ERO Resources Corp.
1842 Clarkson Street
Denver, CO 80218
(303) 830-1188
Fax: 830-1199

Denver • Boise

www.eroresources.com
ero@eroresources.com

CO50000-04649

06974VIC-V

RECEIVED
FEB 24 2004
EPA Region 8
Ground Water Program

February 23, 2004

Ms. Valois Shea
US EPA Region 8
8P-W-GW
999 18th Street, Suite 300
Denver, CO 80202-4235

RE: Underground Injection Control Authorization Request
Former AAD Disposal, 1240 Harlan Street, Lakewood, Colorado

Dear Ms. Shea:

ERO is seeking authorization from the EPA to inject purged groundwater that has been treated with potassium permanganate into the shallow aquifer via a monitoring well located on the site. The site is located at 1240 Harlan Street, Lakewood, Colorado (Figure 1). The site is owned by:

1240 Harlan LLC
771 Santa Fe Drive, Suite 204
Denver, CO 80204
Phone: (303) 572-8778
Fax: (303) 595-9567

Howard Snyder

The owner is the operator and responsible party for the operation, maintenance, and closure of the injection system. ERO Resources Corp. is contracted by 1240 Harlan LLC to monitor the site. Contact is:

Mr. Richard Trenholme
ERO Resources Corporation
1842 Clarkson Street
Denver, CO 80218

Groundwater and soil VOC contamination exist on the property from activities that took place on the property from 1998 to 2000, when the property was occupied by AAD Disposal. A copy of the analytical results of monitoring wells currently being monitored is attached (Appendix A). ERO is required by the Colorado Department of Public Health and Environment (CDPHE) to sample wells semi-annually, and approximately 55 gallons of purged groundwater will be produced during each sampling event. ERO has received approval from the CDPHE to treat the purge water on-site using potassium permanganate, and dispose of the waste as non-hazardous waste. The CDPHE approval letter and the analytical results from the treated purge water are attached (Appendix B.). By-products from the reaction include carbon dioxide, manganese dioxide solids, potassium, and chloride; these by-products are non-toxic at the levels produced. ERO proposes to inject the treated groundwater by gravity into existing monitoring well (MW-2) (Figure 2). MW-2 is completed to a depth of 27

feet below ground surface (BGS), and screened from 17-27 feet BGS. The lithology on the property consists of sandy to silty clay alluvium. Attached are the boring logs for soil borings and monitoring wells associated with property (Appendix C). The nearest surface water body is Dry Gulch, which is about 200 feet north of the property (Figure 1). The property is supplied with potable water from the Consolidated Mutual Water Company. Based on well records, ERO believes all other properties within the contaminant plume downgradient of the property obtain potable water from the Consolidated Mutual Water Company. One permitted drinking water well is within ½ mile of the property. It is located in the NE¼ NW¼ of Section 1, north of the property and Dry Gulch. More precise information about the well location is not listed in the well record (State Engineer Office, January 10, 2003). The well is 40 feet deep with a water level of 28 feet. All other wells within ½ mile of the property are monitoring wells (Appendix D).

Please call me if you have any questions.

Sincerely,

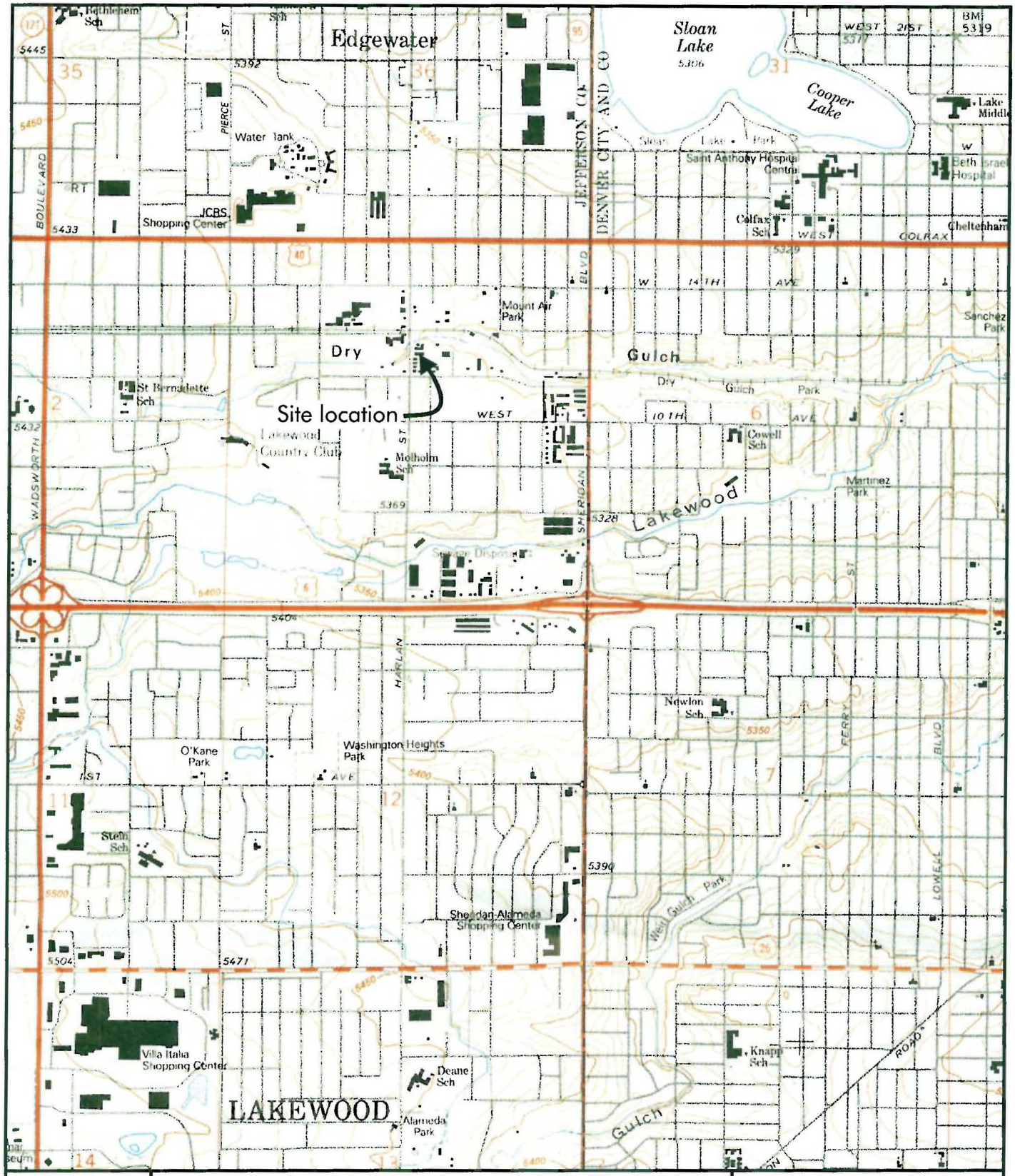
Richard Trenholme

Richard Trenholme
Vice President

Enclosures:

Figure 1. Property Location
Figure 2. Site Plan
Appendix A: Analytical Results
Appendix B: CDPHE Approval Letter, and Purge Water Analytical Results
Appendix C: Boring Logs
Appendix D: SEO Well Records

Figures



ERO

ERO Resources Corp.
1842 Clarkson Street
Denver, CO 80218
(303) 830-1188
Fax: 830-1199

