-Chlorophenylphenyl ether	7005-72-3	ND	0.418	0.418
Chrysene	218-01-9	ND	0.294	0.294

R E S U L T S (Cont'd)

Work Order # 9708172

Extraction Batch # 3520970811134000

Page 24

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W09 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-03A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9137 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 11:33 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	84-74-2	ND	0.310	0.310
Di-n-octylphthalate	117-84-0	ND	0.210	0.210
Dibenz(a,h)anthracene	53-70-3	ND	0.236	0.236
Dibenzofuran	132-64-9	ND	0.348	0.348
1,2-Dichlorobenzene	95-50-1	ND	0.535	0.535
1,3-Dichlorobenzene	541-73-1	ND	0.405	0.405
1,4-Dichlorobenzene	106-46-7	ND	0.429	0.429
3,3'-Dichlorobenzidine	91-94-1	ND	0.644	0.644
2,4-Dichlorophenol	120-83-2	ND	0.395	0.395
2,6-Dichlorophenol	87-65-0	ND	0.486	0.486
Diethylphthalate	84-66-2	ND	0.314	0.314
p-Dimethylaminoazobenzene	60-11-7	ND	0.581	0.581
7,12-Dimethylbenz(a)anthracene	57-97-6	ND	3.62	3.62
Dimethylphenethylamine	122-09-8	ND	7.59	7.59
2,4-Dimethylphenol	105-67-9	ND	0.458	0.458
Dimethylphthalate	131-11-3	ND	0.305	0.305
4,6-Dinitro-2-methylphenol	534-52-1	ND	1.33	1.33
2,4-Dinitrophenol	51-28-5	ND	11.7	11.7
2,4-Dinitrotoluene	121-14-2	ND	0.363	0.363
2,6-Dinitrotoluene	606-20-2	ND	0.971	0.971
Diphenylamine/N-NitrosoDPA	122-39-4	ND	0.556	0.556
Ethyl methanesulfonate	62-50-0	ND	0.392	0.392
bis(2-Ethylhexyl)phthalate	117-81-7	ND	0.981	0.981
Fluoranthene	206-44-0	ND	0.297	0.297
Fluorene	86-73-7	ND	0.361	0.361

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W09 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-03A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9137 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 11:33 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	118-74-1	ND	0.296	0.296
Hexachlorobutadiene	87-68-3	ND	1.21	1.21
Hexachlorocyclopentadiene	77-47-4	ND	3.26	3.26
Hexachloroethane	67-72-1	ND	0.731	0.731
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.314	0.314
Isophorone	78-59-1	ND	0.270	0.270
Methyl methanesulfonate	66-27-3	ND	0.800	0.800
3-Methylcholanthrene	56-49-5	ND	2.94	2.94
2-Methylnaphthalene	91-57-6	ND	0.830	0.830
4-Methylphenol/3-Methylphenol	NO_CAS	33.8 F	0.449	0.449
2-Methylphenol	95-48-7	21.0	0.349	0.349
N-Nitroso-di-n-butylamine	924-16-3	ND	1.43	1.43
N-Nitroso-di-n-propylamine	621-64-7	ND	0.350	0.350
N-Nitrosodimethylamine	62-75-9	ND	1.12	1.12
N-Nitrosopiperidine	100-75-4	ND	0.451	0.451
Naphthalene	91-20-3	1.05	0.405	0.405
1-Naphthylamine	134-32-7	ND	7.73	7.73
2-Naphthylamine	91-59-8	ND	4.27	4.27
2-Nitroaniline	88-74-4	ND	0.545	0.545
3-Nitroaniline	99-09-2	ND	0.851	0.851
4-Nitroaniline	100-01-6	ND	2.27	2.27
Nitrobenzene	98-95-3	ND	0.298	0.298
2-Nitrophenol	88-75-5	ND	0.261	0.261
4-Nitrophenol	100-02-7	ND	2.16	2.16
Pentachlorobenzene	608-93-5	ND	0.308	0.308

R E S U L T S (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W09 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-03A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9137 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 11:33 | Reviewer SDK

Test Code 827SWATX

Analyte	CAS #	Aliquot Mass/Volume 1050 (mL) Extract/Digestate Volume 1.0 (mL) Dilution Factor 1 Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	82-68-8	ND	1.86	1.86
Pentachlorophenol	87-86-5	ND	7.23	7.23
Phenacetin	62-44-2	ND	0.462	0.462
Phenanthrene	85-01-8	ND	0.325	0.325
Phenol	108-95-2	3.80	1.51	1.51
2-Picoline	109-06-8	ND	1.68	1.68
Pronamide*	23950-58-5	ND	0.572	0.572
Pyrene	129-00-0	ND	0.349	0.349
Pyridine	110-86-1	ND	1.32	1.32
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	0.354	0.354
2,3,4,6-Tetrachlorophenol	58-90-2	ND	0.407	0.407
1,2,4-Trichlorobenzene	120-82-1	ND	0.390	0.390
2,4,5-Trichlorophenol	95-95-4	ND	0.290	0.290
2,4,6-Trichlorophenol	88-06-2	ND	0.288	0.288

R E S U L T S (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W09 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-03A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9137 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 11:33 | Reviewer SDK

Test Code 827SWATX

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	321-60-8	95.2	98.3	103	43	116
2-Fluorophenol	367-12-4	190	170	89	60	124
Nitrobenzene-d5	4165-60-0	95.2	95.7	100	45	114
Phenol-d5	4165-62-2	190	207	109	28	122
Terphenyl-d14	1718-51-0	95.2	94.5	99	66	122
2,4,6-Tribromophenol	118-79-6	190	198	104	26	123

RESULTS

Fraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W06
Lab Sample ID 9708172-01A
File # U9140
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 13:30

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 1040 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acenaphthene	83-32-9	ND	0.497	0.497
Acenaphthylene	208-96-8	ND	0.259	0.259
Acetophenone	98-86-2	3.25	0.315	0.315
4-Aminobiphenyl	92-67-1	ND	1.64	1.64
Aniline	62-53-3	ND	0.809	0.809
Anthracene	120-12-7	ND	0.239	0.239
Benz(a)anthracene	56-55-3	ND	0.212	0.212
Benz(a)pyrene	50-32-8	ND	0.261	0.261
Benzidine	92-87-5	ND	44.8	44.8
Benzo(b)fluoranthene	205-99-2	ND	0.237	0.237
Benzo(g,h,i)perylene	191-24-2	ND	0.253	0.253
Benzo(k)fluoranthene	207-08-9	ND	0.296	0.296
Benzoic acid	65-85-0	218 X	6.19	6.19
Benzyl alcohol	100-51-6	ND	0.363	0.363
4-Bromophenylphenyl ether	101-55-3	ND	0.271	0.271
Butylbenzylphthalate	85-68-7	ND	0.191	0.191
4-Chloro-3-methylphenol	59-50-7	ND	0.421	0.421
p-Chloroaniline	106-47-8	ND	0.487	0.487
bis(2-Chloroethoxy)methane	111-91-1	ND	0.206	0.206
bis(2-Chloroethyl)ether	111-44-4	ND	0.366	0.366
bis(2-Chloroisopropyl)ether	108-60-1	ND	0.307	0.307
2-Chloronaphthalene	91-58-7	ND	0.448	0.448
2-Chlorophenol	95-57-8	ND	0.209	0.209
4-Chlorophenylphenyl ether	7005-72-3	ND	0.422	0.422
Chrysene	218-01-9	ND	0.297	0.297

R E S U L T S (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W06 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-01A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9140 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | ~~Date Analyzed 08/14/97 13:30~~ | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1040 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	84-74-2	ND	0.312	0.312
Di-n-octylphthalate	117-84-0	ND	0.212	0.212
Dibenz(a,h)anthracene	53-70-3	ND	0.238	0.238
Dibenzofuran	132-64-9	ND	0.351	0.351
1,2-Dichlorobenzene	95-50-1	ND	0.540	0.540
1,3-Dichlorobenzene	541-73-1	ND	0.409	0.409
1,4-Dichlorobenzene	106-46-7	ND	0.433	0.433
3,3'-Dichlorobenzidine	91-94-1	ND	0.650	0.650
2,4-Dichlorophenol	120-83-2	ND	0.399	0.399
2,6-Dichlorophenol	87-65-0	ND	0.490	0.490
Diethylphthalate	84-66-2	0.507	0.317	0.317
p-Dimethylaminoazobenzene	60-11-7	ND	0.587	0.587
7,12-Dimethylbenz(a)anthracene	57-97-6	ND	3.65	3.65
Dimethylphenethylamine	122-09-8	ND	7.66	7.66
2,4-Dimethylphenol	105-67-9	ND	0.462	0.462
Dimethylphthalate	131-11-3	ND	0.308	0.308
4,6-Dinitro-2-methylphenol	534-52-1	ND	1.35	1.35
2,4-Dinitrophenol	51-28-5	ND	11.8	11.8
2,4-Dinitrotoluene	121-14-2	ND	0.366	0.366
2,6-Dinitrotoluene	606-20-2	ND	0.981	0.981
Diphenylamine/N-NitrosoDPA	122-39-4	ND	0.562	0.562
Ethyl methanesulfonate	62-50-0	ND	0.396	0.396
bis(2-Ethylhexyl)phthalate	117-81-7	2.12	0.990	0.990
Fluoranthene	206-44-0	ND	0.300	0.300
Fluorene	86-73-7	ND	0.364	0.364

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W06 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-01A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9140 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 13:30 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1040 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	118-74-1	ND	0.299	0.299
Hexachlorobutadiene	87-68-3	ND	1.22	1.22
Hexachlorocyclopentadiene	77-47-4	ND	3.29	3.29
Hexachloroethane	67-72-1	ND	0.738	0.738
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.317	0.317
Isophorone	78-59-1	ND	0.273	0.273
Methyl methanesulfonate	66-27-3	ND	0.808	0.808
3-Methylcholanthrene	56-49-5	ND	2.97	2.97
2-Methylnaphthalene	91-57-6	ND	0.838	0.838
4-Methylphenol/3-Methylphenol	NO_CAS	154 F	0.453	0.453
2-Methylphenol	95-48-7	208 X	0.352	0.352
N-Nitroso-di-n-butylamine	924-16-3	ND	1.44	1.44
N-Nitroso-di-n-propylamine	621-64-7	ND	0.353	0.353
N-Nitrosodimethylamine	62-75-9	ND	1.13	1.13
N-Nitrosopiperidine	100-75-4	ND	0.456	0.456
Naphthalene	91-20-3	0.649	0.409	0.409
1-Naphthylamine	134-32-7	ND	7.81	7.81
2-Naphthylamine	91-59-8	ND	4.31	4.31
2-Nitroaniline	88-74-4	ND	0.550	0.550
3-Nitroaniline	99-09-2	ND	0.860	0.860
4-Nitroaniline	100-01-6	ND	2.29	2.29
Nitrobenzene	98-95-3	ND	0.301	0.301
2-Nitrophenol	88-75-5	ND	0.263	0.263
4-Nitrophenol	100-02-7	ND	2.18	2.18
Pentachlorobenzene	608-93-5	ND	0.311	0.311

R E S U L T S (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W06 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-01A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9140 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 13:30 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1040 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	82-68-8	ND	1.87	1.87
Pentachlorophenol	87-86-5	ND	7.30	7.30
Phenacetin	62-44-2	ND	0.466	0.466
Phenanthrene	85-01-8	ND	0.328	0.328
Phenol	108-95-2	2.85	1.53	1.53
2-Picoline	109-06-8	ND	1.69	1.69
Pronamide	23950-58-5	ND	0.578	0.578
Pyrene	129-00-0	ND	0.352	0.352
Pyridine	110-86-1	ND	1.34	1.34
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	0.358	0.358
2,3,4,6-Tetrachlorophenol	58-90-2	ND	0.411	0.411
1,2,4-Trichlorobenzene	120-82-1	ND	0.394	0.394
2,4,5-Trichlorophenol	95-95-4	ND	0.292	0.292
2,4,6-Trichlorophenol	88-06-2	ND	0.290	0.290

R E S U L T S (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W06
Lab Sample ID 9708172-01A
File # U9140
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 13:30

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	321-60-8	96.2	95.7	100	43	116
2-Fluorophenol	367-12-4	192	174	90	60	124
Nitrobenzene-d5	4165-60-0	96.2	98.0	102	45	114
Phenol-d5	4165-62-2	192	213	111	28	122
Terphenyl-d14	1718-51-0	96.2	86.5	90	66	122
2,4,6-Tribromophenol	118-79-6	192	201	105	26	123

RESULTS

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W07
Lab Sample ID 9708172-02A
File # U9141
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 14:09

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acenaphthene	83-32-9	ND	0.492	0.492
Acenaphthylene	208-96-8	ND	0.256	0.256
Acetophenone	98-86-2	ND	0.312	0.312
4-Aminobiphenyl	92-67-1	ND	1.63	1.63
Aniline	62-53-3	ND	0.801	0.801
Anthracene	120-12-7	ND	0.237	0.237
Benz(a)anthracene	56-55-3	ND	0.210	0.210
Benz(a)pyrene	50-32-8	ND	0.258	0.258
Benzidine	92-87-5	ND	44.4	44.4
Benzo(b)fluoranthene	205-99-2	ND	0.235	0.235
Benzo(g,h,i)perylene	191-24-2	ND	0.250	0.250
Benzo(k)fluoranthene	207-08-9	ND	0.293	0.293
Benzoic acid	65-85-0	ND	6.13	6.13
Benzyl alcohol	100-51-6	ND	0.360	0.360
4-Bromophenylphenyl ether	101-55-3	ND	0.269	0.269
Butylbenzylphthalate	85-68-7	ND	0.190	0.190
4-Chloro-3-methylphenol	59-50-7	ND	0.417	0.417
p-Chloroaniline	106-47-8	ND	0.483	0.483
bis(2-Chloroethoxy)methane	111-91-1	ND	0.204	0.204
bis(2-Chloroethyl)ether	111-44-4	ND	0.363	0.363
bis(2-Chloroisopropyl)ether	108-60-1	ND	0.304	0.304
2-Chloronaphthalene	91-58-7	ND	0.444	0.444
2-Chlorophenol	95-57-8	ND	0.207	0.207
4-Chlorophenylphenyl ether	7005-72-3	ND	0.418	0.418
Chrysene	218-01-9	ND	0.294	0.294

R E S U L T S (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W07 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-02A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9141 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 14:09 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	84-74-2	ND	0.310	0.310
Di-n-octylphthalate	117-84-0	ND	0.210	0.210
Dibenz(a,h)anthracene	53-70-3	ND	0.236	0.236
Dibenzofuran	132-64-9	ND	0.348	0.348
1,2-Dichlorobenzene	95-50-1	ND	0.535	0.535
1,3-Dichlorobenzene	541-73-1	ND	0.405	0.405
1,4-Dichlorobenzene	106-46-7	ND	0.429	0.429
3,3'-Dichlorobenzidine	91-94-1	ND	0.644	0.644
2,4-Dichlorophenol	120-83-2	ND	0.395	0.395
2,6-Dichlorophenol	87-65-0	ND	0.486	0.486
Diethylphthalate	84-66-2	ND	0.314	0.314
p-Dimethylaminoazobenzene	60-11-7	ND	0.581	0.581
7,12-Dimethylbenz(a)anthracene	57-97-6	ND	3.62	3.62
Dimethylphenethylamine	122-09-8	ND	7.59	7.59
2,4-Dimethylphenol	105-67-9	ND	0.458	0.458
Dimethylphthalate	131-11-3	ND	0.305	0.305
4,6-Dinitro-2-methylphenol	534-52-1	ND	1.33	1.33
2,4-Dinitrophenol	51-28-5	ND	11.7	11.7
2,4-Dinitrotoluene	121-14-2	ND	0.363	0.363
2,6-Dinitrotoluene	606-20-2	ND	0.971	0.971
Diphenylamine/N-NitrosoDPA	122-39-4	ND	0.556	0.556
Ethyl methanesulfonate	62-50-0	ND	0.392	0.392
bis(2-Ethylhexyl)phthalate	117-81-7	2.07	0.981	0.981
Fluoranthene	206-44-0	ND	0.297	0.297
Fluorene	86-73-7	ND	0.361	0.361

R E S U L T S (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W07 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-02A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9141 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 14:09 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	118-74-1	ND	0.296	0.296
Hexachlorobutadiene	87-68-3	ND	1.21	1.21
Hexachlorocyclopentadiene	77-47-4	ND	3.26	3.26
Hexachloroethane	67-72-1	ND	0.731	0.731
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.314	0.314
Isophorone	78-59-1	ND	0.270	0.270
Methyl methanesulfonate	66-27-3	ND	0.800	0.800
3-Methylcholanthrene	56-49-5	ND	2.94	2.94
2-Methylnaphthalene	91-57-6	ND	0.830	0.830
4-Methylphenol/3-Methylphenol	NO_CAS	ND	0.449	0.449
2-Methylphenol	95-48-7	ND	0.349	0.349
N-Nitroso-di-n-butylamine	924-16-3	ND	1.43	1.43
N-Nitroso-di-n-propylamine	621-64-7	ND	0.350	0.350
N-Nitrosodimethylamine	62-75-9	ND	1.12	1.12
N-Nitrosopiperidine	100-75-4	ND	0.451	0.451
Naphthalene	91-20-3	ND	0.405	0.405
1-Naphthylamine	134-32-7	ND	7.73	7.73
2-Naphthylamine	91-59-8	ND	4.27	4.27
2-Nitroaniline	88-74-4	ND	0.545	0.545
3-Nitroaniline	99-09-2	ND	0.851	0.851
4-Nitroaniline	100-01-6	ND	2.27	2.27
Nitrobenzene	98-95-3	ND	0.298	0.298
2-Nitrophenol	88-75-5	ND	0.261	0.261
4-Nitrophenol	100-02-7	ND	2.16	2.16
Pentachlorobenzene	608-93-5	ND	0.308	0.308

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W07
Lab Sample ID 9708172-02A
File # U9141
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 14:09

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	82-68-8	ND	1.86	1.86
Pentachlorophenol	87-86-5	ND	7.23	7.23
Phenacetin	62-44-2	ND	0.462	0.462
Phenanthrene	85-01-8	ND	0.325	0.325
Phenol	108-95-2	ND	1.51	1.51
2-Picoline	109-06-8	ND	1.68	1.68
Pronamide	23950-58-5	ND	0.572	0.572
Pyrene	129-00-0	ND	0.349	0.349
Pyridine	110-86-1	ND	1.32	1.32
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	0.354	0.354
2,3,4,6-Tetrachlorophenol	58-90-2	ND	0.407	0.407
1,2,4-Trichlorobenzene	120-82-1	ND	0.390	0.390
2,4,5-Trichlorophenol	95-95-4	ND	0.290	0.290
2,4,6-Trichlorophenol	88-06-2	ND	0.288	0.288

R E S U L T S (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W07 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-02A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9141 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 14:09 | Reviewer SDK

Test Code 827SWATX

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	321-60-8	95.2	94.8	100	43	116
2-Fluorophenol	367-12-4	190	167	88	60	124
Nitrobenzene-d5	4165-60-0	95.2	97.3	102	45	114
Phenol-d5	4165-62-2	190	197	104	28	122
Terphenyl-d14	1718-51-0	95.2	90.5	95	66	122
2,4,6-Tribromophenol	118-79-6	190	193	102	26	123

LABORATORY BLANK INFORMATION

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Lab Sample ID BLK973729
File # U9136
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40
Date Analyzed 08/14/97 10:54

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acenaphthene	ND	0.517	0.517
Acenaphthylene	ND	0.269	0.269
Acetophenone	ND	0.328	0.328
4-Aminobiphenyl	ND	1.71	1.71
Aniline	ND	0.841	0.841
Anthracene	ND	0.249	0.249
Benz(a)anthracene	ND	0.220	0.220
Benz(a)pyrene	ND	0.271	0.271
Benzidine	ND	46.6	46.6
Benzo(b)fluoranthene	ND	0.247	0.247
Benzo(g,h,i)perylene	ND	0.263	0.263
Benzo(k)fluoranthene	ND	0.308	0.308
Benzoic acid	ND	6.44	6.44
Benzyl alcohol	ND	0.378	0.378
4-Bromophenylphenyl ether	ND	0.282	0.282
Butylbenzylphthalate	ND	0.199	0.199
4-Chloro-3-methylphenol	ND	0.438	0.438
p-Chloroaniline	ND	0.507	0.507
bis(2-Chloroethoxy)methane	ND	0.214	0.214
bis(2-Chloroethyl)ether	ND	0.381	0.381
bis(2-Chloroisopropyl)ether	ND	0.319	0.319
2-Chloronaphthalene	ND	0.466	0.466
2-Chlorophenol	ND	0.217	0.217
4-Chlorophenylphenyl ether	ND	0.439	0.439
Chrysene	ND	0.309	0.309

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Lab Sample ID BLK973729 | Date Prepared 08/11/97 13:40: | Instrument MSD2 | Reporting Subset ___ | Matrix W
File # U9136 | Date Analyzed 08/14/97 10:54 | Column _____ | Spikes Subset ___
Method Semivolatiles by SW8270B | Analyst MCL | Specs Subset ___
Test Code 827SWATX | Reviewer SDK

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	ND	0.325	0.325
Di-n-octylphthalate	ND	0.221	0.221
Dibenz(a,h)anthracene	ND	0.248	0.248
Dibenzofuran	ND	0.365	0.365
1,2-Dichlorobenzene	ND	0.562	0.562
1,3-Dichlorobenzene	ND	0.425	0.425
1,4-Dichlorobenzene	ND	0.450	0.450
3,3'-Dichlorobenzidine	ND	0.676	0.676
2,4-Dichlorophenol	ND	0.415	0.415
2,6-Dichlorophenol	ND	0.510	0.510
Diethylphthalate	ND	0.330	0.330
p-Dimethylaminoazobenzene	ND	0.610	0.610
7,12-Dimethylbenz(a)anthracene	ND	3.80	3.80
Dimethylphenethylamine	ND	7.97	7.97
2,4-Dimethylphenol	ND	0.481	0.481
Dimethylphthalate	ND	0.320	0.320
4,6-Dinitro-2-methylphenol	ND	1.40	1.40
2,4-Dinitrophenol	ND	12.3	12.3
2,4-Dinitrotoluene	ND	0.381	0.381
2,6-Dinitrotoluene	ND	1.02	1.02
Diphenylamine/N-NitrosoDPA	ND	0.584	0.584
Ethyl methanesulfonate	ND	0.412	0.412
bis(2-Ethylhexyl)phthalate	ND	1.03	1.03
Fluoranthene	ND	0.312	0.312
Fluorene	ND	0.379	0.379

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Lab Sample ID BLK973729
File # U9136
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:54

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	ND	0.311	0.311
Hexachlorobutadiene	ND	1.27	1.27
Hexachlorocyclopentadiene	ND	3.42	3.42
Hexachloroethane	ND	0.768	0.768
Indeno(1,2,3-cd)pyrene	ND	0.330	0.330
Isophorone	ND	0.284	0.284
Methyl methanesulfonate	ND	0.840	0.840
3-Methylcholanthrene	ND	3.09	3.09
2-Methylnaphthalene	ND	0.872	0.872
4-Methylphenol/3-Methylphenol	ND	0.471	0.471
2-Methylphenol	ND	0.366	0.366
N-Nitroso-di-n-butylamine	ND	1.50	1.50
N-Nitroso-di-n-propylamine	ND	0.367	0.367
N-Nitrosodimethylamine	ND	1.18	1.18
N-Nitrosopiperidine	ND	0.474	0.474
Naphthalene	ND	0.425	0.425
1-Naphthylamine	ND	8.12	8.12
2-Naphthylamine	ND	4.48	4.48
2-Nitroaniline	ND	0.572	0.572
3-Nitroaniline	ND	0.894	0.894
4-Nitroaniline	ND	2.38	2.38
Nitrobenzene	ND	0.313	0.313
2-Nitrophenol	ND	0.274	0.274
4-Nitrophenol	ND	2.27	2.27
Pentachlorobenzene	ND	0.323	0.323

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Lab Sample ID BLK973729 | Date Prepared 08/11/97 13:40 | Instrument MSD2 | Reporting Subset ___ | Matrix W
File # U9136 | Date Analyzed 08/14/97 10:54 | Column ___ | Spikes Subset ___
Method Semivolatiles by SW8270B | Analyst MCL | Specs Subset ___
Test Code 827SWATX | Reviewer SDK

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	ND	1.95	1.95
Pentachlorophenol	ND	7.59	7.59
Phenacetin	ND	0.485	0.485
Phenanthrene	ND	0.341	0.341
Phenol	ND	1.59	1.59
2-Picoline	ND	1.76	1.76
Pronamide	ND	0.601	0.601
Pyrene	ND	0.366	0.366
Pyridine	ND	1.39	1.39
1,2,4,5-Tetrachlorobenzene	ND	0.372	0.372
2,3,4,6-Tetrachlorophenol	ND	0.427	0.427
1,2,4-Trichlorobenzene	ND	0.410	0.410
2,4,5-Trichlorophenol	ND	0.304	0.304
2,4,6-Trichlorophenol	ND	0.302	0.302

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Lab Sample ID BLK973729
File # U9136
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:54

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Surrogate(s)	Spiked Conc. ug/L	Measured Conc. ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	100	101	101	43	116
2-Fluorophenol	200	176	88	60	124
Nitrobenzene-d5	100	107	107	45	114
Phenol-d5	200	197	98	28	122
Terphenyl-d14	100	103	103	66	122
2,4,6-Tribromophenol	200	199	99	26	123

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LABORATORY CONTROL SAMPLE

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Work Order # 9708172

Method Semivolatiles by SW8270B
Test Code 827SWATX
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:16
Instrument MSD2
Column
Analyst MCL
Reviewer SDK
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

Analyte	LCS Lab Sample ID LCS976382 File ID U9134			LCS Duplicate Lab Sample ID LCSD976382 File ID U9135			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Acenaphthene	100	108	108	100	110	110	76	133	1.8	21
Acenaphthylene	100	106	106	100	107	107	74	134	0.94	21
Aniline	100	68.0	68	100	62.9	63	22	113	7.6	32
Anthracene	100	106	106	100	105	105	68	128	0.95	21
Benz(a)anthracene	100	107	107	100	107	107	82	132	0	21
Benz(a)pyrene	100	106	106	100	107	107	77	141	0.94	19
Benzidine	100	5.41	5.4	100	ND	NC	0.1	75	NC	263
Benzo(b)fluoranthene	100	96.2	96	100	95.3	95	73	135	1.0	28
Benzo(g,h,i)perylene	100	113	113	100	113	113	74	144	0	20
Benzo(k)fluoranthene	100	97.1	97	100	103	103	64	148	6.0	26
Benzoic acid	100	89.3	89	100	90.8	91	0.1	230	2.2	140
Benzyl alcohol	100	96.2	96	100	96.8	97	66	138	1.0	19
4-Bromophenylphenyl ether	100	118	118	100	117	117	69	127	0.85	18
Butylbenzylphthalate	100	102	102	100	100	100	69	150	2.0	25
4-Chloro-3-methylphenol	100	108	108	100	110	110	64	141	1.8	19
p-Chloroaniline	100	93.7	94	100	90.7	91	50	134	3.2	26
bis(2-Chloroethoxy)methane	100	99.7	100	100	100	100	75	137	0	21
bis(2-Chloroethyl)ether	100	90.3	90	100	88.9	89	76	124	1.1	21
bis(2-Chloroisopropyl)ether	100	84.0	84	100	83.8	84	68	128	0	23
2-Chloronaphthalene	100	108	108	100	110	110	72	118	1.8	16

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:16

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

LCS Lab Sample ID LCS976382 File ID U9134

LCS Duplicate Lab Sample ID LCSD976382 File ID U9135

Analyte	LCS Spiked Conc. ug/L	LCS Measured Conc. ug/L	LCS Rec. %	LCSD Spiked Conc. ug/L	LCSD Measured Conc. ug/L	LCSD Rec. %	Recovery Spec. Limits Low %	Recovery Spec. Limits High %	RPD Result %	RPD Spec. Limit %
2-Chlorophenol	100	96.6	97	100	96.8	97	81	117	0	17
4-Chlorophenylphenyl ether	100	118	118	100	118	118	79	133	0	18
Chrysene	100	110	110	100	109	109	85	133	0.91	21
Di-n-butylphthalate	100	100	100	100	101	101	68	135	1.00	21
Di-n-octylphthalate	100	101	101	100	103	103	54	146	2.0	22
Dibenz(a,h)anthracene	100	115	115	100	116	116	73	145	0.87	20
Dibenzofuran	100	104	104	100	105	105	82	130	0.96	16
1,2-Dichlorobenzene	100	99.2	99	100	102	102	73	121	3.0	22
1,3-Dichlorobenzene	100	94.8	95	100	98.2	98	70	120	3.1	27
1,4-Dichlorobenzene	100	97.1	97	100	101	101	70	120	4.0	24
3,3'-Dichlorobenzidine	100	116	116	100	98.6	99	49	140	16	33
2,4-Dichlorophenol	100	108	108	100	111	111	60	135	2.7	19
Diethylphthalate	100	106	106	100	109	109	83	123	2.8	15
2,4-Dimethylphenol	100	82.9	83	100	92.5	93	32	119	11	33
Dimethylphthalate	100	110	110	100	112	112	84	130	1.8	21
4,6-Dinitro-2-methylphenol	100	137	137	100	136	136	53	163	0.73	18
2,4-Dinitrophenol	100	140	140	100	138	138	24	191	1.4	23
2,4-Dinitrotoluene	100	126	126	100	128	128	72	139	1.6	20
2,6-Dinitrotoluene	100	116	116	100	117	117	76	140	0.86	18
Diphenylamine/N-NitrosoDPA	100	104	104	100	100.0	100	47	117	3.9	21

