UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
HOUSTON BRANCH
6608 HORNWOOD DRIVE
HOUSTON, TEXAS 77074
3/23/87

Tony St. Clair
Camp Dresser & McKee
9442 Capital of Texas, Hwy. North
Arboretum Plaza, Two, Suite 400
Austin, Texas 78759

Ref. Case No. 6804

Site Name S. Cavalcade

Dear Mr. St. Clair:

Enclosed you will find the contract laboratory data results for the following samples: FD261
FD262
FD263
FD264

004208

The data results and all supporting raw data have been reviewed by members of our technical staff at the Houston Branch. Please note comments on attached Review Summary.

The data was found:

(√) Acceptable

( ) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

If you should have any questions regarding the data review, please call Dr. M.L. Ritter of my staff at (713) 954-6771 for assistance.

Sincerely,

Michael Daggett
Chief, Organic Lab Section

1012292

Enclosures

cc: David Stockton, 6E-HL
Keith Bradley, 6E-SH
Duane Geuder, WH-548A

123

004208

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI, HOUSTON BRANCH
6608 HORNWOOD DRIVE
HOUSTON, TEXAS 77074

ORGANIC QA CHECKLIST

Site: South Cavalcade
Contract No.: 68-01-7167
Case No.: 6804
Contractor: SWRI, San Antonio
Reviewed By: M.L. Ritter
Matrix: Water
Date: 3/12/87
Acct. #: 7TFAJN38 SF TFAU56

Sample No.: FD261, FD262, FD263 and FD264

004209

OVERALL COMMENTS (To Be Completed By EPA PERSONNEL)

	VOA	B/N	A	Pest	Other
1. Holding Times	A	A	A	A	
2. Tuning/Performance	A	A	A	A	
3. Calibrations	A	A	A	A	
4. Blanks	A	A	A	A	
5. Surrogates	A	A	A	A	
6. Matrix Spike/Dup	A	A	A	A	
7. Compound Identity	A	A	A	A	
8. Case Assessment	A	A	A	A	

COMMENTS OR CLARIFICATIONS (See Attached)

A - Acceptable - All items delivered; all criteria met.

P - Provisional - Data usable; some non-essential review items missing or criteria were not met.

U - Unacceptable - Data unusable; essential review items missing or criteria not met.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

Case 6804 Site South Cavalcade Lab SWRI

The following is a summary of sample qualifiers used by Region VI in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	4	0	0
BN	3	0	0
A	3	0	0
Pest	3	0	0
Other			

004210

COMMENTS:

1. Data package for Case 6804 is acceptable. Case 6804 consisted here of four water samples, three of them, FD261-FD263, for full organics analysis and one, FD264, for volatile organics analysis only.
2. The lab did an excellent job on these samples; the Case data package was well organized and well documented. The lab noted in the narrative the several problems related to these samples, namely those of the BNA fractions requiring dilution due to very large naphthalene peaks and its effect on the areas of the nearby internal standard. Also the lab explained the problem with carbon disulfide in the VOA analysis of FD263.
3. Surrogate and matrix spike recoveries for the data set were very good. All surrogate recoveries were within limits; for VOAs 0/24; for BNAs 0/30; and for Pest 0/6 were outside of limits. Spike recoveries were all within limits except for two slightly low recoveries for Lindane. All RPDs were within QC limits. Note that FD263 BNA had several spiking compounds present in the sample and the recoveries were excellent.

ORGANIC QA CHECKLIST
CONTINUATION PAGE

CASE NO. 6804 SITE South Cavalcade

COMMENTS:

4. Blanks for this data were good; no problems were found with solvent for the BNA analysis. The lab did report a low level of carbon disulfide in the volatiles blank and this compound then showed up in the matrix spike runs, but not in the sample. The lab is trying to find the source of the CS_2.

5. All requirements were met with regard to GC/MS tunings, mass calibrations and all initial and continuing calibrations for compounds. Pesticide calibrations and standards summary were acceptable, as were other contract required items for Pesticide/PCBs portion of the package.

6. Sample results- Volatile organic hydrocarbons such as benzene, toluene, etc., were found in amounts of 80 - 200 ug/l in FD261 and FD262. Naphthalene was the overwhelming prevalent BNA compound in FD261 (11 ppm), FD262(12 ppm) and even in FD263 (1.3 ppm). All runs for napthalene required dilutions and reruns. Other BNA target compounds found were calculated on the basis of the undiluted runs and consisted of other aromatic hydrocarbons. The matrix spike/duplicate runs for FD263 BNA fraction were in excellent agreement with the unspiked sample.