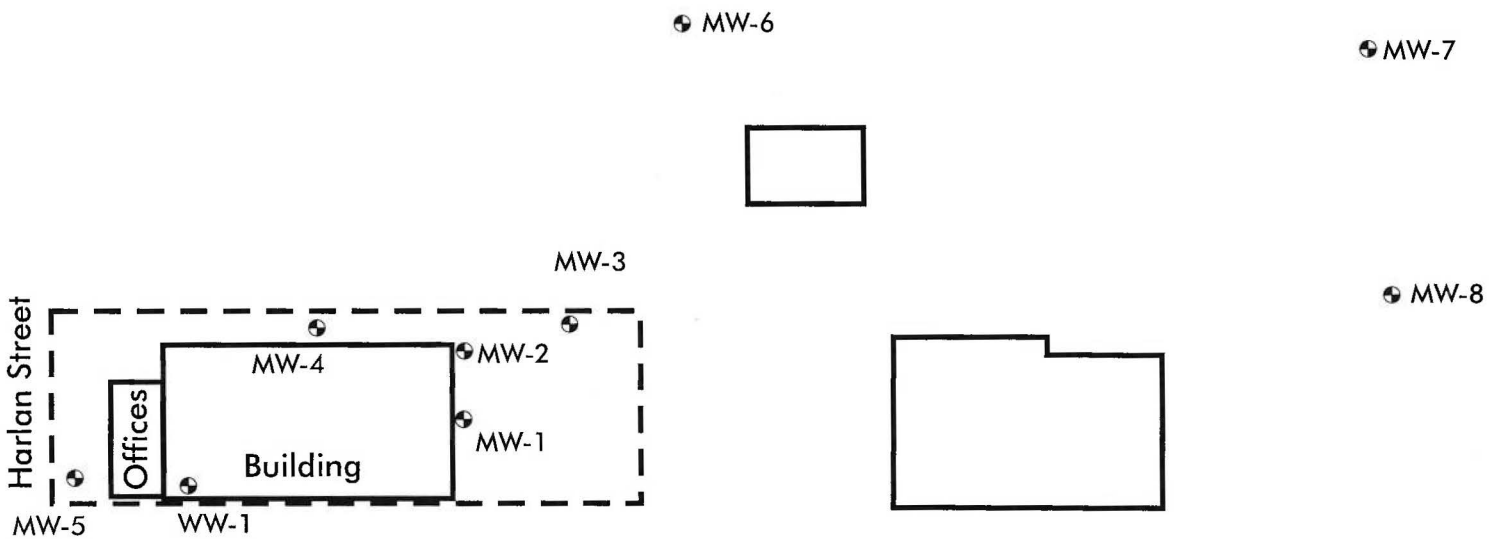
1240 Harlan Street LLC
NE 1/4 Section 1, T4S, R69W
Fort Logan Quadrangle,
Jefferson County, Colorado

1 Inch = 2,000 Feet

N

Figure 1
Site Location

Prepared for: 1240 Harlan LLC
File:1847 Fig1.cdr
January 2003



ERO Resources Corp.
1842 Clarkson Street
Denver, CO 80218
(303) 830-1188
Fax: 830-1199

Monitoring Well
Property Boundary

N

1" = 100'

Figure 2
Site Plan

Prepared for: **1240 Harlan LLC**

File: 1847-Fig 2-10.03.cdr

Date: October 3, 2003

Appendix A: Analytical Results

Evergreen Analytical Laboratory

RECEIVED
OCT 2 0 2003

October 09, 2003

Richard Trenholme
ERO Resources Corporation
1842 Clarkson St.
Denver, CO 80218

Lab Work Order: 03-5921
Client Project ID: 1847

Dear Richard Trenholme:

Enclosed are the analytical results and invoice for the samples shown in the Laboratory Work Order Summary.

The enclosed data for testing performed at Evergreen Analytical Laboratory (EAL) have been reviewed for quality assurance. A case narrative is included to describe any anomalies associated with the samples or data.

EAL will dispose of all samples one month from the date of this letter. If you want samples returned, please advise us by mail or fax as soon as possible.

A copy of this project report and supporting data will be retained for a period of five years unless we are otherwise advised by you. A document retrieval charge will apply.

Thank you for using the services of Evergreen Analytical. If you have any questions concerning the analytical data, please contact me. Please direct other questions to Client Services.

Sincerely,

Carl Smits
Technical Director of Chemical Analysis

WORK ORDER Summary Evergreen Analytical, Inc. 03-5921

Rpt To: Richard Trenholme
ERO Resources Corporation
1842 Clarkson St.
Denver, CO 80218-
(303) 830-1188

Fax To: Richard Trenholme **FX:** (303) 830-1199 **PH:** (303) 830-1188

9/25/03 5:41:22 PM

Client Project ID: 1847

QC Level: Level I

Comments:

Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Storage	Test Code	Test Name	Hold	MS	Date Due	Hold Time
03-5921-01A	MW-3	Groundwater	9/25/03	9/25/03	11	8260_W *	8260B VOA Hazardous Substance List	☐	☐	10/9/03	10/2/03
03-5921-01B	MW-3	Groundwater	9/25/03	9/25/03	E4	ANIONS_W *	Anions by IC	☐	☐	10/9/03	9/27/03
03-5921-02A	MW-6	Groundwater	9/25/03	9/25/03	11	8260_W *	8260B VOA Hazardous Substance List	☐	☐	10/9/03	10/2/03
03-5921-02B	MW-6	Groundwater	9/25/03	9/25/03	E4	ANIONS_W *	Anions by IC	☐	☐	10/9/03	9/27/03
03-5921-03A	MW-7	Groundwater	9/25/03	9/25/03	11	8260_W *	8260B VOA Hazardous Substance List	☐	☐	10/9/03	10/2/03
03-5921-03B	MW-7	Groundwater	9/25/03	9/25/03	E4	ANIONS_W *	Anions by IC	☐	☐	10/9/03	9/27/03

Definitions: * - Test Code has a Select List

CHAIN OF CUSTODY RECORD / ANALYTICAL SERVICES AGREEMENT **

02

Page 1 of 1

Evergreen Analytical Laboratory Inc.

4036 Youngfield St.
Wheat Ridge, Colorado 80033
(303) 425-6021
FAX (303) 425-6854
(877) 737-4521
e-mail info@evergreenanalytical.com

CLIENT INFORMATION

CLIENT: Eco Resources
ADDRESS: 1842 Clarkson St.
CITY: Denver STATE: CO ZIP: 80218
PHONE#: 303-830-1188 FAX #: 303-830-1199
REPORT TO (Mr/Ms): Richard Trenholme
INVOICE TO: Same
PROJECT I.D.: 1847
P.O. #: EAL QUOTE #:
Sampler: (sign)

NOTE: Identify Known Hazards Below

Report Results by: (Date)*
Standard 2 working weeks ☒
UST Analyses per Fee Schedule ☐
* Rush: ☐ less than 24 hrs, 150% ☐ 1 - 2 work days, 100%
☐ 3 - 5 work days, 50% ☐ 6 - 9 work days, 25%
*Rush analysis subject to surcharge noted

Please **PRINT** all information:

SAMPLE IDENTIFICATION	DATE SAMPLED	TIME	No. of Containers	MATRIX: 1) Drinking Water or 2) Discharge Water or 3) Ground Water (circle one)	Soil / Solid / Air / Gas	Oil / Sludge / Multi-phase	TCLP VOA/BNA/Pest/Herb/Metals (circle)	VOA 8260/624 (circle)	BNA 8270/625 (circle)	Pesticides 8081/8141/608 (circle)	Pest/PCBs 8081/8082/608 (circle)	PCB Screen 8082 mod.	Herbicides 8151	BTEX 8021/602 (circle)/MTBE (circle)	TVPH 8015mod. (Gasoline)	TEPH 8015mod. (Diesel)	Total Metals-DW / NPDES / SW846 (circle & list metals below)	Dissolved Metals - DW / SW846 (circle & list metals below)	Oil & Grease 413.1	TRPH 418.1	Chloride						For Laboratory use only
MW-3	9/25/03	1245	3	X				X													X						01
MW-6	↓	1045	3	X				X													X						02
MW-7	9/25/03	1115	3	X				X													X						03
Sample Fraction								A													B						Loc 11 E4
Does this analysis involve property transfer? ☐ Yes or ☒ No																											Container

