



THE MEMPHIS DEPOT TENNESSEE

ADMINISTRATIVE RECORD COVER SHEET

AR File Number 626

**SEMI-ANNUAL GROUNDWATER QUALITY REPORT
(YEAR THREE, FIRST HALF)
GROUNDWATER INTERIM REMEDIAL ACTION**

DUNN FIELD

MEMPHIS DEFENSE DEPOT, TENNESSEE

PREPARED FOR



MOBILE DISTRICT COE

CONTRACT NO. DACA01-99-D-0040

BY

JACOBS ENGINEERING GROUP

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1.0 INTRODUCTION

This report summarizes the results of Year Three, First Half (Y3S1) monitoring of the Groundwater Interim Remedial Action (IRA) system at the Dunn Field area of the Memphis Defense Depot, Memphis, Tennessee (DDMT). The reporting frequency has been changed from quarterly to semi-annually beginning with this report.

1.1 Scope of Work

This report summarizes a sampling event of February, 2001 and presents the groundwater surface data through February. System monitoring was performed in accordance with “Groundwater Interim Remedial Action, Defense Depot Memphis, Tennessee, Operations and Maintenance Plan,” Amendment Number 1 (dated September, 1999) and Amendment Number 2 (dated December 21, 2000 and effective February 1, 2001), all prepared by CH2MHill. This plan contains an overview of the recovery system and its functions. Start-up, operation, and shutdown procedures are detailed in this plan. Requirements for sampling, monitoring and reporting are also specified.

1.2 Site Description and Background

DDMT covers 642 acres in Shelby County, Tennessee (Figure 1). The facility is approximately four miles southeast of the central business district and one mile northwest of Memphis International Airport. Operations began in 1942 with the mission to inventory and supply materials for the United States Army. In 1964, its mission was expanded to serve as one of the principal distribution centers for a complete range of military commodities. Past activities at DDMT included a wide range of storage, distribution, and maintenance practices. DDMT has been closed since 1997 and is maintained by the Memphis Depot Caretaker Division, under the control of the Defense Depot, Susquehanna, Pennsylvania/Defense Logistics Agency (DLA). DDMT is currently undergoing Base Realignment and Closure (BRAC) activities.

Dunn Field, also called OU-1, consists of 68 acres of land located north of the main installation, across Dunn Road (Figure 1). The northwestern quadrant of Dunn Field was used as a landfill area. The southwestern and southeastern quadrants were used as a storage area for mineral stockpiles. The northeastern portion was used as a pistol range and later as a pesticide storage area. Until 1970, Army supplies, including hazardous and non-hazardous materials were burned or buried primarily in the northwest portion of Dunn Field. These materials potentially included oil and grease, paint, paint thinner, methyl bromide, pesticides, herbicides, and food supplies. Disposal operations at Dunn Field have created a plume of contaminated groundwater, in the shallow fluvial aquifer, along the western and northern portion of Dunn Field. Groundwater monitoring performed during the 1989 and 1990 remedial investigation/feasibility study (RI/FS) identified concentrations of dissolved volatile organic compounds (VOCs) and heavy metals above regulatory limits. Identified VOCs included, but were not limited to tetrachloroethene, trichloroethene, dichloroethene, carbon tetrachloride, chloroform and 1,1,2,2 – trichloroethane.

The DDMT facility is classified as a Superfund Site under the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA) Section 120 (Federal Facilities).

1.3 Hydrogeology

DDMT is underlain by a layer of wind blown deposits (loess) about 20 to 30 feet thick. Underlying the loess, to a depth of generally 70 to 95 feet below land surface (bls), is a series of terrace deposits consisting primarily of silty to gravelly sands with some thin clay interbeds. The lower saturated portion of the terrace deposits is referred to as a fluvial aquifer, which is the uppermost aquifer beneath DDMT. The Jackson Formation, Upper Claiborne Group, which generally consists of high plasticity clay of variable thickness (5 to 75 feet), composes the base of the fluvial aquifer. The saturated thickness of the fluvial aquifer varies from 2 to 20 feet and is controlled, in part, by the topography of the Jackson Formation, Upper Claiborne Group.

Beneath the Jackson Formation, Upper Claiborne Group lies the Memphis Sand Aquifer, which is the primary source of drinking water for the City of Memphis. The Jackson Formation, Upper Claiborne Group clays serve as both the confining unit for the Memphis Sand Aquifer and the base of the fluvial aquifer.

