

Monitoring Well Sampling Event

at

Hercules, Inc.  
613 West 7<sup>th</sup> Street  
Hattiesburg, Ms

presented to:

Charles Jordan, Environmental Supervisor  
Hercules, Inc.  
Hattiesburg, MS

June 20 - 25, 1998  
1<sup>st</sup> Quarterly Sampling  
of 1998

by

  
\_\_\_\_\_  
Michael S. Bonner, Ph.D.  
BONNER ANALYTICAL TESTING COMPANY

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## 1.0 INTRODUCTION

At the request of Mr. Charlie Jordan, Environmental Supervisor with Hercules Inc. of Hattiesburg, MS, Bonner Analytical Testing Company sampled six monitoring wells which were previously installed at the site during December, 1997. This sampling event, which took place on June 24 – 25, 1998, was the second of four quarterly events directed by the Mississippi Department of Environmental Quality (MDEQ).

## 2.0 PURGING

Prior to purging, each well was gauged from north side top of casing (TOC) to assess depth to water and well depth. After well gauging was completed, a dedicated bailer was placed in the well and three to five well volumes were removed. pH, temperature, conductivity, and turbidity were recorded after each well volume. When two successive measurements of temperature and conductivity were found to be stable within 10%, purging was terminated and samples were collected.

Monitoring Well 1 (MW1) bailed dry after two well volumes (4.0 gallons). MW2 and MW3 required four well volumes to stabilize, while MW4, MW5, and MW6 required five well volumes. After five well volumes, field turbidity measurements of 421 and 448 NTU were reported for MW4 and MW5. Elevated turbidity was reported in these wells during the initial sample collection in December, 1997. Turbidity reading of 18.3 to 59 NTU were reported for the remaining wells.

## 3.0 SAMPLING & ANALYSIS

Samples were collected immediately following the purging process utilizing disposable Teflon bailers. MW1, MW2, MW3, and MW6 were tested for eight RCRA metals. MW4 and MW5 were tested for metals, volatiles,

and semivolatiles as directed by MDEQ. Analytical protocols were EPA 200 series and SW846-8260/8270 as outlined in the work plan. Additionally, one trip blank and one equipment blank was analyzed for each parameter as part of the QA/QC protocol.

Volatile and semivolatile organics were quantitated using the standard compound list. Those remaining compounds in the 8260/8270 comprehensive list were screened as Tentatively Identified Compounds (TIC). There was no attempt to address any other TICs. Two compounds, Acetophenone (51.6 ppb) and Dioxation (113.3 ppb) were tentatively identified. Due to the tentative nature of this identification, a generic identification was used to describe these analytes, as suggested by Hercules data review consultants. The Acetophenone TIC was identified as Aromatic Hydrocarbon compound and the Dioxation TIC was identified as an Organophosphorous compound.

#### 4.0 RESULTS

There were no significant hits for the eight listed RCRA metals. Barium was detected at levels ranging from 0.044 ppm to 0.363 ppm. No SW846/8260 volatile compounds were found. One aromatic hydrocarbon SW846/8270 compound was tentatively identified at 51.6 ppb. One Organophosphorous compound was tentatively identified at 113.3 ppb.

#### 5.0 DISCUSSION

Groundwater flow direction has not been determined at this time due to survey problems. Upon completion of surveys, groundwater flow direction will be completed.

APPENDIX I

BONNER ANALYTICAL TESTING COMPANY

2703 OAK GROVE ROAD  
HATTIESBURG, MS 39402  
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT46083-46084  
Collected By: Client

Sample Date/Time: See Below  
Date/Time Rec'd: 06-25-98 @ 0900

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2<sup>ND</sup> QUARTER, 1998  
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Analyte/Method	MW-1 06-25-98	MW-2 06-24-98	MDL	Date/Time/Analyst
Arsenic/200.15	ND	ND	0.003	07-13-98/1043/JMR
Barium/200.15	0.165	0.081	0.00005	07-13-98/1730/JMR
Cadmium/200.15	ND	ND	0.0003	07-13-98/1730/JMR
Chromium/200.15	ND	ND	0.0003	07-13-98/1730/JMR
Lead/200.15	ND	ND	0.003	07-13-98/1730/JMR
Mercury/245.1	ND	ND	0.0002	07-14-98/1535/JMR
Selenium/200.15	ND	ND	0.001	08-11-98/1005/GMR
Silver/272.1	ND	ND	0.002	07-21-98/1121/JMR

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Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

Certified by: \_\_\_\_\_

  
Michael S. Bonner, Ph.D.  
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

2703 OAK GROVE ROAD  
HATTIESBURG, MS 39402  
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT46085-46086  
Collected By: Client

Sample Date/Time: See Below  
Date/Time Rec'd: 06-25-98 @ 0900

-----  
2<sup>ND</sup> QUARTER, 1998  
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Analyte/Method	MW-3 06-24-98	MW-4 06-24-98	MDL	Date/Time/Analyst
Arsenic/200.15	ND	ND	0.003	07-13-98/1043/JMR
Barium/200.15	0.044	0.230	0.00005	07-13-98/1730/JMR
Cadmium/200.15	ND	ND	0.0003	07-13-98/1730/JMR
Chromium/200.15	ND	ND	0.0003	07-13-98/1730/JMR
Lead/200.15	ND	ND	0.003	07-13-98/1730/JMR
Mercury/245.1	ND	ND	0.0002	07-14-98/1535/JMR
Selenium/200.15	ND	ND	0.001	08-11-98/1005/GMR
Silver/272.1	ND	ND	0.002	07-21-98/1121/JMR

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Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

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2703 OAK GROVE ROAD  
HATTIESBURG, MS 39402  
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT46087-46088  
Collected By: Client

Sample Date/Time: See Below  
Date/Time Rec'd: 06-25-98 @ 0900

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2<sup>ND</sup> QUARTER, 1998  
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Analyte/Method	MW-5 06-24-98	MW-6 06-24-98	MDL	Date/Time/Analyst
Arsenic/200.15	0.011	ND	0.003	07-13-98/1043/JMR
Barium/200.15	0.363	0.120	0.00005	07-13-98/1730/JMR
Cadmium/200.15	ND	ND	0.0003	07-13-98/1730/JMR
Chromium/200.15	ND	ND	0.0003	07-13-98/1730/JMR
Lead/200.15	ND	ND	0.003	07-13-98/1730/JMR
Mercury/245.1	ND	ND	0.0002	07-14-98/1535/JMR
Selenium/200.15	ND	ND	0.001	08-11-98/1005/GMR
Silver/272.1	ND	ND	0.002	07-21-98/1121/JMR

-----  
Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

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2703 OAK GROVE ROAD  
HATTIESBURG, MS 39402  
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT46089-46090  
Collected By: Client

Sample Date/Time: See Below  
Date/Time Rec'd: 06-25-98 @ 0900

-----  
2<sup>ND</sup> QUARTER, 1998  
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Analyte/Method	Trip Blank 06-24-98	Equipment Blank 06-25-98	MDL	Date/Time/Analyst
Arsenic/200.15	ND	ND	0.003	07-13-98/1043/JMR
Barium/200.15	ND	ND	0.00005	07-13-98/1730/JMR
Cadmium/200.15	ND	ND	0.0003	07-13-98/1730/JMR
Chromium/200.15	ND	ND	0.0003	07-13-98/1730/JMR
Lead/200.15	ND	ND	0.003	07-13-98/1730/JMR
Mercury/245.1	ND	ND	0.0002	07-14-98/1535/JMR
Selenium/200.15	ND	ND	0.001	08-11-98/1005/GMR
Silver/272.1	ND	ND	0.002	07-21-98/1121/JMR

-----  
Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit

Certified by: 

Michael S. Bonner, Ph.D.  
BONNER ANALYTICAL TESTING COMPANY

**BONNER ANALYTICAL TESTING COMPANY**

2703 Oak Grove Road, Hattiesburg, MS 39402

Phone: (601) 268-7084 Fax: (601) 268-7084

CLIENT: HERCULES

DATE: 06-24-98

LOCATION: HATTIESBURG, MS

Monitoring Well 5	Time	pH - S.U.	Temp °C	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 18.3'	1015	6.24	24.8	1100	221	Foamy, yellow water
Depth to Water TOC 10.45'	1030	6.41	23.4	1100	659	
Well Depth BLS N/A	1045	6.45	22.8	1100	647	
Quantity per Volume 1.7 Gal.	1100	6.42	22.9	1100	521	
LNAPL - No DNAPL - No	1115	6.47	22.8	1050	448	

Monitoring Well 4	Time	pH - S.U.	Temp °C	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 18.95'	1145	6.04	25.4	600	335	Chalky, white colored water
Depth to Water TOC 10.9'	1200	6.10	25.4	300	110	
Well Depth BLS N/A	1215	6.05	24.4	550	330	
Quantity per Volume 1.36 Gal	1230	6.11	24.7	550	299	
LNAPL - No DNAPL - No	1245	6.21	24.8	550	421	

Monitoring Well 2	Time	pH - S.U.	Temp °C	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 20.45'	1300	5.62	24.4	138	9.2	Readings were consistent
Depth to Water TOC 7.98'	1315	5.91	22.5	126	78	so only needed 4 well volumes
Well Depth BLS N/A	1330	5.97	23.8	123	62.5	
Quantity per Volume 2.12	1345	6.13	22.1	130	59	
LNAPL - No DNAPL - No						

\* Turbidity exceeds 5 NTU; Remove 5 additional well volumes  
 Well Volume = 0.17 x Water column in Feet  
 LNAPL - Light Non Aqueous Phase Liquid  
 DNAPL - Dense Non Aqueous Phase Liquid  
 TOC - Top o Casing (North Side)  
 BLS - Below Land Surface

**BONNER ANALYTICAL TESTING COMPANY**

2703 Oak Grove Road, Hattiesburg, MS 39402

Phone: (601) 268-7084 Fax: (601) 268-7084

CLIENT: HERCULES

DATE: 06-24-98

LOCATION: HATTIESBURG, MS

Monitoring Well 3	Time	pH - S.U.	Temp °C	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 18.95'	1400	5.90	24.4	100	27.7	Readings were consistent
Depth to Water TOC 8.55'	1415	5.55	24.4	80	37.6	so we only needed 4 well volumes
Well Depth BLS N/A	1430	5.51	24.4	50	26.6	
Quantity per Volume 1.77 Gal.	1445	5.46	24.4	90	18.3	
LNAPL - No DNAPL - No						

Monitoring Well 6	Time	pH - S.U.	Temp °C	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC 23.65'	1500	6.54	27.4	120	7.6	
Depth to Water TOC 9.90'	1515	6.24	26.5	190	102.5	
Well Depth BLS N/A	1530	6.22	26.6	195	75.9	
Quantity per Volume 2.34 Gal	1545	6.18	26.6	190	46.9	
LNAPL - No DNAPL - No	1600	6.31	26.6	190	24.0	

Monitoring Well 1	Time	pH - S.U.	Temp °C	Cond. umhos/cm	Turbidity NTU	Remarks
Total Depth TOC	1615	6.17	24.6	120	606	Chalky white water
Depth to Water TOC	1630	6.09	23.3	132	536	Bailed well dry at 4 gallons
Well Depth BLS N/A	1645					
Quantity per Volume						
LNAPL - DNAPL -						

\* Turbidity exceeds 5 NTU; Remove 5 additional well volumes  
 Well Volume = 0.17 x Water column in Feet  
 LNAPL - Light Non Aqueous Phase Liquid  
 DNAPL - Dense Non Aqueous Phase Liquid  
 TOC - Top o Casing (North Side)  
 BLS - Below Land Surface

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules  
 Location: MW-4  
 File #: BT46086

Collected: 6/24/98 12:15 BATCO  
 Extracted: 6/25/98 8:30 JMR  
 Analyzed: 6/28/98 14:04 JMR  
 Date \_\_\_\_\_ Time \_\_\_\_\_ Analyst \_\_\_\_\_

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL ug/L (ppb)	BT46086				BLANK				Matrix Spike				Matrix Spike Duplicate			
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/L in the extract	Spike		Detected Amount ng/L in the extract	Spike					
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery				
Phenol	108-95-2	5.2	ND															
Bis(2-chloroethyl)ether	111-44-4	6.9	ND															
2-Chlorophenol	95-57-8	5.7	ND															
1,3-Dichlorobenzene	541-73-1	8.3	ND															
1,4-Dichlorobenzene	108-46-7	6.1	ND															
Benzyl Alcohol	100-51-6	14.8	ND															
1,2-Dichlorobenzene	95-50-1	6.0	ND															
2-Methylphenol	95-48-7	5.8	ND															
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND															
4-Methylphenol	108-44-5	8.7	ND															
Hexachloroethane	67-72-1	8.0	ND															
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND															
Nitrobenzene	98-95-3	8.2	ND															
Isophorone	78-59-1	9.2	ND															
2,4-Dimethylphenol	105-87-9	6.0	ND															
2-Nitrophenol	88-75-5	9.1	ND															
Benzoic Acid	65-85-0	22.3	ND															
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND															
2,4-Dichlorophenol	120-83-2	5.2	ND															
1,2,4-Trichlorobenzene	120-82-1	9.4	ND															
Naphthalene	91-20-3	8.5	ND															
4-Chloroaniline	106-47-8	8.5	ND															
Hexachlorobutadiene	87-68-3	9.4	ND															
4-Chloro-3-methylphenol	59-50-7	7.7	ND															
2-Methylnaphthalene	91-57-8	7.5	ND															
Hexachlorocyclopentadiene	77-47-4	8.6	ND															
2,4,6-Trichlorophenol	88-06-2	9.1	ND															
2,4,5-Trichlorophenol	95-95-4	7.1	ND															
2-Chloronaphthalene	91-58-7	5.7	ND															
2-Nitroaniline	88-74-4	12.0	ND															
Dimethylphthalate	131-11-3	8.2	ND															
Acenaphthylene	208-96-8	9.0	ND															
2,6-Dinitrotoluene	608-20-2	9.2	ND															
3-Nitroaniline	99-09-2	16.0	ND															
Acenaphthene	83-32-9	8.3	ND															
2,4-Dinitrophenol	51-28-5	14.2	ND															
4-Nitrophenol	100-02-7	8.6	ND															
Dibenzofuran	132-64-9	8.4	ND															
2,4-Dinitrotoluene	121-14-2	8.3	ND															
Diethylphthalate	84-86-2	9.9	ND															
Fluorene	86-73-7	9.8	ND															
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND															
4-Nitroaniline	100-01-6	8.7	ND															
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND															

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules      Collection: 6/24/98      12:15      BATCO  
 Location: MW-4      Extraction: 6/25/98      8:30      JMR  
 File #: BT46088      Analysis: 6/28/98      14:04      JMR  
 Date      Time      Analyst

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL (ug/L (ppb))	BT46088			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L (ppb))	Spike Amount (ug)	Spike % Recovery	Detected Amount (ug/L (ppb))	Spike Amount (ug)	Spike % Recovery	Detected Amount (ng/ul in the extract)	Spike Amount (ug)	Spike % Recovery	Detected Amount (ng/ul in the extract)	Spike Amount (ug)	Spike % Recovery
N-Nitrosodiphenylamine	86-30-8	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-88-5	12.5	ND			ND			186.46	150.00	124.31	193.70	150.00	129.13
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			101.73	100.00	101.73	100.60	100.00	100.60
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzofluoranthene	56-55-3	7.7	ND			ND			ND			ND		
3,3-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzofluoranthene	205-99-2	8.8	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzofluoranthene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzofluoranthene	53-70-3	9.0	ND			ND			ND			ND		
Benzofluoranthene	191-24-2	10.0	ND			ND			ND			ND		
<b>Surrogate Compounds</b>														
2-Fluorophenol			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
Phenol-d5			141.62	200.00	70.81	72.10	200.00	36.05	74.88	200.00	37.44	78.15	200.00	39.08
Nitrobenzene-d5			72.49	200.00	36.25	48.58	200.00	24.29	50.36	200.00	25.18	51.24	200.00	25.62
2-Fluorobiphenyl			128.24	100.00	128.24	69.95	100.00	69.95	66.90	100.00	66.90	69.42	100.00	69.42
2,4,6-Tribromophenol			188.20	100.00	168.20	69.13	100.00	89.13	67.11	100.00	67.11	66.83	100.00	66.83
Terphenyl-d14			241.27	200.00	120.64	210.83	200.00	105.42	192.37	200.00	96.19	197.79	200.00	98.90
			193.89	200.00	193.89	103.87	100.00	103.87	76.69	100.00	76.69	77.00	100.00	77.00

\* Results Outside of QA Limits due to matrix interference

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company



BONNER ANALYTICAL TESTING COMPANY  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules  
 Location: MW-5  
 File #: BT46087

Collected: 6/24/98 10:30 BATCO  
 Extracted: 6/25/98 8:30 JMR  
 Analyzed: 6/28/98 14:58 JMR  
 Date Time Analyst

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL ug/L (ppb)	BT46087			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ng/ul in the extract	Amount ug	% Recovery	Detected Amount ng/ul in the extract	Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			122.13	150.00	81.42	127.81	150.00	85.21
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND	150.00	73.17	ND	150.00	79.55
2-Chlorophenol	95-57-8	5.7	ND			109.75			ND	150.00	73.17	119.32	150.00	79.55
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND	100.00	66.56	ND	100.00	73.80
1,4-Dichlorobenzene	108-46-7	6.1	ND			66.56			ND	100.00	66.56	73.80	100.00	73.80
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND	100.00	66.56	ND	100.00	73.80
1,2-Dichlorobenzene	95-50-1	8.0	ND			ND			ND	100.00	66.56	ND	100.00	73.80
2-Methylphenol	95-48-7	5.6	ND			ND			ND	100.00	66.56	ND	100.00	73.80
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND	100.00	66.56	ND	100.00	73.80
4-Methylphenol	108-44-5	8.7	ND			ND			ND	100.00	66.56	ND	100.00	73.80
Hexachloroethane	67-72-1	8.0	ND			ND			ND	100.00	66.56	ND	100.00	73.80
N-Nitrosodi-N-propylamine	621-64-7	9.7	ND			93.77			93.77	100.00	93.77	100.73	100.00	100.73
Nitrobenzene	98-95-3	8.2	ND			ND			ND	100.00	93.77	ND	100.00	100.73
Isophorone	78-59-1	9.2	ND			ND			ND	100.00	93.77	ND	100.00	100.73
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND	100.00	93.77	ND	100.00	100.73
2-Nitrophenol	88-75-5	9.1	ND			ND			ND	100.00	93.77	ND	100.00	100.73
Benzoic Acid	65-85-0	22.3	ND			ND			ND	100.00	93.77	ND	100.00	100.73
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND	100.00	93.77	ND	100.00	100.73
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			ND	100.00	93.77	ND	100.00	100.73
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			82.02			82.02	100.00	82.02	86.80	100.00	86.80
Naphthalene	91-20-3	8.5	ND			ND			ND	100.00	82.02	ND	100.00	86.80
4-Chloroaniline	108-47-8	8.5	ND			ND			ND	100.00	82.02	ND	100.00	86.80
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND	100.00	82.02	ND	100.00	86.80
4-Chloro-3-methylphenol	58-50-7	7.7	ND			170.70			170.70	150.00	113.80	170.82	150.00	113.88
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND	150.00	113.80	ND	150.00	113.88
Hexachlorocyclopentadiene	77-47-4	8.8	ND			ND			ND	150.00	113.80	ND	150.00	113.88
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND	150.00	113.80	ND	150.00	113.88
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND	150.00	113.80	ND	150.00	113.88
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND	150.00	113.80	ND	150.00	113.88
2-Nitroaniline	88-74-4	12.0	ND			ND			ND	150.00	113.80	ND	150.00	113.88
Dimethylphthalate	131-11-3	8.2	ND			ND			ND	150.00	113.80	ND	150.00	113.88
Acenaphthylene	208-96-8	9.0	ND			ND			ND	150.00	113.80	ND	150.00	113.88
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND	150.00	113.80	ND	150.00	113.88
3-Nitroaniline	99-09-2	16.0	ND			ND			ND	150.00	113.80	ND	150.00	113.88
Acenaphthene	83-32-9	6.3	ND			111.47			111.47	100.00	111.47	114.86	100.00	114.86
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			ND	100.00	111.47	ND	100.00	114.86
4-Nitrophenol	100-02-7	8.8	ND			224.77			224.77	150.00	149.85	227.43	150.00	151.62
Dibenzofuran	132-64-9	8.4	ND			ND			ND	150.00	149.85	ND	150.00	151.62
2,4-Dinitrotoluene	121-14-2	8.3	ND			115.75			115.75	100.00	115.75	118.16	100.00	118.16
Diethylphthalate	84-68-2	9.9	ND			ND			ND	100.00	115.75	ND	100.00	118.16
Fluorene	86-73-7	9.8	ND			ND			ND	100.00	115.75	ND	100.00	118.16
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND	100.00	115.75	ND	100.00	118.16
4-Nitroaniline	100-01-6	8.7	ND			ND			ND	100.00	115.75	ND	100.00	118.16
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND	100.00	115.75	ND	100.00	118.16

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules Location: MW-5 Collection: 6/24/98 10:30 BATCO Sample Type: Water  
 File #: BT46087 Extraction: 6/25/98 8:30 JMR Extraction Method: 3510b  
 Analysis: 6/28/98 14:58 JMR Analysis Method: 8270  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_ Analyst: \_\_\_\_\_

Compound Name	CAS Number	MDL ug/L (ppb)	BT46087			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spiked Amount ug	% Recovery	Detected Amount ug/L (ppb)	Spiked Amount ug	% Recovery	Detected Amount ng/L in the extract	Spiked Amount ug	% Recovery	Detected Amount ng/L in the extract	Spiked Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			186.46	150.00	124.31	193.70	150.00	129.13
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	208-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			101.73	100.00	101.73	100.60	100.00	100.60
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzolanthracene	56-55-3	7.7	ND			ND			ND			ND		
3,3-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
But(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzol(b)fluoranthene	205-99-2	8.8	ND			ND			ND			ND		
Benzol(k)fluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzo(a)pyrene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzof(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzo(g,h,i)perylene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			182.38	200.00	91.19	72.10	200.00	36.05	74.88	200.00	37.44	78.15	200.00	39.08
Phenol-d5			89.25	200.00	44.83	48.58	200.00	24.29	50.36	200.00	25.18	51.24	200.00	25.62
Nitrobenzene-d5			109.88	100.00	109.88	69.95	100.00	69.95	66.90	100.00	66.90	69.42	100.00	69.42
2-Fluorobiphenyl			87.67	100.00	87.67	69.13	100.00	69.13	87.11	100.00	87.11	69.83	100.00	69.83
2,4,6-Tribromophenol			202.15	200.00	101.08	210.63	200.00	105.42	192.37	200.00	96.19	197.79	200.00	98.90
Terphenyl-d14			99.71	100.00	99.71	103.87	100.00	103.87	76.89	100.00	76.89	77.00	100.00	77.00

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company





BONNER ANALYTICAL TESTING COMPANY  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: Hercules  
 Location: MMV #4  
 File #: BT46086

Collected: 06/24/98 12:15 BATCO  
 Received: 06/26/98 8:00 CMB  
 Analyzed: 07/02/98 14:35 CRR  
 Date Time Analyst

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL (ug/L (ppb))	SAMPLE			BLANK			MATRIX SPIKE (BT46087)			MATRIX SPIKE DUP (BT46087)		
			Detected Amount (ug/L (ppb))	Amount (ug)	Spike % Recovery	Detected Amount (ug/L (ppb))	Amount (ug)	Spike % Recovery	Detected Amount (ug/L (ppb))	Amount (ng)	Spike % Recovery	Detected Amount (ug/L (ppb))	Amount (ng)	Spike % Recovery
1,1-Dichloroethane	75-35-4	2.00	ND			ND			40.0	250.0	80.0	39.6	250.0	79.2
Benzene	71-43-2	2.00	ND			ND			43.9	250.0	87.8	44.2	250.0	88.4
Trichloroethane	79-01-6	2.50	ND			ND			45.5	250.0	91.0	45.3	250.0	90.6
Toluene	108-88-3	2.50	ND			ND			46.2	250.0	92.4	46.8	250.0	93.6
Chlorobenzene	108-90-7	2.00	ND			ND			50.5	250.0	101.0	51.4	250.0	102.8
Bromobenzene	108-86-1	2.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	2.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	2.00	ND			ND			ND			ND		
Bromoflorn	75-25-2	2.50	ND			ND			ND			ND		
Bromomethane	74-83-9	1.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	1.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	2.50	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	3.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND			ND		
Chloroethane	75-00-3	3.00	ND			ND			ND			ND		
Chloroform	66-67-3	2.00	ND			ND			ND			ND		
Chloromethane	74-87-3	3.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	2.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND			ND			ND		
1,2-Dibromoethane	106-93-4	2.00	ND			ND			ND			ND		
Dibromomethane	74-95-3	2.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND			ND		
1,1-Dichloroethane	107-06-2	2.00	ND			ND			ND			ND		
cis-1,2-Dichloroethane	156-59-2	2.50	ND			ND			ND			ND		
trans-1,2-Dichloroethane	156-60-5	2.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	2.50	ND			ND			ND			ND		
2,2-Dichloropropane	142-28-9	2.50	ND			ND			ND			ND		
1,1-Dichloropropene	594-20-7	2.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	563-56-6	2.00	ND			ND			ND			ND		
t-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND			ND		
Ethyl benzene	10061-02-6	2.00	ND			ND			ND			ND		
Hexachlorobutadiene	100-41-4	2.00	ND			ND			ND			ND		
Isopropylbenzene	87-68-3	2.00	ND			ND			ND			ND		
p-Isopropyltoluene	98-82-8	2.50	3.05			ND			ND			ND		
Methylene chloride	99-87-6	2.00	ND			ND			ND			ND		
Naphthalene	75-09-2	2.50	ND			ND			ND			ND		
n-Propylbenzene	91-20-3	3.00	ND			ND			ND			ND		
	103-65-1	1.50	ND			ND			ND			ND		