M.L. Rutter
6EHL
3/12/87

004211

SOUTHWEST RESEARCH INSTITUTE

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CHEMISTRY AND CHEMICAL ENGINEERING DIVISION

March 5, 1987 (VTSR - 27)

Mr. William Langley
USEPA Region VI
Environmental Services Division
6608 Hornwood Drive
Monterrey Park Plaza Blgd C
Houston Tx 77074

Subject: Case 6804, Contract Lab Program
Sample, Standards, and Raw QC Data Packages
Contract 68-01-7167
SwRI Project 01-8865

Dear Mr. Langley:

Enclosed are the organics analysis data for the above referenced case.

Sincerely,

Patricia V. Kuhrt
Research Scientist

TECHNICAL APPROVAL:

Jong-Pyng Hsu, Manager
Mass Spectrometry Section

PVK:pvk

cc: Sample Management Office (includes Sample Data Summary)
Environmental Monitoring Systems Lab, Las Vegas

SAN ANTONIO, TEXAS
WITH OFFICES IN HOUSTON, TEXAS, AND WASHINGTON, D.C

004212

1 001

SWRI
CLP CASE 6804

I. CASE NARRATIVE (CLP CASE 6804)

- THREE LOW WATERS FOR FULL ORGANIC ANALYSIS: FD-261, FD-262, and FD-263
- ONE LOW WATER FOR VOA ANALYSIS ONLY: FD-264

1. In reviewing the raw pesticide data provided, it should be noted that our data system accompanies pesticide replots with a time which corresponds to the replot time, rather than the actual injection time. To match the chromatogram with its respective report, compare the data file names.

2. The percent differences for DBC on the OV-100 confirmation run seen for samples FD-261 and FD-262 were greater than the 2% criteria limit. This is a result of an interference which coelutes on this column, as supported by the fact that recoveries for DBC were within criteria for both the blank and sample FD-263. Furthermore, all recoveries for DBC were within the allowed range on the MPP003 quantitation column.

3. In the semivolatile analysis for samples FD-262 and FD-263, naphthalene was found at levels that exceeded the calibration range. The value reported for this compound on FORM I is the value obtained from re-analysis of the sample at a secondary dilution required to bring the value within the upper half of the calibration range, and is flagged with the qualifier "DL" (for VALUE AT A RE-ANALYSIS AT A SECONDARY DILUTION). All other values reported are from the original analysis.

4. In the semivolatile analysis for sample FD-262 (SwRI lab file ID C02178705), the area of the internal standard D8-Naphthalene is greater than 2 times the area from the corresponding calibration standard. This is due to interferences from a large, coeluting Naphthalene peak and from a partially coeluting Benzo[b]-thiophene peak.

5. The following abbreviations were used to label the internal standards and surrogate peaks on the semivolatile GC/MS reconstructed ion chromatograms.

2-Fluorophenol	--	2-FP
D5-Phenol	--	D5-PHENOL
D4-1,4-Dichlorobenzene	--	D4-1,4-DCB
D5-Nitrobenzene	--	D5-NB
D8-Naphthalene	--	D8-NAPH
2-Fluorobiphenyl	--	2-FBP
D10-Acenaphthene	--	D10-ACEPH
2,4,6-Tribromophenol	--	2,4,6-TBP
D10-Phenantherene	--	D10-PHEN
D14-Terphenyl	--	D14-TERP
D12-Chrysene	--	D12-CHRY
D12-Perylene	--	D12-PERY

6. In the volatile analysis of sample FD-263, initial analysis on 2/07/87 yielded an unspiked analysis in which no carbon disulfide was detected, whereas the matrix spike and matrix spike duplicate for that sample yielded carbon disulfide present at 100 mg/L and 110 mg/l, respectively. Repeat analysis on 2/09/87 again yielded an unspiked sample free of carbon disulfide and matrix spike and matrix spike duplicate values of 110 mg/L and 34 mg/L. Although our method blanks do not indicate a problem with carbon disulfide contamination, we feel that the matrix spike and matrix spike duplicate results are due to laboratory contamination, and that carbon disulfide is not present in the actual sample. Further analysis of this sample was not possible because insufficient sample was provided (only two 40 ml vials were received for sample FD-263). Values reported for FD-263 MS and FD-263MSD were from the re-analysis. We are currently working on corrective action in order to remove carbon disulfide contamination from the laboratory.