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Method Semivolatiles by SW8270B
Test Code 827SWATX
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:16
Instrument MSD2
Column
Analyst MCL
Reviewer SDK
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

Analyte	LCS Lab Sample ID LCS976382 File ID U9134			LCS Duplicate Lab Sample ID LCSD976382 File ID U9135			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
bis(2-Ethylhexyl)phthalate	100	98.8	99	100	99.4	99	74	144	0	22
Fluoranthene	100	109	109	100	109	109	77	129	0	19
Fluorene	100	109	109	100	110	110	79	121	0.91	17
Hexachlorobenzene	100	109	109	100	109	109	66	126	0	19
Hexachlorobutadiene	100	104	104	100	112	112	51	147	7.4	20
Hexachlorocyclopentadiene	100	52.8	53	100	52.4	52	0.1	148	1.9	49
Hexachloroethane	100	101	101	100	105	105	62	127	3.9	28
Indeno(1,2,3-cd)pyrene	100	112	112	100	113	113	75	141	0.89	19
Isophorone	100	92.0	92	100	93.8	94	81	133	2.2	18
2-Methylnaphthalene	100	98.2	98	100	100	100	63	134	2.0	21
4-Methylphenol/3-Methylphenol	100	102	102	100	101	101	62	126	0.98	17
2-Methylphenol	100	96.2	96	100	96.7	97	72	126	1.0	19
N-Nitroso-di-n-propylamine	100	99.7	100	100	103	103	68	128	3.0	21
N-Nitrosodimethylamine	100	103	103	100	110	110	27	155	6.6	24
Naphthalene	100	105	105	100	109	109	70	133	3.7	17
2-Nitroaniline	100	110	110	100	112	112	69	140	1.8	24
3-Nitroaniline	100	107	107	100	104	104	69	133	2.8	22
4-Nitroaniline	100	116	116	100	110	110	59	137	5.3	19
Nitrobenzene	100	107	107	100	113	113	74	142	5.4	22
2-Nitrophenol	100	116	116	100	116	116	67	149	0	19

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LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Work Order # 9708172

Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:16

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

Analyte	LCS Lab Sample ID LCS976382 File ID U9134			LCS Duplicate Lab Sample ID LCSD976382 File ID U9135			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
4-Nitrophenol	100	117	117	100	118	118	56	131	0.85	20
Pentachlorophenol	100	112	112	100	111	111	47	143	0.90	18
Phenanthrene	100	109	109	100	110	110	74	132	0.91	17
Phenol	100	94.2	94	100	89.2	89	70	123	5.5	18
Pyrene	100	107	107	100	107	107	74	148	0	21
1,2,4-Trichlorobenzene	100	105	105	100	109	109	71	129	3.7	16
2,4,5-Trichlorophenol	100	118	118	100	119	119	80	132	0.84	15
2,4,6-Trichlorophenol	100	112	112	100	113	113	76	128	0.89	15

Surrogate(s)									
2-Fluorobiphenyl	100	106	106	100	106	106	43	116	
2-Fluorophenol	200	176	88	200	171	85	60	124	
Nitrobenzene-d5	100	102	102	100	106	106	45	114	
Phenol-d5	200	215	107	200	199	100	28	122	
Terphenyl-d14	100	105	105	100	105	105	66	122	
2,4,6-Tribromophenol	200	214	107	200	218	109	26	123	

MATRIX SPIKE(S)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Work Order # 9708172

Project Sample ID IPW0897W09
Method Semivolatiles by SW8270B
Test Code 827SWAMS

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 12:51

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Spike Sol'n #	Vol. Added
SP-1-772-D	100 uL
SP-1-773-D	250 uL
Surrogate Sol'n	Vol. Added
SP-1-745-AG	100 uL

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID	Lab Sample ID	Lab Sample ID
9708172-03A	9708172-04A MS	9708172-05A MSD
File # U9137	File # U9138	File # U9139
Aliquot Mass/Vol	Aliquot Mass/Vol	Aliquot Mass/Vol
1050 (mL)	1070 (mL)	1070 (mL)
Extract Mass/Vol	Extract Mass/Vol	Extract Mass/Vol
1.0 (mL)	1.0 (mL)	1.0 (mL)
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1

Analyte	Spike Sol'n Conc. ug/mL	Measured Conc. ug/L	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %
Acenaphthene	400	ND	93.5	103	110	93.5	95.4	102	76	133	7.6	21
4-Chloro-3-methylphenol	1000	ND	93.5	103	110	93.5	95.9	103	64	141	6.6	19
2-Chlorophenol	1000	ND	93.5	94.2	101	93.5	88.5	95	81	117	6.1	17
1,4-Dichlorobenzene	400	ND	93.5	95.5	102	93.5	88.2	94	70	120	8.2	24
2,4-Dinitrotoluene	400	ND	93.5	116	124	93.5	108	115	72	139	7.5	20
N-Nitroso-di-n-propylamine	400	ND	93.5	99.1	106	93.5	93.4	100	68	128	5.8	21
4-Nitrophenol	1000	ND	93.5	103	110	93.5	101	109	56	131	0.91	20
Pentachlorophenol	1000	ND	93.5	106	114	93.5	100	107	47	143	6.3	18
Phenol	1000	3.80	93.5	94.3	97	93.5	90.7	93	70	123	4.2	18
Pyrene	400	ND	93.5	102	109	93.5	92.3	99	74	148	9.6	21
1,2,4-Trichlorobenzene	400	ND	93.5	96.3	103	93.5	90.3	97	71	129	6.0	16

MATRIX SPIKE(S) (Cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Work Order # 9708172

Project Sample ID IPW0897W09
Method Semivolatiles by SW8270B
Test Code 827SWAMS

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 12:51

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Spike Sol'n #	Vol. Added
SP-1-772-D	100 uL
SP-1-773-D	250 uL
Surrogate Sol'n	Vol. Added
SP-1-745-AG	100 uL

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID	Lab Sample ID	Lab Sample ID
9708172-03A	9708172-04A MS	9708172-05A MSD
File # U9137	File # U9138	File # U9139
Aliquot Mass/Vol 1050 (mL)	Aliquot Mass/Vol 1070 (mL)	Aliquot Mass/Vol 1070 (mL)
Extract Mass/Vol 1.0 (mL)	Extract Mass/Vol 1.0 (mL)	Extract Mass/Vol 1.0 (mL)
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1

Analyte	Spike Sol'n Conc. ug/mL	Measured Conc. ug/L	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %
Surrogate(s)												
2-Fluorobiphenyl	1000	98.3	93.5	98.4	105	93.5	90.9	97	43	116		
2-Fluorophenol	2000	170	187	167	90	187	159	85	60	124		
Nitrobenzene-d5	1000	95.7	93.5	92.8	99	93.5	88.4	94	45	114		
Phenol-d5	2000	207	187	195	105	187	191	102	28	122		
Terphenyl-d14	1000	94.5	93.5	94.4	101	93.5	86.3	92	66	122		
2,4,6-Tribromophenol	2000	198	187	201	108	187	190	102	26	123		

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MATRIX SPIKE(S)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Work Order # 9708172

Project Sample ID _____

Method Method SW8270B plus extras

Test Code 827SWXMS

Date Collected 08/06/97

Date Received 08/08/97

Date Prepared 08/11/97 13:40:

Date Analyzed 08/14/97 16:44

Instrument MSD2

Column _____

Analyst MCL

Reviewer SDK

Reporting Subset ___ ___

Spikes Subset ___ ___

Specs Subset ___ ___

Matrix W

Report As received

% Moisture _____

Spike Sol'n #	Vol. Added
SP-1-772-D	100 uL
SP-1-773-D	250 uL
Surrogate Sol'n	**Vol. Added**
SP-1-745-AG	100 uL

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID	Lab Sample ID	Lab Sample ID
9708175-01A	9708175-03A MS	9708175-04A MSD
File # U9143	File # U9144	File # U9145
Aliquot Mass/Vol	Aliquot Mass/Vol	Aliquot Mass/Vol
1010 (mL)	1030 (mL)	1000 (mL)
Extract Mass/Vol	Extract Mass/Vol	Extract Mass/Vol
1.0 (mL)	1.0 (mL)	1.0 (mL)
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1

Analyte	Spike Sol'n Conc. ug/mL	Measured Conc. ug/L	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %
Acenaphthene	400	ND	97.1	105	108	100	110	110	76	133	1.8	21
4-Chloro-3-methylphenol	1000	ND	97.1	102	105	100	108	108	64	141	2.8	19
2-Chlorophenol	1000	ND	97.1	97.4	100	100	100	100	81	117	0	17
1,4-Dichlorobenzene	400	ND	97.1	99.3	102	100	102	102	70	120	0	24
2,4-Dinitrotoluene	400	ND	97.1	117	120	100	123	123	72	139	2.5	20
N-Nitroso-di-n-propylamine	400	ND	97.1	98.8	102	100	103	103	68	128	0.98	21
4-Nitrophenol	1000	ND	97.1	106	109	100	114	114	56	131	4.5	20
Pentachlorophenol	1000	ND	97.1	105	108	100	110	110	47	143	1.8	18
Phenol	1000	ND	97.1	90.9	94	100	96.0	96	70	123	2.1	18
Pyrene	400	ND	97.1	101	104	100	104	104	74	148	0	21
1,2,4-Trichlorobenzene	400	ND	97.1	99.9	103	100	105	105	71	129	1.9	16

MATRIX SPIKE(S) (Cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Work Order # 9708172

Project Sample ID
Method Method SW8270B plus extras
Test Code 827SWXMS

Date Collected 08/06/97
Date Received 08/08/97
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 16:44

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Spike Sol'n #	Vol. Added
SP-1-772-D	100 uL
SP-1-773-D	250 uL
Surrogate Sol'n	Vol. Added
SP-1-745-AG	100 uL

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID	Lab Sample ID	Lab Sample ID
9708175-01A	9708175-03A MS	9708175-04A MSD
File # U9143	File # U9144	File # U9145
Aliquot Mass/Vol 1010 (mL)	Aliquot Mass/Vol 1030 (mL)	Aliquot Mass/Vol 1000 (mL)
Extract Mass/Vol 1.0 (mL)	Extract Mass/Vol 1.0 (mL)	Extract Mass/Vol 1.0 (mL)
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1

Analyte	Spike Sol'n Conc. ug/mL	Measured Conc. ug/L	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %
Surrogate(s)												
2-Fluorobiphenyl	1000	93.7	97.1	102	105	100	106	106	43	116		
2-Fluorophenol	2000	162	194	175	90	200	185	92	60	124		
Nitrobenzene-d5	1000	94.1	97.1	98.4	101	100	103	103	45	114		
Phenol-d5	2000	185	194	200	103	200	218	109	28	122		
Terphenyl-d14	1000	88.3	97.1	98.4	101	100	100	100	66	122		
2,4,6-Tribromophenol	2000	181	194	205	106	200	215	107	26	123		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSD270814082701
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/14/97 08:47 Reporting Subset ___ Instrument MSD2
File # U9133 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acenaphthene	50.9	50.0	102	80	120
Acenaphthylene	52.4	50.0	105		
Acetophenone	48.8	50.0	98		
2-Acetylaminofluorene	48.3	50.0	97		
4-Aminobiphenyl	72.6	50.0	145		
Aniline	53.8	50.0	108		
Anthracene	52.7	50.0	105		
Benz(a)anthracene	49.2	50.0	98		
Benz(a)pyrene	52.4	50.0	105	80	120
Benzidine	72.5	50.0	145		
Benzo(b)fluoranthene	44.1	50.0	88		
Benzo(g,h,i)perylene	52.4	50.0	105		
Benzo(k)fluoranthene	48.4	50.0	97		
Benzoic acid	8.14	50.0	16		
Benzyl alcohol	51.1	50.0	102		
4-Bromophenylphenyl ether	53.8	50.0	108		
Butylbenzylphthalate	46.4	50.0	93		
Carbazole	53.7	50.0	107		
4-Chloro-3-methylphenol	50.3	50.0	101	80	120
p-Chloroaniline	56.5	50.0	113		
Chlorobenzilate	48.0	50.0	96		
bis(2-Chloroethoxy)methane	48.4	50.0	97		
bis(2-Chloroethyl)ether	47.6	50.0	95		
bis(2-Chloroisopropyl)ether	44.3	50.0	88		
2-Chloronaphthalene	50.6	50.0	101		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270814082701
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/14/97 08:47 Reporting Subset ___ Instrument MSD2
File # U9133 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
2-Chlorophenol	50.9	50.0	102		
4-Chlorophenylphenyl ether	54.7	50.0	109		
Chrysene	49.5	50.0	99		
Di-n-butylphthalate	47.8	50.0	96		
Di-n-octylphthalate	49.1	50.0	98	80	120
Diallate	51.0	50.0	102		
Dibenz(a,h)anthracene	55.0	50.0	110		
Dibenzofuran	52.5	50.0	105		
1,2-Dichlorobenzene	52.4	50.0	105		
1,3-Dichlorobenzene	50.9	50.0	102		
1,4-Dichlorobenzene	51.9	50.0	104	80	120
3,3'-Dichlorobenzidine	53.8	50.0	108		
2,4-Dichlorophenol	53.4	50.0	107	80	120
2,6-Dichlorophenol	54.2	50.0	108		
Diethylphthalate	49.6	50.0	99		
p-Dimethylaminoazobenzene	48.2	50.0	96		
7,12-Dimethylbenz(a)anthracene	53.0	50.0	106		
3,3'-Dimethylbenzidine	57.8	50.0	116		
Dimethylphenethylamine	45.3	50.0	91		
2,4-Dimethylphenol	52.2	50.0	104		
Dimethylphthalate	50.8	50.0	102		
4,6-Dinitro-2-methylphenol	57.4	50.0	115		
1,3-Dinitrobenzene	56.5	50.0	113		
2,4-Dinitrophenol	53.9	50.0	108		
2,4-Dinitrotoluene	55.9	50.0	112		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270814082701
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/14/97 08:47 Reporting Subset ___ Instrument MSD2
File # U9133 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
2,6-Dinitrotoluene	53.8	50.0	108		
Diphenylamine/N-NitrosoDPA	108	100	108	80	120
Ethyl methanesulfonate	48.3	50.0	97		
bis(2-Ethylhexyl)phthalate	46.1	50.0	92		
Fluoranthene	52.0	50.0	104	80	120
Fluorene	52.6	50.0	105		
Hexachlorobenzene	50.1	50.0	100		
Hexachlorobutadiene	51.5	50.0	103	80	120
Hexachlorocyclopentadiene	62.6	50.0	125		
Hexachloroethane	53.7	50.0	107		
Hexachlorophene	ND	50.0	NC		
Hexachloropropene	58.8	50.0	118		
Indeno(1,2,3-cd)pyrene	52.5	50.0	105		
Isophorone	48.2	50.0	96		
Isosafrole	49.2	50.0	98		
Methapyrilene	47.1	50.0	94		
Methyl methanesulfonate	50.9	50.0	102		
3-Methylcholanthrene	53.2	50.0	106		
2-Methylnaphthalene	52.1	50.0	104		
4-Methylphenol/3-Methylphenol	54.3	50.0	109		
2-Methylphenol	49.7	50.0	99		
N-Nitroso-di-n-butylamine	49.6	50.0	99		
N-Nitroso-di-n-propylamine	52.2	50.0	104		
N-Nitrosodiethylamine	53.3	50.0	107		
N-Nitrosodimethylamine	54.7	50.0	109		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270814082701
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/14/97 08:47 Reporting Subset ___ Instrument MSD2
File # U9133 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
N-Nitrosomethylethylamine	53.0	50.0	106		
N-Nitrosomorpholine	53.0	50.0	106		
N-Nitrosopiperidine	50.1	50.0	100		
N-Nitrosopyrrolidine	58.5	50.0	117		
Naphthalene	52.7	50.0	105		
1,4-Naphthoquinone	53.1	50.0	106		
1-Naphthylamine	51.9	50.0	104		
2-Naphthylamine	42.5	50.0	85		
5-Nitro-o-toluidine	52.9	50.0	106		
2-Nitroaniline	ND	50.0	NC		
3-Nitroaniline	50.5	50.0	101		
4-Nitroaniline	59.7	50.0	119		
Nitrobenzene	52.8	50.0	106		
2-Nitrophenol	55.6	50.0	111	80	120
4-Nitrophenol	52.5	50.0	105		
4-Nitroquinoline-1-oxide	56.9	50.0	114		
Pentachlorobenzene	51.2	50.0	102		
Pentachloroethane	50.7	50.0	101		
Pentachloronitrobenzene	50.8	50.0	102		
Pentachlorophenol	50.3	50.0	101	80	120
Phenacetin	47.3	50.0	95		
Phenanthrene	52.0	50.0	104		
Phenol	52.9	50.0	106	80	120
p-Phenylenediamine	ND	50.0	NC		
2-Picoline	50.9	50.0	102		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270814082701
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/14/97 08:47 Reporting Subset ___ Instrument MSD2
File # U9133 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Pronamide	25.8	25.0	103		
Pyrene	49.6	50.0	99		
Pyridine	55.9	50.0	112		
Safrole	50.6	50.0	101		
1,2,4,5-Tetrachlorobenzene	51.6	50.0	103		
2,3,4,6-Tetrachlorophenol	51.7	50.0	103		
o-Toluidine	53.1	50.0	106		
1,2,4-Trichlorobenzene	52.2	50.0	104		
2,4,5-Trichlorophenol	52.3	50.0	105		
2,4,6-Trichlorophenol	51.9	50.0	104	80	120
sym-Trinitrobenzene	57.2	50.0	114		

Surrogate(s)					
2-Fluorobiphenyl	51.7	50.0	103		
2-Fluorophenol	103	100	103		
Nitrobenzene-d5	53.1	50.0	106		
Phenol-d5	108	100	108		
Terphenyl-d14	49.4	50.0	99		
2,4,6-Tribromophenol	97.6	100	98		

Method Method SW8270B plus extras Specification# 827S

Lab Sample ID File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action
LCSD976382 U9135		Benzidine		Benzidine was not detected (ND) in the LCSD. As a result, the percent recovery and RPD for this compound were not calculated (NC).	Benzidine is subject to oxidative loss and may not be recovered according to method 8270B. No corrective action necessary.
9708172-03A U9137	IPW0897W09	4-Methylphenol/3-Methylphenol	F	The F flag indicates that 3-methylphenol coelutes with 4-methylphenol. The calibration response factor is based on 4-methylphenol only. Any identification for 4-methylphenol should be regarded as a possible sum of the two indistinguishable isomers.	
9708172-01A U9140	IPW0897W06	4-Methylphenol/3-Methylphenol	F	The F flag indicates that 3-methylphenol coelutes with 4-methylphenol. The calibration response factor is based on 4-methylphenol only. Any identification for 4-methylphenol should be regarded as a possible sum of the two indistinguishable isomers.	
9708172-01A U9140	IPW0897W06	2-Methylphenol	X	The X flag indicates that the concentration for this analyte exceeds the calibration range but the peak is not saturated, so the concentration reported is an accurate reflection of the amount of this analyte present in the sample.	
9708172-01A U9140	IPW0897W06	Benzoic Acid	X	The X flag indicates that the concentration for this analyte exceeds the calibration range but the peak is not saturated, so the concentration reported is an accurate reflection of the amount of this analyte present in the sample.	

08/22/97 10:01:21

RADIAN ANALYTICAL SERVICES
FPAS REPORT
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Work Order # 9708155

Client INTERNATIONAL PAPER
Facility
Client Code IP WILM

Certified By Julie A Pocock
Date 8/22/97

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08/22/97 10:01:21

WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To 3200 E. CHAPEL HILL RD.
RTP, NC 27709
Attention JIM NARKUNAS

Client Code IP WILM
Client INTERNATIONAL PAPER
Facility
Work ID WILMINGTON SEMIANNUA

Work Order # 9708155
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RCN 258058.1501

Prepared By Radian International, LLC
14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70117AJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
IPW0897W23	01A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
IPW0897W24	02A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
IPW0897W10	03A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
IPW0897W12	04A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
	05A MS	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
	06A MSD	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals

WORK ORDER COMMENTS

Post digestion spikes not performed on all GFAAS analyses per Item 271 of the New York ELAP manual. Post digestion spikes were performed, as necessary, when recoveries for serial dilutions or matrix spikes for an analytical batch did not fall within recovery tolerances.

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

08/22/97 10:01:21

ANALYTICAL PROTOCOL SUMMARY

Work Order # 9708155

Client INTERNATIONAL PAPER

Specification # XXGS

Facility

Client Code IP WILM

Method Arsenic by SW7060A

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
IPW0897W10	9708155-03A	ASGSWA00	GDIG970808073000	AAZ4__70821102702
IPW0897W12	9708155-04A	ASGSWA00	GDIG970808073000	AAZ4__70821102702
IPW0897W23	9708155-01A	ASGSWA00	GDIG970808073000	AAZ4__70821102702
IPW0897W24	9708155-02A	ASGSWA00	GDIG970808073000	AAZ4__70821102702

RESULTS SUMMARY

Method Arsenic by SW7060A

Test Code ASGSWA00

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708155-03A		9708155-04A		9708155-01A		9708155-02A	
File ID:	Z4082110-44		Z4082110-37		Z4082110-42		Z4082110-43	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/08/97		08/08/97		08/08/97		08/08/97	
Date Analyzed:	08/21/97 14:41:00		08/21/97 14:00:00		08/21/97 14:30:00		08/21/97 14:36:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	mg/L		mg/L		mg/L		mg/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Arsenic	0.0232	0.00151	0.00669	0.00151	0.0305	0.00151	0.0169	0.00151

08/22/97 10:01:21

INITIAL CALIBRATION

Work Order # 9708155

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Initial Calibration # Z4970821102700

Calibration Date 08/21/97 10:27:00

Sol'n # _____

Method Arsenic by SW7060A

Test Code ASGSWA00

Instrument Z4

Analyst MSC

Reviewer DLC

Analytes	Response Area Counts / Reference Conc. mg/L	Response Area Counts / Reference Conc. mg/L	Response Area Counts / Reference Conc. mg/L	Response Area Counts / Reference Conc. mg/L	Response Area Counts / Reference Conc. mg/L	Response / Reference Conc.	Response / Reference Conc.	Correlation Coefficient
Arsenic	0.000 0.0	0.0065190 0.003	0.0293979 0.015	0.0595302 0.030	0.1148841 0.060			1.000

Specification Limits for correlation coefficient >0.995

DIGESTION BATCH SUMMARY

Digestion Batch # GDIG970808073000

Work Order # 9708155

Method Digestion by Mod. SW3020A
Test Code DIFSWA00

Extraction Start Date/Time 08/08/97 07:30:00
Extraction Stop Date/Time

Analyst HD
Reviewer MSC

Sample	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
1	IPW0897W23	9708155-01A	50	
2	IPW0897W24	9708155-02A	50	
3	IPW0897W10	9708155-03A	50	
4	IPW0897W12	9708155-04A	50	
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Quality Control	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
Blank		BLK973721	50	
Detectability Check Sample		DCS976366	50	
Laboratory Control Sample		LCSD976365	50	
Laboratory Control Sample Duplicate		LCSD976365	50	
Matrix Spike	IPW0897W12	9708155-05A	50	
Matrix Spike Duplicate	IPW0897W12	9708155-06A	50	

08/22/97 10:01:21

ANALYSIS BATCH SUMMARY

Analysis Batch # AAZ4 70821102702

Work Order # 9708155

Method Arsenic by SW7060A

Test Code ASGSWA00

Initial Calibration # Z4970821102700

Calibration Date 08/21/97

Analysis Start Date/Time 08/21/97 10:27:00

Analysis Stop Date/Time 08/21/97 14:58:00

Instrument Z4

Analyst MSC

Reviewer DLC

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/21/97 10:27:00		S_0	Initial Calibration Blank	Z4082110-1
2	08/21/97 10:33:00		S 3	Initial Calibration Standard 1	Z4082110-2
3	08/21/97 10:39:00		S 15	Initial Calibration Standard 2	Z4082110-3
4	08/21/97 10:44:00		S 30	Initial Calibration Standard 3	Z4082110-4
5	08/21/97 10:51:00		S 60	Initial Calibration Standard 4	Z4082110-5
31	08/21/97 13:26:00		ICV	Initial Calibration Verification	Z4082110-31
32	08/21/97 13:31:00		ICB	Blank, Initial Calibration	Z4082110-32
33	08/21/97 13:37:00		BLK973721	Blank, Method	Z4082110-33
34	08/21/97 13:42:00		DCS976366	Detectability Check Sample	Z4082110-34
35	08/21/97 13:48:00		LCS976365	Lab Control Sample	Z4082110-35
36	08/21/97 13:54:00		LCSD976365	Lab Control Sample Duplicate	Z4082110-36
37	08/21/97 14:00:00	IPW0897W12	9708155-04A	Sample	Z4082110-37
38	08/21/97 14:07:00	IPW0897W12	9708155-04A	Serial Dilutions	Z4082110-38
39	08/21/97 14:13:00	IPW0897W12	9708155-04A	Analytical Spike	Z4082110-39
40	08/21/97 14:18:00	IPW0897W12	9708155-05A	Matrix Spike	Z4082110-40
41	08/21/97 14:24:00	IPW0897W12	9708155-06A	Matrix Spike Duplicate	Z4082110-41
42	08/21/97 14:30:00	IPW0897W23	9708155-01A	Sample	Z4082110-42
43	08/21/97 14:36:00	IPW0897W24	9708155-02A	Sample	Z4082110-43
44	08/21/97 14:41:00	IPW0897W10	9708155-03A	Sample	Z4082110-44
45	08/21/97 14:47:00		CCV	Continuing Calibration Verification	Z4082110-45
46	08/21/97 14:53:00		CCB	Blank, Continuing Calibration	Z4082110-46

RESULTS

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Project Sample ID IPW0897W12
Lab Sample ID 9708155-04A
File # Z4082110-37
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/21/97 14:00:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.00669	0.00151	0.00151

08/22/97 10:01:21

RESULTS

Digestion Batch # GDIG970808073000

Analysis Batch # AAZ4 70821102702

Work Order # 9708155

Project Sample ID IPW0897W23
Lab Sample ID 9708155-01A
File # Z4082110-42
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/21/97 14:30:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Analyte	CAS #	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 — Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.0305	0.00151	0.00151

RESULTS

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Project Sample ID IPW0897W24
Lab Sample ID 9708155-02A
File # Z4082110-43
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/21/97 14:36:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Analyte	CAS #	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.0169	0.00151	0.00151

08/22/97 10:01:21

RESULTS

Digestion Batch # GDIG970808073000

Analysis Batch # AAZ4 70821102702

Work Order # 9708155

Project Sample ID IPW0897W10

Lab Sample ID 9708155-03A

File # Z4082110-44

Method Arsenic by SW7060A

Test Code ASGSWA00

Date Collected 08/06/97

Date Received 08/07/97

Date Prepared 08/08/97

Date Analyzed 08/21/97 14:41:00

Instrument Z4

Column

Analyst MSC

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Aliquot Mass/Volume 50 (mL)

Extract/Digestate Volume 50 (mL)

Dilution Factor 1

Analyte	CAS #	Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.0232	0.00151	0.00151

LABORATORY BLANK INFORMATION

Digestion Batch # _____
Analysis Batch # AAZ4 70821102702

Lab Sample ID CCB
File # Z4082110-46
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared _____
Date Analyzed 08/21/97 14:53:00

Instrument Z4
Column _____
Analyst MSC
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Analyte	Aliquot Mass/Volume _____ (mL) Extract/Digestate Volume 1 (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	-0.000170 J	0.00151	-1000

08/22/97 10:01:21

LABORATORY BLANK INFORMATION

Work Order # 9708155
Page 14

Digestion Batch # _____
Analysis Batch # AAZ4 70821102702

Lab Sample ID ICB
File # Z4082110-32
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared _____
Date Analyzed 08/21/97 13:31:00

Instrument Z4
Column _____
Analyst MSC
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Analyte	Aliquot Mass/Volume _____ (mL) Extract/Digestate Volume 1 (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	-0.000490 J	0.00151	-1000

LABORATORY BLANK INFORMATION

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Lab Sample ID BLK973721
File # Z4082110-33
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared 08/08/97
Date Analyzed 08/21/97 13:37:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Analyte	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	< DL	0.00151	0.00151

08/22/97 10:01:21

LABORATORY CONTROL SAMPLE

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Work Order # 9708155

Method Arsenic by SW7060A
Test Code ASGSWA00
Date Prepared 08/08/97
Date Analyzed 08/21/97 13:54:00
Instrument Z4
Column
Analyst MSC
Reviewer DLC
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 50 (mL)
Extract Mass or Vol 50 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS	1 ml		

	LCS Lab Sample ID LCS976365 File ID Z4082110-35			LCS Duplicate Lab Sample ID LCSD976365 File ID Z4082110-36			Recovery Spec. Limits		RPD	
Analyte	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Arsenic	0.0500	0.0489	98	0.0500	0.0482	96	75	125	2.1	20

MATRIX SPIKE(S)

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Work Order # 9708155

Project Sample ID IPW0897W12
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/21/97 14:24:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Spike Sol'n #	Vol. Added
Surrogate Sol'n	**Vol. Added**

Sample	Spiked Sample	Spiked Sample Dup	Recovery Specification Limits	RPD
Lab Sample ID: 9708155-04A	Lab Sample ID: 9708155-05A MS	Lab Sample ID: 9708155-06A MSD		
File # Z4082110-37	File # Z4082110-40	File # Z4082110-41		
Aliquot Mass/Vol: 50 (mL)	Aliquot Mass/Vol: 50 (mL)	Aliquot Mass/Vol: 50 (mL)		
Extract Mass/Vol: 50 (mL)	Extract Mass/Vol: 50 (mL)	Extract Mass/Vol: 50 (mL)		
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1		

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Specification Limit %
Arsenic	0.050	0.00669	0.0500	0.0581	103	0.0500	0.0566	100	75	125	3.0	20

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # AAZ4 70821102702
Initial Calibration # Z4970821102700

Lab Sample ID CCV
File # Z4082110-45
Method Arsenic by SW7060A
Test Code ASGSMA00

Date Analyzed 08/21/97 14:47:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument Z4
Analyst MSC
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Arsenic	0.0503	0.0500	101	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Work Order # 9708155

Analysis Batch # AAZ4 70821102702

Initial Calibration # Z4970821102700

Lab Sample ID ICV
File # Z4082110-31
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Analyzed 08/21/97 13:26:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument Z4
Analyst MSC
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Arsenic	0.0496	0.0500	99	90	110

08/22/97 10:01:21

ANALYTICAL SPIKE(S)

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Work Order # 9708155
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Project Sample ID IPW0897W12
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/21/97 14:13:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Spike Sol'n #	Vol. Added
Surrogate Sol'n	**Vol. Added**

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID 9708155-04A	Lab Sample ID 9708155-04A	Lab Sample ID
File # Z4082110-37	File # Z4082110-39	File #
Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol
Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)	Extract Mass/Vol
Dil Fact. 1	Dil Fact. 1	Dil Fact.