BONNER ANALYTICAL TESTING COMPANY  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: Hercules  
 Location: MOV #5  
 File #: BT76087

Collected: 06/24/98 10:30 BATCO  
 Received: 06/26/98 8:00 CMB  
 Analyzed: 07/02/98 17:05 CRR  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_ Analyst

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE				BLANK				MATRIX SPIKE (BT76087)				MATRIX SPIKE DUP (BT76087)			
			Detected		Spike		Detected		Spike		Detected		Spike		Detected		Spike	
			Amount ug/L (ppb)	Amount ug	% Recovery	Amount ug/L (ppb)	Amount ug	% Recovery	Amount ug/L (ppb)	Amount ng	% Recovery	Amount ug/L (ppb)	Amount ng	% Recovery	Amount ug/L (ppb)	Amount ng	% Recovery	
1,1-Dichloroethene	75-35-4	2.00	ND			ND			ND			40.0	250.0	80.0	39.6	250.0	79.2	
Benzene	71-43-2	2.00	ND			ND			ND			43.9	250.0	87.8	44.2	250.0	88.4	
Trichloroethene	79-01-6	2.50	ND			ND			ND			45.5	250.0	91.0	45.3	250.0	90.6	
Toluene	108-88-3	2.50	ND			ND			ND			46.2	250.0	92.4	46.8	250.0	93.6	
Chlorobenzene	108-90-7	2.00	ND			ND			ND			50.5	250.0	101.0	51.4	250.0	102.8	
Bromobenzene	108-86-1	2.50	ND			ND			ND									
Bromochloromethane	74-97-5	2.00	ND			ND			ND									
Bromodichloromethane	75-27-4	2.00	ND			ND			ND									
Bromomethane	75-25-2	2.50	ND			ND			ND									
n-Butylbenzene	74-83-9	1.00	ND			ND			ND									
sec-Butylbenzene	104-51-8	1.50	ND			ND			ND									
tert-Butylbenzene	135-98-8	2.50	ND			ND			ND									
Carbon Tetrachloride	98-06-6	3.00	ND			ND			ND									
Chloroethane	56-23-5	2.00	ND			ND			ND									
Chloroform	75-00-3	3.00	ND			ND			ND									
Chloromethane	66-67-3	3.00	ND			ND			ND									
2-Chlorotoluene	74-87-3	3.00	ND			ND			ND									
4-Chlorotoluene	95-49-8	3.00	ND			ND			ND									
Dibromochloromethane	106-43-4	1.50	ND			ND			ND									
1,2-Dibromo-3-chloropropane	124-48-1	2.00	ND			ND			ND									
1,2-Dibromoethane	96-12-8	4.00	ND			ND			ND									
Dibromomethane	106-93-4	2.00	ND			ND			ND									
1,2-Dichlorobenzene	74-95-3	2.50	ND			ND			ND									
1,3-Dichlorobenzene	95-50-1	2.50	ND			ND			ND									
1,4-Dichlorobenzene	541-73-1	2.00	ND			ND			ND									
Dichlorodifluoromethane	106-46-7	2.00	ND			ND			ND									
1,1-Dichloroethane	75-71-8	2.00	ND			ND			ND									
1,2-Dichloroethane	75-34-3	2.00	ND			ND			ND									
cis-1,2-Dichloroethene	107-06-2	2.00	ND			ND			ND									
trans-1,2-Dichloroethene	156-59-2	2.50	ND			ND			ND									
1,2-Dichloropropane	156-60-5	2.50	ND			ND			ND									
1,3-Dichloropropane	78-87-5	2.50	ND			ND			ND									
2,2-Dichloropropane	142-28-9	2.50	ND			ND			ND									
1,1-Dichloropropene	594-20-7	2.00	ND			ND			ND									
c-1,3-Dichloropropene	563-58-6	2.00	ND			ND			ND									
t-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND									
Ethyl benzene	10061-02-6	2.00	ND			ND			ND									
Hexachlorobutadiene	100-41-4	2.00	ND			ND			ND									
Isopropylbenzene	87-68-3	2.00	ND			ND			ND									
p-Isopropyltoluene	98-82-8	2.50	ND			ND			ND									
Methylene chloride	99-87-6	2.00	ND			ND			ND									
Naphthalene	75-09-2	2.50	ND			ND			ND									
n-Propylbenzene	91-20-3	3.00	ND			ND			ND									
	103-65-1	1.50	ND			ND			ND									

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**VOLATILE ORGANICS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: MXV #5  
 File #: BT46087

Collected: 06/24/98 10:30 BATCO  
 Received: 06/26/98 8:00 GMB  
 Analysis: 07/02/98 17:05 CRB  
 Date Time Analyst

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spiked Amount ug	Spike % Recovery	Detected Amount ug/L (ppb)	Spiked Amount ug	Spike % Recovery	Detected Amount ug/L (ppb)	Spiked Amount ng	Spike % Recovery	Detected Amount ug/L (ppb)	Spiked Amount ng	Spike % Recovery
Syrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethane	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.50	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.00	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
Dibromofluoromethane	1868-53-7		48.5	250.0	97.0	49.6	250.0	99.2	45.9	250.0	91.8	47.8	250.0	95.6
Toluene-d8	2037-26-5		50.2	250.0	100.4	51.0	250.0	102.0	48.7	250.0	97.4	48.9	250.0	97.8
4-Bromofluorobenzene	460-00-4		46.8	250.0	93.6	48.0	250.0	96.0	49.0	250.0	98.0	47.2	250.0	94.4

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules      Collected: 6/24/98      NA      BATCO      Sample Type: Water  
 Location: TRIP BLANK      Extracted: 6/25/98      11:15      JMR      Extraction Method: 3510b  
 File #: 8146089      Analyzed: 6/28/98      12:50      JMR      Analysis Method: 8270  
 Date      Time      Analyst

Compound Name	CAS Number	MDL (pgbl)	8146089			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L)	Amount (ug)	Spike Recovery (%)	Detected Amount (ug/L)	Amount (ug)	% Recovery	Detected Amount (ng/ul in the extract)	Amount (ug)	% Recovery	Detected Amount (ng/ul in the extract)	Amount (ug)	% Recovery
Phenol	108-95-2	5.2	ND			ND			122.13	150.00	81.42	127.81	150.00	85.21
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND	150.00		ND		
2-Chlorophenol	95-57-8	5.7	ND			109.75			109.75	150.00	73.17	119.32	150.00	79.55
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND	100.00	66.56	73.80	100.00	73.80
1,4-Dichlorobenzene	106-46-7	6.1	ND			66.56			66.56	100.00	66.56	73.80	100.00	73.80
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			93.77			93.77	100.00	93.77	100.73	100.00	100.73
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			82.02			82.02	100.00	82.02	86.80	100.00	86.80
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			170.70			170.70	150.00	113.80	170.82	150.00	113.88
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND		
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			ND			ND			ND		
2,4-Dichlorophenol	51-28-5	14.2	ND			111.47			111.47	100.00	111.47	114.86	100.00	114.86
4-Nitrophenol	100-02-7	8.6	ND			ND			ND			ND		
Dibenzofuran	132-64-9	8.4	ND			224.77			224.77	150.00	149.85	227.43	150.00	151.62
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			ND			ND		
Diethylphthalate	84-86-2	9.9	ND			115.75			115.75	100.00	115.75	118.16	100.00	118.16
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-8	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules      Collection: 6/24/98      NA      BATCO  
 Location: TRIP BLANK      Extraction: 6/25/98      11:15      JMR  
 File #: BT46089      Analysis: 6/28/98      12:50      JMR  
 Date      Time      Analyst

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL ug/L (ppb)	BT46089			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike Amount ug	% Recovery	Detected Amount ug/L (ppb)	Spike Amount ug	% Recovery	Detected Amount ng/ul in the extract	Spike Amount ug	% Recovery	Detected Amount ng/ul in the extract	Spike Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenylphenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			186.46	150.00	124.31	193.70	150.00	129.13
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			ND			ND		
Pyrene	129-00-0	7.9	ND			ND			101.73	100.00	101.73	100.60	100.00	100.60
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzofluoranthene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzofluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Indenol(1,2,3-c,d)pyrene	50-32-8	5.9	ND			ND			ND			ND		
Benzofluoranthene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzofluoranthene	53-70-3	9.0	ND			ND			ND			ND		
Benzofluoranthene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
2-Fluorophenol			78.12	200.00	39.06	72.10	200.00	36.05	74.88	200.00	37.44	78.15	200.00	39.08
Phenol-d5			54.96	200.00	27.48	48.58	200.00	24.29	50.36	200.00	25.18	51.24	200.00	25.62
Nitrobenzene-d5			50.67	100.00	50.67	69.95	100.00	69.95	66.90	100.00	66.90	69.42	100.00	69.42
2-Fluorobiphenyl			65.57	100.00	65.57	69.13	100.00	69.13	67.11	100.00	67.11	69.83	100.00	69.83
2,4,6-Tribromophenol			172.03	200.00	86.02	210.83	200.00	105.42	192.37	200.00	96.19	197.79	200.00	98.90
Terphenyl-d14			98.42	100.00	98.42	103.87	100.00	103.87	76.69	100.00	76.69	77.00	100.00	77.00

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules Location: EQUIPMENT BLANK Collected: 6/25/98 8:00AM BATCO  
 File #: BT46090 Extracted: 6/25/98 11:15 JMR  
 Analyzed: 6/26/98 22:49 JMR  
 Date \_\_\_\_\_ Time \_\_\_\_\_ Analyst \_\_\_\_\_  
 Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL (ppb)	BT46090			BLANK			Matrix Spike		Matrix Spike Duplicate			
			Detected Amount (ug/L)	Amount (ug)	Spike % Recovery	Detected Amount (ug/L)	Amount (ug)	Spike % Recovery	Detected Amount (ng/L in the extract)	Amount (ug)	Spike % Recovery	Detected Amount (ng/L in the extract)	Amount (ug)	Spike % Recovery
Phenol	108-95-2	5.2	ND			ND			122.13	150.00	81.42	127.81	150.00	85.21
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			109.75	150.00	73.17	119.32	150.00	79.55
2-Chlorophenol	95-57-8	5.7	ND			ND			66.56	100.00	66.56	73.80	100.00	73.80
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			ND			ND		
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			93.77	100.00	93.77	100.73	100.00	100.73
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			82.02	100.00	82.02	86.80	100.00	86.80
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			ND			ND		
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			170.70	150.00	113.80	170.82	150.00	113.88
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND		
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			ND			111.47	100.00	111.47	114.86	100.00	114.86
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			ND			ND		
4-Nitrophenol	100-02-7	8.6	ND			ND			224.77	150.00	149.85	227.43	150.00	151.62
Dibenzofuran	132-84-9	8.4	ND			ND			ND			ND		
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			115.75	100.00	115.75	118.16	100.00	118.16
Diethylphthalate	84-86-2	9.9	ND			ND			ND			ND		
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules  
 Location: EQUIPMENT BLANK  
 File #: BT46090

Collection: 6/25/98 8:00AM BATCO  
 Extraction: 6/25/98 11:15 JMR  
 Analysis: 6/26/98 22:49 JMR  
 Date \_\_\_\_\_ Time \_\_\_\_\_ Analyst \_\_\_\_\_

Sample Type: Water  
 Extraction Method: 35100  
 Analysis Method: 8270

Compound Name	CAS Number	MDL (ppb)	BT46090			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L)	Spiked Amount (ug)	% Recovery	Detected Amount (ug/L)	Spiked Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spiked Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spiked Amount (ug)	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			186.46	150.00	124.31	193.70	150.00	129.13
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	7.9	ND			ND			ND			ND		
Pyrene	129-00-0	5.7	ND			ND			ND			ND		
Butylbenzylphthalate	85-68-7	9.9	ND			ND			101.73	100.00	101.73	100.60	100.00	100.60
Benzofluoranthene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzofluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzofluoranthene	50-32-8	5.9	ND			ND			ND			ND		
Indenol(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzofluoranthene	53-70-3	9.0	ND			ND			ND			ND		
Benzofluoranthene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			51.65	200.00	25.83	72.10	200.00	36.05	74.88	200.00	37.44	78.15	200.00	39.08
Phenol-d5			37.39	200.00	18.70	48.58	200.00	24.29	50.36	200.00	25.18	51.24	200.00	25.62
Nitrobenzene-d5			35.75	100.00	35.75	69.95	100.00	69.95	66.90	100.00	66.90	69.42	100.00	69.42
2-Fluorobiphenyl			44.42	100.00	44.42	69.13	100.00	69.13	67.11	100.00	67.11	69.83	100.00	69.83
2,4,6-Tribromophenol			135.59	200.00	67.80	210.83	200.00	105.42	192.37	200.00	96.19	197.79	200.00	98.90
Terphenyl-d14			112.18	200.00	112.18	103.87	100.00	103.87	76.69	100.00	76.69	77.00	100.00	77.00

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company



**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**VOLATILE ORGANICS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: Trip Blank  
 File #: BT46089

Collected: 06/24/98  
 Received: 06/26/98  
 Analyzed: 07/03/98  
 Date

Time: 8:00  
 18:45

Analyst: BATCO  
 CMB  
 CR

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL (ug/L (ppb))	SAMPLE			BLANK			MATRIX SPIKE (BT46087)			MATRIX SPIKE DUP (BT46087)							
			Detected Amount (ug/L (ppb))	Amount (ug)	Spike % Recovery	Detected Amount (ug/L (ppb))	Amount (ug)	Spike % Recovery	Detected Amount (ug/L (ppb))	Amount (ng)	Spike % Recovery	Detected Amount (ug/L (ppb))	Amount (ng)	Spike % Recovery					
1,1-Dichloroethane	75-35-4	2.00	ND			ND			ND			ND							
Benzene	71-43-2	2.00	ND			ND			ND			ND			250.0	80.0	39.6	250.0	79.2
Trichloroethane	79-01-6	2.50	ND			ND			ND			ND			250.0	87.8	44.2	250.0	88.4
Toluene	108-88-3	2.50	ND			ND			ND			ND			250.0	91.0	45.3	250.0	90.6
Chlorobenzene	108-90-7	2.00	ND			ND			ND			ND			250.0	92.4	46.8	250.0	93.6
Bromobenzene	108-86-1	2.50	ND			ND			ND			ND			250.0	101.0	51.4	250.0	102.8
Bromochloromethane	74-97-5	2.00	ND			ND			ND			ND							
Bromodichloromethane	75-27-4	2.00	ND			ND			ND			ND							
Bromoform	75-25-2	2.50	ND			ND			ND			ND							
Bromomethane	74-83-9	1.00	ND			ND			ND			ND							
n-Butylbenzene	104-51-8	1.50	ND			ND			ND			ND							
sec-Butylbenzene	135-98-8	2.50	ND			ND			ND			ND							
tert-Butylbenzene	98-06-6	3.00	ND			ND			ND			ND							
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND			ND							
Chloroethane	75-00-3	3.00	ND			ND			ND			ND							
Chloroform	66-67-3	2.00	ND			ND			ND			ND							
Chloromethane	74-87-3	3.00	ND			ND			ND			ND							
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND			ND							
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND			ND							
Dibromochloromethane	124-48-1	2.00	ND			ND			ND			ND							
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND			ND			ND							
1,2-Dibromoethane	106-93-4	2.00	ND			ND			ND			ND							
Dibromomethane	74-95-3	2.50	ND			ND			ND			ND							
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND			ND			ND							
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND			ND							
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND			ND							
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND			ND							
1,1-Dichloroethane	75-34-3	2.00	ND			ND			ND			ND							
cis-1,2-Dichloroethane	107-06-2	2.00	ND			ND			ND			ND							
trans-1,2-Dichloroethane	156-59-2	2.50	ND			ND			ND			ND							
1,2-Dichloropropane	156-60-5	2.50	ND			ND			ND			ND							
1,3-Dichloropropane	78-87-5	2.50	ND			ND			ND			ND							
2,2-Dichloropropane	142-28-9	2.50	ND			ND			ND			ND							
1,1-Dichloropropene	594-20-7	2.00	ND			ND			ND			ND							
c-1,3-Dichloropropene	563-58-6	2.00	ND			ND			ND			ND							
t-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND			ND							
Ethyl benzene	10061-02-6	2.00	ND			ND			ND			ND							
Hexachlorobutadiene	100-41-4	2.00	ND			ND			ND			ND							
Isopropylbenzene	87-68-3	2.50	ND			ND			ND			ND							
p-Isopropyltoluene	98-82-8	2.50	ND			ND			ND			ND							
Methylene chloride	99-87-6	2.00	ND			ND			ND			ND							
n-Propylbenzene	75-09-2	2.50	ND			ND			ND			ND							
	91-20-3	3.00	ND			ND			ND			ND							
	103-65-1	1.50	ND			ND			ND			ND							

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**VOLATILE ORGANICS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: Trip Blank  
 File #: BT46089

Collected: 06/24/98  
 Received: 06/26/98  
 Analysis: 07/03/98  
 Date: 18:45  
 Time: BATCO  
 Analyst: CMB  
 CRR

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
<b>Surrogate Compounds</b>			<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>
Dibromofluoromethane	1868-53-7		50.2	250.0	100.4	50.3	250.0	100.6	45.9	250.0	91.8	47.8	250.0	95.6
Toluene-d8	2037-26-5		49.6	250.0	99.2	52.4	250.0	104.8	48.7	250.0	97.4	48.9	250.0	97.8
4-Bromofluorobenzene	460-00-4		49.6	250.0	99.2	51.7	250.0	103.4	49.0	250.0	98.0	47.2	250.0	94.4

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company



**PUNNEK ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**VOLATILE ORGANICS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: Field Blank  
 File #: BT46090

Collected: 06/25/98 8:00 BATCO  
 Received: 06/26/98 8:00 CMB  
 Analyzed: 07/02/98 18:06 CRB  
 Date Time Analyst

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT46087)			MATRIX SPIKE DUP (BT46087)		
			Detected Amount (ug/L)	Amount (ug)	% Recovery	Detected Amount (ug/L)	Amount (ug)	% Recovery	Detected Amount (ug/L)	Amount (ng)	% Recovery	Detected Amount (ug/L)	Amount (ng)	% Recovery
1,1-Dichloroethene	75-35-4	2.00	ND			ND			40.0	250.0	80.0	39.6	250.0	79.2
Benzene	71-43-2	2.00	ND			ND			43.9	250.0	87.8	44.2	250.0	88.4
Trichloroethene	79-01-6	2.50	ND			ND			45.5	250.0	91.0	45.3	250.0	90.6
Toluene	108-88-3	2.50	ND			ND			46.2	250.0	92.4	46.8	250.0	93.6
Chlorobenzene	108-90-7	2.00	ND			ND			50.5	250.0	101.0	51.4	250.0	102.8
Bromobenzene	108-86-1	2.50	ND			ND						ND		
Bromochloromethane	74-97-5	2.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	2.00	ND			ND			ND			ND		
Bromoform	75-25-2	2.50	ND			ND			ND			ND		
Bromomethane	74-83-9	1.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	1.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	2.50	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	3.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND			ND		
Chloroethane	75-00-3	3.00	ND			ND			ND			ND		
Chloroform	66-67-3	2.00	ND			ND			ND			ND		
Chloromethane	74-87-3	3.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	2.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND			ND			ND		
1,2-Dibromoethane	106-93-4	2.00	ND			ND			ND			ND		
Dibromomethane	74-95-3	2.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	2.00	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	2.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	2.00	ND			ND			ND			ND		
cis-1,2-Dichloroethane	156-59-2	2.50	ND			ND			ND			ND		
trans-1,2-Dichloroethane	156-60-5	2.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	2.50	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	2.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	2.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	2.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND			ND		
1-1,3-Dichloropropene	10061-02-6	2.00	ND			ND			ND			ND		
Ethyl benzene	100-41-4	2.50	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	2.00	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	2.50	ND			ND			ND			ND		
p-Isopropyltoluene	99-87-6	2.00	ND			ND			ND			ND		
Methylene chloride	75-09-2	2.50	ND			ND			ND			ND		
Naphthalene	91-20-3	3.00	ND			ND			ND			ND		
n-Propylbenzene	103-65-1	1.50	ND			ND			ND			ND		

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**VOLATILE ORGANICS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: Field Blank  
 File #: BT46090

Collected: 06/25/98 8:00 BATCO  
 Received: 06/26/98 8:00 CMB  
 Analysis: 07/02/98 18:06 CRR  
 Date Time Analyst

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount (ppb)	Spiked Amount ug	% Recovery	Detected Amount (ppb)	Spiked Amount ug	% Recovery	Detected Amount (ppb)	Spiked Amount ng	% Recovery	Detected Amount (ppb)	Spiked Amount ng	% Recovery
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethane	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
<b>Surrogate Compounds</b>														
Dibromofluoromethane	1868-53-7		48.9	250.0	97.8	49.6	250.0	99.2	45.9	250.0	91.8	47.8	250.0	95.6
Toluene-d8	2037-26-5		49.6	250.0	99.2	51.0	250.0	102.0	48.7	250.0	97.4	48.9	250.0	97.8
4-Bromofluorobenzene	460-00-4		48.2	250.0	96.4	48.0	250.0	96.0	49.0	250.0	98.0	47.2	250.0	94.4

Certified by:



Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company



APPENDIX II

YOUR COMPANY NAME: Herceg & S  
 YOUR COMPANY ADDRESS: Hattiesburg

NAME OF PERSON TO CONTACT: Charlie Jordan  
 CONTACT PERSON'S PHONE: \_\_\_\_\_

YOUR PROJECT NO.: \_\_\_\_\_ YOUR PO.# \_\_\_\_\_ YOUR PROJECT NAME: #2 Quarter

YOUR SAMPLE DESCRIPTION: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_ MATRIX \_\_\_\_\_

YOUR SAMPLE DESCRIPTION:	DATE	TIME	MATRIX
MU-1	6/25	1055	
MU-2	6/24	1405	
MU-3	6/24	1450	
MU-4	6/24	1215	
MU-5	6/24	1030	
MU-6	6/24	1635	
Imp Blank	6/24		
Equipment Blank	6/25	0800	

RELINQUISHED BY: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_ (Signature)

SHIPPED BY: \_\_\_\_\_ (Signature)

METHOD OF SHIPMENT \_\_\_\_\_

**BONNER ANALYTICAL TESTING COMPANY**  
 Phone: 2703 Oak Grove Road (601) 264-2854 Hattiesburg, MS 39402 Fax: (601) 268-7084  
 "Testing Your World for a Safer Tomorrow"

PARAMETERS FOR ANALYSIS

VOA's

Semi VOA

As Ba Cd

Cr Pb Hg

Se Ag

NUMBER OF CONTAINERS \_\_\_\_\_ PRESERVATIONS \_\_\_\_\_

REMARK

Detection Limits Special Limits Required Yes No

Turnaround Time

RELINQUISHED BY: \_\_\_\_\_ (Signature)

COURIER (Signature)

RECEIVED FOR BATCO BY: \_\_\_\_\_ (Signature)

DATE \_\_\_\_\_ TIME \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_ (Signature)

DATE/TIME

SAMPLE REMAINDER DISPOSAL

RETURN SAMPLE REMAINDER TO CLIENT VIA \_\_\_\_\_ (SOC) SHIPPING CHARGES MAY BE INCURRED

I REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS \_\_\_\_\_ (Signature)

IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A \_\_\_\_\_ (Date) ADDITIONAL CHARGE OF \$\_\_\_\_\_ PER SAMPLE WILL BE ASSESSED FOR \_\_\_\_\_

REVISION DATE



APPENDIX III

Monitoring Well Installation  
Sampling & Analysis

at

Hercules, Inc.  
613 West 7<sup>th</sup> Street  
Hattiesburg, Ms

presented to:

Charles Jordan, Environmental Supervisor  
Hercules, Inc.  
Hattiesburg, MS

December 8 - 15, 1997

by



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Michael S. Bonner, Ph.D.  
BONNER ANALYTICAL TESTING COMPANY

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	Page
1.0 Monitoring Well Installation.....	1-2
2.0 Well Development.....	2
3.0 Purging.....	2-3
4.0 Sampling.....	3
5.0 Analysis.....	3

Table 1- Borehole and Well Construction Data

Appendix A - Borelogs

Appendix B - Field Data

Appendix C - Monitoring Well Site Diagram

Appendix D - Analytical Data

Appendix E - Chain-of-Custody

Appendix F - July 31, Work Plan

## INTRODUCTION

At the request of Mr. Charlie Jordan, Environmental Supervisor with Hercules Inc. of Hattiesburg, MS, Bonner Analytical Testing Company installed six monitoring wells and subsequently developed, purged and sampled these wells during the period of December 8-15, 1997. Samples were analyzed for thirteen heavy metals, volatile organics, semivolatile organics, pesticides, and PCBs.

Details relating to the project were presented in the work plan approved by the Mississippi Department of Environmental Quality (MDEQ) and Hercules Incorporated dated July 31, 1997.

### 1.0 MONITORING WELL INSTALLATION

Six two inch I.D. flush thread schedule 40 PVC monitoring wells were installed. The well locations (MW-1 through MW-6) are designated in the site map located in Appendix C. Boreholes were advanced utilizing hollow stem drilling technology. Well depths ranged between fifteen and twenty feet below land surface (BLS). A ten foot screened interval was used in each well. Screened slots were 0.01 inches.

Wells were completed as follows:

1. Coarse sand was tremied to the top of the screened interval.
2. Fine sand was tremied to two feet above the screened interval.
3. Hydrated 10% Bentonite was tremied one to two feet above the fine sand.
4. 90/10 grout was tremied to one foot BLS.
5. After 24 hours the well was completed.