***

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature:

Jong Pyng Hsu, Manager
Section of Mass Spectrometry

SOUTHWEST RESEARCH INSTITUTE

Sample Number

FD 261

3 002

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: SwRI
Lab Sample No: FD261
Sample Matrix: Water
Data Release Authorized By:

Case No: 6804
QC Report No: 6804
Contract No: 68-01-7167
Date Sample Received: 02/06/87

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: 02/07/87
Date Analyzed: 02/07/87
Conc/Dil Factor: 1 pH 6
Percent Moisture (Not Decanted): NA

CAS Number		ug/l	CAS Number		ug/l
74-87-3	Chloromethane	10U	78-87-5	1,2-Dichloropropane	5U
74-83-9	Bromomethane	10U	10061-02-6	Trans-1,3-Dichloropropene	5U
75-01-4	Vinyl Chloride	10U	79-01-6	Trichloroethene	5U
75-00-3	Chloroethane	10U	124-48-1	Dibromochloromethane	5U
75-09-2	Methylene Chloride	5U	79-00-5	1,1,2-Trichloroethane	5U
67-64-1	Acetone	10U	71-43-2	Benzene	86
75-15-0	Carbon Disulfide	5U	10061-01-5	Cis-1,3-Dichloropropene	5U
75-35-4	1,1-Dichloroethene	5U	110-75-8	2-Chloroethylvinylether	10U
75-34-3	1,1-Dichloroethane	5U	75-25-2	Bromoform	5U
156-60-5	Trans-1,2-Dichloroethene	5U	591-78-6	4-Methyl-2-Pentanone	10U
67-66-3	Chloroform	5U	108-10-1	2-Hexanone	10U
107-06-2	1,2-Dichloroethane	5U	127-18-4	Tetrachloroethene	5U
78-93-3	2-Butanone	10U	79-34-5	1,1,2,2-Tetrachloroethane	5U
71-55-6	1,1,1-Trichloroethane	5U	108-88-3	Toluene	110
56-23-5	Carbon Tetrachloride	5U	108-90-7	Chlorobenzene	5U
108-05-4	Vinyl Acetate	10U	100-41-4	Ethylbenzene	92
75-27-4	Bromodichloromethane	5U	100-42-5	Styrene	5U
				Total Xylenes	220

Data Reporting Qualifiers

Values If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration dilution action(This is not necessarily the instrument detection limit). The footnote should be read U compound was analyzed for but not detected. The number is the minimum attainable limit for the sample.

J Indicates an estimating value. This flag is used either when estimated a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S spiked compounds

Form I

004215

004215

Sample No: FD 261
Case No: 6804

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
GPC Cleanup NO
Date Extracted/Prepared: 02/09/87
Separatory Funnel Extraction--YES
Date Analyzed: 02/17/87
Conc/Dil Factor: 100.00
Percent Moisture (Decanted): NA

CAS Number		ug/l
108-95-2	Phenol	1000U
111-44-4	bis(2-Chloroethyl)Ether	1000U
95-57-8	2-Chlorophenol	1000U
541-73-1	1,3-Dichlorobenzene	1000U
106-46-7	1,4-Dichlorobenzene	1000U
100-51-6	Benzyl Alcohol	1000U
95-50-1	1,2-Dichlorobenzene	1000U
95-48-7	2-Methylphenol	1000U
39638-32-9	bis(2-Chloroisopropyl)Ether	1000U
106-44-5	4-Methylphenol	1000U
621-64-7	N-Nitroso-Di-n-Propylamine	1000U
67-72-1	Hexachloroethane	1000U
98-95-3	Nitrobenzene	1000U
78-59-1	Isophorone	1000U
88-75-5	2-Nitrophenol	1000U
105-67-9	2,4-Dimethylphenol	1000U
65-85-0	Benzoic Acid	5000U
111-91-1	bis(2-Chloroethoxy)Methane	1000U
120-83-2	2,4-Dichlorophenol	1000U
120-82-1	1,2,4-Trichlorobenzene	1000U
91-20-3	Naphthalene	11000
106-47-8	4-Chloroaniline	1000U
87-68-3	Hexachlorobutadiene	1000U
59-50-7	4-Chloro-3-Methylphenol	1000U
91-57-6	2-Methylnaphthalene	330 J
77-47-4	Hexachlorocyclopentadiene	1000U
88-06-2	2,4,6-Trichlorophenol	1000U
95-95-4	2,4,5-Trichlorophenol	5000U
91-58-7	2-Chloronaphthalene	1000U
88-74-4	2-Nitroaniline	5000U
131-11-3	Dimethyl Phthalate	1000U
208-96-8	Acenaphthylene	1000U
99-09-2	3-Nitroaniline	5000U

