100255

WESTON

Appendix F

Support Documentation

TABLE I

ENVIRONMENTAL PROTECTION AGENCY REGION III
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS No. 13449 CONTRACTOR 3 River

Instrument# EXTR C	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	11-25-89			11-27-89 1209											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride					95.8	C									
Acetone					43.3	C									
Carbon Disulfide															
1,1-Dichloroethene															
1,1-Dichloroethane															
Total-1,2-Dichloroethene															
Chloroform															
1,2-Dichloroethane															
2-Butanone	0.023		R	0.043	90.4	R									
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
cis-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
trans-1,3-Dichloropropene															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone					36.9	C									
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
Total Xylenes															
AFFECTED SAMPLES:	VBLK01			VBLK01											
	CZ430			CZ430											
	CZ431			CZ431											

Reviewer Initials/Date: 3-13-90 mxh

AR300944

* See last page of this table for DEFINITION OF CODES.

TABLE I

ENVIRONMENTAL PROTECTION AGENCY REGION III
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS No. 13144 CONTRACTOR J RIVERS

Instrument# EXTP2	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	11-20-89			11-28-89 1050											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone					327	CH									
Carbon Disulfide															
1,1-Dichloroethene															
1,1-Dichloroethane															
Total-1,2-Dichloroethene															
Chloroform															
1,2-Dichloroethane															
2-Butanone	0.043		R	0.048		R									
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
cis-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
trans-1,3-Dichloropropene															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
Total Xylenes															

AFFECTED SAMPLES:

VBLK08	VBLK02
CZ417	CZ417
CZ418	CZ418
CZ418MS	CZ418MS
CZ418MSD	CZ418MSD

Reviewer Initials/Date: 3-13-90 mjb

See last page of this table for DEFINITION OF CODES.

AR300945

TABLE I

ENVIRONMENTAL PROTECTION AGENCY REGION III
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS No. 13109 CONTRACTOR 3 River

Instrument# EXTRA	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	10.9.89														
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride					258	CH									
Acetone															
Carbon Disulfide															
1,1-Dichloroethene															
1,1-Dichloroethane					26.4	C									
Total-1,2-Dichloroethene															
Chloroform															
1,2-Dichloroethane															
2-Butanone	0.016		R	0.024	53.2	R									
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
cis-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
trans-1,3-Dichloropropene															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone					110	C									
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
Total Xylenes															

AFFECTED SAMPLES:

VBLK05	VBLK05
CZ416	CZ416
CZ415	CZ415
CZ415MS	CZ415MS
CZ415MSD	CZ415MSD

Reviewer Initials/Date: 3.13.90 mjh

AR300946

* See last page of this table for DEFINITION OF CODES.

TABLE I

ENVIRONMENTAL PROTECTION AGENCY REGION III
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS (Part 1 of 2)

CASE/SAS No. 13449 CONTRACTOR 3 River

Instrument# EXTRA	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	11-16-89			12.19.89	1001		12.20.89	1021							
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Phenol															
bis(2-Chloroethyl)ether															
2-Chlorophenol															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
Benzyl alcohol															
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-Chloroisopropyl)ether															
4-Methylphenol															
N-Nitroso-di-n-propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic acid															
bis(2-Chloroethoxy)methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline					38.6	C		42.8	C						
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline								25.8	C						
Dimethylphthalate															
Acenaphthylene															
2,6-Dinitrotoluene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol					28.3	C									

AFFECTED SAMPLES:

SBLK01	CZ416
SBLK02	CZ417
CZ415	CZ418
CZ415MS	
CZ415MSD	

Reviewer Initials/Date: 3-7-90 mjb

TABLE I

ENVIRONMENTAL PROTECTION AGENCY REGION III
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS (Part 2 of 2)

CASE/SAS No._____ CONTRACTOR _____

Instrument#	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	11.16.89			12.19.89 1000			12.20.89 1021								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Dibenzofuran															
2,4-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline															
4,6-Dinitro-2-methylphenol															
N-Nitrosodiphenylamine															
4-Bromophenyl-phenylether															
Hexachlorobenzene								25.1							
Pentachlorophenol															
Phenanthrene															
Anthracene															
Di-n-butylphthalate															
Fluoranthene															
Pyrene															
Butylbenzylphthalate															
3,3-Dichlorobenzidine					39.6	C									
Benzo(a)anthracene															
Chrysene															
bis(2-Ethylhexyl)phthalate															
Di-n-octylphthalate															
Benzo(b)fluoranthene															
Benzo(k)fluoranthene															
Benzo(a)pyrene															
Indeno(1,2,3-cd)pyrene															
Dibenz(a,h)anthracene															
Benzo(g,h,i)perylene															

AFFECTED SAMPLES:

	SBLK01	CZ416		
	SBUD2	CZ417		
	CZ415	CZ418		
	CZ415MS			
	CZ415MS			

Reviewer Initials/Date: 3.7.90 mjh

* See last page of this table for DEFINITION OF CODES.

WESTON

DEFINITION OF CODES USED IN TABLE I

I = %RSD exceeded 30% in the initial calibration, positive results are qualified "J", and quantitation limits are qualified "UJ".

C = %D exceeded 25% in the continuing calibration. Positive results are qulified "J", and quantitation limits are qualified "UJ".

F = RF less than 0.05 in all calibrations. All quantitation limits are qualified "R".

+ = The "B" qualifier, denoting blank contamination, supersedes the qualifier issued in this table.

L = The "L" qualifier, denoting low bias of results, supersedes the qualifier issued in this table.

R = The "R" qualifier, denoting unusuable results, supersedes the qualifier issued in this table.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRC Calibration Date(s): 11/25/89 11/26/89

Matrix: (soil/water) WATER Level: (low/med): LOW Column: (pack/cap) PACK

Min $\overline{RRF}$ for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 = C2470 RRF50 = C2475
RRF100= C2471 RRF150= C2472 RRF200= C2473

COMPOUND	RRF20	RRF50	RRF100	RRF150	RRF200	$\overline{RRF}$	% RSD
Chloromethane #	1.291	1.233	1.320	1.287	1.306	1.287	2.6#
Bromomethane	0.809	0.764	0.647	0.577	0.566	0.673	16.3
Vinyl Chloride *	0.790	0.765	0.693	0.603	0.535	0.677	15.9*
Chloroethane	0.520	0.524	0.495	0.458	0.428	0.485	8.5
Methylene Chloride	0.627	0.662	0.623	0.646	0.628	0.637	2.6
Acetone	0.450	0.465	0.345	0.328	0.318	0.381	18.5
Carbon Disulfide	6.208	6.122	6.151	5.833	5.784	6.020	3.3
1,1-Dichloroethene *	1.636	1.589	1.591	1.555	1.582	1.591	1.8*
1,1-Dichloroethane #	3.256	3.220	3.320	3.226	3.116	3.227	2.3#
1,2-Dichloroethene (total)	1.853	1.847	1.846	1.788	1.794	1.826	1.7
Chloroform *	3.464	3.470	3.516	3.309	3.342	3.420	2.6*
1,2-Dichloroethane	2.478	2.469	2.487	2.462	2.295	2.438	3.3
2-Butanone	0.027	0.026	0.021	0.020	0.021	0.023	14.8
1,1,1-Trichloroethane	0.408	0.400	0.378	0.375	0.387	0.389	3.6
Carbon Tetrachloride	0.418	0.434	0.408	0.418	0.433	0.422	2.6
Vinyl Acetate	0.638	0.672	0.634	0.643	0.653	0.648	2.3
Bromodichloromethane	0.506	0.531	0.509	0.508	0.526	0.516	2.3
1,2-Dichloropropane *	0.365	0.351	0.344	0.341	0.345	0.349	2.7*
cis-1,3-Dichloropropene	0.468	0.470	0.450	0.452	0.454	0.459	2.1
Trichloroethene	0.386	0.387	0.371	0.372	0.383	0.380	2.1
Dibromochloromethane	0.444	0.462	0.438	0.453	0.458	0.451	2.2
1,1,2-Trichloroethane	0.321	0.330	0.310	0.307	0.316	0.317	2.9
Benzene	1.028	0.977	0.925	0.938	0.931	0.960	4.5
trans-1,3-Dichloropropene	0.411	0.427	0.410	0.421	0.421	0.418	1.7
Bromoform #	0.286	0.323	0.320	0.323	0.335	0.317	5.9#
4-Methyl-2-Pentanone	0.582	0.569	0.542	0.518	0.535	0.549	4.7
2-Hexanone	0.420	0.417	0.367	0.354	0.338	0.379	9.9
Tetrachloroethene	0.387	0.389	0.390	0.380	0.410	0.391	2.9
1,1,2,2-Tetrachloroethane #	0.689	0.712	0.681	0.672	0.706	0.692	2.4#
Toluene *	0.866	0.831	0.803	0.778	0.809	0.818	4.0*
Chlorobenzene #	0.994	1.011	0.997	0.989	1.000	0.998	0.8#
Ethylbenzene *	0.555	0.542	0.532	0.519	0.541	0.538	2.4*
Styrene	1.155	1.134	1.104	1.055	1.		
Xylenes (total)	0.679	0.671	0.646	0.619	0.		
Toluene-d8	1.209	1.187	1.166	1.116	1.164	1.169	3.0
Bromofluorobenzene	0.626	0.633	0.607	0.597	0.635	0.619	2.7
1,2-Dichloroethane-d4	2.286	2.294	2.284	2.160	2.093	2.223	4.1

AR300950

FORM VI VOA

7 Rev.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRC Calibration Date: 11/27/89 Time: 12:09

Lab File ID: C2486 Init. Calib. Date(s): 11/25/89 11/26/89

Matrix: (soil/water) WATER Level: (low/med): LOW Column: (pack/cap) PACK

Min RRF50 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		RRF	RRF50	%D	
Chloromethane	#	1.287	1.134	11.9	#
Bromomethane		0.673	0.644	4.3	
Vinyl Chloride	*	0.677	0.631	6.8	*
Chloroethane		0.485	0.468	3.6	
Methylene Chloride		0.637	1.248	95.8	
Acetone		0.381	0.546	43.3	
Carbon Disulfide		6.020	6.583	9.4	
1,1-Dichloroethene	*	1.591	1.701	7.0	*
1,1-Dichloroethane	#	3.227	3.460	7.2	#
1,2-Dichloroethene (total)		1.826	2.005	9.8	
Chloroform	*	3.420	3.680	7.6	*
1,2-Dichloroethane		2.438	2.454	0.6	
2-Butanone		0.023	0.043	90.4	
1,1,1-Trichloroethane		0.389	0.375	3.5	
Carbon Tetrachloride		0.422	0.386	8.7	
Vinyl Acetate		0.648	0.551	15.0	
Bromodichloromethane		0.516	0.489	5.3	
1,2-Dichloropropane	*	0.349	0.337	3.4	*
cis-1,3-Dichloropropene		0.459	0.455	1.0	
Trichloroethene		0.380	0.350	7.9	
Dibromochloromethane		0.451	0.404	10.3	
1,1,2-Trichloroethane		0.317	0.297	6.3	
Benzene		0.960	0.987	2.8	
trans-1,3-Dichloropropene		0.418	0.394	5.7	
Bromoform	#	0.317	0.254	20.0	#
4-Methyl-2-Pentanone		0.549	0.490	10.8	
2-Hexanone		0.379	0.519	36.9	
Tetrachloroethene		0.391	0.348	10.9	
1,1,2,2-Tetrachloroethane	#	0.692	0.654	5.5	#
Toluene	*	0.818	0.855	4.6	*
Chlorobenzene	#	0.998	0.963	3.5	#
Ethylbenzene	*	0.538	0.560	4.1	*
Styrene		1.108	1.137	2.6	
Xylenes (total)		0.655	0.674		
Toluene-d8		1.169	1.190	1.9	
Bromofluorobenzene		0.619	0.634	2.4	
1,2-Dichloroethane-d4		2.223	2.262	1.7	

VBLK01
CZ430
CZ431

AR300951

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRC Calibration Date(s): 11/20/89 11/20/89

Matrix: (soil/water) SOIL Level: (low/med): LOW Column: (pack/cap) PACK

Min $\overline{RRF}$ for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 = C2440 RRF50 = C2435
RRF100= C2437 RRF150= C2438 RRF200= C2439

COMPOUND	RRF20	RRF50	RRF100	RRF150	RRF200	$\overline{RRF}$	% RSD
Chloromethane #	1.195	1.201	1.277	1.332	1.330	1.267	5.3#
Bromomethane	0.608	0.553	0.497	0.461	0.453	0.514	12.8
Vinyl Chloride *	0.647	0.654	0.616	0.543	0.460	0.584	14.1*
Chloroethane	0.450	0.452	0.425	0.401	0.381	0.421	7.3
Methylene Chloride	0.605	0.539	0.512	0.498	0.501	0.531	8.4
Acetone	0.165	0.188	0.179	0.173	0.134	0.168	12.3
Carbon Disulfide	6.913	6.616	6.665	6.449	6.348	6.598	3.3
1,1-Dichloroethene *	1.816	1.729	1.733	1.698	1.696	1.734	2.8*
1,1-Dichloroethane #	3.626	3.493	3.572	3.428	3.350	3.494	3.2#
1,2-Dichloroethene (total)	2.066	1.969	2.022	1.934	1.903	1.979	3.3
Chloroform *	3.712	3.531	3.569	3.395	3.267	3.495	4.9*
1,2-Dichloroethane	2.489	2.203	2.178	2.065	1.794	2.146	11.7
2-Butanone	0.054	0.041	0.040	0.040	0.042	0.043	14.3
1,1,1-Trichloroethane	0.403	0.371	0.354	0.352	0.407	0.377	7.0
Carbon Tetrachloride	0.384	0.367	0.359	0.363	0.416	0.378	6.2
Vinyl Acetate	0.761	0.712	0.691	0.686	0.652	0.700	5.7
Bromodichloromethane	0.576	0.514	0.506	0.500	0.525	0.524	5.8
1,2-Dichloropropane *	0.475	0.381	0.377	0.365	0.364	0.392	11.9*
cis-1,3-Dichloropropene	0.545	0.481	0.470	0.457	0.434	0.477	8.8
Trichloroethene	0.463	0.383	0.375	0.373	0.389	0.397	9.5
Dibromochloromethane	0.466	0.403	0.405	0.393	0.400	0.413	7.1
1,1,2-Trichloroethane	0.435	0.325	0.319	0.309	0.298	0.337	16.5
Benzene	1.298	1.046	1.000	0.959	1.027	1.066	12.5
trans-1,3-Dichloropropene	0.456	0.403	0.401	0.391	0.357	0.401	8.9
Bromoform #	0.295	0.273	0.290	0.296	0.311	0.293	4.7#
4-Methyl-2-Pentanone	0.804	0.661	0.662	0.678	0.690	0.699	8.6
2-Hexanone	0.645	0.470	0.466	0.482	0.467	0.506	15.4
Tetrachloroethene	0.446	0.353	0.362	0.361	0.366	0.378	10.2
1,1,2,2-Tetrachloroethane #	1.004	0.793	0.823	0.834	0.888	0.868	9.6#
Toluene *	1.147	0.870	0.850	0.825	0.817	0.902	15.4*
Chlorobenzene #	1.259	1.006	0.999	0.991	1.001	1.051	11.1#
Ethylbenzene *	0.733	0.565	0.566	0.549			#*
Styrene	1.554	1.173	1.165	1.148			#
Xylenes (total)	0.909	0.689	0.680	0.677	0.686	0.728	13.9
Toluene-d8	1.589	1.219	1.199	1.171	1.170	1.270	14.2
Bromofluorobenzene	0.829	0.618	0.624	0.615	0.622	0.642	14.1
1,2-Dichloroethane-d4	2.304	2.052	2.042	1.944	1.		

AR300952

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRC Calibration Date: 11/28/89 Time: 10:50

Lab File ID: C2500 Init. Calib. Date(s): 11/20/89 11/20/89

Matrix: (soil/water) SOIL Level: (low/med): LOW Column: (pack/cap) PACK

Min RRF50 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		RRF	RRF50	%D	
Chloromethane	#	1.267	1.357	7.1	#
Bromomethane		0.514	0.605	17.7	
Vinyl Chloride	*	0.584	0.680	16.5	*
Chloroethane		0.421	0.459	8.8	
Methylene Chloride		0.531	0.616	16.0	
Acetone		0.168	0.717	327.1	
Carbon Disulfide		6.598	6.241	5.4	
1,1-Dichloroethene	*	1.734	1.632	5.9	*
1,1-Dichloroethane	#	3.494	3.332	4.6	#
1,2-Dichloroethene (total)		1.979	1.860	6.0	
Chloroform	*	3.495	3.282	6.1	*
1,2-Dichloroethane		2.146	2.321	8.2	
2-Butanone		0.043	0.048	11.0	
1,1,1-Trichloroethane		0.377	0.335	11.1	
Carbon Tetrachloride		0.378	0.354	6.3	
Vinyl Acetate		0.700	0.678	3.2	
Bromodichloromethane		0.524	0.465	11.2	
1,2-Dichloropropane	*	0.392	0.355	9.6	*
cis-1,3-Dichloropropene		0.477	0.447	6.3	
Trichloroethene		0.397	0.373	6.0	
Dibromochloromethane		0.413	0.399	3.5	
1,1,2-Trichloroethane		0.337	0.309	8.4	
Benzene		1.066	0.962	9.7	
trans-1,3-Dichloropropene		0.401	0.386	3.8	
Bromoform	#	0.293	0.287	2.0	#
4-Methyl-2-Pentanone		0.699	0.772	10.4	
2-Hexanone		0.506	0.572	13.1	
Tetrachloroethene		0.378	0.374	0.8	
1,1,2,2-Tetrachloroethane	#	0.868	0.704	19.0	#
Toluene	*	0.902	0.829	8.1	*
Chlorobenzene	#	1.051	0.988	6.0	#
Ethylbenzene	*	0.592	0.545	8.1	*
Styrene		1.236	1.129	8.[illegible]	
Xylenes (total)		0.728	0.667	8.[illegible]	
Toluene-d8		1.270	1.188	6.4	
Bromofluorobenzene		0.662	0.611	7.6	
1,2-Dichloroethane-d4		2.009	2.007	0.1	

VBLK02
CZ417
CZ418
CZ418MS
CZ419MSD

AR300953

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRC Calibration Date(s): 10/ 9/89 10/ 9/89

Matrix: (soil/water) SOIL Level: (low/med): MED Column: (pack/cap) PACK

Min $\overline{RRF}$ for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 = C2190 RRF50 = C2188
RRF100= C2189 RRF150= C2191 RRF200= C2192

COMPOUND	RRF20	RRF50	RRF100	RRF150	RRF200	$\overline{RRF}$	% RSD
Chloromethane #	1.452	1.527	1.480	1.427	1.395	1.456	3.5#
Bromomethane	0.681	0.747	0.675	0.668	0.663	0.687	5.0
Vinyl Chloride *	0.520	0.582	0.552	0.532	0.527	0.543	4.6*
Chloroethane	0.427	0.419	0.400	0.374	0.389	0.402	5.4
Methylene Chloride	0.477	0.541	0.501	0.458	0.450	0.485	7.6
Acetone	0.269	0.351	0.222	0.186	0.233	0.252	24.8
Carbon Disulfide	5.025	5.392	5.226	4.978	4.789	5.082	4.6
1,1-Dichloroethene *	1.762	1.847	1.794	1.714	1.676	1.759	3.8*
1,1-Dichloroethane #	3.672	4.726	4.640	3.501	4.348	4.177	13.4#
1,2-Dichloroethene (total)	2.023	2.117	2.055	1.966	1.955	2.023	3.3
Chloroform *	3.941	3.805	3.765	3.661	3.566	3.748	3.8*
1,2-Dichloroethane	2.621	2.171	2.221	2.376	2.250	2.328	7.8
2-Butanone	0.019	0.013	0.017	0.015	0.013	0.016	16.5
1,1,1-Trichloroethane	0.534	0.532	0.518	0.468	0.452	0.501	7.7
Carbon Tetrachloride	0.568	0.605	0.606	0.552	0.545	0.575	5.0
Vinyl Acetate	0.422	0.409	0.453	0.420	0.427	0.426	3.8
Bromodichloromethane	0.678	0.645	0.659	0.609	0.602	0.638	5.1
1,2-Dichloropropane *	0.453	0.404	0.402	0.379	0.369	0.401	8.1*
cis-1,3-Dichloropropene	0.546	0.504	0.497	0.475	0.466	0.497	6.2
Trichloroethene	0.521	0.487	0.457	0.443	0.434	0.468	7.6
Dibromochloromethane	0.499	0.498	0.489	0.464	0.462	0.482	3.7
1,1,2-Trichloroethane	0.385	0.325	0.320	0.303	0.300	0.327	10.5
Benzene	1.206	1.162	1.076	0.999	0.984	1.086	9.0
trans-1,3-Dichloropropene	0.484	0.439	0.426	0.407	0.399	0.431	7.7
Bromoform #	0.284	0.323	0.333	0.318	0.315	0.315	5.8#
4-Methyl-2-Pentanone	0.406	0.412	0.393	0.382	0.398	0.398	3.0
2-Hexanone	0.224	0.164	0.152	0.151	0.167	0.172	17.5
Tetrachloroethene	0.451	0.409	0.394	0.394	0.414	0.412	5.7
1,1,2,2-Tetrachloroethane #	0.672	0.701	0.695	0.636	0.680	0.677	3.8#
Toluene *	0.988	0.862	0.820	0.781	0.794	0.849	9.9*
Chlorobenzene #	1.213	1.091	1.060	1.039	1.048	[illegible]	[illegible]
Ethylbenzene *	0.624	0.538	0.522	0.507	[illegible]	[illegible]	[illegible]
Styrene	1.247	1.104	1.056	1.036	[illegible]	[illegible]	8.0
Xylenes (total)	0.763	0.706	0.651	0.646	0.648	0.683	7.5
Toluene-d8	1.452	1.264	1.232	1.182	1.201	1.266	8.6
Bromofluorobenzene	0.899	0.824	0.793	0.772	0.756	0.809	7.0
1,2-Dichloroethane-d4	2.361	1.960	2.015	2.015	1.905	2.051	8.7

AR300954

AR300954

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRC Calibration Date: 12/12/89 Time: 13:04

Lab File ID: C2607 Init. Calib. Date(s): 10/ 9/89 10/ 9/89

Matrix:(soil/water) SOIL Level:(low/med): MED Column:(pack/cap) PACK

Min RRF50 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D	
Chloromethane	1.456	1.392	4.4	#
Bromomethane	0.687	0.526	23.5	
Vinyl Chloride	0.543	0.654	20.6	*
Chloroethane	0.402	0.501	24.7	
Methylene Chloride	0.485	1.739	258.4	
Acetone	0.252	0.256	1.6	
Carbon Disulfide	5.082	5.937	16.8	
1,1-Dichloroethene	1.759	1.608	8.6	*
1,1-Dichloroethane	4.177	3.076	26.4	#
1,2-Dichloroethene (total)	2.023	1.836	9.2	
Chloroform	3.748	3.250	13.3	*
1,2-Dichloroethane	2.328	2.066	11.3	
2-Butanone	0.016	0.024	53.2	
1,1,1-Trichloroethane	0.501	0.396	21.0	
Carbon Tetrachloride	0.575	0.467	18.8	
Vinyl Acetate	0.426	0.423	0.8	
Bromodichloromethane	0.638	0.499	21.9	
1,2-Dichloropropane	0.401	0.355	11.7	*
cis-1,3-Dichloropropene	0.497	0.455	8.5	
Trichloroethene	0.468	0.387	17.3	
Dibromochloromethane	0.482	0.434	10.0	
1,1,2-Trichloroethane	0.327	0.304	6.8	
Benzene	1.086	0.984	9.4	
trans-1,3-Dichloropropene	0.431	0.390	9.5	
Bromoform	0.315	0.267	15.1	#
4-Methyl-2-Pentanone	0.398	0.405	1.7	
2-Hexanone	0.172	0.361	110.4	
Tetrachloroethene	0.412	0.409	0.9	
1,1,2,2-Tetrachloroethane	0.677	0.556	17.8	#
Toluene	0.849	0.860	1.4	*
Chlorobenzene	1.090	1.019	6.6	#
Ethylbenzene	0.540	0.552	2.3	*
Styrene	1.098	1.11		
Xylenes (total)	0.683	0.67		
Toluene-d8	1.266	1.226	3.2	
Bromofluorobenzene	0.809	0.582	28.1	
1,2-Dichloroethane-d4	2.051	1.941	5.4	

V8LK05
CZ416
CZ415
CZ415MS
CZ415MSD

AR300955

6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRB Calibration Date(s): 11/16/89 11/16/89

Min RRF for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 = B2418 RRF50 = B2419
RRF80 = B2420 RRF120= B2421 RRF160= B2422

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	RRF	% RSD
Phenol *	2.518	2.635	2.336	2.433	2.293	2.443	5.7*
bis(2-Chloroethyl)ether	1.814	1.844	1.739	1.840	1.893	1.826	3.1
2-Chlorophenol	1.498	1.503	1.567	1.606	1.504	1.536	3.1
1,3-Dichlorobenzene	1.482	1.466	1.422	1.512	1.366	1.450	3.9
1,4-Dichlorobenzene *	1.554	1.634	1.539	1.625	1.435	1.557	5.2*
Benzyl Alcohol	0.918	1.053	1.109	1.111	1.130	1.064	8.1
1,2-Dichlorobenzene	1.554	1.433	1.427	1.527	1.456	1.479	3.9
2-Methylphenol	1.727	1.696	1.702	1.813	1.636	1.715	3.7
bis(2-Chloroisopropyl)Ether	2.782	2.718	2.688	2.790	2.888	2.773	2.8
4-Methylphenol	1.727	1.696	1.702	1.813	1.636	1.715	3.7
N-Nitroso-di-n-propylamine #	1.207	1.339	1.292	1.368	1.252	1.292	5.0#
[illegible]achloroethane	0.651	0.661	0.625	0.654	0.690	0.656	3.5
[illegible]robenzene	0.413	0.396	0.393	0.451	0.416	0.414	5.5
Isophorone	0.637	0.683	0.722	0.789	0.696	0.706	7.9
2-Nitrophenol *	0.163	0.182	0.169	0.218	0.195	0.185	11.9*
2,4-Dimethylphenol	0.332	0.335	0.339	0.400	0.339	0.349	8.2
Benzoic Acid		0.131	0.154	0.157	0.181	0.156	13.1
bis(2-Chloroethoxy)Methane	0.474	0.471	0.448	0.540	0.466	0.480	7.3
2,4-Dichlorophenol *	0.224	0.245	0.235	0.266	0.242	0.242	6.3*
1,2,4-Trichlorobenzene	0.283	0.270	0.258	0.278	0.259	0.270	4.2
Naphthalene	1.037	1.075	0.958	1.113	0.950	1.027	7.0
4-Chloroaniline	0.198	0.182	0.178	0.179	0.181	0.184	4.6
Hexachlorobutadiene *	0.139	0.134	0.126	0.147	0.132	0.135	5.8*
4-Chloro-3-Methylphenol *	0.263	0.291	0.292	0.308	0.320	0.295	7.3*
2-Methylnaphthalene	0.594	0.627	0.581	0.642	0.591	0.607	4.3
Hexachlorocyclopentadiene #	0.363	0.353	0.358	0.390	0.388	0.370	4.6#
2,4,6-Trichlorophenol *	0.370	0.362	0.365	0.393	0.410	0.380	5.4*
2,4,5-Trichlorophenol	0.392	0.363	0.366	0.404	0.404	0.386	5.2
2-Chloronaphthalene	1.169	1.101	1.102	1.243	1.138	1.151	5.1
2-Nitroaniline	0.443	0.359	0.399	0.425	0.409	0.407	7.8
Dimethylphthalate	0.998	0.919	1.014	1.049	1.065	1.009	5.6
Acenaphthylene	1.679	1.748	1.650	1.832	1.685	1.719	4.2
2,6-Dinitrotoluene	0.276	0.273	0.246	0.285	0.276	0.271	5.5
3-Nitroaniline	0.246	0.238	0.261	0.246	0.272	0.253	5.4
Acenaphthene *	0.991	1.098	1.016	1.159	1.0[illegible]	[illegible]	[illegible]
2,4-Dinitrophenol *		0.061	0.083	0.071	0.1[illegible]	[illegible]	[illegible]
4-[illegible]itrophenol *		0.07[illegible]	0.095	0.092	0.105	0.091	15.6#
[illegible]							

AR300956

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRB Calibration Date(s): 11/16/89 11/16/89