6. The well was completed to surface with concrete to include a 2'x2'x4" concrete pad with elevation marker, protective casing with locks, four 3 inch protective pipes filled with concrete and then painted.

Pertinent information relating to boring, well construction, purging and sampling are presented in Table 1 and Appendices A - F.

## 2.0 WELL DEVELOPMENT

Wells were allowed to cure a minimum of 24 hours prior to development. Wells were developed by a combination of bailing, pumping and surging.

MW-1 was designated as the background well. This well bailed dry after removal of 5.5 gallons of water. The turbidity was > 100 NTUs at this point. However, upon recovery, and after purging, a turbidity of 13.9 NTU was achieved.

MW-5 could not be developed below a 19 NTU turbidity due to a persistent yellow color.

The remaining wells MW-2, MW-3, MW-4 and MW-6 were developed to a final turbidity below 5 NTUs.

## 3.0 PURGING

Prior to purging and immediately after removing the well cap, each well was tested for organic vapors using a field organic vapor analyzer equipped with a flame ionization detector. MW-4 and MW-5 produced vapor space readings greater than 100,000 ppm. The remaining wells gave no response.

Next, each well was gauged from the north side top of casing to assess depth to water and well depth to +0.01'. Prior to purging pH, temperature, conductivity and turbidity were determined.

After the removal of five well volumes pH, temperature, conductivity and turbidity measurements were repeated twice more within 20 minutes. All wells produced water that was stable within  $\pm 10\%$  as required. However, MW1 and MW5 produced turbidity values of 13.0 and 24.4 NTU's, respectively. MW-1 and MW-5 were purged further, removing 5 additional well volumes. However, the turbidities remained elevated at 13.9 and 25.1 NTU's, respectively.

#### 4.0 SAMPLING

Samples were collected immediately following the purging process utilizing disposable Teflon bailers. Samples were collected for volatile organics method SW846/8260, semi volatile organics method SW846/8270, pesticide/PCB method SW846/8081 and thirteen heavy metals utilizing the appropriate EPA/200 series protocol as outlined in the work plan.

#### 5.0 ANALYSIS

All samples were analyzed for volatile organics utilizing the 8260 standard list of compounds. The remaining 8260 compound list was evaluated as TICs. Semivolatile organics, Method 8270, were evaluated using the standard list and the remaining compound list was evaluated as TICs. The results of these analyses are presented in Appendix D.

**TABLE 1  
BOREHOLE AND WELL CONSTRUCTION DATA**

Well ID #	1	2	3
Date of Construction	12-09-97	12-09-97	12-09-97
Borehole & Well Casing Diameter	2"	2"	2"
Well Depth +0.01 ft.	17'	17'	15'
Casing Length	7'	7'	5'
Casing Materials	PVC Schedule 40	PVC Schedule 40	PVC Schedule 40
Casing & Screen Joint Type	Flush Thread	Flush Thread	Flush Thread
Screened Intervals	10'	10'	10'
Screen Materials	PVC Flushthread	PVC Flushthread	PVC Flushthread
Screen Slot Size/ Design	0.01	0.01	0.01
Filter Pack Material & Size	Sand <0.1" (<5%) 0.01"-0.039" (>50%) >0.039" (<35%)	Sand <0.1" (<5%) 0.01"-0.039" (>50%) >0.039" (<35%)	Sand <0.1" (<5%) 0.01"-0.039" (>50%) >0.039" (<35%)
Calculated/Actual Filter Pack Volume	4.42 ft <sup>3</sup>	4.08 ft <sup>3</sup>	4.42 ft <sup>3</sup>
Filter Pack Placement Method	Tremmie	Tremmie	Tremmie
Annular Sealant Composition	Bentonite/90:10 Grout	Bentonite/90:10 Grout	Bentonite/90:10 Grout
Annular Sealant Placement Method	Tremmie	Tremmie	Tremmie
Calculated/Actual Annular Sealant Vol.	0.34 ft <sup>3</sup>	0.85 ft <sup>3</sup>	0.17 ft <sup>3</sup>
Surface Sealant Composition	3,000 PSI Concrete	3,000 PSI Concrete	3,000 PSI Concrete
Surface Seal Placement Method	Tremmie	Tremmie	Tremmie
Calculated/Actual Surface Sealant Vol.	0.34 ft <sup>3</sup>	0.17 ft <sup>3</sup>	0.17 ft <sup>3</sup>
Surface Seal Design	2x2x4' Pad	2x2x4' Pad	2x2x4' Pad
Well Development Procedure	Bailing, Pumping & Surge Block	Bailing, Pumping & Surge Block	Bailing, Pumping & Surge Block
Turbidity Measurement	13.9 NTU	1.9 NTU	0.5 NTU
Type/Design of Protective Casing	3" x 3" rectangular steel	3" x 3" rectangular steel	3" x 3" rectangular steel
Well Cap & Lock	Yes	Yes	Yes
Ground Surface Elevation (+0.01)			
Survey Reference Point Elevation on Well Casing (+0.01 ft.)			
Top of Well Casing Elevation (+0.01)			
Top of Protective Steel Casing Elevation (+0.01 ft.)			

**BOREHOLE AND WELL CONSTRUCTION DATA**

Well ID #	4	5	6
Date of Construction	12-09-97	12-08-97	12-08-97
Borehole & Well Casing Diameter	2"	2"	2"
Well Depth + 0.01 ft.	15.0'	15'	18'
Casing Length	5'	5'	8'
Casing Materials	PVC Schedule 40	PVC Schedule 40	PVC Schedule 40
Casing & Screen Joint Type	Flush Thread	Flush Thread	Flush Thread
Screened Intervals	10'	10'	10'
Screen Materials	PVC Flushthread	PVC Flushthread	PVC Flushthread
Screen Slot Size/ Design	0.01	0.01	0.01
Filter Pack Material & Size	Sand <0.1" (<5%) 0.01"-0.039" (>50%) >0.039" (<35%)	Sand <0.1" (<5%) 0.01"-0.039" (>50%) >0.039" (<35%)	Sand <0.1" (<5%) 0.01"-0.039" (>50%) >0.039" (<35%)
Calculated/Actual Filter Pack Volume	4.25 ft <sup>3</sup>	4.25 ft <sup>3</sup>	4.08 ft <sup>3</sup>
Filter Pack Placement Method	Tremmie	Tremmie	Tremmie
Annular Sealant Composition	Bentonite/90:10 Grout	Bentonite/90:10 Grout	Bentonite/90:10 Grout
Annular Sealant Placement Method	Tremmie	Tremmie	Tremmie
Calculated/Actual Annular Sealant Vol.	0.17 ft <sup>3</sup>	0.17 ft <sup>3</sup>	0.34 ft <sup>3</sup>
Surface Sealant Composition	3,000 PSI Concrete	3,000 PSI Concrete	3,000 PSI Concrete
Surface Seal Placement Method	Tremmie	Tremmie	Tremmie
Calculated/Actual Surface Sealant Vol.	0.17 ft <sup>3</sup>	0.17 ft <sup>3</sup>	0.34 ft <sup>3</sup>
Surface Seal Design	2x2x4' Pad	2x2x4' Pad	2x2x4' Pad
Well Development Procedure	Bailing, Pumping & Surge Block	Bailing, Pumping & Surge Block	Bailing, Pumping & Surge Block
Turbidity Measurement	0.8 NTU	25.1 NTU	0.3 NTU
Type/Design of Protective Casing	3" x 3" rectangular steel	3" x 3" rectangular steel	3" x 3" rectangular steel
Well Cap & Lock	Yes	Yes	Yes
Ground Surface Elevation (+0.01)			
Survey Reference Point Elevation on Well Casing (+0.01 ft.)			
Top of Well Casing Elevation (+0.01)			
Top of Protective Steel Casing Elevation (+0.01 ft.)			

APPENDIX A

# Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402

Phone: (601) 264-2854 Fax: (601) 268-7084

## MONITORING WELL CONSTRUCTION DIAGRAM

Driller Permit #: 0-527

Client: Hercules

Address: Hattiesburg, MS

Boring No.: 1

Date Started: 12/9/97

Date Finished: 12/9/97

Surface Elevation: \_\_\_\_\_

LS/Top of Casing: \_\_\_\_\_

Well Installed on Completion: YES

KEY:  Concrete     Grout     Bentonite Seal     Sand Pack     Screen

Lithologic Description	Depth (Feet)	Well Design
Riser 3.46	1.0	
0-1.5' Top Soil		
1.5 - 8' Tan Silty Clay	3.5	[Well Design: Grout/Bentonite Seal/Sand Pack/Screen]
	5.0	
8 - 10' Wet Sandy Clay	7.0	
10 - 11.5' Wet Sand and Some Clay		
11.5 - 13 Wet Silty Sand		
13 - 17' Tan Clay Very Consolidated	17.0	

Well Loc: \_\_\_\_\_  
 Section: 4  
 Township: 4N  
 Range: 13W  
 Well Usage: \_\_\_\_\_

**Development Method**

Bailer  
 Airlift  
 Nitrogen  
 Submersible Pump  
 Other: Peristaltic Pump

Well Dev. Time: \_\_\_\_\_  
 Volume: \_\_\_\_\_

**Well Construction Materials:**

Protective Cover:  Manhole  
 Protective Casing  
 Other: \_\_\_\_\_

Riser Material: PVC Flushtread  
 Well Diameter: 2"  
 Screen Material: PVC Flushtread  
 Screen Slot Size: 0.01

Bentonite Plug:   
 Grout:

Sand: Quantity 5 Bags @ 100 lbs ea of #2  
1 Bag @ 100 lbs ea of #1

Initial Water Level: 7 82'  
 Water Level at Development: 7 82'



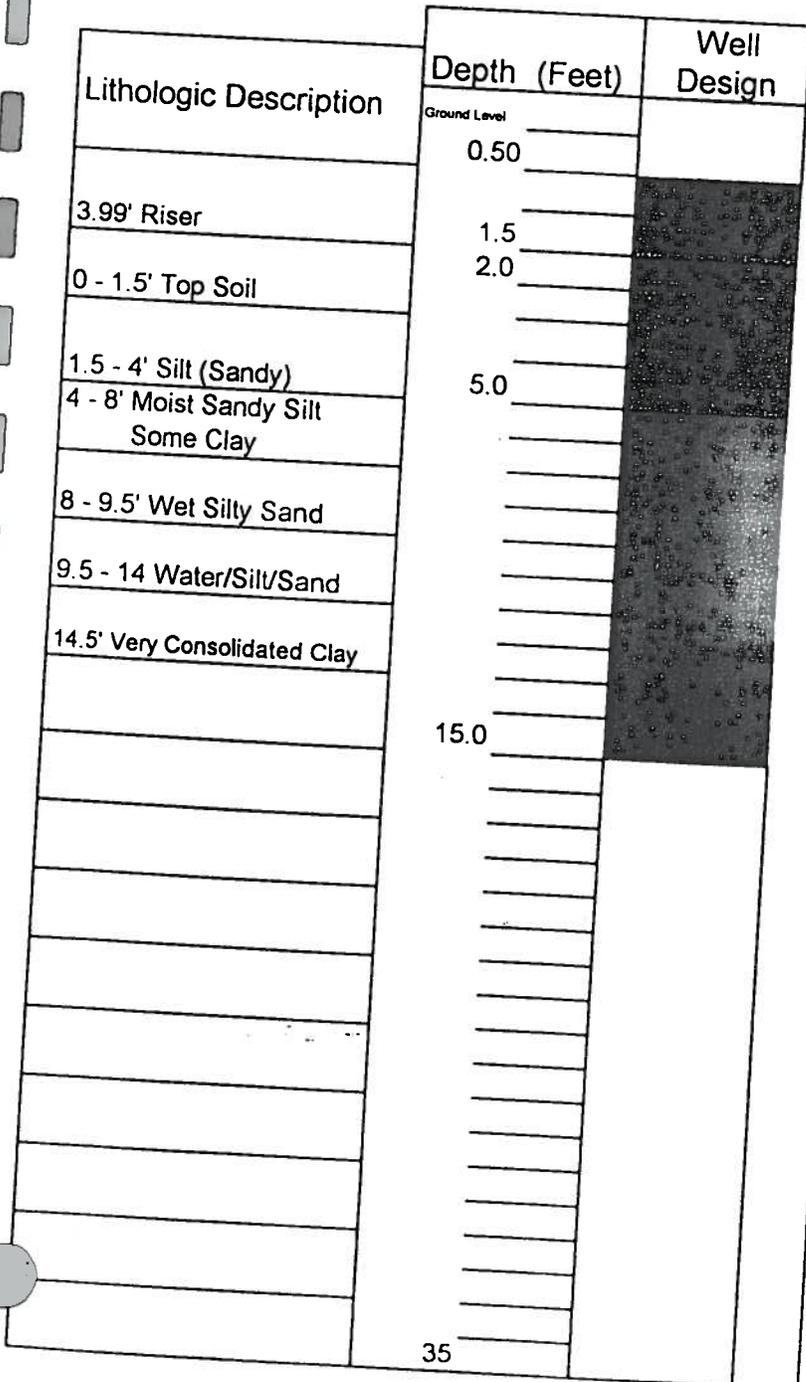
### MONITORING WELL CONSTRUCTION DIAGRAM

Driller Permit #: 0-527  
 Client: Hercules  
 Address: Hattiesburg, MS

Boring No.: 3  
 Date Started: 12/9/97  
 Date Finished: 12/9/97

Surface Elevation: \_\_\_\_\_  
 LS/Top of Casing: \_\_\_\_\_  
 Well Installed on Completion: YES

KEY:  Concrete     Grout     Bentonite Seal     Sand Pack     Screen



Well Loc: \_\_\_\_\_  
 Section: 4  
 Township: 4N  
 Range: 13W  
 Well Usage: \_\_\_\_\_

**Development Method**

Bailer  
 Airlift  
 Nitrogen  
 Submersible Pump  
 Other: Peristaltic Pump

Well Dev. Time: \_\_\_\_\_  
 Volume: \_\_\_\_\_

**Well Construction Materials:**

Protective Cover:  Manhole  
 Protective Casing  
 Other: \_\_\_\_\_

Riser Material: PVC Flushthread  
 Well Diameter: 2"  
 Screen Material: PVC Flushthread  
 Screen Slot Size: 0.01

Bentonite Plug   
 Grout

Sand: Quantity 3 Bags @ 100 lbs ea of #2  
1 Bag @ 100 lbs ea of #4

Initial Water Level 7.37'  
 Water Level at Development 7.37'



# Bonner Analytical Testing Company

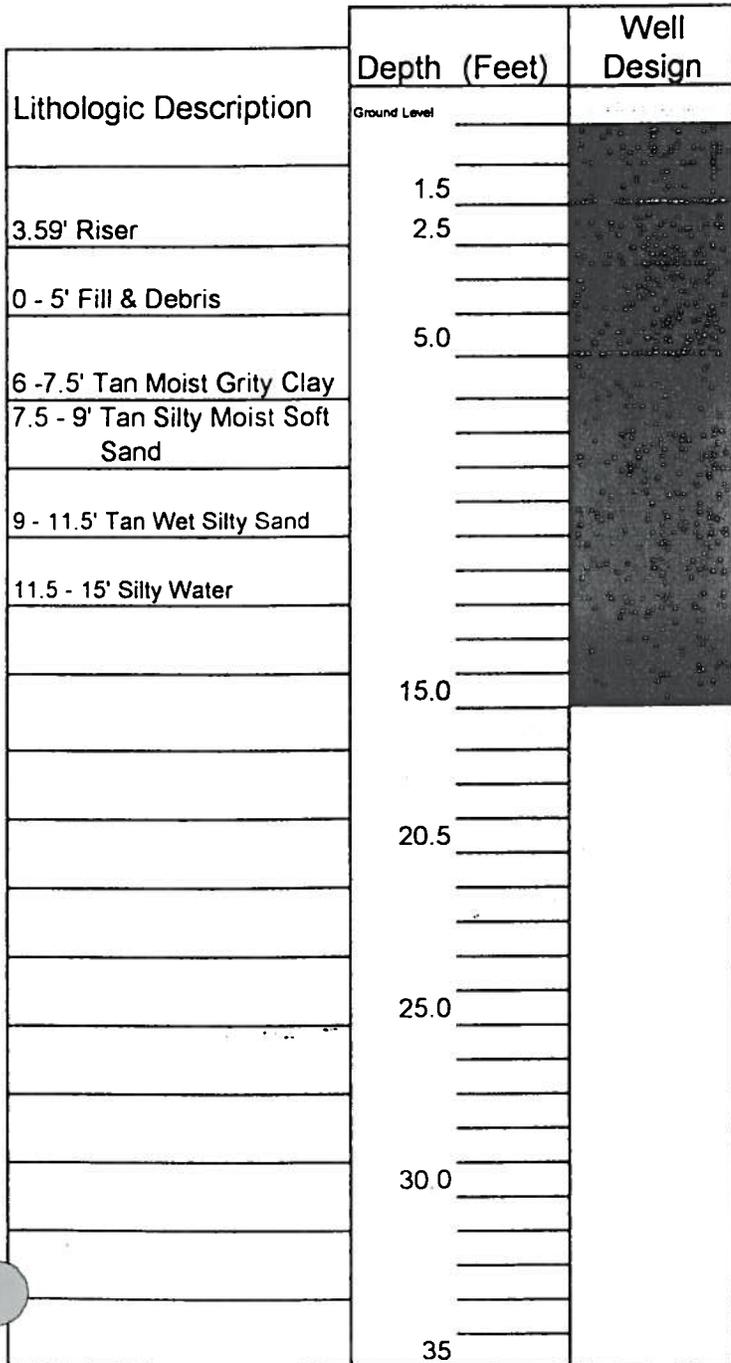
2703 Oak Grove Road, Hattiesburg, MS 39402

Phone: (601) 264-2854 Fax: (601) 268-7084

## MONITORING WELL CONSTRUCTION DIAGRAM

Driller Permit #: <u>0-527</u>	Boring No.: <u>5</u>	Surface Elevation: _____
Client: <u>Hercules</u>	Date Started: <u>12/8/97</u>	LS/Top of Casing: _____
Address: <u>Hattiesburg, MS</u>	Date Finished: <u>12/8/97</u>	Well Installed on Completion: <u>YES</u>

KEY:  Concrete     Grout     Bentonite Seal     Sand Pack     Screen



Well Loc: _____
Section: <u>4</u>
Township: <u>4N</u>
Range: <u>13W</u>
Well Usage: _____

Development Method
<input type="checkbox"/> Bailer <input type="checkbox"/> Airlift <input type="checkbox"/> Nitrogen <input type="checkbox"/> Submersible Pump <input checked="" type="checkbox"/> Other: Peristaltic Pump
Well Dev. Time: _____
Volume: _____

Well Construction Materials:	
Protective Cover:	<input type="checkbox"/> Manhole <input checked="" type="checkbox"/> Protective Casing <input type="checkbox"/> Other: _____
Riser Material: PVC Flushthread Well Diameter: 2" Screen Material: PVC Flushthread Screen Slot Size: 0.01"	
Bentonite Plug:	<input checked="" type="checkbox"/>
Grout:	<input checked="" type="checkbox"/>
Sand:	Quantity <u>4 Bags @ 100 lbs ea of #2</u> <u>1.5 Bags @ 100 lbs ea #4</u>
Initial Water Level	<u>10 12'</u>
Water Level at Development	<u>10 12'</u>



APPENDIX B

# Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402

Phone: (601) 264-2854 Fax: (601) 268-7084

CLIENT: HERCULES

DATE: 12-13/15-97

LOCATION: Hercules Landfill and Sludge Pit

Monitoring Well #1	Time	pH S.U.	Temp degrees C	Conductivity micromhos/cm	Turbidity NTU	REMARKS
Total Depth TOC 20.46'	1645	5.34	18.5	51	55	FID = 0 ppm
Depth to Water TOC 7.82'	1655	5.52	19.8	83	13.5	
Well Depth BLS 17.00'	1705	5.66	19.9	89	13.0	Sampled @ 1710 Bailed 11 Gallons
Quan. Per Volume 2.15 Gallons	1720	5.65	19.9	92	*13.9	Bailed 11 Gallons add'l
LNAPL - NO DNAPL - NO						

Monitoring Well #2	Time	pH S.U.	Temp degrees C	Conductivity micromhos/cm	Turbidity NTU	REMARKS
Total Depth TOC 20.48'	1550	5.67	16.9	112	5	FID = 0 ppm
Depth to Water TOC 6.83'	1600	5.63	17.6	110	1.9	
Well Depth BLS 17.00'	1610	5.69	17.5	112	1.9	
Quan. Per Volume 2.32 Gallons						Sampled @ 1620 Bailed 12 Gallons
LNAPL - NO DNAPL - NO						

Monitoring Well #3	Time	pH S.U.	Temp degrees C	Conductivity micromhos/cm	Turbidity NTU	REMARKS
Total Depth TOC 18.96'	1515	5.36	17.6	60	4.4	FID = 0 ppm
Depth to Water TOC 7.37'	1520	5.22	16.8	50	0.4	
Well Depth BLS 15.00'	1535	5.18	16.8	50	0.5	
Quan. Per Volume 1.97 Gallons						Sampled @ 1540 Bailed 10 Gallons
LNAPL - NO DNAPL - NO						

\*Turbidity exceeds 5 NTU; Remove 5 additional well volumes

Well Volume = 0.17 \* Water Column in Feet.

LNAPL - Light Non Aqueous Phase Liquid

DNAPL - Dense Non Aqueous Phase Liquid

TOC - Top of Casing (North Side)

BLS - Below Land Surface

# Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402

Phone: (601) 264-2854 Fax: (601) 268-7084

CLIENT: HERCULES

DATE: 12-13/15-97

LOCATION: Hercules Landfill and Sludge Pit

Monitoring Well #4	Time	pH S.U.	Temp degrees C	Conductivity micromhos/cm	Turbidity NTU	REMARKS
Total Depth TOC 18.99'	NA	5.34	18.5	350	1.7	FID > 100,000 ppm
Depth to Water TOC 10.93'	NA	6.08	19.7	520	0.9	
Well Depth BLS 15.00'	NA	6.12	19.6	510	0.8	
Quan. Per Volume 1.37 Gallons		6.21	19.5			Bailed 7 Gallons
LNAPL - NO DNAPL - NO						

Monitoring Well #5	Time	pH S.U.	Temp degrees C	Conductivity micromhos/cm	Turbidity NTU	REMARKS
Total Depth TOC 18.59'	1133	6.62	19.5	580	42	FID > 100,000 ppm
Depth to Water TOC 10.12'	1140	6.5	19.9	520	26.1	
Well Depth BLS 15.00'	1155	6.41	19.5	520	24.4	Sampled @ 1210 Bailed 7.5 Gallons
Quan. Per Volume 1.44 Gallons	1210	6.4	19.5	515	*25.1	Bailed 7.5 Gallons add'l
LNAPL - NO DNAPL - NO						

Monitoring Well #6	Time	pH S.U.	Temp degrees C	Conductivity micromhos/cm	Turbidity NTU	REMARKS
Total Depth TOC 23.25'	1630	5.88	21.5	198	2.9	FID = 0 ppm
Depth to Water TOC 9.56'	1640	5.91	21.2	185	0.3	
Well Depth BLS 18.00'	1655	6.06	21.4	170	0.3	
Quan. Per Volume 2.32 Gallons						Sampled @ 1500 Bailed 12 Gallons
LNAPL - NO DNAPL - NO						

\*Turbidity exceeds 5 NTU; Remove 5 additional well volumes

Well Volume = 0.17 x Water Column in Feet.