CAS Number		ug/l
83-32-9	Acenaphthene	290 J
51-28-5	2,4-Dinitrophenol	5000U
100-02-7	4-Nitrophenol	5000U
132-64-9	Dibenzofuran	1000U
121-14-2	2,4-Dinitrotoluene	1000U
606-20-2	2,6-Dinitrotoluene	1000U
84-66-2	Diethylphthalate	1000U
7005-72-3	4-Chlorophenylphenylether	1000U
86-73-7	Fluorene	130 J
100-01-6	4-Nitroaniline	5000U
534-52-1	4,6-Dinitro-2-Methylphenol	5000U
86-30-6	N-Nitrosodiphenylamine(1)	1000U
101-55-3	4-Bromophenylphenylether	1000U
118-74-1	Hexachlorobenzene	1000U
87-86-5	Pentachlorophenol	5000U
85-01-8	Phenanthrene	230 J
120-12-7	Anthracene	1000U
84-74-2	Di-n-Butylphthalate	1000U
206-44-0	Fluoranthene	1000U
129-00-0	Pyrene	1000U
85-68-7	Butylbenzylphthalate	1000U
91-94-1	3,3'-Dichlorobenzidine	2000U
56-55-3	Benzo(a)Anthracene	1000U
117-81-7	bis(2-Ethylhexyl)Phthalate	1000U
218-01-9	Chrysene	1000U
117-84-0	Di-n-Octyl Phthalate	1000U
205-99-2	Benzo(b)Fluoranthene	1000U
207-08-9	Benzo(k)Fluoranthene	1000U
50-32-8	Benzo(a)Pyrene	1000U
193-39-5	Indeno(1,2,3-cd)Pyrene	1000U
53-70-3	Dibenz(a,h)Anthracene	1000U
191-24-2	Benzo(g,h,i)Perylene	1000U

(1) - Cannot be separated from diphenylamine

004216

004216

SOUTHWEST RESEARCH INSTITUTE 3 004

Sample No: FD 261
Case No: 6804

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low
Date Extracted/Prepared: 02/10/87

GPC Cleanup NO

Separatory Funnel Extraction - YES

Date Analyzed: 02/11/87
Conc/Dil Factor: 1.00
Percent Moisture (Decanted): NA

CAS Number		ug/l
319-84-6	Alpha-BHC	0.05U
319-85-7	Beta-BHC	0.05U
319-86-8	Delta-BHC	0.05U
58-89-9	Gamma-BHC (Lindane)	0.05U
76-44-8	Heptachlor	0.05U
309-00-2	Aldrin	0.05U
1024-57-3	Heptachlor Epoxide	0.05U
959-98-8	Endosulfan I	0.05U
60-57-1	Dieldrin	0.10U
72-55-9	4,4'-DDE	0.10U
72-20-8	Endrin	0.10U
33213-65-9	Endosulfan II	0.10U
72-54-8	4,4'-DDD	0.10U
1031-07-8	Endosulfan Sulfate	0.10U
50-29-3	4,4'-DDT	0.10U
72-43-5	Methoxychlor	0.50U
53494-70-5	Endrin Ketone	0.10U
57-74-9	Chlordane	0.50U
8001-35-2	Toxaphene	1.00U
12674-11-2	Aroclor-1016	0.50U
11104-28-2	Aroclor-1221	0.50U
11141-16-5	Aroclor-1232	0.50U
53469-21-9	Aroclor-1242	0.50U
12672-29-6	Aroclor-1248	0.50U
11097-69-1	Aroclor-1254	1.00U
11096-82-5	Aroclor-1260	1.00U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(S) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000 or W(s) V(t) 10000 V(i) 5

Form I

004217

004217

SOUTHWEST RESEARCH INSTITUTE

Sample No: FD 261
Case No: 6804

Organics Analysis Data Sheet
(Page 4)
Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration ug/l
	NO SEMIVOLATILE COMPOUND FOUND			
271-89-6	BENZOFURAN	VOA	947	400 J
496-11-7	1H-INDENE,2,3-DIHYDRO-	VOA	990	800 J

004218

Form I, Part B

SOUTHWEST RESEARCH INSTITUTE

Sample Number

FD 262

3 052

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: SwRI
Lab Sample No: FD262
Sample Matrix: Water
Data Release Authorized By:

Case No: 6804
QC Report No: 6804
Contract No: 68-01-7167
Date Sample Received: 02/06/87

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: 02/07/87
Date Analyzed: 02/07/87
Conc/Dil Factor: 1 pH 6
Percent Moisture (Not Decanted): NA

CAS Number		ug/l
74-87-3	Chloromethane	10U
74-83-9	Bromomethane	10U
75-01-4	Vinyl Chloride	10U
75-00-3	Chloroethane	10U
75-09-2	Methylene Chloride	5U
67-64-1	Acetone	10U
75-15-0	Carbon Disulfide	5U
75-35-4	1,1-Dichloroethene	5U
75-34-3	1,1-Dichloroethane	5U
156-60-5	Trans-1,2-Dichloroethene	5U
67-66-3	Chloroform	5U
107-06-2	1,2-Dichloroethane	5U
78-93-3	2-Butanone	10U
71-55-6	1,1,1-Trichloroethane	5U
56-23-5	Carbon Tetrachloride	5U
108-05-4	Vinyl Acetate	10U
75-27-4	Bromodichloromethane	5U