1.4 Remedial Objectives

The DDMT facility, including Dunn Field, was placed on the National Priority List (NPL) in 1992 primarily because of the EPA's final Hazard Ranking System (HRS) Scoring Package of 58.06. In August 1995, CH2M-Hill submitted a Record of Decision (ROD) for a Groundwater IRA at Dunn Field to the regulatory agencies for approval. The ROD provided the basis of design for the components associated with the IRA for Dunn Field. The following remedial objectives were identified in the ROD and O&M Plan:

- Install recovery wells along the leading edge of the groundwater plume.
- Operate the system of recovery wells until contaminant concentrations are reduced to acceptable levels or until the final remedy is in place.
- Perform chemical analysis to monitor the quality of the discharge in accordance with city discharge permit requirements.
- Create a hydraulic barrier to prevent any further migration of contaminated groundwater offsite.

1.5 System Description

Seven groundwater extraction wells, one pre-cast concrete building, an underground conveyance system, a flow measurement and control system, and associated components were installed at Dunn Field in 1997. Equipment, process controls, operational

requirements, recovery well sizes and depths, pumping rates, and construction drawings are defined in the Technical Specifications prepared by CH2M-Hill. The system location and layout is shown in Figure 1.

Four additional wells (RW-1, RW-1A, RW-1B, and RW-2) have been completed as of the date of this report. Startup of these wells occurred the first week in March 2001. These additional monitoring wells are located in a line to the south (along the perimeter of Dunn Field) of RW-3.

2.0 SYSTEM MONITORING METHODOLOGY

2.1 Groundwater Level Measurements

Water level measurements were recorded twice a month during this operational period from a select number of monitoring wells located both on and off Dunn Field. The list of monitoring wells used through January, 2001 is given below:

MW-02	MW-15	MW-37 ^b	MW-55
MW-03	MW-18	MW-38	MW-56
MW-04	MW-19 ^a	MW-40	MW-57 ^a
MW-05	MW-27	MW-41	MW-58 ^a
MW-06	MW-28	MW-42	MW-59 ^a
MW-07	MW-29	MW-43	MW-60 ^a
MW-08	MW-30	MW-44	MW-62
MW-09	MW-31	MW-45	MW-63
MW-10	MW-32 ^b	MW-46	MW-65
MW-11	MW-33	MW-49	MW-67 ^c
MW-12	MW-34 ^b	MW-51	MW-68
MW-13	MW-35	MW-53	MW-69
MW-14	MW-36	MW-54	MW-70
			MW-71
			PZ-02

^a The monitoring of these wells was added in quarter three and quarter four of year one

^b These wells were monitored manually upon removal of USGS continuous recording devices

^c MW-67 is inaccessible due to a lodged sampling pump

Monitoring wells MW-32, MW-34 and MW-37 were incorporated into the bi-monthly gauging events within a month after USGS removed their water level recording devices (transducers). Transducers were then installed in MW-13, 14, 32, 34, 37 and 70. These transducers are downloaded monthly. Representative water levels from these transducers are included in Appendix A. Complete transducer data files are submitted monthly with the operation and maintenance report. The transducer configuration will be changed prior to the Year 3 Second Half sampling event in accordance with Amendment #2 of the Operations and Maintenance Plan. Five of the transducers will be relocated from their existing locations to the following locations: MW-4, MW-45, MW-95, MW-55, and MW-84. Four newly installed wells; MW-68, MW-69, MW-70 and MW-71 also required bi-monthly measurements for the current year O&M period. All wells were available for bi-monthly gauging events for the current year O&M period with the exception of MW-67. This well is unavailable due to the presence of a lodged sampling pump.

Amendment # 2 to the Groundwater Interim Remedial Action resulted in a change in the frequency and sampling regimen of the monitoring wells and became effective in February, 2001.

The updated monitoring scheme is shown below. Monitoring wells requiring bi-weekly measurement are in plain type. Wells requiring monthly measurement are in bold type.

MW-3	MW-30	MW-56	MW-79*
MW-4	MW-31	MW-57	MW-80*
MW-5	MW-32	MW-58	MW-87*
MW-6	MW-33	MW-59	MW-89*
MW-7	MW-34	MW-60	MW-90*
MW-8	MW-35	MW-61	MW-91*
MW-9	MW-36	MW-65	PZ-02
MW-10	MW-37	MW-68	RW-01
MW-11	MW-38	MW-69	RW-01A
MW-12	MW-41	MW-70	RW-01B
MW-14	MW-42	MW-71	RW-02
MW-15	MW-43	MW-73*	RW-03
MW-18	MW-46	MW-74*	RW-04
MW-19	MW-49	MW-75*	RW-05
MW-27	MW-51	MW-76*	RW-06
MW-28	MW-53	MW-77*	RW-07
MW-29	MW-54	MW-78*	RW-08
			RW-09

*New wells installed in October through December 2000

All wells requiring water level measurements were monitored in accordance with the requirements of Exhibit 5-1 of the Amendment #1 to the Groundwater Interim Remedial Action, Defense Depot Memphis, Tennessee Updated Operation and Maintenance Plan dated September 1999 (Updated O&M). Figure 2 shows the locations of all monitored wells. Previous measurement data for Y2Q1, Y2Q2, Y2Q3, and Y2Q4 were submitted to the USACE, DLA, TDEC and USEPA separately with their respective groundwater quality reports. A complete set of the Y3S1 measurement data is given in Appendix A.

