8260
VP-LW-41

10/13/97 09:45:03

RADIAN ANALYTICAL SERVICES
PPAS REPORT
TABLE OF CONTENTS

Work Order # 9709789

Client DOW CHEMICAL CO.
Facility PLAQUEMINE, LA
Client Code DOW PLAQ

Certified By
Date Oct 15, 1997

10/13/9 2:45:03

WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To P.O.Box 201088
Austin, TX 78720-1088
Attention HEIDI KRALL

Client Code DOW PLAQ
Client DOW CHEMICAL CO.
Facility PLAQUEMINE, LA
Work ID BIF TRIAL BURNS

Work Order # 9709789
Page 1

RCN 800117.5000

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

CSC DPMAXWELL

Case # NA
SDG # NA
RAS # 70807ADPM

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
DOW-VP-LW-41-V1	01A	COMPVO00	Compositing for GC/MS VOA
DOW-VP-LW-41-V2	02A	COMPVO00	Compositing for GC/MS VOA
DOW-VP-LW-41-V3	03A	COMPVO00	Compositing for GC/MS VOA
DOW-VP-LW-41-V4	04A	COMPVO00	Compositihg for GC/MS VOA
DOW-VP-LW-41-V5	05A	COMPVO00	Compositing for GC/MS VOA
DOW-VP-LW-41-V6	06A	COMPVO00	Compositing for GC/MS VOA
DOW-VP-LW-41-V7	07A	COMPVO00	Compositing for GC/MS VOA
DOW-VP-LW-41-V8	08A	COMPVO00	Compositing for GC/MS VOA
DOW-VP-LW-41-V9	09A	COMPVO00	Compositing for GC/MS VOA
DOW-VP-LW-41-V10	10A	COMPVO00	Compositing for GC/MS VOA
DOW-VP-LW-41-V11	11A	COMPVO00	Compositing for GC/MS VOA
DOW-VP-LW-41-V1/V11	12A COMPOSITE	826SWAVP	Volatile Organics by GC/MS
	12B COMPOSITE	SPAREB00	Spare Sample
DOW-VP-LW-41-V1/V11	13A DUP	826SWAVP	Volatile Organics by GC/MS
	13B DUP	SPAREB00	Spare Sample

DO A 051348
CONFIDENTIAL

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.

Client DOW CHEMICAL CO.
Facility PLAQUEMINE, LA
Client Code DOW PLAQ
Method Volatile Organics SW8260A

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
DOW-VP-LW-41-V1/V11	9709789-13A	826SWAVP	NA	MSMSDB71007004801
DOW-VP-LW-41-V1/V11	9709789-12A	826SWAVP	NA	MSMSDB71007004801

Method Volatile Organics SW8260A
Test Code 826SWAVP

Project Sample ID:	DOW-VP-LW-41--V1/V11	DOW-VP-LW-41--V1/V11		
Lab ID:	9709789-13A DUP	9709789-12A COMPOS		
File ID:	B1006739	B1006751		
Date Collected:	09/24/97	09/24/97		
Date Prepared:				
Date Analyzed:	10/07/97 05:13:00	10/07/97 14:22:00		
Dilution Factor:	10000	10000		
Matrix:	Water	Water		
Units:	ug/mL	ug/mL		
Report as:	received	received		
Column:				
Analyte	Conc. DL	Conc. DL	Conc. DL	Conc. DL
Chlorobenzene	13300 935	15500 935		
1,1,2-Trichloroethane	209000 1190	222000 1190		

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	101	98		
1,2-Dichloroethane-d4	101	97		
Toluene-d8	101	102		

DO A 051352
CONFIDENTIAL

10/13/97 09:45:03

INITIAL CALIBRATION

Work Order # 9709789

Initial Calibration # MSDB970825000000

Sol'n # #MS-VOA-STD-6

Calibration Date 08/25/97 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
Dichlorodifluoromethane	1.647 1	1.970 5	1.777 20	1.999 50	2.136 100			1.91	10.1	
Chloromethane SPCC	3.245 0.5	2.825 5	2.655 20	2.977 50	3.048 100			2.95	7.58	
Vinyl chloride CCC	1.944 0.5	2.199 5	1.957 20	2.277 50	2.348 100			2.14	8.64	
Bromomethane										0.999
Chloroethane	0.736 0.5	0.923 5	0.922 20	1.051 50	1.090 100			0.944	14.7	
Trichlorofluoromethane	1.594 0.5	1.739 5	1.529 20	1.721 50	1.758 100			1.67	6.05	
Acrolein	0.091 2.5	0.106 25	0.104 100	0.113 250	0.105 500			0.104	7.69	
Acetonitrile	0.061 10	0.061 25	0.059 100	0.065 250	0.067 500			0.0626	5.25	
Acetone	0.313 2	0.269 5	0.225 20	0.238 50	0.254 100			0.260	13.1	
Iodomethane	2.555 1	1.988 5	1.828 20	1.908 50	1.990 100			2.05	14.0	