LNAPL - Light Non Aqueous Phase Liquid

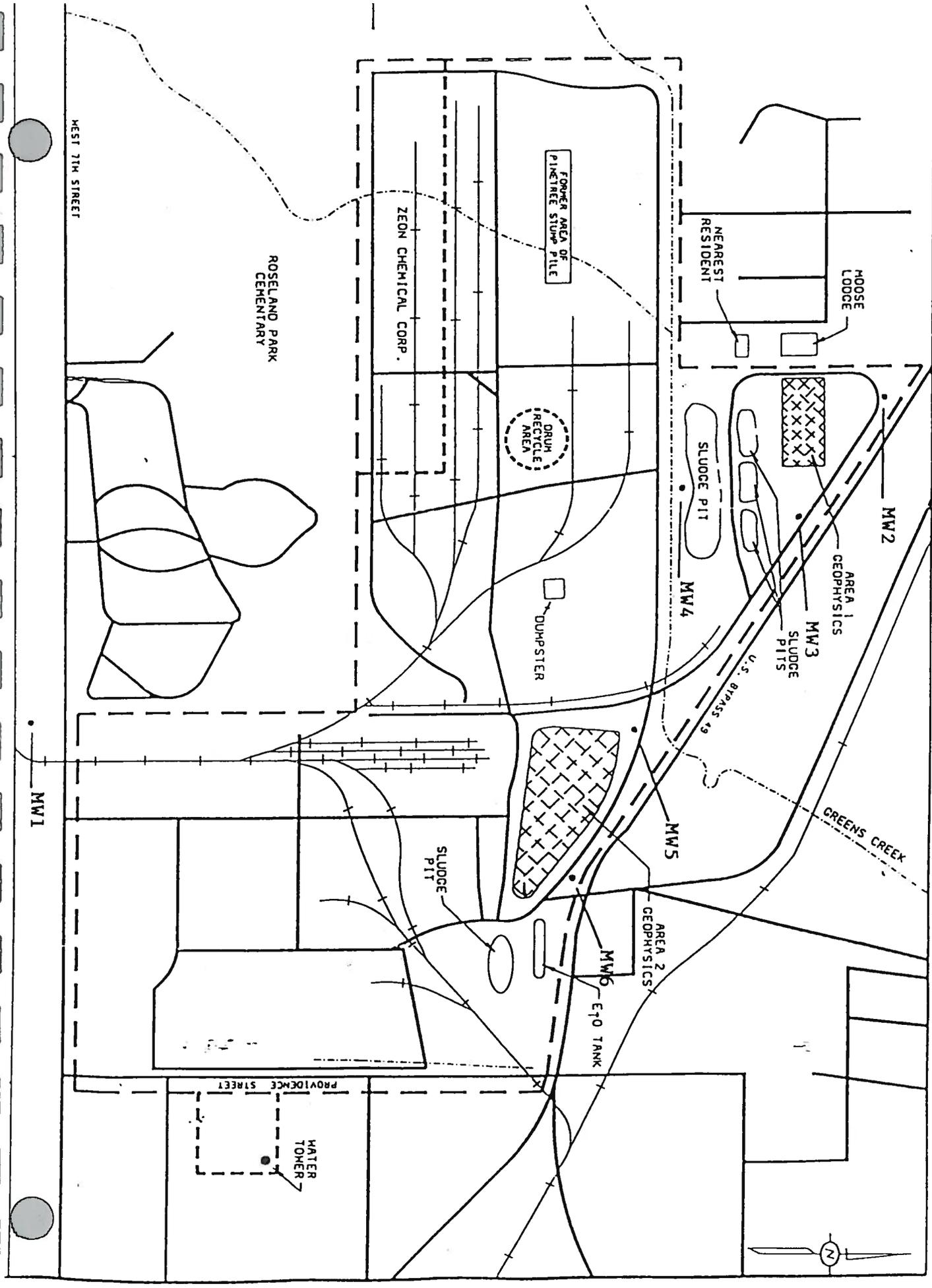
DNAPL - Dense Non Aqueous Phase Liquid

TOC - Top of Casing (North Side)

BLS - Below Land Surface

APPENDIX C

HATTIESBURG, MS  
MONITORING WELL LOCATIONS



APPENDIX D

BONNER ANALYTICAL TESTING COMPANY

2703 OAK GROVE ROAD  
 HATTIESBURG, MS 39402  
 PH. (601) 264-2854

Client: HERCULES

File Number: BT42539-42541  
 Collected By: DOC

Sample Date/Time:  
 Date/Time Rec'd: 12-16-97 @ 1120

Analyte/Method #	MW-1	MW-2	MW-3	MDL	Date/Time/Analyst
Antimony/200.7	ND	ND	ND	0.02	01-12-98/1121/JMR
Arsenic/200.15	0.0067	0.0022	ND	0.002	01-13-98/1633/JMR
Beryllium/200.7	0.0076	ND	ND	0.001	01-12-98/1121/JMR
Cadmium/213.1	ND	ND	ND	0.04	12-22-97/1129/GMR
Chromium/200.7	0.116	ND	ND	0.01	01-12-98/1121/JMR
Copper/200.7	0.075	ND	ND	0.01	01-14-98/1211/JMR
Lead/239.1	0.132	ND	ND	0.02	12-22-97/1024/GMR
Mercury/245.2	ND	ND	ND	0.0004	01-14-98/1510/GMR
Nickel/200.7	0.052	ND	ND	0.01	01-12-98/1121/JMR
Selenium/200.15	ND	ND	ND	0.002	01-13-98/1633/JMR
Silver/272.1	ND	ND	ND	0.06	12-23-97/0903/GMR
Thallium/200.7	ND	ND	ND	0.025	02-13-98/1234/JMR
Zinc/289.1	0.190	ND	ND	0.02	12-18-97/1448/GMR

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

Certified by: Michael S. Bonner  
 Michael S. Bonner, Ph.D.  
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 HATTIESBURG, MS 39402  
 PH. (601) 264-2854

Client: HERCULES

File Number: BT42542-42544  
 Collected By: DOC

Sample Date/Time:  
 Date/Time Rec'd: 12-16-97 @ 1120

Analyte/Method #	MW-4	MW-5	MW-6	MDL	Date/Time/Analyst
Antimony/200.7	ND	ND	ND	0.02	01-12-98/1121/JMR
Arsenic/200.15	0.1536	0.1035	ND	0.002	01-13-98/1633/JMR
Beryllium/200.7	0.014	ND	ND	0.001	01-12-98/1121/JMR
Cadmium/213.1	ND	ND	ND	0.04	12-22-97/1129/GMR
Chromium/200.7	0.223	0.046	0.015	0.01	01-12-98/1121/JMR
Copper/200.7	0.154	ND	ND	0.01	01-14-98/1211/JMR
Lead/239.1	ND	ND	ND	0.02	12-22-97/1024/GMR
Mercury/245.2	0.0007	0.0007	0.0007	0.0004	01-14-98/1510/GMR
Nickel/200.7	0.312	0.025	ND	0.01	01-12-98/1121/JMR
Selenium/200.15	ND	ND	ND	0.002	01-13-98/1633/JMR
Silver/272.1	ND	ND	ND	0.06	12-23-97/0903/GMR
Thallium/200.7	ND	ND	ND	0.025	02-13-98/1234/JMR
Zinc/289.1	0.361	0.089	ND	0.02	12-18-97/1448/GMR

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

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2703 OAK GROVE ROAD  
HATTIESBURG, MS 39402  
PH. (601) 264-2854

Client: HERCULES

File Number: BT42545-42546  
Collected By: DOC

Sample Date/Time:  
Date/Time Rec'd: 12-16-97 @ 1120

Analyte/Method #	Trip Blank	Equipment Blank	MDL	Date/Time/Analyst
Antimony/200.7	ND	ND	0.02	01-12-98/1121/JMR
Arsenic/200.15	ND	ND	0.002	01-13-98/1633/JMR
Beryllium/200.7	ND	ND	0.001	01-12-98/1121/JMR
Cadmium/213.1	ND	ND	0.04	12-22-97/1129/GMR
Chromium/200.7	ND	ND	0.01	01-12-98/1121/JMR
Copper/200.7	ND	ND	0.01	01-14-98/1211/JMR
Lead/239.1	ND	ND	0.02	12-22-97/1024/GMR
Mercury/245.2	ND	ND	0.0004	01-14-98/1510/GMR
Nickel/200.7	ND	ND	0.01	01-12-98/1121/JMR
Selenium/200.15	ND	ND	0.002	01-13-98/1633/JMR
Silver/272.1	ND	ND	0.06	12-23-97/0903/GMR
Thallium/200.7	ND	ND	0.025	02-13-98/1234/JMR
Zinc/289.1	ND	ND	0.02	12-18-97/1448/GMR

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

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**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**PESTICIDE/POLYCHLORINATED BI-PHENYLS - ECD ANALYSIS DATA**

Client: Hercules Collected: 12/15/97 17:30 DOC  
 Sample ID: MW-1 Extracted: 12/18/97 9:45 RML  
 File #: B142539 Analyzed: 12/23/97 1:42 RML  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_ Analyst: \_\_\_\_\_  
 Sample Type: Water  
 Extraction Method: SW846 3510  
 Analysis Method: SW846 8081A

COMPOUNDS	MDL ug/L (ppb)	SAMPLE			METHOD BLANK			MATRIX SPIKE			MATRIX SPIKE DUPLICATE		
		Detected Amount ug/L (ppb)	Amount ug	% Recovery									
1P: Aldrin *	0.05	ND			ND			192.4	250.0	76.96	220.8	250.0	88.32
2P: Alpha-BHC	0.05	ND			ND								
3P: Beta-BHC	0.05	ND			ND			212.8	250.0	85.12	239.5	250.0	95.80
4P: Gamma-BHC *	0.05	ND			ND								
5P: Delta-BHC	0.05	ND			ND			421.9	500.0	84.38	446.3	500.0	89.26
6P: Chlordane	0.50	ND			ND								
7P: 4,4'-DDT *	0.10	ND			ND								
8P: 4,4'-DDE	0.10	ND			ND								
9P: 4,4'-DDD	0.05	ND			ND								
10P: Dieldrin *	0.10	ND			ND			456.5	500.0	91.30	499.5	500.0	99.90
11P: Alpha-Endosulfan	0.10	ND			ND								
12P: Beta-Endosulfan	0.10	ND			ND			461.1	500.0	92.22	503.6	500.0	100.72
13P: Endosulfan Sulfate	0.10	ND			ND								
14P: Endrin *	0.10	ND			ND			214.5	250.0	85.80	212.4	250.0	84.96
15P: Endrin Aldelyde	0.10	ND			ND								
16P: Heptachlor *	0.05	ND			ND								
17P: Heptachlor Epoxide	0.10	ND			ND								
18P: PCB1242	0.50	ND			ND								
19P: PCB1254	1.00	ND			ND								
20P: PCB1221	0.50	ND			ND								
21P: PCB1232	0.50	ND			ND								
22P: PCB1248	1.00	ND			ND								
23P: PCB1260	1.00	ND			ND								
24P: PCB1016	0.50	ND			ND								
25P: Toxaphene	1.00	ND			ND								
<b>SURROGATE COMPOUNDS</b>		Detected Amount	Spiked Amount	% Recovery									
Decachlorobiphenyl		21.53	20.00	107.65	18.25	20.00	91.25	21.68	20.00	108.40	21.98	20.00	107.90

\* = Matrix Spiking Compounds

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**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 PESTICIDE/POLYCHLORINATED BIPHENYLS - ECD ANALYSIS DATA

Client: Hercules Collected: 12/15/97 16:20 DOC  
 Sample ID: MW-2 Extracted: 12/18/97 9:45 RML  
 File #: 8142540 Analyzed: 12/23/97 2:29 RML  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_ Analyst: \_\_\_\_\_

Sample Type: Water  
 Extraction Method: SW846 3510  
 Analysis Method: SW846 8081A

COMPOUNDS	MDL ug/L (ppb)	SAMPLE			METHOD BLANK			MATRIX SPIKE			MATRIX SPIKE DUPLICATE		
		Detected Amount ug/L (ppb)	Spiked Amount ug	% Recovery									
1P. Aldrin *	0.05	ND	ND		ND	ND		192.4	250.0	76.96	220.8	250.0	88.32
2P. Alpha-BHC	0.05	ND	ND		ND	ND							
3P. Beta-BHC	0.05	ND	ND		ND	ND		212.8	250.0	85.12	239.5	250.0	95.80
4P. Gamma-BHC *	0.05	ND	ND		ND	ND							
5P. Delta-BHC	0.05	ND	ND		ND	ND		421.9	500.0	84.38	446.3	500.0	89.26
6P. Chlordane	0.50	ND	ND		ND	ND							
7P. 4,4'-DDT *	0.10	ND	ND		ND	ND							
8P. 4,4'-DDE	0.10	ND	ND		ND	ND							
9P. 4,4'-DDD	0.05	ND	ND		ND	ND							
10P. Dieldrin *	0.10	ND	ND		ND	ND		456.5	500.0	91.30	499.5	500.0	99.90
11P. Alpha-Endosulfan	0.10	ND	ND		ND	ND							
12P. Beta-Endosulfan	0.10	ND	ND		ND	ND							
13P. Endosulfan Sulfate	0.10	ND	ND		ND	ND		461.1	500.0	92.22	503.6	500.0	100.72
14P. Endrin *	0.10	ND	ND		ND	ND							
15P. Endrin Aldehyde	0.10	ND	ND		ND	ND		214.5	250.0	85.80	212.4	250.0	84.96
16P. Heptachlor *	0.05	ND	ND		ND	ND							
17P. Heptachlor Epoxide	0.10	ND	ND		ND	ND							
18P. PCB1242	0.50	ND	ND		ND	ND							
19P. PCB1254	1.00	ND	ND		ND	ND							
20P. PCB1221	0.50	ND	ND		ND	ND							
21P. PCB1232	0.50	ND	ND		ND	ND							
22P. PCB1248	1.00	ND	ND		ND	ND							
23P. PCB1260	1.00	ND	ND		ND	ND							
24P. PCB1016	0.50	ND	ND		ND	ND							
25P. Toxaphene	1.00	ND	ND		ND	ND							
<b>SURROGATE COMPOUNDS</b>		Detected Amount	Spiked Amount	% Recovery									
Decachlorobiphenyl		20.37	20.00	101.85	18.25	20.00	91.25	21.68	20.00	108.40	21.58	20.00	107.90

\* = Matrix Spiking Compounds

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**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**PESTICIDE/POLYCHLORINATED BI-PHENYLS - ECD ANALYSIS DATA**

Client: Hercules Collected: 12/15/97 15:40 DOC Sample Type: Water  
 Sample ID: MW-3 Extracted: 12/18/97 9:45 RML Extraction Method: SWG46 3510  
 File #: BIT2541 Analyzed: 12/23/97 3:17 RML Analysis Method: SWG46 8081A

COMPOUNDS	MDL ug/L (ppb)	SAMPLE Spike			METHOD BLANK			MATRIX SPIKE			MATRIX SPIKE DUPLICATE		
		Detected Amount ug/L (ppb)	Amount ug	% Recovery									
1P. Aldrin *	0.05	ND			ND			192.4	250.0	76.96	220.8	250.0	88.32
2P. Alpha-BHC	0.05	ND			ND								
3P. Beta-BHC	0.05	ND			ND								
4P. Gamma-BHC *	0.05	ND			ND			212.8	250.0	85.12	239.5	250.0	95.80
5P. Delta-BHC	0.05	ND			ND								
6P. Chlordane	0.50	ND			ND								
7P. 4,4'-DDT *	0.10	ND			ND			421.9	500.0	84.38	446.3	500.0	89.26
8P. 4,4'-DDE	0.10	ND			ND								
9P. 4,4'-DDD	0.05	ND			ND								
10P. Dieldrin *	0.10	ND			ND			456.5	500.0	91.30	499.5	500.0	99.90
11P. Alpha-Endosulfan	0.10	ND			ND								
12P. Beta-Endosulfan	0.10	ND			ND								
13P. Endosulfan Sulfate	0.10	ND			ND								
14P. Endrin *	0.10	ND			ND			461.1	500.0	92.22	503.6	500.0	100.72
15P. Endrin Aldehyde	0.10	ND			ND								
16P. Heptachlor *	0.05	ND			ND			214.5	250.0	85.80	212.4	250.0	84.96
17P. Heptachlor Epoxide	0.10	ND			ND								
18P. PCB1242	0.50	ND			ND								
19P. PCB1254	1.00	ND			ND								
20P. PCB1221	0.50	ND			ND								
21P. PCB1232	0.50	ND			ND								
22P. PCB1248	1.00	ND			ND								
23P. PCB1260	1.00	ND			ND								
24P. PCB1016	0.50	ND			ND								
25P. Toxaphene	1.00	ND			ND								
SURROGATE COMPOUNDS		Detected Amount	Spike Amount	% Recovery									
Decachlorobiphenyl		19.76	20.00	98.80	18.25	20.00	91.25	21.88	20.00	108.40	21.58	20.00	107.90

\* = Matrix Spiking Compounds

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 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 PESTICIDE/POLYCHLORINATED BI-PHENYLS - ECD ANALYSIS DATA

Client: Hercules      Collected: 12/12/97      13:10      DOC  
 Sample ID: MW-4      Extracted: 12/18/97      9:45      RML  
 File #: BT42542      Analyzed: 12/23/97      4:05      RML  
 Date      Time      Analyst

Sample Type: Water  
 Extraction Method: SW946 3510  
 Analysis Method: SW946 8081A

COMPOUNDS	MIDL ug/L (ppb)	SAMPLE Spike			METHOD BLANK			MATRIX SPIKE			MATRIX SPIKE DUPLICATE		
		Detected Amount ug/L (ppb)	Amount ug	% Recovery									
1P. Aldrin *	0.05	ND			ND			192.4	250.0	76.96	220.8	250.0	88.32
2P. Alpha-BHC	0.05	ND			ND								
3P. Beta-BHC	0.05	ND			ND								
4P. Gamma-BHC *	0.05	ND			ND			212.8	250.0	85.12	239.5	250.0	95.80
5P. Delta-BHC	0.05	ND			ND								
6P. Chlordane	0.50	ND			ND			421.9	500.0	84.38	446.3	500.0	89.26
7P. 4,4'-DDT *	0.10	ND			ND								
8P. 4,4'-DDE	0.10	ND			ND								
9P. 4,4'-DDD	0.05	ND			ND								
10P. Dieldrin *	0.10	ND			ND			456.5	500.0	91.30	499.5	500.0	99.90
11P. Alpha-Endosulfan	0.10	ND			ND								
12P. Beta-Endosulfan	0.10	ND			ND								
13P. Endosulfan Sulfate	0.10	ND			ND								
14P. Endrin *	0.10	ND			ND			461.1	500.0	92.22	503.6	500.0	100.72
15P. Endrin Aldehyde	0.10	ND			ND								
16P. Heptachlor *	0.05	ND			ND			214.5	250.0	85.80	212.4	250.0	84.96
17P. Heptachlor Epoxide	0.10	ND			ND								
18P. PCB1242	0.50	ND			ND								
19P. PCB1254	1.00	ND			ND								
20P. PCB1221	0.50	ND			ND								
21P. PCB1232	0.50	ND			ND								
22P. PCB1248	1.00	ND			ND								
23P. PCB1260	1.00	ND			ND								
24P. PCB1016	0.50	ND			ND								
25P. Toxaphene	1.00	ND			ND								
<b>SURROGATE COMPOUNDS</b>		Detected Amount	Spike Amount	% Recovery									
Decachlorobiphenyl		14.50	20.00	72.50	18.25	20.00	91.25	21.68	20.00	108.40	21.58	20.00	107.90

\* = Matrix Spiking Compounds

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**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**PESTICIDE/POLYCHLORINATED BI-PHENYLS - ECD ANALYSIS DATA**

Client: Hercules Collected: 12/12/97 9:00 DOC  
 Sample ID: MW-5 Extracted: 12/18/97 9:45 RML  
 File #: B142543 Analyzed: 12/23/97 4:52 RML  
 Date: 12/23/97 Time:            Analyst:           

Sample Type: Water  
 Extraction Method: SM846 3510  
 Analysis Method: SM846 8081A

COMPOUNDS	MDL ug/L (ppb)	SAMPLE			METHOD BLANK			MATRIX SPIKE			MATRIX SPIKE DUPLICATE		
		Detected Amount ug/L (ppb)	Amount ug	% Recovery									
1P Aldrin *	0.05	ND			ND			192.4	250.0	76.96	220.8	250.0	88.32
2P Alpha-BHC	0.05	ND			ND			212.8	250.0	85.12	239.5	250.0	95.80
3P Beta-BHC	0.05	ND			ND			421.9	500.0	84.38	446.3	500.0	89.26
4P Gamma-BHC *	0.05	ND			ND			456.5	500.0	91.30	499.5	500.0	99.90
5P Delta-BHC	0.05	ND			ND			461.1	500.0	92.22	503.6	500.0	100.72
6P Chlordane	0.50	ND			ND			214.5	250.0	85.80	212.4	250.0	84.96
7P 4,4'-DDT *	0.10	ND			ND								
8P 4,4'-DDE	0.10	ND			ND								
9P 4,4'-DDD	0.10	ND			ND								
10P Dieldrin *	0.05	ND			ND								
11P Alpha-Endosulfan	0.10	ND			ND								
12P Beta-Endosulfan	0.10	ND			ND								
13P Endosulfan Sulfate	0.10	ND			ND								
14P Endrin *	0.10	ND			ND								
15P Endrin Aldehyde	0.10	ND			ND								
16P Heptachlor *	0.05	ND			ND								
17P Heptachlor Epoxide	0.10	ND			ND								
18P PCB1242	0.50	ND			ND								
19P PCB1254	1.00	ND			ND								
20P PCB1221	0.50	ND			ND								
21P PCB1232	0.50	ND			ND								
22P PCB1248	1.00	ND			ND								
23P PCB1260	1.00	ND			ND								
24P PCB1016	0.50	ND			ND								
25P Toxaphene	1.00	ND			ND								
<b>SURROGATE COMPOUNDS</b>		Detected Amount	Spiked Amount	% Recovery									
Decachlorobiphenyl		17.58	20.00	87.90	18.25	20.00	91.25	21.68	20.00	108.40	21.58	20.00	107.90

\* = Matrix Spiking Compounds

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**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**PESTICIDE/POLYCHLORINATED BIPHENYLS - ECD ANALYSIS DATA**

Client: Hercules  
 Sample ID: MW-6  
 File #: BT42544  
 Collected: 12/12/97 13:10  
 Extracted: 12/18/97 9:45  
 Analyzed: 12/23/97 5:40  
 Date  
 Time  
 DOC  
 RML  
 RML  
 Analyst  
 Sample Type: Water  
 Extraction Method: SW846 3510  
 Analysis Method: SW846 8081A

COMPOUNDS	MDL ug/L (ppb)	SAMPLE			METHOD BLANK			MATRIX SPIKE			MATRIX SPIKE DUPLICATE		
		Detected Amount ug/L (ppb)	Amount ug	% Recovery									
1P. Aldrin *	0.05	ND			ND			192.4	250.0	76.96	220.8	250.0	88.32
2P. Alpha-BHC	0.05	ND			ND								
3P. Beta-BHC	0.05	ND			ND								
4P. Gamma-BHC *	0.05	ND			ND			212.8	250.0	85.12	239.5	250.0	95.80
5P. Delta-BHC	0.05	ND			ND								
6P. Chlordane	0.50	ND			ND			421.9	500.0	84.38	446.3	500.0	89.26
7P. 4,4'-DDT *	0.10	ND			ND								
8P. 4,4'-DDE	0.10	ND			ND								
9P. 4,4'-DDD	0.05	ND			ND								
10P. Dieldrin *	0.10	ND			ND			456.5	500.0	91.30	499.5	500.0	99.90
11P. Alpha-Endosulfan	0.10	ND			ND								
12P. Beta-Endosulfan	0.10	ND			ND								
13P. Endosulfan Sulfate	0.10	ND			ND								
14P. Endrin *	0.10	ND			ND			461.1	500.0	92.22	503.6	500.0	100.72
15P. Endrin Aldehyde	0.10	ND			ND								
16P. Heptachlor *	0.05	ND			ND			214.5	250.0	85.80	212.4	250.0	84.96
17P. Heptachlor Epoxide	0.10	ND			ND								
18P. PCB1242	0.50	ND			ND								
19P. PCB1254	1.00	ND			ND								
20P. PCB1221	0.50	ND			ND								
21P. PCB1232	0.50	ND			ND								
22P. PCB1248	1.00	ND			ND								
23P. PCB1260	1.00	ND			ND								
24P. PCB1016	0.50	ND			ND								
25P. Toxaphene	1.00	ND			ND								
SURROGATE COMPOUNDS		Detected Amount	Spiked Amount	% Recovery									
Decachlorobiphenyl		19.36	20.00	96.80	18.25	20.00	91.25	21.68	20.00	108.40	21.58	20.00	107.90

\* = Matrix Spiking Compounds

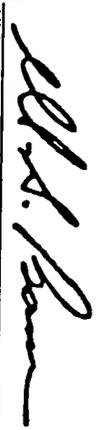
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**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**PESTICIDE/POLYCHLORINATED BI-PHENYLS - ECD ANALYSIS DATA**

Client: Hercules      Collected: 12/12/97      DOC: \_\_\_\_\_  
 Sample ID: Trip Blank      Extracted: 12/18/97      RML: \_\_\_\_\_  
 File #: 8142945      Analyzed: 12/23/97      RML: \_\_\_\_\_  
 Date: \_\_\_\_\_      Time: \_\_\_\_\_      Analyst: \_\_\_\_\_  
 Sample Type: Water      Extraction Method: SW646 3510  
 Analysis Method: SW646 8081A

COMPOUNDS	MDL (ppb)	SAMPLE			METHOD BLANK			MATRIX SPIKE			MATRIX SPIKE DUPLICATE		
		Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ug/L)	Spike Amount (ug)	% Recovery
1P: Aldrin	0.05	ND			ND			192.4	250.0	76.96	220.8	250.0	88.32
2P: Alpha-BHC	0.05	ND			ND								
3P: Beta-BHC	0.05	ND			ND								
4P: Gamma-BHC	0.05	ND			ND			212.8	250.0	85.12	239.5	250.0	95.80
5P: Delta-BHC	0.05	ND			ND								
6P: Chlordane	0.50	ND			ND								
7P: 4,4'-DDT	0.10	ND			ND			421.9	500.0	84.38	446.3	500.0	89.26
8P: 4,4'-DDE	0.10	ND			ND								
9P: 4,4'-DDD	0.05	ND			ND								
10P: Dieldrin	0.10	ND			ND								
11P: Alpha-Endosulfan	0.10	ND			ND			456.5	500.0	91.30	499.5	500.0	99.90
12P: Beta-Endosulfan	0.10	ND			ND								
13P: Endosulfan Sulfate	0.10	ND			ND								
14P: Endrin	0.10	ND			ND			461.1	500.0	92.22	503.6	500.0	100.72
15P: Endrin Aldehyde	0.10	ND			ND								
16P: Heptachlor	0.05	ND			ND			214.5	250.0	85.80	212.4	250.0	84.96
17P: Heptachlor Epoxide	0.10	ND			ND								
18P: PCB1242	0.50	ND			ND								
19P: PCB1254	1.00	ND			ND								
20P: PCB1221	0.50	ND			ND								
21P: PCB1232	0.50	ND			ND								
22P: PCB1248	1.00	ND			ND								
23P: PCB1260	1.00	ND			ND								
24P: PCB1016	0.50	ND			ND								
25P: Toxaphene	1.00	ND			ND								
<b>SURROGATE COMPOUNDS</b>													
Decachlorobiphenyl		Detected Amount: 21.91	Spike Amount: 20.00	% Recovery: 109.55	Detected Amount: 18.25	Spike Amount: 20.00	% Recovery: 91.25	Detected Amount: 21.88	Spike Amount: 20.00	% Recovery: 108.40	Detected Amount: 21.58	Spike Amount: 20.00	% Recovery: 107.90

\* Matrix Spiking Compounds

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**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**PESTICIDE/POLYCHLORINATED BI-PHENYLS - ECD ANALYSIS DATA**