In addition to the monitoring wells discussed above, recovery well water levels from the seven operating wells are electronically and continuously recorded during system operation. This data is recorded using water level transducers with readings taken at one hour intervals. Data is retrieved remotely on a routine basis from an electronic data logging system. As of this report date, the telemetry system is experiencing a technical problem and has not yet been brought back on-line following system restart in March, 2001. Flow rates and water levels in the recovery wells have been collected manually during site visits, with this information summarized in the monthly Operation and Maintenance Reports. Collected telemetry information shall be included in the next scheduled report (Y3S2) due in October, 2001.

2.2 Groundwater Sample Collection and Analyses

Groundwater samples were collected in February, 2001. Samples were collected from 25 of 26 selected monitoring wells, and 4 of 11 recovery wells as shown below:

Well Type	Well No.	Analyses/Method at Each Well	Date Performed
Down-Gradient Groundwater Monitoring Wells	MW-30	Semi-Annual: PH/Field Probe Conductivity/Field Probe Volatile Organics/SW8260B	13 Feb 01 through 20 Feb 01
	MW-31		
	MW-32		
	MW-33		
	MW-34		
	MW-37		
	MW-40		
	MW-42		
	MW-43		
	MW-44		
	MW-51		
	MW-54		
	MW-56		
	MW-57		
	MW-58		
	MW-68		
	MW-69		
	MW-70		
	MW-71		
	MW-76		
	MW-77		
	MW-78		
	MW-79		
	MW-80		
	MW-95		
Recovery Wells	RW-04	Semi-Annual: PH/Field Probe Conductivity/Field Probe Volatile Organics/SW8260B	15 Feb 01
	RW-05		
	RW-08		
	RW-09		

Cumulative analytical results for sampled monitoring wells presented in Table 1 include eight sampling episodes of data following system start-up. Cumulative analytical results for the sampled recovery wells presented in Table 2 also include data following system start-up. Laboratory analytical reports are provided in Appendix B. A discussion of the results is presented in Section 3.0 of this report. A groundwater sample could not be collected from MW-67 during this monitoring period due to the presence of a sampling pump lodged in the well casing. The recovery wells not sampled were not operational at the time of the sampling episode. Wells RW-1, 1A, 1B and 2 did not undergo startup until the first week of March and so were unavailable for sampling. Recovery RW-3 had a malfunctioning actuator and could not be operated. Wells RW-6 and 7 were awaiting replacement of actuator and control valve assemblies and could not be sampled.

2.3 System Discharge Sample Collection and Analyses

Per agreement with the City of Memphis, effluent samples which had been collected monthly, will now be collected quarterly beginning in 2001. An effluent sample was collected in January, 2001 from the groundwater extraction system at a location approximately 200 feet upstream from the final discharge point. The discharge point is a manhole located on Kyle Street at the north property line of the Depot.

Effluent samples were collected on a monthly basis from February 1999 through December 2000, and shall be collected quarterly beginning in 2001. The samples were analyzed in accordance with Section F.1 of the Industrial Wastewater Discharge Agreement for Volatile Organic Compounds (VOCs) in each quarter. Semi-Volatile Organic Compounds (SVOCs) and Metals shall also be analyzed on an annual basis.

Analysis of the samples was performed to evaluate compliance with the City of Memphis Industrial Wastewater Discharge Agreement and subsequent revisions. A copy of this agreement was provided in the Year One Operations and Maintenance Report. Analytical results for each effluent sample are presented in Table 3. Laboratory analytical reports are provided in Appendix C. A discussion of the results is presented in Section 3.0 of this report.

2.4 Field and Laboratory Quality Assurance/Quality Control Samples

As part of the Quality Assurance/Quality Control (QA/QC) Program, a variety of field and laboratory QA/QC samples were collected and analyzed during each sampling event. Groundwater was the only matrix analyzed; however, samples were collected from three different sources: groundwater monitoring wells, groundwater extraction recovery wells, and groundwater extraction effluent. A summary of Quality Control samples is given in Table 4.

2.4.1 Semi-Annual Groundwater Sampling Event

QA/QC samples collected in the field during this semi-annual sampling event included 2 equipment blanks, 4 double blind duplicates, 2 field blanks, temperature blanks, and trip blanks. A trip blank and temperature blank was typically included in every cooler delivered to the laboratory. One double blind duplicate was collected for approximately every ten samples while one equipment blank and one field blank were collected for approximately every 20 samples. Laboratory QA/QC included surrogate spikes to show control of organic analyses, a method blank and laboratory control sample, and matrix spike and matrix spike duplicate (MS/MSD) samples.