Initial Calibration # MSDB970825000000

Sol'n # HMS-VOA-STD-6
Calibration Date 08/25/97 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-Dichloroethene CCC	0.953 0.5	1.035 5	0.934 20	1.007 50	0.966 100			0.979	4.21	
Carbon disulfide	4.609 0.5	5.026 5	4.431 20	4.772 50	4.640 100			4.70	4.71	
1,1,2-Trichlorotrifluoroethane	1.151 0.5	1.159 5	1.013 20	1.097 50	1.103 100			1.10	5.27	
Acrylonitrile	0.281 2	0.289 5	0.294 20	0.307 50	0.294 100			0.293	3.23	
3-Chloropropene	2.393 0.5	2.055 5	1.594 20	1.956 50	2.038 100			2.01	14.2	
Methylene chloride	1.611 0.5	1.333 5	1.195 20	1.251 50	1.206 100			1.32	13.0	
trans-1,2-Dichloroethene	1.074 0.5	1.110 5	0.974 20	1.075 50	1.076 100			1.06	4.84	
Propanenitrile	0.104 2.5	0.085 25	0.080 100	0.093 250	0.090 500			0.0904	10.0	
1,1-Dichloroethane SPCC	1.981 0.5	2.095 5	1.804 20	1.741 50	1.876 100			1.90	7.43	
Methyl t-butyl ether	2.167 0.5	2.105 5	2.003 20	2.236 50	2.170 100			2.14	4.11	

Initial Calibration # MSDB970825000000

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

Calibration Date 08/25/97 00:00:00

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	1.999 0.5	1.620 5	1.404 20	1.542 50	1.489 100			1.61	14.3	
2-Chloro-1,3-butadiene	0.829 0.5	0.954 5	0.843 20	0.925 50	0.926 100			0.895	6.22	
2-Butanone (MEK)	0.430 2	0.396 5	0.328 20	0.327 50	0.313 100			0.359	14.3	
Tetrahydrofuran	0.227 2	0.187 5	0.167 20	0.180 50	0.181 100			0.188	12.1	
cis-1,2-Dichloroethene	1.043 0.5	1.093 5	0.962 20	1.040 50	1.037 100			1.04	4.53	
2,2-Dichloropropane	1.251 0.5	1.082 5	0.950 20	1.000 50	1.004 100			1.06	11.2	
Bromochloromethane	0.510 0.5	0.586 5	0.538 20	0.572 50	0.569 100			0.555	5.52	
Chloroform CCC	1.518 0.5	1.568 5	1.372 20	1.478 50	1.486 100			1.48	4.86	
1,1,1-Trichloroethane	1.305 0.5	1.399 5	1.227 20	1.351 50	1.383 100			1.33	5.20	
1,2-Dichloroethane	1.245 0.5	1.319 5	1.236 20	1.316 50	1.337 100			1.29	3.61	

10/13/97 .:03 **I N I T I A L C A L I B R A T I O N Cont'd** Work Order # 970.

Initial Calibration # MSDB970825000000

Sol'n # MS-VOA-STD-6 Calibration Date 08/25/97 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-Dichloropropene	0.302 0.5	0.302 5	0.266 20	0.279 50	0.285 100			0.287	5.40	
Benzene	0.994 0.5	1.025 5	0.912 20	0.921 50	0.874 100			0.945	6.59	
Carbon tetrachloride	0.184 0.5	0.204 5	0.182 20	0.194 50	0.194 100			0.192	4.63	
2-Hexanone	0.241 0.5	0.27 5	0.278 20	0.302 50	0.305 100			0.279	9.36	
4 Methyl-2-pentanone (MIBK)	0.188 0 5	0.165 5	0.165 20	0.168 50	0.172 100			0.172	5.60	
1,2-Dichloropropane CCC	0.283 0.5	0.294 5	0.267 20	0.271 50	0.260 100			0.275	4.91	
Trichloroethene	0.244 0.5	0.256 5	0.223 20	0.229 50	0.230 100			0.236	5.66	
Dibromomethane	0.119 0.5	0.125 5	0.117 20	0.118 50	0.117 100			0.119	2.81	
Bromodichloromethane	0.245 0.5	0.261 5	0.248 20	0.261 50	0.264 100			0.256	3.38	
Methyl methacrylate	0.094 0.5	0.106 5	0.106 20	0.111 50	0.112 100			0.106	6.76	