Min RRF for SPCC(*) = 0.050 Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 = B2418 RRF50 = B2419
RRF80 = B2420 RRF120= B2421 RRF160= B2422

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Dibenzofuran	1.639	1.424	1.427	1.580	1.471	1.508	6.4
2,4-Dinitrotoluene	0.322	0.273	0.302	0.294	0.319	0.302	6.6
Diethylphthalate	0.919	0.768	0.825	0.868	0.928	0.862	7.8
4-Chlorophenyl-phenylether	0.665	0.618	0.575	0.684	0.618	0.632	6.8
Fluorene	1.219	1.143	1.132	1.254	1.159	1.181	4.5
4-Nitroaniline	0.186	0.186	0.200	0.200	0.211	0.197	5.4
4,6-Dinitro-2-Methylphenol		0.073	0.092	0.085	0.095	0.086	11.3
N-Nitrosodiphenylamine (1) *	0.266	0.182	0.175	0.194	0.198	0.203	17.9*
4-Bromophenyl-phenylether	0.240	0.261	0.230	0.267	0.263	0.252	6.4
Hexachlorobenzene	0.237	0.246	0.230	0.258	0.245	0.243	4.4
Pentachlorophenol *		0.136	0.135	0.148	0.155	0.144	6.6*
Phenanthrene	1.031	1.017	1.087	1.093	1.113	1.068	3.9
Anthracene	0.970	1.021	1.109	1.143	1.094	1.067	6.6
Di-n-butylphthalate	0.697	0.839	0.923	1.063	1.087	0.922	17.5
Fluoranthene *	0.875	0.928	1.068	1.336	1.261	1.094	18.4*
Pyrene	1.496	1.140	1.023	1.011	0.829	1.100	22.6
Butylbenzylphthalate	0.359	0.421	0.402	0.414	0.395	0.398	6.0
3,3'-Dichlorobenzidine	0.079	0.158	0.142	0.101	0.126	0.121	26.1
Benzo(a)anthracene	1.117	1.075	1.088	1.107	1.123	1.102	1.8
Chrysene	1.082	1.086	1.038	1.164	1.020	1.078	5.2
bis(2-Ethylhexyl)phthalate	0.449	0.566	0.586	0.581	0.598	0.556	10.9
Di-n-octylphthalate *	0.640	0.944	1.043	1.108	1.227	0.993	22.4*
Benzo(b)fluoranthene	1.059	1.092	1.066	1.168	1.302	1.137	8.9
Benzo(k)fluoranthene	1.164	1.157	1.123	1.337	1.323	1.221	8.3
Benzo(a)pyrene *	0.919	0.952	1.042	1.098	1.101	1.023	8.2*
Indeno(1,2,3-cd)pyrene	1.041	1.125	1.050	1.108	1.180	1.101	5.2
Dibenz(a,h)anthracene	0.770	0.889	1.002	1.004	1.028	0.938	11.6
Benzo(g,h,i)perylene	0.889	1.052	1.056	1.128	1.083	1.042	8.7
Nitrobenzene-d5	0.475	0.439	0.422	0.492	0.456	0.457	6.1
2-Fluorobiphenyl	1.833	1.469	1.371	1.559	1.388	1.524	12.4
Terphenyl-d14	1.163	0.779	0.703	0.710	0.602	0.791	27.5
Phenol-d5	2.709	2.666	2.585	2.547	2.328	2.567	5.8
2-Fluorophenol	1.875	1.864	1.798	1.902	1.724	1.833	
2,4,6-Tribromophenol	0.309	0.229	0.221	0.234	0.22		

1) Cannot be separated from Diphenylamine

AR300957

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRB Calibration Date: 12/19/89 Time: 10:06

Lab File ID: B2653 Init. Calib. Date(s): 11/16/89 11/16/89

Min RRF50 for SPCC(#) = 0.050 Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D	
Phenol	2.443	2.282	6.6	*
bis(2-Chloroethyl)ether	1.826	1.872	2.5	
2-Chlorophenol	1.536	1.492	2.9	
1,3-Dichlorobenzene	1.450	1.477	1.9	
1,4-Dichlorobenzene	1.557	1.553	0.3	*
Benzyl Alcohol	1.064	1.049	1.4	
1,2-Dichlorobenzene	1.479	1.499	1.3	
2-Methylphenol	1.715	1.590	7.3	
bis(2-Chloroisopropyl)Ether	2.773	2.563	7.6	
4-Methylphenol	1.715	1.612	6.0	
N-Nitroso-di-n-propylamine	1.292	1.121	13.2	#
Hexachloroethane	0.656	0.673	2.6	
Nitrobenzene	0.414	0.379	8.3	
Isophorone	0.706	0.607	14.0	
2-Nitrophenol	0.185	0.186	0.2	*
2,4-Dimethylphenol	0.349	0.323	7.6	
Benzoic Acid	0.156	0.134	13.8	
bis(2-Chloroethoxy)Methane	0.480	0.518	7.9	
2,4-Dichlorophenol	0.242	0.256	5.5	*
1,2,4-Trichlorobenzene	0.270	0.293	8.6	
Naphthalene	1.027	1.083	5.5	
4-Chloroaniline	0.184	0.113	38.6	
Hexachlorobutadiene	0.135	0.149	9.9	*
4-Chloro-3-Methylphenol	0.295	0.287	2.7	*
2-Methylnaphthalene	0.607	0.632	4.2	
Hexachlorocyclopentadiene	0.370	0.361	2.4	#
2,4,6-Trichlorophenol	0.380	0.334	12.1	*
2,4,5-Trichlorophenol	0.386	0.389	0.7	
2-Chloronaphthalene	1.151	1.041	9.5	
2-Nitroaniline	0.407	0.322	20.9	
Dimethylphthalate	1.009	1.025	1.6	
Acenaphthylene	1.719	1.592	7.4	
2,6-Dinitrotoluene	0.271	0.230	15.1	
3-Nitroaniline	0.253	0.266	5.1	
Acenaphthene	1.060	1.036	2.3	*
2,4-Dinitrophenol	0.079	0.06[illegible]		#
4-Nitrophenol	0.091	0.065	[illegible]	#

SBLK01
SBLK02
CZ415
CZ415MS
CZ415MSD

AR300958

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRB Calibration Date: 12/19/89 Time: 10:06

Lab File ID: B2653 Init. Calib. Date(s): 11/16/89 11/16/89

Min RRF50 for SPCC(#) = 0.050 Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D
Dibenzofuran	1.508	1.445	4.2
2,4-Dinitrotoluene	0.302	0.285	5.5
Diethylphthalate	0.862	0.884	2.6
4-Chlorophenyl-phenylether	0.632	0.557	11.9
Fluorene	1.181	1.159	1.9
4-Nitroaniline	0.197	0.221	12.2
4,6-Dinitro-2-Methylphenol	0.086	0.067	22.5
N-Nitrosodiphenylamine (1) *	0.203	0.178	12.6 *
4-Bromophenyl-phenylether	0.252	0.260	3.2
Hexachlorobenzene	0.243	0.286	17.7
Pentachlorophenol *	0.144	0.173	20.4 *
Phenanthrene	1.068	1.020	4.6
Anthracene	1.067	1.006	5.7
Di-n-butylphthalate	0.922	0.944	2.4
Fluoranthene *	1.094	1.013	7.4 *
Pyrene	1.100	1.182	7.5
Butylbenzylphthalate	0.398	0.423	6.3
3,3'-Dichlorobenzidine	0.121	0.170	39.6
Benzo(a)anthracene	1.102	1.025	7.0
Chrysene	1.078	1.038	3.7
bis(2-Ethylhexyl)phthalate	0.556	0.573	3.0
Di-n-octylphthalate *	0.993	0.923	7.0 *
Benzo(b)fluoranthene	1.137	1.046	8.0
Benzo(k)fluoranthene	1.221	1.215	0.5
Benzo(a)pyrene *	1.023	0.971	5.1 *
Indeno(1,2,3-cd)pyrene	1.101	0.946	14.1
Dibenz(a,h)anthracene	0.938	0.932	0.7
Benzo(g,h,i)perylene	1.042	1.017	2.4
Nitrobenzene-d5	0.457	0.413	9.6
2-Fluorobiphenyl	1.524	1.343	11.9
Terphenyl-d14	0.791	0.845	6.8
Phenol-d5	2.567	2.473	3.7
2-Fluorophenol	1.833	1.854	1.2
2,4,6-Tribromophenol	0.244	0.216	11.6

SBLK01
SBLK02
CZ415
CZ415MS
CZ415MSD

(1) Cannot be separated from Diphenylamine

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRB Calibration Date: 12/20/89 Time: 10:21

Lab File ID: B2668 Init. Calib. Date(s): 11/16/89 11/16/89

Min RRF50 for SPCC(#) = 0.050 Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D
Phenol *	2.443	2.356	3.5 *
bis(2-Chloroethyl)ether	1.826	1.813	0.7
2-Chlorophenol	1.536	1.609	4.8
1,3-Dichlorobenzene	1.450	1.534	5.8
1,4-Dichlorobenzene *	1.557	1.545	0.8 *
Benzyl Alcohol	1.064	1.030	3.2
1,2-Dichlorobenzene	1.479	1.456	1.6
2-Methylphenol	1.715	1.646	4.0
bis(2-Chloroisopropyl)Ether	2.773	2.449	11.7
4-Methylphenol	1.715	1.705	0.6
N-Nitroso-di-n-propylamine #	1.292	1.079	16.4 #
Hexachloroethane	0.656	0.697	6.2
Nitrobenzene	0.414	0.354	14.5
Isophorone	0.706	0.579	18.0
2-Nitrophenol *	0.185	0.180	2.9 *
2,4-Dimethylphenol	0.349	0.349	0.1
Benzoic Acid	0.156	0.149	4.6
bis(2-Chloroethoxy)Methane	0.480	0.459	4.3
2,4-Dichlorophenol *	0.242	0.272	12.2 *
1,2,4-Trichlorobenzene	0.270	0.291	7.8
Naphthalene	1.027	1.049	2.1
4-Chloroaniline	0.184	0.105	42.8
Hexachlorobutadiene *	0.135	0.151	11.6 *
4-Chloro-3-Methylphenol *	0.295	0.268	9.0 *
2-Methylnaphthalene	0.607	0.586	3.5
Hexachlorocyclopentadiene #	0.370	0.423	14.1 #
2,4,6-Trichlorophenol *	0.380	0.404	6.4 *
2,4,5-Trichlorophenol	0.386	0.452	17.0
2-Chloronaphthalene	1.151	1.078	6.3
2-Nitroaniline	0.407	0.302	25.9
Dimethylphthalate	1.009	0.905	10.3
Acenaphthylene	1.719	1.570	8.6
2,6-Dinitrotoluene	0.271	0.229	15.7
3-Nitroaniline	0.253	0.222	12.2
Acenaphthene *	1.060	0.991	
2,4-Dinitrophenol #	0.079	0.075	
4-Nitrophenol #	0.091	0.082	9.1 #

CZ416
CZ417
CZ418

AR300960

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Instrument ID: EXTRB Calibration Date: 12/20/89 Time: 10:21

Lab File ID: B2668 Init. Calib. Date(s): 11/16/89 11/16/89

Min RRF50 for SPCC(#) = 0.050 Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D
Dibenzofuran	1.508	1.373	9.0
2,4-Dinitrotoluene	0.302	0.243	19.6
Diethylphthalate	0.862	0.764	11.4
4-Chlorophenyl-phenylether	0.632	0.542	14.2
Fluorene	1.181	1.079	8.7
4-Nitroaniline	0.197	0.170	13.6
4,6-Dinitro-2-Methylphenol	0.086	0.078	9.6
N-Nitrosodiphenylamine (1) *	0.203	0.166	18.5 *
4-Bromophenyl-phenylether	0.252	0.262	4.0
Hexachlorobenzene	0.243	0.304	25.1
Pentachlorophenol *	0.144	0.167	16.0 *
Phenanthrene	1.068	1.012	5.2
Anthracene	1.067	1.011	5.3
Di-n-butylphthalate	0.922	0.829	10.0
Fluoranthene *	1.094	0.936	14.5 *
Pyrene	1.100	1.294	17.7
Butylbenzylphthalate	0.398	0.380	4.5
3,3'-Dichlorobenzidine	0.121	0.143	17.7
Benzo(a)anthracene	1.102	1.041	5.5
Chrysene	1.078	1.019	5.5
bis(2-Ethylhexyl)phthalate	0.556	0.475	14.5
Di-n-octylphthalate *	0.993	0.750	24.4 *
Benzo(b)fluoranthene	1.137	1.172	3.0
Benzo(k)fluoranthene	1.221	1.363	11.7
Benzo(a)pyrene *	1.023	1.009	1.3 *
Indeno(1,2,3-cd)pyrene	1.101	0.935	15.1
Dibenz(a,h)anthracene	0.938	0.956	1.9
Benzo(g,h,i)perylene	1.042	1.026	1.5
Nitrobenzene-d5	0.457	0.410	10.2
2-Fluorobiphenyl	1.524	1.418	6.9
Terphenyl-d14	0.791	0.865	9.3
Phenol-d5	2.567	2.476	3.6
2-Fluorophenol	1.833	1.851	1.0
2,4,6-Tribromophenol	0.244	0.207	15.1

CZ416
CZ417
CZ418

(1) Cannot be separated from Diphenylamine

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix Spike - EPA Sample No.: CZ415 Level: (low/med) MED

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	8224.	0.	9079.	110	59-172
Trichloroethene	8224.	0.	7518.	91	62-137
Benzene	8224.	6252.	13664.	90	66-142
Toluene	8224.	0.	8389.	102	59-139
Chlorobenzene	8224.	65236.	79991.	179 *	60-133

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	8023.	8870.	111	0	22	59-172
Trichloroethene	8023.	7400.	92	1	24	62-137
Benzene	8023.	12360.	76	17	21	66-142
Toluene	8023.	8163.	102	0	21	59-139
Chlorobenzene	8023.	72427.	90	67 *	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 5 outside limits
Spike Recovery: 1 out of 10 outside limits

COMMENTS:

AR 300962

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix Spike - EPA Sample No.: CZ415 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC	#	QC LIMITS REC.
Phenol	8572.	0.	0.	0	*	26- 90
2-Chlorophenol	8572.	0.	0.	0	*	25-102
1,4-Dichlorobenzene	4286.	11816.	26808.	350	*	28-104
N-Nitroso-di-n-prop.(1)	4286.	0.	0.	0	*	41-126
1,2,4-Trichlorobenzene	4286.	576.	600.	1	*	38-107
4-Chloro-3-Methylphenol	8572.	0.	0.	0	*	26-103
Acenaphthene	4286.	0.	0.	0	*	31-137
4-Nitrophenol	8572.	0.	0.	0	*	11-114
2,4-Dinitrotoluene	4286.	0.	0.	0	*	28- 89
Pentachlorophenol	8572.	0.	0.	0	*	17-109
Pyrene	4286.	0.	0.	0	*	35-142

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC	#	% RPD	#	QC LIMITS RPD	REC.
Phenol	8628.	0.	0	*	0		35	26- 90
2-Chlorophenol	8628.	0.	0	*	0		50	25-102
1,4-Dichlorobenzene	4314.	10863.	0	*	227	*	27	28-104
N-Nitroso-di-n-prop.(1)	4314.	0.	0	*	0		38	41-126
1,2,4-Trichlorobenzene	4314.	989.	10	*	178	*	23	38-107
4-Chloro-3-Methylphenol	8628.	0.	0	*	0		33	26-103
Acenaphthene	4314.	0.	0	*	0		19	31-137
4-Nitrophenol	8628.	0.	0	*	0		50	11-114
2,4-Dinitrotoluene	4314.	0.	0	*	0		47	28- 89
Pentachlorophenol	8628.	0.	0	*	0		47	17-109
Pyrene	4314.	0.	0	*	0		36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 2 out of 11 outside limits
Spike Recovery: 22 out of 22 outside limits

COMMENTS:

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix Spike - EPA Sample No.: CZ415 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	34.40	.00	37.52	109	46-127
Heptachlor	34.40	.00	36.09	105	35-130
Aldrin	34.40	.00	39.36	114	34-132
Dieldrin	86.00	.00	101.66	118	31-134
Endrin	86.00	.00	84.40	98	42-139
4,4'-DDT	86.00	.00	120.41	140 *	23-134

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	34.97	14.81	42 *	88 *	50	46-127
Heptachlor	34.97	15.07	43	84 *	31	35-130
Aldrin	34.97	15.74	45	87 *	43	34-132
Dieldrin	87.43	41.65	48	85 *	38	31-134
Endrin	87.43	33.72	39 *	87 *	45	42-139
4,4'-DDT	87.43	45.16	52	92 *	50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 6 out of 6 outside limits
Spike Recovery: 3 out of 12 outside limits

COMMENTS:

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Level: (low/med) MED

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
1	VBLK05	88	108	94		0
2	CZ416	92	110	95		0
3	CZ415	102	119	98		0
4	CZ415MS	101	123 *	96		1
5	CZ415MSD	104	155 *	98		1
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	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery val

* Values outside of contract required QC

D Surrogates diluted out

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
1	SBLK01	41	43	58	30	36	42		0
2	CZ415MS	0 *	0 *	0 *	0 *	0 *	0 *		6
3	CZ415	0 *	0 *	0 *	0 *	0 *	0 *		6
4	CZ415MSD	0 *	0 *	0 *	0 *	0 *	0 *		6
5	SBLK02	40	40	61	31	36	37		0
6	CZ416	39	40	81	28	33	33		0
7	CZ418	39	39	59	27	31	25		0
8	CZ417	48	45	56	31	41	41		0
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		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl-d14	(18-137)
S4 (PHL)	= Phenol-d5	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

Column to be used to flag recovery valu

* Values outside of contract required QC limits

D Surrogates diluted out

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Level:(low/med) LOW

Column DB608

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
1	PBLK01	73	
2	CZ415	103	
3	CZ415MS	58	
4	CZ415MSD	17 *	
5	ZZZZZ	0 *	
6	CZ416	70	
7	CZ417	53	
8	CZ418	76	
9	ZZZZZ	0 *	
10	ZZZZZ	0 *	
11			
12			
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30			

ADVISORY QC LIMITS

S1 (DBC) = Dibutyl chlorendate (20-150)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) WATER Lab Sample ID: VBLK01

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C2487

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 100. Date Analyzed: 11/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

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

CAS NO.	COMPOUND	Q
74-87-3	Chloromethane	10. U
74-83-9	Bromomethane	10. U
75-01-4	Vinyl Chloride	10. U
75-00-3	Chloroethane	10. U
75-09-2	Methylene Chloride	7.
67-64-1	Acetone	10. U
75-15-0	Carbon Disulfide	5. U
75-35-4	1,1-Dichloroethene	5. U
75-34-3	1,1-Dichloroethane	5. U
540-59-0	1,2-Dichloroethene (total)	5. U
67-66-3	Chloroform	5. U
107-06-2	1,2-Dichloroethane	5. U
78-93-3	2-Butanone	10. U
71-55-6	1,1,1-Trichloroethane	5. U
56-23-5	Carbon Tetrachloride	5. U
108-05-4	Vinyl Acetate	10. U
75-27-4	Bromodichloromethane	5. U
78-87-5	1,2-Dichloropropane	5. U
10061-01-5	cis-1,3-Dichloropropene	5. U
79-01-6	Trichloroethene	5. U
124-48-1	Dibromochloromethane	5. U
79-00-5	1,1,2-Trichloroethane	5. U
71-43-2	Benzene	5. U
10061-02-6	trans-1,3-Dichloropropene	5. U
75-25-2	Bromoform	5. U
108-10-1	4-Methyl-2-Pentanone	10. U
591-78-6	2-Hexanone	10. U
127-18-4	Tetrachloroethene	5. U
79-34-5	1,1,2,2-Tetrachloroethane	5. U
108-88-3	Toluene	5. U
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	5. U
1330-20-7	Xylenes (total)	5. U

AR300968

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK01

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) WATER Lab Sample ID: VBLK01

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C2487

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 100. Date Analyzed: 11/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK02

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: VBLK02

Sample wt/vol: 5.0 (g/mL) G Lab File ID: C2501

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 11/28/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	14.	
67-64-1	Acetone	8.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene		
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylenes (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK02

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: VBLK02

Sample wt/vol: 5.0 (g/mL) G Lab File ID: C2501

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 11/28/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK05

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: VBLK05

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C2608

Level: (low/med) MED Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 12/12/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1300.	U
74-83-9	Bromomethane	1300.	U
75-01-4	Vinyl Chloride	1300.	U
75-00-3	Chloroethane	1300.	U
75-09-2	Methylene Chloride	570.	J
67-64-1	Acetone	1300.	U
75-15-0	Carbon Disulfide	630.	U
75-35-4	1,1-Dichloroethene	630.	U
75-34-3	1,1-Dichloroethane	630.	U
540-59-0	1,2-Dichloroethene (total)	630.	U
67-66-3	Chloroform	630.	U
107-06-2	1,2-Dichloroethane	630.	U
78-93-3	2-Butanone	1300.	U
71-55-6	1,1,1-Trichloroethane	630.	U
56-23-5	Carbon Tetrachloride	630.	U
108-05-4	Vinyl Acetate	1300.	U
75-27-4	Bromodichloromethane	630.	U
78-87-5	1,2-Dichloropropane	630.	U
10061-01-5	cis-1,3-Dichloropropene	630.	U
79-01-6	Trichloroethene	630.	U
124-48-1	Dibromochloromethane	630.	U
79-00-5	1,1,2-Trichloroethane	630.	U
71-43-2	Benzene	630.	U
10061-02-6	trans-1,3-Dichloropropene	630.	U
75-25-2	Bromoform	630.	U
108-10-1	4-Methyl-2-Pentanone	1300.	U
591-78-6	2-Hexanone	1300.	U
127-18-4	Tetrachloroethene	630.	U
79-34-5	1,1,2,2-Tetrachloroethane	630.	U
108-88-3	Toluene		
108-90-7	Chlorobenzene	[illegible]	U
100-41-4	Ethylbenzene	630.	U
100-42-5	Styrene	630.	U
1330-20-7	Xylenes (total)	630.	U

AR300972

1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK05

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: VBLK05

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C2608

Level: (low/med) MED Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 12/12/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN HYDROCARBON	12.15	900.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ415MS

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: RAS0877MS

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C2612

Level: (low/med) MED Date Received: 11/18/89

% Moisture: not dec. 24. Date Analyzed: 12/12/89

Column: (pack/cap) PACK Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	3300.	U
74-83-9	Bromomethane	3300.	U
75-01-4	Vinyl Chloride	3300.	U
75-00-3	Chloroethane	3300.	U
75-09-2	Methylene Chloride	880.	BJ
67-64-1	Acetone	3300.	U
75-15-0	Carbon Disulfide	1600.	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	1600.	U
540-59-0	1,2-Dichloroethene (total)	1600.	U
67-66-3	Chloroform	1600.	U
107-06-2	1,2-Dichloroethane	1600.	U
78-93-3	2-Butanone	3300.	U
71-55-6	1,1,1-Trichloroethane	1600.	U
56-23-5	Carbon Tetrachloride	1600.	U
108-05-4	Vinyl Acetate	3300.	U
75-27-4	Bromodichloromethane	1600.	U
78-87-5	1,2-Dichloropropane	1600.	U
10061-01-5	cis-1,3-Dichloropropene	1600.	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	1600.	U
79-00-5	1,1,2-Trichloroethane	1600.	U
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene	1600.	U
75-25-2	Bromoform	1600.	U
108-10-1	4-Methyl-2-Pentanone	3300.	U
591-78-6	2-Hexanone	3300.	U
127-18-4	Tetrachloroethene		
79-34-5	1,1,2,2-Tetrachloroethane		
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	1600.	U
100-42-5	Styrene	1600.	U
1330-20-7	Xylenes (total)	1600.	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ415MSD

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: RAS0877MSD

Sample wt/vol: 4.1 (g/mL) G Lab File ID: C2613

Level: (low/med) MED Date Received: 11/18/89

% Moisture: not dec. 24. Date Analyzed: 12/12/89

Column: (pack/cap) PACK Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	3200.	U
74-83-9	Bromomethane	3200.	U
75-01-4	Vinyl Chloride	3200.	U
75-00-3	Chloroethane	3200.	U
75-09-2	Methylene Chloride	900.	BJ
67-64-1	Acetone	3200.	U
75-15-0	Carbon Disulfide	1600.	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	1600.	U
540-59-0	1,2-Dichloroethene (total)	1600.	U
67-66-3	Chloroform	1600.	U
107-06-2	1,2-Dichloroethane	1600.	U
78-93-3	2-Butanone	3200.	U
71-55-6	1,1,1-Trichloroethane	1600.	U
56-23-5	Carbon Tetrachloride	1600.	U
108-05-4	Vinyl Acetate	3200.	U
75-27-4	Bromodichloromethane	1600.	U
78-87-5	1,2-Dichloropropane	1600.	U
10061-01-5	cis-1,3-Dichloropropene	1600.	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	1600.	U
79-00-5	1,1,2-Trichloroethane	1600.	U
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene	1600.	U
75-25-2	Bromoform	1600.	U
108-10-1	4-Methyl-2-Pentanone	3200.	U
591-78-6	2-Hexanone	3200.	U
127-18-4	Tetrachloroethene		
79-34-5	1,1,2,2-Tetrachloroethane	[illegible]	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	1600.	U
100-42-5	Styrene	1600.	U
1330-20-7	Xylenes (total)	1600.	U

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AR300975

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ418MS

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: RAS0881MS

Sample wt/vol: 4.9 (g/mL) G Lab File ID: C2505

Level: (low/med) LOW Date Received: 11/22/89

% Moisture: not dec. ~~30.11~~ 94.9 Date Analyzed: 11/28/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12 ~~13.~~	U
74-83-9	Bromomethane	12 ~~13.~~	U
75-01-4	Vinyl Chloride	12 ~~13.~~	U
75-00-3	Chloroethane	12 ~~13.~~	U
75-09-2	Methylene Chloride	36 ~~40.~~	B
67-64-1	Acetone	12 ~~13.~~	U
75-15-0	Carbon Disulfide	6 ~~6.~~	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12 ~~13.~~	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12 ~~13.~~	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12 ~~13.~~	U
591-78-6	2-Hexanone	12 ~~13.~~	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylenes (total)	6.	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ418MSD

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: RAS0881MSD

Sample wt/vol: 4.9 (g/mL) G Lab File ID: C2506

Level: (low/med) LOW Date Received: 11/22/89

% Moisture: not dec. 20.11 4-9-90 Date Analyzed: 11/28/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12 ~~13~~.	U
74-83-9	Bromomethane	12 ~~13~~.	U
75-01-4	Vinyl Chloride	12 ~~13~~.	U
75-00-3	Chloroethane	12 ~~13~~.	U
75-09-2	Methylene Chloride	26 ~~29~~.	B
67-64-1	Acetone	12 ~~13~~.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12 ~~13~~.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12 ~~13~~.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12 ~~13~~.	U
591-78-6	2-Hexanone	12 ~~13~~.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylenes (total)	6.	U

AR300977

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK01

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: SBLK01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B2654

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 11/28/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	660.	U
111-44-4	bis(2-Chloroethyl)ether	660.	U
95-57-8	2-Chlorophenol	660.	U
541-73-1	1,3-Dichlorobenzene	660.	U
106-46-7	1,4-Dichlorobenzene	660.	U
100-51-6	Benzyl Alcohol	660.	U
95-50-1	1,2-Dichlorobenzene	660.	U
95-48-7	2-Methylphenol	660.	U
108-60-1	bis(2-Chloroisopropyl)Ether	660.	U
106-44-5	4-Methylphenol	660.	U
621-64-7	N-Nitroso-di-n-propylamine	660.	U
67-72-1	Hexachloroethane	660.	U
98-95-3	Nitrobenzene	660.	U
78-59-1	Isophorone	660.	U
88-75-5	2-Nitrophenol	660.	U
105-67-9	2,4-Dimethylphenol	660.	U
65-85-0	Benzoic Acid	3200.	U
111-91-1	bis(2-Chloroethoxy)Methane	660.	U
120-83-2	2,4-Dichlorophenol	660.	U
120-82-1	1,2,4-Trichlorobenzene	660.	U
91-20-3	Naphthalene	660.	U
106-47-8	4-Chloroaniline	660.	U
87-68-3	Hexachlorobutadiene	660.	U
59-50-7	4-Chloro-3-Methylphenol	660.	U
91-57-6	2-Methylnaphthalene	660.	U
77-47-4	Hexachlorocyclopentadiene	660.	U
88-06-2	2,4,6-Trichlorophenol	660.	U
95-95-4	2,4,5-Trichlorophenol	3200.	U
91-58-7	2-Chloronaphthalene	660.	U
88-74-4	2-Nitroaniline	3200.	U
131-11-3	Dimethylphthalate		
208-96-8	Acenaphthylene		
606-20-2	2,6-Dinitrotoluene	660.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK01