2.4.2 Quarterly Effluent Sampling Event

QA/QC samples collected in the field during effluent sampling events may include temperature blanks, trip blanks, and equipment blanks or double blind duplicates. A QA/QC sample was not collected for the first quarter 2001 effluent sample, but shall be collected semi-annually. Surrogates were used by the laboratory to show control of organic analysis. A laboratory control duplicate sample was analyzed for batches that did not include MS/MSDs.

2.5 Sample Packaging and Handling

Upon collection, samples and associated field QA/QC samples were immediately placed on ice in a cooler. Stored samples were checked periodically and ice was replaced as needed to maintain a 4 degree Celsius temperature. Samples were segregated by sealed plastic bubble-wrap bags and placed in a cooler with the chain-of-custody forms. Samples were typically hand delivered the same day of collection to the laboratory, Environmental Testing and Consulting, Inc. (ETC) in Memphis, TN.

3.0 MONITORING RESULTS

This section discusses results of the Y3S1 remedial action groundwater monitoring at DDMT in February 2001. Figure 2 shows the locations of monitoring and recovery wells at the site. Figure 3 reports results of each groundwater sample collected for this event.

3.1 Groundwater Elevation and Hydraulic Gradient

Groundwater level measurements at the site have been collected approximately twice a month at monitoring wells locations discussed in Section 2.0 since system start-up in November 1998. A new monitoring scheme as shown in Section 2.0 was put into place in February, 2001. Groundwater elevation data for Y3S1 that was collected for the Dunn Field area on March 29, 2001 was used as the basis for this report. The ground water interpolation for the first half 2001 data was prepared by the Waterways Experiment Station (WES) in Vicksburg, Mississippi. A detailed description of the interpolation technique and tables of groundwater elevations are included in Appendix E. The groundwater contour map generated from the data is shown in Figure 4.

The groundwater flow direction during the Y3S1 groundwater measurement event was to the west-southwest. In general, the baseline calculated hydraulic gradient varied from 0.01 ft/ft in the northern part of Dunn Field to 0.003 ft/ft across the southernmost section of Dunn Field. Groundwater level measurements of monitoring wells that are sampled are provided in Table 5. Groundwater measurement data from all monitored wells is provided in Appendix A.

3.2 Groundwater Analytical Results

This section discusses analytical results of effluent samples of water discharged to the Publicly Owned Treatment Works (POTW) as well as groundwater samples collected from recovery wells and select monitoring wells. Groundwater analytical results from the Y3S1 sampling and analysis event are presented with historical data in Figure 3. A copy of the laboratory analytical reports for Y3S1 monitoring/recovery wells, including chain-of-custody documentation, is provided in Appendix B. A copy of the laboratory analytical reports and chain-of-custody documentation for the monthly effluent samples is provided in Appendix C.

3.2.1 Effluent Analytical Results Summary

During the Y3S1 monitoring period, an effluent discharge sample was collected in January, 2001 from the groundwater recovery system in compliance with the latest City of Memphis Discharge Permit. The samples were analyzed for pH (Method 150.1), TAL Metals (EPA 200 series), TCL Volatile Organics (Method 8260B) and TCL Semi-Volatile Organics (Method 8270C). Effluent analytical reports are provided in Appendix C. In accordance with the new discharge agreement, VOCs shall be collected on a quarterly basis and SVOCs and Metals shall be collected annually.

There was one exceedance of the discharge permit levels during the Y3S1 period in January for Cis 1,2 – dichloroethene. The detected concentration of 59.2 ug/L was acceptable according to the one day maximum level (100 ug/L), but exceeded the monthly average level (50 ug/L). As the monthly grab sample is more closely representative of a one-day maximum level, discharge permit compliance is still observed. Table 3 presents effluent sample analytical results from system startup through January 2001.

3.2.2 Recovery Well Analytical Results Summary

Y3S1 groundwater samples were collected from the four of the seven existing recovery wells on February 15, 2001. The three non-sampled wells were not operating during the sampling event as detailed in Section 2.0. Additionally, samples could not be collected from the four new recovery wells (RW-1, 1A, 1B, and 2) since actual startup of these wells occurred after the sampling event. The groundwater samples were analyzed for TCL Volatile Organics (Method 8260B). Results are provided in Tables 2. Y3S1 recovery well laboratory analytical results are provided in Appendix B.

Only compounds that have been detected are reported. Trichloroethene has consistently exceeded MCLs in all of the recovery wells. Carbon Tetrachloride has been consistently detected at concentrations exceeding MCLs in the four new recovery wells (RW-1, 1A, 1B, and 2) and in RW-3. All of these wells are located from the western mid-section of Dunn Field southward.