For Laboratory use only:
W.O.# 03-5921
B.O.F.# NA
C/S (O) 127 / PU
C/S (I) 127 / HP
Cooler Temp. °C 7
Seals Present Y / N / NA
Seals Intact Y / N
Samples Pres. Y / N / NA
Headspace Y / N / NA
By ____/____

Instructions:

** **Important Note:** By relinquishing samples client agrees to the terms and conditions on the reverse side hereof

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	9/25/03 1342		9/25/03 1342				

Evergreen Analytical, Inc. **Date:** *09-Oct-03*

Client Project ID: 1847
Lab Order: 03-5921

CASE NARRATIVE

SAMPLE RECEIVING

Samples were received in good condition within method specified holding times.
Samples were hand delivered to the laboratory by the client.
VOC samples were marked as unpreserved on bottle labels.
The temperature of the sample(s) upon arrival was 7° C.
Samples for volatile organic compounds (VOCs) were received with no headspace present.
The address of sample collection was not provided by the client. JD

CLIENT SERVICES

There are no anomalies to report. SG

GENERAL CHEMISTRY

Anions : There are no anomalies to report. MM

GAS CHROMATOGRAPHY / MASS SPECTROMETRY

Method 8260_W : LCS / LCSD recoveries for Carbon disulfide were 5 to 7 % below historical limits. This analyte was not found in the samples. There were no other anomalies to report. SWT/CMS

Evergreen Analytical, Inc.

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Project ID 1847
Collection Date: 9/25/03

Lab Order: 03-5921
Date Received: 9/25/03
Units: mg/L

Anions by IC
Chloride

Method: E300

Lab ID	Client ID	Matrix	Date Prepared	Date Analyzed	Results	LQL	DF
03-5921-01B	MW-3	Groundwater	9/26/03	9/26/03	52.3	2.5	5
03-5921-02B	MW-6	Groundwater	9/26/03	9/26/03	95.8	2.5	5
03-5921-03B	MW-7	Groundwater	9/26/03	9/26/03	79.4	2.5	5

Comments

Analyst

Approved

Qualifiers: J - Indicates an estimated value when the compound is detected, but is below the LQL
U - Compound analyzed for but not detected
X - See case narrative

Definitions: DF - Dilution Factor
LQL - Lower Quantitation Limit

Print Date: 10/2/03

Evergreen Analytical, Inc.
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID:	MW-3	**Lab Work Order:**	03-5921
Client Project ID:	1847	**Lab Sample ID:**	03-5921-01A
Date Collected:	9/25/03	**Sample Matrix:**	Groundwater
Date Received:	9/25/03	**Lab File ID:**	VOA31002\22742.D
Date Prepared:	10/2/03	**Method Blank:**	RB100203
Date Analyzed:	10/2/03	**Prep Factor:**	1.000
Percent Moisture:	NA	**Dilution Factor:**	1.00

Method: SW8260B — **VOLATILE ORGANICS** — **Units: µg/L**

Analytes	CAS Number	Result	MCL µg/L	LQL
1,1,1-Trichloroethane	71-55-6	6.6	200	4.0
1,1,2,2-Tetrachloroethane	79-34-5	U		4.0
1,1,2-Trichloroethane	79-00-5	2.7 J	5	5.0
1,1-Dichloroethane	75-34-3	35	none	2.0
1,1-Dichloroethene	75-35-4	130	7	2.0
1,2-Dichloroethane	107-06-2	7.2	5	3.0
1,2-Dichloropropane	78-87-5	U		2.0
2-Butanone	78-93-3	U		20
2-Chloroethylvinylether	110-75-8	U		4.0
2-Hexanone	591-78-6	U		10
4-Methyl-2-pentanone	108-10-1	U		10
Acetone	67-64-1	U		20
Benzene	71-43-2	2.8	5	2.0
Bromodichloromethane	75-27-4	U		3.0
Bromoform	75-25-2	U		2.0
Bromomethane	74-83-9	U		20
Carbon disulfide	75-15-0	U		2.0
Carbon tetrachloride	56-23-5	U		2.0
Chlorobenzene	108-90-7	U		2.0
Chloroethane	75-00-3	U		4.0
Chloroform	67-66-3	U		2.0
Chloromethane	74-87-3	U		5.0
cis-1,2-Dichloroethene	156-59-2	1.4 J	70	2.0
cis-1,3-Dichloropropene	10061-01-5	U		2.0
Dibromochloromethane	124-48-1	U		3.0
Ethylbenzene	100-41-4	U		3.0
Methylene chloride dichloromethane	75-09-2	0.46 J	5	4.0
Styrene	100-42-5	U		5.0
Tetrachloroethene	127-18-4	8.3	5	4.0
Toluene	108-88-3	U		2.0
Total Xylene	1330-20-7	U		5.0
trans-1,2-Dichloroethene	156-60-5	U	100	2.0
trans-1,3-Dichloropropene	10061-02-6	U		2.0
Trichloroethene	79-01-6	0.89 J	5	2.0
Vinyl acetate	108-05-4	U		4.0
Vinyl chloride	75-01-4	28	2	2.0

Surr: 1,2-Dichloroethane-d4	17060-07-0	106	**QC Limits:**	89-112 %REC
Surr: 4-Bromofluorobenzene	460-00-4	98	**QC Limits:**	82-109 %REC
Surr: Toluene-d8	2037-26-5	103	**QC Limits:**	87-111 %REC

Analyst — **Approved** DC

Qualifiers:
B - Analyte detected in the associated Method Blank, value not subtracted from result
E - Extrapolated value. Value exceeds calibration range
H - Sample exceeded analytical holding time
J - Indicates an estimated value when the compound is detected, but is below the LQL
S - Spike Recovery outside accepted limits
U - Compound analyzed for but not detected
X - See case narrative
* - Value exceeded the Maximum Contamination Level (MCL)

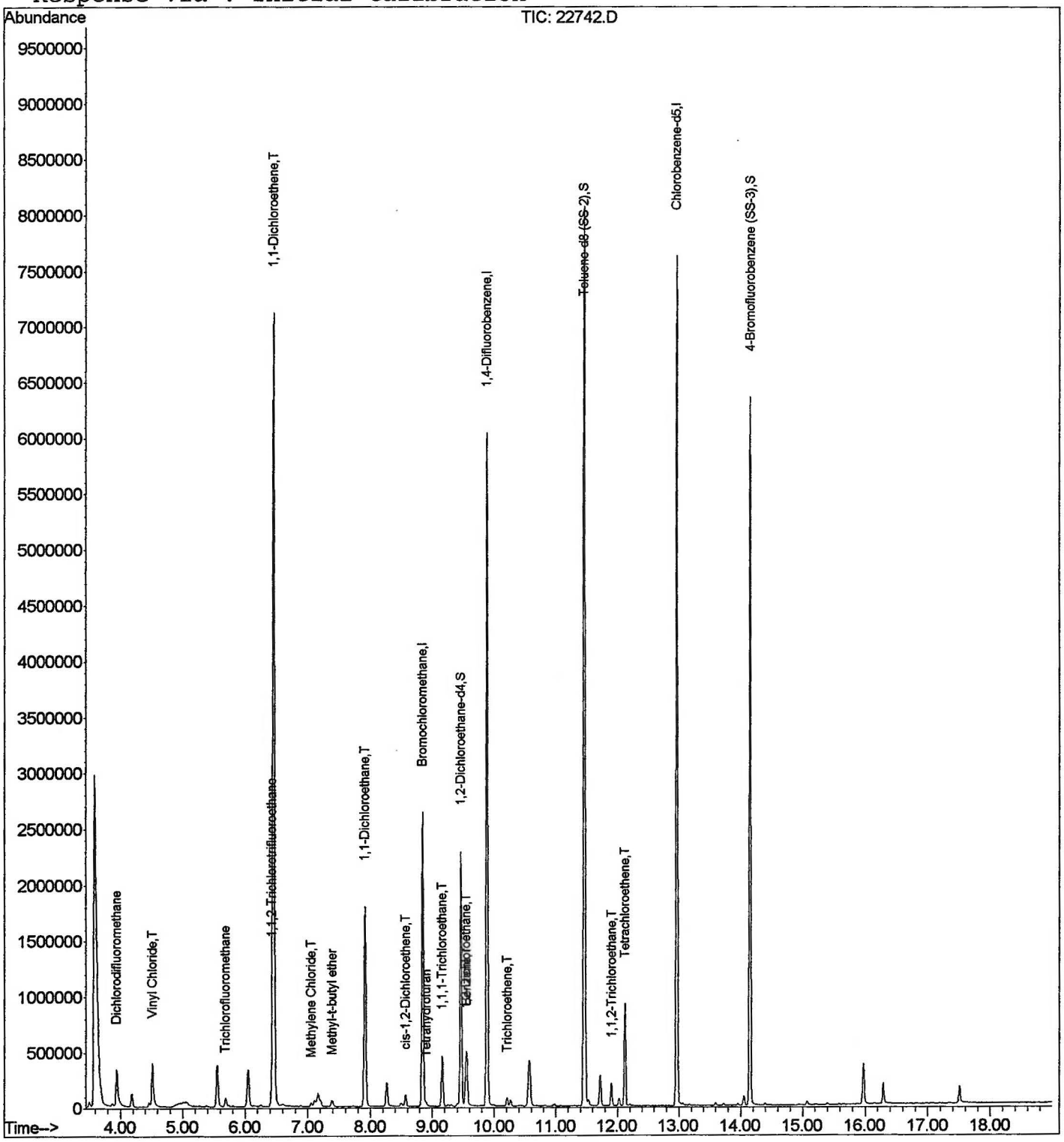
Definitions:
NA - Not Applicable
LQL - Lower Quantitation Limit
MDL - Method Detection Limit
Surr - Surrogate