Client: Hercules Collected: 12/15/97 DOC: \_\_\_\_\_  
 Sample ID: Equipment Blank Extracted: 12/18/97 RML: \_\_\_\_\_  
 File #: 8142346 Analyzed: 12/23/97 RML: \_\_\_\_\_  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_ Analyst: \_\_\_\_\_  
 Sample Type: Water  
 Extraction Method: SWB46 3510  
 Analysis Method: SWB46 8081A

COMPOUNDS	MDL (ppb)	SAMPLE			METHOD BLANK			MATRIX SPIKE			MATRIX SPIKE DUPLICATE		
		Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ug/L)	Spike Amount (ug)	% Recovery
1P. Aldrin *	0.05	ND			ND			192.4	250.0	76.96	220.8	250.0	88.32
2P. Alpha-BHC	0.05	ND			ND								
3P. Beta-BHC	0.05	ND			ND								
4P. Gamma-BHC *	0.05	ND			ND			212.8	250.0	85.12	239.5	250.0	95.80
5P. Delta-BHC	0.05	ND			ND								
6P. Chlordane	0.50	ND			ND			421.9	500.0	84.38	446.3	500.0	89.26
7P. 4,4'-DDT *	0.10	ND			ND								
8P. 4,4'-DDE	0.10	ND			ND								
9P. 4,4'-DDD	0.05	ND			ND								
10P. Dieldrin *	0.10	ND			ND			456.5	500.0	91.30	499.5	500.0	99.90
11P. Alpha-Endosulfan	0.10	ND			ND								
12P. Beta-Endosulfan	0.10	ND			ND								
13P. Endosulfan Sulfate	0.10	ND			ND								
14P. Endrin *	0.10	ND			ND								
15P. Endrin Alderlyde	0.10	ND			ND			461.1	500.0	92.22	503.6	500.0	100.72
16P. Heptachlor *	0.10	ND			ND			214.5	250.0	85.80	212.4	250.0	84.96
17P. Heptachlor Epoxide	0.05	ND			ND								
18P. PCB1242	0.10	ND			ND								
19P. PCB1254	0.50	ND			ND								
20P. PCB1221	1.00	ND			ND								
21P. PCB1232	0.50	ND			ND								
22P. PCB1248	1.00	ND			ND								
23P. PCB1260	1.00	ND			ND								
24P. PCB1016	0.50	ND			ND								
25P. Toxaphene	1.00	ND			ND								
<b>SURROGATE COMPOUNDS</b>													
Decachlorobiphenyl		Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
		20.42	20.00	102.10	18.25	20.00	91.25	21.68	20.00	108.40	21.58	20.00	107.90

\* = Matrix Spiking Compounds

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BONNER ANALYTICAL TESTING COMPANY  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**  
 Location: **TW-1**  
 File #: **BT42539**  
 Collected: **12/15/97** 17:30 **BATCO**  
 Received: **12/16/97** 11:20 **RWC**  
 Analyzed: **12/18/97** 12:20 **CRR**  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_ Analyst: \_\_\_\_\_  
 Sample Type: **Water**  
 Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT42541)			MATRIX SPIKE DUP (BT42541)		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	2.00	ND			ND			52.2	250.0	104.4	51.3	250.0	102.6
Benzene	71-43-2	2.00	ND			ND			52.4	250.0	104.8	51.5	250.0	103.0
Trichloroethene	79-01-6	2.50	ND			ND			52.5	250.0	105.0	53.0	250.0	106.0
Toluene	108-88-3	2.50	ND			ND			53.1	250.0	106.2	53.1	250.0	106.2
Chlorobenzene	108-90-7	2.00	ND			ND			52.9	250.0	105.8	54.0	250.0	108.0
Bromobenzene	108-86-1	2.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	2.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	2.00	ND			ND			ND			ND		
Bromoform	75-25-2	2.50	ND			ND			ND			ND		
Bromomethane	74-83-9	1.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	1.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	2.50	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	3.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND			ND		
Chloroethane	75-00-3	3.00	ND			ND			ND			ND		
Chloroform	66-67-3	2.00	ND			ND			ND			ND		
Chloromethane	74-87-3	3.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	2.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND			ND			ND		
1,2-Dibromoethane	106-93-4	2.00	ND			ND			ND			ND		
Dibromomethane	74-95-3	2.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	2.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	2.00	ND			ND			ND			ND		
cis-1,2-Dichloroethene	156-59-2	2.50	ND			ND			ND			ND		
trans-1,2-Dichloroethene	156-60-5	2.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	2.50	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	2.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	2.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	2.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND			ND		
Ethyl benzene	10061-02-8	2.00	ND			ND			ND			ND		
Hexachlorobutadiene	100-41-4	2.50	ND			ND			ND			ND		
Isopropyltoluene	87-68-3	2.00	ND			ND			ND			ND		
p-Isopropyltoluene	98-82-8	2.50	ND			ND			ND			ND		
Methylene chloride	99-87-6	2.00	ND			ND			ND			ND		
Naphthalene	75-09-2	2.50	ND			ND			ND			ND		
n-Propylbenzene	91-20-3	3.00	ND			ND			ND			ND		
	103-65-1	1.50	ND			ND			ND			ND		

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**VOLATILE ORGANICS - GC/MS ANALYSIS DATA**

Client: **HERCULES**  
 Location: **MW-1**  
 File #: **BT42539**  
 Collected: **12/15/97** 17:30 **BATCO**  
 Received: **12/16/97** 11:20 **RWC**  
 Analysis: **12/18/97** 12:20 **CRR**  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_ Analyst: \_\_\_\_\_  
 Sample Type: **Water**  
 Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spiked Amount ug	Spike % Recovery	Detected Amount ug/L (ppb)	Spiked Amount ug	Spike % Recovery	Detected Amount ug/L (ppb)	Spiked Amount ng	Spike % Recovery	Detected Amount ug/L (ppb)	Spiked Amount ng	Spike % Recovery
<b>Styrene</b>	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
<b>Surrogate Compounds</b>														
Dibromofluoromethane	1868-53-7		49.5	250.0	99.0	46.6	250.0	93.2	46.0	250.0	92.0	46.7	250.0	93.4
Toluene-d8	2037-26-5		44.9	250.0	89.8	49.2	250.0	98.4	46.1	250.0	92.2	45.9	250.0	91.8
4-Bromofluorobenzene	460-00-4		47.0	250.0	94.0	49.7	250.0	99.4	47.9	250.0	95.8	48.9	250.0	97.8

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# BONNER ANALYTICAL TESTING COMPANY

## VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Client : HERCULES

File # : BT42539

Sample Matrix : Water

Lab Sample ID : MW-1

Sample Collection Date : 12/15/97

Sample Analysis Date : 12/18/97

GC Column Length : 105 M

Dilution Factor : 1

GC Column ID : 0.53 mm

Sample Weight/ Volume : 5.0 (g/mL) mL

Number TICs Found : 0

Concentration Units : ug / L (PPB)

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION

NOTE: TICs reported for SW 846 method 8260 compounds only.

BONNER ANALYTICAL TESTING COMPANY  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES  
 Location: MW - 2  
 File #: BT42540

Collected: 12/15/97 16:20 BATCO  
 Received: 12/16/97 11:20 RWC  
 Analyzed: 12/18/97 13:21 CR  
 Date Time Analyst

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT42541)			MATRIX SPIKE DUP (BT42541)		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	2.00	ND			ND			52.2	250.0	104.4	51.3	250.0	102.6
Benzene	71-43-2	2.00	ND			ND			52.4	250.0	104.8	51.5	250.0	103.0
Trichloroethene	79-01-6	2.50	ND			ND			52.5	250.0	105.0	53.0	250.0	106.0
Toluene	108-88-3	2.50	ND			ND			53.1	250.0	106.2	53.1	250.0	106.2
Chlorobenzene	108-90-7	2.00	ND			ND			52.9	250.0	105.8	54.0	250.0	108.0
Bromobenzene	108-86-1	2.50	ND			ND								
Bromochloromethane	74-97-5	2.00	ND			ND								
Bromodichloromethane	75-27-4	2.00	ND			ND								
Bromotoluene	75-25-2	2.50	ND			ND								
Bromomethane	74-83-9	1.00	ND			ND								
n-Butylbenzene	104-51-8	1.50	ND			ND								
sec-Butylbenzene	135-98-8	2.50	ND			ND								
tert-Butylbenzene	98-06-6	3.00	ND			ND								
Carbon Tetrachloride	56-23-5	2.00	ND			ND								
Chloroethane	75-00-3	3.00	ND			ND								
Chloroform	66-67-3	2.00	ND			ND								
Chloromethane	74-87-3	3.00	ND			ND								
2-Chlorotoluene	95-49-8	3.00	ND			ND								
4-Chlorotoluene	106-43-4	1.50	ND			ND								
Dibromochloromethane	124-48-1	2.00	ND			ND								
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND								
1,2-Dibromoethane	106-93-4	2.00	ND			ND								
Dibromomethane	74-95-3	2.50	ND			ND								
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND								
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND								
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND								
Dichlorodifluoromethane	75-71-8	2.00	ND			ND								
1,1-Dichloroethane	75-34-3	2.00	ND			ND								
1,2-Dichloroethane	107-06-2	2.00	ND			ND								
cis-1,2-Dichloroethene	156-59-2	2.50	ND			ND								
trans-1,2-Dichloroethene	156-60-5	2.50	ND			ND								
1,2-Dichloropropane	78-87-5	2.50	ND			ND								
1,3-Dichloropropane	142-28-9	2.50	ND			ND								
2,2-Dichloropropane	594-20-7	2.00	ND			ND								
1,1-Dichloropropane	563-58-6	2.00	ND			ND								
c-1,3-Dichloropropane	10061-01-5	2.00	ND			ND								
t-1,3-Dichloropropane	10061-02-6	2.00	ND			ND								
Ethyl benzene	100-41-4	2.50	ND			ND								
Hexachlorobutadiene	87-68-3	2.00	ND			ND								
Isopropylbenzene	98-82-8	2.50	ND			ND								
p-Isopropyltoluene	99-87-6	2.00	ND			ND								
Methylene chloride	75-09-2	2.50	ND			ND								
Naphthalene	91-20-3	3.00	ND			ND								
n-Propylbenzene	103-65-1	1.50	ND			ND								

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**      Collected: 12/15/97      16:20      **BATCO**      Sample Type: Water  
 Location: MW-2      Received: 12/16/97      11:20      **RWC**      Analysis Method: 8260  
 File #: BT42540      Analysis: 12/18/97      13:21      **GRR**      Date      Time      Analyst

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spiked Amount ug	% Recovery	Detected Amount ug/L (ppb)	Spiked Amount ug	% Recovery	Detected Amount ug/L (ppb)	Spiked Amount ng	% Recovery	Detected Amount ug/L (ppb)	Spiked Amount ng	% Recovery
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloroethane	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
<b>Surrogate Compounds</b>														
Dibromofluoromethane	1868-53-7		47.5	250.0	95.0	46.6	250.0	93.2	46.0	250.0	92.0	46.7	250.0	93.4
Toluene-d8	2037-26-5		48.4	250.0	96.8	49.2	250.0	98.4	46.1	250.0	92.2	45.9	250.0	91.8
4-Bromofluorobenzene	460-00-4		45.3	250.0	90.6	49.7	250.0	99.4	47.9	250.0	95.8	48.9	250.0	97.8

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company



BONNER ANALYTICAL TESTING COMPANY  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES  
 Location: MW - 3  
 File #: BT42541

Collected: 12/15/97 15:40 BATCO  
 Received: 12/16/97 11:20 RWG  
 Analyzed: 12/18/97 14:22 CRR  
 Date Time Analyst

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT42541)			MATRIX SPIKE DUP (BT42541)		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
1,1-Dichloroethane	75-35-4	2.00	ND			ND			52.2	250.0	104.4	51.3	250.0	102.6
Benzene	71-43-2	2.00	ND			ND			52.4	250.0	104.8	51.5	250.0	103.0
Trichloroethane	79-01-6	2.50	ND			ND			52.5	250.0	105.0	53.0	250.0	106.0
Toluene	108-88-3	2.50	ND			ND			53.1	250.0	106.2	53.1	250.0	106.2
Chlorobenzene	108-90-7	2.00	ND			ND			52.9	250.0	105.8	54.0	250.0	108.0
Bromobenzene	108-86-1	2.50	ND			ND						ND		
Bromochloromethane	74-97-5	2.00	ND			ND						ND		
Bromodichloromethane	75-27-4	2.00	ND			ND						ND		
Bromotrimethylsilane	75-25-2	2.50	ND			ND						ND		
Bromomethane	74-83-9	1.00	ND			ND						ND		
n-Butylbenzene	104-51-8	1.50	ND			ND						ND		
sec-Butylbenzene	135-98-8	2.50	ND			ND						ND		
tert-Butylbenzene	98-06-6	3.00	ND			ND						ND		
Carbon Tetrachloride	56-23-5	2.00	ND			ND						ND		
Chloroethane	75-00-3	3.00	ND			ND						ND		
Chloroform	66-67-3	2.00	ND			ND						ND		
Chloromethane	74-87-3	3.00	ND			ND						ND		
2-Chlorotoluene	95-49-8	3.00	ND			ND						ND		
4-Chlorotoluene	106-43-4	1.50	ND			ND						ND		
Dibromochloromethane	124-48-1	2.00	ND			ND						ND		
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND						ND		
Dibromomethane	106-93-4	2.00	ND			ND						ND		
Dibromomethane	74-95-3	2.50	ND			ND						ND		
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND						ND		
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND						ND		
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND						ND		
Dichlorodifluoromethane	75-71-8	2.00	ND			ND						ND		
1,1-Dichloroethane	75-34-3	2.00	ND			ND						ND		
1,2-Dichloroethane	107-06-2	2.00	ND			ND						ND		
cis-1,2-Dichloroethane	156-59-2	2.50	ND			ND						ND		
trans-1,2-Dichloroethane	156-60-5	2.50	ND			ND						ND		
1,2-Dichloropropane	78-87-5	2.50	ND			ND						ND		
1,3-Dichloropropane	142-28-9	2.50	ND			ND						ND		
2,2-Dichloropropane	594-20-7	2.00	ND			ND						ND		
1,1-Dichloropropene	563-58-6	2.00	ND			ND						ND		
c-1,3-Dichloropropene	10061-01-5	2.00	ND			ND						ND		
1-1,3-Dichloropropene	10061-02-6	2.00	ND			ND						ND		
Ethyl benzene	100-41-4	2.50	ND			ND						ND		
Hexachlorobutadiene	87-68-3	2.00	ND			ND						ND		
Isopropylbenzene	98-82-8	2.50	ND			ND						ND		
p-Isopropyltoluene	99-87-6	2.00	ND			ND						ND		
Methylene chloride	75-09-2	2.50	ND			ND						ND		
Naphthalene	91-20-3	3.00	ND			ND						ND		
n-Propylbenzene	103-65-1	1.50	ND			ND						ND		

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**  
 Location: **MW - 3**  
 File #: **BT42541**

Collected: **12/15/97** **15:40** **BATCO**  
 Received: **12/16/97** **11:20** **RWC**  
 Analysis: **12/18/97** **14:22** **CRR**  
 Date \_\_\_\_\_ Time \_\_\_\_\_ Analyst \_\_\_\_\_

Sample Type **Water**  
 Analysis Method **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spike Amount ug	Recovery %	Detected Amount ug/L (ppb)	Spike Amount ug	Recovery %	Detected Amount ug/L (ppb)	Spike Amount ng	Recovery %	Detected Amount ug/L (ppb)	Spike Amount ng	Recovery %
<b>Styrene</b>	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
<b>Surrogate Compounds</b>														
Dibromofluoromethane	1866-53-7		47.8	250.0	95.6	46.6	250.0	93.2	46.0	250.0	92.0	46.7	250.0	93.4
Toluene-d8	2037-26-5		50.4	250.0	100.8	49.2	250.0	98.4	46.1	250.0	92.2	45.9	250.0	91.8
4-Bromofluorobenzene	460-00-4		48.0	250.0	96.0	49.7	250.0	99.4	47.9	250.0	95.8	48.9	250.0	97.8

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

# BONNER ANALYTICAL TESTING COMPANY

## VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Client : HERCULES

File # : BT42541

Sample Matrix : Water

Lab Sample ID : MW-3

Sample Collection Date : 12/15/97

Sample Analysis Date : 12/18/97

GC Column Length : 105 M

Dilution Factor : 1

GC Column ID : 0.53 mm

Sample Weight/ Volume : 5.0 (g/mL) mL

Number TICs Found : 0

Concentration Units : ug / L (PPB)

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION

NOTE: TICs reported for SW 846 method 8260 compounds only.

BONNER ANALYTICAL TESTING COMPANY  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES  
 Location: MW - 4  
 File #: BT42542

Collected: 12/12/97 13:10 BATCO  
 Received: 12/16/97 11:20 RWC  
 Analyzed: 12/18/97 19:56 CRR  
 Date Time Analyst

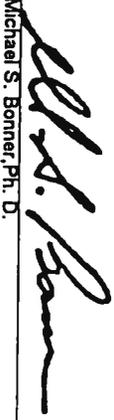
Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT42541)			MATRIX SPIKE DUP (BT42541)		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug/L (ppb)	Amount ng		% Recovery	Amount ng
1,1-Dichloroethene	75-35-4	2.00	ND		ND		52.2	250.0	104.4	51.3	250.0	102.6		
Benzene	71-43-2	2.00	ND		ND		52.4	250.0	104.8	51.5	250.0	103.0		
Trichloroethene	79-01-6	2.50	ND		ND		52.5	250.0	105.0	53.0	250.0	106.0		
Toluene	108-88-3	2.50	ND		ND		53.1	250.0	106.2	53.1	250.0	106.2		
Chlorobenzene	108-90-7	2.00	ND		ND		52.9	250.0	105.8	54.0	250.0	108.0		
Bromobenzene	108-86-1	2.50	ND		ND									
Bromochloromethane	74-97-5	2.00	ND		ND									
Bromodichloromethane	75-27-4	2.00	ND		ND									
Bromoform	75-25-2	2.50	ND		ND									
Bromomethane	74-83-9	1.00	ND		ND									
n-Butylbenzene	104-51-8	1.50	ND		ND									
sec-Butylbenzene	135-98-8	2.50	ND		ND									
tert-Butylbenzene	98-06-6	3.00	ND		ND									
Carbon Tetrachloride	56-23-5	2.00	ND		ND									
Chloroethane	75-00-3	3.00	ND		ND									
Chloroform	66-67-3	2.00	ND		ND									
Chloromethane	74-87-3	3.00	ND		ND									
2-Chlorotoluene	95-49-8	3.00	ND		ND									
4-Chlorotoluene	106-43-4	1.50	ND		ND									
Dibromochloromethane	124-48-1	2.00	ND		ND									
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND		ND									
1,2-Dibromoethane	106-93-4	2.00	ND		ND									
Dibromomethane	74-95-3	2.50	ND		ND									
1,2-Dichlorobenzene	95-50-1	2.50	ND		ND									
1,3-Dichlorobenzene	541-73-1	2.00	ND		ND									
1,4-Dichlorobenzene	106-46-7	2.00	ND		ND									
Dichlorodifluoromethane	75-71-8	2.00	ND		ND									
1,1-Dichloroethane	75-34-3	2.00	ND		ND									
1,2-Dichloroethane	107-06-2	2.00	ND		ND									
cis-1,2-Dichloroethene	156-59-2	2.50	ND		ND									
trans-1,2-Dichloroethene	156-60-5	2.50	ND		ND									
1,2-Dichloropropane	78-87-5	2.50	ND		ND									
1,3-Dichloropropane	142-28-9	2.50	ND		ND									
2,2-Dichloropropane	594-20-7	2.00	ND		ND									
1,1-Dichloropropene	563-58-6	2.00	ND		ND									
c-1,3-Dichloropropene	10061-01-5	2.00	ND		ND									
1,1,3-Dichloropropene	10061-02-6	2.00	ND		ND									
Ethyl benzene	100-41-4	2.50	ND		ND									
Hexachlorobutadiene	87-68-3	2.00	ND		ND									
Isopropylbenzene	98-82-8	2.50	ND		ND									
p-Isopropyltoluene	99-87-6	2.00	ND		ND									
Methylene chloride	75-09-2	2.50	ND		ND									
Naphthalene	91-20-3	3.00	ND		ND									
n-Propylbenzene	103-65-1	1.50	ND		ND									

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES** Location: **MW-4** Collected: **12/12/97** 13:10 **BATCO** Sample Type: **Water**  
 File #: **BT42342** Received: **12/16/97** 11:20 **RWC** Analysis Method: **8260**  
 Analysis: **12/18/97** 19:56 **CRR** Date: \_\_\_\_\_ Time: \_\_\_\_\_ Analyst: \_\_\_\_\_

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spike Amount ug	Recovery %	Detected Amount ug/L (ppb)	Spike Amount ug	Recovery %	Detected Amount ug/L (ppb)	Spike Amount ng	Recovery %	Detected Amount ug/L (ppb)	Spike Amount ng	Recovery %
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropene	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
<b>Surrogate Compounds</b>														
Dibromofluoromethane	1868-53-7		Detected Amount 44.7	Spike Amount 250.0	Recovery % 89.4	Detected Amount 46.6	Spike Amount 250.0	Recovery % 93.2	Detected Amount 46.0	Spike Amount 250.0	Recovery % 92.0	Detected Amount 46.7	Spike Amount 250.0	Recovery % 93.4
Toluene-d8	2037-26-5		48.4	250.0	96.8	49.2	250.0	98.4	46.1	250.0	92.2	45.9	250.0	91.8
4-Bromofluorobenzene	460-00-4		48.3	250.0	96.6	49.7	250.0	99.4	47.9	250.0	95.8	48.9	250.0	97.8

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

# BONNER ANALYTICAL TESTING COMPANY

## VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Client : HERCULES

File # : BT42542

Sample Matrix : Water

Lab Sample ID : MW-4

Sample Collection Date : 12/12/97

Sample Analysis Date : 12/18/97

GC Column Length : 105 M

Dilution Factor : 1

GC Column ID : 0.53 mm

Sample Weight/ Volume : 5.0 (g/mL) mL

Number TICs Found : 2

Concentration Units : ug / L (PPB)

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION
67-64-1	Acetone	10.6	169
78-93-3	MEK	17.2	182

NOTE: TICs reported for SW 846 method 8260 compounds only.