Cis 1,2 Dichloroethene has been consistently detected in Recovery Wells RW-3 (5 of 8 samples), RW-7 (4 of last 5 samples), and RW-8 (7 of last 8 samples). Tetrachloroethene was detected above MCLs in RW-5 during 6 of the last 9 sample rounds, and has then been detected exceeding MCLs in RW-4 (once), RW-6 (6 of 8 samples), RW-7 (all samples), RW-8 (8 of 9 samples), and RW-9 (all samples). The compound 1,1 Dichloroethene has been detected above MCLs in RW-8 (first three sample events) and RW-9 (all samples).

RW-01 , RW-01A, RW-01B, RW-2

These wells received pumps and motors and had not yet undergone startup at the time of the sampling event. All previous sampling events found that Trichloroethene and Carbon Tetrachloride exceeded the MCLs. Past sampling events showed exceedance of MCLs for three compounds: carbon tetrachloride, trichloroethene and cis 1,2 dichloroethene.

RW-03 This well had a malfunctioning actuator and control valve at the time of sampling, and could not be sampled.

RW-04 One compound (TCE) was detected at concentrations exceeding MCLs during Y3S1. TCE has exceeded MCLs during each of the sampling events. During Y3S1 TCE increased from 204 to 337 ug/L. The detected concentration has varied between 204 and 649 ug/L since May, 1999.

RW-05 PCE and TCE exceeded MCLs during this sample event. PCE was detected at 6.19 ug/L and TCE was detected at 407 ug/L. No constituents exceeded MCLs during the Y2Q4 sampling event, however these two constituents have exceeded MCLs in the majority of past sampling events.

RW-06 This well was not operational, but was undergoing replacement of actuator and control valve and was restarted at a later date. In the previous sampling event, only trichloroethene exceeded the MCLs.

RW-07 This well was not operational, but was undergoing replacement of actuator and control valve and was restarted at a later date. The November 2000 sampling event found MCLs exceedances in three constituents: trichloroethene, tetrachloroethene, and cis 1,2-dichloroethene.

RW-08 Three compounds (Cis 1,2 Dichloroethene, PCE, and TCE) exceeded the MCL concentration during the Y3S1 sampling event. TCE has consistently exceeded MCLs in each of the nine events. TCE increased from 56.9 to 105 ug/L. PCE, which had consistently exceeded MCLs, increased to 7.22 ug/L from 2.02 ug/L. Cis 1,2 Dichloroethene has also consistently exceeded MCLs (7 of last 9 events) and increased from 40.1 to 118 ug/L.

RW-09 Three compounds (1,1-DCE, PCE and TCE) were detected at concentrations exceeding the MCLs during the Y3S1 sampling event. All three compounds have exceeded MCLs during each of the nine sampling events. 1,1- DCE decreased slightly from 52.5 to 46.1 ug/L. PCE decreased from 54.3 to 38.6 ug/L and TCE decreased slightly from 36.3 to 22.4 ug/L.

3.2.3 Monitoring Well Analytical Results Summary

Y3S1 groundwater samples were collected from select monitoring wells at the site. The samples were analyzed for TCL Volatile Organics (Method (8260B)). Y3S1 monitoring well laboratory analytical reports are contained in Appendix B.

Table 1 presents TCL Volatile Organics analytical results from all monitoring wells sampled during the Y3Q1 event. Only compounds detected during any sampling event have been reported in the tables.

MW-14 This well has been dropped from the list of monitored wells (See Section 2.0).

MW-15 This well has been dropped from the list of monitored wells (See Section 2.0).

MW-30 No VOCs have been detected at concentrations exceeding MCLs for all nine quarterly sampling events.

MW-31 Four compounds (1,1 DCE, Cis 1,2 DCE, PCE and TCE) were detected at a concentration exceeding MCLs during Y3S1. TCE has exceeded MCLs in each of nine sampling events and increased from 18.5 to 233 ug/L. The previous high concentration was 49.5 ug/L (May, 2000). 1,1 DCE has exceeded MCLs in 5 of the last 8 sampling events. Cis 1,2 DCE had not previously exceeded the MCLs at this location. PCE has had only one prior exceedance of the MCL and the exceedance during this sampling event was very slightly above the MCL (5.02 ug/L vs. 5.0 ug/L).

MW-32 Two compounds (CT and TCE) were detected at concentrations exceeding the MCLs. Both CT and TCE have been detected at concentrations exceeding MCLs in each of the prior sampling events. CT decreased from 61.3 to 19.7 ug/L and TCE decreased from 94.8 to 60.4 ug/L.

MW-33 No compounds have been detected at concentrations exceeding MCLs during this and all prior sampling events.