Print Date: 10/8/03

Quantitation Report

Data File : C:\HPCHEM\1\DATA\VOA31002\22742.D Vial: 6
Acq On : 2 Oct 2003 1:13 pm Operator: Steve Tyson
Sample : 03-5921-01A Inst : VOA3
Misc : SAMP 8260_W Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 8 13:36 2003 Quant Results File: 82600922.RES

Method : C:\HPCHEM\1\METHODS\82600922.M (RTE Integrator)
Title : 8260
Last Update : Mon Sep 22 16:11:25 2003
Response via : Initial Calibration



Evergreen Analytical, Inc.
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID:	MW-6	**Lab Work Order:**	03-5921
Client Project ID:	1847	**Lab Sample ID:**	03-5921-02A
Date Collected:	9/25/03	**Sample Matrix:**	Groundwater
Date Received:	9/25/03	**Lab File ID:**	VOA31002\22743.D
Date Prepared:	10/2/03	**Method Blank:**	RB100203
Date Analyzed:	10/2/03	**Prep Factor:**	1.000
Percent Moisture:	NA	**Dilution Factor:**	1.00

Method: SW8260B — **VOLATILE ORGANICS** — **Units: µg/L**

Analytes	CAS Number	Result	LQL
1,1,1-Trichloroethane	71-55-6	U	4.0
1,1,2,2-Tetrachloroethane	79-34-5	U	4.0
1,1,2-Trichloroethane	79-00-5	U	5.0
1,1-Dichloroethane	75-34-3	U	2.0
1,1-Dichloroethene	75-35-4	0.41 J	2.0
1,2-Dichloroethane	107-06-2	U	3.0
1,2-Dichloropropane	78-87-5	U	2.0
2-Butanone	78-93-3	U	20
2-Chloroethylvinylether	110-75-8	U	4.0
2-Hexanone	591-78-6	U	10
4-Methyl-2-pentanone	108-10-1	U	10
Acetone	67-64-1	U	20
Benzene	71-43-2	U	2.0
Bromodichloromethane	75-27-4	U	3.0
Bromoform	75-25-2	U	2.0
Bromomethane	74-83-9	U	20
Carbon disulfide	75-15-0	U	2.0
Carbon tetrachloride	56-23-5	U	2.0
Chlorobenzene	108-90-7	U	2.0
Chloroethane	75-00-3	U	4.0
Chloroform	67-66-3	U	2.0
Chloromethane	74-87-3	U	5.0
cis-1,2-Dichloroethene	156-59-2	1.9 J	2.0
cis-1,3-Dichloropropene	10061-01-5	U	2.0
Dibromochloromethane	124-48-1	U	3.0
Ethylbenzene	100-41-4	U	3.0
Methylene chloride	75-09-2	U	4.0
Styrene	100-42-5	U	5.0
Tetrachloroethene	127-18-4	31	4.0
Toluene	108-88-3	U	2.0
Total Xylene	1330-20-7	U	5.0
trans-1,2-Dichloroethene	156-60-5	1.1 J	2.0
trans-1,3-Dichloropropene	10061-02-6	U	2.0
Trichloroethene	79-01-6	3.7	2.0
Vinyl acetate	108-05-4	U	4.0
Vinyl chloride	75-01-4	U	2.0

Surr: 1,2-Dichloroethane-d4	17060-07-0	106	**QC Limits:**	89-112 %REC
Surr: 4-Bromofluorobenzene	460-00-4	97	**QC Limits:**	82-109 %REC
Surr: Toluene-d8	2037-26-5	102	**QC Limits:**	87-111 %REC

Analyst **Approved**

Qualifiers:
B - Analyte detected in the associated Method Blank, value not subtracted from result
E - Extrapolated value. Value exceeds calibration range
H - Sample exceeded analytical holding time
J - Indicates an estimated value when the compound is detected, but is below the LQL
S - Spike Recovery outside accepted limits
U - Compound analyzed for but not detected
X - See case narrative
* - Value exceeded the Maximum Contamination Level (MCL)

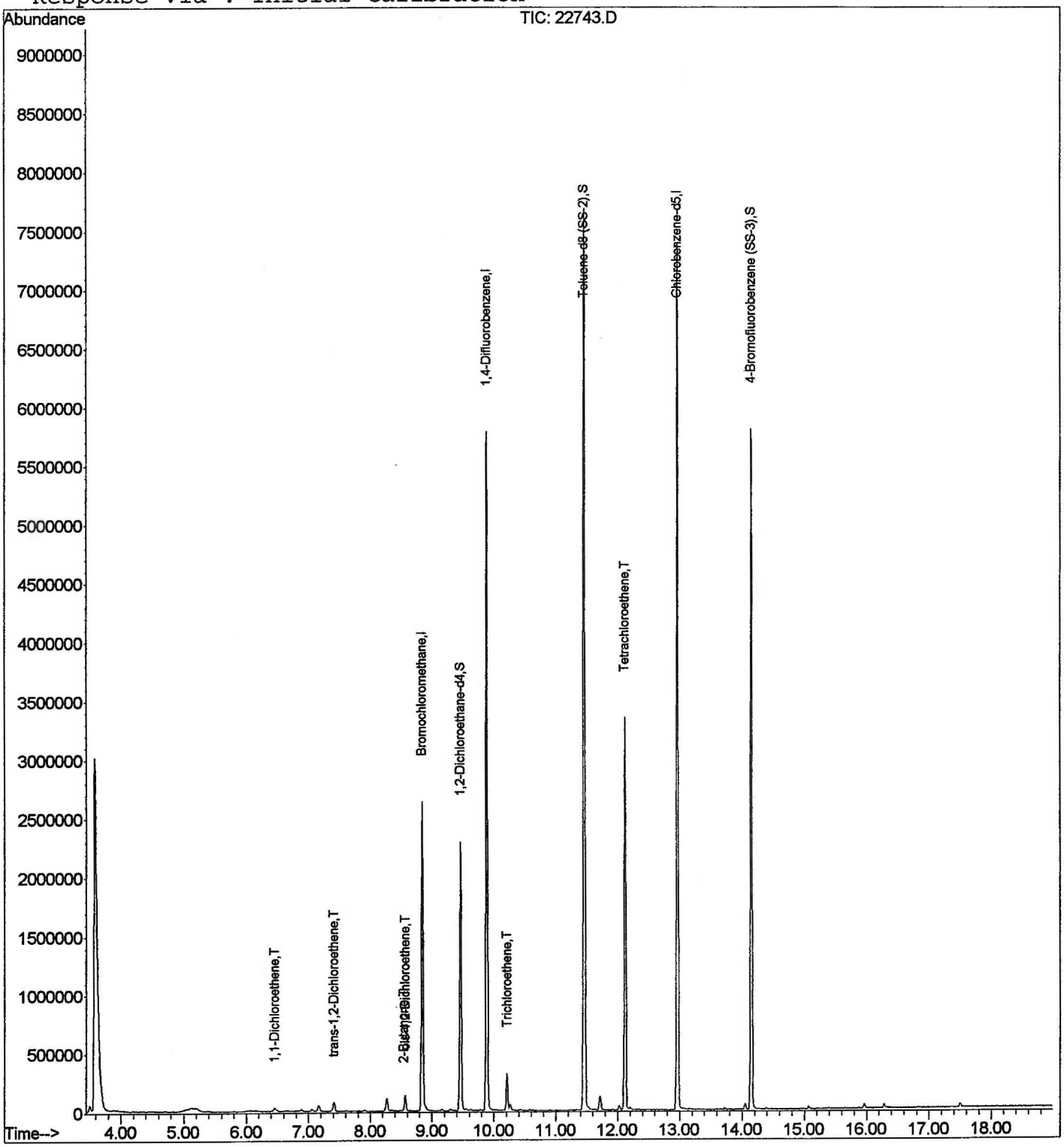
Definitions:
NA - Not Applicable
LQL - Lower Quantitation Limit
MDL - Method Detection Limit
Surr - Surrogate