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: SBLK01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B2654

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 11/28/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3200.	U
83-32-9	Acenaphthene	660.	U
51-28-5	2,4-Dinitrophenol	3200.	U
100-02-7	4-Nitrophenol	3200.	U
132-64-9	Dibenzofuran	660.	U
121-14-2	2,4-Dinitrotoluene	660.	U
84-66-2	Diethylphthalate	660.	U
7005-72-3	4-Chlorophenyl-phenylether	660.	U
86-73-7	Fluorene	660.	U
100-01-6	4-Nitroaniline	3200.	U
534-52-1	4,6-Dinitro-2-Methylphenol	3200.	U
86-30-6	N-Nitrosodiphenylamine (1)	660.	U
101-55-3	4-Bromophenyl-phenylether	660.	U
118-74-1	Hexachlorobenzene	660.	U
87-86-5	Pentachlorophenol	3200.	U
85-01-8	Phenanthrene	660.	U
120-12-7	Anthracene	660.	U
84-74-2	Di-n-butylphthalate	660.	U
206-44-0	Fluoranthene	660.	U
129-00-0	Pyrene	660.	U
85-68-7	Butylbenzylphthalate	660.	U
91-94-1	3,3'-Dichlorobenzidine	1300.	U
56-55-3	Benzo(a)anthracene	660.	U
218-01-9	Chrysene	660.	U
117-81-7	bis(2-Ethylhexyl)phthalate	660.	U
117-84-0	Di-n-octylphthalate	660.	U
205-99-2	Benzo(b)fluoranthene	660.	U
207-08-9	Benzo(k)fluoranthene	660.	U
50-32-8	Benzo(a)pyrene		
193-39-5	Indeno(1,2,3-cd)pyrene		
53-70-3	Dibenz(a,h)anthracene	660.	U
191-24-2	Benzo(g,h,i)perylene	660.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK01

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: SBLK01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B2654

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 11/28/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

Number TICs found: 6

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN HYDROCARBON	7.92	400.	J
2.	- -	UNKNOWN HYDROCARBON	8.08	300.	J
3.	- -	UNKNOWN HYDROCARBON	9.10	2000.	J
4.	- -	UNKNOWN HYDROCARBON	9.48	400.	J
5.	- -	UNKNOWN HYDROCARBON	10.87	500.	J
6.	- -	UNKNOWN HYDROCARBON	12.72	900.	J
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AR300980

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK02

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: SBLK02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B2665

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 11/29/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	660.	U
111-44-4	bis(2-Chloroethyl)ether	660.	U
95-57-8	2-Chlorophenol	660.	U
541-73-1	1,3-Dichlorobenzene	660.	U
106-46-7	1,4-Dichlorobenzene	660.	U
100-51-6	Benzyl Alcohol	660.	U
95-50-1	1,2-Dichlorobenzene	660.	U
95-48-7	2-Methylphenol	660.	U
108-60-1	bis(2-Chloroisopropyl)Ether	660.	U
106-44-5	4-Methylphenol	660.	U
621-64-7	N-Nitroso-di-n-propylamine	660.	U
67-72-1	Hexachloroethane	660.	U
98-95-3	Nitrobenzene	660.	U
78-59-1	Isophorone	660.	U
88-75-5	2-Nitrophenol	660.	U
105-67-9	2,4-Dimethylphenol	660.	U
65-85-0	Benzoic Acid	3200.	U
111-91-1	bis(2-Chloroethoxy)Methane	660.	U
120-83-2	2,4-Dichlorophenol	660.	U
120-82-1	1,2,4-Trichlorobenzene	660.	U
91-20-3	Naphthalene	660.	U
106-47-8	4-Chloroaniline	660.	U
87-68-3	Hexachlorobutadiene	660.	U
59-50-7	4-Chloro-3-Methylphenol	660.	U
91-57-6	2-Methylnaphthalene	660.	U
77-47-4	Hexachlorocyclopentadiene	660.	U
88-06-2	2,4,6-Trichlorophenol	660.	U
95-95-4	2,4,5-Trichlorophenol	3200.	U
91-58-7	2-Chloronaphthalene		
88-74-4	2-Nitroaniline	3200.	U
131-11-3	Dimethylphthalate	660.	U
208-96-8	Acenaphthylene	660.	U
606-20-2	2,6-Dinitrotoluene	660.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK02

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: SBLK02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B2665

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 11/29/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3200.	U
83-32-9	Acenaphthene	660.	U
51-28-5	2,4-Dinitrophenol	3200.	U
100-02-7	4-Nitrophenol	3200.	U
132-64-9	Dibenzofuran	660.	U
121-14-2	2,4-Dinitrotoluene	660.	U
84-66-2	Diethylphthalate	660.	U
7005-72-3	4-Chlorophenyl-phenylether	660.	U
86-73-7	Fluorene	660.	U
100-01-6	4-Nitroaniline	3200.	U
534-52-1	4,6-Dinitro-2-Methylphenol	3200.	U
86-30-6	N-Nitrosodiphenylamine (1)	660.	U
101-55-3	4-Bromophenyl-phenylether	660.	U
118-74-1	Hexachlorobenzene	660.	U
87-86-5	Pentachlorophenol	3200.	U
85-01-8	Phenanthrene	660.	U
120-12-7	Anthracene	660.	U
84-74-2	Di-n-butylphthalate	660.	U
206-44-0	Fluoranthene	660.	U
129-00-0	Pyrene	660.	U
85-68-7	Butylbenzylphthalate	660.	U
91-94-1	3,3'-Dichlorobenzidine	1300.	U
56-55-3	Benzo(a)anthracene	660.	U
218-01-9	Chrysene	660.	U
117-81-7	bis(2-Ethylhexyl)phthalate	660.	U
117-84-0	Di-n-octylphthalate	660.	U
205-99-2	Benzo(b)fluoranthene	660.	U
207-08-9	Benzo(k)fluoranthene	660.	U
50-32-8	Benzo(a)pyrene		
193-39-5	Indeno(1,2,3-cd)pyrene		
53-70-3	Dibenz(a,h)anthracene	660.	U
191-24-2	Benzo(g,h,i)perylene	660.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK02

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: SBLK02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B2665

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 11/29/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN HYDROCARBON	7.73	400.	J
2. - -	UNKNOWN HYDROCARBON	7.93	300.	J
3. - -	UNKNOWN HYDROCARBON	8.10	300.	J
4. - -	UNKNOWN HYDROCARBON	9.10	2000.	J
5. - -	UNKNOWN HYDROCARBON	9.78	400.	J
6. - -	UNKNOWN HYDROCARBON	10.60	300.	J
7. - -	UNKNOWN HYDROCARBON	10.88	700.	J
8. - -	UNKNOWN HYDROCARBON	12.73	900.	J
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ415MS

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: RAS0877MS

Sample wt/vol: 30.7 (g/mL) G Lab File ID: B2659

Level: (low/med) LOW Date Received: 11/18/89

% Moisture: not dec. 24. dec. 0. Date Extracted: 11/28/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether	850.	U
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene	850.	U
106-46-7	1,4-Dichlorobenzene		
100-51-6	Benzyl Alcohol	850.	U
95-50-1	1,2-Dichlorobenzene	850.	U
95-48-7	2-Methylphenol	850.	U
108-60-1	bis(2-Chloroisopropyl)Ether	850.	U
106-44-5	4-Methylphenol	850.	U
621-64-7	N-Nitroso-di-n-propylamine		
67-72-1	Hexachloroethane	850.	U
98-95-3	Nitrobenzene	850.	U
78-59-1	Isophorone	850.	U
88-75-5	2-Nitrophenol	850.	U
105-67-9	2,4-Dimethylphenol	850.	U
65-85-0	Benzoic Acid	4200.	U
111-91-1	bis(2-Chloroethoxy)Methane	850.	U
120-83-2	2,4-Dichlorophenol	850.	U
120-82-1	1,2,4-Trichlorobenzene		
91-20-3	Naphthalene	850.	U
106-47-8	4-Chloroaniline	850.	U
87-68-3	Hexachlorobutadiene	850.	U
59-50-7	4-Chloro-3-Methylphenol		
91-57-6	2-Methylnaphthalene	850.	U
77-47-4	Hexachlorocyclopentadiene	850.	U
88-06-2	2,4,6-Trichlorophenol	850.	U
95-95-4	2,4,5-Trichlorophenol	4200.	U
91-58-7	2-Chloronaphthalene	850.	U
88-74-4	2-Nitroaniline	[illegible]	
131-11-3	Dimethylphthalate		
208-96-8	Acenaphthylene	850.	U
606-20-2	2,6-Dinitrotoluene	850.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ415MS

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: RAS0877MS

Sample wt/vol: 30.7 (g/mL) G Lab File ID: B2659

Level: (low/med) LOW Date Received: 11/18/89

% Moisture: not dec. 24. dec. 0. Date Extracted: 11/28/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4200.	U
83-32-9	Acenaphthene		
51-28-5	2,4-Dinitrophenol	4200.	U
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran	850.	U
121-14-2	2,4-Dinitrotoluene		
84-66-2	Diethylphthalate	850.	U
7005-72-3	4-Chlorophenyl-phenylether	850.	U
86-73-7	Fluorene	850.	U
100-01-6	4-Nitroaniline	4200.	U
534-52-1	4,6-Dinitro-2-Methylphenol	4200.	U
86-30-6	N-Nitrosodiphenylamine (1)	850.	U
101-55-3	4-Bromophenyl-phenylether	850.	U
118-74-1	Hexachlorobenzene	850.	U
87-86-5	Pentachlorophenol		
85-01-8	Phenanthrene	850.	U
120-12-7	Anthracene	850.	U
84-74-2	Di-n-butylphthalate	850.	U
206-44-0	Fluoranthene	850.	U
129-00-0	Pyrene		
85-68-7	Butylbenzylphthalate	850.	U
91-94-1	3,3'-Dichlorobenzidine	1700.	U
56-55-3	Benzo(a)anthracene	850.	U
218-01-9	Chrysene	850.	U
117-81-7	bis(2-Ethylhexyl)phthalate	850.	U
117-84-0	Di-n-octylphthalate	850.	U
205-99-2	Benzo(b)fluoranthene	850.	U
207-08-9	Benzo(k)fluoranthene	850.	U
50-32-8	Benzo(a)pyrene	850.	U
193-39-5	Indeno(1,2,3-cd)pyrene	850.	U
53-70-3	Dibenz(a,h)anthracene		
191-24-2	Benzo(g,h,i)perylene	850.	U

(1) - Cannot be separated from diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ415MSD

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: RAS0877MSD

Sample wt/vol: 30.5 (g/mL) G Lab File ID: B2661

Level: (low/med) LOW Date Received: 11/18/89

% Moisture: not dec. 24. dec. 0. Date Extracted: 11/28/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether	850.	U
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene	850.	U
106-46-7	1,4-Dichlorobenzene		
100-51-6	Benzyl Alcohol	850.	U
95-50-1	1,2-Dichlorobenzene	850.	U
95-48-7	2-Methylphenol	850.	U
108-60-1	bis(2-Chloroisopropyl)Ether	850.	U
106-44-5	4-Methylphenol	850.	U
621-64-7	N-Nitroso-di-n-propylamine		
67-72-1	Hexachloroethane	850.	U
98-95-3	Nitrobenzene	850.	U
78-59-1	Isophorone	850.	U
88-75-5	2-Nitrophenol	850.	U
105-67-9	2,4-Dimethylphenol	850.	U
65-85-0	Benzoic Acid	4200.	U
111-91-1	bis(2-Chloroethoxy)Methane	850.	U
120-83-2	2,4-Dichlorophenol	850.	U
120-82-1	1,2,4-Trichlorobenzene		
91-20-3	Naphthalene	850.	U
106-47-8	4-Chloroaniline	850.	U
87-68-3	Hexachlorobutadiene	850.	U
59-50-7	4-Chloro-3-Methylphenol		
91-57-6	2-Methylnaphthalene	850.	U
77-47-4	Hexachlorocyclopentadiene	850.	U
88-06-2	2,4,6-Trichlorophenol	850.	U
95-95-4	2,4,5-Trichlorophenol	4200.	U
91-58-7	2-Chloronaphthalene	850.	U
88-74-4	2-Nitroaniline		
131-11-3	Dimethylphthalate	[illegible]	U
208-96-8	Acenaphthylene	850.	U
606-20-2	2,6-Dinitrotoluene	850.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ415MSD

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: RAS0877MSD

Sample wt/vol: 30.5 (g/mL) G Lab File ID: B2661

Level: (low/med) LOW Date Received: 11/18/89

% Moisture: not dec. 24. dec. 0. Date Extracted: 11/28/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4200.	U
83-32-9	Acenaphthene		
51-28-5	2,4-Dinitrophenol	4200.	U
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran	850.	U
121-14-2	2,4-Dinitrotoluene		
84-66-2	Diethylphthalate	850.	U
7005-72-3	4-Chlorophenyl-phenylether	850.	U
86-73-7	Fluorene	850.	U
100-01-6	4-Nitroaniline	4200.	U
534-52-1	4,6-Dinitro-2-Methylphenol	4200.	U
86-30-6	N-Nitrosodiphenylamine (1)	850.	U
101-55-3	4-Bromophenyl-phenylether	850.	U
118-74-1	Hexachlorobenzene	850.	U
87-86-5	Pentachlorophenol		
85-01-8	Phenanthrene	850.	U
120-12-7	Anthracene	850.	U
84-74-2	Di-n-butylphthalate	850.	U
206-44-0	Fluoranthene	850.	U
129-00-0	Pyrene		
85-68-7	Butylbenzylphthalate	850.	U
91-94-1	3,3'-Dichlorobenzidine	1700.	U
56-55-3	Benzo(a)anthracene	850.	U
218-01-9	Chrysene	850.	U
117-81-7	bis(2-Ethylhexyl)phthalate	850.	U
117-84-0	Di-n-octylphthalate	850.	U
205-99-2	Benzo(b)fluoranthene	850.	U
207-08-9	Benzo(k)fluoranthene	850.	U
50-32-8	Benzo(a)pyrene		
193-39-5	Indeno(1,2,3-cd)pyrene		
53-70-3	Dibenz(a,h)anthracene	850.	U
191-24-2	Benzo(g,h,i)perylene	850.	U

(1) - Cannot be separated from diphenylamine

#AR300987

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ415MS

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: RAS0877MS

Sample wt/vol: 31. (g/mL) G Lab File ID: G837

Level: (low/med) LOW Date Received: 11/18/89

% Moisture: not dec. 24. dec. 0. Date Extracted: 11/28/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	21 ~~16.~~	J
319-85-7	beta-BHC	21.	U
319-86-8	delta-BHC	21.	U
58-89-9	gamma-BHC (Lindane)		
76-44-8	Heptachlor		
309-00-2	Aldrin		
1024-57-3	Heptachlor epoxide	21.	U
959-98-8	Endosulfan I	21.	U
60-57-1	Dieldrin		
72-55-9	4,4'-DDE	41.	U
72-20-8	Endrin		
33213-65-9	Endosulfan II	41.	U
72-54-8	4,4'-DDD	41.	U
1031-07-8	Endosulfan sulfate	41.	U
50-29-3	4,4'-DDT		
72-43-5	Methoxychlor	210.	U
53494-70-5	Endrin ketone	41.	U
5103-71-9	alpha-Chlordane	210.	U
5103-74-2	gamma-Chlordane	210.	U
8001-35-2	Toxaphene	410.	U
12674-11-2	Aroclor-1016	210.	U
11104-28-2	Aroclor-1221	210.	U
11141-16-5	Aroclor-1232	210.	U
53469-21-9	Aroclor-1242	210.	U
12672-29-6	Aroclor-1248	210.	U
11097-69-1	Aroclor-1254	410.	U
11096-82-5	Aroclor-1260	410.	U

4/9/90

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK01

Lab Name: 3RIVER Contract: 68-W8-0020

Lab Code: 3RIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: 11,28,89

Sample wt/vol: 30. (g/mL) G Lab File ID: G835

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 11/28/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	16.	U
319-85-7	beta-BHC	16.	U
319-86-8	delta-BHC	16.	U
58-89-9	gamma-BHC (Lindane)	16.	U
76-44-8	Heptachlor	16.	U
309-00-2	Aldrin	16.	U
1024-57-3	Heptachlor epoxide	16.	U
959-98-8	Endosulfan I	16.	U
60-57-1	Dieldrin	32.	U
72-55-9	4,4'-DDE	32.	U
72-20-8	Endrin	32.	U
33213-65-9	Endosulfan II	32.	U
72-54-8	4,4'-DDD	32.	U
1031-07-8	Endosulfan sulfate	32.	U
50-29-3	4,4'-DDT	32.	U
72-43-5	Methoxychlor	160.	U
53494-70-5	Endrin ketone	32.	U
5103-71-9	alpha-Chlordane	160.	U
5103-74-2	gamma-Chlordane	160.	U
8001-35-2	Toxaphene	320.	U
12674-11-2	Aroclor-1016	160.	U
11104-28-2	Aroclor-1221	160.	U
11141-16-5	Aroclor-1232	160.	U
53469-21-9	Aroclor-1242	160.	U
12672-29-6	Aroclor-1248	160.	U
11097-69-1	Aroclor-1254	320.	U
11096-82-5	Aroclor-1260	320.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ415MSD

Lab Name: JRIVER Contract: 68-W8-0020

Lab Code: JRIVER Case No.: 13149 SAS No.: SDG No.: CZ415

Matrix: (soil/water) SOIL Lab Sample ID: RAS0877MSD

Sample wt/vol: 30. (g/mL) G Lab File ID: G838

Level: (low/med) LOW Date Received: 11/18/89

% Moisture: not dec. 24. dec. 0. Date Extracted: 11/28/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/19/89

GPC Cleanup: (Y/N) Y pH: 5.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	~~5.1~~ 21	J
319-85-7	beta-BHC	21.	U
319-86-8	delta-BHC	21.	U
58-89-9	gamma-BHC (Lindane)		
76-44-8	Heptachlor		
309-00-2	Aldrin		
1024-57-3	Heptachlor epoxide	21.	U
959-98-8	Endosulfan I	21.	U
60-57-1	Dieldrin		
72-55-9	4,4'-DDE	42.	U
72-20-8	Endrin		
33213-65-9	Endosulfan II	42.	U
72-54-8	4,4'-DDD	42.	U
1031-07-8	Endosulfan sulfate	42.	U
50-29-3	4,4'-DDT		
72-43-5	Methoxychlor	210.	U
53494-70-5	Endrin ketone	42.	U
5103-71-9	alpha-Chlordane	210.	U
5103-74-2	gamma-Chlordane	210.	U
8001-35-2	Toxaphene	420.	U
12674-11-2	Aroclor-1016	210.	U
11104-28-2	Aroclor-1221	210.	U
11141-16-5	Aroclor-1232	210.	U
53469-21-9	Aroclor-1242	210.	U
12672-29-6	Aroclor-1248	210.	U
11097-69-1	Aroclor-1254	420.	U
11096-82-5	Aroclor-1260	420.	U

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

DATE : April 25, 1990

SUBJECT: Organic Data Validation for the Standard Chlorine Site
Case 13445

FROM : Theresa A. Simpson TAS
Region III ESAT DPO (3ES23)

TO : Bob Guarni
Regional Project Manager (3HW25)

THRU : Patricia J. Krantz, Chief TAS for
Quality Assurance Branch (3ES23)

Attached is the organic data review for the Standard Chlorine Site (Case 13445) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me.

Attachment

cc: Dave Basko, VERSAR
Elaine Spiewak (3HW14) (w/o attachment)

TID File: 03900116 Task 1270

WESTON
MANAGERS DESIGNERS/CONSULTANTS
2568A RIVA ROAD
SUITE 300
ANNAPOLIS, MD 21401
PHONE: 301-266-9887

DATE: 23 APRIL 1990

SUBJECT: ORGANIC DATA VALIDATION FOR CASE 13445
Site: Standard Chlorine

FROM: DOUG McINNES DJM
ORGANIC DATA REVIEWER

DON O'BRIEN DJO
ORGANIC DATA REVIEWER

TO: TERRY SIMPSON
ESAT DEPUTY PROJECT OFFICER

THRU: RICHARD DRESSER RWD
ESAT TEAM MANAGER

OVERVIEW

Case 13445 consisted of two (2) water samples and nine (2) soil samples, submitted to RECMD for volatile, semivolatile, and pesticide/PCB analyses. Included in this case was one (1) equipment blank, and one (1) trip blank that was analyzed for volatiles only. The samples were analyzed as a Contract Laboratory Program (CLP) Regular Analytical Service (RAS).

SUMMARY

All samples were successfully analyzed for all target compounds for all samples. All instrument and method sensitivities were according to the Contract Laboratory Program (CLP) Routine Analytical Service (RAS) protocol.

MINOR PROBLEMS

- Several compounds failed precision criteria for initial and/or continuing calibrations. Quantitation limits for these compounds were qualified "UJ", and reported results were qualified "J", except when superseded by the "B" qualifier, denoting blank contamination. (See Table I in Appendix F).

NOTES

- The reported Tentatively Identified Compounds (TIC's) in Appendix D have been reviewed and corrected during data validation. Chlorobenzene, a volatile fraction 1 [illegible] compound, has been crossed off of the semivolatile TIC form for sample CZ412 (See Appendix D).

- The maximum concentration of contaminants found in the field blanks or method blanks are summarized in the table below. All samples with concentrations of common laboratory contaminants less than ten times (<10X) the blank concentration have been qualified "B" in the data summary. (See Appendix F).

Compound	Concentration *
methylene chloride **	510 J µg/L or µg/Kg
acetone **	1300 µg/L or µg/Kg
bis(2-ethylhexyl)phthalate ***	200 µg/L or 400000 µg/Kg

* - Aqueous blank contaminant concentrations have been calculated from medium level soil results.
** - Common Laboratory Contaminant
***- Medium level soil equivalent result has been calculated from an aqueous blank result.

- One of the MS/MSD analyses had a compound other than the spiking compounds or blank contaminants present. Following is a table of results and precision estimates for this non-spiked compound:

MS/MSD Non-Spiked Compounds

Compound	Concentration (µg/Kg) CZ412	CZ412MS	CZ412MSD	%RSD
nitrobenzene	17000 J	24000	28000	24

All data for case 13445 were reviewed in accordance with the Functional Guidelines for Evaluating Organic Analyses with Modifications for use within Region III. The text of this report addresses only those problems affecting usability.

ATTACHMENTS

1) Appendix A - Glossary of Data Qualifiers
2) Appendix B - Data Summary. These include:
   (a) All positive results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R").
3) Appendix C - Results as Reported by the Laboratory for All Target Compounds
4) Appendix D - Reviewed and Corrected Tentatively Identified Compounds
5) Appendix E - Organic Regional Data Assessment Summary
6) Appendix F - Support Documentation

DCN - DM004A10

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Appendix A

Glossary of Data Qualifiers

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATING TO IDENTIFICATION
(confidence concerning presence or absence of compounds):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

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Appendix B

Data Summary Forms

DATA SUMMARY FORM: VOLATILES 1

WATER SAMPLES
(ug/L)

ll ame: STANDARD CHLORINE

as ; 13445 Sampling Date(s): 01/09 - 01/10/90

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

AR300998

	Sample No.	CBF81	CBF83
	Dilution Factor	1	1
	Location	TB-27 (TRIP BLANK)	EQB-2 (EQUIPMENT BLANK)
0L	COMPOUND		
)	Chloromethane		
)	Bromomethane		
)	*Vinyl Chloride		
)	Chloroethane		
	*Methylene Chloride	UJ	UJ
0	Acetone		
	Carbon Disulfide		
	*1,1-Dichloroethene		
	1,1-Dichloroethane		
	*Total-1,2-Dichloroethene		
	Chloroform		
	*1,2-Dichloroethane	UJ	UJ
0	*2-Butanone		
5	*1,1,1-Trichloroethane		
5	*Carbon Tetrachloride		
10	Vinyl Acetate	UJ	UJ
5	Bromodichloromethane		

CRQL = Contract Required Detection Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS

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Appendix C

Results as Reported by the Laboratory
for all Target Compounds

DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: STANDARD CHLORINE

SOIL SAMPLES (ug/Kg)

Case #: 13445 Sampling Date(s): 01/09-01/10/90

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ((100 - % moisture)/100)

	Sample No.	CZ 412																			
	Dilution Factor	1/10																			
	% Moisture	11																			
	Location	CB-1																			
QL	COMPOUND																				
1	alpha-BHC																				
1	beta-BHC																				
1	delta-BHC																				
1	Gamma-BHC (Lindane)																				
8	Heptachlor																				
8	Aldrin																				
8	Heptachlor Epoxide																				
8	Endosulfan I																				
16	Dieldrin																				
16	4,4'-DDE																				
16	Endrin																				
16	Endosulfan II																				
16	4,4'-DDD																				
16	Endosulfan Sulfate																				
16	4,4'-DDT																				
80	Methoxychlor																				
16	Endrin ketone																				
80	Alpha-Chlordane																				
80	Gamma-Chlordane																				
160	Toxaphene																				
80	Aroclor-1016																				
80	Aroclor-1221																				
80	Aroclor-1232																				
80	Aroclor-1242																				
80	Aroclor-1248																				
160	Aroclor-1254																				
160	Aroclor-1260																				

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

revised 12/86

R301009

DATA SUMMARY FORM: PESTICIDES AND PCBS

Site Name: STANDARD CHLORINE

WATER SAMPLES
(ug/L)

Case #: 13445 Sampling Date(s): 01/09 - 01/10/90

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

CRQL	Sample No. / Dilution Factor / Location / COMPOUND	CBF 83 / 1 / EQB-3 (EQUIP. BLANK)																			
0.05	alpha-BHC																				
0.05	beta-BHC																				
0.05	delta-BHC																				
0.05	*Gamma-BHC (Lindane)																				
0.05	*Heptachlor																				
0.05	Aldrin																				
0.05	Heptachlor Epoxide																				
0.05	Endosulfan I																				
0.10	Dieldrin																				
0.10	4,4'-DDE																				
0.10	*Endrin																				
0.10	Endosulfan II																				
0.10	4,4'-DDD																				
0.10	Endosulfan Sulfate																				
0.10	4,4'-DDT																				
0.5	*Methoxychlor																				
0.10	Endrin ketone																				
0.5	*Alpha-Chlordane																				
0.5	*Gamma-Chlordane																				
1.0	*Toxaphene																				
0.5	*Aroclor-1[illegible]																				
0.5	*Aroclor-1[illegible]																				
0.5	*Aroclor-1[illegible]																				
0.5	*Aroclor-1[illegible]																				
0.5	*Aroclor-1[illegible]																				
1.0	*Aroclor-1[illegible]																				
1.0	*Aroclor-1[illegible]																				

CRDL = C[illegible] Required Detection Limit *Action [illegible]l Exists SEE NARRATIVE FOR CODE D[illegible]ITIONS

revised 12/88

DATA SUMMARY FORM: B N A S 3

Site Name: STANDARD CHLORINE

SOIL SAMPLES
(ug/Kg)

Case #: 13445 Sampling Date(s): 01/09 - 01/10/90

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ((100 - % moisture)/100)

AR301007

	Sample No.	CBF 85		CZ 412	
	Dilution Factor	240*		60*	
	% Moisture	10		11	
	Location	CB-2		CB-1	
CRQL	COMPOUND				
330	N-Nitrosodiphenylamine				
330	4-Bromophenyl phenylether				
330	Hexachlorobenzene				
1600	Pentachlorophenol				
330	Phenanthrene				
330	Anthracene				
330	Di-n-butylphthalate				
330	Fluoranthene				
330	Pyrene				
330	Butylbenzylphthalate				
1600	3,3-Dichlorobenzidine		UJ		UJ
330	Benzo(a)anthracene				
330	Chrysene				
330	bis(2-Ethylhexyl)phthalate			7100	B
330	Di-n-octylphthalate				
330	Benzo(b)fluoranthene				
330	Benzo(k)fluoranthene				
330	Benzo(a)py				
330	Indeno(1,2, rene		UJ		
330	Dibenz(a,h) cene		UJ		UJ
330	Benzo(g,h, ne		UJ		UJ