BONNER ANALYTICAL TESTING COMPANY  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES  
 Location: MW - 5  
 File #: BT42543

Collected: 12/12/97 9:00  
 Received: 12/16/97 11:20  
 Analyzed: 12/18/97 18:53  
 Date Time Analyst

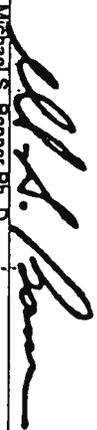
Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT42543)			MATRIX SPIKE DUP (BT42541)		
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ng	% Recovery		Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	2.00	ND			ND			52.2	250.0	104.4	51.3	250.0	102.6
Benzene	71-43-2	2.00	ND			ND			52.4	250.0	104.8	51.5	250.0	103.0
Trichloroethene	79-01-6	2.50	ND			ND			52.5	250.0	105.0	53.0	250.0	106.0
Toluene	108-88-3	2.50	ND			ND			53.1	250.0	106.2	53.1	250.0	106.2
Chlorobenzene	108-90-7	2.00	ND			ND			52.9	250.0	105.8	54.0	250.0	108.0
Bromobenzene	108-86-1	2.50	ND			ND						ND		
Bromochloromethane	74-97-5	2.00	ND			ND			ND	ND	ND	ND	ND	ND
Bromodichloromethane	75-27-4	2.00	ND			ND			ND	ND	ND	ND	ND	ND
Bromotorm	75-25-2	2.50	ND			ND			ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	1.00	ND			ND			ND	ND	ND	ND	ND	ND
n-Butylbenzene	104-51-8	1.50	ND			ND			ND	ND	ND	ND	ND	ND
sec-Butylbenzene	135-98-8	2.50	ND			ND			ND	ND	ND	ND	ND	ND
tert-Butylbenzene	98-06-6	3.00	ND			ND			ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	3.00	ND			ND			ND	ND	ND	ND	ND	ND
Chloroform	66-67-3	2.00	ND			ND			ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	3.00	ND			ND			ND	ND	ND	ND	ND	ND
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND	ND	ND	ND	ND	ND
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	2.00	ND			ND			ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND			ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	106-93-4	2.00	ND			ND			ND	ND	ND	ND	ND	ND
Dibromomethane	74-95-3	2.50	ND			ND			ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND			ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	2.00	ND			ND			ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	2.00	ND			ND			ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethane	156-59-2	2.50	ND			ND			ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethane	156-60-5	2.50	ND			ND			ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	2.50	ND			ND			ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	142-28-9	2.50	ND			ND			ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	594-20-7	2.00	ND			ND			ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	563-58-6	2.00	ND			ND			ND	ND	ND	ND	ND	ND
c-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND	ND	ND	ND	ND	ND
1,1,3-Dichloropropene	10061-02-6	2.00	ND			ND			ND	ND	ND	ND	ND	ND
Ethyl benzene	100-41-4	2.50	ND			ND			ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	2.00	ND			ND			ND	ND	ND	ND	ND	ND
Isopropylbenzene	98-82-8	2.50	ND			ND			ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	99-87-6	2.00	ND			ND			ND	ND	ND	ND	ND	ND
Methylene chloride	75-09-2	2.50	ND			ND			ND	ND	ND	ND	ND	ND
Naphthalen	91-20-3	3.00	ND			ND			ND	ND	ND	ND	ND	ND
n-Propylbe	103-65-1	1.50	ND			ND			ND	ND	ND	ND	ND	ND

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**VOLATILE ORGANICS - GC/MS ANALYSIS DATA**

Client: **HERCULES** Collected: 12/12/97 9:00 **BATCO** Sample Type: Water  
 Location: MW-5 Received: 12/16/97 11:20 **RWC** Analysis Method: 8260  
 File #: BT142543 Analysis: 12/18/97 18:53 **GRR** Date:            Time:            Analyst:           

Compound Name	CAS Number	MDL (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount (ug/L)	Spiked Amount (ug)	Recovery %	Detected Amount (ug/L)	Spiked Amount (ug)	Recovery %	Detected Amount (ug/L)	Spiked Amount (ng)	Recovery %	Detected Amount (ug/L)	Spiked Amount (ng)	Recovery %
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trichloropropane	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
<b>Surrogate Compounds</b>			<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>Recovery %</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>Recovery %</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>Recovery %</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>Recovery %</b>
Dibromofluoromethane	1868-53-7		45.3	250.0	90.6	46.6	250.0	93.2	46.0	250.0	92.0	46.7	250.0	93.4
Toluene-d8	2037-26-5		49.5	250.0	99.0	49.2	250.0	98.4	46.1	250.0	92.2	45.9	250.0	91.8
4-Bromofluorobenzene	460-00-4		49.2	250.0	98.4	49.7	250.0	99.4	47.9	250.0	95.8	48.9	250.0	97.8

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company



BONNER ANALYTICAL TESTING COMPANY  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES  
 Location: MW - 6  
 File #: BT42544

Collected: 12/12/97 13:10 BATCO  
 Received: 12/16/97 11:20 RWC  
 Analyzed: 12/18/97 15:23 CRR  
 Date Time Analyst

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT42544)			MATRIX SPIKE DUP (BT42544)		
			Detected Amount (ug/L)	Amount (ug)	Recovery (%)	Detected Amount (ug/L)	Amount (ug)	Recovery (%)	Detected Amount (ug/L)	Amount (ng)	Recovery (%)	Detected Amount (ug/L)	Amount (ng)	Recovery (%)
1,1-Dichloroethene	75-35-4	2.00	ND			ND			52.2	250.0	104.4	51.3	250.0	102.6
Benzene	71-43-2	2.00	ND			ND			52.4	250.0	104.8	51.5	250.0	103.0
Trichloroethene	79-01-6	2.50	ND			ND			52.5	250.0	105.0	53.0	250.0	106.0
Toluene	108-88-3	2.50	ND			ND			53.1	250.0	106.2	53.1	250.0	106.2
Chlorobenzene	108-90-7	2.00	ND			ND			52.9	250.0	105.8	54.0	250.0	108.0
Bromobenzene	108-86-1	2.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	2.00	ND			ND			ND			ND		
Bromoform	75-27-4	2.00	ND			ND			ND			ND		
Bromomethane	75-25-2	2.50	ND			ND			ND			ND		
n-Butylbenzene	74-83-9	1.00	ND			ND			ND			ND		
sec-Butylbenzene	104-51-8	1.50	ND			ND			ND			ND		
tert-Butylbenzene	135-98-8	2.50	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND			ND		
Chloroethane	75-00-3	3.00	ND			ND			ND			ND		
Chloroform	66-67-3	2.00	ND			ND			ND			ND		
Chloromethane	74-87-3	3.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	2.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND			ND			ND		
1,2-Dibromoethane	106-93-4	2.00	ND			ND			ND			ND		
Dibromomethane	74-95-3	2.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	2.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	2.00	ND			ND			ND			ND		
cis-1,2-Dichloroethene	156-59-2	2.50	ND			ND			ND			ND		
trans-1,2-Dichloroethene	156-60-5	2.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	2.50	ND			ND			ND			ND		
1,2-Dichloropropane	142-28-9	2.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	2.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	2.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND			ND		
t-1,3-Dichloropropene	10061-02-6	2.00	ND			ND			ND			ND		
Ethyl benzene	100-41-4	2.50	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	2.00	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	2.50	ND			ND			ND			ND		
p-Isopropyltoluene	99-87-6	2.00	ND			ND			ND			ND		
Methylene chloride	75-09-2	2.50	ND			ND			ND			ND		
Naphthalene	91-20-3	3.00	ND			ND			ND			ND		
n-Propylbenzene	103-65-1	1.50	ND			ND			ND			ND		

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES  
 Location: MW-6  
 File #: BT42544

Collected: 12/12/97 13:10 BATCO  
 Received: 12/16/97 11:20 RWC  
 Analysis: 12/18/97 15:23 CRR  
 Date \_\_\_\_\_ Time \_\_\_\_\_ Analyst \_\_\_\_\_

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL (ug/L (ppb))	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount (ug/L (ppb))	Spiked Amount (ug)	Recovery %	Detected Amount (ug/L (ppb))	Spiked Amount (ug)	Recovery %	Detected Amount (ug/L (ppb))	Spiked Amount (ng)	Recovery %	Detected Amount (ug/L (ppb))	Spiked Amount (ng)	Recovery %
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trimethylbenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
<b>Surrogate Compounds</b>			<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>
Dibromofluoromethane	1868-53-7		49.1	250.0	98.2	46.6	250.0	93.2	46.0	250.0	92.0	46.7	250.0	93.4
Toluene-d8	2037-26-5		49.3	250.0	98.6	49.2	250.0	98.4	46.1	250.0	92.2	45.9	250.0	91.8
4-Bromofluorobenzene	460-00-4		49.2	250.0	98.4	49.7	250.0	99.4	47.9	250.0	95.8	48.9	250.0	97.8

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

# BONNER ANALYTICAL TESTING COMPANY

## VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Client : HERCULES

File # : BT42544

Sample Matrix : Water

Lab Sample ID : MW-6

Sample Collection Date : 12/12/97

Sample Analysis Date : 12/18/97

GC Column Length : 105 M

Dilution Factor : 1

GC Column ID : 0.53 mm

Sample Weight/ Volume : 5.0 (g/mL) mL

Number TICs Found : 0

Concentration Units : ug / L (PPB)

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION

NOTE: TICs reported for SW 846 method 8260 compounds only.

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**VOLATILE ORGANICS - GC/MS ANALYSIS DATA**

Client: **HERCULES**  
 Location: **Trip Blank**  
 File #: **BT42543**

Collected: **12/12/97**      **BATCO**  
 Received: **12/15/97**      **RWC**  
 Analyzed: **12/18/97**      **CRR**  
 Date      Time      Analyst

Sample Type: **Water**  
 Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT42543)			MATRIX SPIKE DUP (BT42543)		
			Detected Amount ug/L (ppb)	Amount ug	Spike % Recovery	Detected Amount ug/L (ppb)	Amount ug	Spike % Recovery	Detected Amount ug/L (ppb)	Amount ng	Spike % Recovery	Detected Amount ug/L (ppb)	Amount ng	Spike % Recovery
1,1-Dichloroethane	75-35-4	2.00	ND			ND			52.2	250.0	104.4	51.3	250.0	102.6
Benzene	71-43-2	2.00	ND			ND			52.4	250.0	104.8	51.5	250.0	103.0
Trichloroethene	79-01-6	2.50	ND			ND			52.5	250.0	105.0	53.0	250.0	106.0
Toluene	108-88-3	2.50	ND			ND			53.1	250.0	106.2	53.1	250.0	106.2
Chlorobenzene	108-90-7	2.00	ND			ND			52.9	250.0	105.8	54.0	250.0	108.0
Bromobenzene	108-86-1	2.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	2.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	2.00	ND			ND			ND			ND		
Bromofarm	75-25-2	2.50	ND			ND			ND			ND		
Bromomethane	74-83-9	1.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	1.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	2.50	ND			ND			ND			ND		
ter-Butylbenzene	98-06-6	3.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND			ND		
Chloroethane	75-00-3	3.00	ND			ND			ND			ND		
Chloroform	66-67-3	2.00	ND			ND			ND			ND		
Chloromethane	74-87-3	3.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	2.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND			ND			ND		
1,2-Dibromoethane	106-93-4	2.00	ND			ND			ND			ND		
Dibromomethane	74-95-3	2.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	2.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	2.00	ND			ND			ND			ND		
cis-1,2-Dichloroethene	156-59-2	2.50	ND			ND			ND			ND		
trans-1,2-Dichloroethene	156-60-5	2.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	2.50	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	2.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	2.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	2.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND			ND		
t-1,3-Dichloropropene	10061-02-6	2.00	ND			ND			ND			ND		
Ethyl benzene	100-41-4	2.50	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	2.00	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	2.50	ND			ND			ND			ND		
p-Isopropyltoluene	99-87-6	2.00	ND			ND			ND			ND		
Methylene chloride	75-09-2	2.50	ND			ND			ND			ND		
n-Propylb	91-20-3	3.00	ND			ND			ND			ND		
n-Propylb	103-65-1	1.50	ND			ND			ND			ND		

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: **HERCULES**  
 Location: **Trip Blank**  
 File #: **BT42545**

Collected: **12/12/97** 0:00 **BATCO**  
 Received: **12/16/97** 11:20 **RWC**  
 Analysis: **12/18/97** 16:50 **CRR**  
 Date **Time Analyst**

Sample Type: **Water**  
 Analysis Method: **8250**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount ug/L (ppb)	Spike Amount ug	% Recovery	Detected Amount ug/L (ppb)	Spike Amount ug	% Recovery	Detected Amount ug/L (ppb)	Spike Amount ng	% Recovery	Detected Amount ug/L (ppb)	Spike Amount ng	% Recovery
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethane	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trinitrobenzene	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
Dibromofluoromethane	1868-53-7		48.8	250.0	97.6	46.6	250.0	93.2	46.0	250.0	92.0	46.7	250.0	93.4
Toluene-d8	2037-26-5		47.2	250.0	94.4	49.2	250.0	98.4	46.1	250.0	92.2	45.9	250.0	91.8
4-Bromofluorobenzene	460-00-4		45.9	250.0	91.8	49.7	250.0	99.4	47.9	250.0	95.8	48.9	250.0	97.8

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

# BONNER ANALYTICAL TESTING COMPANY

## VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Client : HERCULES

File # : BT42545

Sample Matrix : Water

Lab Sample ID : Trip Blank

Sample Collection Date : 12/12/97

Sample Analysis Date : 12/18/97

GC Column Length : 105 M

Dilution Factor : 1

GC Column ID : 0,53 mm

Sample Weight/ Volume : 5.0 (g/mL) mL

Number TICs Found : 0

Concentration Units : ug / L (PPB)

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION

NOTE: TICs reported for SW 846 method 8260 compounds only.

**BONNIER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**VOLATILE ORGANICS - GC/MS ANALYSIS DATA**

Client: **HERCULES**  
 Location: **Equipment Blank**  
 File #: **BT42546**

Collected: **12/15/97**  
 Received: **12/16/97**  
 Analyzed: **12/18/97**  
 Date: **11:20**  
 Time: **17:51**  
 Analyst: **BATCO**  
**RWC**  
**CRR**

Sample Type: **Water**  
 Analysis Method: **8260**

Compound Name	CAS Number	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX SPIKE (BT42541)			MATRIX SPIKE DUP (BT42541)		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery	Detected Amount ug/L (ppb)	Amount ng	% Recovery
1,1-Dichloroethene	75-35-4	2.00	ND			ND			52.2	250.0	104.4	51.3	250.0	102.6
Benzene	71-43-2	2.00	ND			ND			52.4	250.0	104.8	51.5	250.0	103.0
Trichloroethene	79-01-6	2.50	ND			ND			52.5	250.0	105.0	53.0	250.0	106.0
Toluene	108-88-3	2.50	ND			ND			53.1	250.0	106.2	53.1	250.0	106.2
Chlorobenzene	108-90-7	2.00	ND			ND			52.9	250.0	105.8	54.0	250.0	106.0
Bromobenzene	108-86-1	2.50	ND			ND			ND			ND		
Bromochloromethane	74-97-5	2.00	ND			ND			ND			ND		
Bromodichloromethane	75-27-4	2.00	ND			ND			ND			ND		
Bromoforn	75-25-2	2.50	ND			ND			ND			ND		
Bromomethane	74-83-9	1.00	ND			ND			ND			ND		
n-Butylbenzene	104-51-8	1.50	ND			ND			ND			ND		
sec-Butylbenzene	135-98-8	2.50	ND			ND			ND			ND		
tert-Butylbenzene	98-06-6	3.00	ND			ND			ND			ND		
Carbon Tetrachloride	56-23-5	2.00	ND			ND			ND			ND		
Chloroethane	75-00-3	3.00	ND			ND			ND			ND		
Chloroform	66-67-3	2.00	ND			ND			ND			ND		
Chloromethane	74-87-3	3.00	ND			ND			ND			ND		
2-Chlorotoluene	95-49-8	3.00	ND			ND			ND			ND		
4-Chlorotoluene	106-43-4	1.50	ND			ND			ND			ND		
Dibromochloromethane	124-48-1	2.00	ND			ND			ND			ND		
1,2-Dibromo-3-chloropropane	96-12-8	4.00	ND			ND			ND			ND		
1,2-Dibromoethane	106-93-4	2.00	ND			ND			ND			ND		
Dibromomethane	74-95-3	2.50	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	2.50	ND			ND			ND			ND		
1,3-Dichlorobenzene	541-73-1	2.00	ND			ND			ND			ND		
1,4-Dichlorobenzene	106-46-7	2.00	ND			ND			ND			ND		
Dichlorodifluoromethane	75-71-8	2.00	ND			ND			ND			ND		
1,1-Dichloroethane	75-34-3	2.00	ND			ND			ND			ND		
1,2-Dichloroethane	107-06-2	2.00	ND			ND			ND			ND		
cis-1,2-Dichloroethene	156-59-2	2.50	ND			ND			ND			ND		
trans-1,2-Dichloroethene	156-60-5	2.50	ND			ND			ND			ND		
1,2-Dichloropropane	78-87-5	2.50	ND			ND			ND			ND		
1,3-Dichloropropane	142-28-9	2.50	ND			ND			ND			ND		
2,2-Dichloropropane	594-20-7	2.00	ND			ND			ND			ND		
1,1-Dichloropropene	563-58-6	2.00	ND			ND			ND			ND		
c-1,3-Dichloropropene	10061-01-5	2.00	ND			ND			ND			ND		
t-1,3-Dichloropropene	10061-02-6	2.00	ND			ND			ND			ND		
Ethyl Benzene	100-41-4	2.50	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	2.00	ND			ND			ND			ND		
Isopropylbenzene	98-82-8	2.50	ND			ND			ND			ND		
p-Isopropyltoluene	99-87-6	2.00	ND			ND			ND			ND		
Methylene chloride	75-09-2	2.50	ND			ND			ND			ND		
Naphthalen	91-20-3	3.00	ND			ND			ND			ND		
n-Propylb	103-65-1	1.50	ND			ND			ND			ND		

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 VOLATILE ORGANICS - GC/MS ANALYSIS DATA

Client: HERCULES  
 Location: Equipment Blank  
 File #: BT42546

Collected: 12/15/97 BATCO  
 Received: 12/18/97 RWC  
 Analysis: 12/18/97 CRR  
 Date: 17:51 Time: Analyst

Sample Type: Water  
 Analysis Method: 8260

Compound Name	CAS Number	MDL (ppb)	SAMPLE			BLANK			MATRIX SPIKE			MATRIX SPIKE DUP		
			Detected Amount (ug/L)	Spiked Amount (ug)	% Recovery	Detected Amount (ug/L)	Spiked Amount (ug)	% Recovery	Detected Amount (ug/L)	Spiked Amount (ng)	% Recovery	Detected Amount (ug/L)	Spiked Amount (ng)	% Recovery
Styrene	100-42-5	2.00	ND			ND			ND			ND		
1,1,1,2-Tetrachloroethane	630-20-6	2.50	ND			ND			ND			ND		
1,1,2,2-Tetrachloroethane	79-34-5	2.50	ND			ND			ND			ND		
Tetrachloroethene	127-18-4	2.00	ND			ND			ND			ND		
1,2,3-Trichlorobenzene	87-61-6	2.00	ND			ND			ND			ND		
1,2,4-Trichlorobenzene	120-82-1	2.50	ND			ND			ND			ND		
1,1,1-Trichloroethane	71-55-6	2.00	ND			ND			ND			ND		
1,1,2-Trichloroethane	79-00-5	2.50	ND			ND			ND			ND		
Trichlorofluoromethane	75-69-4	2.00	ND			ND			ND			ND		
1,2,3-Trichloropropane	96-18-4	1.50	ND			ND			ND			ND		
1,2,4-Trichloropropane	95-63-6	2.00	ND			ND			ND			ND		
1,3,5-Trimethylbenzene	108-67-8	3.00	ND			ND			ND			ND		
Vinyl chloride	75-01-4	2.50	ND			ND			ND			ND		
Xylenes (total)	1330-20-7	4.00	ND			ND			ND			ND		
<b>Surrogate Compounds</b>			<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>	<b>Detected Amount</b>	<b>Spiked Amount</b>	<b>% Recovery</b>
Dibromofluoromethane	1868-53-7		48.6	250.0	97.2	46.6	250.0	93.2	46.0	250.0	92.0	46.7	250.0	93.4
Toluene-d8	2037-26-5		46.1	250.0	92.2	49.2	250.0	98.4	46.1	250.0	92.2	45.9	250.0	91.8
4-Bromofluorobenzene	460-00-4		49.0	250.0	98.0	49.7	250.0	99.4	47.9	250.0	95.8	48.9	250.0	97.8

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

BONNER ANALYTICAL TESTING COMPANY

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Client : HERCULES

File # : BT42546

Sample Matrix : Water

Lab Sample ID : Equipment Blank

Sample Collection Date : 12/15/97

Sample Analysis Date : 12/18/97

GC Column Length : 105 M

Dilution Factor : 1

GC Column ID : 0.53 mm

Sample Weight/ Volume : 5.0 (g/mL) mL

Number TICs Found : 0

Concentration Units : ug / L (PPB)

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION

NOTE: TICs reported for SW 846 method 8260 compounds only.

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: MW-1  
 File #: BT42539

Collected: 12/15/97 17:30 BATCO  
 Extracted: 12/19/97 9:00 CMB  
 Analyzed: 1/9/98 2:34 CMB  
 Date \_\_\_\_\_ Time \_\_\_\_\_ Analyst \_\_\_\_\_

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL (ppb)	BT42539			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L)	Amount (ug)	Spike % Recovery	Detected Amount (ug/L)	Amount (ug)	Spike % Recovery	Detected Amount (ng/L in the extract)	Amount (ug)	Spike % Recovery	Detected Amount (ng/L in the extract)	Amount (ug)	Spike % Recovery
Phenol	108-95-2	5.2	ND			ND			89.18	300.00	29.73	99.51	300.00	33.17
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND	300.00	62.51	210.70	300.00	70.23
2-Chlorophenol	95-57-8	5.7	ND			ND			187.53	300.00	62.51	ND	300.00	ND
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND	200.00	42.80	100.12	200.00	50.06
1,4-Dichlorobenzene	106-46-7	6.1	ND			85.60			ND			ND		
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			136.46			ND	200.00	68.23	160.56	200.00	80.26
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
Benzoic Acid	88-75-5	9.1	ND			ND			ND			ND		
2-Nitrophenol	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			95.21			ND	200.00	47.61	109.42	200.00	54.71
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			ND			ND		
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-68-3	9.4	ND			234.19			ND	300.00	78.06	260.60	300.00	86.87
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND		
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	9.0	ND			121.78			200.00	60.89	144.73	200.00	72.37	
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			ND			ND		
4-Nitrophenol	100-02-7	8.6	ND			112.70			300.00	37.57	107.40	300.00	35.80	
Dibenzofuran	132-64-9	8.4	ND			ND			ND			ND		
2,4-Dinitrotoluene	121-14-2	8.3	ND			147.75			200.00	73.88	161.78	200.00	80.89	
Diethylphthalate	84-66-2	9.9	ND			ND			ND			ND		
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro 2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules  
 Location: MW-1  
 File #: B142539

Collection: 12/15/97 17:30 8ATCO  
 Extraction: 12/19/97 9:00 CMB  
 Analysis: 1/9/98 2:34 CMB  
 Date Time Analyst

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL (ppb)	B142539			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spike Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spike Amount (ug)	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			311.90	300.00	103.97	307.08	300.00	102.38
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
D-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			174.39	200.00	87.20	180.67	200.00	90.34
Pyrene	129-00-0	7.9	ND			ND			ND			ND		
Burylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzofluoranthene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
D-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzol(b)fluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzol(k)fluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzofluoranthene	50-32-8	5.9	ND			ND			ND			ND		
Indenol(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzol(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzol(g,h,i)perylene	191-24-2	10.0	ND			ND			ND			ND		
<b>Surrogate Compounds</b>														
2-Fluorophenol	70-41		Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
Phenol-d5	53.29		70.41	200.00	35.21	92.22	200.00	46.11	112.38	200.00	56.18	123.26	200.00	61.83
Nitrobenzene-d5	85.94		53.29	200.00	26.65	64.71	200.00	32.36	78.94	200.00	39.47	87.05	200.00	43.53
2-Fluorobiphenyl	63.85		85.94	100.00	85.94	74.74	100.00	74.74	97.18	100.00	97.18	104.82	100.00	104.82
2,4,6-Trifluorophenol	189.97		63.85	100.00	63.85	65.54	100.00	65.54	88.97	100.00	86.97	104.87	100.00	104.87
Terphenyl-14	91.50		189.97	200.00	84.99	226.16	200.00	113.08	273.28	200.00	136.64	286.69	200.00	143.35
			91.50	100.00	91.50	132.90	100.00	132.90	127.86	100.00	127.66	125.04	100.00	125.04

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

# BONNER ANALYTICAL TESTING COMPANY

## SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Client : Hercules, Inc. \_\_\_\_\_

File # : BT42539 \_\_\_\_\_

Sample Matrix : Water \_\_\_\_\_

Lab Sample ID : MW-1 \_\_\_\_\_

Sample Collection Date : 12-15-97 @ 1730 \_\_\_\_\_

Sample Analysis Date : 01-09-98 @ 0234 \_\_\_\_\_

GC Column Length : 30 M \_\_\_\_\_

Dilution Factor : 1.02 \_\_\_\_\_

GC Column ID : 0.25 mm \_\_\_\_\_

Sample Weight/ Volume : 980 mL \_\_\_\_\_

Method Code: 8270 \_\_\_\_\_

Number TICs Found : 0 \_\_\_\_\_

Concentration Units : ug / L (PPB) \_\_\_\_\_

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION

NOTE: TICs reported for SW846 method 8270 compounds only.