Print Date: 10/8/03

Quantitation Report

Data File : C:\HPCHEM\1\DATA\VOA31002\22743.D Vial: 7
Acq On : 2 Oct 2003 1:38 pm Operator: Steve Tyson
Sample : 03-5921-02A Inst : VOA3
Misc : SAMP 8260_W Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 8 13:58 2003 Quant Results File: 82600922.RES

Method : C:\HPCHEM\1\METHODS\82600922.M (RTE Integrator)
Title : 8260
Last Update : Mon Sep 22 16:11:25 2003
Response via : Initial Calibration



Evergreen Analytical, Inc.
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID:	MW-7	**Lab Work Order:**	03-5921
Client Project ID:	1847	**Lab Sample ID:**	03-5921-03A
Date Collected:	9/25/03	**Sample Matrix:**	Groundwater
Date Received:	9/25/03	**Lab File ID:**	VOA31002\22744.D
Date Prepared:	10/2/03	**Method Blank:**	RB100203
Date Analyzed:	10/2/03	**Prep Factor:**	1.000
Percent Moisture:	NA	**Dilution Factor:**	1.00

Method: SW8260B — **VOLATILE ORGANICS** — **Units: µg/L**

Analytes	CAS Number	Result	LQL
1,1,1-Trichloroethane	71-55-6	U	4.0
1,1,2,2-Tetrachloroethane	79-34-5	U	4.0
1,1,2-Trichloroethane	79-00-5	U	5.0
1,1-Dichloroethane	75-34-3	0.80 J	2.0
1,1-Dichloroethene	75-35-4	1.4 J	2.0
1,2-Dichloroethane	107-06-2	U	3.0
1,2-Dichloropropane	78-87-5	U	2.0
2-Butanone	78-93-3	U	20
2-Chloroethylvinylether	110-75-8	U	4.0
2-Hexanone	591-78-6	U	10
4-Methyl-2-pentanone	108-10-1	U	10
Acetone	67-64-1	U	20
Benzene	71-43-2	U	2.0
Bromodichloromethane	75-27-4	U	3.0
Bromoform	75-25-2	U	2.0
Bromomethane	74-83-9	U	20
Carbon disulfide	75-15-0	U	2.0
Carbon tetrachloride	56-23-5	U	2.0
Chlorobenzene	108-90-7	U	2.0
Chloroethane	75-00-3	U	4.0
Chloroform	67-66-3	U	2.0
Chloromethane	74-87-3	U	5.0
cis-1,2-Dichloroethene	156-59-2	4.8	2.0
cis-1,3-Dichloropropene	10061-01-5	U	2.0
Dibromochloromethane	124-48-1	U	3.0
Ethylbenzene	100-41-4	U	3.0
Methylene chloride	75-09-2	U	4.0
Styrene	100-42-5	U	5.0
Tetrachloroethene	127-18-4	27	4.0
Toluene	108-88-3	U	2.0
Total Xylene	1330-20-7	U	5.0
trans-1,2-Dichloroethene	156-60-5	1.0 J	2.0
trans-1,3-Dichloropropene	10061-02-6	U	2.0
Trichloroethene	79-01-6	5.3	2.0
Vinyl acetate	108-05-4	U	4.0
Vinyl chloride	75-01-4	U	2.0

Surr: 1,2-Dichloroethane-d4	17060-07-0	104	**QC Limits:**	89-112 %REC
Surr: 4-Bromofluorobenzene	460-00-4	97	**QC Limits:**	82-109 %REC
Surr: Toluene-d8	2037-26-5	101	**QC Limits:**	87-111 %REC

Analyst **Approved**

Qualifiers:
B - Analyte detected in the associated Method Blank, value not subtracted from result
E - Extrapolated value. Value exceeds calibration range
H - Sample exceeded analytical holding time
J - Indicates an estimated value when the compound is detected, but is below the LQL
S - Spike Recovery outside accepted limits
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X - See case narrative
* -Value exceeded the Maximum Contamination Level (MCL)

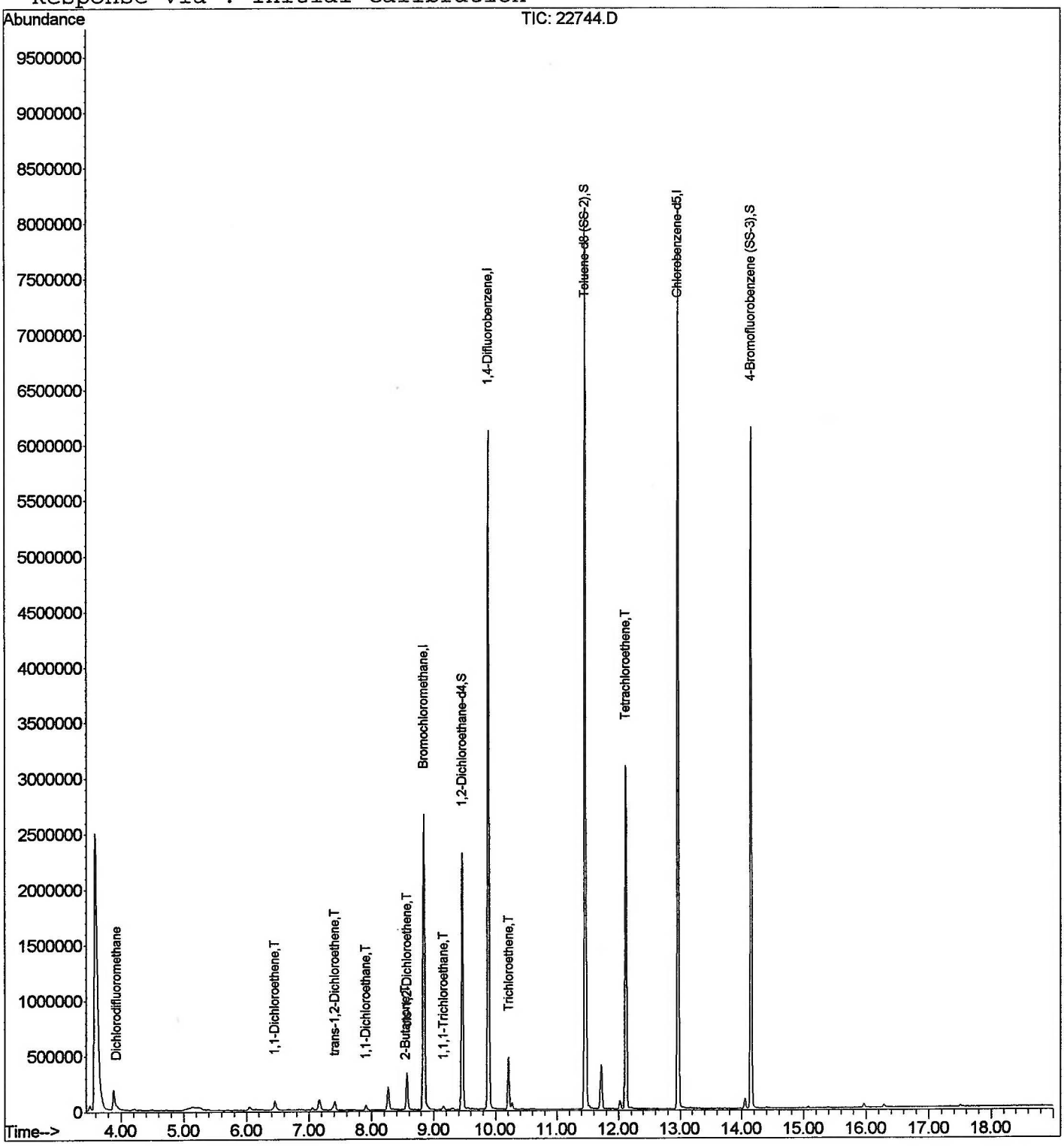
Definitions:
NA - Not Applicable
LQL - Lower Quantitation Limit
MDL - Method Detection Limit
Surr - Surrogate