CRQL = Con Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

*THIS SAMP WAS RUN BY THE MEDIUM LEVEL METHOD - EFFECTIVE DF = 60 X FORM I DF

revised 12/88

DATA SUMMARY FORM: B N A S 2

Site Name: STANDARD CHLORINE

Case #: 13445 Sampling Date(s): 01/04 - 01/10/90

SOIL SAMPLES (ug/Kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ((100 - % moisture)/100)

	Sample No.	CBF 85	CZ412
	Dilution Factor	240X	60 X
	% Moisture	10	11
	Location	CB-2	CB-1
CRQL	COMPOUND		
330	Hexachlorobutadiene		
330	4-Chloro-3-methylphenol		
330	2-Methylnaphthalene		
330	Hexachlorocyclopentadiene		
330	2,4,6-Trichlorophenol		
1600	2,4,5-Trichlorophenol		
330	2-Chloronaphthalene		
1600	2-Nitroaniline		
330	Dimethylphthalate		
330	Acenaphthylene		
330	2,6-Dinitrotoluene		
1600	3-Nitroaniline		
330	Acenaphthene		
1600	2,4-Dinitrophenol	UJ	UJ
1600	4-Nitrophenol		UJ
330	Dibenzofuran		
330	2,4-Dinitrotoluene		
330	Diethylph[illegible]ate		
330	4-Chloro[illegible]yl-phenylether		
330	Fluorene		
1600	4-Nitroan[illegible]	UJ	
1600	4,6-Dinit[illegible]methylphenol	UJ	

CRQL = Co[illegible]act Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

* THIS SAM[illegible] WAS RUN BY THE MEDIUM LEVEL METHOD - EFFECTIVE DF = 60 X FORM I DF

revised 12/88

AR301006

AR3 1005

DATA SUMMARY FORM: B N A S 1

Site Name: STANDARD CHLORINE

SOIL SAMPLES (ug/Kg)

Case #: 13445 Sampling Date(s): 01/09 - 01/10/90

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ((100 - % moisture)/100)

	Sample No.	CBF 85		CZ412	
	Dilution Factor	240 *		60 *	
	% Moisture	10		11	
	Location	CB-2		CB-1	
CRQL	COMPOUND				
330	Phenol				
330	bis(2-Chloroethyl)ether				
330	2-Chlorophenol				
330	1,3-Dichlorobenzene	25000	J		
330	1,4-Dichlorobenzene	250000		300000	
330	Benzyl Alcohol				
330	1,2-Dichlorobenzene	420000		170000	
330	2-Methylphenol				
330	bis(2-Chloroisopropyl)ether				
330	4-Methylphenol				
330	N-Nitroso-di-n-propylamine				
330	Hexachloroethane				
330	Nitrobenzene			17000	J
330	Isophorone				
330	2-Nitrophenol				
330	2,4-Dimethylphenol				
1600	Benzoic A		UJ		UJ
330	bis(2-Chlor oxy)methane				
330	2,4-Dichlor ol				
330	1,2,4-Trichl nzene	1200000		330000	
330	Naphthalen				
330	4-Chlorogan				

CRQL = Con l Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

* THIS SA 'E WAS RUN BY THE MEDIUM LEVEL METHOD - EFFECTIVE DF: 60 x FORM I DF

revised 12/88

DATA SUMMARY FORM: B N A S 3

WATER SAMPLES
(ug/L)

Site Name: STANDARD CHLORINE

Case #: 13445 Sampling Date(s): 01/09 - 01/10/90

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

	Sample No.	CBF 83																			
	Dilution Factor	2.*																			
	Location	EQB-3 (EQUIP. BLANK)																			
DL	COMPOUND																				
0	N-Nitrosodiphenylamine																				
0	4-Bromophenyl-phenylether																				
0	*Hexachlorobenzene																				
50	*Pentachlorophenol																				
10	Phenanthrene																				
10	Anthracene																				
10	Di-n-butylphthalate																				
10	Fluoranthene																				
10	Pyrene																				
10	Butylbenzylphthalate																				
20	3,3-Dichlorobenzidine		UJ																		
10	Benzo(a)anthracene																				
10	Chrysene																				
10	bis(2-Ethylhexyl)phthalate	200	B																		
10	Di-n-octylphthalate																				
10	Benzo(b)fluoranthene																				
10	Benzo(k)fluoran[illegible]																				
10	Benzo(a)pyren[illegible]																				
10	Indeno(1,2,3-c[illegible]ne																				
10	Dibenz(a,h)anth[illegible]ne		UJ																		
10	Benzo(g,h,i)pe[illegible]		UJ																		

CRDL = Cont[illegible] Required Detection Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS

* DURING E[illegible] ACTION A 2X DILUTION WAS PERFORMED - EFFECTIVE DF = 2

revised 12/88

AR301100

DATA SUMMARY FORM: B N A S 2

Site Name: STANDARD CHLORINE

WATER SAMPLES (ug/L)

Case #: 13445 Sampling Date(s): 01/09-01/10/90

To calculate sample quantitation limit: (CRQL * Dilution Factor)

CRQL	COMPOUND																				
	Sample No.	CBF 83																			
	Dilution Factor	2 *																			
	Location	EQB-3 (EQUIP. BLANK)																			
0	Hexachlorobutadiene																				
0	4-Chloro-3-methylphenol																				
0	2-Methylnaphthalene																				
0	Hexachlorocyclopentadiene																				
0	2,4,6-Trichlorophenol																				
0	2,4,5-Trichlorophenol																				
0	2-Chloronaphthalene																				
0	2-Nitroaniline																				
0	Dimethylphthalate																				
0	Acenaphthylene																				
0	2,6-Dinitrotoluene																				
0	3-Nitroaniline																				
0	Acenaphthene																				
50	2,4-Dinitrophenol		45																		
50	4-Nitrophenol		45																		
0	Dibenzofuran																				
0	2,4-Dinitrotoluene																				
0	Diethylphthalate																				
0	4-Chlorophenyl p ether																				
0	Fluorene																				
50	4-Nitroaniline																				
50	4,6-Dinitro-2-meth nol																				

CRDL = Contra equired Detection Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS

* DURING EXTRACTION A 2X DILUTION WAS PERFORMED - EFFECTIVE DF = 2

revised 12/88

DATA SUMMARY FORM: B N A S 1

WATER SAMPLES
(ug/L)

Site Name: STANDARD CHLORINE

Case #: 13445 Sampling Date(s): 01/09 - 01/10/90

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

Sample No.	CBF 83																			
Dilution Factor	2 *																			
Location	EQB-2																			
COMPOUND	(EQUIP. BLANK)																			
Phenol																				
bis(2-Chloroethyl)ether																				
2-Chlorophenol																				
*1,3-Dichlorobenzene																				
*1,4-Dichlorobenzene																				
Benzyl Alcohol																				
1,2-Dichlorobenzene																				
2-Methylphenol																				
bis(2-Chloroisopropyl)ether																				
4-Methylphenol																				
N-Nitroso-di-n propylamine																				
Hexachloroethane																				
Nitrobenzene																				
Isophorone																				
2-Nitrophenol																				
2,4-Dimethylphenol																				
Benzoic Acid		UJ																		
bis(2-Chloroethoxy)methane																				
2,4-Dichlorophenol																				
1,2,4-Trichlorobenzene																				
Naphthalene																				
4-Chloroaniline																				

CRQL = Contract Required Detection Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS

* DURING EXTRACTION A 2x DILUTION WAS PERFORMED - EFFECTIVE DF = 2

revised 12/88

DATA SUMMARY FORM: VOLATILES 2

Site Name: STANDARD CHLORINE

Case #: 13445 Sampling Date(s): 01/09 - 01/10/90

SOIL SAMPLES (ug/Kg)

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ((100 - % moisture)/100)

	Sample No.	CBF85	CZ412
	Dilution Factor	125 *	3125 *
	% Moisture	10	11
	Location	CB-2	CB-1
CRQL	COMPOUND		
5	1,2-Dichloropropane		
5	Cis-1,3-Dichloropropene		
5	Trichloroethene		
5	Dibromochloromethane		
5	1,1,2-Trichloroethane		
5	Benzene		
5	Trans-1,3-Dichloropropene		
5	Bromoform		
10	4 Methyl-2-pentanone		
10	2-Hexanone		
5	Tetrachloroethene		
5	1,1,2,2-Tetrachloroethane		
5	Toluene		
5	Chlorobenzene	5000	580000
5	Ethylbenzene		
5	Styrene		
5	Total Xylenes		

CRQL = Contr Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

* THIS SAM WAS RUN BY THE MEDIUM LEVEL METHOD - EFFECTIVE DF = 125 X FORM I DF

Revised 12/88

AR301000

DATA SUMMARY FORM: VOLATILES 1

Site Name: STANDARD CHLORINE

SOIL SAMPLES (ug/Kg)

Case #: 13445 Sampling Date(s): 01/09 - 01/10/90

To calculate sample quantitation limit: (CRQL * Dilution Factor) / ((100 - % moisture)/100)

	Sample No.	CBF85		CZ412																	
	Dilution Factor	125 *		3125 *																	
	% Moisture	10		11																	
	Location	CB-2		CB-1																	
IQL	COMPOUND																				
10	Chloromethane																				
10	Bromomethane																				
10	Vinyl Chloride																				
10	Chloroethane																				
5	Methylene Chloride	540	B	11000	B																
10	Acetone		UJ	46000	B																
5	Carbon Disulfide																				
5	1,1-Dichloroethene																				
5	1,1-Dichloroethane																				
5	Total-1,2-Dichloroethene																				
5	Chloroform																				
5	1,2-Dichloroethane																				
10	2-Butanone																				
5	1,1,1-Trichloroethane																				
5	Carbon Tetrachloride																				
10	Vinyl Acetate																				
5	Bromodichloromethane																				

CRQL = Contract Required Detection Limit

SEE NARRATIVE FOR CODE DEFINITIONS

* THIS SAMPLE WAS RUN BY THE MEDIUM LEVEL METHOD - EFFECTIVE DF = 125 X FORM I DF

revised 12/88

DATA SUMMARY FORM: V O L A T I L E S 2

Site Name: STANDARD CHLORINE

WATER SAMPLES
(ug/L)

Case #: 13445 Sampling Date(s): 01/09-01/10/90

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

	Sample No.	CBF 81		CBF 83															
	Dilution Factor	1		1															
	Location	TB-27 (TRIP BLANK)		EQB-2 (EQUIP. BLANK)															
CRQL	COMPOUND																		
5	*1,2-Dichloropropane																		
5	Cis-1,3-Dichloropropene																		
5	Trichloroethene																		
5	Dibromochloromethane																		
5	1,1,2-Trichloroethane																		
5	*Benzene																		
5	Trans-1,3-Dichloropropene																		
5	Bromoform																		
10	4-Methyl-2-pentanone		4J		4J														
10	2-Hexanone																		
5	*Tetrachloroethene																		
5	1,1,2,2-Tetrachloroethane																		
5	*Toluene																		
5	*Chlorobenzene																		
5	*Ethylbenzene																		
5	*Styrene																		
5	*Total Xylenes																		

L = Cor l Required Detection Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

revised 12/88

AR300999

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CBF81

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: BW0028

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: AA437

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 100. Date Analyzed: 1/11/90

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane		
108-88-3	Toluene		
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CBF83

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: BW0027

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: AA436

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 100. Date Analyzed: 1/11/90

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	[illegible]	[illegible]
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CBF83

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: 8W0027

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: 8A302

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 100. dec._____ Date Extracted: 1/12/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	1	
95-95-4	2,4,5-Trichlorophenol	5	
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

C8F83

Lab Name: RECMO Contract: 68W80051

Lab Code: RECMO Case No.: 13445 SAS No.: SDG No.: C8F81

Matrix: (soil/water) WATER Lab Sample ID: 8W0027

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: BA302

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 100. dec._____ Date Extracted: 1/12/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	200.	B
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	[illegible]	[illegible]
207-08-9	Benzo(k)fluoranthene	[illegible]	[illegible]
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

AR301014

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CBF83

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: BW0027

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: C27A17

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 100. dec._____ Date Extracted: 1/12/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC (Lindane)	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.100	U
72-55-9	4,4'-DDE	.100	U
72-20-8	Endrin	.100	U
33213-65-9	Endosulfan II	.100	U
72-54-8	4,4'-DDD	.100	U
1031-07-8	Endosulfan sulfate	.100	U
50-29-3	4,4'-DDT	.100	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.100	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CBF85

ab Name: RECMD Contract: 68W80051

ab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

atrix: (soil/water) SOIL Lab Sample ID: BS0026

ample wt/vol: 4.000 (g/mL) G Lab File ID: CA598

evel: (low/med) MED Date Received: 1/11/90

Moisture: not dec. 10. Date Analyzed: 1/15/90

olumn: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1400.	U
74-83-9	Bromomethane	1400.	U
75-01-4	Vinyl Chloride	1400.	U
75-00-3	Chloroethane	1400.	U
75-09-2	Methylene Chloride	540.	BJ
67-64-1	Acetone	1400.	U
75-15-0	Carbon Disulfide	690.	U
75-35-4	1,1-Dichloroethene	690.	U
75-34-3	1,1-Dichloroethane	690.	U
540-59-0	1,2-Dichloroethene (total)	690.	U
67-66-3	Chloroform	690.	U
107-06-2	1,2-Dichloroethane	690.	U
78-93-3	2-Butanone	1400.	U
71-55-6	1,1,1-Trichloroethane	690.	U
56-23-5	Carbon Tetrachloride	690.	U
108-05-4	Vinyl Acetate	1400.	U
75-27-4	Bromodichloromethane	690.	U
78-87-5	1,2-Dichloropropane	690.	U
10061-01-5	cis-1,3-Dichloropropene	690.	U
79-01-6	Trichloroethene	690.	U
124-48-1	Dibromochloromethane	690.	U
79-00-5	1,1,2-Trichloroethane	690.	U
71-43-2	Benzene	690.	U
10061-02-6	trans-1,3-Dichloropropene	690.	U
75-25-2	Bromoform	690.	U
108-10-1	4-Methyl-2-Pentanone	1400.	U
591-78-6	2-Hexanone	1400.	U
127-18-4	Tetrachloroethene	690.	U
79-34-5	1,1,2,2-Tetrachloroethane	690.	U
108-88-3	Toluene	690.	U
108-90-7	Chlorobenzene	5000.	
100-41-4	Ethylbenzene	690.	U
100-42-5	Styrene	690.	U
1330-20-7	Xylene (total)	690.	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CBF85

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0026

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA315

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 10. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/17/90

GPC Cleanup: (Y/N) N pH: 8.4 Dilution Factor: 4.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	88000.	U
111-44-4	bis(2-Chloroethyl)ether	88000.	U
95-57-8	2-Chlorophenol	88000.	U
541-73-1	1,3-Dichlorobenzene	25000.	J
106-46-7	1,4-Dichlorobenzene	250000.	
100-51-6	Benzyl alcohol	88000.	U
95-50-1	1,2-Dichlorobenzene	420000.	
95-48-7	2-Methylphenol	88000.	U
108-60-1	bis(2-Chloroisopropyl)ether	88000.	U
106-44-5	4-Methylphenol	88000.	U
621-64-7	N-Nitroso-di-n-propylamine	88000.	U
67-72-1	Hexachloroethane	88000.	U
98-95-3	Nitrobenzene	88000.	U
78-59-1	Isophorone	88000.	U
88-75-5	2-Nitrophenol	88000.	U
105-67-9	2,4-Dimethylphenol	88000.	U
65-85-0	Benzoic acid	440000.	U
111-91-1	bis(2-Chloroethoxy)methane	88000.	U
120-83-2	2,4-Dichlorophenol	88000.	U
120-82-1	1,2,4-Trichlorobenzene	1200000.	
91-20-3	Naphthalene	88000.	U
106-47-8	4-Chloroaniline	88000.	U
87-68-3	Hexachlorobutadiene	88000.	U
59-50-7	4-Chloro-3-methylphenol	88000.	U
91-57-6	2-Methylnaphthalene	88000.	U
77-47-4	Hexachlorocyclopentadiene	88000.	U
88-06-2	2,4,6-Trichlorophenol	88000.	U
95-95-4	2,4,5-Trichlorophenol	[illegible]	U
91-58-7	2-Chloronaphthalene		
88-74-4	2-Nitroaniline	440000.	U
131-11-3	Dimethylphthalate	88000.	U
208-96-8	Acenaphthylene	88000.	U
606-20-2	2,6-Dinitrotoluene	88000.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CBF85

ab Name: RECMD Contract: 68W80051

ab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

atrix: (soil/water) SOIL Lab Sample ID: BS0026

ample wt/vol: 1.000 (g/mL) G Lab File ID: BA315

evel: (low/med) MED Date Received: 1/11/90

Moisture: not dec. 10. dec._____ Date Extracted: 1/15/90

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/17/90

PC Cleanup: (Y/N) N pH: 8.4 Dilution Factor: 4.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	440000.	U
83-32-9	Acenaphthene	88000.	U
51-28-5	2,4-Dinitrophenol	440000.	U
100-02-7	4-Nitrophenol	440000.	U
132-64-9	Dibenzofuran	88000.	U
121-14-2	2,4-Dinitrotoluene	88000.	U
84-66-2	Diethylphthalate	88000.	U
7005-72-3	4-Chlorophenyl-phenylether	88000.	U
86-73-7	Fluorene	88000.	U
100-01-6	4-Nitroaniline	440000.	U
534-52-1	4,6-Dinitro-2-methylphenol	440000.	U
86-30-6	N-Nitrosodiphenylamine	88000.	U
101-55-3	4-Bromophenyl-phenylether	88000.	U
118-74-1	Hexachlorobenzene	88000.	U
87-86-5	Pentachlorophenol	440000.	U
85-01-8	Phenanthrene	88000.	U
120-12-7	Anthracene	88000.	U
84-74-2	Di-n-butylphthalate	88000.	U
206-44-0	Fluoranthene	88000.	U
129-00-0	Pyrene	88000.	U
85-68-7	Butylbenzylphthalate	88000.	U
91-94-1	3,3'-Dichlorobenzidine	180000.	U
56-55-3	Benzo(a)anthracene	88000.	U
218-01-9	Chrysene	88000.	U
117-81-7	bis(2-Ethylhexyl)phthalate	88000.	U
117-84-0	Di-n-octylphthalate	88000.	U
205-99-2	Benzo(b)fluoranthene	88000.	U
207-08-9	Benzo(k)fluoranthene	88000.	U
50-32-8	Benzo(a)pyrene	880	
193-39-5	Indeno(1,2,3-cd)pyrene	880[illegible]	
53-70-3	Dibenzo(a,h)anthracene	88000.	U
191-24-2	Benzo(g,h,i)perylene	88000.	U

(1) - Cannot be separated from diphenylamine

AR301018

-1A-

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 4.000 (g/mL) G Lab File ID: CA600

Level: (low/med) MED Date Received: 1/11/90

Moisture: not dec. 11. Date Analyzed: 1/15/90

Column: (pack/cap) PACK Dilution Factor: 25.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	35000.	U
74-83-9	Bromomethane	35000.	U
75-01-4	Vinyl Chloride	35000.	U
75-00-3	Chloroethane	35000.	U
75-09-2	Methylene Chloride	11000.	BJ
67-64-1	Acetone	46000.	B
75-15-0	Carbon Disulfide	18000.	U
75-35-4	1,1-Dichloroethene	18000.	U
75-34-3	1,1-Dichloroethane	18000.	U
540-59-0	1,2-Dichloroethene (total)	18000.	U
67-66-3	Chloroform	18000.	U
107-06-2	1,2-Dichloroethane	18000.	U
78-93-3	2-Butanone	35000.	U
71-55-6	1,1,1-Trichloroethane	18000.	U
56-23-5	Carbon Tetrachloride	18000.	U
108-05-4	Vinyl Acetate	35000.	U
75-27-4	Bromodichloromethane	18000.	U
78-87-5	1,2-Dichloropropane	18000.	U
10061-01-5	cis-1,3-Dichloropropene	18000.	U
79-01-6	Trichloroethene	18000.	U
124-48-1	Dibromochloromethane	18000.	U
79-00-5	1,1,2-Trichloroethane	18000.	U
71-43-2	Benzene	18000.	U
10061-02-6	trans-1,3-Dichloropropene	18000.	U
75-25-2	Bromoform	18000.	U
108-10-1	4-Methyl-2-Pentanone	35000.	U
591-78-6	2-Hexanone	35000.	U
127-18-4	Tetrachloroethene	18000.	U
79-34-5	1,1,2,2-Tetrachloroethane	18000.	U
108-88-3	Toluene	18000.	U
108-90-7	Chlorobenzene	580000.	
100-41-4	Ethylbenzene	18000.	U
100-42-5	Styrene	18000.	U
1330-20-7	Xylene (total)	18000.	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA304

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 4.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	22000.	U
111-44-4	bis(2-Chloroethyl)ether	22000.	U
95-57-8	2-Chlorophenol	22000.	U
541-73-1	1,3-Dichlorobenzene	22000.	U
106-46-7	1,4-Dichlorobenzene	300000.	
100-51-6	Benzyl alcohol	22000.	U
95-50-1	1,2-Dichlorobenzene	170000.	
95-48-7	2-Methylphenol	22000.	U
108-60-1	bis(2-Chloroisopropyl)ether	22000.	U
106-44-5	4-Methylphenol	22000.	U
621-64-7	N-Nitroso-di-n-propylamine	22000.	U
67-72-1	Hexachloroethane	22000.	U
98-95-3	Nitrobenzene	17000.	J
78-59-1	Isophorone	22000.	U
88-75-5	2-Nitrophenol	22000.	U
105-67-9	2,4-Dimethylphenol	22000.	U
65-85-0	Benzoic acid	110000.	U
111-91-1	bis(2-Chloroethoxy)methane	22000.	U
120-83-2	2,4-Dichlorophenol	22000.	U
120-82-1	1,2,4-Trichlorobenzene	330000.	
91-20-3	Naphthalene	22000.	U
106-47-8	4-Chloroaniline	22000.	U
87-68-3	Hexachlorobutadiene	22000.	U
59-50-7	4-Chloro-3-methylphenol	22000.	U
91-57-6	2-Methylnaphthalene	22000.	U
77-47-4	Hexachlorocyclopentadiene	22000.	U
88-06-2	2,4,6-Trichlorophenol	22000.	U
95-95-4	2,4,5-Trichlorophenol	110000	
91-58-7	2-Chloronaphthalene	22(	
88-74-4	2-Nitroaniline	110000.	U
131-11-3	Dimethylphthalate	22000.	U
208-96-8	Acenaphthylene	22000.	U
606-20-2	2,6-Dinitrotoluene	22000.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA304

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 4.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	110000.	U
83-32-9	Acenaphthene	22000.	U
51-28-5	2,4-Dinitrophenol	110000.	U
100-02-7	4-Nitrophenol	110000.	U
132-64-9	Dibenzofuran	22000.	U
121-14-2	2,4-Dinitrotoluene	22000.	U
84-66-2	Diethylphthalate	22000.	U
7005-72-3	4-Chlorophenyl-phenylether	22000.	U
86-73-7	Fluorene	22000.	U
100-01-6	4-Nitroaniline	110000.	U
534-52-1	4,6-Dinitro-2-methylphenol	110000.	U
86-30-6	N-Nitrosodiphenylamine	22000.	U
101-55-3	4-Bromophenyl-phenylether	22000.	U
118-74-1	Hexachlorobenzene	22000.	U
87-86-5	Pentachlorophenol	110000.	U
85-01-8	Phenanthrene	22000.	U
120-12-7	Anthracene	22000.	U
84-74-2	Di-n-butylphthalate	22000.	U
206-44-0	Fluoranthene	22000.	U
129-00-0	Pyrene	22000.	U
85-68-7	Butylbenzylphthalate	22000.	U
91-94-1	3,3'-Dichlorobenzidine	44000.	U
56-55-3	Benzo(a)anthracene	22000.	U
218-01-9	Chrysene	22000.	U
117-81-7	bis(2-Ethylhexyl)phthalate	7100.	BJ
117-84-0	Di-n-octylphthalate	22000.	U
205-99-2	Benzo(b)fluoranthene	22000.	U
207-08-9	Benzo(k)fluoranthene	22000.	U
50-32-8	Benzo(a)pyrene		
193-39-5	Indeno(1,2,3-cd)pyrene		
53-70-3	Dibenzo(a,h)anthracene	22000.	U
191-24-2	Benzo(g,h,i)perylene	22000.	U

(1) - Cannot be separated from diphenylamine

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C27A21

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) Y pH: 4.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18.	U
319-85-7	beta-BHC	18.	U
319-86-8	delta-BHC	18.	U
58-89-9	gamma-BHC (Lindane)	18.	U
76-44-8	Heptachlor	18.	U
309-00-2	Aldrin	18.	U
1024-57-3	Heptachlor epoxide	18.	U
959-98-8	Endosulfan I	18.	U
60-57-1	Dieldrin	36.	U
72-55-9	4,4'-DDE	36.	U
72-20-8	Endrin	36.	U
33213-65-9	Endosulfan II	36.	U
72-54-8	4,4'-DDD	36.	U
1031-07-8	Endosulfan sulfate	36.	U
50-29-3	4,4'-DDT	36.	U
72-43-5	Methoxychlor	180.	U
53494-70-5	Endrin ketone	36.	U
5103-71-9	alpha-Chlordane	180.	U
5103-74-2	gamma-Chlordane	180.	U
8001-35-2	Toxaphene	360.	U
12674-11-2	Aroclor-1016	180.	U
11104-28-2	Aroclor-1221	180.	U
11141-16-5	Aroclor-1232	180.	U
53469-21-9	Aroclor-1242	180.	U
12672-29-6	Aroclor-1248	180.	U
11097-69-1	Aroclor-1254	360.	U
11096-82-5	Aroclor-1260	360.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412 DL

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C27A24

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/17/90

GPC Cleanup: (Y/N) Y pH: 4.6 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	180.	U
319-85-7	beta-BHC	180.	U
319-86-8	delta-BHC	180.	U
58-89-9	gamma-BHC (Lindane)	180.	U
76-44-8	Heptachlor	180.	U
309-00-2	Aldrin	180.	U
1024-57-3	Heptachlor epoxide	180.	U
959-98-8	Endosulfan I	180.	U
60-57-1	Dieldrin	360.	U
72-55-9	4,4'-DDE	360.	U
72-20-8	Endrin	360.	U
33213-65-9	Endosulfan II	360.	U
72-54-8	4,4'-DDD	360.	U
1031-07-8	Endosulfan sulfate	360.	U
50-29-3	4,4'-DDT	360.	U
72-43-5	Methoxychlor	1800.	U
53494-70-5	Endrin ketone	360.	U
5103-71-9	alpha-Chlordane	1800.	U
5103-74-2	gamma-Chlordane	1800.	U
8001-35-2	Toxaphene	3600.	U
12674-11-2	Aroclor-1016	1800.	U
11104-28-2	Aroclor-1221	1800.	U
11141-16-5	Aroclor-1232	1800.	U
53469-21-9	Aroclor-1242	1800.	U
12672-29-6	Aroclor-1248	1800.	U
11097-69-1	Aroclor-1254	3600.	U
11096-82-5	Aroclor-1260	3600.	U

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Appendix D

Reviewed and Corrected Tentatively Identified Compounds

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CBF81

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: BW0028

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: AA437

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 100. Date Analyzed: 1/11/90

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	NO SIGNIFICANT PEAKS PRESENT			
2.				
3.				
4.				
5.				
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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CBF83

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: BW0027

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: AA436

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 100. Date Analyzed: 1/11/90

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	NO SIGNIFICANT PEAKS PRESENT			
2.				
3.				
4.				
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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CBF83

Lab Name: RECMO Contract: 68W80051

Lab Code: RECMO Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: BW0027

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: BA302

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 100. dec._____ Date Extracted: 1/12/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	NO SIGNIFICANT PEAKS PRESENT			
2.				
3.				
4.				
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AR301027

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CBF85

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0026

Sample wt/vol: 4.000 (g/mL) G Lab File ID: CA598

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 10. Date Analyzed: 1/15/90

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	NO SIGNIFICANT PEAKS PRESENT			
1.				
2.				
3.				
4.				
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CBF85

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0026

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA315

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 10. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/17/90

GPC Cleanup: (Y/N) N pH: 8.4 Dilution Factor: 4.00

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-70-3	Benzene, 1,3,5-trichloro- (8	13.55	200000.	J
2. 634-90-2	Benzene, 1,2,3,5-tetrachloro	15.38	50000.	J
3. 634-66-2	Benzene, 1,2,3,4-tetrachloro	16.13	50000.	J
4.				
5.				
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AR301029

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CZ412

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 4.000 (g/mL) G Lab File ID: CA600

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 11. Date Analyzed: 1/15/90

Column: (pack/cap) PACK Dilution Factor: 25.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	NO SIGNIFICANT PEAKS PRESENT			
2.				
3.				
4.				
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CZ412

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA304

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 4.6 Dilution Factor: 1.00

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~108-90-7~~	~~Benzene, chloro- (8CI9CI)~~	~~6.48~~	~~10000.~~	~~J~~
2.	87-61-6	Benzene, 1,2,3-trichloro- (8	13.56	20000.	J
3.	634-90-2	Benzene, 1,2,3,5-tetrachloro	15.41	100000.	J
4.	634-66-2	Benzene, 1,2,3,4-tetrachloro	16.14	50000.	J
5.					
6.					
7.					
8.					
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WESTON

Appendix E

Organic Regional Data Assessment Summary

WESTON

DPO: [X] ACTION [ ] FYI

Region III

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO: 13445
SDG NO: CBF81
SOW: 88
NO. OF SAMPLES: 2

LABORATORY: RECMD
DATA USER: Charles Sands
REVIEW COMPLETION DATE: 04/16/90
MATRIX: WATER

REVIEWER: ESAT

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	O	O	O	
2. GC-MS TUNE/GC PERFORMANCE	O	O	O	
3. INITIAL CALIBRATIONS	X	XA	O	
4. CONTINUING CALIBRATION	X	M	O	
5. FIELD BLANKS (F=NOT APPLICABLE)	O	X	O	
6. LABORATORY BLANKS	X	X	O	
7. SURROGATES	O	O	O	
8. MATRIX SPIKE/DUPLICATES	O	O	O	
9. REGIONAL QC (F=NOT APPLICABLE)	F	F	F	
10. INTERNAL STANDARDS	O	O		
11. COMPOUND IDENTIFICATION	O	O	O	
12. COMPOUND QUANTITATION	O	O	O	
13. SYSTEM PERFORMANCE	O	O	O	
14. OVERALL ASSESSMENT	M	M	O	

O = No problems or minor problems that do not affect data usability
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as estimated.
Z = More than about 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

DPO ACTION ITEMS:

AREAS OF CONCERN:

DOCUMENTATION ATTACHED (See Following Pages)

WESTON

DPO: [X] ACTION [ ] FYI

Region III

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO: 13445
SDG NO: CBF81
SOW: 88
NO. OF SAMPLES: 2

LABORATORY: RECMD
DATA USER: Charles Sands
REVIEW COMPLETION DATE: 04/16/90
MATRIX: SOIL

REVIEWER: ESAT

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	O	O	O	
2. GC-MS TUNE/GC PERFORMANCE	O	O	O	
3. INITIAL CALIBRATIONS	X	XA	O	
4. CONTINUING CALIBRATION	O	M	O	
5. FIELD BLANKS (F=NOT APPLICABLE)	O	X	O	
6. LABORATORY BLANKS	X	X	O	
7. SURROGATES	O	O	O	
8. MATRIX SPIKE/DUPLICATES	O	O	O	
9. REGIONAL QC (F=NOT APPLICABLE)	F	F	F	
10. INTERNAL STANDARDS	O	O		
11. COMPOUND IDENTIFICATION	O	O	O	
12. COMPOUND QUANTITATION	O	O	O	
13. SYSTEM PERFORMANCE	O	O	O	
14. OVERALL ASSESSMENT	X	M	O	

O = No problems or minor problems that do not affect data usability
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as estimated.
Z = More than about 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

DPO ACTION ITEMS:

AREAS OF CONCERN:

DOCUMENTATION ATTACHED (See Following Pages)

WESTON

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY NOTES
Case 13445 SDG CBF81 (water samples)

Item 3A - Methylene chloride failed precision criteria (≤30%) for the volatile initial calibration.