CAS Number			ug/l
78-87-5	1,2-Dichloropropane		5U
10061-02-6	Trans-1,3-Dichloropropene		5U
79-01-6	Trichloroethene		5U
124-48-1	Dibromochloromethane		5U
79-00-5	1,1,2-Trichloroethane		5U
71-43-2	Benzene	81	
10061-01-5	Cis-1,3-Dichloropropene		5U
110-75-8	2-Chloroethylvinylether		10U
75-25-2	Bromoform		5U
591-78-6	4-Methyl-2-Pentanone		10U
108-10-1	2-Hexanone		10U
127-18-4	Tetrachloroethene		5U
79-34-5	1,1,2,2-Tetrachloroethane		5U
108-88-3	Toluene	90	
108-90-7	Chlorobenzene		5U
100-41-4	Ethylbenzene	79	
100-42-5	Styrene		5U
	Total Xylenes	180	

004219

Data Reporting Qualifiers

Values If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration dilution action(This is not necessarily the instrument detection limit). The footnote should be read U compound was analyzed for but not detected. The number is the minimum attainable limit for the sample.

J Indicates an estimating value. This flag is used either when estimated a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >=10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S spiked compounds

Form I

SOUTHWEST RESEARCH INSTITUTE

Sample No: FD 262
Case No: 6804

3 053

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 02/09/87

GPC Cleanup NO

Separatory Funnel Extraction--YES

Date Analyzed: 02/17/87
Conc/Dil Factor: 1.00
Percent Moisture (Decanted): NA

CAS Number		ug/l
108-95-2	Phenol	10U
111-44-4	bis(2-Chloroethyl)Ether	10U
95-57-8	2-Chlorophenol	10U
541-73-1	1,3-Dichlorobenzene	10U
106-46-7	1,4-Dichlorobenzene	10U
100-51-6	Benzyl Alcohol	10U
95-50-1	1,2-Dichlorobenzene	10U
95-48-7	2-Methylphenol	32
39638-32-9	bis(2-Chloroisopropyl)Ether	10U
106-44-5	4-Methylphenol	10U
621-64-7	N-Nitroso-Di-n-Propylamine	10U
67-72-1	Hexachloroethane	10U
98-95-3	Nitrobenzene	10U
78-59-1	Isophorone	10U
88-75-5	2-Nitrophenol	10U
105-67-9	2,4-Dimethylphenol	12
65-85-0	Benzoic Acid	50U
111-91-1	bis(2-Chloroethoxy)Methane	10U
120-83-2	2,4-Dichlorophenol	10U
120-82-1	1,2,4-Trichlorobenzene	10U
91-20-3	Naphthalene	12000 SD
106-47-8	4-Chloroaniline	10U
87-68-3	Hexachlorobutadiene	10U
59-50-7	4-Chloro-3-Methylphenol	10U
91-57-6	2-Methylnaphthalene	340
77-47-4	Hexachlorocyclopentadiene	10U
88-06-2	2,4,6-Trichlorophenol	10U
95-95-4	2,4,5-Trichlorophenol	50U
91-58-7	2-Chloronaphthalene	10U
88-74-4	2-Nitroaniline	50U
131-11-3	Dimethyl Phthalate	10U
208-96-8	Acenaphthylene	10U
99-09-2	3-Nitroaniline	50U

CAS Number			ug/l
83-32-9	Acenaphthene	380	
51-28-5	2,4-Dinitrophenol		50U
100-02-7	4-Nitrophenol		50U
132-64-9	Dibenzofuran	260	
121-14-2	2,4-Dinitrotoluene		10U
606-20-2	2,6-Dinitrotoluene		10U
84-66-2	Diethylphthalate		10U
7005-72-3	4-Chlorophenylphenylether		10U
86-73-7	Fluorene	130	
100-01-6	4-Nitroaniline		50U
534-52-1	4,6-Dinitro-2-Methylphenol		50U
86-30-6	N-Nitrosodiphenylamine(1)		10U
101-55-3	4-Bromophenylphenylether		10U
118-74-1	Hexachlorobenzene		10U
87-86-5	Pentachlorophenol		50U
85-01-8	Phenanthrene	370	
120-12-7	Anthracene	30	
84-74-2	Di-n-Butylphthalate		10U
206-44-0	Fluoranthene	63	
129-00-0	Pyrene	53	
85-68-7	Butylbenzylphthalate		10U
91-94-1	3,3'-Dichlorobenzidine		20U
56-55-3	Benzo(a)Anthracene	17	
117-81-7	bis(2-Ethylhexyl)Phthalate		10U
218-01-9	Chrysene	14	
117-84-0	Di-n-Octyl Phthalate		10U
205-99-2	Benzo(b)Fluoranthene	10	
207-08-9	Benzo(k)Fluoranthene		10U
50-32-8	Benzo(a)Pyrene	9 J	
193-39-5	Indeno(1,2,3-cd)Pyrene		10U
53-70-3	Dibenz(a,h)Anthracene		10U
191-24-2	Benzo(g,h,i)Perylene		10U