Print Date: 10/8/03

Quantitation Report

Data File : C:\HPCHEM\1\DATA\VOA31002\22744.D Vial: 8
Acq On : 2 Oct 2003 2:02 pm Operator: Steve Tyson
Sample : 03-5921-03A Inst : VOA3
Misc : SAMP 8260_W Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 8 14:12 2003 Quant Results File: 82600922.RES

Method : C:\HPCHEM\1\METHODS\82600922.M (RTE Integrator)
Title : 8260
Last Update : Mon Sep 22 16:11:25 2003
Response via : Initial Calibration



Evergreen Analytical, Inc.

Date: *08-Oct-03*

Work Order: 03-5921
Client Project ID: 1847

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_W

Sample ID: RB100203	SampType: MBLK	TestCode: 8260_W	Run ID: VOA-3_031002A	Prep Date: 10/2/03	Units: µg/L
	Batch ID: R6529	TestNo: SW8260B	FileID: VOA31002\22741.D	Analysis Date: 10/2/03	SeqNo: 120021

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	U	4.0									
1,1,2,2-Tetrachloroethane	U	4.0									
1,1,2-Trichloroethane	U	5.0									
1,1-Dichloroethane	U	2.0									
1,1-Dichloroethene	U	4.0									
1,2-Dichloroethane	U	3.0									
1,2-Dichloropropane	U	4.0									
2-Butanone	U	20									
2-Chloroethylvinylether	U	10									
2-Hexanone	U	20									
4-Methyl-2-pentanone	U	10									
Acetone	U	20									
Benzene	U	2.0									
Bromodichloromethane	U	3.0									
Bromoform	U	4.0									
Bromomethane	U	20									
Carbon disulfide	U	3.0									
Carbon tetrachloride	U	2.0									
Chlorobenzene	U	2.0									
Chloroethane	U	30									
Chloroform	U	3.0									
Chloromethane	U	20									
cis-1,2-Dichloroethene	U	2.0									
cis-1,3-Dichloropropene	U	2.0									
Dibromochloromethane	U	2.0									
Ethylbenzene	U	3.0									
Methylene chloride	U	4.0									
Styrene	U	4.0									
Tetrachloroethene	U	4.0									
Toluene	U	2.0									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
H - Sample exceeded analytical holding time

Print Date: 10/8/03

Work Order: 03-5921
Client Project ID: 1847

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_W

Sample ID: RB100203	SampType: MBLK	TestCode: 8260_W	Run ID: VOA-3_031002A	Prep Date: 10/2/03	Units: µg/L
	Batch ID: R6529	TestNo: SW8260B	FileID: VOA31002\22741.D	Analysis Date: 10/2/03	SeqNo: 120021

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Xylene	U	10									
trans-1,2-Dichloroethene	U	2.0									
trans-1,3-Dichloropropene	U	4.0									
Trichloroethene	U	2.0									
Vinyl acetate	U	5.0									
Vinyl chloride	U	2.0									
Surr: 1,2-Dichloroethane-d4	51.35	0	50	0	103	89	112	0	0		
Surr: 4-Bromofluorobenzene	47.69	0	50	0	95.4	82	109	0	0		
Surr: Toluene-d8	52.1	0	50	0	104	87	111	0	0		

Qualifiers:
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
H - Sample exceeded analytical holding time

Print Date: 10/8/03

Evergreen Analytical, Inc.

Date: *08-Oct-03*

Work Order: 03-5921
Client Project ID: 1847

ANALYTICAL QC SUMMARY REPORT

BatchID: R6529

Sample ID: LCS100203	SampType: LCS	TestCode: 8260_S	Run ID: VOA-3_031002A	Prep Date: 10/2/03	Units: µg/Kg
	Batch ID: R6529	TestNo: SW8260B	FileID: VOA31002\22747.D	Analysis Date: 10/2/03	SeqNo: 120025

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	56.93	5.0	50	0	114	77	130	0	0		
1,1,2,2-Tetrachloroethane	57.55	10	50	0	115	80	128	0	0		
1,1,2-Trichloroethane	55.17	5.0	50	0	110	82	123	0	0		
1,1-Dichloroethane	59.4	5.0	50	0	119	74	122	0	0		
1,1-Dichloroethene	59.57	5.0	50	0	119	76	117	0	0		S (22 HIGH)
1,2-Dichloroethane	58.15	5.0	50	0	116	69	139	0	0		
1,2-Dichloropropane	54.57	5.0	50	0	109	79	115	0	0		
2-Butanone	48.72	20	50	0	97.4	80	134	0	0		
2-Chloroethylvinylether	52.04	20	50	0	104	25	176	0	0		
2-Hexanone	57.24	40	50	0	114	74	145	0	0		
4-Methyl-2-pentanone	52.91	20	50	0	106	76	133	0	0		
Acetone	55.28	60	50	0	111	70	147	0	0		J
Benzene	56.77	5.0	50	0	114	87	117	0	0		
Bromodichloromethane	55.5	5.0	50	0	111	74	130	0	0		
Bromoform	57.48	10	50	0	115	71	128	0	0		
Bromomethane	51.54	60	50	0	103	0.01	188	0	0		J
Carbon disulfide	29.68	5.0	50	0	59.4	66	115	0	0		S (72 low)
Carbon tetrachloride	55.05	5.0	50	0	110	72	124	0	0		
Chlorobenzene	57.06	5.0	50	0	114	85	114	0	0		
Chloroethane	44.99	70	50	0	90	0.01	226	0	0		J
Chloroform	56.72	5.0	50	0	113	75	124	0	0		
Chloromethane	54.05	10	50	0	108	49	131	0	0		
cis-1,2-Dichloroethene	54.96	5.0	50	0	110	81	119	0	0		
cis-1,3-Dichloropropene	58.46	5.0	50	0	117	78	121	0	0		
Dibromochloromethane	53.56	5.0	50	0	107	77	124	0	0		
Ethylbenzene	59.42	5.0	50	0	119	81	122	0	0		
Methylene chloride	52.11	10	50	0	104	72	125	0	0		
Styrene	54.77	10	50	0	110	83	129	0	0		
Tetrachloroethene	57.79	5.0	50	0	116	78	117	0	0		
Toluene	61.48	5.0	50	0	123	84	119	0	0		S (42 HIGH)