Item 3B - Benzoic acid and 2,4-dinitrophenol (a continuing calibration compound - CCC), failed precision criteria (≤30%) for the semivolatile initial calibration.

Item 4A - Several volatile compounds failed precision criteria (≤25%) for the continuing calibrations. (See Table I in Appendix F).

Item 4B - Several semivolatile compounds failed precision criteria (≤25%) for the continuing calibrations. (See Table I in Appendix F).

Item 5A - The common laboratory contaminant bis(2-ethylhexyl)phthalate was found at a maximum concentration of 200 µg/L or 400000 µg/Kg (medium level soil equivalent concentration) in the equipment blank.

Item 6A - The maximum concentration of contaminants found in the method blanks are summarized in the table below. All samples with concentrations of common laboratory contaminants less than ten times (<10X) the blank concentration have been qualified "B" in the data summary. (See Appendix F).

Compound	Concentration *
methylene chloride **	510 J µg/L
acetone **	1300 µg/L
bis(2-ethylhexyl)phthalate	56.6 µg/L

* - Aqueous blank contaminant concentrations have been calculated from medium level soil results.
** - Common Laboratory Contaminant

WESTON

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY NOTES
Case 13445 SDG CBF81 (soil samples)

Item 3A - Acetone failed precision criteria (≤30%) for the volatile initial calibration.

Item 3B - Benzoic acid and 2,4-dinitrophenol (a continuing calibration compound - CCC) failed precision criteria (≤30%) for the semivolatile initial calibration.

Item 4A - Several volatile compounds failed precision criteria (≤25%) for the continuing calibrations. (See Table I in Appendix F).

Item 4B - Several semivolatile compounds failed precision criteria (≤25%) for the continuing calibrations. (See Table I in Appendix F).

Item 5A - The common laboratory contaminant bis(2-ethylhexyl)phthalate was found at a maximum concentration of 200 µg/L or 400000 µg/Kg (medium level soil equivalent concentration) in the equipment blank.

Item 6A - The maximum concentration of contaminants found in the method blanks are summarized in the table below. All samples with concentrations of common laboratory contaminants less than ten times (<10X) the blank concentration have been qualified "B" in the data summary. (See Appendix F).

Compound	Concentration
methylene chloride **	510 J µg/Kg
acetone **	1300 µg/Kg
bis(2-ethylhexyl)phthalate **	3400 J µg/Kg

** - Common Laboratory Contaminant

Item 8A - The semivolatile MS/MSD analyses of [illegible] had seven (7) out of twenty-two [illegible] recoveries outside of the QC limits. (See Appendix F).

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY NOTES
Case 13445 SDG CBF81 (soil samples)

Item 8B - The semivolatile MS/MSD analyses had a compound other than the spiking compounds or blank contaminants present. Following is a table of results and precision estimates for this non-spiked compound:

MS/MSD Non-Spiked Compounds

Compound	Concentration (µg/Kg) CZ412	CZ412MS	CZ412MSD	%RSD
nitrobenzene	17000 J	24000	28000	24

Item 14A - The reported Tentatively Identified Compounds (TIC's) in Appendix D have been reviewed and corrected during data validation. Chlorobenzene, a volatile fraction target compound, has been crossed off of the semivolatile TIC form for sample CZ412 (See Appendix D).

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WESTON

Appendix F

Support Documentation

TABLE I

ENVIRONMENTAL PROTECTION AGENCY REGION III
CALIBRATION OUTLIERS
VOLATILE ESL COMPOUNDS

CASE/SAS No. 13445 CONTRACTOR RECMD

Instrument# F0011	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	12/01/89			01/11/90 0931											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride		43.8	K												
Acetone															
Carbon Disulfide															
1,1-Dichloroethene															
1,1-Dichloroethane															
Total-1,2-Dichloroethene															
Chloroform															
1,2-Dichloroethane					29.4	C									
2-Butanone															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate					39.1	C									
Bromodichloromethane															
1,2-Dichloropropane															
cis-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
trans-1,3-Dichloropropene															
Bromoform															
4-Methyl-2-Pentanone					38.6	C									
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
Total Xylenes															

AFFECTED SAMPLES:

All	VBLKW1
WATER	CBF83
Samples	CBF81

Reviewer Initials/Date: DJM 04/06/90

* See last page of this table for DEFINITION OF CODES.

TABLE I

ENVIRONMENTAL PROTECTION AGENCY REGION III
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS No. 13445 CONTRACTOR RECMD

Instrument# 70033	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	12/06/89														
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone		31.6	IH												
Carbon Disulfide															
1,1-Dichloroethene															
1,1-Dichloroethane															
Total-1,2-Dichloroethene															
Chloroform															
1,2-Dichloroethane															
2-Butanone															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
cis-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
trans-1,3-Dichloropropene															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
Total Xylenes															

AFFECTED SAMPLES:

VBIKS1				
CBF85				
CZ412				
CZ412MS				
CZ412MSD				

Reviewer Initials/Date: DJM

* See last page of this table for DEFINITION OF CODES.

TABLE I

ENVIRONMENTAL PROTECTION AGENCY REGION III
CALIBRATION OUTLIERS
SEMIVOLATILE ESL COMPOUNDS (Part 1 of 2)

CASE/SAS No. 13345 CONTRACTOR RECMD

Instrument# 700202	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	01/04/90			01/16/90 1057			01/17/90 1126								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Phenol															
bis(2-Chloroethyl)ether															
2-Chlorophenol															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
Benzyl alcohol															
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-Chloroisopropyl)ether															
4-Methylphenol															
N-Nitroso-di-n-propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic acid		33.8	I					30.5%							
bis(2-Chloroethoxy)methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethylphthalate															
Acenaphthylene															
2,6-Dinitrotoluene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol		34.8	I					40.8	L						
4-Nitrophenol					51.1	C									

AFFECTED SAMPLES:

All Samples	SBLK 2	CZ412ms
	SBLK 1	CZ412msD
	CBF 83	CBF 85
	CZ 412	

Reviewer Initials/Date: DSM 04/06/90

AR301041

TABLE I

ENVIRONMENTAL PROTECTION AGENCY REGION III
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS (Part 2 of 2)

CASE/SAS No. 13445 CONTRACTOR RECMD

Instrument# 400202	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	01/04/90			01/16/90 1052			01/17/90 1126								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Dibenzofuran															
2,4-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline								36.5	C						
4,6-Dinitro-2-methylphenol								28.4	C						
N-Nitrosodiphenylamine															
4-Bromophenyl-phenylether															
Hexachlorobenzene															
Pentachlorophenol															
Phenanthrene															
Anthracene															
Di-n-butylphthalate															
Fluoranthene															
Pyrene															
Butylbenzylphthalate															
3,3-Dichlorobenzidine					51.6	C		65.6	C						
Benzo(a)anthracene															
Chrysene															
bis(2-Ethylhexyl)phthalate					31.6	C+									
Di-n-octylphthalate															
Benzo(b)fluoranthene															
Benzo(k)fluoranthene															
Benzo(a)pyrene															
Indeno(1,2,3-cd)pyrene								28.7	C						
Dibenz(a,h)anthracene					28.7	C		31.5	C						
Benzo(g,h,i)perylene					32.1	C		34.7	C						

AFFECTED SAMPLES:

All Samples	SBLK2	CZ412MS
	SBLK1	CZ412MSD
	CBF83	CBF85
	CZ412	

Reviewer Initials/Date: DJM 04/06/90

* See last page of this table for DEFINITION OF CODES.

DEFINITION OF CODES USED IN TABLE I

I = %RSD exceeded 30% in the initial calibration, positive results are qualified "J", and quantitation limits are qualified "UJ".

C = %D exceeded 25% in the continuing calibration. Positive results are qualified "J", and quantitation limits are qualified "UJ".

F = RF less than 0.05 in all calibrations. All quantitation limits are qualified "R".

+ = The "B" qualifier, denoting blank contamination, supersedes the qualifier issued in this table.

L = The "L" qualifier, denoting low bias of results, supersedes the qualifier issued in this table.

R = The "R" qualifier, denoting unusuable results, supersedes the qualifier issued in this table.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Instrument ID: 70011 Calibration Date(s): 12/ 1/89 12/ 1/89

Matrix:(soil/water) WATER Level:(low/med): LOW Column:(pack/cap) PACK

Min $\overline{RRF}$ for SPCC(#) = .300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF020= XA186 RRF050= XA179
RRF100= XA183 RRF150= XA182 RRF200= XA181

COMPOUND	RRF020	RRF050	RRF100	RRF150	RRF200	$\overline{RRF}$	% RSD
Chloromethane #	.505	.491	.522	.572	.484	.515	6.9#
Bromomethane	1.030	1.043	1.100	1.155	1.059	1.077	4.7
Vinyl Chloride *	.643	.657	.728	.815	.694	.707	9.7*
Chloroethane	.466	.476	.495	.535	.506	.496	5.5
Methylene Chloride	2.505	1.036	1.275	1.214	1.041	1.414	43.8
Acetone	.408	.293	.276	.181	.265	.285	28.6
Carbon Disulfide	2.264	2.746	2.545	2.746	2.712	2.602	7.9
1,1-Dichloroethene *	.762	.839	.737	.906	.841	.817	8.3*
1,1-Dichloroethane #	2.090	2.210	2.016	2.280	2.150	2.150	[illegible]#
1,2-Dichloroethene (total)	.837	.965	.925	.978	.923	.926	6.0
Chloroform *	3.084	3.279	2.991	3.348	3.193	3.179	4.5*
1,2-Dichloroethane	2.418	2.614	2.507	2.452	2.425	2.483	3.3
2-Butanone	.063	.081	.052	.053	.076	.065	20.1
1,1,1-Trichloroethane	.756	.942	.878	.914	.895	.877	8.1
Carbon Tetrachloride	.665	.810	.707	.854	.829	.773	10.6
Vinyl Acetate	.519	.463	.471	.459	.511	.484	5.8
Bromodichloromethane	.972	1.085	1.019	.987	1.033	1.019	4.3
1,2-Dichloropropane *	.338	.347	.323	.341	.344	.339	2.7*
cis-1,3-Dichloropropene	.612	.674	.646	.622	.659	.643	4.0
Trichloroethene	.372	.399	.356	.394	.392	.383	4.7
Dibromochloromethane	.792	.830	.754	.782	.807	.793	3.6
1,1,2-Trichloroethane	.316	.298	.283	.282	.281	.292	5.1
Benzene	.625	.658	.652	.652	.659	.649	2.2
trans-1,3-Dichloropropene	.522	.565	.537	.497	.528	.530	4.6
Bromoform #	.628	.660	.670	.619	.661	.648	3.5#
4-Methyl-2-Pentanone	.381	.309	.290	.272	.285	.308	14.1
2-Hexanone	.222	.325	.195	.183	.296	.244	25.8
Tetrachloroethene	.460	.497	.446	.513	.476	.478	5.7
1,1,2,2-Tetrachloroethane #	.555	.510	.538	.487	.491	.516	5.8#
Toluene *	.572	.583	.582	.583	.559	.576	1.8*
Chlorobenzene #	.850	.841	.784	.879	.837	.838	4.1#
Ethylbenzene *	.341	.370	.362	.380	.359	.362	4.0*
Styrene	.795	.835	.779	.799	.807	.803	2.5
Xylene (total)	.448	.472	.443	.461	.452	.455	[illegible]
Toluene d-8	1.205	1.174	1.167	1.173	----	----	0
Bromofluorobenzene	1.099	1.140	1.124	1.126	1.119	1.121	1.3
1,2-Dichloroethane-d4	2.[illegible]	2.496	2.468	2.540	2.521	2.476	2.9

AR301044

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Instrument ID: 70011 Calibration Date: 1/11/90 Time: 9:31

Lab File ID: XA434 Init. Calib. Date(s): 12/ 1/89 12/ 1/89

Matrix:(soil/water) WATER Level:(low/med): LOW Column:(pack/cap) PACK

Min RRF50 for SPCC(#) = .300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		$\overline{RRF}$	RRF50	%D	
Chloromethane	#	.515	.435	15.4	#
Bromomethane		1.077	1.071	.6	
Vinyl Chloride	*	.707	.599	15.3	*
Chloroethane		.496	.461	7.0	
Methylene Chloride		1.414	1.068	24.5	
Acetone		.285	.281	1.1	
Carbon Disulfide		2.602	2.334	10.3	
1,1-Dichloroethene	*	.817	.892	9.2	*
1,1-Dichloroethane	#	2.150	1.795	16.5	#
1,2-Dichloroethene (total)		.926	.917	1.0	
Chloroform	*	3.179	2.680	15.7	*
1,2-Dichloroethane		2.483	1.754	29.4	
2-Butanone		.065	.061	6.0	
1,1,1-Trichloroethane		.877	.664	24.3	
Carbon Tetrachloride		.773	.628	18.8	
Vinyl Acetate		.484	.295	39.1	
Bromodichloromethane		1.019	.778	23.6	
1,2-Dichloropropane	*	.339	.283	16.5	*
cis-1,3-Dichloropropene		.643	.548	14.7	
Trichloroethene		.383	.416	8.8	
Dibromochloromethane		.793	.726	8.5	
1,1,2-Trichloroethane		.292	.282	3.6	
Benzene		.649	.600	7.5	
trans-1,3-Dichloropropene		.530	.433	18.4	
Bromoform	#	.648	.589	9.0	#
4-Methyl-2-Pentanone		.308	.189	38.6	
2-Hexanone		.244	.186	23.9	
Tetrachloroethene		.478	.537	12.3	
1,1,2,2-Tetrachloroethane	#	.516	.418	19.0	#
Toluene	*	.576	.550	4.4	*
Chlorobenzene	#	.838	.870	3.8	#
Ethylbenzene	*	.362	.369	1.8	*
Styrene		.803	.813		
Xylene (total)		.455	.468		
Toluene d-8		1.171	1.061	9.4	
Bromofluorobenzene		1.121	.949	15.4	
1,2-Dichloroethane-d4		2.476	1.598	35.5	

VBIKW1
CBF83
CBF81

AR300045

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Instrument ID: 70033 Calibration Date(s): 12/ 6/89 12/ 6/89

Matrix:(soil/water) SOIL Level:(low/med): MED Column:(pack/cap) PACK

Min $\overline{RRF}$ for SPCC(#) = .300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF020= ZA342 RRF050= ZA341
RRF100= ZA340 RRF150= ZA339 RRF200= ZA338

COMPOUND	RRF020	RRF050	RRF100	RRF150	RRF200	$\overline{RRF}$	% RSD
Chloromethane #	.800	.795	.830	.895	.962	.857	8.3#
Bromomethane	1.160	1.160	1.142	1.266	1.253	1.196	4.9
Vinyl Chloride *	.793	.667	.677	.957	.778	.774	15.1*
Chloroethane	.534	.555	.557	.593	.647	.577	7.6
Methylene Chloride	1.833	1.203	1.091	1.108	1.123	1.272	24.9
Acetone	.354	.213	.227	.167	.191	.230	31.6
Carbon Disulfide	2.408	2.800	2.911	3.090	3.214	2.884	10.8
1,1-Dichloroethene *	.786	1.035	1.099	1.191	1.301	1.082	17.9*
1,1-Dichloroethane #	2.244	2.203	2.278	2.395	2.442	2.312	4.4#
1,2-Dichloroethene (total)	1.127	1.236	1.152	1.293	1.353	1.232	7.7
Chloroform *	3.060	3.009	3.130	3.256	3.325	3.156	4.2*
1,2-Dichloroethane	2.169	1.953	1.894	2.015	2.002	2.007	5.1
2-Butanone	.044	.067	.077	.058	.068	.063	20.
1,1,1-Trichloroethane	.618	.719	.694	.734	.770	.707	8.
Carbon Tetrachloride	.563	.694	.721	.754	.798	.706	12.6
Vinyl Acetate	.433	.407	.493	.437	.441	.442	7.1
Bromodichloromethane	.752	.797	.783	.785	.787	.781	2.2
1,2-Dichloropropane *	.368	.354	.350	.337	.343	.350	3.4*
cis-1,3-Dichloropropene	.487	.527	.531	.545	.544	.527	4.5
Trichloroethene	.355	.410	.390	.381	.427	.393	7.0
Dibromochloromethane	.652	.667	.660	.638	.652	.654	1.7
1,1,2-Trichloroethane	.294	.295	.296	.265	.270	.284	5.3
Benzene	.694	.743	.718	.758	.760	.734	3.9
trans-1,3-Dichloropropene	.371	.386	.408	.406	.407	.395	4.1
Bromoform #	.496	.519	.524	.479	.519	.508	3.7#
4-Methyl-2-Pentanone	.293	.288	.290	.235	.253	.272	9.6
2-Hexanone	.200	.197	.199	.163	.175	.187	9.0
Tetrachloroethene	.419	.482	.449	.483	.505	.467	7.2
1,1,2,2-Tetrachloroethane #	.567	.578	.537	.496	.537	.543	5.9#
Toluene *	.605	.670	.572	.629	.649	.625	6.1*
Chlorobenzene #	.845	.911	.847	.869	.911	.877	3.7#
Ethylbenzene *	.367	.424	.375	.405	.418	.398	6.4*
Styrene	.831	.877	.864	.875	.859	.861	2.1
Xylene (total)	.532	.553	.525	.529	.527	.533	2.2
Toluene-d8	1.129	1.166	1.125	1.145	1.155	1.144	1.5
Bromofluorobenzene	.871	.879	.831	.848	.852	.856	2.2
1,2-Dichloroethane-d4	1.886	1.829	1.932	2.024	2.045	1.943	4.7

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Instrument ID: 70033 Calibration Date: 1/15/90 Time: 9:51

Lab File ID: ZA596 Init. Calib. Date(s): 12/ 6/89 12/ 6/89

Matrix:(soil/water) SOIL Level:(low/med): MED Column:(pack/cap) PACK

Min RRF50 for SPCC(#) = .300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		$\overline{RRF}$	RRF50	%D		
Chloromethane	#	.857	1.060	23.8	#	VBIX S1
Bromomethane		1.196	1.364	14.1		CBF85
Vinyl Chloride	*	.774	.909	17.4	*	
Chloroethane		.577	.704	21.9		CZ412
Methylene Chloride		1.272	1.533	20.5		
Acetone		.230	.245	6.2		CZ412MS
Carbon Disulfide		2.884	3.008	4.3		
1,1-Dichloroethene	*	1.082	1.163	7.4	*	CZ412MSD
1,1-Dichloroethane	#	2.312	2.389	3.3	#	
1,2-Dichloroethene (total)		1.232	1.229	.2		
Chloroform	*	3.156	3.240	2.7	*	
1,2-Dichloroethane		2.007	1.814	9.6		
2-Butanone		.063	.071	12.8		
1,1,1-Trichloroethane		.707	.788	11.5		
Carbon Tetrachloride		.706	.804	13.9		
Vinyl Acetate		.442	.352	20.3		
Bromodichloromethane		.781	.763	2.2		
1,2-Dichloropropane	*	.350	.334	4.5	*	
cis-1,3-Dichloropropene		.527	.506	3.9		
Trichloroethene		.393	.434	10.5		
Dibromochloromethane		.654	.608	7.0		
1,1,2-Trichloroethane		.284	.253	10.9		
Benzene		.734	.751	2.2		
trans-1,3-Dichloropropene		.395	.364	7.8		
Bromoform	#	.508	.411	19.1	#	
4-Methyl-2-Pentanone		.272	.228	16.2		
2-Hexanone		.187	.158	15.3		
Tetrachloroethene		.467	.560	19.9		
1,1,2,2-Tetrachloroethane	#	.543	.479	11.7	#	
Toluene	*	.625	.678	8.5	*	
Chlorobenzene	#	.877	.910	3.8	#	
Ethylbenzene	*	.398	.417	4.8	*	
Styrene		.861	.795	7.6		
Xylene (total)		.533	.518	2.9		
Toluene-d8		1.144	1.192	4.2		
Bromofluorobenzene		.856	.770	10.0		
1,2-Dichloroethane-d4		1.943	1.654	14.9		

FORM VII VOA 1/87 Rev.

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: RECMO Contract: 68W80051

Lab Code: RECMO Case No.: 13445 SAS No.: SDG No.: C8F31

Instrument ID: 700202 Calibration Date(s): 1/ 4/90 1/ 4/90

Min $\overline{RRF}$ for SPCC(#) = .050 Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF020= YA205 RRF050= YA204
RRF080= YA203 RRF120= YA202 RRF160= YA200

COMPOUND	RRF020	RRF050	RRF080	RRF120	RRF160	$\overline{RRF}$	% RSD
Phenol *	1.705	1.640	1.613	1.633	1.673	1.653	2.2*
bis(2-Chloroethyl)ether	1.679	1.550	1.559	1.615	1.622	1.605	3.3
2-Chlorophenol	1.525	1.414	1.410	1.425	1.387	1.432	3.7
1,3-Dichlorobenzene	1.740	1.663	1.550	1.640	1.503	1.659	3.0
1,4-Dichlorobenzene *	1.902	1.686	1.711	1.632	1.589	1.684	4.8*
Benzyl alcohol	.795	.811	.762	.795	.830	.799	3.1
1,2-Dichlorobenzene	1.642	1.553	1.508	1.518	1.444	1.533	4.7
2-Methylphenol	1.206	1.148	1.104	1.116	1.170	1.149	3.6
bis(2-Chloroisopropyl)ether	2.303	2.194	2.128	2.197	2.234	2.211	2.9
4-Methylphenol	1.110	1.089	1.031	1.100	1.064	1.079	2.9
N-Nitroso-di-n-propylamine #	1.282	1.207	1.183	1.219	1.170	1.212	3.6#
Hexachloroethane	.777	.726	.731	.718	.720	.734	3.3
Nitrobenzene	.496	.502	.474	.497	.490	.492	2.2
Isophorone	.908	.886	.834	.883	.792	.861	5.5
2-Nitrophenol *	.197	.206	.201	.219	.211	.207	4.1*
2,4-Dimethylphenol	.449	.413	.402	.444	.429	.427	4.7
Benzoic acid		.069	.058	.098	.123	.087	33.8
bis(2-Chloroethoxy)methane	.553	.553	.505	.558	.538	.542	4.0
2,4-Dichlorophenol *	.307	.314	.303	.303	.306	.307	1.4*
1,2,4-Trichlorobenzene	.396	.380	.349	.349	.346	.364	6.2
Naphthalene	1.160	1.113	1.077	1.107	.911	1.074	8.9
4-Chloroaniline	.482	.465	.431	.464	.455	.459	4.0
Hexachlorobutadiene *	.238	.222	.208	.198	.187	.210	9.5*
4-Chloro-3-methylphenol *	.320	.332	.312	.333	.353	.330	4.6*
2-Methylnaphthalene	.659	.660	.598	.631	.629	.635	4.0
Hexachlorocyclopentadiene #	.392	.431	.406	.434	.445	.422	5.2#
2,4,6-Trichlorophenol *	.421	.403	.407	.441	.465	.428	5.9*
2,4,5-Trichlorophenol		.446	.417	.374	.354	.398	10.5
2-Chloronaphthalene	1.501	1.418	1.390	1.349	1.344	1.400	4.6
2-Nitroaniline		.524	.520	.552	.567	.541	4.2
Dimethylphthalate	1.621	1.611	1.581	1.617	1.615	1.609	1.0
Acenaphthylene	2.204	2.159	2.111	1.984	1.930	2.078	5.6
2,6-Dinitrotoluene	.342	.374	.371	[illegible]	[illegible]	[illegible]	.1
3-Nitroaniline		.333	.329	.3[illegible]	[illegible]	[illegible]	4.4
Acenaphthene *	1.398	1.381	1.284	1.273	1.264	1.320	4.8*
2,4-Dinitrophenol #		.050	.064	.090	.112	.079	34.8#
4-Nitrophenol #		.127	.139	.171	.174	.153	15.5#

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: RECMO Contract: 68W80051

Lab Code: RECMO Case No.: 13445 SAS No.: SDG No.: C8F81

Instrument ID: 700202 Calibration Date(s): 1/ 4/90 1/ 4/90

Min $\overline{RRF}$ for SPCC(#) = .050 Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF020= YA205 RRF050= YA204
RRF080= YA203 RRF120= YA202 RRF160= YA200