SD - VALUE FROM SEPARATE ANALYSIS AT A SECONDARY DILUTION (SEE CASE NARRATIVE)

(1) - Cannot be separated from diphenylamine

Form I

004220

SOUTHWEST RESEARCH INSTITUTE

Sample No: FD 262
Case No: 6804

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low
Date Extracted/Prepared: 02/10/87

GPC Cleanup NO

Separatory Funnel Extraction - YES

Date Analyzed: 02/11/87
Conc/Dil Factor: 1.00
Percent Moisture (Decanted): NA

CAS Number		ug/l
319-84-6	Alpha-BHC	0.05U
319-85-7	Beta-BHC	0.05U
319-86-8	Delta-BHC	0.05U
58-89-9	Gamma-BHC (Lindane)	0.05U
76-44-8	Heptachlor	0.05U
309-00-2	Aldrin	0.05U
1024-57-3	Heptachlor Epoxide	0.05U
959-98-8	Endosulfan I	0.05U
60-57-1	Dieldrin	0.10U
72-55-9	4,4'-DDE	0.10U
72-20-8	Endrin	0.10U
33213-65-9	Endosulfan II	0.10U
72-54-8	4,4'-DDD	0.10U
1031-07-8	Endosulfan Sulfate	0.10U
50-29-3	4,4'-DDT	0.10U
72-43-5	Methoxychlor	0.50U
53494-70-5	Endrin Ketone	0.10U
57-74-9	Chlordane	0.50U
8001-35-2	Toxaphene	1.00U
12674-11-2	Aroclor-1016	0.50U
11104-28-2	Aroclor-1221	0.50U
11141-16-5	Aroclor-1232	0.50U
53469-21-9	Aroclor-1242	0.50U
12672-29-6	Aroclor-1248	0.50U
11097-69-1	Aroclor-1254	1.00U
11096-82-5	Aroclor-1260	1.00U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(S) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000 or W(s) V(t) 10000 V(i) 5

Form I

004221

SOUTHWEST RESEARCH INSTITUTE

Sample No: FD 262
Case No: 6804

3 055

Organics Analysis Data Sheet
(Page 4)
Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration ug/l
	C2 ALKYL BENZENE	BNA	367	200 J
100-41-4	BENZENE, ETHYL-	BNA	401	50 J
620-14-4	BENZENE, 1-ETHYL-3-METHYL	BNA	480	40 J
271-89-6	BENZOFURAN	VOA	966	400 J
620-14-4	BENZENE, 1-ETHYL-3-METHYL	BNA	486	20 J
108-67-8	BENZENE, 1,3,5-TRIMETHYL-	BNA	517	300 J
526-73-8	BENZENE, 1,2,3-TRIMETHYL-	BNA	547	40 J
611-15-4	BENZENE, 1-ETHENYL-2-METHYL-	BNA	564	600 J
95-13-6	BENZENE, 1-PROPYNYL-	BNA	573	500 J
104-55-2	2-PROPENAL, 3-PHENYL-	BNA	636	200 J
95-15-8	BENZO[B]THIOPHENE	BNA	743	2000 J
3855-26-3	PHENOL, 2-ETHYL-4-METHYL-	BNA	787	80 J
52896-99-8	NAPHTHALENE, 1-METHYL-	BNA	851	900 J
1197-34-8	PHENOL, 3,5-DIETHYL-	BNA	870	200 J
83-32-9	1,1'-BIPHENYL	BNA	908	300 J
939-27-5	NAPHTHALENE, 2-ETHYL-	BNA	946	300 J
54852-73-2	1,1'-BIPHENYL, 3-ETHOXY-	BNA	1180	100 J
86-74-8	9H-CARBAZOLE	BNA	1280	400 J
607-66-9	2(1H)-QUINOLINONE, 4-METHYL-	BNA	1325	200 J
	UNKNOWN PAH	BNA	1528	20 J
	UNKNOWN	BNA	1602	30 J

004222

Form I, Part B

SOUTHWEST RESEARCH INSTITUTE

Sample Number

FD 263

3 168

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: SwRI
Lab Sample No: FD263
Sample Matrix: Water
Data Release Authorized By:

Case No: 6804
QC Report No: 6804
Contract No: 68-01-7167
Date Sample Received: 02/06/87

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: 02/09/87
Date Analyzed: 02/09/87
Conc/Dil Factor: 1 pH 6
Percent Moisture (Not Decanted): NA

