HARTCROWSER
Delivering smarter solutions

June 18, 2001

Anchorage

Mr. Gary Gill
City of Kent
220 - 4th Avenue South
Kent, Washington 98032-5895

Boston

Re: Results of Groundwater Monitoring - February and May 2001
CHEMCENTRAL/Seattle Facility
2335-30

Chicago

Dear Mr. Gill:

Denver

This letter presents the results of quarterly groundwater monitoring conducted in February and May 2001 at the CHEMCENTRAL/Seattle facility located in Kent, Washington. A Site and Exploration Plan is shown on Figure 1. We are collecting quarterly groundwater samples to evaluate conditions beneath the site as groundwater remediation progresses. Sample results are discussed below, and data are summarized in Table 1.

Fairbanks

Groundwater Sampling

Jersey City

On February 15 and May 21, 2001, we collected and analyzed groundwater samples from on-site monitoring wells HC-6D and HC-10, and from downgradient/off-site monitoring well HC-8. We also attempted to sample on-site well HC-12, but there was insufficient water in that well for sampling. Table 1 presents a summary of volatile organic compound (VOC) concentrations detected in the samples, along with historical data collected since 1998.

Juneau

Based on the results of groundwater sampling and analysis, the following observations can be made:

Long Beach

- On-site well HC-6D, installed in the Lower Sand Aquifer, and off-site well HC-8, located downgradient from the recovery trenches, showed no detections in either the February or May sampling events.

Portland

- The concentrations of constituents observed in on-site well HC-10 are comparable to those measured during previous quarterly monitoring.

Seattle

1910 Fairview Avenue East
Seattle, Washington 98102-3699
Fax 206.328.5581
Tel 206.324.9530

The next sampling rounds are planned for August and November 2001. If you have any comments or questions with regard to monitoring at the CHEMCENTRAL/Seattle facility in Kent, please contact us.

LIMITATIONS

Work for this project was performed, and this letter prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of the City of Kent for specific application to the referenced property. This report is not meant to represent a legal opinion. No other warranty, express or implied, is made.

Any questions regarding our work and this letter report, the presentation of the information, and the interpretation of data are welcome and should be referred to the undersigned.

We trust that this report meets your needs.

Sincerely,

HART CROWSER, INC.

David A. Heffner

DAVID A. HEFFNER, P.E.
Associate Engineer

Attachments:

Table 1 - Analytical Results for Groundwater Samples, 1998 through 2001
Figure 1 - Site and Exploration Plan
Appendix A - Groundwater Samples Analytical Data Quality Review and Laboratory Certificates of Analysis, Analytical Resources, Inc.

cc: Robert Garner, CHEMCENTRAL Corporation
Steve Halpin, CHEMCENTRAL/Seattle
Mike Larson, CHEMCENTRAL/Seattle
Doug Knutson, Washington State Department of Ecology

Table 1 - Analytical Results for Groundwater Samples, 1998 through 2001

Sampling Location/ Constituent	Concentration in µg/L													
	2/19/98	5/20/98	8/17/98	11/20/98	2/24/99	5/25/99	8/26/99	11/29/99	2/25/00	6/1/00	8/17/00	11/15/00	2/15/01	5/21/01
HC-2														
Acetone	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	10 U	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	460	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	37	Yearly Sample Only	Yearly Sample Only
Benzene				3				1 U				2		
1,4-Dichlorobenzene				2 U				2 U				1 U		
1,1-Dichloroethane				130				40				17		
1,2-Dichloroethane				1 U				1 U				1 U		
1,2-Dichloroethene (total)				7				9.3				3.7		
Ethylbenzene				1 U				1 U				4.1		
4-Methyl-2-Pentanone (MIBK)				10 U				10 U				5 U		
Methylene Chloride				5 U				5 U				2 U		
Tetrachloroethene				1 U				3.5				1 U		
Toluene				1 U				1 U				1 U		
Vinyl Chloride				1 U				3.3				50		
Xylenes (total)				1 U				1 U				5.3		
2-Butanone (MEK)				10 U				10 U				6.8		
HC-3														
Acetone	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	10 U	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	140	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	5.9	Yearly Sample Only	Yearly Sample Only
Benzene				7				6.7				5.8		
1,4-Dichlorobenzene				2 U				2 U				1 U		
1,1-Dichloroethane				1 U				1.7				1 U		
1,2-Dichloroethane				1 U				1 U				1 U		
1,2-Dichloroethene (total)				1 U				262				1.2		
Ethylbenzene				1 U				1.2				1 U		
4-Methyl-2-Pentanone (MIBK)				10 U				11				5 U		
Methylene Chloride				5 U				25				2 U		
Tetrachloroethene				1 U				1 U				1 U		
Toluene				7				9.2				1 U		
Vinyl Chloride				1 U				37				1 U		
Xylenes (total)				25				9.5				1 U		
2-Butanone (MEK)				10 U				13				5 U		
HC-4														
Acetone	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	10 U	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	1,800	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	15	Yearly Sample Only	Yearly Sample Only
Benzene				1 U				1 U				1 U		
1,4-Dichlorobenzene				2 U				2 U				1 U		
1,1-Dichloroethane				1 U				1 U				1 U		
1,2-Dichloroethane				1 U				1 U				1 U		
1,2-Dichloroethene (total)				1 U				1 U				1.4		
Ethylbenzene				1 U				1 U				1 U		
4-Methyl-2-Pentanone (MIBK)				10 U				10 U				5 U		
Methylene Chloride				5 U				5 U				2 U		
Tetrachloroethene				1 U				1 U				1 U		
Toluene				1 U				1 U				1 U		
Vinyl Chloride				1 U				1 U				1 U		
Xylenes (total)				1 U				1 U				1 U		
2-Butanone (MEK)				10 U				10 U				5 U		

Table 1 - Analytical Results for Groundwater Samples, 1998 through 2001

Sampling Location/ Constituent	Concentration in µg/L													
	2/19/98	5/20/98	8/17/98	11/20/98	2/24/99	5/25/99	8/26/99	11/29/99	2/25/00	6/1/00	8/17/00	11/15/00	2/15/01	5/21/01
HC-4D														
Acetone	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	10 U	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	10 U	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	5 U	Yearly Sample Only	Yearly Sample Only
Benzene				1 U				1 U				1 U		
1,4-Dichlorobenzene				2 U				2 U				1 U		
1,1-Dichloroethane				1 U				1 U				1 U		
1,2-Dichloroethane				1 U				1 U				1 U		
1,2-Dichloroethene (total)				1 U				1 U				1 U		
Ethylbenzene				1 U				1 U				1 U		
4-Methyl-2-Pentanone (MIBK)				10 U				10 U				5 U		
Methylene Chloride				5 U				5 U				2 U		
Tetrachloroethene				1 U				1 U				1 U		
Toluene				1 U				1 U				1 U		
Vinyl Chloride				1 U				1 U				1 U		
Xylenes (total)				1 U				1 U				1 U		
2-Butanone (MEK)				10 U				10 U				5 U		
HC-6D														
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 U	5 U	8.2	5 U	5 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone (MIBK)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U
Methylene Chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U
HC-8														
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone (MIBK)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U
Methylene Chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	1 U	2	2	1 U	1 U	1 U	2	1 U	1.7	3.2	1.1	3	1 U	1 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U

Table 1 - Analytical Results for Groundwater Samples, 1998 through 2001

Sampling Location/ Constituent	Concentration in µg/L													
	2/19/98	5/20/98	8/17/98	11/20/98	2/24/99	5/25/99	8/26/99	11/29/99	2/25/00	6/1/00	8/17/00	11/15/00	2/15/01	5/21/01
HC-8D														
Acetone	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	10 U	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	10 U	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	5 U	Yearly Sample Only	Yearly Sample Only
Benzene				1 U				1 U				1 U		
1,4-Dichlorobenzene				2 U				2 U				1 U		
1,1-Dichloroethane				1 U				1 U				1 U		
1,2-Dichloroethane				1 U				1 U				1 U		
1,2-Dichloroethene (total)				1 U				1 U				1 U		
Ethylbenzene				1 U				1 U				1 U		
4-Methyl-2-Pentanone (MIBK)				10 U				10 U				5 U		
Methylene Chloride				5 U				5 U				2 U		
Tetrachloroethene				1 U				1 U				1 U		
Toluene				1 U				1 U				1 U		
Vinyl Chloride				1 U				1 U				1 U		
Xylenes (total)				1 U				1 U				1 U		
2-Butanone (MEK)				10 U				10 U				5 U		
HC-9														
Acetone	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	10 U	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	Unable to Access Well	Yearly Sample Only	Yearly Sample Only	Yearly Sample Only	25	Yearly Sample Only	Yearly Sample Only
Benzene				35								26		
1,4-Dichlorobenzene				2 U								1 U		
1,1-Dichloroethane				1 U								1 U		
1,2-Dichloroethane				1 U								1 U		
1,2-Dichloroethene (total)				1 U								1 U		
Ethylbenzene				2								1 U		
4-Methyl-2-Pentanone (MIBK)				10 U								5 U		
Methylene Chloride				5 U								2 U		
Tetrachloroethene				1 U								1 U		
Toluene				1								1.1		
Vinyl Chloride				1 U								1 U		
Xylenes (total)				1,600								770		
2-Butanone (MEK)				10 U								5		
HC-10														
Acetone	1,500	2,800	2,700	3,200	50 U	1,600	1,700	Unable	1,300	3,500	4,300	5,000 U	5,100	8,800
Benzene	64	95	50 U	50 U	69	75	50 U	to	71	300 U	35	1,000 U	500 U	75
1,4-Dichlorobenzene	100 U	100 U	100 U	100 U	100 U	100 U	100 U	Access	100 U	300 U	3.1	1,000 U	500 U	50 U
1,1-Dichloroethane	1,300	1,100	110	170	1,400	640	50 U	Well	990	410	42	1,000 U	500 U	720
1,2-Dichloroethane	50 U	50 U	50 U	50 U	50 U	50 U	50 U		50 U	300 U	11	1,000 U	500 U	50 U
1,2-Dichloroethene (total)	4,500	9,000	77	520	6,200	5,800	50 U		5,500	3,900	57	1,000 U	500 U	3,600
Ethylbenzene	3,900	4,500	2,200	1,300	3,000	3,900	2,400		4,500	3,800	3,100	2,900	3,000	3,400
4-Methyl-2-Pentanone (MIBK)	590	1,700	1,500	1,300	50 U	1,600	1,300		930	640 J	720	5,000 U	2,500 U	1,400
Methylene Chloride	250 U	250 U	250 U	250 U	250 U	250 U	250 U		250 U	600 U	43	2,000 U	1,000 U	110
Tetrachloroethene	50 U	50 U	50 U	50 U	50 U	50 U	50 U		50 U	300 U	1.9	1,000 U	500 U	50 U
Toluene	50,000	47,000	38,000	20,000	54,000	44,000	31,000		45,000	38,000	32,000	33,000	38,000	50,000
Vinyl Chloride	1,100	1,400	50 U	50 U	800	1,200	50 U		1,200	970	57	1,000 U	500 U	1,200
Xylenes (total)	21,000	23,000	13,000	7,900	16,000	20,000	12,000		22,000	20,300	16,400	16,000	16,500	17,800
2-Butanone (MEK)	820	1,700	1,200	1,300	50 U	650	510		500 U	1,500 U	630	5,000 U	2,500 U	930