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc.	Measured Conc.	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %
Arsenic	0.020	0.00669	0.0200	0.0266	99				85	115		

08/22/97 10:01:21

SERIAL DILUTION CHECK

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Work Order # 9708155
Page 21

Project Sample ID IPW0897W12
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared 08/08/97
Date Analyzed 08/21/97 14:07:00

Instrument Z4
Analyst MSC
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received

	Sample Result Lab Sample ID 9708155-04A Dilution Factor 1		Diluted Sample Result Lab Sample ID 9708155-04A Dilution Factor 5		% Difference	
Analyte	Measured Concentration mg/L	Detection Limit mg/L	Measured Concentration mg/L	Detection Limit mg/L	Result	Specification Limit %
Arsenic	0.00669	0.00151	< DL	0.00755	1.6	10

ANALYTICAL PROTOCOL SUMMARY
COMMENTS/NARRATIVE

Method Arsenic by SW7060A Specification# XXGS

Lab Sample ID File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action

08/22/97 10:00:21

RADIAN ANALYTICAL SERVICES
FPAS REPORT
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Work Order # 9708174

Client INTERNATIONAL PAPER
Facility
Client Code IP WILM

Certified By Julie A Peacock
Date 8/22/97

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FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

ANALYTICAL PROTOCOL SUMMARY

Work Order # 9708174

Client INTERNATIONAL PAPER

Specification # XXGS

Facility

Client Code IP WILM

Method Arsenic by SW7060A

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
IPW0897W06	9708174-01A	ASGSWA00	GDIG970814080000	AAZ4__70821102701
IPW0897W07	9708174-02A	ASGSWA00	GDIG970814080000	AAZ4__70821102701
IPW0897W09	9708174-03A	ASGSWA00	GDIG970814080000	AAZ4__70821102701

RESULTS SUMMARY

Method Arsenic by SW7060A

Test Code ASGSWA00

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708174-01A		9708174-02A		9708174-03A			
File ID:	Z4082110-27		Z4082110-28		Z4082110-13			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/14/97		08/14/97		08/14/97			
Date Analyzed:	08/21/97 12:54:00		08/21/97 13:00:00		08/21/97 11:36:00			
Dilution Factor:	4		1		1			
Matrix:	Water		Water		Water			
Units:	mg/L		mg/L		mg/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Arsenic	0.151	0.00604	0.00350	0.00151	0.0199	0.00151		

08/22/97 10:00:21

INITIAL CALIBRATION

Work Order # 9708174

Initial Calibration # Z4970821102700

Calibration Date 08/21/97 10:27:00

Sol'n # _____

Method Arsenic by SW7060A

Test Code ASGSWA00

Instrument Z4

Analyst MSC

Reviewer DLC

Analytes	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response _____ Reference Conc.	Response _____ Reference Conc.	Correlation Coefficient
Arsenic	0.000 0.0	0.0065190 0.003	0.0293979 0.015	0.0595302 0.030	0.1148841 0.060			1.000

Specification Limits for correlation coefficient >0.995

LABORATORY BLANK INFORMATION

Digestion Batch # GDIG970814080000
Analysis Batch # AAZ4 70821102701

Lab Sample ID BLK973758
File # Z4082110-8
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared 08/14/97
Date Analyzed 08/21/97 11:08:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Analyte	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	ND	0.00151	0.00151

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W07 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-02A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9141 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 14:09 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	84-74-2	ND	0.310	0.310
Di-n-octylphthalate	117-84-0	ND	0.210	0.210
Dibenz(a,h)anthracene	53-70-3	ND	0.236	0.236
Dibenzofuran	132-64-9	ND	0.348	0.348
1,2-Dichlorobenzene	95-50-1	ND	0.535	0.535
1,3-Dichlorobenzene	541-73-1	ND	0.405	0.405
1,4-Dichlorobenzene	106-46-7	ND	0.429	0.429
3,3'-Dichlorobenzidine	91-94-1	ND	0.644	0.644
2,4-Dichlorophenol	120-83-2	ND	0.395	0.395
2,6-Dichlorophenol	87-65-0	ND	0.486	0.486
Diethylphthalate	84-66-2	ND	0.314	0.314
p-Dimethylaminoazobenzene	60-11-7	ND	0.581	0.581
7,12-Dimethylbenz(a)anthracene	57-97-6	ND	3.62	3.62
Dimethylphenethylamine	122-09-8	ND	7.59	7.59
2,4-Dimethylphenol	105-67-9	ND	0.458	0.458
Dimethylphthalate	131-11-3	ND	0.305	0.305
4,6-Dinitro-2-methylphenol	534-52-1	ND	1.33	1.33
2,4-Dinitrophenol	51-28-5	ND	11.7	11.7
2,4-Dinitrotoluene	121-14-2	ND	0.363	0.363
2,6-Dinitrotoluene	606-20-2	ND	0.971	0.971
Diphenylamine/N-NitrosoDPA	122-39-4	ND	0.556	0.556
Ethyl methanesulfonate	62-50-0	ND	0.392	0.392
bis(2-Ethylhexyl)phthalate	117-81-7	2.07	0.981	0.981
Fluoranthene	206-44-0	ND	0.297	0.297
Fluorene	86-73-7	ND	0.361	0.361

R E S U L T S (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W07 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-02A | Date Received 08/08/97 | Column ___ | Spikes Subset ___ | Report As received

File # U9141 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture ___

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 14:09 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	118-74-1	ND	0.296	0.296
Hexachlorobutadiene	87-68-3	ND	1.21	1.21
Hexachlorocyclopentadiene	77-47-4	ND	3.26	3.26
Hexachloroethane	67-72-1	ND	0.731	0.731
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.314	0.314
Isophorone	78-59-1	ND	0.270	0.270
Methyl methanesulfonate	66-27-3	ND	0.800	0.800
3-Methylcholanthrene	56-49-5	ND	2.94	2.94
2-Methylnaphthalene	91-57-6	ND	0.830	0.830
4-Methylphenol/3-Methylphenol	NO_CAS	ND	0.449	0.449
2-Methylphenol	95-48-7	ND	0.349	0.349
N-Nitroso-di-n-butylamine	924-16-3	ND	1.43	1.43
N-Nitroso-di-n-propylamine	621-64-7	ND	0.350	0.350
N-Nitrosodimethylamine	62-75-9	ND	1.12	1.12
N-Nitrosopiperidine	100-75-4	ND	0.451	0.451
Naphthalene	91-20-3	ND	0.405	0.405
1-Naphthylamine	134-32-7	ND	7.73	7.73
2-Naphthylamine	91-59-8	ND	4.27	4.27
2-Nitroaniline	88-74-4	ND	0.545	0.545
3-Nitroaniline	99-09-2	ND	0.851	0.851
4-Nitroaniline	100-01-6	ND	2.27	2.27
Nitrobenzene	98-95-3	ND	0.298	0.298
2-Nitrophenol	88-75-5	ND	0.261	0.261
4-Nitrophenol	100-02-7	ND	2.16	2.16
Pentachlorobenzene	608-93-5	ND	0.308	0.308

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W07 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-02A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9141 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 14:09 | Reviewer SDK

Test Code 827SWATX

Aliquot Mass/Volume 1050 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	82-68-8	ND	1.86	1.86
Pentachlorophenol	87-86-5	ND	7.23	7.23
Phenacetin	62-44-2	ND	0.462	0.462
Phenanthrene	85-01-8	ND	0.325	0.325
Phenol	108-95-2	ND	1.51	1.51
2-Picoline	109-06-8	ND	1.68	1.68
Pronamide	23950-58-5	ND	0.572	0.572
Pyrene	129-00-0	ND	0.349	0.349
Pyridine	110-86-1	ND	1.32	1.32
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	0.354	0.354
2,3,4,6-Tetrachlorophenol	58-90-2	ND	0.407	0.407
1,2,4-Trichlorobenzene	120-82-1	ND	0.390	0.390
2,4,5-Trichlorophenol	95-95-4	ND	0.290	0.290
2,4,6-Trichlorophenol	88-06-2	ND	0.288	0.288

R E S U L T S (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Project Sample ID IPW0897W07 | Date Collected 08/07/97 | Instrument MSD2 | Reporting Subset ___ | Matrix W

Lab Sample ID 9708172-02A | Date Received 08/08/97 | Column _____ | Spikes Subset ___ | Report As received

File # U9141 | Date Prepared 08/11/97 13:40: | Analyst MCL | Specs Subset ___ | % Moisture _____

Method Semivolatiles by SW8270B | Date Analyzed 08/14/97 14:09 | Reviewer SDK

Test Code 827SWATX

Surrogate(s)	CAS #	Spiked Conc. ug/L	Measured Concentration ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	321-60-8	95.2	94.8	100	43	116
2-Fluorophenol	367-12-4	190	167	88	60	124
Nitrobenzene-d5	4165-60-0	95.2	97.3	102	45	114
Phenol-d5	4165-62-2	190	197	104	28	122
Terphenyl-d14	1718-51-0	95.2	90.5	95	66	122
2,4,6-Tribromophenol	118-79-6	190	193	102	26	123

LABORATORY BLANK INFORMATION

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Lab Sample ID BLK973729
File # U9136
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40
Date Analyzed 08/14/97 10:54

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Acenaphthene	ND	0.517	0.517
Acenaphthylene	ND	0.269	0.269
Acetophenone	ND	0.328	0.328
4-Aminobiphenyl	ND	1.71	1.71
Aniline	ND	0.841	0.841
Anthracene	ND	0.249	0.249
Benz(a)anthracene	ND	0.220	0.220
Benz(a)pyrene	ND	0.271	0.271
Benzidine	ND	46.6	46.6
Benzo(b)fluoranthene	ND	0.247	0.247
Benzo(g,h,i)perylene	ND	0.263	0.263
Benzo(k)fluoranthene	ND	0.308	0.308
Benzoic acid	ND	6.44	6.44
Benzyl alcohol	ND	0.378	0.378
4-Bromophenylphenyl ether	ND	0.282	0.282
Butylbenzylphthalate	ND	0.199	0.199
4-Chloro-3-methylphenol	ND	0.438	0.438
p-Chloroaniline	ND	0.507	0.507
bis(2-Chloroethoxy)methane	ND	0.214	0.214
bis(2-Chloroethyl)ether	ND	0.381	0.381
bis(2-Chloroisopropyl)ether	ND	0.319	0.319
2-Chloronaphthalene	ND	0.466	0.466
2-Chlorophenol	ND	0.217	0.217
4-Chlorophenylphenyl ether	ND	0.439	0.439
Chrysene	ND	0.309	0.309

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Lab Sample ID BLK973729
File # U9136
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:54

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Di-n-butylphthalate	ND	0.325	0.325
Di-n-octylphthalate	ND	0.221	0.221
Dibenz(a,h)anthracene	ND	0.248	0.248
Dibenzofuran	ND	0.365	0.365
1,2-Dichlorobenzene	ND	0.562	0.562
1,3-Dichlorobenzene	ND	0.425	0.425
1,4-Dichlorobenzene	ND	0.450	0.450
3,3'-Dichlorobenzidine	ND	0.676	0.676
2,4-Dichlorophenol	ND	0.415	0.415
2,6-Dichlorophenol	ND	0.510	0.510
Diethylphthalate	ND	0.330	0.330
p-Dimethylaminoazobenzene	ND	0.610	0.610
7,12-Dimethylbenz(a)anthracene	ND	3.80	3.80
Dimethylphenethylamine	ND	7.97	7:97
2,4-Dimethylphenol	ND	0.481	0.481
Dimethylphthalate	ND	0.320	0.320
4,6-Dinitro-2-methylphenol	ND	1.40	1.40
2,4-Dinitrophenol	ND	12.3	12.3
2,4-Dinitrotoluene	ND	0.381	0.381
2,6-Dinitrotoluene	ND	1.02	1.02
Diphenylamine/N-NitrosoDPA	ND	0.584	0.584
Ethyl methanesulfonate	ND	0.412	0.412
bis(2-Ethylhexyl)phthalate	ND	1.03	1.03
Fluoranthene	ND	0.312	0.312
Fluorene	ND	0.379	0.379

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Lab Sample ID BLK973729
File # U9136
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:54

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Hexachlorobenzene	ND	0.311	0.311
Hexachlorobutadiene	ND	1.27	1.27
Hexachlorocyclopentadiene	ND	3.42	3.42
Hexachloroethane	ND	0.768	0.768
Indeno(1,2,3-cd)pyrene	ND	0.330	0.330
Isophorone	ND	0.284	0.284
Methyl methanesulfonate	ND	0.840	0.840
3-Methylcholanthrene	ND	3.09	3.09
2-Methylnaphthalene	ND	0.872	0.872
4-Methylphenol/3-Methylphenol	ND	0.471	0.471
2-Methylphenol	ND	0.366	0.366
N-Nitroso-di-n-butylamine	ND	1.50	1.50
N-Nitroso-di-n-propylamine	ND	0.367	0.367
N-Nitrosodimethylamine	ND	1.18	1.18
N-Nitrosopiperidine	ND	0.474	0.474
Naphthalene	ND	0.425	0.425
1-Naphthylamine	ND	8.12	8.12
2-Naphthylamine	ND	4.48	4.48
2-Nitroaniline	ND	0.572	0.572
3-Nitroaniline	ND	0.894	0.894
4-Nitroaniline	ND	2.38	2.38
Nitrobenzene	ND	0.313	0.313
2-Nitrophenol	ND	0.274	0.274
4-Nitrophenol	ND	2.27	2.27
Pentachlorobenzene	ND	0.323	0.323

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Lab Sample ID BLK973729
File # U9136
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:54

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 1000 (mL)
Extract/Digestate Volume 1.0 (mL)
Dilution Factor 1

Analyte	Measured Conc. ug/L	Detection Limit ug/L	Reporting Limit ug/L
Pentachloronitrobenzene	ND	1.95	1.95
Pentachlorophenol	ND	7.59	7.59
Phenacetin	ND	0.485	0.485
Phenanthrene	ND	0.341	0.341
Phenol	ND	1.59	1.59
2-Picoline	ND	1.76	1.76
Pronamide	ND	0.601	0.601
Pyrene	ND	0.366	0.366
Pyridine	ND	1.39	1.39
1,2,4,5-Tetrachlorobenzene	ND	0.372	0.372
2,3,4,6-Tetrachlorophenol	ND	0.427	0.427
1,2,4-Trichlorobenzene	ND	0.410	0.410
2,4,5-Trichlorophenol	ND	0.304	0.304
2,4,6-Trichlorophenol	ND	0.302	0.302

LABORATORY BLANK INFORMATION (cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Lab Sample ID BLK973729
File # U9136
Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:54

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Surrogate(s)	Spiked Conc. ug/L	Measured Conc. ug/L	Recovery %	Specification Limits Low %	Specification Limits High %
2-Fluorobiphenyl	100	101	101	43	116
2-Fluorophenol	200	176	88	60	124
Nitrobenzene-d5	100	107	107	45	114
Phenol-d5	200	197	98	28	122
Terphenyl-d14	100	103	103	66	122
2,4,6-Tribromophenol	200	199	99	26	123

08/18/97 09:22:47

LABORATORY CONTROL SAMPLE

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Work Order # 9708172

Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:16

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

LCS Lab Sample ID LCS976382 File ID U9134

LCS Duplicate Lab Sample ID LCSD976382 File ID U9135

Analyte	LCS Spiked Conc. ug/L	LCS Measured Conc. ug/L	LCS Rec. %	LCSD Spiked Conc. ug/L	LCSD Measured Conc. ug/L	LCSD Rec. %	Recovery Spec. Limits Low %	Recovery Spec. Limits High %	RPD Result %	RPD Spec. Limit %
Acenaphthene	100	108	108	100	110	110	76	133	1.8	21
Acenaphthylene	100	106	106	100	107	107	74	134	0.94	21
Aniline	100	68.0	68	100	62.9	63	22	113	7.6	32
Anthracene	100	106	106	100	105	105	68	128	0.95	21
Benz(a)anthracene	100	107	107	100	107	107	82	132	0	21
Benz(a)pyrene	100	106	106	100	107	107	77	141	0.94	19
Benzidine	100	5.41	5.4	100	ND	NC	0.1	75	NC	263
Benzo(b)fluoranthene	100	96.2	96	100	95.3	95	73	135	1.0	28
Benzo(g,h,i)perylene	100	113	113	100	113	113	74	144	0	20
Benzo(k)fluoranthene	100	97.1	97	100	103	103	64	148	6.0	26
Benzoic acid	100	89.3	89	100	90.8	91	0.1	230	2.2	140
Benzyl alcohol	100	96.2	96	100	96.8	97	66	138	1.0	19
4-Bromophenylphenyl ether	100	118	118	100	117	117	69	127	0.85	18
Butylbenzylphthalate	100	102	102	100	100	100	69	150	2.0	25
4-Chloro-3-methylphenol	100	108	108	100	110	110	64	141	1.8	19
p-Chloroaniline	100	93.7	94	100	90.7	91	50	134	3.2	26
bis(2-Chloroethoxy)methane	100	99.7	100	100	100	100	75	137	0	21
bis(2-Chloroethyl)ether	100	90.3	90	100	88.9	89	76	124	1.1	21
bis(2-Chloroisopropyl)ether	100	84.0	84	100	83.8	84	68	128	0	23
2-Chloronaphthalene	100	108	108	100	110	110	72	118	1.8	16

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:16

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

Analyte	LCS Lab Sample ID LCS976382 File ID U9134			LCS Duplicate Lab Sample ID LCSD976382 File ID U9135			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
2-Chlorophenol	100	96.6	97	100	96.8	97	81	117	0	17
4-Chlorophenylphenyl ether	100	118	118	100	118	118	79	133	0	18
Chrysene	100	110	110	100	109	109	85	133	0.91	21
Di-n-butylphthalate	100	100	100	100	101	101	68	135	1.00	21
Di-n-octylphthalate	100	101	101	100	103	103	54	146	2.0	22
Dibenz(a,h)anthracene	100	115	115	100	116	116	73	145	0.87	20
Dibenzofuran	100	104	104	100	105	105	82	130	0.96	16
1,2-Dichlorobenzene	100	99.2	99	100	102	102	73	121	3.0	22
1,3-Dichlorobenzene	100	94.8	95	100	98.2	98	70	120	3.1	27
1,4-Dichlorobenzene	100	97.1	97	100	101	101	70	120	4.0	24
3,3'-Dichlorobenzidine	100	116	116	100	98.6	99	49	140	16	33
2,4-Dichlorophenol	100	108	108	100	111	111	60	135	2.7	19
Diethylphthalate	100	106	106	100	109	109	83	123	2.8	15
2,4-Dimethylphenol	100	82.9	83	100	92.5	93	32	119	11	33
Dimethylphthalate	100	110	110	100	112	112	84	130	1.8	21
4,6-Dinitro-2-methylphenol	100	137	137	100	136	136	53	163	0.73	18
2,4-Dinitrophenol	100	140	140	100	138	138	24	191	1.4	23
2,4-Dinitrotoluene	100	126	126	100	128	128	72	139	1.6	20
2,6-Dinitrotoluene	100	116	116	100	117	117	76	140	0.86	18
Diphenylamine/N-NitrosoDPA	100	104	104	100	100.0	100	47	117	3.9	21

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Method Semivolatiles by SW8270B
Test Code 827SWATX
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:16
Instrument MSD2
Column
Analyst MCL
Reviewer SDK
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

LCS Lab Sample ID LCS976382 File ID U9134

LCS Duplicate Lab Sample ID LCSD976382 File ID U9135

Analyte	LCS Spiked Conc. ug/L	LCS Measured Conc. ug/L	LCS Rec. %	LCSD Spiked Conc. ug/L	LCSD Measured Conc. ug/L	LCSD Rec. %	Recovery Spec. Limits Low %	Recovery Spec. Limits High %	RPD Result %	RPD Spec. Limit %
bis(2-Ethylhexyl)phthalate	100	98.8	99	100	99.4	99	74	144	0	22
Fluoranthene	100	109	109	100	109	109	77	129	0	19
Fluorene	100	109	109	100	110	110	79	121	0.91	17
Hexachlorobenzene	100	109	109	100	109	109	66	126	0	19
Hexachlorobutadiene	100	104	104	100	112	112	51	147	7.4	20
Hexachlorocyclopentadiene	100	52.8	53	100	52.4	52	0.1	148	1.9	49
Hexachloroethane	100	101	101	100	105	105	62	127	3.9	28
Indeno(1,2,3-cd)pyrene	100	112	112	100	113	113	75	141	0.89	19
Isophorone	100	92.0	92	100	93.8	94	81	133	2.2	18
2-Methylnaphthalene	100	98.2	98	100	100	100	63	134	2.0	21
4-Methylphenol/3-Methylphenol	100	102	102	100	101	101	62	126	0.98	17
2-Methylphenol	100	96.2	96	100	96.7	97	72	126	1.0	19
N-Nitroso-di-n-propylamine	100	99.7	100	100	103	103	68	128	3.0	21
N-Nitrosodimethylamine	100	103	103	100	110	110	27	155	6.6	24
Naphthalene	100	105	105	100	109	109	70	133	3.7	17
2-Nitroaniline	100	110	110	100	112	112	69	140	1.8	24
3-Nitroaniline	100	107	107	100	104	104	69	133	2.8	22
4-Nitroaniline	100	116	116	100	110	110	59	137	5.3	19
Nitrobenzene	100	107	107	100	113	113	74	142	5.4	22
2-Nitrophenol	100	116	116	100	116	116	67	149	0	19

08/18/97 09:22:47

LABORATORY CONTROL SAMPLE Cont'd

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Work Order # 9708172

Method Semivolatiles by SW8270B
Test Code 827SWATX

Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 10:16

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 1000 (mL)
Extract Mass or Vol 1.0 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-772-D	100 uL	SP-1-745-AG	100 uL
SP-1-773-D	250 uL		

Analyte	LCS Lab Sample ID LCS976382 File ID U9134			LCS Duplicate Lab Sample ID LCSD976382 File ID U9135			Recovery Spec. Limits		RPD	
	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Low %	High %	Result %	Spec. Limit %
4-Nitrophenol	100	117	117	100	118	118	56	131	0.85	20
Pentachlorophenol	100	112	112	100	111	111	47	143	0.90	18
Phenanthrene	100	109	109	100	110	110	74	132	0.91	17
Phenol	100	94.2	94	100	89.2	89	70	123	5.5	18
Pyrene	100	107	107	100	107	107	74	148	0	21
1,2,4-Trichlorobenzene	100	105	105	100	109	109	71	129	3.7	16
2,4,5-Trichlorophenol	100	118	118	100	119	119	80	132	0.84	15
2,4,6-Trichlorophenol	100	112	112	100	113	113	76	128	0.89	15

Surrogate(s)									
2-Fluorobiphenyl	100	106	106	100	106	106	43	116	
2-Fluorophenol	200	176	88	200	171	85	60	124	
Nitrobenzene-d5	100	102	102	100	106	106	45	114	
Phenol-d5	200	215	107	200	199	100	28	122	
Terphenyl-d14	100	105	105	100	105	105	66	122	
2,4,6-Tribromophenol	200	214	107	200	218	109	26	123	

MATRIX SPIKE(S)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Work Order # 9708172

Project Sample ID IPW0897W09
Method Semivolatiles by SW8270B
Test Code 827SWAMS

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 12:51

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Spike Sol'n #	Vol. Added
SP-1-772-D	100 uL
SP-1-773-D	250 uL
Surrogate Sol'n	**Vol. Added**
SP-1-745-AG	100 uL

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID	Lab Sample ID	Lab Sample ID
9708172-03A	9708172-04A MS	9708172-05A MSD
File # U9137	File # U9138	File # U9139
Aliquot Mass/Vol	Aliquot Mass/Vol	Aliquot Mass/Vol
1050 (mL)	1070 (mL)	1070 (mL)
Extract Mass/Vol	Extract Mass/Vol	Extract Mass/Vol
1.0 (mL)	1.0 (mL)	1.0 (mL)
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1

Analyte	Spike Sol'n Conc. ug/mL	Measured Conc. ug/L	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %
Acenaphthene	400	ND	93.5	103	110	93.5	95.4	102	76	133	7.6	21
4-Chloro-3-methylphenol	1000	ND	93.5	103	110	93.5	95.9	103	64	141	6.6	19
2-Chlorophenol	1000	ND	93.5	94.2	101	93.5	88.5	95	81	117	6.1	17
1,4-Dichlorobenzene	400	ND	93.5	95.5	102	93.5	88.2	94	70	120	8.2	24
2,4-Dinitrotoluene	400	ND	93.5	116	124	93.5	108	115	72	139	7.5	20
N-Nitroso-di-n-propylamine	400	ND	93.5	99.1	106	93.5	93.4	100	68	128	5.8	21
4-Nitrophenol	1000	ND	93.5	103	110	93.5	101	109	56	131	0.91	20
Pentachlorophenol	1000	ND	93.5	106	114	93.5	100	107	47	143	6.3	18
Phenol	1000	3.80	93.5	94.3	97	93.5	90.7	93	70	123	4.2	18
Pyrene	400	ND	93.5	102	109	93.5	92.3	99	74	148	9.6	21
1,2,4-Trichlorobenzene	400	ND	93.5	96.3	103	93.5	90.3	97	71	129	6.0	16

MATRIX SPIKE(S) (Cont'd)

Extraction Batch # 3520970811134000
Analysis Batch # MSMSD270814082701

Work Order # 9708172

Project Sample ID IPW0897W09
Method Semivolatiles by SW8270B
Test Code 827SWAMS

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97 13:40:
Date Analyzed 08/14/97 12:51

Instrument MSD2
Column
Analyst MCL
Reviewer SDK

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Spike Sol'n #	Vol. Added
SP-1-772-D	100 uL
SP-1-773-D	250 uL
Surrogate Sol'n	**Vol. Added**
SP-1-745-AG	100 uL

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID	Lab Sample ID	Lab Sample ID
9708172-03A	9708172-04A MS	9708172-05A MSD
File # U9137	File # U9138	File # U9139
Aliquot Mass/Vol	Aliquot Mass/Vol	Aliquot Mass/Vol
1050 (mL)	1070 (mL)	1070 (mL)
Extract Mass/Vol	Extract Mass/Vol	Extract Mass/Vol
1.0 (mL)	1.0 (mL)	1.0 (mL)
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1

Analyte	Spike Sol'n Conc. ug/mL	Measured Conc. ug/L	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %

Surrogate(s)											
2-Fluorobiphenyl	1000	98.3	93.5	98.4	105	93.5	90.9	97	43	116	
2-Fluorophenol	2000	170	187	167	90	187	159	85	60	124	
Nitrobenzene-d5	1000	95.7	93.5	92.8	99	93.5	88.4	94	45	114	
Phenol-d5	2000	207	187	195	105	187	191	102	28	122	
Terphenyl-d14	1000	94.5	93.5	94.4	101	93.5	86.3	92	66	122	
2,4,6-Tribromophenol	2000	198	187	201	108	187	190	102	26	123	

08/18/97 09:22:47

MATRIX SPIKE(S)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Work Order # 9708172

Project Sample ID _____

Method Method SW8270B plus extras

Test Code 827SWXMS

Date Collected 08/06/97

Date Received 08/08/97

Date Prepared 08/11/97 13:40:

Date Analyzed 08/14/97 16:44

Instrument MSD2

Column _____

Analyst MCL

Reviewer SDK

Reporting Subset ___ ___

Spikes Subset ___ ___

Specs Subset ___ ___

Matrix W

Report As received

% Moisture _____

Spike Sol'n #	Vol. Added
SP-1-772-D	100 uL
SP-1-773-D	250 uL
Surrogate Sol'n	**Vol. Added**
SP-1-745-AG	100 uL