Initial Calibration # MSDB970825000000

Sol'n # #MS-VOA-STD-6 Calibration Date 08/25/97 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
2-Chloroethyl vinyl ether	0.117 0.5	0.106 5	0.103 20	0.106 50	0.11 100			0.108	4.99	
trans-1,3-Dichloropropene	0.614 0.5	0.672 5	0.647 20	0.662 50	0.648 100			0.649	3.38	
cis-1,3-Dichloropropene	0.307 0.5	0.326 5	0.305 20	0.315 50	0.32 100			0.315	2.79	
Toluene CCC	1.608 0.5	1.632 5	1.468 20	1.485 50	1.431 100			1.52	5.87	
1,1,2-Trichloroethane	0.451 0.5	0.495 5	0.458 20	0.473 50	0.474 100			0.470	3.61	
Ethyl methacrylate	0.545 0.5	0.597 5	0.606 20	0.631 50	0.648 100			0.605	6.50	
1,3-Dichloropropane	0.811 0.5	0.791 5	0.751 20	0.759 50	0.765 100			0.775	3.21	
Dibromochloromethane	0.503 0.5	0.506 5	0.508 20	0.539 50	0.545 100			0.520	3.86	
1,2-Dibromoethane	0.423 0.5	0.444 5	0.43 20	0.439 50	0.445 100			0.436	2.17	
Tetrachloroethene	0.478 0.5	0.531 5	0.468 20	0.487 50	0.493 100			0.491	4.90	

Initial Calibration # MSDB970825000000

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

Calibration Date 08/25/97 00:00:00

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
Chlorobenzene SPCC	1.657 0.5	1.758 5	1.603 20	1.667 50	1.665 100			1.67	3.34	
1,1,1,2-Tetrachloroethane	0.485 0.5	0.534 5	0.499 20	0.532 50	0.541 100			0.518	4.76	
1-Chlorohexane	0.761 0.5	0.867 5	0.775 20	0.843 50	0.868 100			0.823	6.23	
Ethylbenzene	0.833 0.5	0.895 5	0.812 20	0.853 50	0.851 100			0.849	3.61	
m&p-Xylene	1.005 1	1.108 10	0.992 40	1.01 100	0.972 200			1.02	5.18	
Bromoform SPCC	0.216 0.5	0.258 5	0.264 20	0.29 50	0.304 100			0.266	12.7	
Styrene	1.498 0.5	1.727 5	1.639 20	1.687 50	1.698 100			1.65	5.49	
o-Xylene	1.01 0.5	1.089 5	1.006 20	1.036 50	1.036 100			1.04	3.20	
trans-1,4-Dichloro-2-butene										0.998
1,1,2,2-Tetrachloroethane SPCC	0.54 0.5	0.495 5	0.493 20	0.499 50	0.503 100			0.506	3.83	

Initial Calibration # MSDB970825000000

Sol'n # HMS-VOA-STD-6 Calibration Date 08/25/97 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
1,2,3 Trichloropropane	0.299 0.5	0.349 5	0.336 20	0.349 50	0.352 100			0.337	6.57	
Isopropylbenzene	2.248 0.5	2.551 5	2.315 20	2.399 50	2.375 100			2.38	4.76	
Bromobenzene	0.892 0.5	0.865 5	0.801 20	0.81 50	0.823 100			0.838	4.63	
2-Chlorotoluene	0.879 0.5	0.899 5	0.79 20	0.789 50	0.798 100			0.831	6.44	
n-Propylbenzene	0.899 0.5	0.923 5	0.823 20	0.829 50	0.834 100			0.862	5.34	
4 Chlorotoluene	0.797 0.5	0.876 5	0.781 20	0.798 50	0.806 100			0.812	4.57	
1,3,5-Trimethylbenzene	2.723 0.5	2.803 5	2.426 20	2.461 50	2.409 100			2.56	7.19	
1,2,4-Trimethylbenzene	2.627 0.5	2.8 5	2.469 20	2.44 50	2.366 100			2.54	6.83	
tert-Butylbenzene	2.49 0.5	2.643 5	2.242 20	2.217 50	2.138 100			2.35	9.03	
1,3-Dichlorobenzene	1.479 0.5	1.585 5	1.457 20	1.472 50	1.502 100			1.50	3.38	

Initial Calibration # MSDB970825000000

Sol'n # #MS-VOA-STD-6
Calibration Date 08/25/97 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
sec-Butylbenzene	3.161 0.5	3.551 5	3.072 20	3.069 50	3.004 100			3.17	6.92	
1,4-Dichlorobenzene	1.408 0.5	1.549 5	1.418 20	1.444 50	1.437 100			1.45	3.90	
p-Isopropyltoluene	2.134 0.5	2.705 5	2.462 20	2.512 50	2.517 100			2.47	8.41	
1,2-Dichlorobenzene	1.346 0.5	1.421 5	1.34 20	1.364 50	1.367 100			1.37	2.34	
n-Butylbenzene	1.765 1	2.281 5	2.296 20	2.433 50	2.489 100			2.25	12.7	
1,2-Dibromo-3-chloropropane	0.062 2	0.064 5	0.077 20	0.083 50	0.087 100			0.0746	15.0	
1,2,4-Trichlorobenzene										0.997
Naphthalene										0.996
1,2,3-Trichlorobenzene										0.997
Hexachlorobutadiene	0.367 1	0.365 5	0.338 20	0.354 50	0.361 100			0.357	3.28	