CAS Number		ug/l	CAS Number		ug/l
74-87-3	Chloromethane	10U	78-87-5	1,2-Dichloropropane	5U
74-83-9	Bromomethane	10U	10061-02-6	Trans-1,3-Dichloropropene	5U
75-01-4	Vinyl Chloride	10U	79-01-6	Trichloroethene	5U
75-00-3	Chloroethane	10U	124-48-1	Dibromochloromethane	5U
75-09-2	Methylene Chloride	5U	79-00-5	1,1,2-Trichloroethane	5U
67-64-1	Acetone 27		71-43-2	Benzene	5U
75-15-0	Carbon Disulfide	5U	10061-01-5	Cis-1,3-Dichloropropene	5U
75-35-4	1,1-Dichloroethene	5U	110-75-8	2-Chloroethylvinylether	10U
75-34-3	1,1-Dichloroethane	5U	75-25-2	Bromoform	5U
156-60-5	Trans-1,2-Dichloroethene	5U	591-78-6	4-Methyl-2-Pentanone	10U
67-66-3	Chloroform	5U	108-10-1	2-Hexanone	10U
107-06-2	1,2-Dichloroethane	5U	127-18-4	Tetrachloroethene	5U
78-93-3	2-Butanone	10U	79-34-5	1,1,2,2-Tetrachloroethane	5U
71-55-6	1,1,1-Trichloroethane	5U	108-88-3	Toluene	5U
56-23-5	Carbon Tetrachloride	5U	108-90-7	Chlorobenzene	5U
108-05-4	Vinyl Acetate	10U	100-41-4	Ethylbenzene 9	
75-27-4	Bromodichloromethane	5U	100-42-5	Styrene	5U
				Total Xylenes 6	

004223

Data Reporting Qualifiers

Values If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration dilution action(This is not necessarily the instrument detection limit). The footnote should be read U compound was analyzed for but not detected. The number is the minimum attainable limit for the sample.

J Indicates an estimating value. This flag is used either when estimated a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/l and a concentration of 3 ug/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >=10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S spiked compounds

Form I

SOUTHWEST RESEARCH INSTITUTE

Sample No: FD 263
Case No: 6804

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 02/09/87

GPC Cleanup NO

Separatory Funnel Extraction--YES

Date Analyzed: 02/17/87
Conc/Dil Factor: 2.00
Percent Moisture (Decanted): NA

CAS Number		ug/l
108-95-2	Phenol	20U
111-44-4	bis(2-Chloroethyl)Ether	20U
95-57-8	2-Chlorophenol	20U
541-73-1	1,3-Dichlorobenzene	20U
106-46-7	1,4-Dichlorobenzene	20U
100-51-6	Benzyl Alcohol	20U
95-50-1	1,2-Dichlorobenzene	20U
95-48-7	2-Methylphenol	20U
39638-32-9	bis(2-Chloroisopropyl)Ether	20U
106-44-5	4-Methylphenol	20U
621-64-7	N-Nitroso-Di-n-Propylamine	20U
67-72-1	Hexachloroethane	20U
98-95-3	Nitrobenzene	20U
78-59-1	Isophorone	20U
88-75-5	2-Nitrophenol	20U
105-67-9	2,4-Dimethylphenol	20U
65-85-0	Benzoic Acid	100U
111-91-1	bis(2-Chloroethoxy)Methane	20U
120-83-2	2,4-Dichlorophenol	20U
120-82-1	1,2,4-Trichlorobenzene	20U
91-20-3	Naphthalene	1300 SD
106-47-8	4-Chloroaniline	20U
87-68-3	Hexachlorobutadiene	20U
59-50-7	4-Chloro-3-Methylphenol	20U
91-57-6	2-Methylnaphthalene	67
77-47-4	Hexachlorocyclopentadiene	20U
88-06-2	2,4,6-Trichlorophenol	20U
95-95-4	2,4,5-Trichlorophenol	100U
91-58-7	2-Chloronaphthalene	20U
88-74-4	2-Nitroaniline	100U
131-11-3	Dimethyl Phthalate	20U
208-96-8	Acenaphthylene	20U
99-09-2	3-Nitroaniline	100U