MW-34 No compounds have been detected at concentrations exceeding MCLs during this and all prior sampling events.

MW-37 This well has been added to the monitoring scheme beginning with this report. No constituents were detected which exceeded the MCLs.

MW-40 No compounds have been detected at concentrations exceeding MCLs during this and all previous sampling events.

MW-42 This well has been added to the monitoring scheme beginning with this report. No constituents were detected which exceeded the MCLs.

MW-43 This well has been added to the monitoring scheme beginning with this report. No constituents were detected which exceeded the MCLs.

MW-44 No compounds were detected at concentrations exceeding the MCLs during Y3S1.

MW-51 Two compounds (DCE and TCE) were detected at concentrations exceeding the MCLs during Y3S1. DCE concentrations have exceeded MCLs in each event except for Y2Q1 and decreased from 57.9 to 15.8 ug/L. TCE has exceeded MCLs for the third consecutive sampling event and decreased from 13.2 ug/L to 6.09 ug/L.

MW-54 Two VOC compounds (CT and TCE) were detected at concentrations exceeding MCLs during the Y3S1 sampling event. CT decreased slightly from 12.8 to 11.2 ug/L and TCE also decreased slightly from 29.2 to 28.3 ug/L. TCE has exceeded MCLs in each of the nine sampling events.

MW-56 No compounds have been detected at concentrations exceeding MCLs during this and all previous sampling events

MW-57 Three compounds (CT, PCE, and TCE) were detected at concentrations exceeding MCLs. CT decreased slightly from 48.3 to 44.4 ug/L. PCE decreased slightly from 5.07 to 5.01 ug/L. TCE decreased from 30.9 to 28.3 ug/L. Each of these compounds has exceeded MCLs in each of the prior four sampling events.

MW-58 No VOCs have been detected at concentrations exceeding MCLs during this and all previous sampling events.

MW-59 This well has been dropped from the list of monitored wells (See Section 2.0).

MW-67 This well could not be sampled during this monitoring period because the purge pump became lodged in the well and could not be lowered into the groundwater or removed from the well prior to the Y2Q2 event. Several attempts have been made to free the pump without success. The well was sampled once before during the Y2Q1 sampling event. No VOC compounds were detected at concentrations exceeding MCLs at that time.

MW-68 One compound (TCE) was detected at a concentration exceeding MCLs during Y3S1. TCE was detected at 9.67 ug/L and has exceeded MCLs 3 of the 4 times this well was sampled.

MW-69 One compound (TCE) was detected at a concentration exceeding the MCL. TCE has been detected at concentrations exceeding the MCL in each of the previous sampling events in which this well has been sampled. TCE concentration decreased this quarter from 464 to 42.2 ug/L.

MW-70 Three compounds (Cis-DCE, and TCE) were detected at concentrations exceeding MCLs. Concentrations of the detected compounds were decreased from the previous sampling event. Cis-DCE decreased from 247 to 34.3 ug/L. PCE decreased from 32.5 to 5.73 ug/L. TCE decreased to 544 ug/L. The sampling results have varied considerably over time in this well.

MW-71 Three VOC compounds (CT, PCE and TCE) were detected at concentrations exceeding MCLs during Y3S1. CT and TCE have exceeded the MCLs in each of the prior sampling events in which this well was sampled. CT decreased slightly from 26.5 to 24.9 ug/L. TCE decreased from 95.6 to 77.8 ug/L. PCE increased from 4.09 to 5.16 ug/L and ranged from 4.09 to 10 ug/L in the 5 sampling events.

MW-76 This well has been added to the monitoring scheme beginning with this report. One compound (TCE) was detected at a concentration exceeding the MCL. TCE was detected at a concentration of 258 ug/L.

MW-78 This well has been added to the monitoring scheme beginning with this report. No constituents were detected which exceeded the MCLs.

MW-79 This well has been added to the monitoring scheme beginning with this report. Four compounds (Benzene, 1,1 DCE, PCE, and TCE) were detected at concentrations exceeding the MCLs. Benzene was detected at a concentration of 13.2 ug/L. 1,1 DCE was detected at a concentration of 30.1 ug/L. PCE was detected at a concentration of 14 ug/L and TCE was detected at 9.6 ug/L.

MW-80 This well has been added to the monitoring scheme beginning with this report. No constituents were detected which exceeded the MCLs.

MW-95 This well has been added to the monitoring scheme beginning with this report. No constituents were detected which exceeded the MCLs.

3.3 QA/QC Results

Quality control samples and results are presented in Table 4 for the Y3S1 sampling event. A data evaluation was conducted for the sampling event. A copy of the complete data evaluation is provided in Appendix D.