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules  
 Location: MW-2  
 File #: BT42540

Collected: 12/15/97 16:20 BATCO  
 Extracted: 12/19/97 9:00 CMB  
 Analyzed: 1/9/98 3:27 CMB  
 Date \_\_\_\_\_ Time \_\_\_\_\_ Analyst \_\_\_\_\_

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL ug/L (ppb)	BT42540				BLANK				Matrix Spike				Matrix Spike Duplicate			
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ng/L in the extract	Amount ug	% Recovery	Detected Amount ng/L in the extract	Amount ug	% Recovery	Detected Amount ng/L in the extract	Amount ug	% Recovery	
																		Amount ug/L (ppb)
Phenol	108-95-2	5.2	ND			ND			89.18	300.00	29.73	99.51	300.00	33.17				
Bis(2-chloroethyl)ether	111-44-4	6.8	ND			ND			ND	300.00	62.51	210.70	300.00	70.23				
2-Chlorophenol	95-57-8	5.7	ND			187.53			ND			ND						
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			85.80	200.00	42.80	100.12	200.00	50.06				
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			ND			ND						
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND						
2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND						
2-Methylphenol	95-48-7	5.8	ND			ND			ND			ND						
Bis(2-chloroisopropyl)ether	108-80-1	8.8	ND			ND			ND			ND						
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND						
Hexachloroethane	67-72-1	8.0	ND			ND			136.46	200.00	68.23	160.56	200.00	80.28				
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			ND			ND						
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND						
Isophorone	78-59-1	9.2	ND			ND			ND			ND						
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND						
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND						
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND						
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			95.21	200.00	47.61	109.42	200.00	54.71				
2,4-Dichlorophenol	120-83-2	5.2	ND			ND			ND			ND						
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			ND			ND						
Naphthalene	91-20-3	8.5	ND			ND			234.19	300.00	78.06	280.60	300.00	86.87				
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND						
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND						
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND						
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND						
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND						
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND						
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND						
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND						
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND						
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND						
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND						
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND						
3-Nitroaniline	99-09-2	16.0	ND			ND			121.78	200.00	60.89	144.73	200.00	72.37				
Acenaphthene	83-32-9	8.3	ND			ND			ND			ND						
2,4-Dinitrophenol	51-28-5	14.2	ND			ND			112.70	300.00	37.57	107.40	300.00	35.80				
4-Nitrophenol	100-02-7	8.6	ND			ND			147.75	200.00	73.88	161.78	200.00	80.89				
Dibenzofuran	132-64-9	8.4	ND			ND			ND			ND						
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			ND			ND						
Diethylphthalate	84-66-2	9.9	ND			ND			ND			ND						
Fluorene	86-73-7	9.8	ND			ND			ND			ND						
4-Chlorophenyl phenylether	7005-72-3	8.3	ND			ND			ND			ND						
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND						
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND						

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules  
 Location: MW-2  
 File #: 8142540

Collection: 12/15/97 16:20 BATCO  
 Extraction: 12/19/97 9:00 CMB  
 Analysis: 1/9/98 3:27 CMB  
 Date: Analyst

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL (ug/L (ppb))	8142540			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L (ppb))	Spiked Amount (ug)	% Recovery	Detected Amount (ug/L (ppb))	Spiked Amount (ug)	% Recovery	Detected Amount (ug/L in the extract)	Spiked Amount (ug)	% Recovery	Detected Amount (ug/L in the extract)	Spiked Amount (ug)	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			311.90	300.00	103.97	307.08	300.00	102.38
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
D,n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			174.39	200.00	87.20	180.67	200.00	90.34
Pyrene	129-00-0	7.9	ND			ND			ND			ND		
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzolanthracene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidine	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
D,n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzobifluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzol(p)pyrene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenz(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzol(g,h,i)perylene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			112.84	200.00	56.42	92.22	200.00	46.11	112.36	200.00	56.18	123.26	200.00	61.63
Phenol-d5			81.20	200.00	40.60	64.71	200.00	32.36	78.94	200.00	39.47	87.05	200.00	43.53
Nitrobenzene-d5			101.23	100.00	101.23	74.74	100.00	74.74	97.18	100.00	97.18	104.82	100.00	104.82
2-Fluorobiphenyl			82.84	100.00	82.84	65.54	100.00	65.54	86.97	100.00	86.97	104.67	100.00	104.67
2,4,6-Tribromophenol			253.26	200.00	126.63	226.16	200.00	113.08	273.28	200.00	136.64	286.69	200.00	143.35
Terphenyl d14			122.74	100.00	122.74	132.90	100.00	132.90	127.66	100.00	127.66	125.04	100.00	125.04

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company



**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

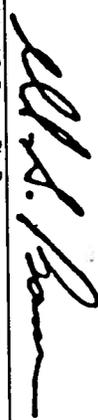
Client: Hercules Collected: 12/15/97 15:40 BATCO Sample Type: Water  
 Location: MW-3 Extracted: 12/19/97 9:00 CM8 Extraction Method: 3510b  
 File #: BT42541 Analyzed: 1/9/98 4:20 CM8 Analysis Method: 8270

Compound Name	CAS Number	MDL ug/L (ppb)	Detected Amount ug/L (ppb)	BT42541 Spike		BLANK Spike		Detected Amount ng/L in the extract	Matrix Spike		Matrix Spike Duplicate		
				Amount ug	% Recovery	Amount ug	% Recovery		Amount ug	% Recovery	Amount ug	% Recovery	
Phenol	108-95-2	5.2	ND					89.18	300.00	29.73	99.51	300.00	33.17
Bis(2-chloroethyl)ether	111-44-4	6.9	ND					ND	300.00	62.51	ND	300.00	70.23
2-Chlorophenol	95-57-8	5.7	ND					187.53	300.00	ND	ND	300.00	ND
1,3-Dichlorobenzene	541-73-1	8.3	ND					85.80	200.00	42.80	100.12	200.00	50.06
1,4-Dichlorobenzene	106-46-7	6.1	ND					ND	ND	ND	ND	ND	ND
Benzyl Alcohol	100-51-6	14.8	ND					ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	6.0	ND					ND	ND	ND	ND	ND	ND
2-Methylphenol	95-48-7	5.6	ND					ND	ND	ND	ND	ND	ND
Bis(2-chloroisopropyl)ether	108-80-1	8.8	ND					ND	ND	ND	ND	ND	ND
4-Methylphenol	106-44-5	8.7	ND					ND	200.00	68.23	160.58	200.00	80.28
Hexachloroethane	67-72-1	8.0	ND					136.48	ND	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	98-95-3	8.2	ND					ND	ND	ND	ND	ND	ND
Nitrobenzene	78-59-1	9.2	ND					ND	ND	ND	ND	ND	ND
Isophorone	105-67-9	6.0	ND					ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	88-75-5	9.1	ND					ND	ND	ND	ND	ND	ND
2-Nitrophenol	85-85-0	22.3	ND					ND	ND	ND	ND	ND	ND
Benzoic Acid	111-91-1	8.8	ND					ND	200.00	47.61	109.42	200.00	38.47
Bis(2-chloroethoxy)methane	120-83-2	5.2	ND					95.21	ND	ND	ND	ND	ND
2,4-Dichlorophenol	120-82-1	9.4	ND					ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	91-20-3	8.5	ND					ND	ND	ND	ND	ND	ND
Naphthalene	106-47-8	8.5	ND					ND	300.00	78.06	280.80	300.00	86.87
4-Chloroaniline	87-68-3	9.4	ND					234.19	ND	ND	ND	ND	ND
Hexachlorobutadiene	59-50-7	7.7	ND					ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	91-57-6	7.5	ND					ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	77-47-4	8.6	ND					ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	88-06-2	9.1	ND					ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	95-95-4	7.1	ND					ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	91-58-7	5.7	ND					ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	88-74-4	12.0	ND					ND	ND	ND	ND	ND	ND
2-Nitroaniline	131-11-3	8.2	ND					ND	ND	ND	ND	ND	ND
Dimethylphthalate	208-96-8	9.0	ND					ND	200.00	60.89	144.73	200.00	72.37
Acenaphthylene	606-20-2	9.2	ND					ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	99-09-2	16.0	ND					121.78	200.00	37.57	107.40	300.00	35.80
3-Nitroaniline	83-32-9	9.0	ND					ND	300.00	ND	ND	300.00	ND
Acenaphthene	51-28-5	14.2	ND					112.70	ND	73.88	161.78	200.00	80.89
2,4-Dinitrophenol	100-02-7	8.6	ND					147.75	200.00	ND	ND	ND	ND
4-Nitrophenol	132-64-9	8.4	ND					ND	ND	ND	ND	ND	ND
Dibenzofuran	121-14-2	8.3	ND					ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	121-14-2	9.9	ND					ND	ND	ND	ND	ND	ND
Diethylphthalate	84-66-2	9.8	ND					ND	ND	ND	ND	ND	ND
Fluorene	86-73-7	9.8	ND					ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenylether	7005-72-3	8.3	ND					ND	ND	ND	ND	ND	ND
4-Nitroaniline	100-01-6	8.7	ND					ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND					ND	ND	ND	ND	ND	ND

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules Location: MW-3 File #: 8142541  
 Collection: 12/15/97 15:40 BATCO  
 Extraction: 12/19/97 9:00 CMB  
 Analysis: 1/9/98 4:20 CMB  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_ Analyst: \_\_\_\_\_  
 Sample Type: Water  
 Extraction Method: 3510B  
 Analysis Method: 8270

Compound Name	CAS Number	MDL ug/L (ppb)	8142541			BLANK			Matrix Spike			Matrix Spike Duplicate			
			Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	Spike		Detected Amount ng/L in the extract	Spike		Detected Amount ng/L in the extract	Spike		
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery	
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND		ND				
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND		ND				
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND		ND				
Pentachlorophenol	87-86-5	12.5	ND			ND			311.90	300.00	103.97	307.08	300.00	102.38	
Phenanthrene	85-01-8	7.1	ND			ND			ND		ND				
Anthracene	120-12-7	8.0	ND			ND			ND		ND				
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND		ND				
Fluoranthene	206-44-0	5.7	ND			ND			174.39	200.00	87.20	180.67	200.00	90.34	
Pyrene	129-00-0	7.9	ND			ND			ND		ND				
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND		ND				
Benzofluoranthracene	56-55-3	7.7	ND			ND			ND		ND				
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND		ND				
Chrysene	218-01-9	7.8	ND			ND			ND		ND				
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND		ND				
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND		ND				
Benzobifluoranthene	205-99-2	6.8	ND			ND			ND		ND				
Benzofluoranthene	207-08-9	4.9	ND			ND			ND		ND				
Benzofluoranthene	50-32-8	4.8	ND			ND			ND		ND				
Benzofluoranthene	193-39-5	5.9	ND			ND			ND		ND				
Indenol(1,2,3-c,d)pyrene	53-70-3	7.8	ND			ND			ND		ND				
Dibenzofluoranthene	53-70-3	9.0	ND			ND			ND		ND				
Benzofluoranthene	191-24-2	10.0	ND			ND			ND		ND				
Surrogate Compounds			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	
2-Fluorophenol			85.22	200.00	42.61	92.22	200.00	46.11	112.38	200.00	56.18	123.26	200.00	61.63	
Phenol-d5			70.90	200.00	35.45	64.71	200.00	32.36	78.94	200.00	39.47	87.05	200.00	43.53	
Nitrobenzene-d5			79.35	100.00	79.35	74.74	100.00	74.74	97.18	100.00	97.18	104.82	100.00	104.82	
2-Fluorobiphenyl			75.11	100.00	75.11	65.54	100.00	65.54	86.97	100.00	86.97	104.67	100.00	104.67	
2,4,6-Tribromophenol			280.03	200.00	140.02	226.16	200.00	113.08	273.28	200.00	136.64	286.69	200.00	143.35	
Terphenyl-d14			139.59	100.00	139.59	132.90	100.00	132.90	127.66	100.00	127.66	125.04	100.00	125.04	

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

**BONNER ANALYTICAL TESTING COMPANY**  
**SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET**  
**TENTATIVELY IDENTIFIED COMPOUNDS**

Client : Hercules, Inc.

Sample Matrix : Water

Sample Collection Date : 12-15-97 @ 1540

Sample Analysis Date : 01-09-98 @ 0420

Dilution Factor : 1.01

Sample Weight/ Volume : 990 mL

Number TICs Found : 0

File # : BT42541

Lab Sample ID : MW-3

GC Column Length : 30 M

GC Column ID : 0.25 mm

Method Code: 8270

Concentration Units : ug / L (PPB)

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION

NOTE: TICs reported for SW846 method 8270 compounds only.

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules Collected: 12/12/97 13:10 BATCO Sample Type: Water  
 Location: MW-4 Extracted: 12/19/97 9:00 CMB Extraction Method: 3510b  
 File #: 8142542 Analyzed: 1/9/98 9:50 CMB Analyst: 8270 Analysis Method:

Compound Name	CAS Number	MDL ug/L (ppb)	8142542			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ng/L in the extract	Amount ug	% Recovery	Detected Amount ng/L in the extract	Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			89.18	300.00	29.73	99.51	300.00	33.17
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND	300.00	62.51	210.70	300.00	70.23
2-Chlorophenol	95-57-8	5.7	ND			ND			187.53	300.00	62.51	210.70	300.00	70.23
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			85.60	200.00	42.80	100.12	200.00	50.06
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			ND	200.00	42.80	100.12	200.00	50.06
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND	200.00	42.80	100.12	200.00	50.06
2-Methylphenol	95-50-1	6.0	ND			ND			ND	200.00	42.80	100.12	200.00	50.06
Bis(2-chloroisopropyl)ether	95-48-7	5.6	ND			ND			ND	200.00	42.80	100.12	200.00	50.06
4-Methylphenol	108-60-1	8.8	ND			ND			ND	200.00	42.80	100.12	200.00	50.06
Hexachloroethane	106-44-5	8.7	ND			ND			ND	200.00	42.80	100.12	200.00	50.06
N-Nitroso-di-N-propylamine	67-72-1	8.0	ND			ND			ND	200.00	42.80	100.12	200.00	50.06
Isophorone	621-84-7	9.7	ND			ND			136.46	200.00	88.23	160.58	200.00	80.28
2,4-Dimethylphenol	98-95-3	8.2	ND			ND			ND	200.00	88.23	160.58	200.00	80.28
Nitrobenzene	78-59-1	9.2	ND			ND			ND	200.00	88.23	160.58	200.00	80.28
2-Nitrophenol	105-67-9	6.0	ND			ND			ND	200.00	88.23	160.58	200.00	80.28
Benzoic Acid	88-75-5	9.1	ND			ND			ND	200.00	88.23	160.58	200.00	80.28
Bis(2-chloroethoxy)methane	65-85-0	22.3	ND			ND			ND	200.00	88.23	160.58	200.00	80.28
2,4-Dichlorophenol	111-91-1	8.8	ND			ND			ND	200.00	88.23	160.58	200.00	80.28
1,2,4-Trichlorobenzene	120-83-2	5.2	ND			ND			95.21	200.00	47.61	109.42	200.00	54.71
Naphthalene	120-82-1	9.4	ND			ND			ND	200.00	47.61	109.42	200.00	54.71
4-Chloroaniline	91-20-3	8.5	ND			ND			ND	200.00	47.61	109.42	200.00	54.71
Hexachlorobutadiene	106-47-8	8.5	ND			ND			ND	200.00	47.61	109.42	200.00	54.71
4-Chloro-3-methylphenol	87-68-3	9.4	ND			ND			234.19	300.00	78.06	260.60	300.00	86.87
2-Methylnaphthalene	59-50-7	7.7	ND			ND			ND	300.00	78.06	260.60	300.00	86.87
Hexachlorocyclopentadiene	91-57-6	7.5	ND			ND			ND	300.00	78.06	260.60	300.00	86.87
2,4,6-Trichlorophenol	77-47-4	8.6	ND			ND			ND	300.00	78.06	260.60	300.00	86.87
2-Chloronaphthalene	88-06-2	9.1	ND			ND			ND	300.00	78.06	260.60	300.00	86.87
2-Nitroaniline	95-95-4	5.7	ND			ND			ND	300.00	78.06	260.60	300.00	86.87
Dimethylphthalate	91-58-7	12.0	ND			ND			ND	300.00	78.06	260.60	300.00	86.87
Acenaphthylene	88-74-4	8.2	ND			ND			ND	300.00	78.06	260.60	300.00	86.87
2,6-Dinitrotoluene	131-11-3	9.0	ND			ND			ND	300.00	78.06	260.60	300.00	86.87
Acenaphthene	208-96-8	9.2	ND			ND			ND	300.00	78.06	260.60	300.00	86.87
3-Nitroaniline	606-20-2	16.0	ND			ND			ND	300.00	78.06	260.60	300.00	86.87
2,4-Dinitrophenol	99-09-2	8.3	ND			ND			121.78	200.00	60.89	144.73	200.00	72.37
4-Nitrophenol	51-28-5	14.2	ND			ND			ND	200.00	60.89	144.73	200.00	72.37
Dibenzofuran	100-02-7	8.6	ND			ND			112.70	300.00	37.57	107.40	300.00	35.80
2,4-Dinitrotoluene	132-64-9	8.4	ND			ND			ND	300.00	37.57	107.40	300.00	35.80
Diethylphthalate	121-14-2	8.3	ND			ND			147.75	200.00	73.88	161.78	200.00	80.89
Fluorene	84-66-2	9.9	ND			ND			ND	200.00	73.88	161.78	200.00	80.89
4-Chlorophenyl phenylether	86-73-7	8.8	ND			ND			ND	200.00	73.88	161.78	200.00	80.89
4-Nitroaniline	7005-72-3	8.3	ND			ND			ND	200.00	73.88	161.78	200.00	80.89
4,6-Dinitro-2-methylphenol	100-01-6	8.7	ND			ND			ND	200.00	73.88	161.78	200.00	80.89
	534-52-1	12.2	ND			ND			ND	200.00	73.88	161.78	200.00	80.89

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: MW-4  
 File #: BT42542

Collection: 12/12/97 13:10 BATCO  
 Extraction: 12/19/97 9:00 CMB  
 Analysis: 1/9/98 9:50 CMB  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_ Analyst: \_\_\_\_\_

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL ug/L (ppb)	BT42542			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Spike Amount ug	% Recovery	Detected Amount ug/L (ppb)	Spike Amount ug	% Recovery	Detected Amount ng/L in the extract	Spike Amount ug	% Recovery	Detected Amount ng/L in the extract	Spike Amount ug	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			311.90	300.00	103.97	307.08	300.00	102.36
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			174.39	200.00	87.20	180.67	200.00	90.34
Pyrene	129-00-0	7.9	ND			ND			ND			ND		
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzolanthracene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzobifluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzofluoranthene	50-32-8	5.9	ND			ND			ND			ND		
Indenol 1,2,3-c,dipylene	193-39-5	7.8	ND			ND			ND			ND		
Dibenzofluoranthene	53-70-3	9.0	ND			ND			ND			ND		
Benzofluoranthene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
2-Fluorophenol			120.63	200.00	60.32	92.22	200.00	46.11	112.36	200.00	56.18	123.26	200.00	61.63
Phenol-d5			100.76	200.00	50.38	64.71	200.00	32.36	78.94	200.00	39.47	87.05	200.00	43.53
Nitrobenzene-d5			121.10	100.00	121.10	74.74	100.00	74.74	97.18	100.00	97.18	104.82	100.00	104.82
2-Fluorodiphenyl			88.75	100.00	88.75	65.54	100.00	65.54	86.97	100.00	86.97	104.67	100.00	104.67
2,4,6-Tribromophenol			303.45	200.00	151.73	226.16	200.00	113.08	273.28	200.00	136.64	286.69	200.00	143.35
Terphenyl-d14			164.21	100.00	164.21	132.90	100.00	132.90	127.66	100.00	127.66	125.04	100.00	125.04

Certified by: 

Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

BONNER ANALYTICAL TESTING COMPANY  
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Client : Hercules, Inc.

File # : BT42542

Sample Matrix : Water

Lab Sample ID : MW-4

Sample Collection Date : 12-12-97 @ 1310

Sample Analysis Date : 01-09-98 @ 0950

GC Column Length : 30 M

Dilution Factor : 1.05

GC Column ID : 0.25 mm

Sample Weight/ Volume : 950 mL

Method Code: 8270

Number TICs Found : 1

Concentration Units : ug / L (PPB)

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION
78-34-2	Dioxathion	23.65	19.37 ug/L

NOTE: TICs reported for SW846 method 8270 compounds only.

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: MW-5  
 File #: BT42543

Collected: 12/12/97  
 Extracted: 12/19/97  
 Analyzed: 1/9/98

9:00  
 10:43  
 Date

BATCO  
 CMB  
 Analyst

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL ug/L (ppb)	BT42543			BLANK			Matrix Spike			Matrix Spike Duplicate						
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ng/ul in the extract	Amount ug	% Recovery	Detected Amount ng/ul in the extract	Amount ug	% Recovery				
															Amount ug	% Recovery	Amount ug	% Recovery
Phenol	108-95-2	5.2	ND															
Bis(2-chloroethyl)ether	111-44-4	6.9	ND															
2-Chlorophenol	95-57-8	5.7	ND															
1,3-Dichlorobenzene	541-73-1	8.3	ND															
1,4-Dichlorobenzene	106-46-7	6.1	ND															
Benzyl Alcohol	100-51-6	14.8	ND															
1,2-Dichlorobenzene	95-50-1	6.0	ND															
2-Methylphenol	95-48-7	5.6	ND															
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND															
4-Methylphenol	106-44-5	8.7	ND															
Hexachloroethane	67-72-1	8.0	ND															
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND															
Nitrobenzene	98-95-3	8.2	ND															
Isothorone	78-59-1	9.2	ND															
2,4-Dimethylphenol	105-67-9	6.0	ND															
2-Nitrophenol	88-75-5	9.1	ND															
Benzoic Acid	65-85-0	22.3	ND															
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND															
2,4-Dichlorophenol	120-83-2	5.2	ND															
1,2,4-Trichlorobenzene	120-82-1	9.4	ND															
Naphthalene	91-20-3	8.5	ND															
4-Chloroaniline	106-47-8	8.5	ND															
Hexachlorobutadiene	87-68-3	9.4	ND															
4-Chloro-3-methylphenol	59-50-7	7.7	ND															
2-Methylnaphthalene	91-57-6	7.5	ND															
Hexachlorocyclopentadiene	77-47-4	8.6	ND															
2,4,6-Trichlorophenol	88-06-2	9.1	ND															
2,4,5-Trichlorophenol	95-95-4	7.1	ND															
2-Chloronaphthalene	91-58-7	5.7	ND															
2-Nitroaniline	88-74-4	12.0	ND															
Dimethylphthalate	131-11-3	8.2	ND															
Acenaphthylene	208-96-8	9.0	ND															
2,6-Dinitrotoluene	606-20-2	9.2	ND															
3-Nitroaniline	99-09-2	16.0	ND															
Acenaphthene	83-32-9	8.3	ND															
2,4-Dinitrophenol	51-28-5	8.3	ND															
4-Nitrophenol	100-02-7	8.6	ND															
Dibenzofuran	132-64-9	8.4	ND															
2,4-Dinitrotoluene	121-14-2	8.3	ND															
Diethylphthalate	84-66-2	9.9	ND															
Fluorene	86-73-7	9.8	ND															
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND															
4-Nitroaniline	100-01-6	8.7	ND															
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND															

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: MW-5  
 File #: BT42543

Collection: 12/12/97 9:00  
 Extraction: 12/19/97 9:00  
 Analysis: 1/9/98 10:43  
 Date Time Analyst

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL (ppb)	BT42543			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ug/L)	Spike Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spike Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spike Amount (ug)	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			311.90	300.00	103.97	307.08	300.00	102.36
Pentachlorophenol	87-86-5	12.5	ND			ND			ND			ND		
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			174.39	200.00	87.20	180.67	200.00	90.34
Pyrene	129-00-0	7.9	ND			ND			ND			ND		
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzolanthracene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidine	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzo(b)fluoranthene	205-99-2	6.8	ND			ND			ND			ND		
Benzo(k)fluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzolapryene	50-32-8	5.9	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Dibenz(a,h)anthracene	53-70-3	9.0	ND			ND			ND			ND		
Benzof(g,h)iperylene	191-24-2	10.0	ND			ND			ND			ND		
Surrogate Compounds			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
2-Fluorophenol			137.50	200.00	68.75	92.22	200.00	46.11	112.36	200.00	56.18	123.26	200.00	61.63
Phenol-d5			97.61	200.00	48.81	64.71	200.00	32.36	78.94	200.00	39.47	87.05	200.00	43.53
Nitrobenzene-d5			149.10	100.00	149.10	74.74	100.00	74.74	97.18	100.00	97.18	104.82	100.00	104.82
2-Fluorobiphenyl			110.73	100.00	110.73	65.54	200.00	65.54	86.97	200.00	136.64	286.69	200.00	143.35
2,4,6-Trifluorophenol			337.91	200.00	168.96	226.16	200.00	113.08	273.28	200.00	136.64	286.69	200.00	143.35
Terphenyl-d14			248.35	100.00	248.35	132.90	100.00	132.90	127.66	100.00	127.66	125.04	100.00	125.04

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

# BONNER ANALYTICAL TESTING COMPANY

## SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Client : Hercules, Inc.

Sample Matrix : Water

Sample Collection Date : 12-12-97 @ 0900

Sample Analysis Date : 01-09-98 @ 1043

Dilution Factor : 1.06

Sample Weight/ Volume : 945 mL

Number TICs Found : 0

File # : BT42543

Lab Sample ID : MW-5

GC Column Length : 30 M

GC Column ID : 0.25 mm

Method Code: 8270

Concentration Units : ug / L (PPB)

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION

NOTE: TICs reported for SW846 method 8270 compounds only.

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA**

Client: Hercules Collected: 12/12/97 13:10 BATCO Sample Type: Water  
 Location: MW-8 Extracted: 12/19/97 9:00 CMB Extraction Method: 3510b  
 File #: BT42544 Analyzed: 1/9/98 5:13 CMB Analysis Method: 8270  
 Date \_\_\_\_\_ Time \_\_\_\_\_ Analyst \_\_\_\_\_

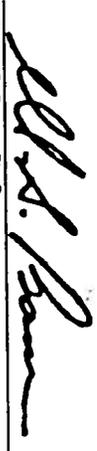
Compound Name	CAS Number	MDL ug/L (ppb)	Detected Amount ug/L (ppb)	Spike		Detected Amount ug/L (ppb)	BLANK Spike		Detected Amount ng/L in the extract	Matrix Spike		Detected Amount ng/L in the extract	Matrix Spike Duplicate	
				Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery		Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			89.18	300.00	29.73	99.51	300.00	33.17
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND	300.00	62.51	210.70	300.00	70.23
2-Chlorophenol	95-57-8	5.7	ND			187.53			ND	200.00	42.80	100.12	200.00	50.06
1,3-Dichlorobenzene	541-73-1	8.3	ND			85.60			ND			ND		
1,4-Dichlorobenzene	108-46-7	6.1	ND			ND			ND			ND		
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	108-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	67-72-1	8.0	ND			136.46			200.00	68.23	160.56	200.00	80.28	
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			ND			ND			ND		
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
2-Nitrophenol	88-75-5	9.1	ND			ND			ND			ND		
Benzoic Acid	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			95.21			200.00	47.61	109.42	200.00	54.71	
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			ND			ND		
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			234.19	78.06	260.60	300.00	86.87	
Hexachlorobutadiene	87-68-3	9.4	ND			ND			ND			ND		
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND		
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-96-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			121.78			200.00	60.89	144.73	200.00	72.37	
2,4-Dinitrophenol	51-28-5	8.3	ND			ND			ND			ND		
4-Nitrophenol	100-02-7	8.2	ND			112.70			300.00	37.57	107.40	300.00	35.80	
Dibenzofuran	132-64-9	8.4	ND			ND			200.00	73.88	161.78	200.00	80.89	
2,4-Dinitrotoluene	121-14-2	8.3	ND			147.75			ND			ND		
Diethylphthalate	84-66-2	9.9	ND			ND			ND			ND		
Fluorene	86-73-7	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	7005-72-3	8.3	ND			ND			ND			ND		
4-Nitroaniline	100-01-6	8.7	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND			ND		

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA**

Client: Hercules      Location: MW-6      Collection: 12/12/97      13:10      BATCO  
 File #: BT42544      Extraction: 12/19/97      9:00      CMB  
 Analysis: 1/9/98      5:13      CMB  
 Date      Time      Analyst

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL (ppb)	BT42544			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L)	Spiked Amount (ug)	Recovery %	Detected Amount (ug)	Spiked Amount (ug)	Recovery %	Detected Amount (ng/L in the extract)	Spiked Amount (ug)	Recovery %	Detected Amount (ng/L in the extract)	Spiked Amount (ug)	Recovery %
N-Nitrosodiphenylamine	88-30-6	7.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Bromophenyl-phenylether	101-55-3	7.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	118-74-1	8.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	87-86-5	12.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	85-01-8	7.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	120-12-7	8.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	84-74-2	7.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	206-44-0	5.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	129-00-0	7.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Butylbenzylphthalate	85-88-7	9.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzofluoranthracene	56-55-3	7.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidene	91-94-1	16.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	218-01-9	7.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	117-84-0	9.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzofluoranthene	205-99-2	6.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzokjfluoranthene	207-08-9	4.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzofluoranthene	50-32-8	5.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzofluoranthene	193-39-5	7.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indenol(1,2,3-c-d)pyrene	53-70-3	9.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofluoranthracene	191-24-2	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzofluoranthene	191-24-2	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Surrogate Compounds</b>														
2-Fluorophenol			Detected Amount	Spiked Amount	Recovery %	Detected Amount	Spiked Amount	Recovery %	Detected Amount	Spiked Amount	Recovery %	Detected Amount	Spiked Amount	Recovery %
Phenol-d5			109.30	200.00	54.65	92.22	200.00	46.11	112.36	200.00	56.18	123.26	200.00	61.63
Nitrobenzene-d5			81.22	200.00	40.61	64.71	200.00	32.36	78.94	200.00	39.47	87.05	200.00	43.53
2-Fluorobiphenyl			101.83	100.00	101.83	74.74	100.00	74.74	97.18	100.00	97.18	104.82	100.00	104.82
2,4,6-Tribromophenol			87.52	100.00	87.52	65.54	100.00	65.54	86.97	200.00	136.64	286.69	200.00	143.35
Terphenyl-d14			264.53	200.00	132.27	226.16	200.00	113.08	273.28	200.00	136.64	286.69	200.00	143.35
			141.67	100.00	141.67	132.90	100.00	132.90	127.66	100.00	127.66	125.04	100.00	125.04

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

**BONNER ANALYTICAL TESTING COMPANY**  
**SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET**  
**TENTATIVELY IDENTIFIED COMPOUNDS**

Client : Hercules, Inc. \_\_\_\_\_

File # : BT42544 \_\_\_\_\_

Sample Matrix : Water \_\_\_\_\_

Lab Sample ID : MW-6 \_\_\_\_\_

Sample Collection Date : 12-12-97 @ 1310 \_\_\_\_\_

GC Column Length : 30 M \_\_\_\_\_

Sample Analysis Date : 01-09-98 @ 0513 \_\_\_\_\_

GC Column ID : 0.25 mm \_\_\_\_\_

Dilution Factor : 1.03 \_\_\_\_\_

Sample Weight/ Volume : 970 mL \_\_\_\_\_

Method Code: 8270 \_\_\_\_\_

Number TICs Found : 0 \_\_\_\_\_

Concentration Units : ug / L (PPB) \_\_\_\_\_

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION

NOTE: TICs reported for SW846 method 8270 compounds only.