Qualifiers:
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
H - Sample exceeded analytical holding time

Print Date: 10/8/03

Work Order: 03-5921
Client Project ID: 1847

ANALYTICAL QC SUMMARY REPORT

BatchID: R6529

Sample ID: **LCS100203** SampType: **LCS** TestCode: **8260_S** Run ID: **VOA-3_031002A** Prep Date: **10/2/03** Units: **µg/Kg**
Batch ID: **R6529** TestNo: **SW8260B** FileID: **VOA31002\22747.D** Analysis Date: **10/2/03** SeqNo: **120025**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Xylene	49.28	10	50	0	98.6	79	122	0	0		
trans-1,2-Dichloroethene	57.74	5.0	50	0	115	83	116	0	0		
trans-1,3-Dichloropropene	63.1	5.0	50	0	126	86	140	0	0		
Trichloroethene	55.83	5.0	50	0	112	80	118	0	0		
Vinyl acetate	46.43	10	50	0	92.9	59	115	0	0		
Vinyl chloride	60.62	6.0	50	0	121	59	125	0	0		
Surr: 1,2-Dichloroethane-d4	53.04	0	50	0	106	90	110	0	0		
Surr: 4-Bromofluorobenzene	50.94	0	50	0	102	72	119	0	0		
Surr: Toluene-d8	52.94	0	50	0	106	77	128	0	0		

Sample ID: **LCSD100203** SampType: **LCSD** TestCode: **8260_S** Run ID: **VOA-3_031002A** Prep Date: **10/2/03** Units: **µg/Kg**
Batch ID: **R6529** TestNo: **SW8260B** FileID: **VOA31002\22748.D** Analysis Date: **10/2/03** SeqNo: **120026**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	55.94	5.0	50	0	112	77	130	56.93	1.75	10	
1,1,2,2-Tetrachloroethane	53.66	10	50	0	107	80	128	57.55	7.00	15	
1,1,2-Trichloroethane	54.04	5.0	50	0	108	82	123	55.17	2.07	13	
1,1-Dichloroethane	57.76	5.0	50	0	116	74	122	59.4	2.80	10	
1,1-Dichloroethene	55.65	5.0	50	0	111	76	117	59.57	6.80	12	
1,2-Dichloroethane	57.75	5.0	50	0	116	69	139	58.15	0.690	10	
1,2-Dichloropropane	55.17	5.0	50	0	110	79	115	54.57	1.09	10	
2-Butanone	44.53	20	50	0	89.1	80	134	48.72	8.99	18	
2-Chloroethylvinylether	50.33	20	50	0	101	25	176	52.04	3.34	25	
2-Hexanone	48.2	40	50	0	96.4	74	145	57.24	17.1	19	
4-Methyl-2-pentanone	45.55	20	50	0	91.1	76	133	52.91	15.0	17	
Acetone	50.8	60	50	0	102	70	147	55.28	8.45	21	J
Benzene	57.66	5.0	50	0	115	87	117	56.77	1.56	10	
Bromodichloromethane	56.22	5.0	50	0	112	74	130	55.5	1.29	10	
Bromoform	53.29	10	50	0	107	71	128	57.48	7.57	10	
Bromomethane	51.55	60	50	0	103	0.01	188	51.54	0.0194	30	J
Carbon disulfide	30.72	5.0	50	0	61.4	66	115	29.68	3.44	13	S (52 low)

Qualifiers:
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B - Analyte detected in the associated Method Blank
H - Sample exceeded analytical holding time

Print Date: 10/8/03

Work Order: 03-5921
Client Project ID: 1847

ANALYTICAL QC SUMMARY REPORT

BatchID: R6529

Sample ID: LCSD100203	SampType: LCSD	TestCode: 8260_S	Run ID: VOA-3_031002A	Prep Date: 10/2/03	Units: µg/Kg
	Batch ID: R6529	TestNo: SW8260B	FileID: VOA31002\22748.D	Analysis Date: 10/2/03	SeqNo: 120026

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	55.36	5.0	50	0	111	72	124	55.05	0.562	10	
Chlorobenzene	57.73	5.0	50	0	115	85	114	57.06	1.17	10	S (12 H 10 H)
Chloroethane	46.64	70	50	0	93.3	0.01	226	44.99	3.60	30	J
Chloroform	56.93	5.0	50	0	114	75	124	56.72	0.370	10	
Chloromethane	56.75	10	50	0	114	49	131	54.05	4.87	25	
cis-1,2-Dichloroethene	57.27	5.0	50	0	115	81	119	54.96	4.12	10	
cis-1,3-Dichloropropene	58.08	5.0	50	0	116	78	121	58.46	0.652	10	
Dibromochloromethane	52.95	5.0	50	0	106	77	124	53.56	1.15	14	
Ethylbenzene	59.13	5.0	50	0	118	81	122	59.42	0.489	11	
Methylene chloride	53.37	10	50	0	107	72	125	52.11	2.39	10	
Styrene	54.96	10	50	0	110	83	129	54.77	0.346	10	
Tetrachloroethene	58.7	5.0	50	0	117	78	117	57.79	1.56	11	
Toluene	59.01	5.0	50	0	118	84	119	61.48	4.10	10	
Total Xylene	50.09	10	50	0	100	79	122	49.28	1.63	10	
trans-1,2-Dichloroethene	57.45	5.0	50	0	115	83	116	57.74	0.504	11	
trans-1,3-Dichloropropene	59.35	5.0	50	0	119	86	140	63.1	6.12	10	
Trichloroethene	56.48	5.0	50	0	113	80	118	55.83	1.16	10	
Vinyl acetate	46.63	10	50	0	93.3	59	115	46.43	0.430	10	
Vinyl chloride	53.47	6.0	50	0	107	59	125	60.62	12.5	21	
Surr: 1,2-Dichloroethane-d4	53.47	0	50	0	107	90	110	0	0	0	
Surr: 4-Bromofluorobenzene	51	0	50	0	102	72	119	0	0	0	
Surr: Toluene-d8	52.37	0	50	0	105	77	128	0	0	0	

Qualifiers:
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H - Sample exceeded analytical holding time

Print Date: 10/8/03

Evergreen Analytical, Inc.

Date: *08-Oct-03*

Work Order: 03-5921
Client Project ID: 1847

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_W

Sample ID: 03-5921-03AMS	SampType: MS	TestCode: 8260_W	Run ID: VOA-3_031002A	Prep Date: 10/2/03	Units: µg/L
Client ID: MW-7	Batch ID: R6529	TestNo: SW8260B	FileID: VOA31002\22749.D	Analysis Date: 10/2/03	SeqNo: 121075