Table 1 - Analytical Results for Groundwater Samples, 1998 through 2001

Sampling Location/ Constituent	Concentration in µg/L													
	2/19/98	5/20/98	8/17/98	11/20/98	2/24/99	5/25/99	8/26/99	11/29/99	2/25/00	6/1/00	8/17/00	11/15/00	2/15/01	5/21/01
HC-12														
Acetone	290 J	Well Dry	Well Dry	Well Dry	420	2,300	Insufficient Water to Collect Sample	330	2,200	8,000	Insufficient Water to Collect Sample	Insufficient Water to Collect Sample	Insufficient Water to Collect Sample	Insufficient Water to Collect Sample
Benzene	9				21	27		6.8	58	300 U				
1,4-Dichlorobenzene	2 U				2 U	10 U		2 U	2 U	300 U				
1,1-Dichloroethane	31				1 U	22		26	99	300 U				
1,2-Dichloroethane	1 U				1 U	10		12	27	300 U				
1,2-Dichloroethene (total)	72				333	545		54	2,800	2,000				
Ethylbenzene	330				940	520		120	1,600	970				
4-Methyl-2-Pentanone (MIBK)	100				310	1,700		300	1,100	1,500 U				
Methylene Chloride	5 U				12	25 U		16	100	600 U				
Tetrachloroethene	1 U				2	5 U		1 U	2	300 U				
Toluene	4,500				16,000	15,000		3,800	21,000	19,000				
Vinyl Chloride	34				140	110		28	1,700	950				
Xylenes (total)	2,100				5,500	2,600		950	8,400	4,700				
2-Butanone (MEK)	110				240	1,200		190	890	1,500 U				

Notes:

U Not detected at detection limit indicated.

J Estimated value.

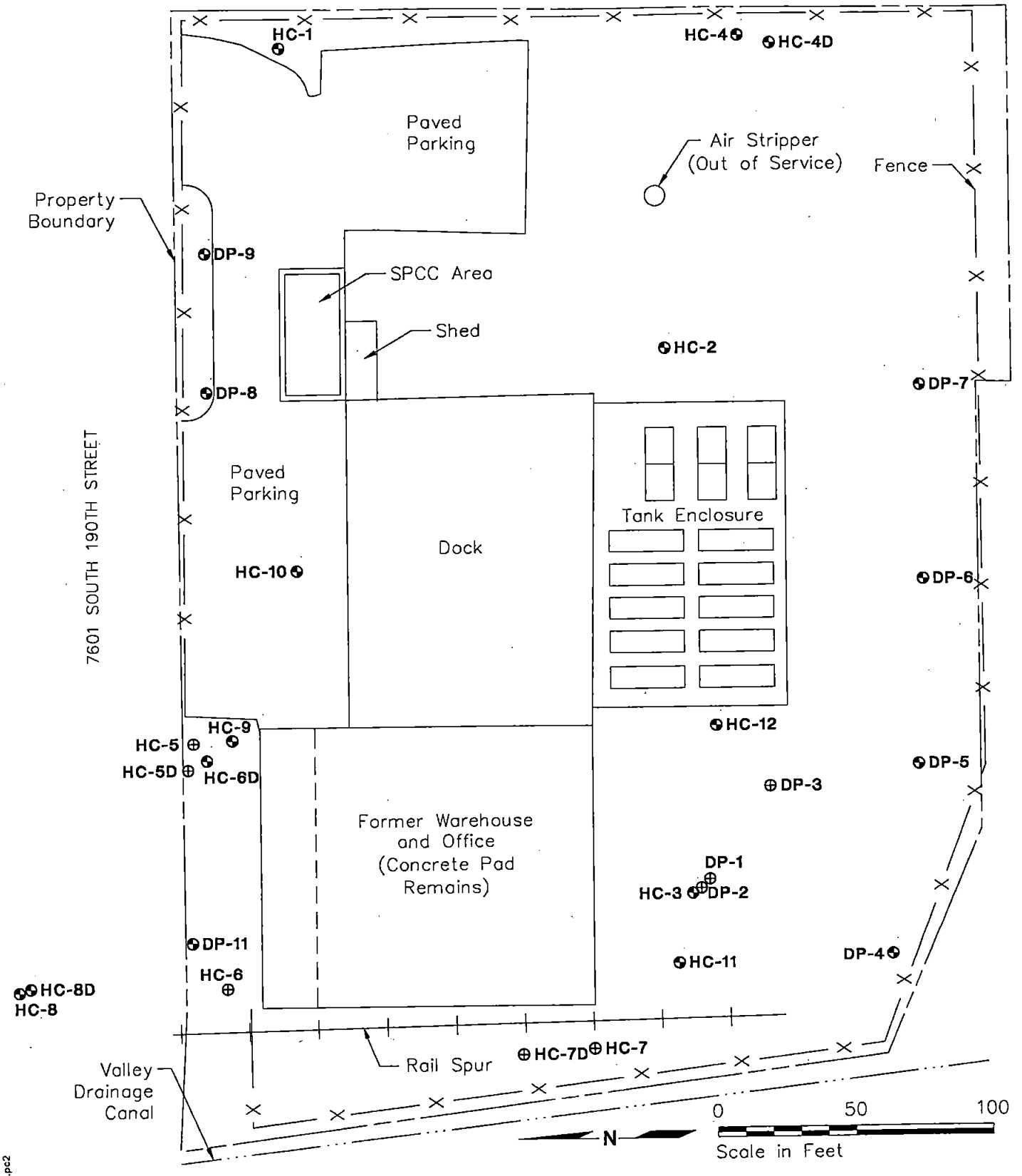
Blanks indicate well not sampled on date indicated.

This table lists only those constituents that have been detected in site groundwater at concentrations above their respective MTCA Method B cleanup levels. Results for other EPA Method 8260 constituents are provided in Appendix A (for the February 15 and May 21, 2001, sampling events), and in appendices of previous mid-year and year-end reports.

See the 1997 Year-End Report (dated February 3, 1998) and earlier year-end reports for analytical results of groundwater sampling performed prior to 1998.

First quarter 1999 samples for HC-8 were collected on 3/1/99.

Site and Exploration Plan
CHEMCENTRAL/Seattle Facility



⊕HC-1 Monitoring Well or Drive Point Location and Number

⊕HC-5 Monitoring Well or Drive Point Destroyed During Construction of Groundwater Extraction System

HARTCROWSER

J-2335-30 6/01

Figure 1

hel 01/11/01 1=50 charlie.pc2
23353000

APPENDIX A
GROUNDWATER SAMPLES ANALYTICAL DATA QUALITY REVIEW AND LABORATORY CERTIFICATES OF ANALYSIS ANALYTICAL RESOURCES, INC.

APPENDIX A
GROUNDWATER SAMPLES ANALYTICAL DATA QUALITY REVIEW AND LABORATORY CERTIFICATES OF ANALYSIS ANALYTICAL RESOURCES, INC.

CHEMCENTRAL Analytical Data Quality Review

Three water samples (HC-6D, HC-8, and HC-10) each were collected on February 15 and May 21, 2001. The February and May samples were submitted along with trip blanks to Analytical Resources, Inc. of Seattle, Washington. The samples were analyzed for volatile organics by EPA Method 8260A. The following quality assurance/quality control parameters were evaluated:

- Holding Times;
- Method Blanks;
- Surrogate Recoveries;
- Blank Spike/Blank Spike Duplicate (BS/BSD) Recoveries;
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries;
- Laboratory Duplicate Relative Percent Differences (RPDs); and
- Reporting Limits.

Samples were analyzed within the required holding time. No method blank or trip blank contamination was detected, and surrogate recoveries were within limits. No qualifiers were assigned since remaining recoveries were acceptable. Blank spike and MS/MSD recoveries were within laboratory control limits. The data are acceptable for use as reported.

LABORATORY CERTIFICATES OF ANALYSIS
ANALYTICAL RESOURCES, INC.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

February 28, 2001

Dave Heffner
Hart Crowser, Inc.
1910 Fairview Ave. East
Seattle, WA 98102

RE: Client Project: Chem Central
ARI Job: CT61

Dear Dave:

Please find enclosed the original chain-of-custody (COC) record and the final results for a sample from the project referenced above. Analytical Resources, Inc. (ARI) accepted four water samples in good condition on February 15, 2001. There were no discrepancies between the COC and the sample containers' labels.

The samples were analyzed for volatile organic compounds referencing US EPA method 8260 and BTEX compounds referencing US EPA method 602 as requested.

No analytical complications were noted.