COMPOUND	RRF020	RRF050	RRF080	RRF120	RRF160	$\overline{RRF}$	% RSD
Dibenzofuran	1.872	1.821	1.753	1.744	1.791	1.796	2.9
2,4-Dinitrotoluene	.410	.458	.470	.503	.485	.465	7.6
Diethylphthalate	1.673	1.692	1.694	1.718	1.657	1.687	1.4
4-Chlorophenyl-phenylether	.530	.582	.565	.524	.517	.564	8.1
Fluorene	1.46	1.352	1.316	1.246	1.292	1.328	6.5
4-Nitroaniline		.293	.274	.306	.295	.285	7.0
4,6-Dinitro-2-methylphenol		.089	.092	.127	.118	.105	19.3
N-Nitrosodiphenylamine *	.527	.588	.584	.639	.627	.613	4.1*
4-Bromophenyl-phenylether	.298	.249	.242	.252	.245	.251	4.0
Hexachlorobenzene	.318	.295	.290	.287	.285	.295	4.5
Pentachlorophenol *		.088	.097	.129	.138	.113	21.3*
Phenanthrene	1.300	1.175	1.204	1.239	1.224	1.228	3.8
Anthracene	1.222	1.207	1.125	1.197	1.042	1.159	6.5
Di-n-butylphthalate	1.757	1.723	1.702	1.725	1.271	1.636	12.5
Fluoranthene *	1.130	1.036	1.002	1.071	.930	1.034	7.2*
Pyrene	2.538	2.192	2.152	2.067	2.167	2.223	8.2
Butylbenzylphthalate	1.222	1.071	1.108	1.071	1.105	1.115	5.5
3,3'-Dichlorobenzidine	.333	.362	.414	.418	.446	.395	11.6
Benzo(a)anthracene	1.161	1.166	1.204	1.234	1.196	1.192	2.5
Chrysene	1.323	1.241	1.338	1.172	1.339	1.283	5.8
bis(2-Ethylhexyl)phthalate	1.710	1.411	1.505	1.438	1.516	1.516	7.7
Di-n-octylphthalate *	3.537	3.387	3.301	3.420	3.157	3.360	4.2*
Benzo(b)fluoranthene	1.397	.919	1.173	1.194	1.147	1.166	14.6
Benzo(k)fluoranthene	1.767	1.968	1.665	1.605	1.548	1.710	9.6
Benzo(a)pyrene *	1.282	1.248	1.208	1.193	1.165	1.219	3.8*
Indeno(1,2,3-cd)pyrene	.96	1.127	1.105	1.217	1.041	1.090	8.8
Dibenzo(a,h)anthracene	.729	.845	.808	.886	.752	.803	8.2
Benzo(g,h,i)perylene	1.278	1.327	1.138	1.196	1.052	1.198	9.1
Nitrobenzene-d5	.482	.486	.460	.494	.497	.483	3.0
2-Fluorobiphenyl	1.665	1.598	1.580	1.500	1.527	1.574	4.1
Terphenyl-d14	1.791	1.570	1.558	1.457	1.602	1.596	7.6
Phenol-d5	1.658	1.590	1.520	1.517	1.573	1.572	3.7
2-Fluorophenol	1.433	1.324	1.308	1.295	1.303	1.333	4.3
2,4,6-Tribromophenol	.090	.109	.111	.12[illegible]	.139	.114	15.7

(1) Cannot be separated from Diphenylamine

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Instrument ID: 700202 Calibration Date: 1/16/90 Time: 10:57

Lab File ID: YA255 Init. Calib. Date(s): 1/ 4/90 1/ 4/90

Min RRF50 for SPCC(#) = .050 Max %D for CCC(*) = 25.0%

COMPOUND		RRF	RRF50	%D	
Phenol	*	1.653	2.040	23.4	*
bis(2-Chloroethyl)ether		1.605	1.784	11.2	
2-Chlorophenol		1.432	1.568	9.5	
1,3-Dichlorobenzene		1.653	1.667	.5	
1,4-Dichlorobenzene	*	1.684	1.723	2.3	*
Benzyl alcohol		.799	.939	17.6	
1,2-Dichlorobenzene		1.533	1.613	5.2	
2-Methylphenol		1.149	1.319	14.8	
bis(2-Chloroisopropyl)ether		2.211	2.199	.6	
4-Methylphenol		1.079	1.329	23.2	
N-Nitroso-di-n-propylamine	#	1.212	1.429	17.9	#
Hexachloroethane		.734	.799	8.8	
Nitrobenzene		.492	.508	3.3	
Isophorone		.861	.941	9.4	
2-Nitrophenol	*	.207	.222	7.1	*
2,4-Dimethylphenol		.427	.441	3.1	
Benzoic acid		.087	.103	18.2	
bis(2-Chloroethoxy)methane		.542	.562	3.8	
2,4-Dichlorophenol	*	.307	.302	1.6	*
1,2,4-Trichlorobenzene		.364	.334	8.3	
Naphthalene		1.074	1.211	12.8	
4-Chloroaniline		.459	.472	2.8	
Hexachlorobutadiene	*	.210	.179	15.0	*
4-Chloro-3-methylphenol	*	.330	.391	18.3	*
2-Methylnaphthalene		.635	.650	2.4	
Hexachlorocyclopentadiene	#	.422	.332	21.3	#
2,4,6-Trichlorophenol	*	.428	.402	5.9	*
2,4,5-Trichlorophenol		.398	.385	3.2	
2-Chloronaphthalene		1.400	1.356	3.1	
2-Nitroaniline		.541	.633	17.0	
Dimethylphthalate		1.609	1.591	1.1	
Acenaphthylene		2.078	2.192	5.5	
2,6-Dinitrotoluene		.353	.379	7.2	
3-Nitroaniline		.344	.393	14.3	
Acenaphthene	*	1.320	1.408	6.6	
2,4-Dinitrophenol	#	.079	.088	11.5	#
4-Nitrophenol	#	.153	.231	51.1	#

SB1K2
SB1K1
CBF83
CZ412

AR301050

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: RECMO Contract: 68W80051

Lab Code: RECMO Case No.: 13445 SAS No.: SDG No.: CBF81

Instrument ID: 700202 Calibration Date: 1/16/90 Time: 10:57

Lab File ID: YA299 Init. Calib. Date(s): 1/ 4/90 1/ 4/90

Min RRFS0 for SPCC(#) = .050 Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRFS0	%D	
Dibenzofuran	1.795	1.749	2.6	
2,4-Dinitrotoluene	.465	.523	12.4	
Diethylphthalate	1.687	1.800	6.7	
4-Chlorophenyl-phenylether	.564	.506	10.2	
Fluorene	1.328	1.364	2.8	
4-Nitroaniline	.285	.245	14.0	
4,6-Dinitro-2-methylphenol	.105	.114	8.6	
N-Nitrosodiphenylamine *	.613	.579	5.5	*
4-Bromophenyl-phenylether	.251	.234	6.8	
Hexachlorobenzene	.295	.288	2.4	
Pentachlorophenol *	.113	.134	18.8	*
Phenanthrene	1.226	1.209	1.5	
Anthracene	1.159	1.203	3.8	
Di-n-butylphthalate	1.636	1.849	13.0	
Fluoranthene *	1.034	1.156	11.8	*
Pyrene	2.223	2.325	4.6	
Butylbenzylphthalate	1.115	1.084	2.8	
3,3'-Dichlorobenzidine	.395	.191	51.6	
Benzo(a)anthracene	1.192	1.170	1.8	
Chrysene	1.283	1.211	5.6	
bis(2-Ethylhexyl)phthalate	1.516	1.038	31.6	
Di-n-octylphthalate *	3.360	2.726	18.8	*
Benzo(b)fluoranthene	1.166	1.243	6.6	
Benzo(k)fluoranthene	1.710	1.819	6.3	
Benzo(a)pyrene *	1.219	1.252	2.7	*
Indeno(1,2,3-cd)pyrene	1.090	.831	23.8	
Dibenzo(a,h)anthracene	.803	.573	28.7	
Benzo(g,h,i)perylene	1.198	.813	32.1	
Nitrobenzene-d5	.483	.518	7.1	
2-Fluorobiphenyl	1.574	1.432	9.0	
Terphenyl-d14	1.596	1.418	11.1	
Phenol-d5	1.572	1.845	17.4	
2-Fluorophenol	1.333	1.520	14.0	
2,4,6-Tribromophenol	.114	.133	17.0	

SBIK2
SBIK1
CBF83
CZ412

(1) Cannot be separated from Diphenylamine

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: RECMD Contract: 68W80051

Lab Code: ~~RECMD~~ Case No.: 13445 SAS No.: SDG No.: C8F81

Instrument ID: 700202 Calibration Date: 1/17/90 Time: 11:26

Lab File ID: YA311 Init. Calib. Date(s): 1/ 4/90 1/ 4/90

Min RRF50 for SPCC(#) = .050 Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D	
Phenol *	1.653	2.023	22.4	*
bis(2-Chloroethyl)ether	1.605	1.776	10.7	
2-Chlorophenol	1.432	1.649	15.1	
1,3-Dichlorobenzene	1.653	1.696	2.2	
1,4-Dichlorobenzene *	1.684	1.745	3.7	*
Benzyl alcohol	.799	.916	14.7	
1,2-Dichlorobenzene	1.533	1.538	.3	
2-Methylphenol	1.149	1.295	12.8	
bis(2-Chloroisopropyl)ether	2.211	2.373	7.3	
4-Methylphenol	1.079	1.276	18.2	
N-Nitroso-di-n-propylamine #	1.212	1.356	11.9	#
Hexachloroethane	.734	.724	1.3	
Nitrobenzene	.492	.513	4.3	
Isophorone	.861	.926	7.6	
2-Nitrophenol *	.207	.209	1.0	*
2,4-Dimethylphenol	.427	.382	10.6	
Benzoic acid	.087	.113	30.5	
bis(2-Chloroethoxy)methane	.542	.551	1.8	
2,4-Dichlorophenol *	.307	.294	4.1	*
1,2,4-Trichlorobenzene	.364	.331	9.0	
Naphthalene	1.074	1.039	3.2	
4-Chloroaniline	.459	.442	3.8	
Hexachlorobutadiene *	.210	.185	12.1	*
4-Chloro-3-methylphenol *	.330	.365	10.6	*
2-Methylnaphthalene	.635	.638	.4	
Hexachlorocyclopentadiene #	.422	.378	10.2	#
2,4,6-Trichlorophenol *	.428	.441	3.1	*
2,4,5-Trichlorophenol	.398	.436	9.6	
2-Chloronaphthalene	1.400	1.408	.6	
2-Nitroaniline	.541	.620	14.7	
Dimethylphthalate	1.609	1.609	.0	
Acenaphthylene	2.078	2.207	6.2	
2,6-Dinitrotoluene	.353	.396	12.1	
3-Nitroaniline	.344	.340		
Acenaphthene *	1.320	1.374		
2,4-Dinitrophenol #	.079	.111	40.8	#
4-Nitrophenol #	.153	.189	23.7	#

CZ412MS
CZ412MSD
CBF85

AR301052

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: REDMO Contract: 68W80051

Lab Code: REDMO Case No.: 13445 SAS No.: SDG No.: CBF81

Instrument ID: 700202 Calibration Date: 1/17/90 Time: 11:26

Lab File ID: YA311 Init. Calib. Date(s): 1/ 4/90 1/ 4/90

Min RRFS0 for SPCC(#) = .050 Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRFS0	%D
Dibenzofuran	1.796	1.815	1.1
2,4-Dinitrotoluene	.465	.539	15.9
Diethylphthalate	1.687	1.775	5.2
4-Chlorophenyl-phenylether	.564	.532	5.7
Fluorene	1.328	1.376	3.6
4-Nitroaniline	.285	.181	36.5
4,6-Dinitro-2-methylphenol	.105	.136	28.9
N-Nitrosodiphenylamine *	.613	.567	7.5 *
4-Bromophenyl-phenylether	.251	.224	11.0
Hexachlorobenzene	.295	.289	2.1
Pentachlorophenol *	.113	.137	21.1 *
Phenanthrene	1.229	1.241	1.0
Anthracene	1.159	1.206	4.1
Di-n-butylphthalate	1.636	1.751	7.0
Fluoranthene *	1.034	1.201	16.2 *
Pyrene	2.223	2.123	4.5
Butylbenzylphthalate	1.115	1.057	5.2
3,3'-Dichlorobenzidine	.395	.136	65.6
Benzo(a)anthracene	1.192	1.185	.6
Chrysene	1.283	1.206	5.9
bis(2-Ethylhexyl)phthalate	1.516	1.343	11.4
Di-n-octylphthalate *	3.360	2.912	13.3 *
Benzo(b)fluoranthene	1.166	1.190	2.1
Benzo(k)fluoranthene	1.710	1.491	12.8
Benzo(a)pyrene *	1.219	1.094	10.3 *
Indeno(1,2,3-cd)pyrene	1.090	.778	28.7
Dibenzo(a,h)anthracene	.803	.550	31.5
Benzo(g,h,i)perylene	1.198	.782	34.7
Nitrobenzene-d5	.483	.495	2.4
2-Fluorobiphenyl	1.574	1.596	1.4
Terphenyl-d14	1.596	1.363	14.6
Phenol-d5	1.572	1.782	13.4
2-Fluorophenol	1.333	1.347	1.1
2,4,6-Tribromophenol	.114	.130	1[illegible]

(1) Cannot be separated from Diphenylamine

AR301053

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix Spike - EPA Sample No.: CZ412 Level:(low/med) MED

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC LIMITS REC.
Phenol	224719.	0.	215196.	96 *	26- 90
2-Chlorophenol	224719.	0.	179756.	80	25-102
1,4-Dichlorobenzene	112360.	300263.	493885.	172 *	28-104
N-Nitroso-di-n-prop.(1)	112360.	0.	104102.	93	41-126
1,2,4-Trichlorobenzene	112360.	329380.	787105.	407 *	38-107
4-Chloro-3-methylphenol	224719.	0.	254050.	113 *	26-103
Acenaphthene	112360.	0.	115043.	102	31-137
4-Nitrophenol	224719.	0.	191339.	85	11-114
2,4-Dinitrotoluene	112360.	0.	97087.	86	28- 89
Pentachlorophenol	224719.	0.	147332.	66	17-109
Pyrene	112360.	0.	127329.	113	35-142

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	224719.	180937.	81	17	35	26- 90
2-Chlorophenol	224719.	163284.	73	10	50	25-102
1,4-Dichlorobenzene	112360.	506415.	183 *	6	27	28-104
N-Nitroso-di-n-prop.(1)	112360.	89655.	80	15	38	41-126
1,2,4-Trichlorobenzene	112360.	873666.	484 *	17	23	38-107
4-Chloro-3-methylphenol	224719.	270557.	120 *	6	33	26-103
Acenaphthene	112360.	114625.	102	0	19	31-137
4-Nitrophenol	224719.	233195.	104	20	50	11-114
2,4-Dinitrotoluene	112360.	98144.	87	1	47	28- 89
Pentachlorophenol	224719.	180749.	80	20	47	17-109
Pyrene	112360.	127500.	113	0	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 7 out of 22 outside limits

COMMENTS:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKW1

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: METHOD BLK

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: AA435

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 100. Date Analyzed: 1/11/90

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKW1

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: METHOD BLK

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: AA435

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 100. Date Analyzed: 1/11/90

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	NO SIGNIFICANT PEAKS PRESENT			
1.				
2.				
3.				
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29.				
30.				

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKS1

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLK

Sample wt/vol: 4.000 (g/mL) G Lab File ID: CA597

Level: (low/med) MED Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 1/15/90

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1300.	U
74-83-9	Bromomethane	1300.	U
75-01-4	Vinyl Chloride	1300.	U
75-00-3	Chloroethane	1300.	U
75-09-2	Methylene Chloride	510.	J
67-64-1	Acetone	1300.	
75-15-0	Carbon Disulfide	630.	U
75-35-4	1,1-Dichloroethene	630.	U
75-34-3	1,1-Dichloroethane	630.	U
540-59-0	1,2-Dichloroethene (total)	630.	U
67-66-3	Chloroform	630.	U
107-06-2	1,2-Dichloroethane	630.	U
78-93-3	2-Butanone	1300.	U
71-55-6	1,1,1-Trichloroethane	630.	U
56-23-5	Carbon Tetrachloride	630.	U
108-05-4	Vinyl Acetate	1300.	U
75-27-4	Bromodichloromethane	630.	U
78-87-5	1,2-Dichloropropane	630.	U
10061-01-5	cis-1,3-Dichloropropene	630.	U
79-01-6	Trichloroethene	630.	U
124-48-1	Dibromochloromethane	630.	U
79-00-5	1,1,2-Trichloroethane	630.	U
71-43-2	Benzene	630.	U
10061-02-6	trans-1,3-Dichloropropene	630.	U
75-25-2	Bromoform	630.	U
108-10-1	4-Methyl-2-Pentanone	1300.	U
591-78-6	2-Hexanone	1300.	U
127-18-4	Tetrachloroethene	630.	U
79-34-5	1,1,2,2-Tetrachloroethane	630.	U
108-88-3	Toluene	630.	U
108-90-7	Chlorobenzene	630.	U
100-41-4	Ethylbenzene	630.	U
100-42-5	Styrene	630.	U
1330-20-7	Xylene (total)	630.	U

FORM I VOA [illegible] Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKS1

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLK

Sample wt/vol: 4.000 (g/mL) G Lab File ID: CA597

Level: (low/med) MED Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 1/15/90

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	NO SIGNIFICANT PEAKS PRESENT			
2.				
3.				
4.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412MS

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 4.000 (g/mL) G Lab File ID: CA601

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 11. Date Analyzed: 1/15/90

Column: (pack/cap) PACK Dilution Factor: 25.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	35000.	U
74-83-9	Bromomethane	35000.	U
75-01-4	Vinyl Chloride	35000.	U
75-00-3	Chloroethane	35000.	U
75-09-2	Methylene Chloride	19000.	B
67-64-1	Acetone	88000.	B
75-15-0	Carbon Disulfide	18000.	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	18000.	U
540-59-0	1,2-Dichloroethene (total)	18000.	U
67-66-3	Chloroform	18000.	U
107-06-2	1,2-Dichloroethane	18000.	U
78-93-3	2-Butanone	35000.	U
71-55-6	1,1,1-Trichloroethane	18000.	U
56-23-5	Carbon Tetrachloride	18000.	U
108-05-4	Vinyl Acetate	35000.	U
75-27-4	Bromodichloromethane	18000.	U
78-87-5	1,2-Dichloropropane	18000.	U
10061-01-5	cis-1,3-Dichloropropene	18000.	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	18000.	U
79-00-5	1,1,2-Trichloroethane	18000.	U
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene	18000.	U
75-25-2	Bromoform	18000.	U
108-10-1	4-Methyl-2-Pentanone	35000.	U
591-78-6	2-Hexanone	35000.	U
127-18-4	Tetrachloroethene	18000.	U
79-34-5	1,1,2,2-Tetrachloroethane	18000.	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	18000.	U
100-42-5	Styrene	18000.	U
1330-20-7	Xylene (total)	18000.	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412MSD

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 4.000 (g/mL) G Lab File ID: CA603

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 11. Date Analyzed: 1/15/90

Column: (pack/cap) PACK Dilution Factor: 25.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	35000.	U
74-83-9	Bromomethane	35000.	U
75-01-4	Vinyl Chloride	35000.	U
75-00-3	Chloroethane	35000.	U
75-09-2	Methylene Chloride	26000.	B
67-64-1	Acetone	78000.	B
75-15-0	Carbon Disulfide	18000.	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	18000.	U
540-59-0	1,2-Dichloroethene (total)	18000.	U
67-66-3	Chloroform	18000.	U
107-06-2	1,2-Dichloroethane	18000.	U
78-93-3	2-Butanone	35000.	U
71-55-6	1,1,1-Trichloroethane	18000.	U
56-23-5	Carbon Tetrachloride	18000.	U
108-05-4	Vinyl Acetate	35000.	U
75-27-4	Bromodichloromethane	18000.	U
78-87-5	1,2-Dichloropropane	18000.	U
10061-01-5	cis-1,3-Dichloropropene	18000.	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	18000.	U
79-00-5	1,1,2-Trichloroethane	18000.	U
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene	18000.	U
75-25-2	Bromoform	18000.	U
108-10-1	4-Methyl-2-Pentanone	35000.	U
591-78-6	2-Hexanone	35000.	U
127-18-4	Tetrachloroethene	18000.	U
79-34-5	1,1,2,2-Tetrachloroethane	18000.	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	18000.	U
100-42-5	Styrene	18000.	U
1330-20-7	Xylene (total)	18000.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: BLANK 1

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: BA301

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 100. dec._____ Date Extracted: 1/12/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	[illegible]	U
91-58-7	2-Chloronaphthalene		
88-74-4	2-Nitroaniline	50.	
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13448 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: BLANK 1

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: BA301

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 100. dec._____ Date Extracted: 1/12/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	33.	
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	[illegible]	
53-70-3	Dibenzo(a,h)anthracene		
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK1

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 1344S SAS No.: SDG No.: C8F81

Matrix: (soil/water) WATER Lab Sample ID: BLANK 1

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: SA301

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 100. dec._____ Date Extracted: 1/12/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	NO SIGNIFICANT PEAKS PRESENT			
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BLANK1 MED

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA300

Level: (low/med) MED Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	20000.	U
111-44-4	bis(2-Chloroethyl)ether	20000.	U
95-57-8	2-Chlorophenol	20000.	U
541-73-1	1,3-Dichlorobenzene	20000.	U
106-46-7	1,4-Dichlorobenzene	20000.	U
100-51-6	Benzyl alcohol	20000.	U
95-50-1	1,2-Dichlorobenzene	20000.	U
95-48-7	2-Methylphenol	20000.	U
108-60-1	bis(2-Chloroisopropyl)ether	20000.	U
106-44-5	4-Methylphenol	20000.	U
621-64-7	N-Nitroso-di-n-propylamine	20000.	U
67-72-1	Hexachloroethane	20000.	U
98-95-3	Nitrobenzene	20000.	U
78-59-1	Isophorone	20000.	U
88-75-5	2-Nitrophenol	20000.	U
105-67-9	2,4-Dimethylphenol	20000.	U
65-85-0	Benzoic acid	100000.	U
111-91-1	bis(2-Chloroethoxy)methane	20000.	U
120-83-2	2,4-Dichlorophenol	20000.	U
120-82-1	1,2,4-Trichlorobenzene	20000.	U
91-20-3	Naphthalene	20000.	U
106-47-8	4-Chloroaniline	20000.	U
87-68-3	Hexachlorobutadiene	20000.	U
59-50-7	4-Chloro-3-methylphenol	20000.	U
91-57-6	2-Methylnaphthalene	20000.	U
77-47-4	Hexachlorocyclopentadiene	20000.	U
88-06-2	2,4,6-Trichlorophenol	20000.	U
95-95-4	2,4,5-Trichlorophenol	100000.	U
91-58-7	2-Chloronaphthalene		
88-74-4	2-Nitroaniline	[illegible]	U
131-11-3	Dimethylphthalate	20000.	U
208-96-8	Acenaphthylene	20000.	U
606-20-2	2,6-Dinitrotoluene	20000.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BLANK1 MED

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA300

Level: (low/med) MED Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	100000.	U
83-32-9	Acenaphthene	20000.	U
51-28-5	2,4-Dinitrophenol	100000.	U
100-02-7	4-Nitrophenol	100000.	U
132-64-9	Dibenzofuran	20000.	U
121-14-2	2,4-Dinitrotoluene	20000.	U
84-66-2	Diethylphthalate	20000.	U
7005-72-3	4-Chlorophenyl-phenylether	20000.	U
86-73-7	Fluorene	20000.	U
100-01-6	4-Nitroaniline	100000.	U
534-52-1	4,6-Dinitro-2-methylphenol	100000.	U
86-30-6	N-Nitrosodiphenylamine	20000.	U
101-55-3	4-Bromophenyl-phenylether	20000.	U
118-74-1	Hexachlorobenzene	20000.	U
87-86-5	Pentachlorophenol	100000.	U
85-01-8	Phenanthrene	20000.	U
120-12-7	Anthracene	20000.	U
84-74-2	Di-n-butylphthalate	20000.	U
206-44-0	Fluoranthene	20000.	U
129-00-0	Pyrene	20000.	U
85-68-7	Butylbenzylphthalate	20000.	U
91-94-1	3,3'-Dichlorobenzidine	40000.	U
56-55-3	Benzo(a)anthracene	20000.	U
218-01-9	Chrysene	20000.	U
117-81-7	bis(2-Ethylhexyl)phthalate	3400.	J
117-84-0	Di-n-octylphthalate	20000.	U
205-99-2	Benzo(b)fluoranthene	20000.	U
207-08-9	Benzo(k)fluoranthene	20000.	U
50-32-8	Benzo(a)pyrene	[illegible]	
193-39-5	Indeno(1,2,3-cd)pyrene	[illegible]	
53-70-3	Dibenzo(a,h)anthracene	20000.	U
191-24-2	Benzo(g,h,i)perylene	20000.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK2

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BLANK1 MED

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA300

Level: (low/med) MED Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	NO SIGNIFICANT PEAKS PRESENT			
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412MS

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA313

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/17/90

GPC Cleanup: (Y/N) N pH: 4.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether	22000.	U
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene	22000.	U
106-46-7	1,4-Dichlorobenzene		
100-51-6	Benzyl alcohol	22000.	U
95-50-1	1,2-Dichlorobenzene	140000.	
95-48-7	2-Methylphenol	22000.	U
108-60-1	bis(2-Chloroisopropyl)ether	22000.	U
106-44-5	4-Methylphenol	22000.	U
621-64-7	N-Nitroso-di-n-propylamine		
67-72-1	Hexachloroethane	22000.	U
98-95-3	Nitrobenzene	24000.	
78-59-1	Isophorone	22000.	U
88-75-5	2-Nitrophenol	22000.	U
105-67-9	2,4-Dimethylphenol	22000.	U
65-85-0	Benzoic acid	110000.	U
111-91-1	bis(2-Chloroethoxy)methane	22000.	U
120-83-2	2,4-Dichlorophenol	22000.	U
120-82-1	1,2,4-Trichlorobenzene		
91-20-3	Naphthalene	22000.	U
106-47-8	4-Chloroaniline	22000.	U
87-68-3	Hexachlorobutadiene	22000.	U
59-50-7	4-Chloro-3-methylphenol		
91-57-6	2-Methylnaphthalene	22000.	U
77-47-4	Hexachlorocyclopentadiene	22000.	U
88-06-2	2,4,6-Trichlorophenol		
95-95-4	2,4,5-Trichlorophenol		
91-58-7	2-Chloronaphthalene	22000.	U
88-74-4	2-Nitroaniline	110000.	U
131-11-3	Dimethylphthalate	22000.	U
208-96-8	Acenaphthylene	22000.	U
606-20-2	2,6-Dinitrotoluene	22000.	U

1C

EPA-SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CZ412MS

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA313

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/17/90

GPC Cleanup: (Y/N) N pH: 4.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	110000.	U
83-32-9	Acenaphthene		
51-28-5	2,4-Dinitrophenol	110000.	U
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran	22000.	U
121-14-2	2,4-Dinitrotoluene		
84-66-2	Diethylphthalate	22000.	U
7005-72-3	4-Chlorophenyl-phenylether	22000.	U
86-73-7	Fluorene	22000.	U
100-01-6	4-Nitroaniline	110000.	U
534-52-1	4,6-Dinitro-2-methylphenol	110000.	U
86-30-6	N-Nitrosodiphenylamine	22000.	U
101-55-3	4-Bromophenyl-phenylether	22000.	U
118-74-1	Hexachlorobenzene	22000.	U
87-86-5	Pentachlorophenol		
85-01-8	Phenanthrene	22000.	U
120-12-7	Anthracene	22000.	U
84-74-2	Di-n-butylphthalate	22000.	U
206-44-0	Fluoranthene	22000.	U
129-00-0	Pyrene		
85-68-7	Butylbenzylphthalate	22000.	U
91-94-1	3,3'-Dichlorobenzidine	44000.	U
56-55-3	Benzo(a)anthracene	22000.	U
218-01-9	Chrysene	22000.	U
117-81-7	bis(2-Ethylhexyl)phthalate	4000.	BJ
117-84-0	Di-n-octylphthalate	22000.	U
205-99-2	Benzo(b)fluoranthene	22000.	U
207-08-9	Benzo(k)fluoranthene	22000.	U
50-32-8	Benzo(a)pyrene	22[illegible]	
193-39-5	Indeno(1,2,3-cd)pyrene	22000.	U
53-70-3	Dibenzo(a,h)anthracene	22000.	U
191-24-2	Benzo(g,h,i)perylene	22000.	U