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID	Lab Sample ID	Lab Sample ID
9708175-01A	9708175-03A MS	9708175-04A MSD
File # U9143	File # U9144	File # U9145
Aliquot Mass/Vol	Aliquot Mass/Vol	Aliquot Mass/Vol
1010 (mL)	1030 (mL)	1000 (mL)
Extract Mass/Vol	Extract Mass/Vol	Extract Mass/Vol
1.0 (mL)	1.0 (mL)	1.0 (mL)
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1

Analyte	Spike Sol'n Conc. ug/mL	Measured Conc. ug/L	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %
Acenaphthene	400	ND	97.1	105	108	100	110	110	76	133	1.8	21
4-Chloro-3-methylphenol	1000	ND	97.1	102	105	100	108	108	64	141	2.8	19
2-Chlorophenol	1000	ND	97.1	97.4	100	100	100	100	81	117	0	17
1,4-Dichlorobenzene	400	ND	97.1	99.3	102	100	102	102	70	120	0	24
2,4-Dinitrotoluene	400	ND	97.1	117	120	100	123	123	72	139	2.5	20
N-Nitroso-di-n-propylamine	400	ND	97.1	98.8	102	100	103	103	68	128	0.98	21
4-Nitrophenol	1000	ND	97.1	106	109	100	114	114	56	131	4.5	20
Pentachlorophenol	1000	ND	97.1	105	108	100	110	110	47	143	1.8	18
Phenol	1000	ND	97.1	90.9	94	100	96.0	96	70	123	2.1	18
Pyrene	400	ND	97.1	101	104	100	104	104	74	148	0	21
1,2,4-Trichlorobenzene	400	ND	97.1	99.9	103	100	105	105	71	129	1.9	16

MATRIX SPIKE(S) (Cont'd)

Extraction Batch # 3520970811134000

Analysis Batch # MSMSD270814082701

Work Order # 9708172

Project Sample ID

Method Method SW8270B plus extras

Test Code 827SWXMS

Date Collected 08/06/97

Date Received 08/08/97

Date Prepared 08/11/97 13:40:

Date Analyzed 08/14/97 16:44

Instrument MSD2

Column

Analyst MCL

Reviewer SDK

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Spike Sol'n #	Vol. Added
SP-1-772-D	100 uL
SP-1-773-D	250 uL
Surrogate Sol'n	Vol. Added
SP-1-745-AG	100 uL

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID	Lab Sample ID	Lab Sample ID
9708175-01A	9708175-03A MS	9708175-04A MSD
File # U9143	File # U9144	File # U9145
Aliquot Mass/Vol	Aliquot Mass/Vol	Aliquot Mass/Vol
1010 (mL)	1030 (mL)	1000 (mL)
Extract Mass/Vol	Extract Mass/Vol	Extract Mass/Vol
1.0 (mL)	1.0 (mL)	1.0 (mL)
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1

Analyte	Spike Sol'n Conc. ug/mL	Measured Conc. ug/L	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Spiked Conc. ug/L	Measured Conc. ug/L	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %

Surrogate(s)											
2-Fluorobiphenyl	1000	93.7	97.1	102	105	100	106	106	43	116	
2-Fluorophenol	2000	162	194	175	90	200	185	92	60	124	
Nitrobenzene-d5	1000	94.1	97.1	98.4	101	100	103	103	45	114	
Phenol-d5	2000	185	194	200	103	200	218	109	28	122	
Terphenyl-d14	1000	88.3	97.1	98.4	101	100	100	100	66	122	
2,4,6-Tribromophenol	2000	181	194	205	106	200	215	107	26	123	

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSD270814082701
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/14/97 08:47 Reporting Subset ___ Instrument MSD2
File # U9133 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acenaphthene	50.9	50.0	102	80	120
Acenaphthylene	52.4	50.0	105		
Acetophenone	48.8	50.0	98		
2-Acetylaminofluorene	48.3	50.0	97		
4-Aminobiphenyl	72.6	50.0	145		
Aniline	53.8	50.0	108		
Anthracene	52.7	50.0	105		
Benz(a)anthracene	49.2	50.0	98		
Benz(a)pyrene	52.4	50.0	105	80	120
Benzidine	72.5	50.0	145		
Benzo(b)fluoranthene	44.1	50.0	88		
Benzo(g,h,i)perylene	52.4	50.0	105		
Benzo(k)fluoranthene	48.4	50.0	97		
Benzoic acid	8.14	50.0	16		
Benzyl alcohol	51.1	50.0	102		
4-Bromophenylphenyl ether	53.8	50.0	108		
Butylbenzylphthalate	46.4	50.0	93		
Carbazole	53.7	50.0	107		
4-Chloro-3-methylphenol	50.3	50.0	101	80	120
p-Chloroaniline	56.5	50.0	113		
Chlorobenzilate	48.0	50.0	96		
bis(2-Chloroethoxy)methane	48.4	50.0	97		
bis(2-Chloroethyl)ether	47.6	50.0	95		
bis(2-Chloroisopropyl)ether	44.3	50.0	88		
2-Chloronaphthalene	50.6	50.0	101		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270814082701
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/14/97 08:47 Reporting Subset ___ Instrument MSD2
File # U9133 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
2-Chlorophenol	50.9	50.0	102		
4-Chlorophenylphenyl ether	54.7	50.0	109		
Chrysene	49.5	50.0	99		
Di-n-butylphthalate	47.8	50.0	96		
Di-n-octylphthalate	49.1	50.0	98	80	120
Diallate	51.0	50.0	102		
Dibenz(a,h)anthracene	55.0	50.0	110		
Dibenzofuran	52.5	50.0	105		
1,2-Dichlorobenzene	52.4	50.0	105		
1,3-Dichlorobenzene	50.9	50.0	102		
1,4-Dichlorobenzene	51.9	50.0	104	80	120
3,3'-Dichlorobenzidine	53.8	50.0	108		
2,4-Dichlorophenol	53.4	50.0	107	80	120
2,6-Dichlorophenol	54.2	50.0	108		
Diethylphthalate	49.6	50.0	99		
p-Dimethylaminoazobenzene	48.2	50.0	96		
7,12-Dimethylbenz(a)anthracene	53.0	50.0	106		
3,3'-Dimethylbenzidine	57.8	50.0	116		
Dimethylphenethylamine	45.3	50.0	91		
2,4-Dimethylphenol	52.2	50.0	104		
Dimethylphthalate	50.8	50.0	102		
4,6-Dinitro-2-methylphenol	57.4	50.0	115		
1,3-Dinitrobenzene	56.5	50.0	113		
2,4-Dinitrophenol	53.9	50.0	108		
2,4-Dinitrotoluene	55.9	50.0	112		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270814082701
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/14/97 08:47 Reporting Subset ___ Instrument MSD2
File # U9133 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
2,6-Dinitrotoluene	53.8	50.0	108		
Diphenylamine/N-NitrosoDPA	108	100	108	80	120
Ethyl methanesulfonate	48.3	50.0	97		
bis(2-Ethylhexyl)phthalate	46.1	50.0	92		
Fluoranthene	52.0	50.0	104	80	120
Fluorene	52.6	50.0	105		
Hexachlorobenzene	50.1	50.0	100		
Hexachlorobutadiene	51.5	50.0	103	80	120
Hexachlorocyclopentadiene	62.6	50.0	125		
Hexachloroethane	53.7	50.0	107		
Hexachlorophene	ND	50.0	NC		
Hexachloropropene	58.8	50.0	118		
Indeno(1,2,3-cd)pyrene	52.5	50.0	105		
Isophorone	48.2	50.0	96		
Isosafrole	49.2	50.0	98		
Methapyrilene	47.1	50.0	94		
Methyl methanesulfonate	50.9	50.0	102		
3-Methylcholanthrene	53.2	50.0	106		
2-Methylnaphthalene	52.1	50.0	104		
4-Methylphenol/3-Methylphenol	54.3	50.0	109		
2-Methylphenol	49.7	50.0	99		
N-Nitroso-di-n-butylamine	49.6	50.0	99		
N-Nitroso-di-n-propylamine	52.2	50.0	104		
N-Nitrosodiethylamine	53.3	50.0	107		
N-Nitrosodimethylamine	54.7	50.0	109		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270814082701
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/14/97 08:47 Reporting Subset ___ Instrument MSD2
File # U9133 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
N-Nitrosomethylethylamine	53.0	50.0	106		
N-Nitrosomorpholine	53.0	50.0	106		
N-Nitrosopiperidine	50.1	50.0	100		
N-Nitrosopyrrolidine	58.5	50.0	117		
Naphthalene	52.7	50.0	105		
1,4-Naphthoquinone	53.1	50.0	106		
1-Naphthylamine	51.9	50.0	104		
2-Naphthylamine	42.5	50.0	85		
5-Nitro-o-toluidine	52.9	50.0	106		
2-Nitroaniline	ND	50.0	NC		
3-Nitroaniline	50.5	50.0	101		
4-Nitroaniline	59.7	50.0	119		
Nitrobenzene	52.8	50.0	106		
2-Nitrophenol	55.6	50.0	111	80	120
4-Nitrophenol	52.5	50.0	105		
4-Nitroquinoline-1-oxide	56.9	50.0	114		
Pentachlorobenzene	51.2	50.0	102		
Pentachloroethane	50.7	50.0	101		
Pentachloronitrobenzene	50.8	50.0	102		
Pentachlorophenol	50.3	50.0	101	80	120
Phenacetin	47.3	50.0	95		
Phenanthrene	52.0	50.0	104		
Phenol	52.9	50.0	106	80	120
p-Phenylenediamine	ND	50.0	NC		
2-Picoline	50.9	50.0	102		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION (Cont'd)

Analysis Batch # MSMSD270814082701
Initial Calibration # MSD2970722093900

Lab Sample ID SSTD050 Date Analyzed 08/14/97 08:47 Reporting Subset ___ Instrument MSD2
File # U9133 Spikes Subset ___ Analyst MCL
Method Semivolatiles by SW8270B Specs Subset ___ Reviewer SDK
Test Code 827SWA00

Analyte	Measured Concentration ug/mL	Reference Concentration ug/mL	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Pronamide	25.8	25.0	103		
Pyrene	49.6	50.0	99		
Pyridine	55.9	50.0	112		
Safrole	50.6	50.0	101		
1,2,4,5-Tetrachlorobenzene	51.6	50.0	103		
2,3,4,6-Tetrachlorophenol	51.7	50.0	103		
o-Toluidine	53.1	50.0	106		
1,2,4-Trichlorobenzene	52.2	50.0	104		
2,4,5-Trichlorophenol	52.3	50.0	105		
2,4,6-Trichlorophenol	51.9	50.0	104	80	120
sym-Trinitrobenzene	57.2	50.0	114		

Surrogate(s)					
2-Fluorobiphenyl	51.7	50.0	103		
2-Fluorophenol	103	100	103		
Nitrobenzene-d5	53.1	50.0	106		
Phenol-d5	108	100	108		
Terphenyl-d14	49.4	50.0	99		
2,4,6-Tribromophenol	97.6	100	98		

Method Method SW8270B plus extras Specification# 827S

Lab Sample ID File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action
LCSD976382 U9135		Benzidine		Benzidine was not detected (ND) in the LCSD. As a result, the percent recovery and RPD for this compound were not calculated (NC).	Benzidine is subject to oxidative loss and may not be recovered according to method 8270B. No corrective action necessary.
9708172-03A U9137	IPW0897W09	4-Methylphenol/3-Methylphenol	F	The F flag indicates that 3-methylphenol coelutes with 4-methylphenol. The calibration response factor is based on 4-methylphenol only. Any identification for 4-methylphenol should be regarded as a possible sum of the two indistinguishable isomers.	
9708172-01A U9140	IPW0897W06	4-Methylphenol/3-Methylphenol	F	The F flag indicates that 3-methylphenol coelutes with 4-methylphenol. The calibration response factor is based on 4-methylphenol only. Any identification for 4-methylphenol should be regarded as a possible sum of the two indistinguishable isomers.	
9708172-01A U9140	IPW0897W06	2-Methylphenol	X	The X flag indicates that the concentration for this analyte exceeds the calibration range but the peak is not saturated, so the concentration reported is an accurate reflection of the amount of this analyte present in the sample.	
9708172-01A U9140	IPW0897W06	Benzoic Acid	X	The X flag indicates that the concentration for this analyte exceeds the calibration range but the peak is not saturated, so the concentration reported is an accurate reflection of the amount of this analyte present in the sample.	

08/22/97 10:01:21

RADIAN ANALYTICAL SERVICES
FPAS REPORT
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Work Order # 9708155

Client INTERNATIONAL PAPER
Facility
Client Code IP WILM

Certified By Julie A Pocock
Date 8/22/97

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WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To 3200 E. CHAPEL HILL RD.
RTP, NC 27709
Attention JIM NARKUNAS

Client Code IP WILM
Client INTERNATIONAL PAPER
Facility
Work ID WILMINGTON SEMIANNUA

Work Order # 9708155
Page 1
RCN 258058.1501

Prepared Radian International, LLC
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70117AJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
IPW0897W23	01A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
IPW0897W24	02A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
IPW0897W10	03A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
IPW0897W12	04A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
	05A MS	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
	06A MSD	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals

WORK ORDER COMMENTS

Post digestion spikes not performed on all GFAAS analyses per Item 271 of the New York ELAP manual. Post digestion spikes were performed, as necessary, when recoveries for serial dilutions or matrix spikes for an analytical batch did not fall within recovery tolerances.

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

ANALYTICAL PROTOCOL SUMMARY

Work Order # 9708155

Client INTERNATIONAL PAPER

Specification # XXGS

Facility

Client Code IP WILM

Method Arsenic by SW7060A

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
IPW0897W10	9708155-03A	ASGSWA00	GDIG970808073000	AAZ4__70821102702
IPW0897W12	9708155-04A	ASGSWA00	GDIG970808073000	AAZ4__70821102702
IPW0897W23	9708155-01A	ASGSWA00	GDIG970808073000	AAZ4__70821102702
IPW0897W24	9708155-02A	ASGSWA00	GDIG970808073000	AAZ4__70821102702

RESULTS SUMMARY

Method Arsenic by SW7060A

Test Code ASGSWA00

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708155-03A		9708155-04A		9708155-01A		9708155-02A	
File ID:	Z4082110-44		Z4082110-37		Z4082110-42		Z4082110-43	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/08/97		08/08/97		08/08/97		08/08/97	
Date Analyzed:	08/21/97 14:41:00		08/21/97 14:00:00		08/21/97 14:30:00		08/21/97 14:36:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	mg/L		mg/L		mg/L		mg/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Arsenic	0.0232	0.00151	0.00669	0.00151	0.0305	0.00151	0.0169	0.00151

08/22/97 10:01:21

INITIAL CALIBRATION

Work Order # 9708155

Initial Calibration # Z4970821102700

Calibration Date 08/21/97 10:27:00

Sol'n # _____

Method Arsenic by SW7060A

Test Code ASGSWA00

Instrument Z4

Analyst MSC

Reviewer DLC

Analytes	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response ____ Reference Conc.	Response ____ Reference Conc.	Correlation Coefficient
Arsenic	0.000 0.0	0.0065190 0.003	0.0293979 0.015	0.0595302 0.030	0.1148841 0.060			1.000

Specification Limits for correlation coefficient >0.995

DIGESTION BATCH SUMMARY

Digestion Batch # GDIG970808073000

Work Order # 9708155

Method Digestion by Mod. SW3020A
Test Code DIFSWA00

Extraction Start Date/Time 08/08/97 07:30:00
Extraction Stop Date/Time

Analyst HD
Reviewer MSC

Sample	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
1	IPW0897W23	9708155-01A	50	
2	IPW0897W24	9708155-02A	50	
3	IPW0897W10	9708155-03A	50	
4	IPW0897W12	9708155-04A	50	
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Quality Control	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
Blank		BLK973721	50	
Detectability Check Sample		DCS976366	50	
Laboratory Control Sample		LCSD976365	50	
Laboratory Control Sample Duplicate		LCSD976365	50	
Matrix Spike	IPW0897W12	9708155-05A	50	
Matrix Spike Duplicate	IPW0897W12	9708155-06A	50	

ANALYSIS BATCH SUMMARY

Analysis Batch # AAZ4 70821102702

Work Order # 9708155

Method Arsenic by SW7060A
Test Code ASGSWA00
Initial Calibration # Z4970821102700
Calibration Date 08/21/97

Analysis Start Date/Time 08/21/97 10:27:00
Analysis Stop Date/Time 08/21/97 14:58:00

Instrument Z4
Analyst MSC
Reviewer DLC

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/21/97 10:27:00		S_0	Initial Calibration Blank	Z4082110-1
2	08/21/97 10:33:00		S 3	Initial Calibration Standard 1	Z4082110-2
3	08/21/97 10:39:00		S 15	Initial Calibration Standard 2	Z4082110-3
4	08/21/97 10:44:00		S 30	Initial Calibration Standard 3	Z4082110-4
5	08/21/97 10:51:00		S 60	Initial Calibration Standard 4	Z4082110-5
31	08/21/97 13:26:00		ICV	Initial Calibration Verification	Z4082110-31
32	08/21/97 13:31:00		ICB	Blank, Initial Calibration	Z4082110-32
33	08/21/97 13:37:00		BLK973721	Blank, Method	Z4082110-33
34	08/21/97 13:42:00		DCS976366	Detectability Check Sample	Z4082110-34
35	08/21/97 13:48:00		LCS976365	Lab Control Sample	Z4082110-35
36	08/21/97 13:54:00		LCSD976365	Lab Control Sample Duplicate	Z4082110-36
37	08/21/97 14:00:00	IPW0897W12	9708155-04A	Sample	Z4082110-37
38	08/21/97 14:07:00	IPW0897W12	9708155-04A	Serial Dilutions	Z4082110-38
39	08/21/97 14:13:00	IPW0897W12	9708155-04A	Analytical Spike	Z4082110-39
40	08/21/97 14:18:00	IPW0897W12	9708155-05A	Matrix Spike	Z4082110-40
41	08/21/97 14:24:00	IPW0897W12	9708155-06A	Matrix Spike Duplicate	Z4082110-41
42	08/21/97 14:30:00	IPW0897W23	9708155-01A	Sample	Z4082110-42
43	08/21/97 14:36:00	IPW0897W24	9708155-02A	Sample	Z4082110-43
44	08/21/97 14:41:00	IPW0897W10	9708155-03A	Sample	Z4082110-44
45	08/21/97 14:47:00		CCV	Continuing Calibration Verification	Z4082110-45
46	08/21/97 14:53:00		CCB	Blank, Continuing Calibration	Z4082110-46

08/22/97 10:01:21

RESULTS

Digestion Batch # GDIG970808073000

Analysis Batch # AAZ4 70821102702

Work Order # 9708155

Project Sample ID IPW0897W12
Lab Sample ID 9708155-04A
File # Z4082110-37
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/21/97 14:00:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.00669	0.00151	0.00151

RESULTS

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Project Sample ID IPW0897W23
Lab Sample ID 9708155-01A
File # Z4082110-42
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/21/97 14:30:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Analyte	CAS #	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 — Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.0305	0.00151	0.00151

RESULTS

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Project Sample ID IPW0897W24
Lab Sample ID 9708155-02A
File # Z4082110-43
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/21/97 14:36:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Analyte	CAS #	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.0169	0.00151	0.00151

RESULTS

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Project Sample ID IPW0897W10
Lab Sample ID 9708155-03A
File # Z4082110-44
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/21/97 14:41:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Analyte	CAS #	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 — Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.0232	0.00151	0.00151

LABORATORY BLANK INFORMATION

Digestion Batch # _____
Analysis Batch # AAZ4 70821102702

Lab Sample ID CCB
File # Z4082110-46
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared _____
Date Analyzed 08/21/97 14:53:00

Instrument Z4
Column _____
Analyst MSC
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Analyte	Aliquot Mass/Volume _____ (mL) Extract/Digestate Volume 1 (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	-0.000170 J	0.00151	-1000

LABORATORY BLANK INFORMATION

Digestion Batch # _____
Analysis Batch # AAZ4 70821102702

Lab Sample ID ICB
File # Z4082110-32
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared _____
Date Analyzed 08/21/97 13:31:00

Instrument Z4
Column _____
Analyst MSC
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Analyte	Aliquot Mass/Volume _____ (mL) Extract/Digestate Volume 1 (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	-0.000490 J	0.00151	-1000

LABORATORY BLANK INFORMATION

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Lab Sample ID BLK973721
File # Z4082110-33
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared 08/08/97
Date Analyzed 08/21/97 13:37:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	< DL	0.00151	0.00151

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LABORATORY CONTROL SAMPLE

Digestion Batch # GDIG970808073000

Analysis Batch # AAZ4 70821102702

Work Order # 9708155

Method Arsenic by SW7060A

Test Code ASGSWA00

Date Prepared 08/08/97

Date Analyzed 08/21/97 13:54:00

Instrument Z4

Column

Analyst MSC

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Aliquot Mass or Vol 50 (mL)

Extract Mass or Vol 50 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS	1 ml		

	LCS Lab Sample ID LCS976365 File ID Z4082110-35			LCS Duplicate Lab Sample ID LCSD976365 File ID Z4082110-36			Recovery Spec. Limits		RPD	
Analyte	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Arsenic	0.0500	0.0489	98	0.0500	0.0482	96	75	125	2.1	20

08/22/97 10:01:21

MATRIX SPIKE(S)

Digestion Batch # GDIG970808073000

Analysis Batch # AAZ4 70821102702

Work Order # 9708155

Project Sample ID IPW0897W12

Method Arsenic by SW7060A

Test Code ASGSWA00

Date Collected 08/06/97

Date Received 08/07/97

Date Prepared 08/08/97

Date Analyzed 08/21/97 14:24:00

Instrument Z4

Column

Analyst MSC

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Spike Sol'n #	Vol. Added
Surrogate Sol'n	**Vol. Added**

Sample	Spiked Sample	Spiked Sample Dup	Recovery Specification Limits	RPD
Lab Sample ID 9708155-04A	Lab Sample ID 9708155-05A MS	Lab Sample ID 9708155-06A MSD		
File # Z4082110-37	File # Z4082110-40	File # Z4082110-41		
Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)		
Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)		
Dil Fact. 1	Dil Fact. 1	Dil Fact. 1		

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Specification Limit %
Arsenic	0.050	0.00669	0.0500	0.0581	103	0.0500	0.0566	100	75	125	3.0	20

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # AAZ4 70821102702
Initial Calibration # Z4970821102700

Lab Sample ID CCV
File # Z4082110-45
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Analyzed 08/21/97 14:47:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument Z4
Analyst MSC
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Arsenic	0.0503	0.0500	101	80	120

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CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Work Order # 9708155

Analysis Batch # AAZ4 70821102702

Initial Calibration # Z4970821102700

Lab Sample ID ICV

File # Z4082110-31

Method Arsenic by SW7060A

Test Code ASGSWA00

Date Analyzed 08/21/97 13:26:00

Reporting Subset ___

Spikes Subset ___

Specs Subset ___

Instrument Z4

Analyst MSC

Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Arsenic	0.0496	0.0500	99	90	110

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ANALYTICAL SPIKE(S)

Digestion Batch # GDIG970808073000

Analysis Batch # AAZ4 70821102702

Work Order # 9708155

Project Sample ID IPW0897W12

Method Arsenic by SW7060A

Test Code ASGSWA00

Date Collected 08/06/97

Date Received 08/07/97

Date Prepared 08/08/97

Date Analyzed 08/21/97 14:13:00

Instrument Z4

Column

Analyst MSC

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Spike Sol'n #	Vol. Added	Sample Lab Sample ID 9708155-04A File # Z4082110-37 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1	Spiked Sample Lab Sample ID 9708155-04A File # Z4082110-39 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1	Spiked Sample Dup Lab Sample ID File # Aliquot Mass/Vol Extract Mass/Vol Dil Fact.	Recovery Specification Limits	RPD
Surrogate Sol'n	Vol. Added					

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc.	Measured Conc.	Rec. %	Low %	High %	Result %	Specification Limit %
Arsenic	0.020	0.00669	0.0200	0.0266	99				85	115		

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SERIAL DILUTION CHECK

Digestion Batch # GDIG970808073000
Analysis Batch # AAZ4 70821102702

Work Order # 9708155
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Project Sample ID IPW0897W12
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared 08/08/97
Date Analyzed 08/21/97 14:07:00

Instrument Z4
Analyst MSC
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received

	Sample Result Lab Sample ID 9708155-04A Dilution Factor 1		Diluted Sample Result Lab Sample ID 9708155-04A Dilution Factor 5		% Difference	
Analyte	Measured Concentration mg/L	Detection Limit mg/L	Measured Concentration mg/L	Detection Limit mg/L	Result	Specification Limit %
Arsenic	0.00669	0.00151	< DL	0.00755	1.6	10

ANALYTICAL PROTOCOL SUMMARY
COMMENTS/NARRATIVE

Work Order # 9708155

Method Arsenic by SW7060A Specification# XXGS

Lab Sample ID File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action

08/22/97 10:00:21

RADIAN ANALYTICAL SERVICES
FPAS REPORT
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Work Order # 9708174

Client INTERNATIONAL PAPER
Facility
Client Code IP WILM

Certified By Julie A Peacock
Date 8/22/97

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WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To 3200 E. CHAPEL HILL RD.
RTP, NC 27709
Attention JIM NARKUNAS

Client Code IP WILM
Client INTERNATIONAL PAPER
Facility
Work ID WILMINGTON SEMIANNUA

Work Order # 9708174
Page 1
RCN 258058.1501

Prepared Radian International, LLC
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70117AJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
IPW0897W06	01A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
IPW0897W07	02A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
IPW0897W09	03A	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
	04A MS	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals
	05A MSD	ASGSWA00	Arsenic by GFAAS
		DIFSWA00	Acid Digestion for Metals

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WORK ORDER COMMENTS

Post digestion spikes not performed on all GFAAS analyses per Item 271 of the New York ELAP manual. Post digestion spikes were performed, as necessary, when recoveries for serial dilutions or matrix spikes for an analytical batch did not fall within recovery tolerances.