A copy of this report and the supporting data will remain on file with ARI. Please feel free to contact me at your convenience if you have any questions.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mary Lou Fox

Mary Lou Fox
Project Manager
marylou@arilabs.com
206-389-6155

Enclosures
cc: File: CT61

MLF/mlf

Sample Custody Record

Samples Shipped to: _____

HARTCROWSER
1910 Fairview Avenue East
Seattle, Washington 98102-3699
Phone: 206-324-9530 FAX: 206-328-5581

JOB J-2335-29 LAB NUMBER _____

PROJECT NAME ChemCentral

HART CROWSER CONTACT David Hoffner

SAMPLED BY: NFM

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	BTEX Method 602	VOC Method 8260	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
	HC-10		2/15	1315	Water		X	3	
	HC-6D		2/15	1400	↓		X	3	
	HC-8		2/15	1445			X	3	
	HC-EFFL		2/16	1535	↓	X		3	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE Neil Morton	2/15/01	SIGNATURE E Joshi	2/15/01
PRINT NAME Neil Morton	TIME	PRINT NAME E Joshi	TIME
COMPANY Hart Crowser	1726	COMPANY HC	1726
RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE	TIME	SIGNATURE	TIME
PRINT NAME		PRINT NAME	
COMPANY		COMPANY	

SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:

TOTAL NUMBER OF CONTAINERS

SAMPLE RECEIPT INFORMATION
CUSTODY SEALS: ☐YES ☐NO ☐N/A
GOOD CONDITION: ☐YES ☐NO
TEMPERATURE
SHIPMENT METHOD: ☐HAND ☐COURIER ☐OVERNIGHT

COOLER NO.: STORAGE LOCATION:

See Lab Work Order No. _____
for Other Contract Requirements

TURNAROUND TIME:
☐ 24 HOURS ☐ 1 WEEK
☐ 48 HOURS ☐ STANDARD
☐ 72 HOURS OTHER _____

White and Yellow Copies to Lab Pink to Project Manager Lab to Return White Copy to Hart Crowser Gold to Sample Custodian

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample No: Method Blank

Lab Sample ID: 022301MB
LIMS ID: 01-1989
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: NA
Date Received: NA

Instrument: NT3
Date Analyzed: 02/23/01 10:01

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	1.0 U
74-83-9	Bromomethane	1.0 U
75-01-4	Vinyl Chloride	1.0 U
75-00-3	Chloroethane	1.0 U
75-09-2	Methylene Chloride	2.0 U
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	5.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	5.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
75-69-4	Trichlorofluoromethane	1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U
1330-20-7	m,p-Xylene	1.0 U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample No: Method Blank

Lab Sample ID: 022301MB
LIMS ID: 01-1989
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: NA
Date Received: NA

Instrument: NT3
Date Analyzed: 02/23/01 10:01

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
107-02-8	Acrolein	50 U
74-88-4	Methyl Iodide	1.0 U
74-96-4	Bromoethane	2.0 U
107-13-1	Acrylonitrile	5.0 U
563-58-6	1,1-Dichloropropene	1.0 U
74-95-3	Dibromomethane	1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U
96-18-4	1,2,3-Trichloropropane	3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0 U
87-68-3	Hexachlorobutadiene	5.0 U
106-93-4	Ethylene Dibromide	1.0 U
74-97-5	Bromochloromethane	1.0 U
594-20-7	2,2-Dichloropropane	1.0 U
142-28-9	1,3-Dichloropropane	1.0 U
98-82-8	Isopropylbenzene	1.0 U
103-65-1	n-Propylbenzene	1.0 U
108-86-1	Bromobenzene	1.0 U
95-49-8	2-Chlorotoluene	1.0 U
106-43-4	4-Chlorotoluene	1.0 U
98-06-6	tert-Butylbenzene	1.0 U
135-98-8	sec-Butylbenzene	1.0 U
99-87-6	4-Isopropyltoluene	1.0 U
104-51-8	n-Butylbenzene	1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0 U
91-20-3	Naphthalene	5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0 U

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	98.4%
d8-Toluene	102%
Bromofluorobenzene	99.7%
d4-1,2-Dichlorobenzene	96.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-10

Lab Sample ID: CT61A
LIMS ID: 01-1989
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 18:32

Sample Amount: 0.010 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	500 U
74-83-9	Bromomethane	500 U
75-01-4	Vinyl Chloride	500 U
75-00-3	**Chloroethane**	**4100**
75-09-2	Methylene Chloride	1000 U
67-64-1	**Acetone**	**5100**
75-15-0	Carbon Disulfide	500 U
75-35-4	1,1-Dichloroethene	500 U
75-34-3	1,1-Dichloroethane	500 U
156-60-5	trans-1,2-Dichloroethene	500 U
156-59-2	cis-1,2-Dichloroethene	500 U
67-66-3	Chloroform	500 U
107-06-2	1,2-Dichloroethane	500 U
78-93-3	2-Butanone	2500 U
71-55-6	1,1,1-Trichloroethane	500 U
56-23-5	Carbon Tetrachloride	500 U
108-05-4	Vinyl Acetate	2500 U
75-27-4	Bromodichloromethane	500 U
78-87-5	1,2-Dichloropropane	500 U
10061-01-5	cis-1,3-Dichloropropene	500 U
79-01-6	Trichloroethene	500 U
124-48-1	Dibromochloromethane	500 U
79-00-5	1,1,2-Trichloroethane	500 U
71-43-2	Benzene	500 U
10061-02-6	trans-1,3-Dichloropropene	500 U
110-75-8	2-Chloroethylvinylether	2500 U
75-25-2	Bromoform	500 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2500 U
591-78-6	2-Hexanone	2500 U
127-18-4	Tetrachloroethene	500 U
79-34-5	1,1,2,2-Tetrachloroethane	500 U
108-88-3	**Toluene**	**38000**
108-90-7	Chlorobenzene	500 U
100-41-4	**Ethylbenzene**	**3000**
100-42-5	Styrene	500 U
75-69-4	Trichlorofluoromethane	500 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1000 U
1330-20-7	**m,p-Xylene**	**12000**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-10

Lab Sample ID: CT61A
LIMS ID: 01-1989
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 18:32

Sample Amount: 0.010 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	4500
95-50-1	1,2-Dichlorobenzene	500 U
541-73-1	1,3-Dichlorobenzene	500 U
106-46-7	1,4-Dichlorobenzene	500 U
107-02-8	Acrolein	25000 U
74-88-4	Methyl Iodide	500 U
74-96-4	Bromoethane	1000 U
107-13-1	Acrylonitrile	2500 U
563-58-6	1,1-Dichloropropene	500 U
74-95-3	Dibromomethane	500 U
630-20-6	1,1,1,2-Tetrachloroethane	500 U
96-12-8	1,2-Dibromo-3-chloropropane	2500 U
96-18-4	1,2,3-Trichloropropane	1500 U
110-57-6	trans-1,4-Dichloro-2-butene	2500 U
108-67-8	1,3,5-Trimethylbenzene	500 U
95-63-6	1,2,4-Trimethylbenzene	500 U
87-68-3	Hexachlorobutadiene	2500 U
106-93-4	Ethylene Dibromide	500 U
74-97-5	Bromochloromethane	500 U
594-20-7	2,2-Dichloropropane	500 U
142-28-9	1,3-Dichloropropane	500 U
98-82-8	Isopropylbenzene	500 U
103-65-1	n-Propylbenzene	500 U
108-86-1	Bromobenzene	500 U
95-49-8	2-Chlorotoluene	500 U
106-43-4	4-Chlorotoluene	500 U
98-06-6	tert-Butylbenzene	500 U
135-98-8	sec-Butylbenzene	500 U
99-87-6	4-Isopropyltoluene	500 U
104-51-8	n-Butylbenzene	500 U
120-82-1	1,2,4-Trichlorobenzene	2500 U
91-20-3	Naphthalene	2500 U
87-61-6	1,2,3-Trichlorobenzene	2500 U

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	100%
Bromofluorobenzene	97.1%
d4-1,2-Dichlorobenzene	98.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-10
MATRIX SPIKE

Lab Sample ID: CT61A-MS
LIMS ID: 01-1989
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 18:58

Sample Amount: 0.010 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	---
74-83-9	Bromomethane	---
75-01-4	Vinyl Chloride	---
75-00-3	Chloroethane	---
75-09-2	Methylene Chloride	---
67-64-1	Acetone	---
75-15-0	Carbon Disulfide	---
75-35-4	1,1-Dichloroethene	---
75-34-3	1,1-Dichloroethane	---
156-60-5	trans-1,2-Dichloroethene	---
156-59-2	cis-1,2-Dichloroethene	---
67-66-3	Chloroform	---
107-06-2	1,2-Dichloroethane	---
78-93-3	2-Butanone	---
71-55-6	1,1,1-Trichloroethane	---
56-23-5	Carbon Tetrachloride	---
108-05-4	Vinyl Acetate	---
75-27-4	Bromodichloromethane	---
78-87-5	1,2-Dichloropropane	---
10061-01-5	cis-1,3-Dichloropropene	---
79-01-6	Trichloroethene	---
124-48-1	Dibromochloromethane	---
79-00-5	1,1,2-Trichloroethane	---
71-43-2	Benzene	---
10061-02-6	trans-1,3-Dichloropropene	---
110-75-8	2-Chloroethylvinylether	---
75-25-2	Bromoform	---
108-10-1	4-Methyl-2-Pentanone (MIBK)	---
591-78-6	2-Hexanone	---
127-18-4	Tetrachloroethene	---
79-34-5	1,1,2,2-Tetrachloroethane	---
108-88-3	Toluene	---
108-90-7	Chlorobenzene	---
100-41-4	Ethylbenzene	---
100-42-5	Styrene	---
75-69-4	Trichlorofluoromethane	---
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	---
1330-20-7	m,p-Xylene	---

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-10
MATRIX SPIKE

Lab Sample ID: CT61A-MS
LIMS ID: 01-1989
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 18:58

Sample Amount: 0.010 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	---
95-50-1	1,2-Dichlorobenzene	---
541-73-1	1,3-Dichlorobenzene	---
106-46-7	1,4-Dichlorobenzene	---
107-02-8	Acrolein	---
74-88-4	Methyl Iodide	---
74-96-4	Bromoethane	---
107-13-1	Acrylonitrile	---
563-58-6	1,1-Dichloropropene	---
74-95-3	Dibromomethane	---
630-20-6	1,1,1,2-Tetrachloroethane	---
96-12-8	1,2-Dibromo-3-chloropropane	---
96-18-4	1,2,3-Trichloropropane	---
110-57-6	trans-1,4-Dichloro-2-butene	---
108-67-8	1,3,5-Trimethylbenzene	---
95-63-6	1,2,4-Trimethylbenzene	---
87-68-3	Hexachlorobutadiene	---
106-93-4	Ethylene Dibromide	---
74-97-5	Bromochloromethane	---
594-20-7	2,2-Dichloropropane	---
142-28-9	1,3-Dichloropropane	---
98-82-8	Isopropylbenzene	---
103-65-1	n-Propylbenzene	---
108-86-1	Bromobenzene	---
95-49-8	2-Chlorotoluene	---
106-43-4	4-Chlorotoluene	---
98-06-6	tert-Butylbenzene	---
135-98-8	sec-Butylbenzene	---
99-87-6	4-Isopropyltoluene	---
104-51-8	n-Butylbenzene	---
120-82-1	1,2,4-Trichlorobenzene	---
91-20-3	Naphthalene	---
87-61-6	1,2,3-Trichlorobenzene	---

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	101%
d8-Toluene	102%
Bromofluorobenzene	99.6%
d4-1,2-Dichlorobenzene	98.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-10
SPIKE DUPLICATE

Lab Sample ID: CT61A-MSD
LIMS ID: 01-1989
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 19:25