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

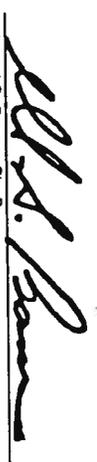
Client: Hercules Collected: 12/12/97 BATCO Sample Type: Water  
 Location: Trip Blank Extracted: 12/19/97 CMB Extraction Method: 3510B  
 File #: BT42545 Analyzed: 1/9/98 CMB Analysis Method: 8270  
 Date \_\_\_\_\_ Time \_\_\_\_\_ Analyst \_\_\_\_\_

Compound Name	CAS Number	MDL ug/L (ppb)	BT42545			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ug/L (ppb)	Amount ug	% Recovery	Detected Amount ng/L in the extract	Amount ug	% Recovery	Detected Amount ng/L in the extract	Amount ug	% Recovery
Phenol	108-95-2	5.2	ND			ND			89.18	300.00	29.73	99.51	300.00	33.17
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND	300.00	62.51	210.70	300.00	70.23
2-Chlorophenol	95-57-8	5.7	ND			ND			187.53	300.00	62.51	ND	300.00	ND
1,3-Dichlorobenzene	541-73-1	8.3	ND			ND			ND	200.00	42.80	100.12	200.00	50.06
1,4-Dichlorobenzene	106-46-7	6.1	ND			85.60			ND			ND		
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND			ND		
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND			ND		
2-Methylphenol	95-48-7	5.6	ND			ND			ND			ND		
Bis(2-chloroisopropyl)ether	108-60-1	8.8	ND			ND			ND			ND		
4-Methylphenol	106-44-5	8.7	ND			ND			ND			ND		
Hexachloroethane	87-72-1	8.0	ND			ND			ND			ND		
N-Nitroso-di-N-propylamine	621-64-7	9.7	ND			136.46			ND	200.00	68.23	160.56	200.00	80.28
Nitrobenzene	98-95-3	8.2	ND			ND			ND			ND		
Isophorone	78-59-1	9.2	ND			ND			ND			ND		
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND			ND		
Benzic Acid	88-75-5	9.1	ND			ND			ND			ND		
2-Nitrophenol	65-85-0	22.3	ND			ND			ND			ND		
Bis(2-chloroethoxy)methane	111-91-1	8.8	ND			ND			ND			ND		
2,4-Dichlorophenol	120-83-2	5.2	ND			95.21			ND	200.00	47.61	109.42	200.00	54.71
1,2,4-Trichlorobenzene	120-82-1	9.4	ND			ND			ND			ND		
Naphthalene	91-20-3	8.5	ND			ND			ND			ND		
4-Chloroaniline	106-47-8	8.5	ND			ND			ND			ND		
Hexachlorobutadiene	87-88-3	9.4	ND			234.19			ND	300.00	78.06	260.60	300.00	86.87
4-Chloro-3-methylphenol	59-50-7	7.7	ND			ND			ND			ND		
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND			ND		
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND			ND		
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND			ND		
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND			ND		
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND			ND		
2-Nitroaniline	88-74-4	12.0	ND			ND			ND			ND		
Dimethylphthalate	131-11-3	8.2	ND			ND			ND			ND		
Acenaphthylene	208-98-8	9.0	ND			ND			ND			ND		
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND			ND		
3-Nitroaniline	99-09-2	16.0	ND			ND			ND			ND		
Acenaphthene	83-32-9	8.3	ND			121.78			ND	200.00	60.89	144.73	200.00	72.37
2,4-Dinitrophenol	51-28-5	8.3	ND			ND			112.70	300.00	37.57	107.40	300.00	35.80
Dibenzofuran	100-02-7	8.6	ND			ND			147.75	200.00	73.88	161.78	200.00	80.89
2,4-Dinitrotoluene	132-64-9	8.4	ND			ND			ND			ND		
Diethylphthalate	121-14-2	8.3	ND			ND			ND			ND		
Fluorene	84-56-2	9.8	ND			ND			ND			ND		
4-Chlorophenyl-phenylether	86-73-7	8.7	ND			ND			ND			ND		
4-Nitroaniline	7005-72-3	8.3	ND			ND			ND			ND		
4,6-Dinitro-2-methylphenol	100-01-6	8.7	ND			ND			ND			ND		
	534-52-1	12.2	ND			ND			ND			ND		

**BONNER ANALYTICAL TESTING COMPANY**  
 QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA  
 BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules      Collection: 12/12/97      BATCO      Sample Type: Water  
 Location: Trip Blank      Extraction: 12/19/97      9:00      CMB      Extraction Method: 3510B  
 File #: BT42545      Analysis: 1/9/98      12:48      CMB      Analysis Method: 8270  
 Date \_\_\_\_\_      Time \_\_\_\_\_      Analyst \_\_\_\_\_

Compound Name	CAS Number	MDL (ug/L (ppb))	BT42545			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L (ppb))	Spike Amount (ug)	% Recovery	Detected Amount (ug/L (ppb))	Spike Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spike Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spike Amount (ug)	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			311.90			307.08	300.00	102.36
Pentachlorophenol	87-86-5	12.5	ND			ND			ND			ND		
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			174.39			180.67	200.00	90.34
Pyrene	129-00-0	7.9	ND			ND			ND			ND		
Butylnonylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzofluoranthene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidine	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	6.8	ND			ND			ND			ND		
Benzofluoranthene	205-99-2	4.9	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	5.9	ND			ND			ND			ND		
Benzofluoranthene	50-32-8	7.8	ND			ND			ND			ND		
Indeno(1,2,3-c:dl)pyrene	193-39-5	9.0	ND			ND			ND			ND		
Dibenz(a,h)anthracene	53-70-3	10.0	ND			ND			ND			ND		
Benzofluoranthene	191-24-2	10.0	ND			ND			ND			ND		
<b>Surrogate Compounds</b>														
2-Fluorophenol			Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery	Detected Amount	Spike Amount	% Recovery
Phenol-d5			72.78	200.00	36.39	92.22	200.00	46.11	112.36	200.00	56.18	123.26	200.00	61.63
Nitrobenzene-d5			57.52	200.00	28.76	64.71	200.00	32.36	78.94	200.00	39.47	87.05	200.00	43.53
2-Fluorobiphenyl			66.07	100.00	66.07	74.74	100.00	74.74	97.18	100.00	97.18	104.82	100.00	104.82
2,4,6-Tribromophenol			63.05	100.00	63.05	65.54	100.00	65.54	86.97	100.00	86.97	104.67	100.00	104.67
Terphenyl-d14			250.90	200.00	125.45	226.16	200.00	113.08	273.28	200.00	136.64	286.69	200.00	143.35
			136.72	100.00	136.72	132.90	100.00	132.90	127.66	100.00	127.66	125.04	100.00	125.04

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company

# BONNER ANALYTICAL TESTING COMPANY

## SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Client : Hercules, Inc. \_\_\_\_\_  
 Sample Matrix : Water \_\_\_\_\_  
 Sample Collection Date : 12-12-97 \_\_\_\_\_  
 Sample Analysis Date : 01-09-98 @ 1248 \_\_\_\_\_  
 Dilution Factor : 1.01 \_\_\_\_\_  
 Sample Weight/ Volume : 990 mL \_\_\_\_\_  
 Number TICs Found : 0 \_\_\_\_\_

File # : BT42545 \_\_\_\_\_  
 Lab Sample ID : Trip Blank \_\_\_\_\_  
 GC Column Length : 30 M \_\_\_\_\_  
 GC Column ID : 0.25 mm \_\_\_\_\_  
 Method Code: 8270 \_\_\_\_\_  
 Concentration Units : ug / L (PPB) \_\_\_\_\_

CAS NUMBER	COMPOUND NAME	RT	EST. CONCENTRATION

NOTE: TICs reported for SW846 method 8270 compounds only.

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: Equipment Blank  
 File #: BT42546

Collected: 12/15/97  
 Extracted: 12/19/97  
 Analyzed: 1/9/98  
 Date

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL (ppb)	BT42546			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L)	Amount (ug)	% Recovery	Detected Amount (ug/L)	Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Amount (ug)	% Recovery
Phenol	108-95-2	5.2	ND			ND			89.18	300.00	29.73	99.51	300.00	33.17
Bis(2-chloroethyl)ether	111-44-4	6.9	ND			ND			ND	300.00	62.51	210.70	300.00	70.23
2-Chlorophenol	95-57-8	5.7	ND			187.53			ND	300.00	42.80	100.12	200.00	50.06
1,3-Dichlorobenzene	541-73-1	8.3	ND			85.60			ND	200.00		ND	200.00	
1,4-Dichlorobenzene	106-46-7	6.1	ND			ND			ND	200.00		ND	200.00	
Benzyl Alcohol	100-51-6	14.8	ND			ND			ND	200.00		ND	200.00	
1,2-Dichlorobenzene	95-50-1	6.0	ND			ND			ND	200.00		ND	200.00	
2-Methylphenol	95-48-7	5.6	ND			ND			ND	200.00		ND	200.00	
Bis(2-chloroisopropyl)ether	108-80-1	8.8	ND			ND			ND	200.00		ND	200.00	
4-Methylphenol	106-44-5	8.7	ND			ND			ND	200.00		ND	200.00	
Hexachloroethane	67-72-1	8.0	ND			136.46			ND	200.00	68.23	160.56	200.00	80.28
N-Nitroso-dih-N-propylamine	621-64-7	9.7	ND			ND			ND	200.00		ND	200.00	
Nitrobenzene	98-95-3	8.2	ND			ND			ND	200.00		ND	200.00	
Isothorone	78-59-1	9.2	ND			ND			ND	200.00		ND	200.00	
2,4-Dimethylphenol	105-67-9	6.0	ND			ND			ND	200.00		ND	200.00	
Benzoic Acid	88-75-5	9.1	ND			ND			ND	200.00		ND	200.00	
Bis(2-chloroethoxy)methane	65-85-0	22.3	ND			ND			ND	200.00	47.81	109.42	200.00	54.71
2,4-Dichlorophenol	111-91-1	8.8	ND			95.21			ND	200.00		ND	200.00	
1,2,4-Trichlorobenzene	120-83-2	5.2	ND			ND			ND	200.00		ND	200.00	
Naphthalene	91-20-3	8.5	ND			ND			ND	200.00		ND	200.00	
4-Chloroaniline	106-47-8	8.5	ND			ND			ND	200.00		ND	200.00	
Hexachlorobutadiene	87-88-3	9.4	ND			234.19			ND	300.00	78.06	260.60	300.00	86.87
4-Chloro-3-methylphenol	59-56-7	7.7	ND			ND			ND	300.00		ND	300.00	
2-Methylnaphthalene	91-57-6	7.5	ND			ND			ND	300.00		ND	300.00	
Hexachlorocyclopentadiene	77-47-4	8.6	ND			ND			ND	300.00		ND	300.00	
2,4,6-Trichlorophenol	88-06-2	9.1	ND			ND			ND	300.00		ND	300.00	
2,4,5-Trichlorophenol	95-95-4	7.1	ND			ND			ND	300.00		ND	300.00	
2-Chloronaphthalene	91-58-7	5.7	ND			ND			ND	300.00		ND	300.00	
2-Nitroaniline	88-74-4	12.0	ND			ND			ND	300.00		ND	300.00	
Dimethylphthalate	131-11-3	8.2	ND			ND			ND	300.00		ND	300.00	
Acenaphthylene	208-98-8	9.0	ND			ND			ND	300.00		ND	300.00	
2,6-Dinitrotoluene	606-20-2	9.2	ND			ND			ND	300.00		ND	300.00	
3-Nitroaniline	99-09-2	16.0	ND			ND			ND	300.00	60.89	144.73	200.00	72.37
Acenaphthene	83-32-9	8.3	ND			ND			ND	300.00	37.57	107.40	300.00	35.80
2,4-Dinitrophenol	51-28-5	14.2	ND			121.78			ND	300.00		ND	300.00	
4-Nitrophenol	100-02-7	8.6	ND			ND			ND	300.00		ND	300.00	
Dibenzofuran	132-64-9	8.4	ND			112.70			ND	200.00	73.88	161.78	200.00	80.89
2,4-Dinitrotoluene	121-14-2	8.3	ND			ND			ND	200.00		ND	200.00	
Diethylphthalate	84-66-2	9.9	ND			147.75			ND	200.00		ND	200.00	
Fluorene	86-73-7	9.8	ND			ND			ND	200.00		ND	200.00	
4-Chlorophenylphenylether	7005-72-3	8.3	ND			ND			ND	200.00		ND	200.00	
4-Nitroaniline	100-01-6	8.7	ND			ND			ND	200.00		ND	200.00	
4,6-Dinitro-2-methylphenol	534-52-1	12.2	ND			ND			ND	200.00		ND	200.00	

**BONNER ANALYTICAL TESTING COMPANY**  
**QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA**  
**BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA**

Client: Hercules  
 Location: Equipment Blank  
 File #: 8142546

Collection: 12/15/97  
 Extraction: 12/19/97  
 Analysis: 1/9/98

BATCO  
 CMB  
 GMB

9:00  
 1:48  
 Time

Analyst

Sample Type: Water  
 Extraction Method: 3510b  
 Analysis Method: 8270

Compound Name	CAS Number	MDL (ug/L (ppb))	8142546			BLANK			Matrix Spike			Matrix Spike Duplicate		
			Detected Amount (ug/L (ppb))	Spiked Amount (ug)	% Recovery	Detected Amount (ug/L (ppb))	Spiked Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spiked Amount (ug)	% Recovery	Detected Amount (ng/L in the extract)	Spiked Amount (ug)	% Recovery
N-Nitrosodiphenylamine	86-30-6	7.5	ND			ND			ND			ND		
4-Bromophenyl-phenylether	101-55-3	7.0	ND			ND			ND			ND		
Hexachlorobenzene	118-74-1	8.0	ND			ND			ND			ND		
Pentachlorophenol	87-86-5	12.5	ND			ND			311.90	300.00	103.97	307.08	300.00	102.36
Phenanthrene	85-01-8	7.1	ND			ND			ND			ND		
Anthracene	120-12-7	8.0	ND			ND			ND			ND		
Di-n-butylphthalate	84-74-2	7.8	ND			ND			ND			ND		
Fluoranthene	206-44-0	5.7	ND			ND			174.39	200.00	87.20	180.67	200.00	90.34
Pyrene	129-00-0	7.9	ND			ND			ND			ND		
Butylbenzylphthalate	85-68-7	9.9	ND			ND			ND			ND		
Benzofluoranthene	56-55-3	7.7	ND			ND			ND			ND		
3,3'-Dichlorobenzidene	91-94-1	16.5	ND			ND			ND			ND		
Chrysene	218-01-9	7.8	ND			ND			ND			ND		
Bis(2-ethylhexyl)phthalate	117-81-7	9.1	ND			ND			ND			ND		
Di-n-octylphthalate	117-84-0	9.4	ND			ND			ND			ND		
Benzobisfluoranthene	205-99-2	8.8	ND			ND			ND			ND		
Benzofluoranthene	207-08-9	4.9	ND			ND			ND			ND		
Benzofluoranthene	50-32-8	5.9	ND			ND			ND			ND		
Benzo(a)pyrene	193-39-5	7.8	ND			ND			ND			ND		
Indeno(1,2,3-c,d)pyrene	53-70-3	9.0	ND			ND			ND			ND		
Dibenz(a,h)anthracene	191-24-2	10.0	ND			ND			ND			ND		
Benzofluoranthene														
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
2-Fluorophenol			122.22	200.00	61.11	92.22	200.00	46.11	112.36	200.00	56.18	123.26	200.00	61.63
Phenol-d5			90.27	200.00	45.14	64.71	200.00	32.36	78.94	200.00	39.47	87.05	200.00	43.53
Nitrobenzene-d5			103.68	100.00	103.68	74.74	100.00	74.74	97.18	100.00	97.18	104.82	100.00	104.82
2-Fluorobiphenyl			77.40	100.00	77.40	65.54	100.00	65.54	86.97	100.00	86.97	104.67	100.00	104.67
2,4,6-Tribromophenol			238.85	200.00	119.43	225.16	200.00	113.08	273.28	200.00	136.64	286.69	200.00	143.35
Terphenyl-d14			136.66	100.00	136.66	132.90	100.00	132.90	127.66	100.00	127.66	125.04	100.00	125.04

Certified by:   
 Michael S. Bonner, Ph. D.  
 Bonner Analytical Testing Company



APPENDIX E

YOUR COMPANY ADDRESS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Phone: 2703 Oak Grove Road  
 (601) 264-2854 Hattiesburg, MS 39402  
 Fax: 268-7084  
 (601) 268-7084

"Testing your World for a Safer Tomorrow"



1 NAME OF PERSON TO CONTACT: \_\_\_\_\_  
 CONTACT PERSON'S PHONE: \_\_\_\_\_

2 YOUR PROJECT NO: \_\_\_\_\_ YOUR PO.# \_\_\_\_\_ YOUR PROJECT NAME: \_\_\_\_\_

YOUR SAMPLE DESCRIPTION:	DATE	TIME	MATRIX
MW-1	15 Dec 47	1730	H <sub>2</sub> O
"	"	"	"
"	"	"	"
"	"	"	"
"	"	"	"
"	"	"	"
"	"	"	"
MW-2	"	1620	"
"	"	"	"
"	"	"	"
"	"	"	"
"	"	"	"
"	"	"	"

RELINQUISHED BY: *Da-Cat* (Signature)  
 DATE: 16 Dec 47  
 TIME: 1120  
 RECEIVED BY: *DeV...* (Signature)  
 SHIPPED BY: *DeV...* (Signature)

PARAMETERS FOR ANALYSIS	NUMBER OF CONTAINERS	PRESERVATIONS
<del>pesticides</del>		
PCB's		
semivol.		
VOA		
METALS		

RELINQUISHED BY: \_\_\_\_\_ (Signature)  
 DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_ (Signature)  
 COURIER \_\_\_\_\_ (Signature)  
 RECEIVED FOR BATCO BY: \_\_\_\_\_ (Signature)

5 REMARKS  
 Turnaround Time \_\_\_\_\_  
 Detection Limits Special Limits Required  
 Yes No  
 Please circle one. If Yes, please describe below or include separate sheet detailing requirements

6 METHOD OF SHIPMENT  
 SAMPLE REMAINDER DISPOSAL  
 RETURN SAMPLE REMAINDER TO CLIENT VIA \_\_\_\_\_ (Date)  
 REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS  
 IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A MINIMUM ADDITIONAL CHARGE OF \$2500 PER SAMPLE WILL BE ASSESSED FOR DISPOSAL.

YOUR COMPANY NAME HTC-152  
 YOUR COMPANY ADDRESS \_\_\_\_\_

Phone: 2703 Oak Grove Road  
 (601) 264-2854 Hattiesburg, MS 39402 (601) 268-7084  
 Fax: 2703 Oak Grove Road  
 (601) 264-2854 Hattiesburg, MS 39402 (601) 268-7084

"Testing your World for a Safer Tomorrow"



NAME OF PERSON TO CONTACT \_\_\_\_\_  
 CONTACT PERSON'S PHONE: \_\_\_\_\_

PARAMETERS FOR ANALYSIS  
 PEST ~~HEAD~~  
 PCB's  
 Semi-vol  
 VOA  
 METALS

YOUR PROJECT NO.: \_\_\_\_\_ YOUR PO.# \_\_\_\_\_  
 YOUR PROJECT NAME: \_\_\_\_\_

NUMBER OF CONTAINERS \_\_\_\_\_  
 PRESERVATIONS \_\_\_\_\_  
 5 REMARKS  
 Turnaround Time \_\_\_\_\_  
 Detection Limits  
 Special Limits Required  
 Yes No  
 Please circle one. If Yes  
 please describe below  
 or include separate  
 sheet detailing  
 requirements

YOUR SAMPLE DESCRIPTION:	DATE	TIME	MATRIX	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
MW-3	15 Dec 97	1540	H2O	[Signature]	15 Dec 97	1310	[Signature]	X		1	H2O
"	"	"	"	"	"	"	"	X		1	H2O
"	"	"	"	"	"	"	"	X		1	H2O
"	"	"	"	"	"	"	"	X		3	H2O
"	"	"	"	"	"	"	"	X		1	H2O
"	"	"	"	"	"	"	"	X		3	H2O
"	"	"	"	"	"	"	"	X		1	H2O
"	"	"	"	"	"	"	"	X		1	H2O
"	"	"	"	"	"	"	"	X		1	H2O
"	"	"	"	"	"	"	"	X		1	H2O

RELINQUISHED BY: [Signature]  
 DATE: 16 Dec 97  
 TIME: 1120

RECEIVED BY: [Signature]  
 DATE/TIME: \_\_\_\_\_

METHOD OF SHIPMENT: \_\_\_\_\_  
 SHIPPED BY: [Signature]

COURIER: [Signature]  
 RECEIVED FOR BATCO BY: [Signature]

7 SAMPLE REMAINDER DISPOSAL  
 RETURN SAMPLE REMAINDER TO CLIENT VIA \_\_\_\_\_  
 (SOME SHIPPING CHARGES MAY BE INCURRED)

1 REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS  
 IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A MINIMUM  
 ADDITIONAL CHARGE OF \$2500 PER SAMPLE WILL BE ASSESSED FOR DISPOSAL

REVISION DATE

YOUR COMPANY NAME \_\_\_\_\_  
 YOUR COMPANY ADDRESS \_\_\_\_\_

Phone: 2703 Oak Grove Road  
 (601) 264-2854 Hattiesburg, MS 39402  
 Fax: (601) 268-7084



1

NAME OF PERSON TO CONTACT: \_\_\_\_\_  
 CONTACT PERSON'S PHONE: \_\_\_\_\_

2

YOUR PROJECT NO: \_\_\_\_\_ YOUR PO# \_\_\_\_\_  
 YOUR PROJECT NAME: \_\_\_\_\_

YOUR SAMPLE DESCRIPTION: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_ MATRIX \_\_\_\_\_  
 MW-5 12 Dec 97 0900

3

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME	MATRIX
MW-4					1310	
"	"	"	"	"	"	"
"	"	"	"	"	"	"
"	"	"	"	"	"	"
"	"	"	"	"	"	"

4

PARAMETERS FOR ANALYSIS

PARAMETERS FOR ANALYSIS	NUMBER OF CONTAINERS	PRESERVATIONS
PCB's		
SEMIVAL		
VOA		
METALS		

5 REMARKS

Detection Limits Special Limits Required  
 Yes No  
 Please circle one. If Yes please describe below or include separate sheet detailing requirements

6

RELINQUISHED BY: (Signature) \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 METHOD OF SHIPMENT \_\_\_\_\_  
 SHIPPED BY: (Signature) \_\_\_\_\_

RELINQUISHED BY: (Signature) \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_  
 RECEIVED FOR BATCO BY: (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

7

SAMPLE REMAINDER DISPOSAL:  
 RETURN SAMPLE REMAINDER TO CLIENT VIA \_\_\_\_\_  
 (SOME SHIPPING CHARGES MAY BE INCURRED)

REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS \_\_\_\_\_ (Date)  
 IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A MINIMUM ADDITIONAL CHARGE OF \$2500 PER SAMPLE WILL BE ASSESSED FOR DISPOSAL

REVISION DATE

APPENDIX F