Initial Calibration # MSDB970825000000

Sol'n # #MS-VOA-STD-6 Calibration Date 08/25/97 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-Bromo-2-chloroethane	0.327 0.5	0.319 5	0.298 20	0.302 50	0.305 100			0.310	3.96	

ANALYSIS BAT . . SUMMARY

Analysis Batch # MSMSDB71007004801

Method Volatile Organics SW8260A
Test Code 826SWA00
Initial Calibration # MSDB970825000000
Calibration Date 08/25/97

Analysis Start Date/Time 10/07/97 00:48:00
Analysis Stop Date/Time 10/07/97 20:06:00

Instrument MSDB
Analyst TLS
Reviewer KLZ

	Sequence/Analysis Time	Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1	10/07/97 00:19:00		SB	Blank, System	B1006729
2	10/07/97 00:48:00		BFB	GC/MS tune files	B1006730
3	10/07/97 00:48:00		VSTDCAL	Continuing Calibration Verification	B1006730
4	10/07/97 01:17:00		LCS977354	Lab Control Sample	B1006731
5	10/07/97 01:46:00		LCSD977355	Lab Control Sample Duplicate	B1006732
6	10/07/97 02:15:00		BLK974099	Blank, Method	B1006733
7	10/07/97 02:44:00		9709616-02A	Sample	B1006734
8	10/07/97 03:13:00		9709616-09A	Matrix Spike	B1006735
9	10/07/97 03:42:00		9709616-10A	Matrix Spike Duplicate	B1006736
10	10/07/97 04:12:00		9709616-08A	Sample	B1006737
11	10/07/97 04:43:00		9709616-04A	Sample	B1006738
12	10/07/97 05:13:00	DOW-VP-LW-41-V1/V11	9709789-13A	Sample	B1006739
13	10/07/97 05:42:00		9709790-12A	Sample	B1006740
14	10/07/97 06:11:00		9709740-03A	Sample	B1006741
15	10/07/97 06:41:00		9709693-01A	Sample	B1006742
16	10/07/97 07:10:00		9709693-02A	Sample	B1006743
17	10/07/97 07:39:00		9709693-03A	Sample	B1006744
18	10/07/97 11:24:00		9709616-01A	Sample	B1006745
19	10/07/97 11:53:00		9709616-03A	Sample	B1006746
20	10/07/97 12:22:00		9709616-06A	Sample	B1006747
21	10/07/97 12:52:00		BFB	GC/MS tune files	B1006748
22	10/07/97 12:52:00		VSTDCAL	Continuing Calibration Verification	B1006748
23	10/07/97 13:23:00		9709616-05A	Sample	B1006749
24	10/07/97 13:53:00		9709616-07A	Sample	B1006750
25	10/07/97 14:22:00	DOW-VP-LW-41-V1/V11	9709789-12A	Sample	B1006751
26	10/07/97 14:51:00		9709693-04A	Sample	B1006752
27	10/07/97 15:20:00		9709740-04A	Sample	B1006753
28	10/07/97 15:49:00		9709740-05A	Sample	B1006754
29	10/07/97 17:33:00		MIBCSTD	Sample	B1006755
30	10/07/97 18:08:00		9709663-02B	Sample	B1006756

ANALYSIS BATCH SUMMARY (cont'd)

Analysis Batch # MSMSUB/1007004801

Method Volatile Organics SW8260A

Test Code 826SWA00

Initial Calibration # MSDB970825000000

Calibration Date 08/25/97

Analysis Start Date/Time 10/07/97 00:48:00

Analysis Stop Date/Time 10/07/97 20:06:00

Instrument MSDB

Analyst TLS

Reviewer KLZ

Sequence/Analysis Time	Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
31 10/07/97 18:37:00		9709663-01B	Sample	B1006757
32 10/07/97 19:06:00		9709616-04B	Sample	B1006758
33 10/07/97 19:35:00		9709616-07B	Sample	B1006759
34 10/07/97 20:06:00		9709616-05B	Sample	B1006760