Sample Amount: 0.010 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	---
74-83-9	Bromomethane	---
75-01-4	Vinyl Chloride	---
75-00-3	Chloroethane	---
75-09-2	Methylene Chloride	---
67-64-1	Acetone	---
75-15-0	Carbon Disulfide	---
75-35-4	1,1-Dichloroethene	---
75-34-3	1,1-Dichloroethane	---
156-60-5	trans-1,2-Dichloroethene	---
156-59-2	cis-1,2-Dichloroethene	---
67-66-3	Chloroform	---
107-06-2	1,2-Dichloroethane	---
78-93-3	2-Butanone	---
71-55-6	1,1,1-Trichloroethane	---
56-23-5	Carbon Tetrachloride	---
108-05-4	Vinyl Acetate	---
75-27-4	Bromodichloromethane	---
78-87-5	1,2-Dichloropropane	---
10061-01-5	cis-1,3-Dichloropropene	---
79-01-6	Trichloroethene	---
124-48-1	Dibromochloromethane	---
79-00-5	1,1,2-Trichloroethane	---
71-43-2	Benzene	---
10061-02-6	trans-1,3-Dichloropropene	---
110-75-8	2-Chloroethylvinylether	---
75-25-2	Bromoform	---
108-10-1	4-Methyl-2-Pentanone (MIBK)	---
591-78-6	2-Hexanone	---
127-18-4	Tetrachloroethene	---
79-34-5	1,1,2,2-Tetrachloroethane	---
108-88-3	Toluene	---
108-90-7	Chlorobenzene	---
100-41-4	Ethylbenzene	---
100-42-5	Styrene	---
75-69-4	Trichlorofluoromethane	---
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	---
1330-20-7	m,p-Xylene	---

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample No: HC-10
SPIKE DUPLICATE

Lab Sample ID: CT61A-MSD
LIMS ID: 01-1989
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 19:25

Sample Amount: 0.010 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	---
95-50-1	1,2-Dichlorobenzene	---
541-73-1	1,3-Dichlorobenzene	---
106-46-7	1,4-Dichlorobenzene	---
107-02-8	Acrolein	---
74-88-4	Methyl Iodide	---
74-96-4	Bromoethane	---
107-13-1	Acrylonitrile	---
563-58-6	1,1-Dichloropropene	---
74-95-3	Dibromomethane	---
630-20-6	1,1,1,2-Tetrachloroethane	---
96-12-8	1,2-Dibromo-3-chloropropane	---
96-18-4	1,2,3-Trichloropropane	---
110-57-6	trans-1,4-Dichloro-2-butene	---
108-67-8	1,3,5-Trimethylbenzene	---
95-63-6	1,2,4-Trimethylbenzene	---
87-68-3	Hexachlorobutadiene	---
106-93-4	Ethylene Dibromide	---
74-97-5	Bromochloromethane	---
594-20-7	2,2-Dichloropropane	---
142-28-9	1,3-Dichloropropane	---
98-82-8	Isopropylbenzene	---
103-65-1	n-Propylbenzene	---
108-86-1	Bromobenzene	---
95-49-8	2-Chlorotoluene	---
106-43-4	4-Chlorotoluene	---
98-06-6	tert-Butylbenzene	---
135-98-8	sec-Butylbenzene	---
99-87-6	4-Isopropyltoluene	---
104-51-8	n-Butylbenzene	---
120-82-1	1,2,4-Trichlorobenzene	---
91-20-3	Naphthalene	---
87-61-6	1,2,3-Trichlorobenzene	---

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	101%
d8-Toluene	103%
Bromofluorobenzene	99.2%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-6D

Lab Sample ID: CT61B
LIMS ID: 01-1990
Matrix: Water
Data Release Authorized: MS
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 17:39

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	1.0 U
74-83-9	Bromomethane	1.0 U
75-01-4	Vinyl Chloride	1.0 U
75-00-3	Chloroethane	1.0 U
75-09-2	Methylene Chloride	2.0 U
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	5.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	5.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
75-69-4	Trichlorofluoromethane	1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U
1330-20-7	m,p-Xylene	1.0 U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample No: HC-6D

Lab Sample ID: CT61B
LIMS ID: 01-1990
Matrix: Water
Data Release Authorized: AM
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 17:39

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
107-02-8	Acrolein	50 U
74-88-4	Methyl Iodide	1.0 U
74-96-4	Bromoethane	2.0 U
107-13-1	Acrylonitrile	5.0 U
563-58-6	1,1-Dichloropropene	1.0 U
74-95-3	Dibromomethane	1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U
96-18-4	1,2,3-Trichloropropane	3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0 U
87-68-3	Hexachlorobutadiene	5.0 U
106-93-4	Ethylene Dibromide	1.0 U
74-97-5	Bromochloromethane	1.0 U
594-20-7	2,2-Dichloropropane	1.0 U
142-28-9	1,3-Dichloropropane	1.0 U
98-82-8	Isopropylbenzene	1.0 U
103-65-1	n-Propylbenzene	1.0 U
108-86-1	Bromobenzene	1.0 U
95-49-8	2-Chlorotoluene	1.0 U
106-43-4	4-Chlorotoluene	1.0 U
98-06-6	tert-Butylbenzene	1.0 U
135-98-8	sec-Butylbenzene	1.0 U
99-87-6	4-Isopropyltoluene	1.0 U
104-51-8	n-Butylbenzene	1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0 U
91-20-3	Naphthalene	5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0 U

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	103%
Bromofluorobenzene	94.1%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-8

Lab Sample ID: CT61C
LIMS ID: 01-1991
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 18:06

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	1.0 U
74-83-9	Bromomethane	1.0 U
75-01-4	Vinyl Chloride	1.0 U
75-00-3	Chloroethane	1.0 U
75-09-2	Methylene Chloride	2.0 U
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	5.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	5.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
75-69-4	Trichlorofluoromethane	1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U
1330-20-7	m,p-Xylene	1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-8

Lab Sample ID: CT61C
LIMS ID: 01-1991
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 18:06

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
107-02-8	Acrolein	50 U
74-88-4	Methyl Iodide	1.0 U
74-96-4	Bromoethane	2.0 U
107-13-1	Acrylonitrile	5.0 U
563-58-6	1,1-Dichloropropene	1.0 U
74-95-3	Dibromomethane	1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U
96-18-4	1,2,3-Trichloropropane	3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0 U
87-68-3	Hexachlorobutadiene	5.0 U
106-93-4	Ethylene Dibromide	1.0 U
74-97-5	Bromochloromethane	1.0 U
594-20-7	2,2-Dichloropropane	1.0 U
142-28-9	1,3-Dichloropropane	1.0 U
98-82-8	Isopropylbenzene	1.0 U
103-65-1	n-Propylbenzene	1.0 U
108-86-1	Bromobenzene	1.0 U
95-49-8	2-Chlorotoluene	1.0 U
106-43-4	4-Chlorotoluene	1.0 U
98-06-6	tert-Butylbenzene	1.0 U
135-98-8	sec-Butylbenzene	1.0 U
99-87-6	4-Isopropyltoluene	1.0 U
104-51-8	n-Butylbenzene	1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0 U
91-20-3	Naphthalene	5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0 U

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	100%
Bromofluorobenzene	96.3%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: Trip Blank

Lab Sample ID: CT61D
LIMS ID: 01-1992
Matrix: Water
Data Release Authorized:
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 16:21

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	1.0 U
74-83-9	Bromomethane	1.0 U
75-01-4	Vinyl Chloride	1.0 U
75-00-3	Chloroethane	1.0 U
75-09-2	Methylene Chloride	2.0 U
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	5.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	5.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
75-69-4	Trichlorofluoromethane	1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U
1330-20-7	m,p-Xylene	1.0 U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample No: Trip Blank

Lab Sample ID: CT61D
LIMS ID: 01-1992
Matrix: Water
Data Release Authorized: AS
Reported: 02/27/01

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Sampled: 02/15/01
Date Received: 02/15/01

Instrument: NT3
Date Analyzed: 02/23/01 16:21

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
107-02-8	Acrolein	50 U
74-88-4	Methyl Iodide	1.0 U
74-96-4	Bromoethane	2.0 U
107-13-1	Acrylonitrile	5.0 U
563-58-6	1,1-Dichloropropene	1.0 U
74-95-3	Dibromomethane	1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U
96-18-4	1,2,3-Trichloropropane	3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0 U
87-68-3	Hexachlorobutadiene	5.0 U
106-93-4	Ethylene Dibromide	1.0 U
74-97-5	Bromochloromethane	1.0 U
594-20-7	2,2-Dichloropropane	1.0 U
142-28-9	1,3-Dichloropropane	1.0 U
98-82-8	Isopropylbenzene	1.0 U
103-65-1	n-Propylbenzene	1.0 U
108-86-1	Bromobenzene	1.0 U
95-49-8	2-Chlorotoluene	1.0 U
106-43-4	4-Chlorotoluene	1.0 U
98-06-6	tert-Butylbenzene	1.0 U
135-98-8	sec-Butylbenzene	1.0 U
99-87-6	4-Isopropyltoluene	1.0 U
104-51-8	n-Butylbenzene	1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0 U
91-20-3	Naphthalene	5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0 U

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	100%
Bromofluorobenzene	96.1%
d4-1,2-Dichlorobenzene	98.0%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: CT61A
LIMS ID: 01-1989
Matrix: Water

Sample No: HC-10
QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Received: 02/15/01

Data Release Authorized:
Reported: 02/27/01

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
Date Sample Analyzed: 02/23/01
Date MS Analyzed: 02/23/01

CONSTITUENT	SAMPLE VALUE	SPIKE VALUE	SPIKE AMT	% RECOVERY	RPD
MATRIX SPIKE					
Chloromethane	< 500	30600	25000	122%	
Bromomethane	< 500	24800	25000	99.2%	
Vinyl Chloride	< 500	31400	25000	126%	
Chloroethane	4070	34300	25000	121%	
Methylene Chloride	< 1000	29200	25000	117%	
Acetone	5100	116000	125000	88.7%	
Carbon Disulfide	< 500	28000	25000	112%	
1,1-Dichloroethene	< 500	29400	25000	118%	
1,1-Dichloroethane	< 500	29400	25000	118%	
trans-1,2-Dichloroethene	< 500	27400	25000	110%	
cis-1,2-Dichloroethene	< 500	28000	25000	112%	
Chloroform	< 500	29200	25000	117%	
1,2-Dichloroethane	< 500	29000	25000	116%	
2-Butanone	< 2500	122000	125000	97.6%	
1,1,1-Trichloroethane	< 500	28700	25000	115%	
Carbon Tetrachloride	< 500	28600	25000	114%	
Vinyl Acetate	< 2500	25400	25000	102%	
Bromodichloromethane	< 500	27500	25000	110%	
1,2-Dichloropropane	< 500	29300	25000	117%	
cis-1,3-Dichloropropene	< 500	26400	25000	106%	
Trichloroethene	< 500	26800	25000	107%	
Dibromochloromethane	< 500	28300	25000	113%	
1,1,2-Trichloroethane	< 500	29800	25000	119%	
Benzene	< 500	29000	25000	116%	
trans-1,3-Dichloropropene	< 500	25800	25000	103%	
2-Chloroethylvinylether	< 2500	22400	25000	89.6%	
Bromoform	< 500	29000	25000	116%	
4-Methyl-2-Pentanone (MIBK)	< 2500	120000	125000	96.0%	
2-Hexanone	< 2500	121000	125000	96.8%	
Tetrachloroethene	< 500	27200	25000	109%	
1,1,2,2-Tetrachloroethane	< 500	30800	25000	123%	
Toluene	38000	66500	25000	114%	
Chlorobenzene	< 500	29200	25000	117%	
Ethylbenzene	3030	31000	25000	112%	
Styrene	< 500	29600	25000	118%	
Trichlorofluoromethane	< 500	25900	25000	104%	