One concern with respect to the use of this data is the detection of carbon disulfide (CS₂) in a number of project samples. Twelve samples were found with varying levels of CS₂ ranging from the reporting limit to 250 ug/L. This analyte had not previously been detected at the site. Since this constituent had not previously been detected, it is hypothesized that it may be an artifact and not the result of site contamination. The widespread and erratic occurrence of its detection in the data set seemed to support this theory. CS₂ is also the only constituent to generate a field duplicate QC non-conformance further suggesting erratic and artificial presence. However, careful evaluation of applicable data collection procedures including sampling, sample handling and shipping, and laboratory operations did not reveal any other source of the constituent.

Similar, but less widespread was the detection of Acetone in five samples. As with CS₂, Acetone had not previously been detected in the monitoring wells, and is a suspected artifact. Future sampling will serve to confirm or deny the actual existence of these two compounds.

3.3.1 Y3S1 Samples

The four samples taken in duplicate were RW-09, MW-56, MW-68 and MW-70. The duplicates were analyzed for the same tests as the original samples. The following table lists the duplicate relative percent difference (RPD) calculations. A blank space indicates that compound was not found in the sample or its duplicate.

Analyte	RW-09	MW-56	MW-68	MW-70
Acetone			17	57
Carbon Disulfide			142	
Carbon Tetrachloride	3	0		7
Chloroform	9	3		2
1,1 Dichloroethane	5			
1,1 Dichloroethene	4			
Trans-1,2-Dichloroethene	1		5	10
Cis 1,2 Dichloroethene	11		8	12
1,1,2,2-Tetrachloroethane	4			7
Tetrachloroethene	1		39	2
1,1,1 Trichloroethane	2			
1,1,2-Trichloroethane				4
Trichloroethene	0	1	11	9
Vinyl Chloride				

The criteria for determining acceptable field duplicate RPD were based on project specific goals. Since no published EPA procedure exists for evaluation of field duplicate results, the following overview is included to document the evaluation procedure used for this report.

Duplicate results for liquid sample matrices which differ by more than a factor of two (RPD > 67) were considered to be in 'disagreement'. In the special case where one or both sample results were less than five times the laboratory practical quantitation limit (PQL), a difference of $\pm$ two times the reported PQL was used. Duplicate samples found in disagreement do not necessarily indicate an error has been made or inappropriate procedures used. Factors including the natural variability of the sample matrix, high or extremely low analyte concentrations, or the presence of compounds which interfere with analysis can each contribute to duplicate disagreement.

Most importantly, data found in disagreement were examined to determine if the disagreements were extreme, isolated occurrences, or if any negative trends existed. Negative trends may indicate systematic errors made in sampling, handling, or analytical procedures; or may indicate the selection of an inappropriate protocol. If negative trends or extreme non-conformances exists, associated data were evaluated carefully to determine their validity.

In general, project precision indicators for field QC duplicate samples were found to be in control. One exception was noted and was evaluated to determine if it had any impact on data use or required data qualification. The finding is discussed below.

- Carbon disulfide in the QC pair MW-68/ MW-68A (lab sample Id 0102408-07 / 08) was found with an RPD = 142. This was the only non-conformance out of four QC duplicate samples collected and therefore is not indicative of a trend. However, carbon disulfide has not been detected at this site in a number of previous sampling events and, based on historical data, is believed to be an outside contaminant from a unidentified source (not an actual constituent in the sample). The erratic presence of this analyte in this QC pair supports this hypothesis.

3.3.2 Quarterly Effluent Samples

Per the new discharge agreement with the City of Memphis, an effluent sample will be collected on a quarterly basis. One sample was collected in January, and no QC analysis was performed at that time. The next sample is scheduled to be collected in late April 2001 and will include a QC sample. The results of this sampling will be included in the Y3S2 report due in the latter half of 2001.

4.0 CONCLUSIONS

Conclusions to this quarterly groundwater quality report have been developed from the review of groundwater monitoring results. The two major system monitoring methods included analytical sample results and groundwater level measurements.