Extraction Batch #

Analysis Batch # MSMSDB/100/004801

Project Sample ID DOW-VP-LW-41-V1/V11 | Date Collected 09/24/97 | Instrument MSDB | Reporting Subset ___ | Matrix W
Lab Sample ID 9709789-13A DUP | Date Received 09/26/97 | Column ___ | Spikes Subset ___ | Report As received
File # B1006739 | Date Prepared ___ | Analyst TLS | Specs Subset ___ | % Moisture ___
Method Volatile Organics SW8260A | Date Analyzed 10/07/97 05:13:00 | Reviewer KLZ
Test Code 826SWAVP

Aliquot Mass/Volume 15.0 (mL)
Extract/Digestate Volume 15.0 (mL)
Dilution Factor 10000

Analyte	CAS #	Measured Concentration ug/mL	Detection Limit ug/mL	Reporting Limit ug/mL
Chlorobenzene	108-90-7	13300	935	0
1,1,2-Trichloroethane	79-00-5	209000	1190	0

Surrogate(s)	CAS #	Spiked Conc. ug/mL	Measured Concentration ug/mL	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	167000	168000	101	77	117
1,2-Dichloroethane-d4	17060-07-0	167000	169000	101	61	143
Toluene-d8	2037-26-5	167000	169000	101	87	113

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CONFIDENTIAL

RESULTS

Work Order # 9709789
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Extraction Batch #
Analysis Batch # MSMSDB71007004801

Project Sample ID DOW-VP-LW-41-V1/V11
Lab Sample ID 9709789-12A COMPOS
File # D1006751
Method Volatile Organics SW8260A
Test Code 826SWAVP

Date Collected 09/24/97
Date Received 09/26/97
Date Prepared
Date Analyzed 10/07/97 14:22:00

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 10000

Analyte	CAS #	Measured Concentration ug/mL	Detection Limit ug/mL	Reporting Limit ug/mL
Chlorobenzene	108-90-7	15500	935	0
1,1,2-Trichloroethane	79-00-5	222000	1190	0

Surrogate(s)	CAS #	Spiked Conc. ug/mL	Measured Concentration ug/mL	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	460-00-4	167000	163000	98	77	117
1,2-Dichloroethane-d4	17060-07-0	167000	163000	97	61	143
Toluene-d8	2037-26-5	167000	171000	102	87	113

Extraction Batch # _____
Analysis Batch # MSMSDB/1007004801

Lab Sample ID BLK974099 Date Prepared _____ Instrument MSDB Reporting Subset ___ Matrix W
File # B1006733 Date Analyzed 10/07/97 02:15:00 Column _____ Spikes Subset ___
Method Volatile Organics SW8260A Analyst TLS Specs Subset ___
Test Code 826SWAVP Reviewer KLZ

Analyte	Aliquot Mass/Volume 15.0 (mL) Extract/Digestate Volume 15.0 (mL) Dilution Factor 0.001 Measured Conc. ug/mL	Detection Limit ug/mL	Reporting Limit ug/mL
Chlorobenzene	ND	0.000093	0
1,1,2-Trichloroethane	ND	0.000119	0

Surrogate(s)	Spiked Conc. ug/mL	Measured Conc. ug/mL	Recovery %	Specification Limits Low %	Specification Limits High %
1,4-Bromofluorobenzene	0.0167	0.0163	98	77	117
1,2-Dichloroethane-d4	0.0167	0.0168	101	61	143
Toluene-d8	0 0167	0.0172	103	87	113

10/13/97 09:45.03

LABORATORY CONTROL SAMPLE

Work Order # 9709789

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Extraction Batch # _____

Analysis Batch # MSMSDB7100?004801

Method Volatile Organics SW8260A
Test Code 826SWAVP

Date Prepared _____
Date Analyzed 10/07/97 01:46.00

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	5.0 uL	1,2-DCA-d4	1 uL
LCS2	5.0 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Analyte	LCS Lab Sample ID LCS977354 File ID B1006731 Spiked Conc ug/L	LCS Measured Conc. ug/L	LCS Rec. %	LCS Duplicate Lab Sample ID LCSD977355 File ID B1006732 Spiked Conc. ug/L	LCS Duplicate Measured Conc. ug/L	LCS Duplicate Rec. %	Recovery Spec. Limits Low %	Recovery Spec. Limits High %	RPD Result %	RPD Spec. Limit %
Chlorobenzene	20.0	20.4	102	20.0	20.2	101	77	129	0.98	14
1,1,2-Trichloroethane	20.0	20.8	104	20.0	19.8	99	67	135	4.9	17
Surrogate(s)										
1,4-Bromofluorobenzene	16.7	17.2	103	16.7	16.8	100	77	117		
1,2-Dichloroethane-d4	16.7	16.7	100	16.7	16.4	98	61	143		
Toluene-d8	16.7	16.8	101	16.7	17.2	103	87	113		

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MATRIX S - KK(S)