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	23.51	4.0	20	0	118	85.5	121	0	0		
1,1,2,2-Tetrachloroethane	21.61	4.0	20	0	108	75.8	145	0	0		
1,1,2-Trichloroethane	21.36	5.0	20	0	107	83	134	0	0		
1,1-Dichloroethane	26.49	2.0	20	0.8	132	85.6	125	0	0		S(72 HIGH)
1,1-Dichloroethene	26.47	2.0	20	1.4	132	76.8	128	0	0		S(42 HIGH)
1,2-Dichloroethane	24.26	3.0	20	0	121	89.8	128	0	0		
1,2-Dichloropropane	21.9	2.0	20	0	110	90.7	123	0	0		
2-Butanone	15.88	20	20	0	79.4	78.8	146	0	0		J
2-Chloroethylvinylether	16.83	4.0	20	0	84.2	0	182	0	0		
2-Hexanone	15.81	10	20	0	79.1	65.8	161	0	0		
4-Methyl-2-pentanone	15.93	10	20	0	79.7	34.4	169	0	0		
Acetone	21.29	20	20	0	106	54.9	160	0	0		
Benzene	23.41	2.0	20	0	117	88.6	124	0	0		
Bromodichloromethane	22.01	3.0	20	0	110	81.3	123	0	0		
Bromoform	19.7	2.0	20	0	98.5	64.4	121	0	0		
Bromomethane	21.18	20	20	0	106	60.5	137	0	0		
Carbon disulfide	12.69	2.0	20	0	63.5	60.8	128	0	0		
Carbon tetrachloride	22.23	2.0	20	0	111	81	118	0	0		
Chlorobenzene	23.34	2.0	20	0	117	90.6	119	0	0		
Chloroethane	25.38	4.0	20	0	127	38.4	160	0	0		
Chloroform	24.35	2.0	20	0	122	88.5	123	0	0		
Chloromethane	23.88	5.0	20	0	119	63.5	130	0	0		
cis-1,2-Dichloroethene	28.94	2.0	20	4.81	121	88.9	122	0	0		
cis-1,3-Dichloropropene	22.13	2.0	20	0	111	85.9	122	0	0		
Dibromochloromethane	19.87	3.0	20	0	99.4	76.1	121	0	0		
Ethylbenzene	25.19	3.0	20	0	126	75.4	128	0	0		
Methylene chloride	22.38	4.0	20	0	112	79.9	119	0	0		
Styrene	22.93	5.0	20	0	115	77.9	127	0	0		
Tetrachloroethene	53.49	4.0	20	27.26	131	38.6	176	0	0		
Toluene	25.76	2.0	20	0	129	74.2	143	0	0		

Qualifiers:
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
H - Sample exceeded analytical holding time

Print Date: 10/8/03

Work Order: 03-5921
Client Project ID: 1847

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_W

Sample ID: 03-5921-03AMS	SampType: MS	TestCode: 8260_W	Run ID: VOA-3_031002A	Prep Date: 10/2/03	Units: µg/L
Client ID: MW-7	Batch ID: R6529	TestNo: SW8260B	FileID: VOA31002\22749.D	Analysis Date: 10/2/03	SeqNo: 121075

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Xylene	20.77	5.0	20	0	104	80.4	126	0	0		
trans-1,2-Dichloroethene	28.26	2.0	20	1.02	141	73.4	135	0	0		S (C2 HIGH)
trans-1,3-Dichloropropene	23.45	2.0	20	0	117	80.5	126	0	0		
Trichloroethene	28.09	2.0	20	5.33	114	85.8	126	0	0		
Vinyl acetate	19.02	4.0	20	0	95.1	61	131	0	0		
Vinyl chloride	26.25	2.0	20	0	131	65.8	125	0	0		S (C2 HIGH)
Surr: 1,2-Dichloroethane-d4	52.7	0	50	0	105	89	112	0	0		
Surr: 4-Bromofluorobenzene	50.3	0	50	0	101	82	109	0	0		
Surr: Toluene-d8	52.37	0	50	0	105	87	111	0	0		

Sample ID: 03-5921-03AMSD	SampType: MSD	TestCode: 8260_W	Run ID: VOA-3_031002A	Prep Date: 10/2/03	Units: µg/L
Client ID: MW-7	Batch ID: R6529	TestNo: SW8260B	FileID: VOA31002\22750.D	Analysis Date: 10/2/03	SeqNo: 121093

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	23.78	4.0	20	0	119	85.5	121	23.51	1.14	13	
1,1,2,2-Tetrachloroethane	23	4.0	20	0	115	75.8	145	21.61	6.23	21	
1,1,2-Trichloroethane	21.94	5.0	20	0	110	83	134	21.36	2.68	17	
1,1-Dichloroethane	26.17	2.0	20	0.8	131	85.6	125	26.49	1.22	15	S (C2 HIGH)
1,1-Dichloroethene	25.97	4.0	20	1.4	130	76.8	128	26.47	1.91	23	S (C2 HIGH)
1,2-Dichloroethane	24.42	3.0	20	0	122	89.8	128	24.26	0.657	12	
1,2-Dichloropropane	22.39	4.0	20	0	112	90.7	123	21.9	2.21	12	
2-Butanone	17.05	20	20	0	85.3	78.8	146	15.88	7.11	27	J
2-Chloroethylvinylether	17.7	10	20	0	88.5	0	182	16.83	5.04	30	
2-Hexanone	18.01	20	20	0	90.1	65.8	161	15.81	13.0	29	J
4-Methyl-2-pentanone	17.81	10	20	0	89.1	34.4	169	15.93	11.1	30	
Acetone	19.76	20	20	0	98.8	54.9	160	21.29	7.45	30	J
Benzene	24.03	2.0	20	0	120	88.6	124	23.41	2.61	9	
Bromodichloromethane	22.55	3.0	20	0	113	81.3	123	22.01	2.42	11	
Bromoform	20.8	4.0	20	0	104	64.4	121	19.7	5.43	18	
Bromomethane	22.97	20	20	0	115	60.5	137	21.18	8.11	30	
Carbon disulfide	12.32	3.0	20	0	61.6	60.8	128	12.69	2.96	20	

Qualifiers:
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
H - Sample exceeded analytical holding time

Print Date: 10/8/03

Work Order: 03-5921
Client Project ID: 1847

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_W

Sample ID: 03-5921-03AMSD	SampType: MSD	TestCode: 8260_W	Run ID: VOA-3_031002A	Prep Date: 10/2/03	Units: µg/L
Client ID: MW-7	Batch ID: R6529	TestNo: SW8260B	FileID: VOA31002\22750.D	Analysis Date: 10/2/03	SeqNo: 121093

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	22.38	2.0	20	0	112	81	118	22.23	0.672	14	
Chlorobenzene	23.15	2.0	20	0	116	90.6	119	23.34	0.817	11	
Chloroethane	21.57	30	20	0	108	38.4	160	25.38	16.2	30	J
Chloroform	23.94	3.0	20	0	120	88.5	123	24.35	1.70	13	
Chloromethane	26.89	20	20	0	134	63.5	130	23.88	11.9	30	S (4 2 H 1 6 H)
cis-1,2-Dichloroethene	28.56	2.0	20	4.81	119	88.9	122	28.94	1.32	17	
cis-1,3-Dichloropropene	22.31	2.0	20	0	112	85.9	122	22.13	0.810	12	
Dibromochloromethane	20.41	2.0	20	0	102	76.1	121	19.87	2.68	16	
Ethylbenzene	24.53	3.0	20	0	123	75.4	128	25.19	2.65	12	
Methylene chloride	22.36	4.0	20	0	112	79.9	119	22.38	0.0894	16	
Styrene	22.42	4.0	20	0	112	77.9	127	22.93	2.25	12	
Tetrachloroethene	53.3	4.0	20	27.26	130	38.6	176	53.49	0.356	14	
Toluene	25.36	2.0	20	0	127	74.2	143	25.76	1.56	26	
Total Xylene	20.26	10	20	0	101	80.4	126	20.77	2.49	11	
trans-1,2-Dichloroethene	27.3	2.0	20	1.02	137	73.4	135	28.26	3.46	19	S (2 2 H 1 6 H)
trans-1,3-Dichloropropene	24.4	4.0	20	0	122	80.5	126	23.45	3.97	14	
Trichloroethene	27.81	2.0	20	5.33	112	85.8	126	28.09	1.00	15	
Vinyl acetate	18.77	5.0	20	0	93.9	61	131	19.02	1.32	19	
Vinyl chloride	23.53	2.0	20	0	118	65.8	125	26.25	10.9	22	
Surr: 1,2-Dichloroethane-d4	53.41	0	50	0	107	89	112	0	0	0	
Surr: 4-Bromofluorobenzene	50.46	0	50	0	101	82	109	0	0	0	
Surr: Toluene-d8	53.4	0	50	0	107	87	111	0	0	0	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
H - Sample exceeded analytical holding time

Print Date: 10/8/03