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

ANALYTICAL PROTOCOL SUMMARY

Work Order # 9708174

Client INTERNATIONAL PAPER

Specification # XXGS

Facility

Client Code IP WILM

Method Arsenic by SW7060A

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
IPW0897W06	9708174-01A	ASGSWA00	GDIG970814080000	AAZ4__70821102701
IPW0897W07	9708174-02A	ASGSWA00	GDIG970814080000	AAZ4__70821102701
IPW0897W09	9708174-03A	ASGSWA00	GDIG970814080000	AAZ4__70821102701

RESULTS SUMMARY

Method Arsenic by SW7060A

Test Code ASGSWA00

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708174-01A		9708174-02A		9708174-03A			
File ID:	Z4082110-27		Z4082110-28		Z4082110-13			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/14/97		08/14/97		08/14/97			
Date Analyzed:	08/21/97 12:54:00		08/21/97 13:00:00		08/21/97 11:36:00			
Dilution Factor:	4		1		1			
Matrix:	Water		Water		Water			
Units:	mg/L		mg/L		mg/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Arsenic	0.151	0.00604	0.00350	0.00151	0.0199	0.00151		

08/22/97 10:00:21

INITIAL CALIBRATION

Work Order # 9708174

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Initial Calibration # Z4970821102700

Calibration Date 08/21/97 10:27:00

Sol'n # _____

Method Arsenic by SW7060A

Test Code ASGSWA00

Instrument Z4

Analyst MSC

Reviewer DLC

Analytes	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response Area Counts Reference Conc. mg/L	Response _____ Reference Conc.	Response _____ Reference Conc.	Correlation Coefficient
Arsenic	0.000 0.0	0.0065190 0.003	0.0293979 0.015	0.0595302 0.030	0.1148841 0.060			1.000

Specification Limits for correlation coefficient >0.995

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DIGESTION BATCH SUMMARY

Digestion Batch # GDIG970814080000

Work Order # 9708174

Method Digestion by Mod. SW3020A

Test Code DIFSWA00

Extraction Start Date/Time 08/14/97 08:00:00

Extraction Stop Date/Time

Analyst HD

Reviewer AR

Sample	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
1	IPW0897W06	9708174-01A	50	
2	IPW0897W07	9708174-02A	50	
3	IPW0897W09	9708174-03A	50	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Quality Control	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
Blank		BLK973758	50	
Detectability Check Sample		DCS976426	50	
Laboratory Control Sample		LCSD976427	50	
Laboratory Control Sample Duplicate		LCSD976427	50	
Matrix Spike	IPW0897W09	9708174-04A	50	
Matrix Spike Duplicate	IPW0897W09	9708174-05A	50	

ANALYSIS BATCH SUMMARY

Analysis Batch # AAZ4 70821102701

Work Order # 9708174

Method Arsenic by SW7060A
Test Code ASGSWA00
Initial Calibration # Z4970821102700
Calibration Date 08/21/97

Analysis Start Date/Time 08/21/97 10:27:00
Analysis Stop Date/Time 08/21/97 14:58:00

Instrument Z4
Analyst MSC
Reviewer DLC

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/21/97 10:27:00		S_0	Initial Calibration Blank	Z4082110-1
2	08/21/97 10:33:00		S 3	Initial Calibration Standard 1	Z4082110-2
3	08/21/97 10:39:00		S 15	Initial Calibration Standard 2	Z4082110-3
4	08/21/97 10:44:00		S 30	Initial Calibration Standard 3	Z4082110-4
5	08/21/97 10:51:00		S 60	Initial Calibration Standard 4	Z4082110-5
6	08/21/97 10:56:00		ICV	Initial Calibration Verification	Z4082110-6
7	08/21/97 11:02:00		ICB	Blank, Initial Calibration	Z4082110-7
8	08/21/97 11:08:00		BLK973758	Blank, Method	Z4082110-8
9	08/21/97 11:14:00		DCS976426	Detectability Check Sample	Z4082110-9
10	08/21/97 11:19:00		DCS976426	Detectability Check Sample	Z4082110-10
11	08/21/97 11:25:00		LCS976427	Lab Control Sample	Z4082110-11
12	08/21/97 11:31:00		LCSD976427	Lab Control Sample Duplicate	Z4082110-12
13	08/21/97 11:36:00	IPW0897W09	9708174-03A	Sample	Z4082110-13
14	08/21/97 11:48:00		LCS976427	Lab Control Sample	Z4082110-14
15	08/21/97 11:54:00		LCSD976427	Lab Control Sample Duplicate	Z4082110-15
16	08/21/97 12:00:00	IPW0897W09	9708174-03A	Serial Dilutions	Z4082110-16
17	08/21/97 12:05:00	IPW0897W09	9708174-03A	Analytical Spike	Z4082110-17
18	08/21/97 12:11:00	IPW0897W09	9708174-04A	Matrix Spike	Z4082110-18
19	08/21/97 12:14:00	IPW0897W09	9708174-04A	Matrix Spike	Z4082110-19
20	08/21/97 12:21:00		CCV	Continuing Calibration Verification	Z4082110-20
21	08/21/97 12:27:00		CCB	Blank, Continuing Calibration	Z4082110-21
22	08/21/97 12:32:00	IPW0897W09	9708174-05A	Matrix Spike Duplicate	Z4082110-22
23	08/21/97 12:35:00	IPW0897W09	9708174-05A	Matrix Spike Duplicate	Z4082110-23
24	08/21/97 12:41:00		A970817405A	Matrix Spike Duplicate	Z4082110-24
25	08/21/97 12:48:00		A970817401A	Sample	Z4082110-25
26	08/21/97 12:51:00		A970817401A	Sample	Z4082110-26
27	08/21/97 12:54:00	IPW0897W06	9708174-01A	Sample	Z4082110-27
28	08/21/97 13:00:00	IPW0897W07	9708174-02A	Sample	Z4082110-28
29	08/21/97 13:06:00		CCV	Continuing Calibration Verification	Z4082110-29
30	08/21/97 13:11:00		CCB	Blank, Continuing Calibration	Z4082110-30

RESULTS

Digestion Batch # GDIG970814080000
Analysis Batch # AAZ4 70821102701

Project Sample ID IPW0897W09
Lab Sample ID 9708174-03A
File # Z4082110-13
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/14/97
Date Analyzed 08/21/97 11:36:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Analyte	CAS #	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.0199	0.00151	0.00151

RESULTS

Digestion Batch # GDIG970814080000
Analysis Batch # AAZ4 70821102701

Project Sample ID IPW0897W06
Lab Sample ID 9708174-01A
File # Z4082110-27
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/14/97
Date Analyzed 08/21/97 12:54:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 4

Analyte	CAS #	Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.151	0.00604	0.00604

RESULTS

Digestion Batch # GDIG970814080000
Analysis Batch # AAZ4 70821102701

Project Sample ID IPW0897W07
Lab Sample ID 9708174-02A
File # Z4082110-28
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/14/97
Date Analyzed 08/21/97 13:00:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	7440-38-2	0.00350	0.00151	0.00151

08/22/97 10:00:21

LABORATORY BLANK INFORMATION

Work Order # 9708174
Page 12

Digestion Batch # _____
Analysis Batch # AAZ4 70821102701

Lab Sample ID CCB
File # Z4082110-21
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared _____
Date Analyzed 08/21/97 12:27:00

Instrument Z4
Column _____
Analyst MSC
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Analyte	Aliquot Mass/Volume _____ (mL) Extract/Digestate Volume 1 (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	-0.000410 J	0.00151	-1000

LABORATORY BLANK INFORMATION

Digestion Batch # _____
Analysis Batch # AAZ4 70821102701

Lab Sample ID CCB
File # Z4082110-30
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared _____
Date Analyzed 08/21/97 13:11:00

Instrument Z4
Column _____
Analyst MSC
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Analyte	Aliquot Mass/Volume _____ (mL) Extract/Digestate Volume 1 (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	-0.000050 J	0.00151	-1000

LABORATORY BLANK INFORMATION

Digestion Batch # _____
Analysis Batch # AAZ4 70821102701

Lab Sample ID ICB
File # Z4082110-7
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared _____
Date Analyzed 08/21/97 11:02:00

Instrument Z4
Column _____
Analyst MSC
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Analyte	Aliquot Mass/Volume _____ (mL) Extract/Digestate Volume 1 (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	-0.000310 J	0.00151	-1000

LABORATORY BLANK INFORMATION

Work Order # 9708174

Digestion Batch # GDIG970814080000

Analysis Batch # AAZ4 70821102701

Lab Sample ID BLK973758
File # Z4082110-8
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Prepared 08/14/97
Date Analyzed 08/21/97 11:08:00

Instrument Z4
Column
Analyst MSC
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Analyte	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Arsenic	ND	0.00151	0.00151

08/22/97 10:00:21

LABORATORY CONTROL SAMPLE

Digestion Batch # GDIG970814080000

Analysis Batch # AAZ4 70821102701

Work Order # 9708174

Method Arsenic by SW7060A

Test Code ASGSWA00

Date Prepared 08/14/97

Date Analyzed 08/21/97 11:31:00

Instrument Z4

Column

Analyst MSC

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Aliquot Mass or Vol 50 (mL)

Extract Mass or Vol 50 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS	1 ml		

Analyte	LCS Lab Sample ID LCS976427 File ID Z4082110-11			LCS Duplicate Lab Sample ID LCSD976427 File ID Z4082110-12			Recovery Spec. Limits		RPD	
	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Arsenic	0.0500	0.0480	96	0.0500	0.0558	112	75	125	15	20

08/22/97 10:00:21

LABORATORY CONTROL SAMPLE

Digestion Batch # GDIG970814080000

Analysis Batch # AAZ4 70821102701

Work Order # 9708174

Method Arsenic by SW7060A

Test Code ASGSWA00

Date Prepared 08/14/97

Date Analyzed 08/21/97 11:54:00

Instrument Z4

Column

Analyst MSC

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Aliquot Mass or Vol 50 (mL)

Extract Mass or Vol 50 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
LCS	1 ml		

Analyte	LCS Lab Sample ID LCS976427 File ID Z4082110-14			LCS Duplicate Lab Sample ID LCSD976427 File ID Z4082110-15			Recovery Spec. Limits		RPD	
	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Arsenic	0.0500	0.0478	96	0.0500	0.0571	114	75	125	17	20

08/22/97 10:00:21

MATRIX SPIKE(S)

Digestion Batch # GDIG970814080000

Analysis Batch # AAZ4 70821102701

Work Order # 9708174

Project Sample ID IPW0897W09

Method Arsenic by SW7060A

Test Code ASGSWA00

Date Collected 08/07/97

Date Received 08/08/97

Date Prepared 08/14/97

Date Analyzed 08/21/97 12:35:00

Instrument Z4

Column

Analyst MSC

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Spike Sol'n #	Vol. Added	Sample Lab Sample ID 9708174-03A File # Z4082110-13 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1	Spiked Sample Lab Sample ID 9708174-04A MS File # Z4082110-19 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 2	Spiked Sample Dup Lab Sample ID 9708174-05A MSD File # Z4082110-23 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 2	Recovery Specification Limits	RPD
Surrogate Sol'n	Vol. Added					

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Specification Limit %
Arsenic	0.050	0.0199	0.0500	0.0723	105	0.0500	0.0729	106	75	125	0.95	20

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # AAZ4 70821102701
Initial Calibration # Z4970821102700

Lab Sample ID CCV
File # Z4082110-20
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Analyzed 08/21/97 12:21:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument Z4
Analyst MSC
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Arsenic	0.0508	0.0500	102	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # AAZ4 70821102701
Initial Calibration # Z4970821102700

Lab Sample ID CCV
File # Z4082110-29
Method Arsenic by SW7060A
Test Code ASGSWA00

Date Analyzed 08/21/97 13:06:00

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument Z4
Analyst MSC
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Arsenic	0.0516	0.0500	103	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Work Order # 9708174

Analysis Batch # AAZ4 70821102701

Initial Calibration # Z4970821102700

Lab Sample ID ICV

File # Z4082110-6

Method Arsenic by SW7060A

Test Code ASGSWA00

Date Analyzed 08/21/97 10:56:00

Reporting Subset ___

Spikes Subset ___

Specs Subset ___

Instrument Z4

Analyst MSC

Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Arsenic	0.0487	0.0500	97	90	110

08/22/97 10:00:21

ANALYTICAL SPIKE(S)

Digestion Batch # GDIG970814080000

Analysis Batch # AAZ4 70821102701

Work Order # 9708174

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Project Sample ID IPW0897W09

Method Arsenic by SW7060A

Test Code ASGSWA00

Date Collected 08/07/97

Date Received 08/08/97

Date Prepared 08/14/97

Date Analyzed 08/21/97 12:05:00

Instrument Z4

Column

Analyst MSC

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Spike Sol'n # Vol. Added

Surrogate Sol'n Vol. Added

Sample Lab Sample ID 9708174-03A File # Z4082110-13 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1

Spiked Sample Lab Sample ID 9708174-03A File # Z4082110-17 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1

Spiked Sample Dup Lab Sample ID File # Aliquot Mass/Vol Extract Mass/Vol Dil Fact.

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc.	Measured Conc.	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %
Arsenic	0.020	0.0199	0.0200	0.0394	98				85	115		

08/22/97 10:00:21

SERIAL DILUTION CHECK

Digestion Batch # GDIG970814080000

Analysis Batch # AAZ4 70821102701

Work Order # 9708174

Project Sample ID IPW0897W09 Date Prepared 08/14/97 Instrument Z4 Reporting Subset ___ Matrix W

Method Arsenic by SW7060A Date Analyzed 08/21/97 12:00:00 Analyst MSC Spikes Subset ___ Report As received

Test Code ASGSWA00 Reviewer DLC Specs Subset ___

	Sample Result Lab Sample ID 9708174-03A Dilution Factor 1		Diluted Sample Result Lab Sample ID 9708174-03A Dilution Factor 5		% Difference	
Analyte	Measured Concentration mg/L	Detection Limit mg/L	Measured Concentration mg/L	Detection Limit mg/L	Result	Specification Limit %
Arsenic	0.0199	0.00151	0.0176	0.00755	11 Q	10

ANALYTICAL PROTOCOL SUMMARY
COMMENTS/NARRATIVE

Method Arsenic by SW7060A Specification# XXGS

Lab Sample ID File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action

08/11/97 17:11:20

Work Order # 9708149

RADIAN ANALYTICAL SERVICES
FPAS REPORT
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Client INTERNATIONAL PAPER

Facility

Client Code IP WILM

Certified By Linda Carter

Date 8/12/97

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08/11/ 17:11:20

WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To 3200 E. CHAPEL HILL RD.
RTP, NC 27709
Attention JIM NARKUNAS

Client Code IP WILM
Client INTERNATIONAL PAPER
Facility
Work ID WILMINGTON SEMIANNUA

Work Order # 9708149
Page 1

RCN 258058.1501

Prepared Radian International, LLC
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70117AJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
IPW0897W23	01A	DGTSWA00	Acid Digestion for Metals
		ICTSW1CR	Metals by ICP
IPW0897W24	02A	DGTSWA00	Acid Digestion for Metals
		ICTSW1CR	Metals by ICP
IPW0897W10	03A	DGTSWA00	Acid Digestion for Metals
		ICTSW1CR	Metals by ICP
IPW0897W12	04A	DGTSWA00	Acid Digestion for Metals
		ICTSW1CR	Metals by ICP

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

ANALYTICAL PROTOCOL SUMMARY

Client INTERNATIONAL PAPER
Facility
Client Code IP WILM
Method ICP Analysis by SW6010A

Specification # ICPS

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
IPW0897W10	9708149-03A	ICTSW1CR	IDIG970808073000	EMJ61E70811085901
IPW0897W12	9708149-04A	ICTSW1CR	IDIG970808073000	EMJ61E70811085901
IPW0897W23	9708149-01A	ICTSW1CR	IDIG970808073000	EMJ61E70811085901
IPW0897W24	9708149-02A	ICTSW1CR	IDIG970808073000	EMJ61E70811085901

Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Project Sample ID:	IPW0897W10		IPW0897W12		IPW0897W23		IPW0897W24	
Lab ID:	9708149-03A		9708149-04A		9708149-01A		9708149-02A	
File ID:	J61E0811-25		J61E0811-26		J61E0811-23		J61E0811-24	
Date Collected:	08/06/97		08/06/97		08/06/97		08/06/97	
Date Prepared:	08/08/97		08/08/97		08/08/97		08/08/97	
Date Analyzed:	08/11/97		08/11/97		08/11/97		08/11/97	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	mg/L		mg/L		mg/L		mg/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Chromium	0.0673 B	0.000348	0.0220 B	0.000348	0.000780 B	0.000348	0.00223 B	0.000348

DIGESTION BATCH SUMMARY

Digestion Batch # IDIG970808073000

Method Digestion by Mod. SW3005A
Test Code DGTSWA00

Extraction Start Date/Time 08/08/97 07:30:00
Extraction Stop Date/Time _____

Analyst HD
Reviewer MSC

Sample	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
1		9708145-01A	50	
2		9708145-02A	50	
3	IPW0897W23	9708149-01A	50	
4	IPW0897W24	9708149-02A	50	
5	IPW0897W10	9708149-03A	50	
6	IPW0897W12	9708149-04A	50	
7		9708152-01A	50	
8		9708152-02A	50	
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Quality Control	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
Blank		BLK973314	50	
Detectability Check Sample		DCS975344	50	
Laboratory Control Sample		LCS975345	50	
Laboratory Control Sample Duplicate		LCSD975345	50	
Matrix Spike		9708152-03A	50	
Matrix Spike Duplicate		9708152-04A	50	

ANALYSIS BATCH SUMMARY

Analysis Batch # EMJ61E70811085901

Work Order # 9708149

Method ICP Analysis by SW6010A
Test Code ICTSW5AF
Initial Calibration # NA
Calibration Date NA

Analysis Start Date/Time 08/11/97 08:59:00
Analysis Stop Date/Time 08/11/97 12:43:00

Instrument J61E
Analyst PLS
Reviewer DLC

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/11/97		STD1-BLANK	Initial Calibration Standard 1	J61E0811-1
2	08/11/97		STD1-BLANK	Initial Calibration Standard 1	J61E0811-2
3	08/11/97		STD1-BLANK	Initial Calibration Standard 1	J61E0811-3
4	08/11/97		S2	Initial Calibration Standard 1	J61E0811-4
5	08/11/97		S5	Initial Calibration Standard 1	J61E0811-5
6	08/11/97		S3	Initial Calibration Standard 1	J61E0811-6
7	08/11/97		STD_2-W	Initial Calibration Verification	J61E0811-7
8	08/11/97		STD_3-W	Initial Calibration Verification	J61E0811-8
9	08/11/97		STD_5-W	Initial Calibration Verification	J61E0811-9
10	08/11/97		CICSA-W	Interference Check Sample-Majors	J61E0811-10
11	08/11/97		CICSAB-W	Interference Check Sample-Majors/Minors	J61E0811-11
12	08/11/97		CCV-3-W	Continuing Calibration Verification	J61E0811-12
13	08/11/97		CCV-2-W	Continuing Calibration Verification	J61E0811-13
14	08/11/97		CCV-1-W	Continuing Calibration Verification	J61E0811-14
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17	08/11/97		DCS975344	Detectability Check Sample	J61E0811-17
18	08/11/97		RLCS	Reporting Limit Check Standard	J61E0811-18
19	08/11/97		LCS975345	Lab Control Sample	J61E0811-19
20	08/11/97		LCSD975345	Lab Control Sample Duplicate	J61E0811-20
21	08/11/97		9708145-01A	Sample	J61E0811-21
22	08/11/97		9708145-02A	Sample	J61E0811-22
23	08/11/97	IPW0897W23	9708149-01A	Sample	J61E0811-23
24	08/11/97	IPW0897W24	9708149-02A	Sample	J61E0811-24
25	08/11/97	IPW0897W10	9708149-03A	Sample	J61E0811-25
26	08/11/97	IPW0897W12	9708149-04A	Sample	J61E0811-26
27	08/11/97		9708152-01A	Sample	J61E0811-27
28	08/11/97		9708152-02A	Serial Dilutions	J61E0811-28
29	08/11/97		9708152-02A	Sample	J61E0811-29
30	08/11/97		9708152-02A	Analytical Spike	J61E0811-30

08/11/97 17:11:20

ANALYSIS BATCH SUMMARY (cont'd)

Analysis Batch # EMJ61E70811085901

Work Order # 9708149

Method ICP Analysis by SW6010A
Test Code ICTSW5AF
Initial Calibration # NA
Calibration Date NA

Analysis Start Date/Time 08/11/97 08:59:00
Analysis Stop Date/Time 08/11/97 12:43:00

Instrument J61E
Analyst PLS
Reviewer DLC

Sequence/Analysis Time	Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
31 08/11/97		9708152-03A	Matrix Spike	J61E0811-31
32 08/11/97		9708152-04A	Matrix Spike Duplicate	J61E0811-32
33 08/11/97		CICSA-W	Interference Check Sample-Majors	J61E0811-33
34 08/11/97		CICSAB-W	Interference Check Sample-Majors/Minors	J61E0811-34
35 08/11/97		CCV-3-W	Continuing Calibration Verification	J61E0811-35
36 08/11/97		CCV-2-W	Continuing Calibration Verification	J61E0811-36
37 08/11/97		CCV-1-W	Continuing Calibration Verification	J61E0811-37
38 08/11/97		ICB-W	Blank, Initial Calibration	J61E0811-38
39 08/11/97		CCB-W	Blank, Continuing Calibration	J61E0811-39

RESULTS

Digestion Batch # IDIG970808073000
Analysis Batch # EMJ61E70811085901

Project Sample ID IPW0897W23
Lab Sample ID 9708149-01A
File # J61E0811-23
Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Analyte	CAS #	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 — Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Chromium	7440-47-3	0.000780 B	0.000348	0.000348

RESULTS

Digestion Batch # IDIG970808073000
Analysis Batch # EMJ61E70811085901

Project Sample ID IPW0897W24
Lab Sample ID 9708149-02A
File # J61E0811-24
Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Chromium	7440-47-3	0.00223 B	0.000348	0.000348

RESULTS

Digestion Batch # IDIG970808073000
Analysis Batch # EMJ61E70811085901

Project Sample ID IPW0897W10
Lab Sample ID 9708149-03A
File # J61E0811-25
Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Analyte	CAS #	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Chromium	7440-47-3	0.0673 B	0.000348	0.000348

RESULTS

Digestion Batch # IDIG970808073000
Analysis Batch # EMJ61E70811085901

Work Order # 9708149

Project Sample ID IPW0897W12
Lab Sample ID 9708149-04A
File # J61E0811-26
Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Date Collected 08/06/97
Date Received 08/07/97
Date Prepared 08/08/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Analyte	CAS #	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) Dilution Factor 1 Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Chromium	7440-47-3	0.0220 B	0.000348	0.000348

LABORATORY BLANK INFORMATION

Digestion Batch # _____
Analysis Batch # EMJ61E70811085901

Lab Sample ID CCB-W
File # J61E0811-15
Method ICP Analysis by SW6010A
Test Code ICTSW5AF

Date Prepared _____
Date Analyzed 08/11/97

Instrument J61E
Column _____
Analyst PLS
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume _____ (mL)
Extract/Digestate Volume _____ (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Aluminum	-0.00269 J	0.00529	-1000
Antimony	-0.00139 J	0.00313	-1000
Arsenic	0.000550 J	0.00175	-1000
Barium	0.0000200 J	0.000118	-1000
Beryllium	0.000320	0.000171	-1000
Cadmium	-0.000190 J	0.000191	-1000
Calcium	0.00243 J	0.00794	-1000
Chromium	-0.000370 J	0.000348	-1000
Cobalt	-0.000130 J	0.000513	-1000
Copper	0.00110 J	0.00155	-1000
Iron	-0.0132 J	0.0155	-1000
Lead	0.00174 J	0.00182	-1000
Magnesium	0.00175 J	0.00400	-1000
Manganese	-0.000010 J	0.000085	-1000
Molybdenum	-0.000570 J	0.000785	-1000
Nickel	-0.000120 J	0.000638	-1000
Potassium	0.0666	0.0348	-1000
Selenium	0.0000200 J	0.00171	-1000
Silver	0.000210 J	0.000537	-1000
Sodium	-0.0862 J	0.0876	-1000
Thallium	-0.000470 J	0.00281	-1000
Vanadium	0.000100 J	0.000523	-1000
Zinc	0.000590 J	0.00169	-1000

LABORATORY BLANK INFORMATION

Digestion Batch # _____
Analysis Batch # EMJ61E70811085901

Lab Sample ID ICB-W
File # J61E0811-38
Method ICP Analysis by SW6010A
Test Code ICTSW5AF

Date Prepared _____
Date Analyzed 08/11/97

Instrument J61E
Column _____
Analyst PLS
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume _____ (mL)
Extract/Digestate Volume _____ (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Aluminum	0.0108	0.00529	-1000
Antimony	-0.00168 J	0.00313	-1000
Arsenic	0.000520 J	0.00175	-1000
Barium	0 J	0.000118	-1000
Beryllium	0.000270	0.000171	-1000
Cadmium	-0.000070 J	0.000191	-1000
Calcium	-0.00431 J	0.00794	-1000
Chromium	0.000100 J	0.000348	-1000
Cobalt	0.0000700 J	0.000513	-1000
Copper	-0.000510 J	0.00155	-1000
Iron	-0.00575 J	0.0155	-1000
Lead	0.000860 J	0.00182	-1000
Magnesium	0.00315 J	0.00400	-1000
Manganese	0 J	0.000085	-1000
Molybdenum	-0.000270 J	0.000785	-1000
Nickel	0.000360 J	0.000638	-1000
Potassium	0.0106 J	0.0348	-1000
Selenium	-0.000130 J	0.00171	-1000
Silver	0.0000200 J	0.000537	-1000
Sodium	0.0139 J	0.0876	-1000
Thallium	-0.00196 J	0.00281	-1000
Vanadium	-0.000110 J	0.000523	-1000
Zinc	-0.000700 J	0.00169	-1000

LABORATORY BLANK INFORMATION

Digestion Batch # IDIG970808073000
Analysis Batch # EMJ61E70811085901

Lab Sample ID BLK973314
File # J61E0811-16
Method ICP Analysis by SW6010A
Test Code ICTSW5AF

Date Prepared 08/08/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Aluminum	0.0364	0.00529	0.00529
Antimony	< DL	0.00313	0.00313
Arsenic	< DL	0.00175	0.00175
Barium	0.000350	0.000118	0.000118
Beryllium	0.000200	0.000171	0.000171
Cadmium	ND	0.000191	0.000191
Calcium	0.0819	0.00794	0.00794
Chromium	0.000380	0.000348	0.000348
Cobalt	< DL	0.000513	0.000513
Copper	< DL	0.00155	0.00155
Iron	< DL	0.0155	0.0155
Lead	< DL	0.00182	0.00182
Magnesium	0.00508	0.00400	0.00400
Manganese	< DL	0.000085	0.000085
Molybdenum	ND	0.000785	0.000785
Nickel	0.000660	0.000638	0.000638
Potassium	< DL	0.0348	0.0348
Selenium	ND	0.00171	0.00171
Silver	< DL	0.000537	0.000537
Sodium	< DL	0.0876	0.0876
Thallium	ND	0.00281	0.00281
Vanadium	0.000600	0.000523	0.000523
Zinc	< DL	0.00169	0.00169

LABORATORY CONTROL SAMPLE

Digestion Batch # IDIG970808073000
Analysis Batch # EMJ61E70811085901

Work Order # 9708149

Method ICP Analysis by SW6010A
Test Code ICTSW5AF
Date Prepared 08/08/97
Date Analyzed 08/11/97
Instrument J61E
Column
Analyst PLS
Reviewer DLC
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 50 (mL)
Extract Mass or Vol 50 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added

Analyte	LCS Lab Sample ID LCS975345 File ID J61E0811-19			LCS Duplicate Lab Sample ID LCSD975345 File ID J61E0811-20			Recovery Spec. Limits		RPD	
	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Aluminum	50.0	50.9	102	50.0	50.4	101	80	120	0.98	20
Antimony	0.0500	0.0506	101	0.0500	0.0480	96	80	120	5.1	20
Arsenic	0.400	0.396	99	0.400	0.391	98	80	120	1.0	20
Barium	1.00	0.984	98	1.00	0.976	98	80	120	0	20
Beryllium	1.00	0.986	99	1.00	0.974	97	80	120	2.0	20
Cadmium	0.0800	0.0788	98	0.0800	0.0778	97	80	120	1.0	20
Calcium	50.0	49.8	100	50.0	49.3	99	80	120	1.0	20
Chromium	0.0800	0.0781	98	0.0800	0.0769	96	80	120	2.1	20
Cobalt	1.00	0.977	98	1.00	0.968	97	80	120	1.0	20
Copper	0.0800	0.0771	96	0.0800	0.0764	95	80	120	1.0	20
Iron	50.0	49.4	99	50.0	49.0	98	80	120	1.0	20
Lead	0.400	0.393	98	0.400	0.390	97	80	120	1.0	20
Magnesium	50.0	48.2	96	50.0	47.8	96	80	120	0	20
Manganese	1.00	0.975	98	1.00	0.965	96	80	120	2.1	20
Molybdenum	1.00	0.993	99	1.00	0.984	98	80	120	1.0	20
Nickel	0.100	0.100	100	0.100	0.0986	99	80	120	1.0	20
Potassium	50.0	50.5	101	50.0	50.1	100	80	120	1.00	20
Selenium	0.100	0.0966	97	0.100	0.0962	96	80	120	1.0	20
Silver	0.0800	0.0788	98	0.0800	0.0778	97	80	120	1.0	20
Sodium	50.0	48.2	96	50.0	47.7	95	80	120	1.0	20

LABORATORY CONTROL SAMPLE Cont'd

Digestion Batch # IDIG970808073000
Analysis Batch # EMJ61E70811085901

Work Order # 9708149

Method ICP Analysis by SW6010A
Test Code ICTSW5AF
Date Prepared 08/08/97
Date Analyzed 08/11/97
Instrument J61E
Column
Analyst PLS
Reviewer DLC
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 50 (mL)
Extract Mass or Vol 50 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added

Analyte	LCS Lab Sample ID LCS975345 File ID J61E0811-19			LCS Duplicate Lab Sample ID LCSD975345 File ID J61E0811-20			Recovery Spec. Limits		RPD	
	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Thallium	0.100	0.0985	99	0.100	0.0985	99	80	120	0	20
Vanadium	0.100	0.0978	98	0.100	0.0964	96	80	120	2.1	20
Zinc	1.00	0.962	96	1.00	0.952	95	80	120	1.0	20

08/11/97 17:11:20

MATRIX SPIKE(S)

Digestion Batch # IDIG970808073000

Analysis Batch # EMJ61E70811085901

Work Order # 9708149

Project Sample ID

Method ICP Analysis by SW6010A

Test Code ICTSW5LK

Date Collected 08/05/97

Date Received 08/07/97

Date Prepared 08/08/97

Date Analyzed 08/11/97

Instrument J61E

Column

Analyst PLS

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Spike Sol'n # Vol. Added

Surrogate Sol'n Vol. Added

Sample Lab Sample ID 9708152-02A File # J61E0811-29 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1

Spiked Sample Lab Sample ID 9708152-03A MS File # J61E0811-31 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1

Spiked Sample Dup Lab Sample ID 9708152-04A MSD File # J61E0811-32 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1

Analyte	Spike Sol'n Conc. mg/L	Sample Measured Conc. mg/L	Spiked Sample Spiked Conc. mg/L	Spiked Sample Measured Conc. mg/L	Spiked Sample Rec. %	Spiked Sample Dup Spiked Conc. mg/L	Spiked Sample Dup Measured Conc. mg/L	Spiked Sample Dup Rec. %	Recovery Specification Limits Low %	Recovery Specification Limits High %	RPD Result %	RPD Specification Limit %
Aluminum	50	0.242 B	50.0	50.6	101	50.0	50.7	101	80	120	0	20
Antimony	.05	-0.00136	0.0500	0.0518	106	0.0500	0.0537	110	80	120	3.7	20
Arsenic	.4	0.00161	0.400	0.403	100	0.400	0.405	101	80	120	1.00	20
Barium	1	0.233 B	1.00	1.20	96	1.00	1.20	96	80	120	0	20
Cadmium	.08	-0.000140	0.0800	0.0783	98	0.0800	0.0790	99	80	120	1.0	20
Chromium	.08	0.00973 B	0.0800	0.0866	96	0.0800	0.0868	96	80	120	0	20
Cobalt	1	0.00139	1.00	0.967	97	1.00	0.973	97	80	120	0	20
Iron	50	1.10	50.0	49.7	97	50.0	49.8	97	80	120	0	20
Lead	.4	0.000630	0.400	0.390	97	0.400	0.393	98	80	120	1.0	20
Manganese	1	0.156	1.00	1.11	95	1.00	1.11	96	80	120	1.0	20
Nickel	.1	0.0160 B	0.100	0.114	98	0.100	0.114	98	80	120	0	20
Selenium	.1	0.00111	0.100	0.0994	98	0.100	0.100	99	80	120	1.0	20
Silver	.08	0.000260	0.0800	0.0796	99	0.0800	0.0804	100	80	120	1.0	20
Vanadium	.1	0.00175 B	0.100	0.0975	96	0.100	0.0986	97	80	120	1.0	20
Zinc	1	0.0269	1.00	0.982	95	1.00	0.990	96	80	120	1.0	20