Reported in ug/L

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: CT61A
LIMS ID: 01-1989
Matrix: Water

Sample No: HC-10
QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Received: 02/15/01

Data Release Authorized: AG
Reported: 02/27/01

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
Date Sample Analyzed: 02/23/01
Date MS Analyzed: 02/23/01

CONSTITUENT	SAMPLE VALUE	SPIKE VALUE	SPIKE AMT	% RECOVERY	RPD
MATRIX SPIKE					
1,1,2-Trichlorotrifluoroethane	< 1000	24900	25000	99.6%	
m,p-Xylene	12000	69000	50000	114%	
O-Xylene	4520	34200	25000	119%	
1,2-Dichlorobenzene	< 500	28200	25000	113%	
1,3-Dichlorobenzene	< 500	28400	25000	114%	
1,4-Dichlorobenzene	< 500	28100	25000	112%	
Acrolein	<25000	145000	125000	116%	
Methyl Iodide	< 500	26300	25000	105%	
Bromoethane	< 1000	26000	25000	104%	
Acrylonitrile	< 2500	31400	25000	126%	
1,1-Dichloropropene	< 500	29000	25000	116%	
Dibromomethane	< 500	30300	25000	121%	
1,1,1,2-Tetrachloroethane	< 500	28000	25000	112%	
1,2-Dibromo-3-chloropropane	< 2500	33600	25000	134%	
1,2,3-Trichloropropane	< 1500	30200	25000	121%	
trans-1,4-Dichloro-2-butene	< 2500	21300	25000	85.2%	
1,3,5-Trimethylbenzene	< 500	29600	25000	118%	
1,2,4-Trimethylbenzene	< 500	29800	25000	119%	
Hexachlorobutadiene	< 2500	27100	25000	108%	
Ethylene Dibromide	< 500	29300	25000	117%	
Bromochloromethane	< 500	28000	25000	112%	
2,2-Dichloropropane	< 500	24100	25000	96.4%	
1,3-Dichloropropane	< 500	29000	25000	116%	
Isopropylbenzene	< 500	28600	25000	114%	
n-Propylbenzene	< 500	28100	25000	112%	
Bromobenzene	< 500	27600	25000	110%	
2-Chlorotoluene	< 500	29800	25000	119%	
4-Chlorotoluene	< 500	25600	25000	102%	
tert-Butylbenzene	< 500	29300	25000	117%	
sec-Butylbenzene	< 500	31000	25000	124%	
4-Isopropyltoluene	< 500	29000	25000	116%	
n-Butylbenzene	< 500	28400	25000	114%	
1,2,4-Trichlorobenzene	< 2500	29300	25000	117%	
Naphthalene	< 2500	34000	25000	136%	
1,2,3-Trichlorobenzene	< 2500	31800	25000	127%	

Reported in ug/L

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: CT61SB
LIMS ID: 01-1989
Matrix: Water
Data Release Authorized:
Reported: 02/27/01
Date Analyzed: 02/23/01
Instrument: NT3

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Received: 02/15/01

LABORATORY CONTROL SAMPLE CONSTITUENT	SPIKE VALUE	SPIKE AMT	% RECOVERY
1,2-Dichlorobenzene	58.9	50.0	118%
1,3-Dichlorobenzene	59.9	50.0	120%
1,4-Dichlorobenzene	59.6	50.0	119%
Acrolein	247.	250	98.8%
Methyl Iodide	44.4	50.0	88.8%
Bromoethane	45.0	50.0	90.0%
Acrylonitrile	47.8	50.0	95.6%
1,1-Dichloropropene	59.0	50.0	118%
Dibromomethane	56.8	50.0	114%
1,1,1,2-Tetrachloroethane	59.8	50.0	120%
1,2-Dibromo-3-chloropropane	64.3	50.0	129%
1,2,3-Trichloropropane	57.4	50.0	115%
trans-1,4-Dichloro-2-butene	36.3	50.0	72.6%
1,3,5-Trimethylbenzene	61.8	50.0	124%
1,2,4-Trimethylbenzene	62.7	50.0	125%
Hexachlorobutadiene	69.4	50.0	139%
Ethylene Dibromide	55.1	50.0	110%
Bromochloromethane	58.1	50.0	116%
2,2-Dichloropropane	56.5	50.0	113%
1,3-Dichloropropane	56.6	50.0	113%
Isopropylbenzene	61.0	50.0	122%
n-Propylbenzene	60.8	50.0	122%
Bromobenzene	57.9	50.0	116%
2-Chlorotoluene	61.3	50.0	123%
4-Chlorotoluene	56.6	50.0	113%
tert-Butylbenzene	62.0	50.0	124%
sec-Butylbenzene	66.7	50.0	133%
4-Isopropyltoluene	64.1	50.0	128%
n-Butylbenzene	65.6	50.0	131%
1,2,4-Trichlorobenzene	64.3	50.0	129%
Naphthalene	63.5	50.0	127%
1,2,3-Trichlorobenzene	64.9	50.0	130%

Lab Control Surrogate Recovery	
d4-1,2-Dichloroethane	98.9%
d8-Toluene	97.2%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	98.2%

Reported in ug/L

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: CT61A
LIMS ID: 01-1989
Matrix: Water

Sample No: HC-10
QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Received: 02/15/01

Data Release Authorized:
Reported: 02/27/01

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
Date Sample Analyzed: 02/23/01
Date MSD Analyzed: 02/23/01

CONSTITUENT	SAMPLE VALUE	SPIKE VALUE	SPIKE AMT	% RECOVERY	RPD
MATRIX SPIKE DUPLICATE					
Chloromethane	< 500	33500	25000	134%	9.0%
Bromomethane	< 500	27600	25000	110%	10%
Vinyl Chloride	< 500	34500	25000	138%	9.4%
Chloroethane	4070	35200	25000	125%	3.3%
Methylene Chloride	< 1000	31500	25000	126%	7.6%
Acetone	5100	156000	125000	121%	31%
Carbon Disulfide	< 500	28300	25000	113%	0.9%
1,1-Dichloroethene	< 500	30200	25000	121%	2.8%
1,1-Dichloroethane	< 500	31400	25000	126%	6.9%
trans-1,2-Dichloroethene	< 500	29000	25000	116%	5.7%
cis-1,2-Dichloroethene	< 500	30400	25000	122%	8.5%
Chloroform	< 500	30600	25000	122%	4.4%
1,2-Dichloroethane	< 500	31200	25000	125%	7.5%
2-Butanone	< 2500	152000	125000	122%	22%
1,1,1-Trichloroethane	< 500	30100	25000	120%	4.4%
Carbon Tetrachloride	< 500	31200	25000	125%	8.9%
Vinyl Acetate	< 2500	26600	25000	106%	4.2%
Bromodichloromethane	< 500	30300	25000	121%	9.5%
1,2-Dichloropropane	< 500	32000	25000	128%	8.8%
cis-1,3-Dichloropropene	< 500	28000	25000	112%	5.9%
Trichloroethene	< 500	28900	25000	116%	7.9%
Dibromochloromethane	< 500	30900	25000	124%	9.1%
1,1,2-Trichloroethane	< 500	30900	25000	124%	3.9%
Benzene	< 500	31400	25000	126%	8.3%
trans-1,3-Dichloropropene	< 500	27800	25000	111%	7.3%
2-Chloroethylvinylether	< 2500	25500	25000	102%	13%
Bromoform	< 500	31900	25000	128%	9.8%
4-Methyl-2-Pentanone (MIBK)	< 2500	147000	125000	118%	21%
2-Hexanone	< 2500	143000	125000	114%	16%
Tetrachloroethene	< 500	29100	25000	116%	6.4%
1,1,2,2-Tetrachloroethane	< 500	33300	25000	133%	7.7%
Toluene	38000	70500	25000	130%	13%
Chlorobenzene	< 500	30600	25000	122%	4.4%
Ethylbenzene	3030	32200	25000	117%	4.5%
Styrene	< 500	30500	25000	122%	3.0%
Trichlorofluoromethane	< 500	27500	25000	110%	6.0%

Reported in ug/L

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: CT61A
LIMS ID: 01-1989
Matrix: Water

Sample No: HC-10
QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Received: 02/15/01

Data Release Authorized:
Reported: 02/27/01

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY
Date Sample Analyzed: 02/23/01
Date MSD Analyzed: 02/23/01

CONSTITUENT	SAMPLE VALUE	SPIKE VALUE	SPIKE AMT	% RECOVERY	RPD
MATRIX SPIKE DUPLICATE					
1,1,2-Trichlorotrifluoroethane	< 1000	25000	25000	100%	0.4%
m,p-Xylene	12000	72000	50000	120%	5.1%
O-Xylene	4520	36000	25000	126%	5.9%
1,2-Dichlorobenzene	< 500	29700	25000	119%	5.3%
1,3-Dichlorobenzene	< 500	30000	25000	120%	5.5%
1,4-Dichlorobenzene	< 500	29600	25000	118%	4.9%
Acrolein	<25000	142000	125000	114%	1.7%
Methyl Iodide	< 500	28700	25000	115%	8.9%
Bromoethane	< 1000	26400	25000	106%	1.9%
Acrylonitrile	< 2500	32400	25000	130%	3.4%
1,1-Dichloropropene	< 500	31400	25000	126%	8.3%
Dibromomethane	< 500	31800	25000	127%	4.7%
1,1,1,2-Tetrachloroethane	< 500	30000	25000	120%	6.9%
1,2-Dibromo-3-chloropropane	< 2500	36800	25000	147%	9.0%
1,2,3-Trichloropropane	< 1500	32400	25000	130%	7.3%
trans-1,4-Dichloro-2-butene	< 2500	21900	25000	87.6%	2.8%
1,3,5-Trimethylbenzene	< 500	29800	25000	119%	0.5%
1,2,4-Trimethylbenzene	< 500	30500	25000	122%	2.3%
Hexachlorobutadiene	< 2500	13600	25000	54.4%	66%
Ethylene Dibromide	< 500	31500	25000	126%	7.2%
Bromochloromethane	< 500	31400	25000	126%	12%
2,2-Dichloropropane	< 500	25100	25000	100%	3.7%
1,3-Dichloropropane	< 500	30400	25000	122%	5.0%
Isopropylbenzene	< 500	29400	25000	118%	3.1%
n-Propylbenzene	< 500	28500	25000	114%	1.4%
Bromobenzene	< 500	30000	25000	120%	8.3%
2-Chlorotoluene	< 500	29300	25000	117%	1.9%
4-Chlorotoluene	< 500	29000	25000	116%	12%
tert-Butylbenzene	< 500	28800	25000	115%	1.9%
sec-Butylbenzene	< 500	27700	25000	111%	11%
4-Isopropyltoluene	< 500	26600	25000	106%	9.0%
n-Butylbenzene	< 500	24400	25000	97.6%	15%
1,2,4-Trichlorobenzene	< 2500	27800	25000	111%	5.4%
Naphthalene	< 2500	35200	25000	141%	3.6%
1,2,3-Trichlorobenzene	< 2500	30400	25000	122%	4.2%