(1) - Cannot be separated from diphenylamine

AR301068

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412MSD

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA314

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/17/90

GPC Cleanup: (Y/N) N pH: 4.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether	22000.	U
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene	22000.	U
106-46-7	1,4-Dichlorobenzene		
100-51-6	Benzyl alcohol	22000.	U
95-50-1	1,2-Dichlorobenzene	180000.	
95-48-7	2-Methylphenol	22000.	U
108-60-1	bis(2-Chloroisopropyl)ether	22000.	U
106-44-5	4-Methylphenol	22000.	U
621-64-7	N-Nitroso-di-n-propylamine		
67-72-1	Hexachloroethane	22000.	U
98-95-3	Nitrobenzene	28000.	
78-59-1	Isophorone	22000.	U
88-75-5	2-Nitrophenol	22000.	U
105-67-9	2,4-Dimethylphenol	22000.	U
65-85-0	Benzoic acid	110000.	U
111-91-1	bis(2-Chloroethoxy)methane	22000.	U
120-83-2	2,4-Dichlorophenol	22000.	U
120-82-1	1,2,4-Trichlorobenzene		
91-20-3	Naphthalene	22000.	U
106-47-8	4-Chloroaniline	22000.	U
87-68-3	Hexachlorobutadiene	22000.	U
59-50-7	4-Chloro-3-methylphenol		
91-57-6	2-Methylnaphthalene	22000.	U
77-47-4	Hexachlorocyclopentadiene	22000.	U
88-06-2	2,4,6-Trichlorophenol	22000.	U
95-95-4	2,4,5-Trichlorophenol		
91-58-7	2-Chloronaphthalene		
88-74-4	2-Nitroaniline	110000.	U
131-11-3	Dimethylphthalate	22000.	U
208-96-8	Acenaphthylene	22000.	U
606-20-2	2,6-Dinitrotoluene	22000.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412MSD

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025

Sample wt/vol: 1.000 (g/mL) G Lab File ID: BA314

Level: (low/med) MED Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/17/90

GPC Cleanup: (Y/N) N pH: 4.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	110000.	U
83-32-9	Acenaphthene		
51-28-5	2,4-Dinitrophenol	110000.	U
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran	22000.	U
121-14-2	2,4-Dinitrotoluene		
84-66-2	Diethylphthalate	22000.	U
7005-72-3	4-Chlorophenyl-phenylether	22000.	U
86-73-7	Fluorene	22000.	U
100-01-6	4-Nitroaniline	110000.	U
534-52-1	4,6-Dinitro-2-methylphenol	110000.	U
86-30-6	N-Nitrosodiphenylamine	22000.	U
101-55-3	4-Bromophenyl-phenylether	22000.	U
118-74-1	Hexachlorobenzene	22000.	U
87-86-5	Pentachlorophenol		
85-01-8	Phenanthrene	22000.	U
120-12-7	Anthracene	22000.	U
84-74-2	Di-n-butylphthalate	22000.	U
206-44-0	Fluoranthene	22000.	U
129-00-0	Pyrene		
85-68-7	Butylbenzylphthalate	22000.	U
91-94-1	3,3'-Dichlorobenzidine	44000.	U
56-55-3	Benzo(a)anthracene	22000.	U
218-01-9	Chrysene	22000.	U
117-81-7	bis(2-Ethylhexyl)phthalate	2200.	BJ
117-84-0	Di-n-octylphthalate	22000.	U
205-99-2	Benzo(b)fluoranthene	22000.	U
207-08-9	Benzo(k)fluoranthene	22000.	U
50-32-8	Benzo(a)pyrene	22000.	U
193-39-5	Indeno(1,2,3-cd)pyrene	22000.	U
53-70-3	Dibenzo(a,h)anthracene	22000.	U
191-24-2	Benzo(g,h,i)perylene	22000.	U

(1) - Cannot be separated from diphenylamine

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK1

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) WATER Lab Sample ID: WBLK 1/12

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: C27A15

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 100. dec._____ Date Extracted: 1/12/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC (Lindane)	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.100	U
72-55-9	4,4'-DDE	.100	U
72-20-8	Endrin	.100	U
33213-65-9	Endosulfan II	.100	U
72-54-8	4,4'-DDD	.100	U
1031-07-8	Endosulfan sulfate	.100	U
50-29-3	4,4'-DDT	.100	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.100	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK2

ab Name: RECMD Contract: 68W80051

ab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

atrix: (soil/water) SOIL Lab Sample ID: BLK S 1/15

ample wt/vol: 30.0 (g/mL) G Lab File ID: C27A18

evel: (low/med) LOW Date Received: 0/ 0/ 0

Moisture: not dec. 0. dec._____ Date Extracted: 1/15/90

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/16/90

PC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	16.	U
319-85-7	beta-BHC	16.	U
319-86-8	delta-BHC	16.	U
58-89-9	gamma-BHC (Lindane)	16.	U
76-44-8	Heptachlor	16.	U
309-00-2	Aldrin	16.	U
1024-57-3	Heptachlor epoxide	16.	U
959-98-8	Endosulfan I	16.	U
60-57-1	Dieldrin	32.	U
72-55-9	4,4'-DDE	32.	U
72-20-8	Endrin	32.	U
33213-65-9	Endosulfan II	32.	U
72-54-8	4,4'-DDD	32.	U
1031-07-8	Endosulfan sulfate	32.	U
50-29-3	4,4'-DDT	32.	U
72-43-5	Methoxychlor	160.	U
53494-70-5	Endrin ketone	32.	U
5103-71-9	alpha-Chlordane	160.	U
5103-74-2	gamma-Chlordane	160.	U
8001-35-2	Toxaphene	320.	U
12674-11-2	Aroclor-1016	160.	U
11104-28-2	Aroclor-1221	160.	U
11141-16-5	Aroclor-1232	160.	U
53469-21-9	Aroclor-1242	160.	U
12672-29-6	Aroclor-1248	160.	U
11097-69-1	Aroclor-1254	320.	U
11096-82-5	Aroclor-1260	320.	U

ID

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CZ412MS

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025MS

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C27A22

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) Y pH: 4.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18.	U
319-85-7	beta-BHC	18.	U
319-86-8	delta-BHC	18.	U
58-89-9	gamma-BHC (Lindane)		
76-44-8	Heptachlor		
309-00-2	Aldrin		
1024-57-3	Heptachlor epoxide	18.	U
959-98-8	Endosulfan I	18.	U
60-57-1	Dieldrin		
72-55-9	4,4'-DDE	36.	U
72-20-8	Endrin		
33213-65-9	Endosulfan II	36.	U
72-54-8	4,4'-DDD	36.	U
1031-07-8	Endosulfan sulfate	36.	U
50-29-3	4,4'-DDT		
72-43-5	Methoxychlor	180.	U
53494-70-5	Endrin ketone	36.	U
5103-71-9	alpha-Chlordane	180.	U
5103-74-2	gamma-Chlordane	180.	U
8001-35-2	Toxaphene	360.	U
12674-11-2	Aroclor-1016	180.	U
11104-28-2	Aroclor-1221	180.	U
11141-16-5	Aroclor-1232	180.	U
53469-21-9	Aroclor-1242	180.	U
12672-29-6	Aroclor-1248	180.	U
11097-69-1	Aroclor-1254	360.	U
11096-82-5	Aroclor-1260	360.	U

FORM I PEST 1/87 Rev.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CZ412MSD

Lab Name: RECMD Contract: 68W80051

Lab Code: RECMD Case No.: 13445 SAS No.: SDG No.: CBF81

Matrix: (soil/water) SOIL Lab Sample ID: BS0025MSD

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C27A23

Level: (low/med) LOW Date Received: 1/11/90

% Moisture: not dec. 11. dec._____ Date Extracted: 1/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 1/16/90

GPC Cleanup: (Y/N) Y pH: 4.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18.	U
319-85-7	beta-BHC	18.	U
319-86-8	delta-BHC	18.	U
58-89-9	gamma-BHC (Lindane)		
76-44-8	Heptachlor		
309-00-2	Aldrin		
1024-57-3	Heptachlor epoxide	18.	U
959-98-8	Endosulfan I	18.	U
60-57-1	Dieldrin		
72-55-9	4,4'-DDE	36.	U
72-20-8	Endrin		
33213-65-9	Endosulfan II	36.	U
72-54-8	4,4'-DDD	36.	U
1031-07-8	Endosulfan sulfate	36.	U
50-29-3	4,4'-DDT		
72-43-5	Methoxychlor	180.	U
53494-70-5	Endrin ketone	36.	U
5103-71-9	alpha-Chlordane	180.	U
5103-74-2	gamma-Chlordane	180.	U
8001-35-2	Toxaphene	360.	U
12674-11-2	Aroclor-1016	180.	U
11104-28-2	Aroclor-1221	180.	U
11141-16-5	Aroclor-1232	180.	U
53469-21-9	Aroclor-1242	180.	U
12672-29-6	Aroclor-1248	180.	U
11097-69-1	Aroclor-1254	360.	U
11096-82-5	Aroclor-1260	360.	U

page 1 of 1 EPA SAMPLE SHIPPING LOG FOR ALL SAMPLES SENT THROUGH THE CONTRACT LAB PROGRAM (12/85 version)

CASE# 13445 SAS# _____ SITE NAME: STANDARD CHLORINE

Site Leader: DAVID SPENCER EPA Project Officer: Bob GUARNI

Phone: (215) 741-4211

SAS REQUEST (details required)

QC SAMPLE INFO AND/OR COMMENTS	CONC. (low/med/high)	SAMPLE PHASE (aq/sol)	TYPE OF REQUEST org, dio inor, SAS	SAMPLE TRAFFIC REPORT NUMBER	ORGANICS OR INORGANICS: LAB NAME	DATE SHIPPED	DATA RECEIVED XX out items not requested: VOA	BNA	PEST	TCDD	METALS	CN	LAB NAME	SAS REQUEST (itemize)	DATE SHIPPED	DATA REC'D
	Low	Sol	ORG	CZ 412	RECMD	1/10/90	✓	✓	✓	X	X	X				
	↓	Sol	↓	CBF 85	↓	↓	✓	✓	X	X	X	X				
EQ. BLANK	↓	AQ	↓	CBF 83	↓	↓	✓	✓	✓	X	X	X				
TRIP BLANK	↓	AQ	↓	CBF 81	↓	↓	✓	X	X	X	X	X				
	Low	Sol	INOR	MCCR 04	JTC	1/10/90	X	X	X	X						
EQ. BLANK	↓	AQ	↓	MCCR 44	↓	↓	X	X	X	X						

AR301075

ENVIRONMENT PROTECTION AGENCY
Office of Enforcement

REGION [illegible]
841 Chestnut St.
Philadelphia, Pennsylvania 19107

CHAIN OF CUSTODY RECORD

PROJ. NO. C03C41 5303.8

PROJECT NAME SCO

SAMPLERS: (Signature) [signature]

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	VCA	BNA	Pest/FCB/BNA				REMARKS CASE No. 134415 TAG No.
CB-112	1/10/90	1020		X	CB-1	4	3	—	1	—	—	—	3-1003748 3-1003787 thru 3-1003899
CBE85	1/10/90	1144		X	CB-2	4	3	1	—	—	—	—	3-1100915 thru 3-1100918
CBE83	1/10/90	1110		X	50B-3	10	2	—	4	—	—	—	3-1100903 thru ~~3-1109~~ 3-1100908 [illegible]
CBE81	1/10/90	0730		X	TB-27	2	2	—	—	—	—	—	3-1100873, 3-1100874

AR301076

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	1/10/90 1530				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by:	Date / Time	Remarks	

Standard Chlorine

ite file

In Reference to Case No(s): 13445

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
Telephone Record Log

Date of Call: 1-16-90

Laboratory Name: Recra Environmental, Inc. (RECMD)
Lab Contact: Cameron Soulis
Region: Region 3
Regional Contact: Annette Lage

Call Initiated By: ___ Laboratory ___ Region X SMO (Sarah Young

In reference to data for the following sample number(s):
CZ-412 (soil)

Summary of Questions/Issues Discussed:
Soil sample CZ-412 has a pH of 4.62. How should the lab proceed?

Summary of Resolution:
RECMD is to note the pH of CZ-412 in the case narrative. Do not adjust the pH and proceed with the analyses. Please include a copy of this telephone log in the data package.

Annette Lage
Signature

Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy 4) Dave Basko - TES/VERSAR

AR301077

cc: Bob Guarni - HWMD (3HW25)

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report

(For CLP Use Only)

Case Number: 13445

SAS No. (If applicable):

1. Sample Description (Enter in Column A)
   1. Surface Water
   2. Ground Water
   3. Leachate
   4. Rinsate
   5. Soil/Sediment
   6. Oil (SAS)
   7. Waste (SAS)
   8. Other (SAS) (Specify)

2. Region Number: III

Sampling Co.:

Sampler (Name):

3. Ship To: RECRA Environmental

4. Date Shipped: 1/10/90

Airbill Number:

Carrier:

Triple volume required for matrix spike/duplicate aqueous sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional instructions.

5. Date Received: 1/11/90 Received by: Alvin Dorman

Laboratory Contract Number: 68W8005

Unit Price: PER CONTRACT

6. Transfer to:

Date Received:

Received by:

Contract Number:

Price:

CLP Sample Number (From labels)	(A) Sample Description (From box 1)	(B) Concentration L=low M=med H=high	(C) RAS Analysis VOA	BNA	Pest/PCB	(D) Special Handling	(E) Station Location	(F) Date/Time of Sample Collection	(G) Corresponding CLP Inorganic Sample Number	(H) Sample Condition on Receipt	(I) High Conc. Phases (Check below) Solid	Water—MIS Liq.	Non Water—MIS Liq.
CZ412		L	X							LAST IN SDG 1ST # IN SDG		1/11/90	
CBF 85			✓							LAST IN SDG			
CBF 83			✓		✓								
CBF 81		L	✓							1ST # IN SDG			

AR301078

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

DATE : April 23, 1990

SUBJECT: Organic Data Validation for the Standard Chlorine Site
SAS 5165C Task 3

FROM : Theresa A. Simpson TAS
Region III ESAT DPO (3ES23)

TO : Bob Guarni
Regional Project Manager (3HW25)

THRU : Patricia J. Krantz, Chief TAS for
Quality Assurance Branch (3ES23)

Attached is the organic data review for the Standard Chlorine Site (SAS 5165C Task 3) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me.

Attachment

cc: Dave Basko, VERSAR
Elaine Spiewak (3HW14) (w/o attachment)

TID File: 03900116 Task 1271

WESTON
MANAGERS DESIGNERS/CONSULTANTS
2568A RIVA ROAD
SUITE 300
ANNAPOLIS, MD 21401
PHONE: 301-266-9887

DATE: 11 APRIL 1990

SUBJECT: ORGANIC DATA VALIDATION FOR SAS 5165C-TASK 3
Site: STANDARD CHLORINE

FROM: PETE CHAPMAN PC
ORGANIC DATA REVIEWER

TO: TERRY SIMPSON
ESAT DEPUTY PROJECT OFFICER

THRU: RICHARD DRESSER RRD
ESAT TEAM MANAGER

OVERVIEW

SAS 5165C-TASK 3 consisted of eight (8) samples submitted to ARI Laboratories, for total organic carbon (TOC) analysis. Included in these samples were seven (7) soil samples, and one (1) aqueous equipment rinsate blank. Samples 5165C-TASK 3-01 and 5165C-TASK 3-02 are a field duplicate pair. The samples were analyzed as a Contract Laboratory Program (CLP) Special Analytical Service (SAS).

SUMMARY

All samples were successfully analyzed for total organic carbon. All instrument and method sensitivities were according to the SAS contract. All soil sample results have been reported on a dry weight basis.

MINOR ISSUES

- The reported result for sample 5165C-TASK 3-08 (aqueous equipment blank) was less than the SAS CRQL (Contract Required Quantitation Limit). Therefore, the reported result for this sample has been qualified estimated "J".

NOTES

- One pair of field duplicate samples (5165C-TASK 3-01 and 5165C-TASK 3-02) were collected and analyzed. In addition, one of the field duplicate samples (5165C-TASK 3-01) was analyzed as a laboratory duplicate. The results for the various samples were 27000, 28000, and 22000, respectively. The relative percent difference (RPD) between the sample and laboratory duplicate was three (3), while the percent relative standard deviation (%RSD) for all three data points was twelve (12).

All data for SAS 5165C-TASK 1 were reviewed in accordance with the Functional Guidelines for Evaluating Organic Analyses with Modifications for use within Region III, and with modifications from the SAS request for this case. The text of this report addresses only those problems affecting usability.

ATTACHMENTS

1) Appendix A - Glossary of Data Qualifiers
2) Appendix B - Data Summary. These include:
   (a) All positive results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R").
3) Appendix C - Results as Reported by the Laboratory for All Target Compounds
4) Appendix D - Organic Regional Data Assessment Summary
5) Appendix E - Support Documentation

DCN - PC003A11.SCL

WESTON

APPENDIX A

GLOSSARY OF DATA QUALIFIERS

WESTON SM

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of compounds):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

APPENDIX B

DATA SUMMARY FORM

WESTON SM

TOC DATA SUMMARY

Site Name: Standard Chlorine

Case Number: SAS 5165C-TASK 3 SAMPLING DATE: 01/4-5/90

Soil Samples (mg/Kg)

Sample Number	Site	TOC	Notes
5165C-TASK 3-01	WS-1	27000	Duplicate of -02
5165C-TASK 3-02	WS-2	22000	Duplicate of -01
5165C-TASK 3-03	WS-3	23000	
5165C-TASK 3-04	WS-4	15000	
5165C-TASK 3-05	WS-5	37000	
5165C-TASK 3-06	WS-6	30000	
5165C-TASK 3-07	WS-7	38000	

Water Sample (mg/Kg)

5165C-TASK 3-08	EQB-2	6.1 J*	Equipment Blank

* - The result is qualified estimated "J" due to the low quantitation limit.

WESTON

APPENDIX C

RESULTS AS REPORTED BY THE LABORATORY FOR ALL TARGET COMPOUNDS

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, Wa 98109-5187
(206) 621-6490

TOC SEDIMENT ANALYSIS DATA SHEET - EPA/CE - 81 - 1 (SID,S3)

SAS NO. 5165 C - Task 3
Matrix: Soil/Sediment

QC Report No: 5016 - USEPA Region III

Data Release Authorized Brian D. Anderson
Data Prepared: MAC:C -C.R.G.(01/26/90)

Lab ID		EPA Sample No	VTSR	Date of Analysis	Weight Sample (mg)	ppm C	TOC (MG/KG) Dry Wt Basis	RPD
Blank		TOC Blank	NA	01/16/90	50	8.232	8.2	
5016	A	5165 C-01	01/06/90	01/16/90	3.5	26950	27000	3.4
5016	A Dupl	5165 C-01 Dupl.	01/06/90	01/16/90	3.1	27870	28000	
5016	B	5165 C-02	01/06/90	01/16/90	2.9	21970	22000	
5016	C	5165 C-03	01/06/90	01/16/90	2.2	22830	23000	
5016	D	5165 C-04	01/06/90	01/16/90	3.2	15070	15000	
5016	E	5165 C-05	01/06/90	01/16/90	1.1	37410	37000	
5016	F	5165 C-06	01/06/90	01/16/90	1.7	29930	30000	
5016	G	5165 C-07	01/06/90	01/16/90	1.4	37650	38000	
5016	H	5165 C-08	01/06/90	01/16/90	50	6.072	6.1	

Calibration: One 2000 ppm C calibration run each 20 samples [Potassium Hydrogen Phthalate]

Analysis performed with a Dohrman DC 80 Sediment Analyzer.

QA/QC: One system blank per calibration. Blank subtracted from sample.

Sample is dried to a constant weight. Dried sediment is acidified with 10% HCL. The The sediment is then oxidized at 850 degrees C and the CO_2 is liberated and measured by IR.

WESTON

APPENDIX D

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

WESTON SM

DPO: [ ] ACTION [X] FYI

Region III

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO: 5165C-TASK 3
SDG NO: SDG 5165C-TASK 3-01
SOW: N/A
NO. OF SAMPLES: (1)

LABORATORY: ARI, Inc.
DATA USER: Gerald Muth
REVIEW COMPLETION DATE: 3/28/90
MATRIX: Water

REVIEWER: ESAT

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES				O
2. GC-MS TUNE/GC PERFORMANCE				F
3. INITIAL CALIBRATIONS				O
4. CONTINUING CALIBRATION				O
5. FIELD BLANKS (F=NOT APPLICABLE)				O
6. LABORATORY BLANKS				O
7. SURROGATES				F
8. MATRIX SPIKE/DUPLICATES				F
9. REGIONAL QC (F=NOT APPLICABLE)				F
10. INTERNAL STANDARDS				F
11. COMPOUND IDENTIFICATION				O
12. COMPOUND QUANTITATION				O
13. SYSTEM PERFORMANCE				O
14. OVERALL ASSESSMENT				O

O = No problems or minor problems that do not affect data usability
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as estimated.
Z = More than about 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

DPO ACTION ITEMS:

AREAS OF CONCERN:

AR301089

WESTON

DPO: [ ] ACTION [X] FYI

Region III

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO: 5165C-TASK 3
SDG NO: SDG 5165C-TASK 3-01
SOW: N/A
NO. OF SAMPLES: (7)

LABORATORY: ARI, Inc.
DATA USER: Gerald Muth
REVIEW COMPLETION DATE: 3/28/90
MATRIX: Soil

REVIEWER: ESAT

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES				O
2. GC-MS TUNE/GC PERFORMANCE				F
3. INITIAL CALIBRATIONS				O
4. CONTINUING CALIBRATION				O
5. FIELD BLANKS (F=NOT APPLICABLE)				O
6. LABORATORY BLANKS				O
7. SURROGATES				F
8. MATRIX SPIKE/DUPLICATES				O
9. REGIONAL QC (F=NOT APPLICABLE)				F
10. INTERNAL STANDARDS				F
11. COMPOUND IDENTIFICATION				O
12. COMPOUND QUANTITATION				O
13. SYSTEM PERFORMANCE				O
14. OVERALL ASSESSMENT				O

O = No problems or minor problems that do not affect data usability
X = No more than about 5% of the data points are qualified as either estimated or unusable.
N = More than about 5% of the data points are qualified as estimated.
Z = More than about 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

DPO ACTION ITEMS:

AREAS OF CONCERN:

WESTON SM

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY NOTES
SAS 5165C - TASK 3 (aqueous sample)

Item 14a -The reported result for sample 5165C-TASK 1-08 (aqueous equipment blank) was less than the SAS CRQL (Contract Required Quantitation Limit). Therefore, the reported result for this sample has been qualified estimated "J".

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY NOTES
SAS 5165C - TASK 3 (soil samples)

Item 8A - A matrix spike and a matrix spike duplicate were performed on sample 5165C - TASK 03-01 and the recoveries were 86% and 85%, respectively. There were no instructions on the SAS request to analyze them and no mention of quality control limits.

Item 14A - One pair of field duplicate samples (5165C-TASK 3-01 and -02) were collected and analyzed. In addition, one of the field duplicate samples was analyzed as a laboratory duplicate. The results for the various samples were 27000, 28000, and 22000, respectively. The relative percent difference (RPD) between the sample and the laboratory duplicate was three (3), while the relative standard deviation (%RSD) for all three data points was twelve (12).

WESTON SM

APPENDIX E

SUPPORT DOCUMENTATION

ANALYTICAL
RESOURCES
INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, Wa 98109-5187
(206) 621-6490

TOC SEDIMENT QA/QC DATA SHEET -

SAS NO. 5165 C - Task 3
Matrix: Soil/Sediment

QC Report No: 5016 - US EPA Region III
VTSR: 1/6/90

Data Release Authorized Bryan D. Anderson
Data Prepared: MAC:C -C.P.G.(01/26/90)

QA/QC Runs:

Lab ID	EPA Sample No.	Date of Analysis	Weight	ppm C	RPD	Std RPD
Cali. Check STD	2000 ppm C KHP#1	1/19/90	25	1836	5.0	8.2
Cali. Check STD	2000 ppm C KHP#2	1/19/90	25	1930		3.5

Lab ID	EPA Sample No.	Date of Analysis	Weight	ppm C	TOC (ppm C) Wt. Basis	% Rec	RPD
Blank	TOC Blank	1/19/90	50	5.933	5.9		
5016 AMS RE	5165C-01 MS RE	1/19/90	2.1	31760	32000	86	1.2
5016 AMSD RE	5165C-01 MSD RE	1/19/90	2.6	29790	30000	85	

Calibration: One 2000 ppm C calibration run each 20 samples [Potassium Hydrogen Phthalate]

Analysis performed with a Dohrman DC 80 Sediment Analyzer.

QA/QC: One system blank per calibration. Blank subtracted from sample.

10 µl of 2000 ppm C added to MS/MSD.

Sample is dried to a constant weight. Dried sediment is acidified with 10% HCL. The The sediment is then oxidized at 850 degrees C and the CO2 is liberated and measured by IR.

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, Wa 98109-5187
(206) 621-6490

T.O.C. - ORGANICS ANALYSIS DATA SHEET - Method 9060

S.A.S. No.: 5165 C Task 3
Matrix: Water

QC Report No: 5016 - USEPA Region III
VTSR: 01/06/90

Data Release Authorized: Bryan D. Anderson
Report Prepared 01/26/90 - MAØ:C C.P.G.

Lab ID	EPA Sample No	Dil. Fac	Analyzed	Detected ppm C	Std Dev		% SD	TOC (ppm C) dil*ppm detected
Blank	TOC Blank	1	01/18/90	0.077	±	0.028	36	0.08
5016 H	5165C-08	1	01/18/90	0.168	±	0.033	20	0.17

Calibration: One 1.0 ppm C calibration run each 10 samples
One 25 ppm C calibration run each 5 samples
[Potassium Hydrogen Phthalate]

Analysis performed with a Dohrman DC180 Analyzer in non-Purgeable Organic Carbon Mode, using the persulfate-UV oxidation method.

QA/QC: One system blank per calibration

Ten mls of sample is acidified with phosphoric acid and purged for 10 minutes. Four 1.0 ml aliquots of each sample are analyzed, and the average and standard deviation reported for each sample.

Abbreviations

Dil Fac: Dilution factor
% SD: Percent Standard Deviation
dil*ppm detected: ppm Carbon detected multiplied by dilution factor.
Std Dev: Standard Deviation

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave. North
Seattle, Wa 98109-5187
(206) 621-6490

T.O.C. - ORGANICS ANALYSIS DATA SHEET - Method 9060

S.A.S. No.: 5165 C Task 3
Matrix: Water

QC Report No: 5016 - USEPA Region III
VTSR: 1/6/90

Data Release Authorized: Brian D. Anderson
Report Prepared 01/26/90 - MAC, C.P.G.

QA/QC Runs:

Lab ID	EPA Sample No	Dil. Fac	Analyzed	Detected ppm C	Std	Dev	% SD
Cali. Check	1.0 ppm C (KHP)	1	1/18/90	1.22	±	0.060	4.9
Cali. Check	25 ppm C (KHP)	1	1/18/90	23.5	±	0.670	2.9
Cali. Check	25 ppm C (KHP)	1	1/18/90	23.1	±	0.932	4.0

Calibration: One 1.0 ppm C calibration run each 10 samples
One 25 ppm C calibration run each 5 samples
[Potassium Hydrogen Phthalate]

Analysis performed with a Dohrman DC180 Analyzer in non-Purgeable Organic Carbon Mode, using the persulfate-UV oxidation method.

QA/QC: One system blank per calibration

Ten mls of sample is acidified with phosphoric acid and purged for 10 minutes. Four 1.0 ml aliquots of each sample are analyzed, and the average and standard deviation reported for each sample.

Abbreviations

Dil Fac: Dilution factor
% SD: Percent Standard Deviation
dil*ppm detected: ppm Carbon detected multiplied by dilution factor.
Std Dev: Standard Deviation

5165-C Task 3

site file

SAS 611

U.S. Environmental Protection Agency
CLP Sample Management Office
209 Madison Street, Alexandria, VA 22313
PHONE: (703) 557-2490 or FTS 557-2490

SAS Number

SPECIAL ANALYTICAL SERVICES
Regional Request

☐ Regional Transmittal

☐ Telephone Request

A. EPA Region and Client: EPA Region III

B. Regional Representative: Colleen K. Walling

C. Telephone Number: (301) 266-9180

sent to SMO 12-21-89

D. Date of Request: December 15, 1989

E. Site Name: Standard Chlorine of Delaware, Delaware City, Delaware

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delay in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. General description of analytical service requested:
Analysis of eight low concentration soil/sediment samples for Total Organi Carbon (TOC) by EPA/CE-81-1 pages 3-73 to 3-76 Method 1 (attached).

2. Definition and number of work units involved (specify whether whole samples or fractions; whether organics or inorganics; whether aqueous or soil and sediments; and whether low, medium, or high concentration):
Six low concentration sediment samples plus one duplicate and one equipment blank. The equipment blank will be an [illegible] sample.