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811085901
Initial Calibration # _____

Lab Sample ID CCV-1-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-37
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5AF

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Silver	0.499	0.500	100	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Work Order # 9708149

Analysis Batch # EMJ61E70811085901

Initial Calibration # _____

Lab Sample ID CCV-1-W
File # J61E0811-14
Method ICP Analysis by SW6010A
Test Code ICTSW5AF

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Silver	0.497	0.500	99	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811085901
Initial Calibration # _____

Lab Sample ID CCV-2-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-36
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5AF

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Antimony	0.495	0.500	99	90	110
Arsenic	0.515	0.500	103	90	110
Barium	0.487	0.500	97	90	110
Beryllium	0.496	0.500	99	90	110
Cadmium	0.511	0.500	102	90	110
Chromium	0.494	0.500	99	90	110
Cobalt	0.487	0.500	97	90	110
Copper	0.492	0.500	98	90	110
Lead	0.511	0.500	102	90	110
Manganese	0.486	0.500	97	90	110
Molybdenum	0.500	0.500	100	90	110
Nickel	0.512	0.500	102	90	110
Selenium	0.503	0.500	101	90	110
Thallium	0.501	0.500	100	90	110
Vanadium	0.506	0.500	101	90	110
Zinc	0.496	0.500	99	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811085901
Initial Calibration # _____

Lab Sample ID CCV-2-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-13
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5AF

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Antimony	0.494	0.500	99	90	110
Arsenic	0.516	0.500	103	90	110
Barium	0.492	0.500	98	90	110
Beryllium	0.505	0.500	101	90	110
Cadmium	0.513	0.500	103	90	110
Chromium	0.501	0.500	100	90	110
Cobalt	0.497	0.500	100	90	110
Copper	0.496	0.500	99	90	110
Lead	0.513	0.500	103	90	110
Manganese	0.498	0.500	100	90	110
Molybdenum	0.501	0.500	100	90	110
Nickel	0.514	0.500	103	90	110
Selenium	0.502	0.500	100	90	110
Thallium	0.503	0.500	101	90	110
Vanadium	0.513	0.500	103	90	110
Zinc	0.508	0.500	102	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811085901
Initial Calibration # _____

Lab Sample ID CCV-3-W
File # J61E0811-35
Method ICP Analysis by SW6010A
Test Code ICTSW5AF

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Aluminum	48.5	50.0	97	90	110
Calcium	49.4	50.0	99	90	110
Iron	49.0	50.0	98	90	110
Magnesium	49.2	50.0	98	90	110
Potassium	50.9	50.0	102	90	110
Sodium	48.1	50.0	96	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811085901
Initial Calibration # _____

Lab Sample ID CCV-3-W
File # J61E0811-12
Method ICP Analysis by SW6010A
Test Code ICTSW5AF

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Aluminum	49.3	50.0	99	90	110
Calcium	50.2	50.0	100	90	110
Iron	50.0	50.0	100	90	110
Magnesium	49.2	50.0	98	90	110
Potassium	51.7	50.0	103	90	110
Sodium	49.4	50.0	99	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811085901
Initial Calibration # _____

Lab Sample ID STD 2-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-7
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5AF

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Antimony	1.00	1.00	100	95	105
Arsenic	1.01	1.00	101	95	105
Barium	0.987	1.00	99	95	105
Beryllium	1.00	1.00	100	95	105
Cadmium	1.02	1.00	102	95	105
Chromium	1.00	1.00	100	95	105
Cobalt	1.01	1.00	101	95	105
Copper	0.984	1.00	98	95	105
Lead	1.02	1.00	102	95	105
Manganese	1.00	1.00	100	95	105
Nickel	1.02	1.00	102	95	105
Selenium	1.01	1.00	101	95	105
Silver	0.994	1.00	99	95	105
Thallium	1.01	1.00	101	95	105
Vanadium	1.00	1.00	100	95	105
Zinc	1.03	1.00	103	95	105

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811085901
Initial Calibration # _____

Lab Sample ID STD 3-W
File # J61E0811-8
Method ICP Analysis by SW6010A
Test Code ICTSW5AF

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Aluminum	100	100	100	95	105
Calcium	99.3	100	99	95	105
Iron	99.3	100	99	95	105
Magnesium	99.2	100	99	95	105
Potassium	100	100	100	95	105
Sodium	101	100	101	95	105

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811085901
Initial Calibration # _____

Lab Sample ID STD 5-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-9
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code I SW5AF

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Molybdenum	9.89	10.0	99	95	105

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811085901
Initial Calibration # _____

Lab Sample ID CICSAB-W
File # J61E0811-34
Method ICP Analysis by SW6010A
Test Code ICTSW5AF

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Barium	0.0517	0.0500	103	80	120
Beryllium	0.0481	0.0500	96	80	120
Cadmium	0.0948	0.100	95	80	120
Chromium	0.0555	0.0500	111	80	120
Cobalt	0.0453	0.0500	91	80	120
Copper	0.0512	0.0500	102	80	120
Lead	0.0942	0.100	94	80	120
Manganese	0.0468	0.0500	94	80	120
Nickel	0.0898	0.100	90	80	120
Silver	0.105	0.100	105	80	120
Vanadium	0.0471	0.0500	94	80	120
Zinc	0.0906	0.100	91	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811085901
Initial Calibration # _____

Lab Sample ID CICSAB-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-11
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5AF

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Barium	0.0523	0.0500	105	80	120
Beryllium	0.0498	0.0500	100	80	120
Cadmium	0.0964	0.100	96	80	120
Chromium	0.0571	0.0500	114	80	120
Cobalt	0.0470	0.0500	94	80	120
Copper	0.0524	0.0500	105	80	120
Lead	0.0979	0.100	98	80	120
Manganese	0.0490	0.0500	98	80	120
Nickel	0.0903	0.100	90	80	120
Silver	0.106	0.100	106	80	120
Vanadium	0.0495	0.0500	99	80	120
Zinc	0.0951	0.100	95	80	120

08/11/97 17:11:20

ANALYTICAL SPIKE(S)

Digestion Batch # IDIG970808073000

Analysis Batch # EMJ61E70811085901

Work Order # 9708149

Project Sample ID _____

Method ICP Analysis by SW6010A

Test Code ICTSW5LK

Date Collected 08/05/97

Date Received 08/07/97

Date Prepared 08/08/97

Date Analyzed 08/11/97

Instrument J61E

Column _____

Analyst PLS

Reviewer DLC

Reporting Subset ___ ___

Spikes Subset ___ ___

Specs Subset ___ ___

Matrix W

Report As received

% Moisture _____

Spike Sol'n #	Vol. Added
Surrogate Sol'n	**Vol. Added**

Sample Lab Sample ID: 9708152-02A
File # J61E0811-29
Aliquot Mass/Vol: 50 (mL)
Extract Mass/Vol: 50 (mL)
Dil Fact. 1

Spiked Sample Lab Sample ID: 9708152-02A
File # J61E0811-30
Aliquot Mass/Vol: 50 (mL)
Extract Mass/Vol: 50 (mL)
Dil Fact. 1.0989

Spiked Sample Dup Lab Sample ID: _____
File # _____
Aliquot Mass/Vol: _____
Extract Mass/Vol: _____
Dil Fact. _____

Analyte	Spike Sol'n Conc. mg/L	Sample Measured Conc. mg/L	Spiked Sample Spiked Conc. mg/L	Spiked Sample Measured Conc. mg/L	Spiked Sample Rec. %	Spiked Sample Dup Spiked Conc.	Spiked Sample Dup Measured Conc.	Spiked Sample Dup Rec. %	Recovery Specification Limits Low %	Recovery Specification Limits High %	RPD Result %	RPD Specification Limit %
Aluminum		0.242 B	54.9	55.1	100				75	125		
Antimony		-0.00136	0.0549	0.0579	108				75	125		
Arsenic		0.00161	0.440	0.445	101				75	125		
Barium		0.233 B	1.10	1.28	96				75	125		
Cadmium		-0.000140	0.0879	0.0848	97				75	125		
Chromium		0.00973 B	0.0879	0.0954	97				75	125		
Cobalt		0.00139	1.10	1.03	94				75	125		
Iron		1.10	54.9	54.0	96				75	125		
Lead		0.000630	0.440	0.427	97				75	125		
Manganese		0.156	1.10	1.20	95				75	125		
Nickel		0.0160 B	0.110	0.123	97				75	125		
Selenium		0.00111	0.110	0.108	97				75	125		
Silver		0.000260	0.0879	0.0874	99				75	125		
Vanadium		0.00175 B	0.110	0.107	96				75	125		
Zinc		0.0269	1.10	1.07	95				75	125		

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SERIAL DILUTION CHECK

Digestion Batch # IDIG970808073000
Analysis Batch # EMJ61E70811085901

Work Order # 9708149
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Project Sample ID _____ Date Prepared 08/08/97 Instrument J61E Reporting Subset ___ Matrix W
Method ICP Analysis by SW6010A Date Analyzed 08/11/97 Analyst PLS Spikes Subset ___ Report As received
Test Code ICTSW5LK Reviewer DLC Specs Subset ___

	Sample Result Lab Sample ID 9708152-02A Dilution Factor 1		Diluted Sample Result Lab Sample ID 9708152-02A Dilution Factor 5		% Difference	
Analyte	Measured Concentration mg/L	Detection Limit mg/L	Measured Concentration mg/L	Detection Limit mg/L	Result	Specification Limit %
Aluminum	0.242 B	0.00529	0.261	0.0265	7.8	10
Antimony	ND	0.00313	ND	0.0156	NC	10
Arsenic	< DL	0.00175	< DL	0.00876	192 Q	10
Barium	0.233 B	0.000118	0.233	0.000590	0.11	10
Cadmium	ND	0.000191	ND	0.000955	NC	10
Chromium	0.00973 B	0.000348	0.00950	0.00174	2.4	10
Cobalt	0.00139	0.000513	< DL	0.00256	33 Q	10
Iron	1.10	0.0155	1.12	0.0773	1.2	10
Lead	< DL	0.00182	< DL	0.00912	146 Q	10
Manganese	0.156	0.000085	0.153	0.000427	1.8	10
Nickel	0.0160 B	0.000638	0.0172	0.00319	7.6	10
Selenium	< DL	0.00171	< DL	0.00856	175 Q	10
Silver	< DL	0.000537	ND	0.00268	NC	10
Vanadium	0.00175 B	0.000523	< DL	0.00262	2.9	10
Zinc	0.0269	0.00169	0.0301	0.00844	12 Q	10

ANALYTICAL PROTOCOL SUMMARY
COMMENTS/NARRATIVE

Method ICP Analysis by SW6010A Specification# ICPS

Lab Sample ID File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action

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RADIAN ANALYTICAL SERVICES
PPAS REPORT
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Work Order # 9708173

Client INTERNATIONAL PAPER
Facility
Client Code IP WILM

Certified By Linda Carter
Date 8/13/97

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WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To 3200 E. CHAPEL HILL RD.
RTP, NC 27709
Attention JIM NARKUNAS

Client Code IP WILM
Client INTERNATIONAL PAPER
Facility
Work ID WILMINGTON SEMIANNUA

Work Order # 9708173
Page 1

RCN 258058.1501

Prepared Radian International, LLC
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70117AJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
IPW0897W06	01A	DGTSWA00	Acid Digestion for Metals
		ICTSW1CR	Metals by ICP
IPW0897W07	02A	DGTSWA00	Acid Digestion for Metals
		ICTSW1CR	Metals by ICP
IPW0897W09	03A	DGTSWA00	Acid Digestion for Metals
		ICTSW1CR	Metals by ICP
	04A MS	DGTSWA00	Acid Digestion for Metals
		ICTSW1CR	Metals by ICP
	05A MSD	DGTSWA00	Acid Digestion for Metals
		ICTSW1CR	Metals by ICP

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

ANALYTICAL PROTOCOL SUMMARY

Client INTERNATIONAL PAPER

Specification # ICPS

Facility

Client Code IP WILM

Method ICP Analysis by SW6010A

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
IPW0897W06	9708173-01A	ICTSW1CR	IDIG970811073000	EMJ61E70811141402
IPW0897W07	9708173-02A	ICTSW1CR	IDIG970811073000	EMJ61E70811141402
IPW0897W09	9708173-03A	ICTSW1CR	IDIG970811073000	EMJ61E70811141402

RESULTS SUMMARY

Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Project Sample ID:	IPW0897W06		IPW0897W07		IPW0897W09			
Lab ID:	9708173-01A		9708173-02A		9708173-03A			
File ID:	J61E0811-60		J61E0811-61		J61E0811-63			
Date Collected:	08/07/97		08/07/97		08/07/97			
Date Prepared:	08/11/97		08/11/97		08/11/97			
Date Analyzed:	08/11/97		08/11/97		08/11/97			
Dilution Factor:	1		1		1			
Matrix:	Water		Water		Water			
Units:	mg/L		mg/L		mg/L			
Report as:	received		received		received			
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Chromium	0.0219	0.000348	0.00135	0.000348	0.000690	0.000348		

DIGESTION BATCH SUMMARY

Digestion Batch # IDIG970811073000

Work Order # 9708173

Method Digestion by Mod. SW3005A
Test Code DGTSWA00

Extraction Start Date/Time 08/11/97 07:30:00
Extraction Stop Date/Time

Analyst HD
Reviewer MSC

Sample	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
1		9707840-01A	50	
2		9707840-02A	50	
3		9707840-03A	50	
4		9708009-01A	50	
5		9708009-02A	50	
6		9708009-03A	50	
7		9708009-04A	50	
8		9708009-05A	50	
9		9708017-01A	50	
10		9708017-02A	50	
11		9708017-03A	50	
12		9708017-04A	50	
13		9708169-01A	50	
14		9708169-02A	50	
15		9708169-03A	50	
16		9708169-04A	50	
17		9708169-05A	50	
18	IPW0897W06	9708173-01A	50	
19	IPW0897W07	9708173-02A	50	
20	IPW0897W09	9708173-03A	50	

Quality Control	Project Sample ID	Lab Sample ID	Sample Size mL	Cleanup Method
Blank		BLK973734	50	
Detectability Check Sample		DCS976394	50	
Laboratory Control Sample		LCS976395	50	
Laboratory Control Sample Duplicate		LCSD976395	50	
Matrix Spike		9707840-04A	50	
Matrix Spike Duplicate		9707840-05A	50	
Matrix Spike		9708009-06A	50	
Matrix Spike Duplicate		9708009-07A	50	
Matrix Spike	IPW0897W09	9708173-04A	50	
Matrix Spike Duplicate	IPW0897W09	9708173-05A	50	

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ANALYSIS BATCH SUMMARY

Analysis Batch # EMJ61E70811141402

Work Order # 9708173

Method ICP Analysis by SW6010A
Test Code ICTSW5NA
Initial Calibration # NA
Calibration Date NA

Analysis Start Date/Time 08/11/97 14:14:00
Analysis Stop Date/Time 08/11/97 22:03:00

Instrument J61E
Analyst PLS
Reviewer DLC

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	08/11/97		STD1-BLANK	Initial Calibration Standard 1	J61E0811-1
2	08/11/97		STD1-BLANK	Initial Calibration Standard 1	J61E0811-2
3	08/11/97		S2	Initial Calibration Standard 1	J61E0811-3
4	08/11/97		S5	Initial Calibration Standard 1	J61E0811-4
5	08/11/97		S3	Initial Calibration Standard 1	J61E0811-5
6	08/11/97		STD_2-W	Initial Calibration Verification	J61E0811-6
7	08/11/97		STD_3-W	Initial Calibration Verification	J61E0811-7
8	08/11/97		STD_5-W	Initial Calibration Verification	J61E0811-8
28	08/11/97		CICSA-W	Interference Check Sample-Majors	J61E0811-28
29	08/11/97		CICSAB-W	Interference Check Sample-Majors/Minors	J61E0811-29
30	08/11/97		CCV-3-W	Continuing Calibration Verification	J61E0811-30
31	08/11/97		CCV-2-W	Continuing Calibration Verification	J61E0811-31
32	08/11/97		CCV-1-W	Continuing Calibration Verification	J61E0811-32
33	08/11/97		ICB-W	Blank, Initial Calibration	J61E0811-33
34	08/11/97		BLK973734	Blank, Method	J61E0811-34
35	08/11/97		DCS976394	Detectability Check Sample	J61E0811-35
36	08/11/97		RLCS	Reporting Limit Check Standard	J61E0811-36
37	08/11/97		LCS976395	Lab Control Sample	J61E0811-37
38	08/11/97		LCSD976395	Lab Control Sample Duplicate	J61E0811-38
39	08/11/97		9708009-01A	Sample	J61E0811-39
40	08/11/97		9708009-02A	Sample	J61E0811-40
41	08/11/97		9708009-03A	Sample	J61E0811-41
42	08/11/97		9708009-04A	Sample	J61E0811-42
43	08/11/97		9708009-05A	Serial Dilutions	J61E0811-43
44	08/11/97		9708009-05A	Sample	J61E0811-44
45	08/11/97		9708009-05A	Analytical Spike	J61E0811-45
46	08/11/97		9708009-06A	Matrix Spike	J61E0811-46
47	08/11/97		9708009-07A	Matrix Spike Duplicate	J61E0811-47
48	08/11/97		9708169-01A	Sample	J61E0811-48
49	08/11/97		9708169-02A	Sample	J61E0811-49

ANALYSIS BATCH SUMMARY (cont'd)

Analysis Batch # EMJ61E70811141402

Method ICP Analysis by SW6010A
Test Code ICTSW5NA
Initial Calibration # NA
Calibration Date NA

Analysis Start Date/Time 08/11/97 14:14:00
Analysis Stop Date/Time 08/11/97 22:03:00

Instrument J61E
Analyst PLS
Reviewer DLC

Sequence/Analysis Time		Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
50	08/11/97		9708169-03A	Sample	J61E0811-50
51	08/11/97		9708169-04A	Sample	J61E0811-51
52	08/11/97		9708169-05A	Sample	J61E0811-52
53	08/11/97		CICSA-W	Interference Check Sample-Majors	J61E0811-53
54	08/11/97		CICSAB-W	Interference Check Sample-Majors/Minors	J61E0811-54
55	08/11/97		CCV-3-W	Continuing Calibration Verification	J61E0811-55
56	08/11/97		CCV-2-W	Continuing Calibration Verification	J61E0811-56
57	08/11/97		CCV-1-W	Continuing Calibration Verification	J61E0811-57
58	08/11/97		ICB-W	Blank, Initial Calibration	J61E0811-58
59	08/11/97		CCB-W	Blank, Continuing Calibration	J61E0811-59
60	08/11/97	IPW0897W06	9708173-01A	Sample	J61E0811-60
61	08/11/97	IPW0897W07	9708173-02A	Sample	J61E0811-61
62	08/11/97	IPW0897W09	9708173-03A	Serial Dilutions	J61E0811-62
63	08/11/97	IPW0897W09	9708173-03A	Sample	J61E0811-63
64	08/11/97	IPW0897W09	9708173-03A	Analytical Spike	J61E0811-64
65	08/11/97	IPW0897W09	9708173-04A	Matrix Spike	J61E0811-65
66	08/11/97	IPW0897W09	9708173-05A	Matrix Spike Duplicate	J61E0811-66
67	08/11/97		9707840-01A	Sample	J61E0811-67
68	08/11/97		9707840-02A	Sample	J61E0811-68
69	08/11/97		9707840-03A	Serial Dilutions	J61E0811-69
70	08/11/97		9707840-03A	Sample	J61E0811-70
71	08/11/97		9707840-03A	Analytical Spike	J61E0811-71
72	08/11/97		9707840-04A	Matrix Spike	J61E0811-72
73	08/11/97		9707840-05A	Matrix Spike Duplicate	J61E0811-73
74	08/11/97		9708017-01A	Sample	J61E0811-74
75	08/11/97		9708017-02A	Sample	J61E0811-75
76	08/11/97		9708017-03A	Sample	J61E0811-76
77	08/11/97		9708017-04A	Sample	J61E0811-77
78	08/11/97		CICSA-W	Interference Check Sample-Majors	J61E0811-78
79	08/11/97		CICSAB-W	Interference Check Sample-Majors/Minors	J61E0811-79

ANALYSIS BATCH SUMMARY (cont'd)

Analysis Batch # EMJ61E70811141402

Work Order # 9708173

Method ICP Analysis by SW6010A
Test Code ICTSW5NA
Initial Calibration # NA
Calibration Date NA

Analysis Start Date/Time 08/11/97 14:14:00
Analysis Stop Date/Time 08/11/97 22:03:00

Instrument J61E
Analyst PLS
Reviewer DLC

Sequence/Analysis Time	Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
80 08/11/97		CCV-3-W	Continuing Calibration Verification	J61E0811-80
81 08/11/97		CCV-2-W	Continuing Calibration Verification	J61E0811-81
82 08/11/97		CCV-1-W	Continuing Calibration Verification	J61E0811-82
83 08/11/97		ICB-W	Blank, Initial Calibration	J61E0811-83
84 08/11/97		CCB-W	Blank, Continuing Calibration	J61E0811-84

RESULTS

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Project Sample ID IPW0897W06
Lab Sample ID 9708173-01A
File # J61E0811-60
Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Chromium	7440-47-3	0.0219	0.000348	0.000348

RESULTS

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Project Sample ID IPW0897W07
Lab Sample ID 970817' 02A
File # J61E0811-61
Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Analyte	CAS #	Aliquot Mass/Volume 50 (mL) Extract/Digestate Volume 50 (mL) D ion Factor 1 Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Chromium	7440-47-3	0.00135	0.000348	0.000348

RESULTS

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Project Sample ID IPW0897W09
Lab Sample ID 9708173-03A
File # J61E0811-63
Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Date Collected 08/07/97
Date Received 08/08/97
Date Prepared 08/11/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 1

Analyte	CAS #	Measured Concentration mg/L	Detection Limit mg/L	Reporting Limit mg/L
Chromium	7440-47-3	0.000690	0.000348	0.000348

LABORATORY BLANK INFORMATION

Digestion Batch # _____
Analysis Batch # EMJ61E70811141402

Lab Sample ID ICB-W
File # J61E0811-83
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Prepared _____
Date Analyzed 08/11/97

Instrument J61E
Column _____
Analyst PLS
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume _____ (mL)
Extract/Digestate Volume _____ (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Aluminum	0.00791	0.00529	-1000
Antimony	0.00143 J	0.00313	-1000
Arsenic	-0.00104 J	0.00175	-1000
Barium	-0.000080 J	0.000118	-1000
Beryllium	0.000670	0.000171	-1000
Boron	-0.000510 J	0.00722	-1000
Cadmium	-0.000070 J	0.000191	-1000
Calcium	-0.00355 J	0.00794	-1000
Chromium	-0.000120 J	0.000348	-1000
Cobalt	0.000190 J	0.000513	-1000
Copper	-0.00140 J	0.00155	-1000
Iron	-0.00369 J	0.0155	-1000
Lead	-0.000020 J	0.00182	-1000
Magnesium	0.00285 J	0.00400	-1000
Manganese	-0.000030 J	0.000085	-1000
Molybdenum	0.000290 J	0.000785	-1000
Nickel	-0.000500 J	0.000638	-1000
Potassium	0.103	0.0348	-1000
Selenium	0.00156 J	0.00171	-1000
Silicon	-0.00467 J	0.0103	-1000
Silver	-0.000120 J	0.000537	-1000
Sodium	-0.0596 J	0.0876	-1000
Strontium	-0.000010 J	0.000064	-1000
Thallium	0.000180 J	0.00281	-1000
Tin	0.000160 J	0.00210	-1000

LABORATORY BLANK INFORMATION (cont'd)

Digestion Batch # _____
Analysis Batch # EMJ61E70811141402

Lab Sample ID ICB-W
File # J61E0811-83
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Prepared _____
Date Analyzed 08/11/97

Instrument J61E
Column _____
Analyst PLS
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume _____ (mL)
Extract/Digestate Volume _____ (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Titanium	-0.000200 J	0.000281	-1000
Vanadium	0.0000600 J	0.000523	-1000
Zinc	-0.00122 J	0.00169	-1000

LABORATORY BLANK INFORMATION

Digestion Batch # _____
Analysis Batch # EMJ61E70811141402

Lab Sample ID ICB-W
File # J61E0811-58
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Prepared _____
Date Analyzed 08/11/97

Instrument J61E
Column _____
Analyst PLS
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume _____ (mL)
Extract/Digestate Volume _____ (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Aluminum	0.0143	0.00529	-1000
Antimony	0.00102 J	0.00313	-1000
Arsenic	-0.00189 J	0.00175	-1000
Barium	-0.000100 J	0.000118	-1000
Beryllium	0.000640	0.000171	-1000
Boron	-0.000720 J	0.00722	-1000
Cadmium	-0.000050 J	0.000191	-1000
Calcium	-0.00213 J	0.00794	-1000
Chromium	-0.000410 J	0.000348	-1000
Cobalt	-0.000010 J	0.000513	-1000
Copper	-0.00155 J	0.00155	-1000
Iron	-0.00599 J	0.0155	-1000
Lead	-0.00101 J	0.00182	-1000
Magnesium	0.00107 J	0.00400	-1000
Manganese	-0.000030 J	0.000085	-1000
Molybdenum	0.000350 J	0.000785	-1000
Nickel	-0.000560 J	0.000638	-1000
Potassium	0.0846	0.0348	-1000
Selenium	0.000420 J	0.00171	-1000
Silicon	-0.00181 J	0.0103	-1000
Silver	-0.000540 J	0.000537	-1000
Sodium	-0.162 J	0.0876	-1000
Strontium	-0.000020 J	0.000064	-1000
Thallium	0.000180 J	0.00281	-1000
Tin	0.000700 J	0.00210	-1000

LABORATORY BLANK INFORMATION (cont'd)

Digestion Batch # _____
Analysis Batch # EMJ61E70811141402

Lab Sample ID ICB-W
File # J61E0811-58
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Prepared _____
Date Analyzed 08/11/97

Instrument J61E
Column _____
Analyst PLS
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Analyte	Aliquot Mass/Volume _____ (mL) Extract/Digestate Volume _____ (mL) Dilution Factor 1 Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Titanium	-0.000160 J	0.000281	-1000
Vanadium	-0.000110 J	0.000523	-1000
Zinc	-0.00135 J	0.00169	-1000

LABORATORY BLANK INFORMATION

Digestion Batch # _____
Analysis Batch # EMJ61E70811141401

Lab Sample ID ICB-W
File # J61E0811-33
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Prepared _____
Date Analyzed 08/11/97

Instrument J61E
Column _____
Analyst PLS
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume _____ (mL)
Extract/Digestate Volume _____ (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Aluminum	0.0160	0.00529	-1000
Antimony	0.000600 J	0.00313	-1000
Arsenic	-0.000360 J	0.00175	-1000
Barium	-0.000010 J	0.000118	-1000
Beryllium	0.000430	0.000171	-1000
Boron	-0.000290 J	0.00722	-1000
Cadmium	-0.000080 J	0.000191	-1000
Calcium	0.00990	0.00794	-1000
Chromium	-0.000170 J	0.000348	-1000
Cobalt	0.000140 J	0.000513	-1000
Copper	-0.000950 J	0.00155	-1000
Iron	0.00194 J	0.0155	-1000
Lead	0.0000200 J	0.00182	-1000
Magnesium	0.0100	0.00400	-1000
Manganese	0.0000400 J	0.000085	-1000
Molybdenum	0 J	0.000785	-1000
Nickel	-0.000480 J	0.000638	-1000
Potassium	0.0253 J	0.0348	-1000
Selenium	-0.000250 J	0.00171	-1000
Silicon	0.0108	0.0103	-1000
Silver	0.000270 J	0.000537	-1000
Sodium	-0.0295 J	0.0876	-1000
Strontium	0.0000200 J	0.000064	-1000
Thallium	-0.000150 J	0.00281	-1000
Tin	0.000750 J	0.00210	-1000

LABORATORY BLANK INFORMATION (cont'd)

Digestion Batch # _____
Analysis Batch # EMJ61E70811141401

Lab Sample ID ICB-W
File # J61E0811-33
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Prepared _____
Date Analyzed 08/11/97

Instrument J61E
Column _____
Analyst PLS
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W

Aliquot Mass/Volume _____ (mL)
Extract/Digestate Volume _____ (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Titanium	-0.000080 J	0.000281	-1000
Vanadium	0.000140 J	0.000523	-1000
Zinc	-0.00119 J	0.00169	-1000

LABORATORY BLANK INFORMATION

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Lab Sample ID BLK973734
File # [illegible]E0811-34
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Prepared 08/11/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Aluminum	0.0237	0.00529	0.00529
Antimony	< DL	0.00313	0.00313
Arsenic	< DL	0.00175	0.00175
Barium	0.000250	0.000118	0.000118
Beryllium	0.000380	0.000171	0.000171
Boron	< DL	0.00722	0.00722
Cadmium	ND	0.000191	0.000191
Calcium	0.0447	0.00794	0.00794
Chromium	ND	0.000348	0.000348
Cobalt	ND	0.000513	0.000513
Copper	< DL	0.00155	0.00155
Iron	< DL	0.0155	0.0155
Lead	ND	0.00182	0.00182
Magnesium	< DL	0.00400	0.00400
Manganese	0.000110	0.000085	0.000085
Molybdenum	ND	0.000785	0.000785
Nickel	0.000880	0.000638	0.000638
Potassium	0.0351	0.0348	0.0348
Selenium	< DL	0.00171	0.00171
Silicon	0.0581	0.0103	0.0103
Silver	ND	0.000537	0.000537
Sodium	ND	0.0876	0.0876
Strontium	0.000320	0.000064	0.000064
Thallium	< DL	0.00281	0.00281
Tin	< DL	0.00210	0.00210