Reported in ug/L

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: CT61SB
LIMS ID: 01-1989
Matrix: Water
Data Release Authorized:
Reported: 02/27/01
Date Analyzed: 02/23/01
Instrument: NT3

QC Report No: CT61-Hart Crowser
Project: ChemCentral
J-2335-29
Date Received: 02/15/01

LABORATORY CONTROL SAMPLE CONSTITUENT	SPIKE VALUE	SPIKE AMT	% RECOVERY
Chloromethane	60.0	50.0	120%
Bromomethane	52.8	50.0	106%
Vinyl Chloride	60.2	50.0	120%
Chloroethane	61.3	50.0	123%
Methylene Chloride	57.5	50.0	115%
Acetone	226.	250	90.4%
Carbon Disulfide	47.1	50.0	94.2%
1,1-Dichloroethene	57.5	50.0	115%
1,1-Dichloroethane	57.2	50.0	114%
trans-1,2-Dichloroethene	56.4	50.0	113%
cis-1,2-Dichloroethene	56.6	50.0	113%
Chloroform	56.8	50.0	114%
1,2-Dichloroethane	56.2	50.0	112%
2-Butanone	237.	250	94.8%
1,1,1-Trichloroethane	57.3	50.0	115%
Carbon Tetrachloride	60.3	50.0	121%
Vinyl Acetate	42.2	50.0	84.4%
Bromodichloromethane	54.7	50.0	109%
1,2-Dichloropropane	57.3	50.0	115%
cis-1,3-Dichloropropene	52.5	50.0	105%
Trichloroethene	55.0	50.0	110%
Dibromochloromethane	60.4	50.0	121%
1,1,2-Trichloroethane	55.3	50.0	111%
Benzene	57.6	50.0	115%
trans-1,3-Dichloropropene	52.9	50.0	106%
2-Chloroethylvinylether	49.2	50.0	98.4%
Bromoform	59.5	50.0	119%
4-Methyl-2-Pentanone (MIBK)	235.	250	94.0%
2-Hexanone	239.	250	95.6%
Tetrachloroethene	59.1	50.0	118%
1,1,2,2-Tetrachloroethane	58.2	50.0	116%
Toluene	56.8	50.0	114%
Chlorobenzene	59.5	50.0	119%
Ethylbenzene	57.4	50.0	115%
Styrene	59.4	50.0	119%
Trichlorofluoromethane	55.4	50.0	111%
1,1,2-Trichlorotrifluoroethane	44.2	50.0	88.4%
m,p-Xylene	119.	100	119%
O-Xylene	58.8	50.0	118%

Reported in ug/L

ANALYTICAL RESOURCES INCORPORATED

WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water 5 mL

QC Report No: CT61

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
022301MB	Method Blank	98%	102%	100%	97%	0
CT61A	HC-10	105%	100%	97%	99%	0
CT61A-MS	HC-10	101%	102%	100%	98%	0
CT61A-MSD	HC-10	101%	103%	99%	101%	0
CT61LCS	Lab Cntrl Sample	99%	97%	100%	98%	0
CT61B	HC-6D	106%	103%	94%	100%	0
CT61C	HC-8	106%	100%	96%	100%	0
CT61D	Trip Blank	103%	100%	96%	98%	0

	LCS/MB LIMITS	QC LIMITS
(DCE) = 1,2-Dichloroethane-d4	(70-130)	(70-130)
(TOL) = Toluene-d8	(70-130)	(70-130)
(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(DCB) = 1,2-Dichlorobenzene-d4	(70-130)	(70-130)

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

Analytical Resources, Incorporated
Analytical Chemists and Consultants

June 5, 2001

Dave Heffner
Hart Crowser, Inc.
1910 Fairview Ave. East
Seattle, WA 98102

RE: Client Project: Chem Central
ARI Job: DD32

Dear Dave:

Please find enclosed the original chain-of-custody (COC) record and the final results for a sample from the project referenced above. Analytical Resources, Inc. (ARI) accepted four water samples and a trip blank in good condition on June 21, 2001. There were no discrepancies between the COC and the sample containers' labels.

The samples were analyzed for volatile organic compounds referencing US EPA method 8260 and BTEX compounds referencing US EPA method 602m. As requested, sample HC-10 was analyzed at a 50 times dilution as well as the higher dilution required to quantify the high levels of some target analytes.

No analytical complications were noted. A copy of these reports and the supporting data will remain on file with ARI. Please feel free to contact me at your convenience if you have any questions.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mary Lou Fox

Mary Lou Fox
Project Manager
marylou@arilabs.com
206-389-6155

Enclosures
cc: File: DD32

MLF/mlf

DD3201-8331 to 01-8335

Chain of Custody Record & Laboratory Analysis Request

Page 1 of 1

Turn Around Requested: STANDARD

Analytical Resources, Incorporated
Analytical Chemists and Consultants
400 Ninth Avenue North
Seattle, WA 98109-4708
206-621-6490 206-621-7523 (fax)

Report to: DAVE HEPPENSTALL	Proj Name: CHEM CENTROID
Company: HART CROWSER	Proj Number: 2335-29
Address: 1910 FAIRVIEW AVE E	Sampler: WILLIAM DAMIANS
Phone: (206) 324-9530	Shipping Method:
Fax: (206) 328-5581	AirBill:

Sample ID	Sample Date	Sample Time	Sample Matrix	No Containers	8260	BTEX	Notes/Comments
HC-6D	5/21/01	1030	H_2O	3	X		9.0°C
HC-8	"	1125	"	3	X		
HC-10	"	1215	"	3	X		
TOT-1	"	0940	"	3		X	
TRIP BLANKS	—	—	"	2			

Relinquished: (Signature)	Relinquished: (Signature)	Relinquished: (Signature)	Special Instructions/Notes
Printed name: WILLIAM DAMIANS	Printed name:	Printed name:	
Company: HART CROWSER	Company:	Company:	
Date: 5/21/01 Time: 1330	Date: Time:	Date: Time:	
Received by:	Received by:	Received by:	
Printed name: S.D DUNNIHOO	Printed name:	Printed name:	
Company: ARI	Company:	Company:	Number of Coolers:
Date: 05/21/01 Time: 1335	Date: Time:	Date: Time:	Cooler Temp(s):
			COC Seals Intact?
			Bottles Intact?

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: Method Blank

Lab Sample ID: 052901MB
LIMS ID: 01-8335
Matrix: Water
Data Release Authorized:
Reported: 05/31/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: NA
Date Received: NA

Instrument: NT3
Date Analyzed: 05/29/01 10:53

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	1.0 U
74-83-9	Bromomethane	1.0 U
75-01-4	Vinyl Chloride	1.0 U
75-00-3	Chloroethane	1.0 U
75-09-2	Methylene Chloride	2.0 U
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	5.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	5.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
75-69-4	Trichlorofluoromethane	1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U
1330-20-7	m,p-Xylene	1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: Method Blank

Lab Sample ID: 052901MB
LIMS ID: 01-8335
Matrix: Water
Data Release Authorized:
Reported: 05/31/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: NA
Date Received: NA

Instrument: NT3
Date Analyzed: 05/29/01 10:53

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
107-02-8	Acrolein	50 U
74-88-4	Methyl Iodide	1.0 U
74-96-4	Bromoethane	2.0 U
107-13-1	Acrylonitrile	5.0 U
563-58-6	1,1-Dichloropropene	1.0 U
74-95-3	Dibromomethane	1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U
96-18-4	1,2,3-Trichloropropane	3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0 U
87-68-3	Hexachlorobutadiene	5.0 U
106-93-4	Ethylene Dibromide	1.0 U
74-97-5	Bromochloromethane	1.0 U
594-20-7	2,2-Dichloropropane	1.0 U
142-28-9	1,3-Dichloropropane	1.0 U
98-82-8	Isopropylbenzene	1.0 U
103-65-1	n-Propylbenzene	1.0 U
108-86-1	Bromobenzene	1.0 U
95-49-8	2-Chlorotoluene	1.0 U
106-43-4	4-Chlorotoluene	1.0 U
98-06-6	tert-Butylbenzene	1.0 U
135-98-8	sec-Butylbenzene	1.0 U
99-87-6	4-Isopropyltoluene	1.0 U
104-51-8	n-Butylbenzene	1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0 U
91-20-3	Naphthalene	5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0 U

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	99.6%
d8-Toluene	97.3%
Bromofluorobenzene	95.0%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-6D

Lab Sample ID: DD32A
LIMS ID: 01-8331
Matrix: Water
Data Release Authorized:
Reported: 05/31/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: 05/21/01
Date Received: 05/21/01

Instrument: NT3
Date Analyzed: 05/29/01 12:08

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	1.0 U
74-83-9	Bromomethane	1.0 U
75-01-4	Vinyl Chloride	1.0 U
75-00-3	Chloroethane	1.0 U
75-09-2	Methylene Chloride	2.0 U
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	5.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	5.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
75-69-4	Trichlorofluoromethane	1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U
1330-20-7	m,p-Xylene	1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-6D

Lab Sample ID: DD32A
LIMS ID: 01-8331
Matrix: Water
Data Release Authorized:
Reported: 05/31/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: 05/21/01
Date Received: 05/21/01