AR301097

3. Program (specify whether Superfund (Remedial or Enforcement), RCRA, NPDES, etc.), Justification for analysis and Site Account Number:

Superfund Enforcement, RP RI/FS Oversight
OTGB03NPH6

SAS Approved By:

4. Estimated date(s) of collection: January 2 through January 12, 1990 (may extend to the week of January 15, 1990)

5. Estimated date(s) and method of shipment: January 3 through January 12, 1990 (may extend to week of January 15, 1990)

Federal Express - Overnight Delivery

6. Approximate number of days results required after lab receipt of samples:

Analysis within 20 days of receipt of last sample. Data package within 45 days of laboratory receipt of last sample

7. Analytical protocol required (attach copy if other than a protocol currently used in this program):

Method 1 found on pages 3-73 through 3-76 in "Procedures for Handling and Chemical Analysis of Sediment and Water Samples", Technical Report EPA/CE-81-1, R.H. Plumb, Jr., 1981. (Method attached)

8. Special technical instructions (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):

Perform duplicate analysis on one of every 20 samples or fraction thereof. Standardize instrument according to manufacturer's instructions.

9. Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain-of-Custody documentation, etc.). If not completed, format of results will be left to program discretion.

Narrative description of process utilized and description of problems encountered, analyst logbook pages, weights and volumes used, raw data, calculations, data sheets, SAS packing list, and chain-of-custody forms. See also addendum 1.

10. Other (use additional sheets or attach supplementary information, as needed):

None.

11. Name of sampling/shipping contact:

Phone: David Basko
(215) 741-4211

12. Data Requirements

Parameter	Detection Limit	Precision Desired (+ or − Concentration)
TOC	10 mg/kg	

13. QC Requirements

Audits Required	Frequency of Audits	Limits (Percent or Concentration)
LAB Duplicate	1/20 or fraction thereof	± 35% RPD
Method Blank	1/20 or fraction thereof	< 10 mg/kg
TOC Certified Standard	1/analytical run	± 95% CI

14. Action Required if Limits are Exceeded

Duplicate: reanalyze the sample and duplicate one additional time and report both sets of data.

Method Blank: reanalyze all affected samples after corrective action has been taken to reduce the blank contamination to less than the method detection limit cited above.

15. Request prepared by: David A. Basko

Date: December 15, 1989

16. Request reviewed by: Laurie Brown

Date: 12-21-89

C. Sadler 12/21/89

Please return this request to the Sample Management Office as soon as possible to expedite processing of your request for special analytical services. Should you have any questions or need any assistance, please contact your Regional Representative at the Sample Management Office.

ADDENDUM 1

Data package must include: all raw data, all instrument and/or equipment calibration results, calculations, blank results, duplicate results, chain of custody forms, SAS request forms, SAS packing list(s) or traffic report(s), copy of airbill(s), and copies of analyst's logbooks(signed by analyst) with date and time of sample preparation and analysis.

The cover page and all sample report forms MUST be labled with the complete EPA sample number as it appears on chain of custody and CLP paperwork.

The case narrative must document all problems encountered and the subsequent resolutions. List instrumentation and methods employed for analysis. Also, note whether samples were preserved or not and the procedure utilized in preservation. EPA QC reference samples, or equivalent reference samples must be identified as to source and lot number. Documentation of "true" value and associated 95 % confidence limits must be provided for any reference samples used.

Procedures for Sediment Samples (S1D, S3)

Method 1: Sample Ignition

Apparatus

Induction furnace such as the Leco WR-12, Dohrmann DC-50, Coleman CH analyzer, or Perkin Elmer 240 elemental analyzer

Combustion boats

Microbalance

Desiccator

Reagents

10 percent hydrochloric acid: mix 100 ml concentrated HCl with 900 ml distilled water.

Copper oxide fines.

Benzoic acid.

Procedure

Dry at 70°C and grind the sediment sample.

Weigh a combustion boat and record the weight. Place 0.2 to 0.5 g homogenized sediment in the combustion boat and reweigh. Combustion boats should not be handled with the bare hand during this process.

If total carbon or inorganic carbon is to be determined, Cupric oxide fines may be added to the sample to assist in combustion. Combust the sample in an induction furnace. Record the result as total carbon.

If organic carbon is to be determined, treat a known weight of dried sediment with several drops of 10 percent HCl. Wait until the effervescing is completed and add more acid. Continue this process until the incremental addition of acid causes no further effervescence. Do not add too much acid at one time as this may cause loss of sample due to frothing.

Reweigh sample & crucible; document weight

Dry the sample at 70°C and place in a desiccator. Add Cupric oxide fines, combust the sample in an induction furnace, and record the result as organic carbon.

Calculations

The carbon content of the sample can be calculated as:

$$\%C = \frac{\text{weight of tube (after-before)}}{\text{sample weight}} \times 27.29$$

Derivation of factor:

$$27.29 = \frac{12.011 \text{ (molecular weight carbon)}}{44.011 \text{ (molecular weight carbon dioxide)}} \times 100\%$$

When the total sample results are used, the result is percent carbon in the sample. When acid-treated samples are used, the result is percent organic carbon. Inorganic carbon is calculated as total carbon minus organic carbon.

Method 2: Differential Combustion[4,5]

Apparatus

Sargent programmed microcombustion apparatus or equivalent

Microbalance

Procedure

Air dry the sediment sample. Using a mortar and pestle, grind the sample to pass a 100-mesh screen.

Combust a known weight of sediment at a programmed heating rate of 300° to 950°C in 10 min and then maintain 950°C for 20 min. Trap the CO_2 in ascarite and record the weight as total carbon. A sample size should be selected that will produce 25 to 50 mg CO_2.

Weigh a second portion of the dried sediment. Combust this sample at a programmed rate of 300° to 650°C in 10 min and maintain 650°C for 20 min. Trap the CO_2 in ascarite and record the weight as organic carbon.

Calculations

The total carbon concentration, C_t, of the sample (in mg/g) is calculated as follows:

$$C_t = \frac{(x_t)\left(\frac{12}{44}\right)}{(g)}$$

where

x_t = weight of CO_2 evolved at 950°C

g = weight of sample combusted, g

The organic carbon, C_o, concentration of the sample (in mg/g) is calculated as follows:

$$C_o = \frac{(x_o)\ (\frac{12}{44})}{(g)}$$

where

x_o = weight of CO_2 evolved at 650°C, mg

g = weight of sample combusted, g

Inorganic carbon, C_I, (in mg/g) is calculated as:

$$C_I = C_t - C_o$$

Method 3: Wet Combustion[4,8]

A third method has been used for carbon in sediments. This is based on the oxidation of the sample with dichromate and back titration of the sample with ferrous ammonium sulfate. References are provided for the procedure but details are not given. The procedure is similar to the chemical oxygen demand test which is not specific for carbon. The wet combustion method is a redox procedure and any reduced chemicals in the sediment samples (ferrous iron, manganous manganese, sulfide) will react with the dichromate. Therefore, this procedure is not recommended unless other instrumentation is not available.

AR301103

References

1. U. S. Environmental Protection Agency. "Manual of Methods for Chemical Analysis of Water and Wastes." Methods Development and Quality Assurance Research Laboratory, National Environmental Research Center; Cincinnati, Ohio. 298 p. (1974).

2. U. S. Environmental Protection Agency. "Methods for Chemical Analysis of Water and Wastes." Environmental Monitoring and Support Laboratory, Office of Research and Development, EPA; Cincinnati, Ohio (1979).

3. Giovannini, G., Poggio, G., and Sequi, P. "Use of an Automatic CHN Analyzer to Determine Organic and Inorganic Carbon in Soils." Unpublished Report, Laboratory of Soil Chemistry, via Corridoni, Pisa, Italy. 9 p. (1975).

4. Konrad, J. G., Chesters, G., and Keeney, D. R. "Determination of Organic- and Carbonate-Carbon in Freshwater Lake Sediments by a Microcombustion Procedure." J. Thermal Analysis 2:199-208 (1970).

5. Kemp, A. L. W. "Organic Matter in the Sediments of Lakes Ontario and Erie." Proc. 12th Conference Great Lakes Research 12:237-249 (1969).

6. Environment Canada. "Analytical Methods Manual," Inland Waters Directorate, Water Quality Branch; Ottawa, Canada (1974).

7. American Public Health Association. Standard Methods for the Examination of Water and Wastewater. APHA; New York, New York. 1193 p. (1976).

8. Gaudette, H. E., Flight, W. R., Toner, L., and Folger, D. W. "An Inexpensive Titration Method for the Determination of Organic Carbon in Recent Sediments." J. Sed. Petrology 44:249-253 (1974).

AR301104

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

DATE : April 23, 1990

SUBJECT: Inorganic Data Validation for the Standard Chlorine Site Case 13445

FROM : Theresa A. Simpson TAS
Region III ESAT DPO (3ES23)

TO : Bob Guarni
Regional Project Manager (3HW25)

THRU : Patricia J. Krantz, Chief TAS for
Quality Assurance Branch (3ES23)

Attached is the inorganic data review for the Standard Chlorine Site (Case 13445) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me.

Attachment

cc: Dave Basko, VERSAR
Elaine Spiewak (3HW14) (w/o attachment)

TID File: 03900414 Task 1318

WESTON
MANAGERS DESIGNERS/CONSULTANTS
2568A RIVA ROAD
SUITE 300
ANNAPOLIS, MD 21401
PHONE: 301-266-9887

DATE: 11 APRIL 1990

SUBJECT: INORGANIC DATA VALIDATION, Case 13445
SITE: STANDARD CHLORINE

FROM: PETE CHAPMAN
INORGANIC DATA REVIEWER

MARSHA BURRELL
SENIOR DATA REVIEWER

TO: TERRY SIMPSON
ESAT DEPUTY PROJECT OFFICER

THRU: RICHARD D. DRESSER
ESAT TEAM MANAGER

OVERVIEW

The set of samples for Case 13445 contained one (1) aqueous sample and one (1) soil sample, which were analyzed through the Contract Laboratory Program (CLP) Routine Analytical Services. The aqueous sample was an equipment blank.

SUMMARY

All analytes were successfully analyzed in all samples. Areas of concern with respect to data usability are listed according to the seriousness of the problem. These include:

MINOR ISSUES

The aqueous preparation blank had reported results for the Al and K analytes that were >IDL. The reported results for these analytes in the aqueous sample that were <5x the blank concentration may be biased high, and therefore, have been qualified "B".

The aqueous laboratory duplicate results for the Al and Ag analytes for sample MCCR44 were outside of the control limit. Therefore, the quantitation limit and reported result for these analytes in the sample have been qualified estimated, "UJ" and "J", unless superseded by "B" denoting blank contamination.

The soil laboratory duplicate results for the Cr, Fe, and Mn analytes were outside of the control limits. Therefore, the reported results for these analytes in the soil sample has been qualified estimated, "J".

Several matrix spike recoveries were low (30-74%) in the analyses. The quantitation limits and reported results may be biased and have been qualified accordingly for the analytes in the affected samples as summarized in the following table:

ANALYTE	SAMPLE TYPE	RECOVERY	REPORTED RESULT	QUANTITATION LIMIT
Ag	Aqueous	Low	-	UL*
Sb,Ba, Pb,Se, Ag	Soil	Low	L	UL

* = The qualifier "UJ" denoting estimated undetected value supersedes the qualifier "UL" for Ag in the aqueous sample.

NOTES:

The aqueous equipment blank was used as the laboratory duplicate and the matrix spike, which contradicts the USEPA CLP SOW 7/88. The equipment blank was used to qualify itself. The quality control outliers associated with this sample appear to be very minor and have no influence on the soil results or the overall performance of the laboratory.

The Furnace AA post-digestion spike for the Pb analyte should be 2x CRDL (2x 3ppb = 6ppb) as stated in the USEPA CLP SOW 7/88. The laboratory spiked the samples at 10 ppb, which is a minor contradiction to the specifications of CLP protocol.

The data was reviewed in accordance with the National Functional Guidelines for Evaluating Inorganic Analyses.

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers added to the laboratory's results during evaluation.

ATTACHMENTS

TABLE 1A	SUMMARY OF QUALIFIERS ON DATA SUMMARY AFTER DATA VALIDATION
TABLE 1B	CODES USED IN COMMENTS COLUMN
TABLE 2	GLOSSARY OF DATA QUALIFIER CODES
TABLE 3	DATA SUMMARY FORM
APPENDIX A	RESULTS REPORTED BY LABORATORY FORM I's
APPENDIX B	DPO REPORT
APPENDIX C	SUPPORT DOCUMENTATION

PC004A01.STA

WESTON SM

TABLE 1A

SUMMARY OF QUALIFIERS ON DATA SUMMARY
AFTER DATA VALIDATION

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Al	MCCR44	B		High	A (163 ppb) B (±200)
Sb	MCCR04		UL	Low	C (61.6%)
Ba	MCCR04		UL	Low	C (74.3%)
Cr	MCCR04	J			B (±4.4)
Fe	MCCR04	J			B (46.1%)
Pb	MCCR04	L		Low	C (66.1%)
Mn	MCCR04	J			B (78.0%)
K	MCCR44	B		High	A (535 ppb)
Se	MCCR04		UL	Low	C (58.9%)
Ag	MCCR04		UL	Low	C (44.2%)
	MCCR44		UJ		B (±10.0) C (70.2%)

WESTON

TABLE 1B

CODES USED IN COMMENTS COLUMN

A = The aqueous preparation blank had a result >IDL (the result is in parentheses) and the reported results were <5x the blank. The reported results may be biased high.

B = The laboratory duplicate results were outside of the control limits ±CRDL or ±2X CRDL or RPD >35% (±CRDL or relative percent difference is in parentheses). Therefore, the reported results are estimated.

C = Due to a low matrix spike recovery (% recovery is in parentheses), the quantitation limits and/or reported results may be biased low.

WESTON

TABLE 2

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

[] = Analyte present. As values approach the IDL the quantitation may not be accurate.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Table 3

DATA SUMMARY FORM: I N O R G A N I C S

WATER SAMPLES
(ug/L)

Site Name: Standard Chlorine

Case 13445 Sampling Date(s): 1/9/90

AR301112

*Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

CRDL	ANALYTE	MCCR44																					
	Sample No.	MCCR44																					
	Dilution Factor	1.0																					
	Location	Equipment Blank EQB-3																					
200	Aluminum	274	B																				
60	Antimony																						
10	*Arsenic																						
200	Barium																						
5	Beryllium																						
5	*Cadmium																						
5000	Calcium																						
10	*Chromium																						
50	Cobalt																						
25	Copper																						
100	Iron	[88.7]																					
5	*Lead																						
5000	Magnesium																						
15	Manganese																						
0.2	Mercury																						
40	*Nickel																						
5000	Potassium	[330]	B																				
5	Selenium																						
10	Silver		UJ																				
5000	Sodium																						
10	Thallium																						
50	Vanadium																						
20	Zinc																						
10	*Cyanide																						

CRDL = Contract Required Detection Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

AR301113

Table 3

DATA SUMMARY FORM: I N O R G A N I C S

Name: Standard Chlorine

#: 13445 Sampling Date(s): 1/10/90

SOIL SAMPLES (mg/Kg)

*Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

	Sample No.	MCCR04																					
	Dilution Factor	1.0																					
	% Solids	89.4																					
	Location	CB-1																					
CRDL	ANALYTE																						
40	Aluminum	5620																					
12	Antimony		UL																				
2	Arsenic																						
40	Barium		UL																				
1	Beryllium																						
1	Cadmium																						
1000	Calcium	[522]																					
2	Chromium	7.5	J																				
10	Cobalt																						
5	Copper	5.6																					
20	Iron	5740	J																				
1	*Lead	0.78	L																				
1000	Magnesium																						
3	Manganese	18.3	J																				
0.2	Mercury																						
8	Nickel																						
1000	Potassiu	[450]																					
1	Selenium		UL																				
2	Silver		UL																				
1000	Sodium	[34.7]																					
2	Thallium																						
10	Vanadiu	[9.2]																					
4	Zinc	6.4																					
2	Cyanide																						

CRDL = (ract Required Detection Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

revised 12/88

WESTON

APPENDIX A

RESULTS REPORTED BY LABORATORY

FORM I'S

U.S. EPA - CLP

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MCCR04

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 68-W8-0023

Lab Code: JTC Case No.: 13445 SAS No.: SDG No.: MCCR04

Matrix (soil/water): SOIL Lab Sample ID: 900080

Level (low/med): LOW Date Received: 1/11/90

% Solids: 89.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5620.00			P
7440-36-0	Antimony	11.00	U	N*	P
7440-38-2	Arsenic	.89	U		F
7440-39-3	Barium	7.40	U	N	P
7440-41-7	Beryllium	.89	U		P
7440-43-9	Cadmium	1.10	U		P
7440-70-2	Calcium	522.00	B		P
7440-47-3	Chromium	7.50		*	P
7440-48-4	Cobalt	3.80	U		P
7440-50-8	Copper	5.60			P
7439-89-6	Iron	5740.00		*	P
7439-92-1	Lead	.78		N	F
7439-95-4	Magnesium	336.00	U		P
7439-96-5	Manganese	18.30		*	P
7439-97-6	Mercury	.11	U		CV
7440-02-0	Nickel	3.60	U		P
7440-09-7	Potassium	450.00	B		A
7782-49-2	Selenium	.45	U	N	F
7440-22-4	Silver	2.00	U	N	P
7440-23-5	Sodium	34.70	B		A
7440-28-0	Thallium	.22	U	W	F
7440-62-2	Vanadium	9.20	B		P
7440-66-6	Zinc	6.40			P
	Cyanide	2.20	U		AS

Color Before: YELLOW Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

EPA SAMPLE NO.

MCCR44

INORGANIC ANALYSIS DATA SHEET

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 68-W8-0023

Lab Code: JTC Case No.: 13445 SAS No.: SDG No.: MCCR04

Matrix (soil/water): WATER Lab Sample ID: 900081

Level (low/med): LOW Date Received: 1/11/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	274.00		*	P
7440-36-0	Antimony	49.00	U		P
7440-38-2	Arsenic	4.00	U	W	F
7440-39-3	Barium	33.00	U		P
7440-41-7	Beryllium	4.00	U		P
7440-43-9	Cadmium	5.00	U		P
7440-70-2	Calcium	190.00	U		P
7440-47-3	Chromium	10.00	U		P
7440-48-4	Cobalt	17.00	U		P
7440-50-8	Copper	22.00	U		P
7439-89-6	Iron	88.70	B		P
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium	1500.00	U		P
7439-96-5	Manganese	4.00	U		P
7439-97-6	Mercury	.20	U		CV
7440-02-0	Nickel	16.00	U		P
7440-09-7	Potassium	330.00	B		A
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	9.00	U	N*	P
7440-23-5	Sodium	90.00	U		A
7440-28-0	Thallium	1.00	U		F
7440-62-2	Vanadium	16.00	U		P
7440-66-6	Zinc	19.00	U		P
	Cyanide	10.00	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

WESTON

APPENDIX B

DPO REPORT

WESTON

DPO: [ ] ACTION [X] FYI

Region III

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO: 13445
SDG NO: MCCR04
SOW: 7/88
NO. OF SAMPLES: one (1)

LABORATORY: JTC
DATA USER: Charles Sands
REVIEW COMPLETION DATE: 4/3/90
MATRIX: Aqueous

REVIEWER: ESAT

	ICP	AA	Hg	CYANIDE
1. HOLDING TIMES	O	O	O	O
2. INITIAL CALIBRATIONS	O	O	O	O
3. CONTINUING CALIBRATIONS	O	O	O	O
4. FIELD BLANKS(F=NOT APPLICABLE)	F	F	F	F
5. LABORATORY BLANKS	M	O	O	O
6. ICS	O			
7. LCS	O	O		
8. DUPLICATE ANALYSIS	M	O	O	O
9. MATRIX SPIKE	O	O	O	O
10. MSA		O		
11. SERIAL DILUTION	O			
12. SAMPLE VERIFICATION	O	O	O	O
13. REGIONAL QC(F-NOT APPLICABLE)	F	F	F	F
14. OVERALL ASSESSMENT	M	O	O	O

O = No problems or minor problems that do not affect data usability
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as estimated.
Z = More than about 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

DPO ACTION ITEMS: _____

AREAS OF CONCERN: _____

WESTON

DPO: [ ] ACTION [X] FYI

Region III

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO: 13445
SDG NO: MCCR04
SOW: 7/88
NO. OF SAMPLES: one (1)

LABORATORY: JTC
DATA USER: Charles Sands
REVIEW COMPLETION DATE: 4/3/90
MATRIX: Soil

REVIEWER: ESAT

	ICP	AA	Hg	CYANIDE
1. HOLDING TIMES	O	O	O	O
2. INITIAL CALIBRATIONS	O	O	O	O
3. CONTINUING CALIBRATIONS	O	O	O	O
4. FIELD BLANKS(F=NOT APPLICABLE)	O	O	O	O
5. LABORATORY BLANKS	O	O	O	O
6. ICS	O			
7. LCS	O	O		
8. DUPLICATE ANALYSIS	M	O	O	O
9. MATRIX SPIKE	M	M	O	O
10. MSA		O		
11. SERIAL DILUTION	O			
12. SAMPLE VERIFICATION	O	O	O	O
13. REGIONAL QC(F-NOT APPLICABLE)	F	F	F	F
14. OVERALL ASSESSMENT	M	M	O	O

O = No problems or minor problems that do not affect data usability
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as estimated.
Z = More than about 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

DPO ACTION ITEMS:

AREAS OF CONCERN:

AR301119

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

NOTES

1. The aqueous equipment blank was used as the laboratory duplicate and the matrix spike sample, which contradicts the USEPA CLP SOW 7/88. The equipment blank was the only aqueous sample and the quality control outliers associated with this sample appear to be very minor. Therefore, this error has no influence on the soil results or the overall performance of the laboratory.

2. The Furnace AA post-digestion spike for the Pb analyte should be 2x the CRDL (2x 3ppb = 6ppb) as stated in the USEPA CLP SOW 7/88. The laboratory spiked the samples at 10 ppb, which is a minor contradiction of CLP protocol.

WESTON

APPENDIX C

SUPPORT DOCUMENTATION

U.S. EPA - CLP

SB

POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MCCR04A

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 68-W8-0023

Lab Code: JTC Case No.: 13445 SAS No.: SDG No.: MCCR04

Matrix: SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		130.70		49.00	U	120.0	108.9		P
Arsenic									NR
Barium		327.70		33.00	U	400.0	81.9		P
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

FORM V (Part 2) - IN

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

DATE : April 23, 1990

SUBJECT: Organic Data Validation for the Standard Chlorine Site
Case 13413

FROM : Theresa A. Simpson TAS
Region III ESAT DPO (3ES23)

TO : Bob Guarni
Regional Project Manager (3HW25)

THRU : Patricia J. Krantz, Chief TAS for
Quality Assurance Branch (3ES23)

Attached is the organic data review for the Standard Chlorine Site (Case 13413) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me.

Attachment

cc: Dave Basko, VERSAR
Elaine Spiewak (3HW14) (w/o attachment)

TID File: 03900116 Task 1269

WESTON
MANAGERS DESIGNERS/CONSULTANTS
2568A RIVA ROAD
SUITE 300
ANNAPOLIS, MD 21401
PHONE: 301-266-9887

DATE: April 11, 1990

SUBJECT: Organic Data Validation for Case 13413
Site: Standard Chlorine

FROM: Don O'Brien DJO
Organic Data Reviewer

Doug McInnes DJM
Organic Data Reviewer

TO: Terry Simpson
ESAT Deputy Project Officer

THRU: Dan Dresser
ESAT Team Manager

OVERVIEW

Case 13413 consisted of two (2) aqueous and seven (7) soil samples for volatile, semivolatile, and pesticide/PCB analyses. Included in this case were one field duplicate pair, one (1) trip blank, that was analyzed for volatiles only, and one (1) equipment blank. Pesticide/PCB analyses were not performed for samples CBF74 through CBF78. The samples were analyzed as a Contract Laboratory Program (CLP) Routine Analytical Service (RAS).

SUMMARY

All samples were successfully analyzed for all target compounds, except for 2-butanone in the volatile analyses of all soil samples. All other instrument and method sensitivities were according to the Contract Laboratory Program (CLP) Routine Analytical Service (RAS) protocol.

MAJOR PROBLEM

- The response factor for 2-butanone was less than 0.05 in one volatile initial and continuing calibration. Quantitation limits were qualified "R" for that compound in the affected samples. (See Table I in Appendix F).

MINOR PROBLEMS

- Recoveries of the volatile surrogate Bromofluorobenzene were above the QC limit for samples CBF76, -77, and -78. Reanalyses had the same surrogates out, therefore, results from the initial analyses are reported on the data summary. [illegible]tation limits were qualified "UJ", and positive results we[illegible] or the affected samples, unless superseded by the [illegible]r. (See Form II in Appendix F).

- Several compounds failed precision criteria during initial and/or continuing calibrations. The quantitation limits were qualified "UJ", and positive results were qualified "J" for these compounds in the affected samples, unless superseded by the "B" qualifier. (See Table I in Appendix F).

NOTES

- The volatiles analyses of all soil samples were performed as medium level analyses. The dilution factors reported on the data summary reflect that action.

- The semivolatiles analysis of sample CBF76 was performed as a medium level analysis. The dilution factor reported on the data summary reflects that action.

- The semivolatile and pesticide/PCB analyses of all soil samples, except sample CBF76, employed GPC cleanup, therefore, the dilution factors reported on the data summary forms reflect that action.

- The maximum concentrations of all compounds appearing in the trip, equipment, or laboratory method blanks are listed below. Because qualifications for blank contaminants are applied across sample matrices and analysis levels, the blank concentrations are reported as they appear on the Form I's, and the equivalent low level analysis concentrations used to qualify sample data. All samples with concentrations of common laboratory contaminants less than ten times (<10X), or uncommon laboratory contaminants less than five times (<5X), the blank concentration have been qualified "B" on the data summary. (Also see Appendix F).

Compound	Concentration Form I	Concentration Low Level
Methylene chloride *	280 ug/L	140 ug/L
Acetone *	2600 ug/Kg	21 ug/Kg
1,2-Dichloroethene	7 ug/L	4 ug/L
Chloroform	14 ug/L	14 ug/L
2-Butanone *	340 ug/Kg	3 ug/Kg
Total xylenes	7 ug/L	7 ug/L
Diethylphthalate *	71 ug/Kg	71 ug/Kg
bis(2-Ethylhexyl)phthalate *	210 ug/Kg	210 ug/Kg

* = Common Laboratory Contaminant

- One field duplicate pair was analyzed by the laboratory. One of the duplicate samples was used for the MS/MSD analyses. Non-spiked compounds other than blank contaminants were determined in the MS/MSD analyses of sample CBF72. The results and precision estimates are as follows:

Compound	Concentration (ug/Kg) CBF72	CBF73	-72MS	-72MSD	%RSD
1,3-Dichlorobenzene	450 J	450 J	350 J	330 J	16
1,4-Dichlorobenzene *	1300	1400	---	---	7 +
Trichlorobenzene *	120 J	130 J	---	---	8 +
Aroclor-1260	400 J	530	240 J	520	32

%RSD = Percent Relative Standard Deviation
* = Spiked Compound, not evaluated in MS/MSD
\+ = Result is Relative Percent Difference

- The initial calibration linearity check run on the confirmation column had percent Relative Standard Deviations (%RSD's) greater than 10% for 4,4'-DDT and DBC. Because this column was used only for confirmation, and since no DDT was determined in the samples, no data was affected. (See Form VIII in Appendix F).

- The Individual A and B mixes run on 1/10/90 and 1/11/90, respectively, on the quantitation column each had one compound with a percent difference between calibration factors greater than 15%. No positive results were determined for either compound, therefore, no data were qualified. (See Form IX in Appendix F).

- The continuing calibration INDB mix run on 1/11/90 on the quantitation column had retention times for several compounds slightly outside the RT windows. Examination of the raw data indicated no positive results were missed because of the RT shifts; therefore, no data were qualified. (See Form IX in Appendix F).

- The reported Tentatively Identified Compounds (TIC's) of Appendix D have been reviewed during data validation. The volatiles Target List Compound, toluene, was reported as a semivolatile TIC for some samples. This compound, and compounds identified as blank contaminants, have been crossed off the TIC Form I's.

All data for Case 13413 were reviewed in accordance with Functional Guidelines for Evaluating Organic Modifications for use within Region III. The text of this report addresses only those problems affecting usability.

ATTACHMENTS

1) Appendix A - Glossary of Data Qualifiers
2) Appendix B - Data Summary. These include:
   (a) All positive results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R").
3) Appendix C - Results as Reported by the Laboratory for All Target Compounds
4) Appendix D - Reviewed and Corrected Tentatively Identified Compounds
5) Appendix E - Organic Regional Data Assessment Summary
6) Appendix F - Support Documentation

DCN: DO004A01.WP5

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Appendix A

Glossary of Data Qualifiers