Extraction Batch # _____

Analysis Batch # MSMSDB71007004801

Project Sample ID _____ Date Collected 09/24/97 Instrument MSDB Reporting Subset ___ ___ Matrix W

Method Volatile Organics SW8260A Date Received 09/25/97 Column _____ Spikes Subset ___ ___ Report As received

Test Code 826SWAMS Date Prepared _____ Analyst TLS Specs Subset ___ ___ % Moisture _____

Date Analyzed 10/07/97 03:42:00 Reviewer KLZ

Spike Sol'n #	Vol. Added	Surrogate Sol'n	Vol. Added
LCS1	5.0 uL	1,2-DCA-d4	1 uL
LCS2	5.0 uL	Toluene-d8	1 uL
		1,4-BFB	1 uL

Sample: Lab Sample ID 9709616-03A; File # B1006746; Aliquot Mass/Vol 15.0 (mL); Extract Mass/Vol 15.0 (mL); Dil Fact. 1

Spiked Sample: Lab Sample ID 9709616-09A MS; File # B1006735; Aliquot Mass/Vol 15.0 (mL); Extract Mass/Vol 15.0 (mL); Dil Fact. 1

Spiked Sample Dup: Lab Sample ID 9709616-10A MSD; File # B1006736; Aliquot Mass/Vol 15.0 (mL); Extract Mass/Vol 15.0 (mL); Dil Fact. 1

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	200000	ND	20.0	21.4	107	20.0	22.6	113	71	133	5.4	17
Chlorobenzene	200000	ND	20.0	20.3	102	20.0	21.0	105	77	129	2.9	14
1,1-Dichloroethene	200000	1.10	20.0	24.9	119	20.0	25.4	121	47	175	1.7	25
Toluene	200000	ND	20.0	20.6	103	20.0	21.0	105	70	132	1.9	17
Trichloroethene	200000	5.84	20.0	27.2	107	20.0	28.3	112	71	129	4.6	17
Surrogate(s)												
1,4-Bromofluorobenzene	250000	16.4	16.7	17.3	104	16.7	17.0	102	77	117		
1,2-Dichloroethane-d4	250000	16.6	16.7	16.9	101	16.7	16.6	99	61	143		
Toluene-d8	250000	17.0	16.7	17.3	104	16.7	17.0	102	87	113		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSDB71007004801
Initial Calibration # MSDB970825000000

Lab Sample ID VSTDCAL Date Analyzed 10/07/97 00:48:00 Reporting Subset ___ Instrument MSDB
File # B1006730 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 %
Acetone	20.8	20.0	104		
Acetonitrile	107	100	107		
Acrolein	45.5	100	46		
Acrylonitrile	20.9	20.0	105		
Benzene	20.3	20.0	102		
1-Bromo-2-chloroethane	20.4	20.0	102		
Bromobenzene	19.0	20 0	95		
Bromochloromethane	20.5	20.0	102		
Bromodichloromethane	20.6	20.0	103		
Bromoform	21.7	20.0	108		
Bromomethane	16.8	20.0	84		
2-Butanone(MEK)	19.8	20.0	99		
n-Butylbenzene	20.9	20.0	105		
sec-Butylbenzene	19.0	20.0	95		
tert-Butylbenzene	18.7	20.0	93		
Carbon disulfide	16.8	20.0	84		
Carbon tetrachloride	18.4	20.0	92		
2-Chloro-1,3-butadiene	18.8	20.0	94		
Chlorobenzene	20.2	20.0	101		
Chloroethane	20.0	20.0	100		
2-Chloroethyl vinyl ether	22.3	20.0	112		
Chloroform	19.6	20.0	98	80	120
1 Chlorohexane	18.8	20.0	94		
Chloromethane	16.8	20.0	84		
3-Chloropropene	18.1	20.0	90		

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

Analysis Batch # MSMSDB71007004801
Initial Calibration # MSDB970825000000

Lab Sample ID VSTDCAL Date Analyzed 10/07/97 00:48:00 Reporting Subset ___ Instrument MSDB
File # B1006730 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 %
2-Chlorotoluene	18.5	20.0	93		
4-Chlorotoluene	19.1	20.0	95		
1,2-Dibromo-3-chloropropane	23.1	20.0	116		
Dibromochloromethane	19.8	20.0	99		
1,2-Dibromoethane	21.3	20.0	106		
Dibromomethane	21.4	20.0	107		
trans-1,4-Dichloro-2-butene	16.5	20.0	82		
1,2-Dichlorobenzene	20.1	20.0	101		
1,3-Dichlorobenzene	19.5	20.0	98		
1,4-Dichlorobenzene	19.9	20.0	100		
Dichlorodifluoromethane	15.5	20.0	77		
1,1-Dichloroethane	20.0	20.0	100		
1,2-Dichloroethane	19.6	20.0	98		
1,1-Dichloroethene	16.9	20.0	84	80	120
cis-1,2-Dichloroethene	19.5	20.0	98		
trans-1,2-Dichloroethene	19.3	20.0	97		
1,2-Dichloropropane	20.3	20.0	101	80	120
1,3-Dichloropropane	20.4	20.0	102		
2,2-Dichloropropane	15.9	20.0	79		
1,1-Dichloropropene	19.3	20.0	96		
cis-1,3-Dichloropropene	20.1	20.0	100		
trans-1,3-Dichloropropene	19.8	20.0	99		
Ethyl methacrylate	21.3	20.0	106		
Ethylbenzene	19.7	20.0	99	80	120
Hexachlorobutadiene	20.4	20.0	102		