Instrument: NT3
Date Analyzed: 05/29/01 12:08

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
107-02-8	Acrolein	50 U
74-88-4	Methyl Iodide	1.0 U
74-96-4	Bromoethane	2.0 U
107-13-1	Acrylonitrile	5.0 U
563-58-6	1,1-Dichloropropene	1.0 U
74-95-3	Dibromomethane	1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U
96-18-4	1,2,3-Trichloropropane	3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0 U
87-68-3	Hexachlorobutadiene	5.0 U
106-93-4	Ethylene Dibromide	1.0 U
74-97-5	Bromochloromethane	1.0 U
594-20-7	2,2-Dichloropropane	1.0 U
142-28-9	1,3-Dichloropropane	1.0 U
98-82-8	Isopropylbenzene	1.0 U
103-65-1	n-Propylbenzene	1.0 U
108-86-1	Bromobenzene	1.0 U
95-49-8	2-Chlorotoluene	1.0 U
106-43-4	4-Chlorotoluene	1.0 U
98-06-6	tert-Butylbenzene	1.0 U
135-98-8	sec-Butylbenzene	1.0 U
99-87-6	4-Isopropyltoluene	1.0 U
104-51-8	n-Butylbenzene	1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0 U
91-20-3	Naphthalene	5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0 U

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	99.5%
Bromofluorobenzene	94.6%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-8

Lab Sample ID: DD32B
LIMS ID: 01-8332
Matrix: Water
Data Release Authorized:
Reported: 05/31/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: 05/21/01
Date Received: 05/21/01

Instrument: NT3
Date Analyzed: 05/29/01 12:34

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	1.0 U
74-83-9	Bromomethane	1.0 U
75-01-4	Vinyl Chloride	1.0 U
75-00-3	Chloroethane	1.0 U
75-09-2	Methylene Chloride	2.0 U
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	5.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	5.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
75-69-4	Trichlorofluoromethane	1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U
1330-20-7	m,p-Xylene	1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-8

Lab Sample ID: DD32B
LIMS ID: 01-8332
Matrix: Water
Data Release Authorized:
Reported: 05/31/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: 05/21/01
Date Received: 05/21/01

Instrument: NT3
Date Analyzed: 05/29/01 12:34

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
107-02-8	Acrolein	50 U
74-88-4	Methyl Iodide	1.0 U
74-96-4	Bromoethane	2.0 U
107-13-1	Acrylonitrile	5.0 U
563-58-6	1,1-Dichloropropene	1.0 U
74-95-3	Dibromomethane	1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U
96-18-4	1,2,3-Trichloropropane	3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0 U
87-68-3	Hexachlorobutadiene	5.0 U
106-93-4	Ethylene Dibromide	1.0 U
74-97-5	Bromochloromethane	1.0 U
594-20-7	2,2-Dichloropropane	1.0 U
142-28-9	1,3-Dichloropropane	1.0 U
98-82-8	Isopropylbenzene	1.0 U
103-65-1	n-Propylbenzene	1.0 U
108-86-1	Bromobenzene	1.0 U
95-49-8	2-Chlorotoluene	1.0 U
106-43-4	4-Chlorotoluene	1.0 U
98-06-6	tert-Butylbenzene	1.0 U
135-98-8	sec-Butylbenzene	1.0 U
99-87-6	4-Isopropyltoluene	1.0 U
104-51-8	n-Butylbenzene	1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0 U
91-20-3	Naphthalene	5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0 U

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	96.1%
Bromofluorobenzene	94.6%
d4-1,2-Dichlorobenzene	99.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-10

Lab Sample ID: DD32C
LIMS ID: 01-8333
Matrix: Water
Data Release Authorized:
Reported: 06/01/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: 05/21/01
Date Received: 05/21/01

Instrument: NT3
Date Analyzed: 05/29/01 13:00

Sample Amount: 0.10 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	50 U
74-83-9	Bromomethane	50 U
75-01-4	**Vinyl Chloride**	**1200**
75-00-3	**Chloroethane**	**5000**
75-09-2	**Methylene Chloride**	**110**
67-64-1	**Acetone**	**8800**
75-15-0	Carbon Disulfide	50 U
75-35-4	1,1-Dichloroethene	50 U
75-34-3	**1,1-Dichloroethane**	**720**
156-60-5	trans-1,2-Dichloroethene	50 U
156-59-2	**cis-1,2-Dichloroethene**	**3600**
67-66-3	Chloroform	50 U
107-06-2	1,2-Dichloroethane	50 U
78-93-3	**2-Butanone**	**930**
71-55-6	**1,1,1-Trichloroethane**	**210**
56-23-5	Carbon Tetrachloride	50 U
108-05-4	Vinyl Acetate	250 U
75-27-4	Bromodichloromethane	50 U
78-87-5	1,2-Dichloropropane	50 U
10061-01-5	cis-1,3-Dichloropropene	50 U
79-01-6	Trichloroethene	50 U
124-48-1	Dibromochloromethane	50 U
79-00-5	1,1,2-Trichloroethane	50 U
71-43-2	**Benzene**	**75**
10061-02-6	trans-1,3-Dichloropropene	50 U
110-75-8	2-Chloroethylvinylether	250 U
75-25-2	Bromoform	50 U
108-10-1	**4-Methyl-2-Pentanone (MIBK)**	**1400**
591-78-6	2-Hexanone	250 U
127-18-4	Tetrachloroethene	50 U
79-34-5	1,1,2,2-Tetrachloroethane	50 U
108-88-3	**Toluene**	**40000 E**
108-90-7	Chlorobenzene	50 U
100-41-4	**Ethylbenzene**	**3400**
100-42-5	Styrene	50 U
75-69-4	Trichlorofluoromethane	50 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	100 U
1330-20-7	**m,p-Xylene**	**13000**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-10

Lab Sample ID: DD32C
LIMS ID: 01-8333
Matrix: Water
Data Release Authorized:
Reported: 06/01/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: 05/21/01
Date Received: 05/21/01

Instrument: NT3
Date Analyzed: 05/29/01 13:00

Sample Amount: 0.10 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	**o-Xylene**	**4800**
95-50-1	1,2-Dichlorobenzene	50 U
541-73-1	1,3-Dichlorobenzene	50 U
106-46-7	1,4-Dichlorobenzene	50 U
107-02-8	Acrolein	2500 U
74-88-4	Methyl Iodide	50 U
74-96-4	Bromoethane	100 U
107-13-1	Acrylonitrile	250 U
563-58-6	1,1-Dichloropropene	50 U
74-95-3	Dibromomethane	50 U
630-20-6	1,1,1,2-Tetrachloroethane	50 U
96-12-8	1,2-Dibromo-3-chloropropane	250 U
96-18-4	1,2,3-Trichloropropane	150 U
110-57-6	trans-1,4-Dichloro-2-butene	250 U
108-67-8	**1,3,5-Trimethylbenzene**	**150**
95-63-6	**1,2,4-Trimethylbenzene**	**450**
87-68-3	Hexachlorobutadiene	250 U
106-93-4	Ethylene Dibromide	50 U
74-97-5	Bromochloromethane	50 U
594-20-7	2,2-Dichloropropane	50 U
142-28-9	1,3-Dichloropropane	50 U
98-82-8	**Isopropylbenzene**	**57**
103-65-1	**n-Propylbenzene**	**82**
108-86-1	Bromobenzene	50 U
95-49-8	2-Chlorotoluene	50 U
106-43-4	4-Chlorotoluene	50 U
98-06-6	tert-Butylbenzene	50 U
135-98-8	sec-Butylbenzene	50 U
99-87-6	4-Isopropyltoluene	50 U
104-51-8	n-Butylbenzene	50 U
120-82-1	1,2,4-Trichlorobenzene	250 U
91-20-3	Naphthalene	250 U
87-61-6	1,2,3-Trichlorobenzene	250 U

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	99.6%
Bromofluorobenzene	93.3%
d4-1,2-Dichlorobenzene	99.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-10
DILUTION

Lab Sample ID: DD32C-DL
LIMS ID: 01-8333
Matrix: Water
Data Release Authorized:
Reported: 06/01/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: 05/21/01
Date Received: 05/21/01

Instrument: NT3
Date Analyzed: 05/29/01 14:17

Sample Amount: 0.010 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	500 U
74-83-9	Bromomethane	500 U
75-01-4	**Vinyl Chloride**	**1300**
75-00-3	**Chloroethane**	**5600**
75-09-2	Methylene Chloride	1000 U
67-64-1	**Acetone**	**10000**
75-15-0	Carbon Disulfide	500 U
75-35-4	1,1-Dichloroethene	500 U
75-34-3	**1,1-Dichloroethane**	**760**
156-60-5	trans-1,2-Dichloroethene	500 U
156-59-2	**cis-1,2-Dichloroethene**	**3900**
67-66-3	Chloroform	500 U
107-06-2	1,2-Dichloroethane	500 U
78-93-3	2-Butanone	2500 U
71-55-6	1,1,1-Trichloroethane	500 U
56-23-5	Carbon Tetrachloride	500 U
108-05-4	Vinyl Acetate	2500 U
75-27-4	Bromodichloromethane	500 U
78-87-5	1,2-Dichloropropane	500 U
10061-01-5	cis-1,3-Dichloropropene	500 U
79-01-6	Trichloroethene	500 U
124-48-1	Dibromochloromethane	500 U
79-00-5	1,1,2-Trichloroethane	500 U
71-43-2	Benzene	500 U
10061-02-6	trans-1,3-Dichloropropene	500 U
110-75-8	2-Chloroethylvinylether	2500 U
75-25-2	Bromoform	500 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2500 U
591-78-6	2-Hexanone	2500 U
127-18-4	Tetrachloroethene	500 U
79-34-5	1,1,2,2-Tetrachloroethane	500 U
108-88-3	**Toluene**	**50000**
108-90-7	Chlorobenzene	500 U
100-41-4	**Ethylbenzene**	**3700**
100-42-5	Styrene	500 U
75-69-4	Trichlorofluoromethane	500 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1000 U
1330-20-7	**m,p-Xylene**	**14000**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: HC-10
DILUTION

Lab Sample ID: DD32C-DL
LIMS ID: 01-8333
Matrix: Water
Data Release Authorized:
Reported: 06/01/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: 05/21/01
Date Received: 05/21/01