LABORATORY BLANK INFORMATION (cont'd)

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Lab Sample ID BLK973734
File # J61E0811-34
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Prepared 08/11/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W

Aliquot Mass/Volume 50 (mL)
Extract/Digestate Volume 50 (mL)
Dilution Factor 1

Analyte	Measured Conc. mg/L	Detection Limit mg/L	Reporting Limit mg/L
Titanium	< DL	0.000281	0.000281
Vanadium	ND	0.000523	0.000523
Zinc	0.00178	0.00169	0.00169

08/13/97 11:09:08

LABORATORY CONTROL SAMPLE

Digestion Batch # IDIG970811073000

Analysis Batch # EMJ61E70811141402

Work Order # 9708173

Method ICP Analysis by SW6010A
Test Code ICTSW5NA
Date Prepared 08/11/97
Date Analyzed 08/11/97
Instrument J61E
Column
Analyst PLS
Reviewer DLC
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 50 (mL)
Extract Mass or Vol 50 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added

Analyte	LCS Lab Sample ID LCS976395 File ID J61E0811-37			LCS Duplicate Lab Sample ID LCSD976395 File ID J61E0811-38			Recovery Spec. Limits		RPD	
	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Aluminum	50.0	50.4	101	50.0	50.6	101	80	120	0	20
Antimony	0.0500	0.0527	105	0.0500	0.0524	105	80	120	0	20
Arsenic	0.400	0.394	98	0.400	0.393	98	80	120	0	20
Barium	1.00	0.963	96	1.00	0.968	97	80	120	1.0	20
Beryllium	1.00	0.980	98	1.00	0.984	98	80	120	0	20
Boron	1.00	0.960	96	1.00	0.959	96	80	120	0	20
Cadmium	0.0800	0.0789	99	0.0800	0.0788	98	80	120	1.0	20
Calcium	50.0	49.9	100	50.0	50.0	100	80	120	0	20
Chromium	0.0800	0.0780	97	0.0800	0.0778	97	80	120	0	20
Cobalt	1.00	0.969	97	1.00	0.974	97	80	120	0	20
Copper	0.0800	0.0786	98	0.0800	0.0764	96	80	120	2.1	20
Iron	50.0	49.3	99	50.0	49.4	99	80	120	0	20
Lead	0.400	0.390	98	0.400	0.391	98	80	120	0	20
Magnesium	50.0	48.9	98	50.0	49.0	98	80	120	0	20
Manganese	1.00	0.963	96	1.00	0.967	97	80	120	1.0	20
Molybdenum	1.00	0.985	98	1.00	0.983	98	80	120	0	20
Nickel	0.100	0.103	103	0.100	0.102	102	80	120	0.98	20
Potassium	50.0	49.6	99	50.0	49.8	100	80	120	1.0	20
Selenium	0.100	0.0972	97	0.100	0.0971	97	80	120	0	20
Silicon	5.00	4.94	99	5.00	5.02	100	80	120	1.0	20

LABORATORY CONTROL SAMPLE Cont'd

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Method ICP Analysis by SW6010A
Test Code ICTSW5NA
Date Prepared 08/11/97
Date Analyzed 08/11/97
Instrument J61E
Column
Analyst PLS
Reviewer DLC
Reporting Subset
Spikes Subset
Specs Subset
Matrix W
Report As received
% Moisture
Aliquot Mass or Vol 50 (mL)
Extract Mass or Vol 50 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added

Analyte	LCS Lab Sample ID LCS976395 File ID J61E0811-37			LCS Duplicate Lab Sample ID LCSD976395 File ID J61E0811-38			Recovery Spec. Limits		RPD	
	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Spec. Limit %
Silver	0.0800	0.0780	97	0.0800	0.0780	98	80	120	1.0	20
Sodium	50.0	47.4	95	50.0	47.5	95	80	120	0	20
Strontium	1.00	0.979	98	1.00	0.984	98	80	120	0	20
Thallium	0.100	0.100	100	0.100	0.0996	100	80	120	0	20
Tin	1.00	0.961	96	1.00	0.960	96	80	120	0	20
Titanium	1.00	0.931	93	1.00	0.932	93	80	120	0	20
Vanadium	0.100	0.0964	96	0.100	0.0970	97	80	120	1.0	20
Zinc	1.00	0.968	97	1.00	0.969	97	80	120	0	20

08/13/97 11:09:08

MATRIX SPIKE(S)

Work Order # 9708173

Digestion Batch # IDIG970811073000

Analysis Batch # EMJ61E70811141402

Project Sample ID IPW0897W09

Method ICP Analysis by SW6010A

Test Code ICTSW1CR

Date Collected 08/07/97

Date Received 08/08/97

Date Prepared 08/11/97

Date Analyzed 08/11/97

Instrument J61E

Column

Analyst PLS

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Spike Sol'n #	Vol. Added	Sample Lab Sample ID 9708173-03A File # J61E0811-63 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1	Spiked Sample Lab Sample ID 9708173-04A MS File # J61E0811-65 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1	Spiked Sample Dup Lab Sample ID 9708173-05A MSD File # J61E0811-66 Aliquot Mass/Vol 50 (mL) Extract Mass/Vol 50 (mL) Dil Fact. 1	Recovery Specification Limits	RPD
Surrogate Sol'n	Vol. Added					

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Specification Limit %
Chromium	.08	0.000690	0.0800	0.0792	98	0.0800	0.0793	98	80	120	0	20

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MATRIX SPIKE(S)

Digestion Batch # IDIG970811073000

Analysis Batch # EMJ61E70811141402

Work Order # 9708173

Project Sample ID _____

Method ICP Analysis by SW6010A

Test Code ICTSW523

Date Collected 07/30/97

Date Received 07/31/97

Date Prepared 08/11/97

Date Analyzed 08/11/97

Instrument J61E.

Column _____

Analyst PLS

Reviewer DLC

Reporting Subset ___ ___

Spikes Subset ___ ___

Specs Subset ___ ___

Matrix W

Report As received

% Moisture _____

Spike Sol'n #	Vol. Added	Sample	Spiked Sample	Spiked Sample Dup	Recovery Specification Limits	RPD
		Lab Sample ID 9707840-03A	Lab Sample ID 9707840-04A MS	Lab Sample ID 9707840-05A MSD		
		File # J61E0811-70	File # J61E0811-72	File # J61E0811-73		
Surrogate Sol'n	Vol. Added	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)		
		Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)		
		Dil Fact. 10	Dil Fact. 10	Dil Fact. 10		

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Specification Limit %
Aluminum	50	14.6 B	50.0	67.2	105	50.0	69.5	110	80	120	4.6	20
Antimony	.05	0.00250 BJ	0.0500	0.0485	92	0.0500	0.0665	128 Q	80	120	33 Q	20
Arsenic	.4	-0.0112 BJ	0.400	0.409	105	0.400	0.430	110	80	120	4.6	20
Barium	1	0.0827 B	1.00	1.02	94	1.00	1.03	95	80	120	1.1	20
Beryllium	1	0.00840 B	1.00	1.03	102	1.00	1.04	104	80	120	1.9	20
Boron	1	2.83 B	1.00	3.80	96	1.00	3.81	98	80	120	2.1	20
Cadmium	.08	-0.00190 J	0.0800	0.0831	106	0.0800	0.0854	109	80	120	2.8	20
Calcium	50	508 B	50.0	560	104	50.0	564	113	80	120	8.3	20
Chromium	.08	0.0219	0.0800	0.0995	97	0.0800	0.109	109	80	120	12	20
Cobalt	1	0.00220 J	1.00	1.02	102	1.00	1.04	104	80	120	1.9	20
Copper	.08	-0.00480 BJ	0.0800	0.0705	94	0.0800	0.0834	110	80	120	16	20
Iron	50	13.4 B	50.0	64.2	102	50.0	67.2	108	80	120	5.7	20
Lead	.4	0.00760 J	0.400	0.415	102	0.400	0.422	104	80	120	1.9	20
Magnesium	50	220 B	50.0	273	106	50.0	277	114	80	120	7.3	20
Manganese	1	0.200 B	1.00	1.19	99	1.00	1.22	102	80	120	3.0	20

MATRIX SPIKE(S) (Cont'd)

Work Order # 9708173

Digestion Batch # IDIG970811073000

Analysis Batch # EMJ61E70811141402

Project Sample ID _____ _____

Method ICP Analysis by SW6010A

Test Code ICTSW523

Date Collected 07/30/97

Date Received 07/31/97

Date Prepared 08/11/97

Date Analyzed 08/11/97

Instrument J61E

Column _____

Analyst PLS

Reviewer DLC

Reporting Subset ___ ___

Spikes Subset ___ ___

Specs Subset ___ ___

Matrix W

Report As received

% Moisture _____

Spike Sol'n # Vol. Added

Surrogate Sol'n Vol. Added

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID 9707840-03A	Lab Sample ID 9707840-04A MS	Lab Sample ID 9707840-05A MSD
File # J61E0811-70	File # J61E0811-72	File # J61E0811-73
Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)
Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)
Dil Fact. 10	Dil Fact. 10	Dil Fact. 10

Analyte	Spike Sol'n Conc. mg/L	Sample Measured Conc. mg/L	Spiked Sample Spiked Conc. mg/L	Spiked Sample Measured Conc. mg/L	Spiked Sample Rec. %	Spiked Sample Dup Spiked Conc. mg/L	Spiked Sample Dup Measured Conc. mg/L	Spiked Sample Dup Rec. %	Recovery Specification Limits Low %	Recovery Specification Limits High %	RPD Result %	RPD Specification Limit %
Nickel	.1	0.0157 B	0.100	0.125	109	0.100	0.133	117	80	120	7.1	20
Potassium	50	10.8 B	50.0	64.9	108	50.0	66.3	111	80	120	2.7	20
Selenium	.1	0.0360 B	0.100	0.122	86	0.100	0.116	80	80	120	7.2	20
Silver	.08	-0.00980 J	0.0800	0.0712	101	0.0800	0.0818	114	80	120	12	20
Sodium	50	759	50.0	801	84	50.0	802	85	80	120	1.2	20
Thallium	.1	-0.0527 BJ	0.100	0.0847	137 Q	0.100	0.102	155 Q	80	120	12	20
Vanadium	.1	0.0145	0.100	0.115	100	0.100	0.131	116	80	120	15	20
Zinc	1	0.0320 B	1.00	1.10	107	1.00	1.13	110	80	120	2.8	20

MATRIX SPIKE(S)

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Work Order # 9708173

Project Sample ID _____
Method ICP Analysis by SW6010A
Test Code ICTSW5AF

Date Collected 07/30/97
Date Received 08/01/97
Date Prepared 08/11/97
Date Analyzed 08/11/97

Instrument J61E
Column _____
Analyst PLS
Reviewer DLC

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix W
Report As received
% Moisture _____

Spike Sol'n #	Vol. Added
Surrogate Sol'n	**Vol. Added**

Sample Lab Sample ID 9708009-05A
File # J61E0811-44
Aliquot Mass/Vol 50 (mL)
Extract Mass/Vol 50 (mL)
Dil Fact. 1

Spiked Sample Lab Sample ID 9708009-06A MS
File # J61E0811-46
Aliquot Mass/Vol 50 (mL)
Extract Mass/Vol 50 (mL)
Dil Fact. 1

Spiked Sample Dup Lab Sample ID 9708009-07A MSD
File # J61E0811-47
Aliquot Mass/Vol 50 (mL)
Extract Mass/Vol 50 (mL)
Dil Fact. 1

Analyte	Spike Sol'n Conc. mg/L	Sample Measured Conc. mg/L	Spiked Sample Spiked Conc. mg/L	Spiked Sample Measured Conc. mg/L	Spiked Sample Rec. %	Spiked Sample Dup Spiked Conc. mg/L	Spiked Sample Dup Measured Conc. mg/L	Spiked Sample Dup Rec. %	Recovery Specification Limits Low %	Recovery Specification Limits High %	RPD Result %	RPD Specification Limit %
Aluminum	50	19.3 B	50.0	102	165 Q	50.0	96.5	154 Q	80	120	6.9	20
Antimony	.05	0.00379 B	0.0500	0.0478	88	0.0500	0.0464	85	80	120	3.5	20
Arsenic	.4	0.00468 B	0.400	0.383	95	0.400	0.387	95	80	120	0	20
Barium	1	0.209 B	1.00	1.16	95	1.00	1.16	95	80	120	0	20
Beryllium	1	0.00293 B	1.00	0.965	96	1.00	0.962	96	80	120	0	20
Cadmium	.08	0.000560	0.0800	0.0781	97	0.0800	0.0777	96	80	120	1.0	20
Calcium	50	5.67 B	50.0	54.6	98	50.0	54.3	97	80	120	1.0	20
Chromium	.08	0.0160	0.0800	0.110	117	0.0800	0.107	113	80	120	3.5	20
Cobalt	1	0.0176	1.00	0.969	95	1.00	0.967	95	80	120	0	20
Copper	.08	0.0142 B	0.0800	0.0918	97	0.0800	0.0919	97	80	120	0	20
Iron	50	16.4 B	50.0	73.6	114	50.0	72.3	112	80	120	1.8	20
Lead	.4	0.0146	0.400	0.401	97	0.400	0.400	96	80	120	1.0	20
Magnesium	50	3.63 B	50.0	54.1	101	50.0	53.8	100	80	120	1.00	20
Manganese	1	0.111 B	1.00	1.08	96	1.00	1.07	96	80	120	0	20
Molybdenum	1	0.000620 J	1.00	0.944	94	1.00	0.942	94	80	120	0	20

MATRIX SPIKE(S) (Cont'd)

Work Order # 9708173

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Digestion Batch # IDIG970811073000

Analysis Batch # EMJ61E70811141402

Project Sample ID _____

Method ICP Analysis by SW6010A

Test Code ICTSW5AF

Date Collected 07/30/97

Date Received 08/01/97

Date Prepared 08/11/97

Date Analyzed 08/11/97

Instrument J61E

Column _____

Analyst PLS

Reviewer DLC

Reporting Subset ___ ___

Spikes Subset ___ ___

Specs Subset ___ ___

Matrix W

Report As received

% Moisture _____

Spike Sol'n #	Vol. Added	Sample	Spiked Sample	Spiked Sample Dup	Recovery Specification Limits	RPD
		Lab Sample ID 9708009-05A	Lab Sample ID 9708009-06A MS	Lab Sample ID 9708009-07A MSD		
		File # J61E0811-44	File # J61E0811-46	File # J61E0811-47		
Surrogate Sol'n	Vol. Added	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)		
		Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)		
		Dil Fact. 1	Dil Fact. 1	Dil Fact. 1		

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Low %	High %	Result %	Specification Limit %
Nickel	.1	0.0177 B	0.100	0.122	104	0.100	0.120	103	80	120	0.97	20
Potassium	50	3.33 B	50.0	52.3	98	50.0	52.0	97	80	120	1.0	20
Selenium	.1	0.000750 BJ	0.100	0.0942	93	0.100	0.0936	93	80	120	0	20
Silver	.08	-0.000690 J	0.0800	0.0756	95	0.0800	0.0759	96	80	120	1.0	20
Sodium	50	3.23	50.0	49.6	93	50.0	49.8	93	80	120	0	20
Thallium	.1	-0.00109 BJ	0.100	0.0972	98	0.100	0.0962	97	80	120	1.0	20
Vanadium	.1	0.0365	0.100	0.163	127 Q	0.100	0.157	121 Q	80	120	4.8	20
Zinc	1	0.0565 B	1.00	1.02	97	1.00	1.02	96	80	120	1.0	20

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141402

Initial Calibration # _____

Lab Sample ID CCV-1-W
File # J61E0811-82
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Silicon	50.6	50.0	101	90	110
Silver	0.498	0.500	100	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141402
Initial Calibration # _____

Lab Sample ID CCV-1-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-57
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5NA

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Silicon	50.6	50.0	101	90	110
Silver	0.498	0.500	100	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141401
Initial Calibration # _____

Lab Sample ID CCV-1-W
File # J61E0811-32
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Silicon	50.6	50.0	101	90	110
Silver	0.497	0.500	100	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141402
Initial Calibration # _____

Lab Sample ID CCV-2-W
File # J61E0811-81
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Antimony	0.500	0.500	100	90	110
Arsenic	0.527	0.500	105	90	110
Barium	0.478	0.500	96	90	110
Beryllium	0.512	0.500	102	90	110
Boron	0.505	0.500	101	90	110
Cadmium	0.534	0.500	107	90	110
Chromium	0.509	0.500	102	90	110
Cobalt	0.506	0.500	101	90	110
Copper	0.488	0.500	98	90	110
Lead	0.530	0.500	106	90	110
Manganese	0.500	0.500	100	90	110
Molybdenum	0.508	0.500	102	90	110
Nickel	0.528	0.500	106	90	110
Selenium	0.511	0.500	102	90	110
Strontium	0.482	0.500	96	90	110
Thallium	0.511	0.500	102	90	110
Tin	0.519	0.500	104	90	110
Titanium	0.487	0.500	97	90	110
Vanadium	0.513	0.500	103	90	110
Zinc	0.531	0.500	106	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141402
Initial Calibration # _____

Lab Sample ID CCV-2-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-56
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5NA

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Antimony	0.493	0.500	99	90	110
Arsenic	0.526	0.500	105	90	110
Barium	0.476	0.500	95	90	110
Beryllium	0.510	0.500	102	90	110
Boron	0.504	0.500	101	90	110
Cadmium	0.536	0.500	107	90	110
Chromium	0.508	0.500	102	90	110
Cobalt	0.502	0.500	100	90	110
Copper	0.487	0.500	97	90	110
Lead	0.531	0.500	106	90	110
Manganese	0.497	0.500	99	90	110
Molybdenum	0.509	0.500	102	90	110
Nickel	0.527	0.500	105	90	110
Selenium	0.510	0.500	102	90	110
Strontium	0.482	0.500	96	90	110
Thallium	0.510	0.500	102	90	110
Tin	0.516	0.500	103	90	110
Titanium	0.486	0.500	97	90	110
Vanadium	0.511	0.500	102	90	110
Zinc	0.532	0.500	106	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141401

Initial Calibration # _____

Lab Sample ID CCV-2-W
File # J61E0811-31
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Antimony	0.498	0.500	100	90	110
Arsenic	0.517	0.500	103	90	110
Barium	0.492	0.500	98	90	110
Beryllium	0.505	0.500	101	90	110
Boron	0.510	0.500	102	90	110
Cadmium	0.513	0.500	103	90	110
Chromium	0.502	0.500	100	90	110
Cobalt	0.497	0.500	99	90	110
Copper	0.498	0.500	100	90	110
Lead	0.513	0.500	103	90	110
Manganese	0.496	0.500	99	90	110
Molybdenum	0.505	0.500	101	90	110
Nickel	0.514	0.500	103	90	110
Selenium	0.502	0.500	100	90	110
Strontium	0.489	0.500	98	90	110
Thallium	0.502	0.500	100	90	110
Tin	0.500	0.500	100	90	110
Titanium	0.488	0.500	98	90	110
Vanadium	0.512	0.500	102	90	110
Zinc	0.507	0.500	101	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141402
Initial Calibration # _____

Lab Sample ID CCV-3-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-80
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5NA

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Aluminum	49.4	50.0	99	90	110
Calcium	51.9	50.0	104	90	110
Iron	51.2	50.0	102	90	110
Magnesium	52.7	50.0	105	90	110
Potassium	51.7	50.0	103	90	110
Sodium	48.7	50.0	97	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141402
Initial Calibration # _____

Lab Sample ID V-3-W
File # J61E0811-55
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Analyzed 08/11/97
Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Aluminum	49.1	50.0	98	90	110
Calcium	51.6	50.0	103	90	110
Iron	50.8	50.0	102	90	110
Magnesium	52.4	50.0	105	90	110
Potassium	51.5	50.0	103	90	110
Sodium	48.6	50.0	97	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141401
Initial Calibration # _____

Lab Sample ID CCV-3-W
File # J61E0811-30
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Aluminum	50.0	50.0	100	90	110
Calcium	50.8	50.0	102	90	110
Iron	50.3	50.0	101	90	110
Magnesium	50.4	50.0	101	90	110
Potassium	51.8	50.0	104	90	110
Sodium	49.2	50.0	98	90	110

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141400
Initial Calibration # _____

Lab Sample ID STD 2-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-6
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5NA

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Antimony	0.997	1.00	100	95	105
Arsenic	1.00	1.00	100	95	105
Barium	0.990	1.00	99	95	105
Beryllium	0.999	1.00	100	95	105
Boron	1.00	1.00	100	95	105
Cadmium	1.01	1.00	101	95	105
Chromium	1.000	1.00	100	95	105
Cobalt	1.00	1.00	100	95	105
Copper	0.990	1.00	99	95	105
Lead	1.00	1.00	100	95	105
Manganese	0.998	1.00	100	95	105
Nickel	1.00	1.00	100	95	105
Selenium	1.00	1.00	100	95	105
Silver	0.995	1.00	100	95	105
Strontium	0.992	1.00	99	95	105
Thallium	0.997	1.00	100	95	105
Vanadium	0.998	1.00	100	95	105
Zinc	1.01	1.00	101	95	105

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141402
Initial Calibration # _____

Lab Sample ID CICSAB-W
File # J61E0811-79
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Barium	0.0506	0.0500	101	80	120
Beryllium	0.0502	0.0500	100	80	120
Cadmium	0.0975	0.100	98	80	120
Chromium	0.0576	0.0500	115	80	120
Cobalt	0.0463	0.0500	92	80	120
Copper	0.0490	0.0500	98	80	120
Lead	0.0994	0.100	99	80	120
Manganese	0.0477	0.0500	96	80	120
Nickel	0.0923	0.100	92	80	120
Silver	0.105	0.100	105	80	120
Vanadium	0.0485	0.0500	97	80	120
Zinc	0.0975	0.100	98	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141400
Initial Calibration # _____

Lab Sample ID STD 2-W
File # J61E0811-6
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Antimony	0.997	1.00	100	95	105
Arsenic	1.00	1.00	100	95	105
Barium	0.990	1.00	99	95	105
Beryllium	0.999	1.00	100	95	105
Boron	1.00	1.00	100	95	105
Cadmium	1.01	1.00	101	95	105
Chromium	1.000	1.00	100	95	105
Cobalt	1.00	1.00	100	95	105
Copper	0.990	1.00	99	95	105
Lead	1.00	1.00	100	95	105
Manganese	0.998	1.00	100	95	105
Nickel	1.00	1.00	100	95	105
Selenium	1.00	1.00	100	95	105
Silver	0.995	1.00	100	95	105
Strontium	0.992	1.00	99	95	105
Thallium	0.997	1.00	100	95	105
Vanadium	0.998	1.00	100	95	105
Zinc	1.01	1.00	101	95	105

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141400
Initial Calibration # _____

Lab Sample ID STD 3-W
File # J61E0811-7
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Aluminum	101	100	101	95	105
Calcium	101	100	101	95	105
Iron	101	100	101	95	105
Magnesium	101	100	101	95	105
Potassium	101	100	101	95	105
Sodium	101	100	101	95	105

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141400
Initial Calibration # _____

Lab Sample ID STD 5-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-8
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5NA

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Molybdenum	10.0	10.0	100	95	105
Silicon	100	100	100	95	105
Tin	10.0	10.0	100	95	105
Titanium	10.0	10.0	100	95	105

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141402
Initial Calibration # _____

Lab Sample ID CICSAB-W
Date Analyzed 08/11/97
Reporting Subset ___
Instrument J61E
File # J61E0811-79
Spikes Subset ___
Analyst PLS
Method ICP Analysis by SW6010A
Specs Subset ___
Reviewer DLC
Test Code ICTSW5NA

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Barium	0.0506	0.0500	101	80	120
Beryllium	0.0502	0.0500	100	80	120
Cadmium	0.0975	0.100	98	80	120
Chromium	0.0576	0.0500	115	80	120
Cobalt	0.0463	0.0500	92	80	120
Copper	0.0490	0.0500	98	80	120
Lead	0.0994	0.100	99	80	120
Manganese	0.0477	0.0500	96	80	120
Nickel	0.0923	0.100	92	80	120
Silver	0.105	0.100	105	80	120
Vanadium	0.0485	0.0500	97	80	120
Zinc	0.0975	0.100	98	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141402
Initial Calibration # _____

Lab Sample ID CICSAB-W
File # J61E0811-54
Method ICP Analysis by SW6010A
Test Code ICTSW5NA

Date Analyzed 08/11/97

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument J61E
Analyst PLS
Reviewer DLC

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Barium	0.0506	0.0500	101	80	120
Beryllium	0.0501	0.0500	100	80	120
Cadmium	0.0974	0.100	97	80	120
Chromium	0.0566	0.0500	113	80	120
Cobalt	0.0458	0.0500	92	80	120
Copper	0.0491	0.0500	98	80	120
Lead	0.0978	0.100	98	80	120
Manganese	0.0472	0.0500	94	80	120
Nickel	0.0919	0.100	92	80	120
Silver	0.105	0.100	105	80	120
Vanadium	0.0478	0.0500	96	80	120
Zinc	0.0960	0.100	96	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # EMJ61E70811141401
Initial Calibration # _____

Lab Sample ID CICSAB-W Date Analyzed 08/11/97 Reporting Subset ___ Instrument J61E
File # J61E0811-29 Spikes Subset ___ Analyst PLS
Method ICP Analysis by SW6010A Specs Subset ___ Reviewer DLC
Test Code ICTSW5NA

Analyte	Measured Concentration mg/L	Reference Concentration mg/L	Recovery %	Recovery Specification Limits	
				Low %	High %
Barium	0.0522	0.0500	104	80	120
Beryllium	0.0493	0.0500	99	80	120
Cadmium	0.0951	0.100	95	80	120
Chromium	0.0564	0.0500	113	80	120
Cobalt	0.0460	0.0500	92	80	120
Copper	0.0515	0.0500	103	80	120
Lead	0.0960	0.100	96	80	120
Manganese	0.0481	0.0500	96	80	120
Nickel	0.0892	0.100	89	80	120
Silver	0.106	0.100	106	80	120
Vanadium	0.0488	0.0500	98	80	120
Zinc	0.0933	0.100	93	80	120

08/13/97 11:09:08

ANALYTICAL SPIKE(S)

Digestion Batch # IDIG970811073000

Analysis Batch # EMJ61E70811141402

Work Order # 9708173

Project Sample ID IPW0897W09

Method ICP Analysis by SW6010A

Test Code ICTSW1CR

Date Collected 08/07/97

Date Received 08/08/97

Date Prepared 08/11/97

Date Analyzed 08/11/97

Instrument J61E

Column

Analyst PLS

Reviewer DLC

Reporting Subset

Spikes Subset

Specs Subset

Matrix W

Report As received

% Moisture

Spike Sol'n # Vol. Added

Surrogate Sol'n Vol. Added

Sample: Lab Sample ID 9708173-03A; File # J61E0811-63; Aliquot Mass/Vol 50 (mL); Extract Mass/Vol 50 (mL); Dil Fact. 1

Spiked Sample: Lab Sample ID 9708173-03A; File # J61E0811-64; Aliquot Mass/Vol 50 (mL); Extract Mass/Vol 50 (mL); Dil Fact. 1.0989

Spiked Sample Dup: Lab Sample ID; File #; Aliquot Mass/Vol; Extract Mass/Vol; Dil Fact.

Analyte	Spike Sol'n Conc. mg/L	Sample Measured Conc. mg/L	Spiked Sample Spiked Conc. mg/L	Spiked Sample Measured Conc. mg/L	Spiked Sample Rec. %	Spiked Sample Dup Spiked Conc.	Spiked Sample Dup Measured Conc.	Spiked Sample Dup Rec. %	Recovery Specification Limits Low %	Recovery Specification Limits High %	RPD Result %	RPD Specification Limit %
Chromium	.08	0.000690	0.0879	0.0868	98				75	125		

ANALYTICAL SPIKE(S)

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Work Order # 9708173

Project Sample ID
Method ICP Analysis by SW6010A
Test Code ICTSW523

Date Collected 07/30/97
Date Received 07/31/97
Date Prepared 08/11/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Spike Sol'n # Vol. Added

Surrogate Sol'n Vol. Added

Sample
Lab Sample ID 9707840-03A
File # J61E0811-70
Aliquot Mass/Vol 50 (mL)
Extract Mass/Vol 50 (mL)
Dil Fact. 10

Spiked Sample
Lab Sample ID 9707840-03A
File # J61E0811-71
Aliquot Mass/Vol 50 (mL)
Extract Mass/Vol 50 (mL)
Dil Fact. 10.989

Spiked Sample Dup
Lab Sample ID
File #
Aliquot Mass/Vol
Extract Mass/Vol
Dil Fact.