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

Analysis Batch # MSMSDB7100/004801
Initial Calibration # MSDB970825000000

Lab Sample ID VSTDCAL Date Analyzed 10/07/97 00:48:00 Reporting Subset ___ Instrument MSDB
File # B1006730 Spikes Subset ___ Analyst JLS
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 %
2-Hexanone	22.4	20.0	112		
Iodomethane	16.8	20.0	84		
Isopropylbenzene	20.0	20.0	100		
p-Isopropyltoluene	19.7	20.0	99		
Methyl methacrylate	22.5	20.0	112		
Methyl t-butyl ether	20.1	20.0	100		
4-Methyl-2-pentanone(MIBK)	21.9	20.0	110		
Methylene chloride	18.4	20.0	92		
Naphthalene	24.7	20.0	124		
Propanenitrile	102	100	102		
n-Propylbenzene	18.6	20.0	93		
Styrene	20.3	20.0	101		
1,1,1,2-Tetrachloroethane	19 6	20.0	98		
1,1,2,2-Tetrachloroethane	21.1	20.0	105		
Tetrachloroethene	19.9	20.0	99		
Tetrahydrofuran	19.9	20.0	100		
Toluene	19.8	20.0	99	80	120
1,2,3-Trichlorobenzene	23.2	20.0	116		
1,2,4-Trichlorobenzene	22.3	20.0	112		
1,1,1-Trichloroethane	19.2	20.0	96		
1,1,2-Trichloroethane	21.3	20.0	106		
Trichloroethene	20.8	20.0	104		
Trichlorofluoromethane	19 6	20.0	98		
1,2,3-Trichloropropane	22.0	20.0	110		
1,1,2-Trichlorotrifluoroethane	18.0	20.0	90		

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

Analysis Batch # MSMSDB71007004801
Initial Calibration # MSDB970825000000

Lab Sample ID VSTDCAL
File # B1006730
Method Volatile Organics SW8260A
Test Code 826SWA00

Date Analyzed 10/07/97 00:48:00

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 %
1,2,4-Trimethylbenzene	19.0	20.0	95		
1,3,5-Trimethylbenzene	18.8	20.0	94		
Vinyl acetate	11.9	20.0	60		
Vinyl chloride	17.9	20.0	90	80	120
m&p-Xylene	40.0	40.0	100		
o-Xylene	19.7	20.0	99		

Surrogate(s)					
1,4-Bromofluorobenzene	17.1	16.7	103	77	117
1,2-Dichloroethane-d4	17.0	16.7	102	61	143
Toluene-d8	17.1	16.7	102	87	113

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # MSMSDB71007004801
Initial Calibration # MSDB970825000000

Lab Sample ID VSTDCAL Date Analyzed 10/07/97 12:52:00 Reporting Subset ___ Instrument MSDB
File # B1006748 Spikes Subset ___ Analyst TLS
Method Volatile Organics SW8260A Specs Subset ___ Reviewer KL2
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
Acetone	17.2	20.0	86		
Acetonitrile	94.8	100	95		
Acrolein	46.0	100	46		
Acrylonitrile	19.4	20.0	97		
Benzene	20.0	20.0	100		
1-Bromo-2-chloroethane	19.6	20.0	98		
Bromobenzene	19.0	20.0	95		
Bromochloromethane	19.7	20.0	98		
Bromodichloromethane	20.0	20.0	100		
Bromoform	20.3	20.0	101		
Bromomethane	16.5	20.0	82		
2-Butanone (MEK)	19.3	20.0	96		
n-Butylbenzene	22.0	20.0	110		
sec-Butylbenzene	19.8	20.0	99		
tert-Butylbenzene	19.3	20.0	96		
Carbon disulfide	14.7	20.0	74		
Carbon tetrachloride	19.1	20.0	96		
2-Chloro-1,3-butadiene	16.8	20.0	84		
Chlorobenzene	19.8	20.0	99		
Chloroethane	19.5	20.0	98		
2-Chloroethyl vinyl ether	19.3	20.0	96		
Chloroform	19.4	20.0	97	80	120
1-Chlorohexane	16.7	20.0	84		
Chloromethane	16.4	20.0	82		
3-Chloropropene	16.8	20.0	84		