Instrument: NT3
Date Analyzed: 05/29/01 14:17

Sample Amount: 0.010 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	**o-Xylene**	**5200**
95-50-1	1,2-Dichlorobenzene	500 U
541-73-1	1,3-Dichlorobenzene	500 U
106-46-7	1,4-Dichlorobenzene	500 U
107-02-8	Acrolein	25000 U
74-88-4	Methyl Iodide	500 U
74-96-4	Bromoethane	1000 U
107-13-1	Acrylonitrile	2500 U
563-58-6	1,1-Dichloropropene	500 U
74-95-3	Dibromomethane	500 U
630-20-6	1,1,1,2-Tetrachloroethane	500 U
96-12-8	1,2-Dibromo-3-chloropropane	2500 U
96-18-4	1,2,3-Trichloropropane	1500 U
110-57-6	trans-1,4-Dichloro-2-butene	2500 U
108-67-8	1,3,5-Trimethylbenzene	500 U
95-63-6	1,2,4-Trimethylbenzene	500 U
87-68-3	Hexachlorobutadiene	2500 U
106-93-4	Ethylene Dibromide	500 U
74-97-5	Bromochloromethane	500 U
594-20-7	2,2-Dichloropropane	500 U
142-28-9	1,3-Dichloropropane	500 U
98-82-8	Isopropylbenzene	500 U
103-65-1	n-Propylbenzene	500 U
108-86-1	Bromobenzene	500 U
95-49-8	2-Chlorotoluene	500 U
106-43-4	4-Chlorotoluene	500 U
98-06-6	tert-Butylbenzene	500 U
135-98-8	sec-Butylbenzene	500 U
99-87-6	4-Isopropyltoluene	500 U
104-51-8	n-Butylbenzene	500 U
120-82-1	1,2,4-Trichlorobenzene	2500 U
91-20-3	Naphthalene	2500 U
87-61-6	1,2,3-Trichlorobenzene	2500 U

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	99.5%
Bromofluorobenzene	94.2%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: Trip Blanks

Lab Sample ID: DD32E
LIMS ID: 01-8335
Matrix: Water
Data Release Authorized:
Reported: 05/31/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: 05/21/01
Date Received: 05/21/01

Instrument: NT3
Date Analyzed: 05/29/01 11:43

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
74-87-3	Chloromethane	1.0 U
74-83-9	Bromomethane	1.0 U
75-01-4	Vinyl Chloride	1.0 U
75-00-3	Chloroethane	1.0 U
75-09-2	Methylene Chloride	2.0 U
67-64-1	Acetone	5.0 U
75-15-0	Carbon Disulfide	1.0 U
75-35-4	1,1-Dichloroethene	1.0 U
75-34-3	1,1-Dichloroethane	1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0 U
67-66-3	Chloroform	1.0 U
107-06-2	1,2-Dichloroethane	1.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	1.0 U
56-23-5	Carbon Tetrachloride	1.0 U
108-05-4	Vinyl Acetate	5.0 U
75-27-4	Bromodichloromethane	1.0 U
78-87-5	1,2-Dichloropropane	1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0 U
79-01-6	Trichloroethene	1.0 U
124-48-1	Dibromochloromethane	1.0 U
79-00-5	1,1,2-Trichloroethane	1.0 U
71-43-2	Benzene	1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0 U
110-75-8	2-Chloroethylvinylether	5.0 U
75-25-2	Bromoform	1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0 U
591-78-6	2-Hexanone	5.0 U
127-18-4	Tetrachloroethene	1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U
108-88-3	Toluene	1.0 U
108-90-7	Chlorobenzene	1.0 U
100-41-4	Ethylbenzene	1.0 U
100-42-5	Styrene	1.0 U
75-69-4	Trichlorofluoromethane	1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U
1330-20-7	m,p-Xylene	1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

Sample No: Trip Blanks

Lab Sample ID: DD32E
LIMS ID: 01-8335
Matrix: Water
Data Release Authorized:
Reported: 05/31/01

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Sampled: 05/21/01
Date Received: 05/21/01

Instrument: NT3
Date Analyzed: 05/29/01 11:43

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	ug/L
95-47-6	o-Xylene	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
107-02-8	Acrolein	50 U
74-88-4	Methyl Iodide	1.0 U
74-96-4	Bromoethane	2.0 U
107-13-1	Acrylonitrile	5.0 U
563-58-6	1,1-Dichloropropene	1.0 U
74-95-3	Dibromomethane	1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0 U
96-18-4	1,2,3-Trichloropropane	3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0 U
87-68-3	Hexachlorobutadiene	5.0 U
106-93-4	Ethylene Dibromide	1.0 U
74-97-5	Bromochloromethane	1.0 U
594-20-7	2,2-Dichloropropane	1.0 U
142-28-9	1,3-Dichloropropane	1.0 U
98-82-8	Isopropylbenzene	1.0 U
103-65-1	n-Propylbenzene	1.0 U
108-86-1	Bromobenzene	1.0 U
95-49-8	2-Chlorotoluene	1.0 U
106-43-4	4-Chlorotoluene	1.0 U
98-06-6	tert-Butylbenzene	1.0 U
135-98-8	sec-Butylbenzene	1.0 U
99-87-6	4-Isopropyltoluene	1.0 U
104-51-8	n-Butylbenzene	1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0 U
91-20-3	Naphthalene	5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0 U

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	102%
Bromofluorobenzene	93.6%
d4-1,2-Dichlorobenzene	99.7%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: DD32SB
LIMS ID: 01-8335
Matrix: Water
Data Release Authorized:
Reported: 06/01/01
Date Analyzed: 05/29/01
Instrument: NT3

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Received: 05/21/01

LABORATORY CONTROL SAMPLE CONSTITUENT	SPIKE VALUE	SPIKE AMT	% RECOVERY
Chloromethane	37.0	50.0	74.0%
Bromomethane	44.5	50.0	89.0%
Vinyl Chloride	35.6	50.0	71.2%
Chloroethane	44.2	50.0	88.4%
Methylene Chloride	45.7	50.0	91.4%
Acetone	249.	250	99.6%
Carbon Disulfide	38.5	50.0	77.0%
1,1-Dichloroethene	41.1	50.0	82.2%
1,1-Dichloroethane	44.1	50.0	88.2%
trans-1,2-Dichloroethene	44.1	50.0	88.2%
cis-1,2-Dichloroethene	46.4	50.0	92.8%
Chloroform	44.0	50.0	88.0%
1,2-Dichloroethane	45.8	50.0	91.6%
2-Butanone	246.	250	98.4%
1,1,1-Trichloroethane	44.1	50.0	88.2%
Carbon Tetrachloride	45.0	50.0	90.0%
Vinyl Acetate	40.9	50.0	81.8%
Bromodichloromethane	46.3	50.0	92.6%
1,2-Dichloropropane	45.9	50.0	91.8%
cis-1,3-Dichloropropene	45.9	50.0	91.8%
Trichloroethene	45.2	50.0	90.4%
Dibromochloromethane	45.6	50.0	91.2%
1,1,2-Trichloroethane	45.7	50.0	91.4%
Benzene	45.8	50.0	91.6%
trans-1,3-Dichloropropene	43.1	50.0	86.2%
2-Chloroethylvinylether	53.1	50.0	106%
Bromoform	45.7	50.0	91.4%
4-Methyl-2-Pentanone (MIBK)	256.	250	102%
2-Hexanone	250.	250	100%
Tetrachloroethene	45.9	50.0	91.8%
1,1,2,2-Tetrachloroethane	45.4	50.0	90.8%
Toluene	45.2	50.0	90.4%
Chlorobenzene	46.4	50.0	92.8%
Ethylbenzene	45.9	50.0	91.8%
Styrene	44.8	50.0	89.6%
Trichlorofluoromethane	39.8	50.0	79.6%
1,1,2-Trichlorotrifluoroethane	43.6	50.0	87.2%
m,p-Xylene	91.9	100	91.9%
O-Xylene	45.3	50.0	90.6%

Reported in ug/L

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: DD32SB
LIMS ID: 01-8335
Matrix: Water
Data Release Authorized:
Reported: 06/01/01
Date Analyzed: 05/29/01
Instrument: NT3

QC Report No: DD32-Hart Crowser
Project: Chem Central
2335-29
Date Received: 05/21/01

LABORATORY CONTROL SAMPLE CONSTITUENT	SPIKE VALUE	SPIKE AMT	% RECOVERY
1,2-Dichlorobenzene	44.9	50.0	89.8%
1,3-Dichlorobenzene	45.5	50.0	91.0%
1,4-Dichlorobenzene	46.0	50.0	92.0%
Acrolein	237.	250	94.8%
Methyl Iodide	36.9	50.0	73.8%
Bromoethane	40.1	50.0	80.2%
Acrylonitrile	52.7	50.0	105%
1,1-Dichloropropene	45.0	50.0	90.0%
Dibromomethane	45.6	50.0	91.2%
1,1,1,2-Tetrachloroethane	45.7	50.0	91.4%
1,2-Dibromo-3-chloropropane	46.2	50.0	92.4%
1,2,3-Trichloropropane	45.5	50.0	91.0%
trans-1,4-Dichloro-2-butene	42.0	50.0	84.0%
1,3,5-Trimethylbenzene	44.8	50.0	89.6%
1,2,4-Trimethylbenzene	46.1	50.0	92.2%
Hexachlorobutadiene	47.0	50.0	94.0%
Ethylene Dibromide	45.3	50.0	90.6%
Bromochloromethane	45.3	50.0	90.6%
2,2-Dichloropropane	44.7	50.0	89.4%
1,3-Dichloropropane	45.2	50.0	90.4%
Isopropylbenzene	45.1	50.0	90.2%
n-Propylbenzene	44.7	50.0	89.4%
Bromobenzene	45.4	50.0	90.8%
2-Chlorotoluene	43.9	50.0	87.8%
4-Chlorotoluene	45.7	50.0	91.4%
tert-Butylbenzene	44.7	50.0	89.4%
sec-Butylbenzene	45.0	50.0	90.0%
4-Isopropyltoluene	45.7	50.0	91.4%
n-Butylbenzene	44.4	50.0	88.8%
1,2,4-Trichlorobenzene	45.6	50.0	91.2%
Naphthalene	47.8	50.0	95.6%
1,2,3-Trichlorobenzene	48.2	50.0	96.4%

Lab Control Surrogate Recovery	
d4-1,2-Dichloroethane	98.7%
d8-Toluene	102%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	97.7%

Reported in ug/L

ANALYTICAL RESOURCES INCORPORATED

WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water 5 mL QC Report No: DD32

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
DD32A	HC-6D	103%	100%	95%	101%	0
DD32B	HC-8	103%	96%	95%	100%	0
DD32C	HC-10	100%	100%	93%	100%	0
DD32C-DL	HC-10	102%	100%	94%	100%	0
052901MB	Method Blank	100%	97%	95%	100%	0
DD32LCS	Lab Cntrl Sample	99%	102%	100%	98%	0
DD32E	Trip Blanks	103%	102%	94%	100%	0

	LCS/MB LIMITS	QC LIMITS
(DCE) = 1,2-Dichloroethane-d4	(70-130)	(70-130)
(TOL) = Toluene-d8	(70-130)	(70-130)
(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(DCB) = 1,2-Dichlorobenzene-d4	(70-130)	(70-130)

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out