CAS Number			ug/l
83-32-9	Acenaphthene	370	
51-28-5	2,4-Dinitrophenol		100U
100-02-7	4-Nitrophenol		100U
132-64-9	Dibenzofuran	180	
121-14-2	2,4-Dinitrotoluene		20U
606-20-2	2,6-Dinitrotoluene		20U
84-66-2	Diethylphthalate		20U
7005-72-3	4-Chlorophenylphenylether		20U
86-73-7	Fluorene	110	
100-01-6	4-Nitroaniline		100U
534-52-1	4,6-Dinitro-2-Methylphenol		100U
86-30-6	N-Nitrosodiphenylamine(1)		20U
101-55-3	4-Bromophenylphenylether		20U
118-74-1	Hexachlorobenzene		20U
87-86-5	Pentachlorophenol		100U
85-01-8	Phenanthrene	290	
120-12-7	Anthracene	33	
84-74-2	Di-n-Butylphthalate		20U
206-44-0	Fluoranthene	78	
129-00-0	Pyrene	60	
85-68-7	Butylbenzylphthalate		20U
91-94-1	3,3'-Dichlorobenzidine		40U
56-55-3	Benzo(a)Anthracene	12 J	
117-81-7	bis(2-Ethylhexyl)Phthalate		20U
218-01-9	Chrysene	11 J	
117-84-0	Di-n-Octyl Phthalate		20U
205-99-2	Benzo(b)Fluoranthene	12 J	
207-08-9	Benzo(k)Fluoranthene		20U
50-32-8	Benzo(a)Pyrene		20U
193-39-5	Indeno(1,2,3-cd)Pyrene		20U
53-70-3	Dibenz(a,h)Anthracene		20U
191-24-2	Benzo(g,h,i)Perylene		20U

SD - VALUE FROM SEPARATE ANALYSIS AT A SECONDARY DILUTION (SEE CASE NARRATIVE)

(1) - Cannot be separated from diphenylamine

Form I

004224

SOUTHWEST RESEARCH INSTITUTE

Sample No: FD 263
Case No: 6804

3 170

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low
Date Extracted/Prepared: 02/10/87

GPC Cleanup NO

Separatory Funnel Extraction - YES

Date Analyzed: 02/11/87
Conc/Dil Factor: 2.00
Percent Moisture (Decanted): NA

CAS Number		ug/l
319-84-6	Alpha-BHC	0.10U
319-85-7	Beta-BHC	0.10U
319-86-8	Delta-BHC	0.10U
58-89-9	Gamma-BHC (Lindane)	0.10U
76-44-8	Heptachlor	0.10U
309-00-2	Aldrin	0.10U
1024-57-3	Heptachlor Epoxide	0.10U
959-98-8	Endosulfan I	0.10U
60-57-1	Dieldrin	0.20U
72-55-9	4,4'-DDE	0.20U
72-20-8	Endrin	0.20U
33213-65-9	Endosulfan II	0.20U
72-54-8	4,4'-DDD	0.20U
1031-07-8	Endosulfan Sulfate	0.20U
50-29-3	4,4'-DDT	0.20U
72-43-5	Methoxychlor	1.00U
53494-70-5	Endrin Ketone	0.20U
57-74-9	Chlordane	1.00U
8001-35-2	Toxaphene	2.00U
12674-11-2	Aroclor-1016	1.00U
11104-28-2	Aroclor-1221	1.00U
11141-16-5	Aroclor-1232	1.00U
53469-21-9	Aroclor-1242	1.00U
12672-29-6	Aroclor-1248	1.00U
11097-69-1	Aroclor-1254	2.00U
11096-82-5	Aroclor-1260	2.00U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(S) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 500 or W(s) V(t) 10000 V(i) 5

Form I

004225

SOUTHWEST RESEARCH INSTITUTE

Sample No: FD 263
Case No: 6804

3 171

Organics Analysis Data Sheet
(Page 4)
Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration ug/l
79-20-9	ACETIC ACID, METHYL ESTER	BNA	525	100 J
611-15-4	BENZENE, 1-ETHENYL-2-METHYL-	BNA	566	100 J
104-55-2	2-PROPENOL, 3-PHENYL-	BNA	637	20 J
	UNKNOWN	BNA	684	80 J
768-00-3	BENZENE, (1-METHYL-1-PROPENYL)-, (E)-	BNA	687	80 J
95-15-8	BENZO[B]THIOPHENE	BNA	733	100 J
60-32-2	HEXANOIC ACID, 6-AMINO-	BNA	784	40 J
52896-99-8	NAPHTHALENE, 1-METHYL-	BNA	849	100 J
83-32-9	1,1'-BIPHENYL	BNA	909	100 J
575-41-7	NAPHTHALENE,1,3-DIMETHYL-	BNA	947	60 J
2489-86-3	NAPHTHALENE,1-(2-PROPENYL)-	BNA	1103	30 J
3218-36-8	[1,1'-BIPHENYL]-4-CARBOXALDEHYDE	BNA	1116	30 J
86-74-8	9H-CARBAZOLE	BNA	1277	60 J
	UNKNOWN PAH	BNA	1339	30 J
	NO VOA COMPOUND FOUND			
132-65-0	DIBENZOTHIOPHENE	BNA	1221	40 J

004226

Form I, Part B