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc.	Measured Conc.	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	Specification Limit %
Aluminum	50	14.6 B	549	579	103				75	125		
Antimony	.05	0.00250 BJ	0.549	0.587	106				75	125		
Arsenic	.4	-0.0112 BJ	4.40	4.62	105				75	125		
Barium	1	0.0827 B	11.0	10.4	94				75	125		
Beryllium	1	0.00840 B	11.0	11.0	100				75	125		
Boron	1	2.83 B	11.0	13.5	97				75	125		
Cadmium	.08	-0.00190 J	0.879	0.899	102				75	125		
Calcium	50	508 B	549	1070	101				75	125		
Chromium	.08	0.0219	0.879	0.911	101				75	125		
Cobalt	1	0.00220 J	11.0	10.7	97				75	125		
Copper	.08	-0.00480 BJ	0.879	0.831	95				75	125		
Iron	50	13.4 B	549	575	102				75	125		
Lead	.4	0.00760 J	4.40	4.52	103				75	125		
Magnesium	50	220 B	549	800	106				75	125		
Manganese	1	0.200 B	11.0	11.1	99				75	125		

ANALYTICAL SPIKE(S) (Cont'd)

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Work Order # 9708173

Project Sample ID
Method ICP Analysis by SW6010A
Test Code ICTSW523

Date Collected 07/30/97
Date Received 07/31/97
Date Prepared 08/11/97
Date Analyzed 08/11/97

Instrument J61E
Column
Analyst PLS
Reviewer DLC

Reporting Subset
Spikes Subset
Specs Subset

Matrix W
Report As received
% Moisture

Spike Sol'n # / Vol. Added
Surrogate Sol'n / Vol. Added

Sample: Lab Sample ID 9707840-03A; File # J61E0811-70; Aliquot Mass/Vol 50 (mL); Extract Mass/Vol 50 (mL); Dil Fact. 10

Spiked Sample: Lab Sample ID 9707840-03A; File # J61E0811-71; Aliquot Mass/Vol 50 (mL); Extract Mass/Vol 50 (mL); Dil Fact. 10.989

Spiked Sample Dup: Lab Sample ID; File #; Aliquot Mass/Vol; Extract Mass/Vol; Dil Fact.

Analyte	Spike Sol'n Conc. mg/L	Sample Measured Conc. mg/L	Spiked Conc. mg/L	Spiked Sample Measured Conc. mg/L	Rec. %	Spiked Sample Dup Spiked Conc.	Spiked Sample Dup Measured Conc.	Rec. %	Recovery Specification Limits Low %	High %	RPD Result %	RPD Specification Limit %
Nickel	.1	0.0157 B	1.10	1.14	102				75	125		
Potassium	50	10.8 B	549	587	105				75	125		
Selenium	.1	0.0360 B	1.10	1.14	100				75	125		
Silver	.08	-0.00980 J	0.879	0.868	100				75	125		
Sodium	50	759	549	1300	98				75	125		
Thallium	.1	-0.0527 BJ	1.10	1.08	103				75	125		
Vanadium	.1	0.0145	1.10	1.11	100				75	125		
Zinc	1	0.0320 B	11.0	11.3	102				75	125		

08/13/97 11:09:08

ANALYTICAL SPIKE(S)

Digestion Batch # IDIG970811073000

Analysis Batch # EMJ61E70811141402

Work Order # 9708173

Project Sample ID _____

Method ICP Analysis by SW6010A

Test Code ICTSW5AF

Date Collected 07/30/97

Date Received 08/01/97

Date Prepared 08/11/97

Date Analyzed 08/11/97

Instrument J61E

Column _____

Analyst PLS

Reviewer DLC

Reporting Subset ___ ___

Spikes Subset ___ ___

Specs Subset ___ ___

Matrix W

Report As received

% Moisture _____

Spike Sol'n #	Vol. Added	Sample	Spiked Sample	Spiked Sample Dup	Recovery Specification Limits	RPD
		Lab Sample ID 9708009-05A	Lab Sample ID 9708009-05A	Lab Sample ID		
		File # J61E0811-44	File # J61E0811-45	File #		
Surrogate Sol'n	Vol. Added	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol		
		Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)	Extract Mass/Vol		
		Dil Fact. 1	Dil Fact. 1.0989	Dil Fact.		

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc.	Measured Conc.	Rec. %	Low %	High %	Result %	Specification Limit %
Aluminum	50	19.3 B	54.9	75.0	101				75	125		
Antimony	.05	0.00379 B	0.0549	0.0568	96				75	125		
Arsenic	.4	0.00468 B	0.440	0.432	97				75	125		
Barium	1	0.209 B	1.10	1.23	93				75	125		
Beryllium	1	0.00293 B	1.10	1.04	95				75	125		
Cadmium	.08	0.000560	0.0879	0.0849	96				75	125		
Calcium	50	5.67 B	54.9	59.4	98				75	125		
Chromium	.08	0.0160	0.0879	0.101	97				75	125		
Cobalt	1	0.0176	1.10	1.02	91				75	125		
Copper	.08	0.0142 B	0.0879	0.0983	96				75	125		
Iron	50	16.4 B	54.9	69.6	97				75	125		
Lead	.4	0.0146	0.440	0.436	96				75	125		
Magnesium	50	3.63 B	54.9	57.2	98				75	125		
Manganese	1	0.111 B	1.10	1.13	93				75	125		
Molybdenum	1	0.000620 J	1.10	1.02	93				75	125		

ANALYTICAL SPIKE(S) (Cont'd)

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Project Sample ID _____
Method ICP Analysis by SW6010A
Test Code ICTSW5AF

Date Collected 07/30/97
Date Received 08/01/97
Date Prepared 08/11/97
Date Analyzed 08/11/97

Instrument J61E
Column _____
Analyst PLS
Reviewer DLC

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix W
Report As received
% Moisture _____

Spike Sol'n #	Vol. Added	Sample	Spiked Sample	Spiked Sample Dup	Recovery Specification Limits	RPD
		Lab Sample ID 9708009-05A	Lab Sample ID 9708009-05A	Lab Sample ID		
		File # J61E0811-44	File # J61E0811-45	File #		
Surrogate Sol'n	Vol. Added	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol 50 (mL)	Aliquot Mass/Vol		
		Extract Mass/Vol 50 (mL)	Extract Mass/Vol 50 (mL)	Extract Mass/Vol		
		Dil Fact. 1	Dil Fact. 1.0989	Dil Fact.		

Analyte	Spike Sol'n Conc. mg/L	Measured Conc. mg/L	Spiked Conc. mg/L	Measured Conc. mg/L	Rec. %	Spiked Conc.	Measured Conc.	Rec. %	Low %	High %	Result %	Specification Limit %
Nickel	.1	0.0177 B	0.110	0.123	96				75	125		
Potassium	50	3.33 B	54.9	57.7	99				75	125		
Selenium	.1	0.000750 BJ	0.110	0.104	94				75	125		
Silver	.08	-0.000690 J	0.0879	0.0845	97				75	125		
Sodium	50	3.23	54.9	54.8	94				75	125		
Thallium	.1	-0.00109 BJ	0.110	0.108	99				75	125		
Vanadium	.1	0.0365	0.110	0.142	96				75	125		
Zinc	1	0.0565 B	1.10	1.07	92				75	125		

08/13/97 11:09:08

SERIAL DILUTION CHECK

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Work Order # 9708173

Project Sample ID IPW0897W09
Method ICP Analysis by SW6010A
Test Code ICTSW1CR

Date Prepared 08/11/97
Date Analyzed 08/11/97

Instrument J61E
Analyst PLS
Reviewer DLC

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix W
Report As received

	Sample Result Lab Sample ID 9708173-03A Dilution Factor 1		Diluted Sample Result Lab Sample ID 9708173-03A Dilution Factor 5		% Difference	
Analyte	Measured Concentration mg/L	Detection Limit mg/L	Measured Concentration mg/L	Detection Limit mg/L	Result	Specification Limit %
Chromium	0.000690	0.000348	ND	0.00174	NC	10

08/13/97 11:09:08

SERIAL DILUTION CHECK

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Work Order # 9708173
Page 48

Project Sample ID _____ Date Prepared 08/11/97 Instrument J61E Reporting Subset ___ Matrix W
Method ICP Analysis by SW6010A Date Analyzed 08/11/97 Analyst PLS Spikes Subset ___ Report As received
Test Code ICTSW523 Reviewer DLC Specs Subset ___

	Sample Result Lab Sample ID 9707840-03A Dilution Factor 10		Diluted Sample Result Lab Sample ID 9707840-03A Dilution Factor 50		% Difference	
Analyte	Measured Concentration mg/L	Detection Limit mg/L	Measured Concentration mg/L	Detection Limit mg/L	Result	Specification Limit %
Aluminum	14.6 B	0.0529	15.0	0.265	2.7	10
Antimony	0.00250 BJ	0.0313	0.0280 J	0.156	1020 Q	10
Arsenic	-0.0112 BJ	0.0175	-0.0260 J	0.0876	0	10
Barium	0.0827 B	0.00118	0.0830	0.00590	0.36	10
Beryllium	0.00840 B	0.00171	0.0345	0.00855	311 Q	10
Boron	2.83 B	0.0722	2.81	0.361	0.71	10
Cadmium	-0.00190 J	0.00191	-0.00100 J	0.00955	0	10
Calcium	508 B	0.0794	510	0.397	0.51	10
Chromium	0.0219	0.00348	0.0190	0.0174	13 Q	10
Cobalt	0.00220 J	0.00513	0.0110 J	0.0256	400 Q	10
Copper	-0.00480 BJ	0.0155	-0.0470 J	0.0777	0	10
Iron	13.4 B	0.155	13.3	0.773	1.2	10
Lead	0.00760 J	0.0182	0.0120 J	0.0912	58 Q	10
Magnesium	220 B	0.0400	214	0.200	2.5	10
Manganese	0.200 B	0.000854	0.208	0.00427	4.2	10
Nickel	0.0157 B	0.00638	0.00550 J	0.0319	65 Q	10
Potassium	10.8 B	0.348	14.9	1.74	38 Q	10
Selenium	0.0360 B	0.0171	0.0835 J	0.0856	132 Q	10
Silver	-0.00980 J	0.00537	-0.000500 J	0.0268	0	10
Sodium	759	0.876	736	4.38	3.1	10

SERIAL DILUTION CHECK (Cont'd)

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Project Sample ID _____ Date Prepared 08/11/97 Instrument J61E Reporting Subset ___ Matrix W
Method ICP Analysis by SW6010A Date Analyzed 08/11/97 Analyst PLS Spikes Subset ___ Report As received
Test Code ICTSW523 Reviewer DLC Specs Subset ___

	Sample Result Lab Sample ID 9707840-03A Dilution Factor 10		Diluted Sample Result Lab Sample ID 9707840-03A Dilution Factor 50		% Difference	
Analyte	Measured Concentration mg/L	Detection Limit mg/L	Measured Concentration mg/L	Detection Limit mg/L	Result	Specification Limit %
Thallium	-0.0527 BJ	0.0281	-0.0800 J	0.141	0	10
Vanadium	0.0145	0.00523	0.0200 J	0.0262	38 Q	10
Zinc	0.0320 B	0.0169	0.197	0.0844	516 Q	10

08/13/97 11:09:08

SERIAL DILUTION CHECK

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Work Order # 9708173
Page 50

Project Sample ID _____ Date Prepared 08/11/97 Instrument J61E Reporting Subset ___ Matrix W
Method ICP Analysis by SW6010A Date Analyzed 08/11/97 Analyst PLS Spikes Subset ___ Report As received
Test Code ICTSW5AF Reviewer DLC Specs Subset ___

	Sample Result Lab Sample ID 9708009-05A Dilution Factor 1		Diluted Sample Result Lab Sample ID 9708009-05A Dilution Factor 5		% Difference	
Analyte	Measured Concentration mg/L	Detection Limit mg/L	Measured Concentration mg/L	Detection Limit mg/L	Result	Specification Limit %
Aluminum	19.3 B	0.00529	20.7	0.0265	7.4	10
Antimony	0.00379 B	0.00313	0.00235 J	0.0156	38 Q	10
Arsenic	0.00468 B	0.00175	-0.00460 J	0.00876	0	10
Barium	0.209 B	0.000118	0.213	0.000590	1.9	10
Beryllium	0.00293 B	0.000171	0.00460	0.000855	57 Q	10
Cadmium	0.000560	0.000191	0.000650 J	0.000955	16 Q	10
Calcium	5.67 B	0.00794	5.72	0.0397	0.76	10
Chromium	0.0160	0.000348	0.0150	0.00174	6.8	10
Cobalt	0.0176	0.000513	0.0166	0.00256	5.6	10
Copper	0.0142 B	0.00155	0.0118	0.00777	17 Q	10
Iron	16.4 B	0.0155	16.8	0.0773	2.3	10
Lead	0.0146	0.00182	0.0134	0.00912	8.0	10
Magnesium	3.63 B	0.00400	3.67	0.0200	1.1	10
Manganese	0.111 B	0.000085	0.112	0.000427	1.0	10
Molybdenum	0.000620 J	0.000785	-0.00210 J	0.00392	0	10
Nickel	0.0177 B	0.000638	0.0158	0.00319	11 Q	10
Potassium	3.33 B	0.0348	3.21	0.174	3.4	10
Selenium	0.000750 BJ	0.00171	0.00400 J	0.00856	433 Q	10
Silver	-0.000690 J	0.000537	-0.000350 J	0.00268	0	10
Sodium	3.23	0.0876	2.69	0.438	17 Q	10

SERIAL DILUTION CHECK (Cont'd)

Digestion Batch # IDIG970811073000
Analysis Batch # EMJ61E70811141402

Project Sample ID _____ Date Prepared 08/11/97 Instrument J61E Reporting Subset ___ Matrix W
Method ICP Analysis by SW6010A Date Analyzed 08/11/97 Analyst PLS Spikes Subset ___ Report As received
Test Code ICTSW5AF Reviewer DLC Specs Subset ___

	Sample Result Lab Sample ID 9708009-05A Dilution Factor 1		Diluted Sample Result Lab Sample ID 9708009-05A Dilution Factor 5		% Difference	
Analyte	Measured Concentration mg/L	Detection Limit mg/L	Measured Concentration mg/L	Detection Limit mg/L	Result	Specification Limit %
Thallium	-0.00109 BJ	0.00281	-0.0146 J	0.0141	0	10
Vanadium	0.0365	0.000523	0.0390	0.00262	6.8	10
Zinc	0.0565 B	0.00169	0.0580	0.00844	2.7	10

ANALYTICAL PROTOCOL SUMMARY
COMMENTS/NARRATIVE

Method ICP Analysis by SW6010A Specification# ICPS

Lab Sample ID File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action

QUALITY CONTROL EXCEPTION REPORT
SUMMARY

QCER #	Analysis Batch Number
970811-08	J61E970811141400

QUALITY CONTROL EXCEPTION REPORT **REPORT COPY 9708173**
LEVEL 2 - ANALYTICAL

QCER # 970811-08 **Revised: 08/12/97**

Analyst: PAT SIMMONS Instrument: J61E Date Analyzed: 08/11/97
Batch #: J61E970811141400 Matrix: WATER Status: C
Prot Spec: ICPS Analysis File #: T70811B

Lab Sample ID:	Client ID:	CSC:	Project Sample ID:
9707840			
9708017			
9708173	IP_WILM	JAL	
9708169			
9708009			

SAMPLE PREPARATION:

PROBLEM IDENTIFICATION
Sample Went Dry _
Loss of ____ %
of Sample _
Emulsion Formed _
Blank Contamination _
Instrument _
Hold Time _
MS/MSD Not Available _
Instrument _
Other (Describe) _

CORRECTIVE ACTION TAKEN
Reprepare Sample _
Sample Sent for Analysis X
Resample _
Other (Describe) _

Comments:

SAMPLE ANALYSIS:

PROBLEM IDENTIFICATION
Surrogate Recovery _
MS/MSD Recovery X
LCS/LCSD Recovery _
MS/MSD Precision X
LCS/LCSD Precision _
Standard _
Blank Contamination _
Instrument _
Hold Time _
No MS/MSD Available for Batch _
Sample pH _
Dil. Due to Hi-Level Non-Target Analytes X
Serial Dilution _
Analytical Spike _
Internal Standard _
Other (Describe) _

PROBABLE CAUSE
Matrix Effect X
Instrument _
Spiking Error _
Contamination _
Coelution _
Unknown _
Other(Describe) X
HIGH ANALYTE CONC.

CORRECTIVE ACTION TAKEN
Reprepare Sample _
Reanalyze Sample _
Reanalyze LCS/LCSD _
Recalibrate Instrument _
Analyze Out of Hold Time _
Prepare New Standard _
Flag Data X
Resample _
Analyze by MSA _
Perform Analytical Spike X
No Action Required _
Level 3 QCER to Follow _
Other (Describe) X
DILUTE SAMPLES

Comments: Due to sample matrix interference, WO's 9708017 and 9707840 will only be reported at a 1-10 dilution.
See next page.

Distribution: CSC, Lab, Report

In the MS/D on 9708009-05A the following failed:

	MS%	MSD%	RPD%
Al	165	154	
V	127	121	

In the MS/D on 9707840-03A, the following failed:

	MS%	MSD%	RPD%
Sb		128	33
Tl	137	155	

All other QC were within limits.

RADIAN INTERNATIONAL LLC

Chain of Custody Record

9708147-149, 155

PROJECT: International Paper

SITE: Wilmington, NC

PREPARED BY (Signature): [signature]

FIELD SAMPLE I.D.	SAMPLE MATRIX	DATE/TIME	MS/MSD	NO. OF CONTAINERS	8260	8270	6010 As, Cr	REMARKS
IPW0897W23	H_2O	8/6/97 1:45		6	3X	3X	X	
IPW0897W24	↓	↓ 2:15		6	3X	3X	X	
IPW0897WFB	↓	↓ 3:00		3	3X			

REMARKS: Shipped FedEx 4557632715

RELINQUISHED BY:	DATE	TIME
[signature]	8/6/97	16:00

RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME

LAB USE ONLY

RECEIVED FOR LABORATORY BY:	DATE	TIME	AIRBILL NO.	OPENED BY:	DATE	TIME	TEMP°C	SEAL #	CONDITION
Firuz Nahidi	8/7/97	9:35							

REMARKS: Addendum #97-1071

IEG-4VFH3-96-30337cc.FH5

FedEx USA Airbill 4557632715

FedEx Recipient Copy

1456771 00026/00300

From 8/6/97 Sender's FedEx Account Number 1328-4690-1

Sender's Name Craig Kennedy Phone (919) 461-1100

Dept./Floor/Suite/Room

RADIAN INTERNATIONAL LLC

1600 PERIMETER PARK

MORRISVILLE State NC Zip 27560

Sender's Phone/Fax/Employee Information 258058 1501

To Sample Control Phone (512) 244-0855

Dept./Floor/Suite/Room

Radian International LLC

14046 Summit Dr. Suite 101

Austin State TX Zip 78728

For 150 lbs FedEx Location check here

Hold Weekday Hold Saturday

For Saturday Delivery check here

Express Package Service (Packages under 150 lbs)

FedEx Priority Overnight

FedEx Standard Overnight

NEW FedEx First Overnight

Express Freight Service (For Packages over 150 lbs)

FedEx Priority Freight

FedEx Standard Freight

Packaging

FedEx Envelope

FedEx Pak

FedEx Box

Special Handling

Does this shipment contain dangerous goods?

Dry Ice

Payment

Bill to: Sender

FedEx Account No.

Credit Card No.

Total Packages 1

51

Release Signature

272

4557632715

Rev. Date 6/96

PART #147956

GBFE 3/97

RADIAN INTERNATIONAL LLC

Chain of Custody Record

9708147-149

PROJECT: International Paper

SITE: Wilmington, NC

PREPARED BY (Signature):

FIELD SAMPLE I.D.	SAMPLE MATRIX	DATE/TIME	MS/MSD	NO. OF CONTAINERS	8260	8270	6010 As, Cr								REMARKS
IPW0897W10	H_2O	8/6/97 12:00		6	3 X	2 X	3 X								
IPW0897W12	H_2O	8/6/97 1:00		6	3 X	2 X	3 X								

REMARKS: Shipped FedEx 4557632660

RELINQUISHED BY:	DATE	TIME
	8/6/97	16:00

RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME

Addendum #97-107

LAB USE ONLY

RECEIVED FOR LABORATORY BY:	DATE	TIME	AIRBILL NO.	OPENED BY:	DATE	TIME	TEMP°C	SEAL #	CONDITION
Kim Nahidi	8/7/97	9:15							

REMARKS:

IEG-01FH13-96-30337coc.FH5

fedex USA Airbill 4557632660

1456771 00023/00300

1 From

Date 8/6/97 Sender's FedEx Account Number 1328-4690-1

Craig Kennedy Phone (919) 461-1100

Dept./Floor/Suite/Room

RADIAN INTERNATIONAL LLC

1600 PERIMETER PARK

MORRISVILLE State NC Zip 27560

2 Your Internal Billing Reference Information 258058-1501

3 To

Sample Control Phone (512) 244-0855

Dept./Floor/Suite/Room

Radian International LLC

14046 Summit Dr. Suite 101

Austin State TX Zip 78728

For HOLD at FedEx Location check here

Hold Weekday Hold Saturday

For Saturday Delivery check here

4 Express Package Service

X FedEx Priority Overnight FedEx Standard Overnight

NEW FedEx First Overnight

5 Express Freight Service

FedEx 1-Day Freight FedEx 2-Day Freight FedEx 3-Day Freight

6 Packaging

FedEx Envelope FedEx Pak FedEx Box FedEx Tube X

7 Special Handling

Does this shipment contain dangerous goods?

Dry Ice Cargo Aircraft Only

8 Payment

Bill to: X Sender Recipient Third Party Credit Card Cash/Check

FedEx Account No.

Credit Card No.

Exp. Date

Total Packages 1 Total Weight 38

Credit Card Auth.

9 Release Signature

272

Rev. Date 6/96
PART #147956

GBFE 3/97

4557632660

NADIAN INTERNATIONAL

CHAIN OF CUSTODY ADDENDUM

ADDENDUM # 97- 1071

RECEIVED BY : Siri Nahidi

DATE RECEIVED : 8/7/97

UNPACKED DATE: 8/7/97

CLIENT CODE : IP_ WILM

VOC SAMPLES SEE SECTION 1.0 , 2.0 & 6.0 ☐ YES

Number of Shipping Containers Received with Chain : 2

Work Orders		
9708147		
9708 148		
9708 149		

1.0 CONTAINERS EXAMINED UPON RECEIPT BY: JN

Container Sealed: ☑ YES ☐ NO

Custody Seal Present: ☑ YES ☐ NO

Custody Seal Number Present: ☐ YES ☑ NO

Custody Seal Signed\Dated: ☑ YES ☐ NO

If seal not intact, list air bill number of container(s).

2.0 VOC CANISTERS EXAMINED UPON RECEIPT NA

Canister Valves Closed : ☐ YES ☐ NO

Canister Valves Capped : ☐ YES ☐ NO

Samples Received Match Chain : ☐ YES ☐ NO

See additional comments : ☐ YES ☐ NO

Packing Material Used:

Comments:

3.0 SAMPLE TEMPERATURE/PRESERVATION UPON RECEIPT JN PYROMETER # P-2

The temperature of container(s): (acceptable tolerance 2 - 6 °C)

2°										

If temperature is outside acceptable tolerance, Client Services was notified (_____ CSC) list all ID's below

Samples do not require cooling :

OK to analyze samples: ☐ YES ☐ NO

PRESERVATION OF SAMPLES REQUIRED: ☐ NA ☑ YES VERIFIED BY: JN

Base samples are >pH 12 : ☐ YES ☐ NO

Acid preserved are < pH2 : ☑ YES ☐ NO

Cyanide samples checked for sulfides: ☐ YES

Sulfide samples appear to be preserved with zinc acetate : ☐ YES ☐ NO

Samples checked for chlorine per specification: ☐ YES

Free Chlorine Present: ☑ YES ☑ NO

JN 8/7/97

If sample preservation/temperature(°C) is outside acceptable tolerance, Client Services was notified (CSC) list all ID's below

Field Sample ID	Analysis	pH/Temp

Field Sample ID	Analysis	pH/Temp

4.0 CONDITION OF SAMPLES

VERIFIED BY: JN

Samples received match COC : ☑ YES ☐ NO

Bottles received intact : ☑ YES ☐ NO

Samples screened for radioactivity : ☐ YES ☑ NO

Samples received from USDA restricted area : ☐ YES ☑ NO

See additional discrepancies/comments section : ☐ YES ☑ NO

5.0 ADDITIONAL DISCREPANCIES

Appears on COC			Appears on Label			Comments
Sample ID	Date/Time	Analysis	Sample ID	Date/Time	Analysis	

6.0 SHIPPING DOCUMENTATION

Freight bill is available and attached to COC : ☑ YES ☐ NO

Carrier : FEDEX

Freight bill numbers : 4557632660, 4557632715

7.0 COMMENTS

Client chain-of-custody is signed, dated with time of receipt, and addendum number is noted in the comments section.

Sample Control Addendum Verified By: [signature]

Date: 8/7/97

(revision 1.0 03/26/97)

RADIAN INTERNATIONAL LLC

Chain of Custody Record

9708171-173,174

Page 1 of 1

PROJECT: International Paper

SITE: Wilmington, NC

PREPARED BY (Signature):

FIELD SAMPLE I.D.	SAMPLE MATRIX	DATE/TIME	MS/MSD	NO. OF CONTAINERS	8260 HCL	8270	6010 As, Cr								REMARKS
IPW0897W06	H_2O	8/7/97 9:30		6	3X	2X	1X								
IPW0897W07	↓	↓ 8:00		6	3X	1X	2X								1 broken 8270
IPW0897W09	↓	↓ 8:45	X	10	6X	3X	1X								trip 8/8/97
Trip Blank	↓			2	2X										(1) 4mmAB

REMARKS: Shipped FedEx. 4557632704

RELINQUISHED BY:	DATE	TIME
	8/7/97	12:00

RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME

LAB USE ONLY

RECEIVED FOR LABORATORY BY:	DATE	TIME	AIRBILL NO.	OPENED BY:	DATE	TIME	TEMP°C	SEAL #	CONDITION
	8/12/97	1015							

REMARKS:

Addendum 971082

IEG-VFH13-96-30337coc.FH5

4557632704

1456771 00027/00300

8/7/97 1328-4690-1

Craig Kennedy 919 461-1100

RADIAN INTERNATIONAL LLC

1600 PERIMETER PARK

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Sample Control 512 244-0855

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1 61

4557632704

272

Rev. Date 6/96
PART #147956

GBPE 3/97

RADIAN
INTERNATIONAL

CHAIN OF CUSTODY ADDENDUM

ADDENDUM # 97- 1082

RECEIVED BY : Nicki L. Gr

DATE RECEIVED : 8-8-97

UNPACKED DATE: 8-8-97

CLIENT CODE : 1P-Wilm

VOC SAMPLES SEE SECTION 1.0 , 2.0 & 6.0 ☐ YES

Number of Shipping Containers Received with Chain : 1

Work Orders		
9708171		
172		
173		
174		

1.0 CONTAINERS EXAMINED UPON RECEIPT BY: (M)

Container Sealed: ☑ YES ☐ NO

Custody Seal Present: ☑ YES ☐ NO

Custody Seal Number Present: ☐ YES ☑ NO

Custody Seal Signed\Dated: ☑ YES ☐ NO

If seal not intact, list air bill number of container(s).

2.0 VOC CANISTERS EXAMINED UPON RECEIPT

Canister Valves Closed : ☐ YES ☐ NO

Canister Valves Capped : ☐ YES ☐ NO

Samples Received Match Chain : ☐ YES ☐ NO

See additional comments : ☐ YES ☐ NO

Packing Material Used:

Comments:

3.0 SAMPLE TEMPERATURE/PRESERVATION UPON RECEIPT (M) PYROMETER # P-3

The temperature of container(s): (acceptable tolerance 2 - 6 °C)

3°										

If temperature is outside acceptable tolerance, Client Services was notified (_____ CSC) list all ID's below

Samples do not require cooling :

OK to analyze samples: ☑ YES ☐ NO

PRESERVATION OF SAMPLES REQUIRED: ☐ NA ☑ YES VERIFIED BY: JN

Base samples are >pH 12 : ☐ YES ☐ NO

Acid preserved are < pH2 : ☑ YES ☐ NO

Cyanide samples checked for sulfides: ☐ YES

Sulfide samples appear to be preserved with zinc acetate : ☐ YES ☐ NO

Samples checked for chlorine per specification: ☑ YES

Free Chlorine Present: ☐ YES ☑ NO

If sample preservation/temperature(°C) is outside acceptable tolerance, Client Services was notified (CSC) list all ID's below

Field Sample ID	Analysis	pH/Temp

Field Sample ID	Analysis	pH/Temp

4.0 CONDITION OF SAMPLES

VERIFIED BY: (ma)

Samples received match COC : ☑ YES ☐ NO

Bottles received intact : ☐ YES ☑ NO

Samples screened for radioactivity : ☐ YES ☑ NO

Samples received from USDA restricted area : ☐ YES ☑ NO

See additional discrepancies/comments section : ☑ YES ☐ NO

5.0 ADDITIONAL DISCREPANCIES

Appears on COC			Appears on Label			Comments
Sample ID	Date/Time	Analysis	Sample ID	Date/Time	Analysis	

6.0 SHIPPING DOCUMENTATION

Freight bill is available and attached to COC : ☑ YES ☐ NO

Carrier : Fed-X

Freight bill numbers : 4557632704

7.0 COMMENTS

1 bottle Id # IPW089 TW 097 (8270) was received broken (ma) 8/8/97

Client chain-of-custody is signed, dated with time of receipt, and addendum number is noted in the comments section.

Sample Control Addendum Verified By: M Spillman

Date: 8/8/97

(revision 1.0 03/26/97)