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

Analysis Batch # MSMSDB/1007004801
Initial Calibration # MSDB970825000000

Lab Sample ID VSTDCAL Date Analyzed 10/07/97 12:52:00 Reporting Subset ___ Instrument MSDB
File # B1006748 Spikes Subset ___ Analyst TLS
Method Volatile Organics SW8260A Specs Subset ___ Reviewer KL2
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
2-Chlorotoluene	18.8	20.0	94		
4-Chlorotoluene	19.2	20.0	96		
1,2-Dibromo-3-chloropropane	22.1	20.0	110		
Dibromochloromethane	19.3	20.0	97		
1,2-Dibromoethane	20.3	20.0	102		
Dibromomethane	20.6	20.0	103		
trans-1,4-Dichloro-2-butene	5.90	20.0	30		
1,2-Dichlorobenzene	20.0	20.0	100		
1,3-Dichlorobenzene	19.9	20.0	100		
1,4-Dichlorobenzene	20.1	20.0	100		
Dichlorodifluoromethane	15.5	20.0	77		
1,1-Dichloroethane	19.2	20.0	96		
1,2-Dichloroethane	19.0	20.0	95		
1,1-Dichloroethene	17.5	20.0	87	80	120
cis-1,2-Dichloroethene	19.3	20.0	96		
trans-1,2-Dichloroethene	18.9	20.0	95		
1,2-Dichloropropane	19.8	20.0	99	80	120
1,3-Dichloropropane	19.5	20.0	97		
2,2-Dichloropropane	19.9	20.0	100		
1,1-Dichloropropene	19.6	20.0	98		
cis-1,3-Dichloropropene	20.3	20.0	102		
trans-1,3-Dichloropropene	19.9	20.0	100		
Ethyl methacrylate	20.2	20.0	101		
Ethylbenzene	19.8	20 0	99	80	120
Hexachlorobutadiene	20.8	20.0	104		

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

Analysis Batch # MSMSDB71007004801
Initial Calibration # MSDB970825000000

Lab Sample ID VSTDCAL | Date Analyzed 10/07/97 12:52:00 | Reporting Subset ___ | Instrument MSDB
File # B1006748 | Spikes Subset ___ | Analyst TLS
Method Volatile Organics SW8260A | Specs Subset ___ | Reviewer KL2
Test Code 826SWA00

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
2-Hexanone	20.7	20.0	104		
Iodomethane	15.7	20.0	78		
Isopropylbenzene	19.8	20.0	99		
p-Isopropyltoluene	20.8	20.0	104		
Methyl methacrylate	21.1	20.0	105		
Methyl t-butyl ether	18.2	20.0	91		
4-Methyl-2-pentanone(MIBK)	20 1	20.0	101		
Methylene chloride	18.2	20.0	91		
Naphthalene	23.3	20.0	116		
Propanenitrile	93.2	100	93		
n-Propylbenzene	19.1	20.0	96		
Styrene	20.1	20.0	101		
1,1,1,2-Tetrachloroethane	19.6	20.0	98		
1,1,2,2-Tetrachloroethane	20.3	20.0	102		
Tetrachloroethene	19.7	20.0	98		
Tetrahydrofuran	18.5	20.0	92		
Toluene	19.8	20.0	99	80	120
1,2,3-Trichlorobenzene	22.1	20.0	110		
1,2,4-Trichlorobenzene	22.1	20.0	111		
1,1,1-Trichloroethane	18.9	20.0	95		
1,1,2-Trichloroethane	19.9	20.0	100		
Trichloroethene	19.8	20.0	99		
Trichlorofluoromethane	20.4	20.0	102		
1,2,3-Trichloropropane	20.6	20.0	103		
1,1,2-Trichlorotrifluoroethane	15.7	20.0	79		

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

Analysis Batch # MSMSDB71007004801
Initial Calibration # MSDB970825000000

Lab Sample ID VSTDCAL | Date Analyzed 10/07/97 12:52:00 | Reporting Subset ___ | Instrument MSDB
File # B1006748 | 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 %
1,2,4-Trimethylbenzene	19.5	20.0	98		
1,3,5-Trimethylbenzene	19.1	20.0	95		
Vinyl acetate	13.1	20.0	65		
Vinyl chloride	17.5	20.0	88	80	120
m&p-Xylene	39.9	40.0	100		
o-Xylene	19.7	20.0	99		

Surrogate(s)					
1,4-Bromofluorobenzene	16.9	16.7	101	77	117
1,2-Dichloroethane-d4	16.1	16.7	96	61	143
Toluene-d8	17.0	16.7	102	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