4.1 Summary of Monitoring Results

- MW-31 has experienced an increase in the number of contaminants exceeding the MCLs (from 2 to 4) and has exhibited a general increase in concentration of 3 of the 4 constituents.
- MW-32 showed a general decrease in contaminant concentration this period, breaking a trend that has been exhibited since the first sampling period. Chloroform was the exception to this and showed an increase from 372 to 434 ug/L.
- MW-70 continues to exhibit the highest concentration of compounds of any sampled wells, however concentrations were significantly lower this event than the last.
- Two compounds (Carbon Disulfide and Acetone) which had not previously been detected were found in several samples. These constituents are suspected artifacts and may not be present in the groundwater. Future sampling events should serve to confirm or deny their existence in the water.
- The groundwater flow during this quarter is to the west-southwest. Since system startup, the flow direction has remained generally to the west and southwest. The hydraulic gradient was seen to vary across the site from 0.01 ft/ft in the north to 0.003 ft/ft in the south.
- C1s 1,2-dichloroethene exceeded the effluent discharge permit limit to the POTW in January. The detected concentration of 59.2 ug/L was acceptable according to the one day maximum level (100 ug/L), but exceeded the monthly average level (50 ug/L). As the monthly grab sample is more closely representative of a one-day maximum level, discharge permit compliance is still observed.
- A sample was collected for each monitoring well except for MW-67 which remains out of commission due to the sampling pump becoming lodged in the well prior to the Y2Q2 sampling event.
- Periods of downtime have been experienced for all wells. During the sampling event, wells RW-1, 1A, 1B, and 2 had not been started at the time of the sampling event and RW-3, 6 and 7 were not in operation due to scheduled maintenance and/or retrofit activities.

TABLES

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Laboratory Analyses			DL	Units	MW-30-YTQ2	MW-30-YTQ3	MW-30-YTQ4	MW-30-YTQ5	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7 1999)
Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected					MW-30-YTQ1	MW-30-YTQ2	MW-30-YTQ3	MW-30-YTQ4		
pH										
Conductivity (umhos)										
Temperature										
Turbidity (ntu)										
TCL Volatile Organics (Method 8260B)										
Acetone	1	ug/L	ND	ND	ND	ND	ND	ND	ND	6100
Benzene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	0.32
Bromodichloromethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	NS	0.17
Carbon Disulfide	1	ug/L	ND	ND	ND	<1.00	ND	6.47	NS	1000
Carbon Tetrachloride	1	ug/L	ND	ND	ND	<1.00	ND	ND	5	0.16
Chlorobenzene	1	ug/L	ND	ND	ND	<1.00	ND	ND	100	110
Chloroform	1	ug/L	ND	ND	ND	<1.00	ND	ND	NS	0.15
Chloromethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	NS	3.6
1,1-Dichloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	NS	800
1,2-Dichloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	5	0.12
Trans 1,2-Dichloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	7	0.044
Cis 1,2-Dichloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	100	120
1,1,2,2-Tetrachloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	NS	0.053
Tetrachloroethene	1	ug/L	ND	ND	ND	<1.00	ND	ND	5	1.1
Toluene	1	ug/L	ND	ND	ND	<1.00	ND	ND	1000	750
1,2,4-Trichlorobenzene	1	ug/L	ND	ND	ND	<1.00	ND	ND	70	190
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	200	540
1,1,2-Trichloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	5	0.19
Trichloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	5	1.6
Vinyl Chloride	1	ug/L	ND	ND	ND	<1.00	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was

confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside

acceptance ranges

E = Concentration exceeds the established method cali-

bration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW-31-Y1Q2 8905638-16 25-May-99	MW-31-Y1Q3 990741-08 27-Aug-99	MW-31-Y1Q4 991147-09 03-Nov-99	MW-31-Y2Q1 002423-02 15-Feb-00	MW-31-Y2Q2 000523-07 17-May-00	MW-31-Y2Q3 000634-06 23-Aug-00	MW-31-Y2Q4 001216-07 07-Nov-00	MW-31-Y3S1 0102408-02 14-Feb-01	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
pH	6.4	7.2	5.9	6	NP	5.9	6.5	5.6		
Conductivity (umhos)	262	275	256	236	NP	236	112	319		
Temperature	18.1	19.2	17.9	17.5	NP	NP	16	17.7		
Turbidity (ntu)	7	244	9.74	162	NP	NP	NP	NP		
DL Units										
Laboratory Analyses										
TCL Volatile Organics (Method 8260B)										
Acetone	1	ND	ND	ND	ND	ND	ND	ND	NS	6100
Benzene	1	ND	ND	ND	ND	ND	ND	ND	5	0.32
Bromochloroethane	1	ND	ND	ND	<1.00	ND	ND	ND	NS	0.17
Carbon Disulfide	1	ND	ND	ND	<1.00	ND	ND	ND	NS	1000
Carbon Tetrachloride	1	0.58 J	ND	ND	<1.00	0.40 J	ND	2.76	5	0.16
Chlorobenzene	1	ND	ND	ND	<1.00	ND	ND	ND	100	110
Chloroform	1	1.66	0.92 J	1.19	1.29	ND	ND	25.1	NS	0.15
Chloroethane	1	ND	ND	ND	<1.00	ND	ND	ND	3.6	NS
1,1-Dichloroethane	1	ND	ND	ND	<1.00	18.9	ND	ND	NS	800
1,2-Dichloroethane	1	ND	ND	ND	<1.00	9.58	ND	ND	5	0.12
1,1,1-Trichloroethane	1	33.3	7.9	5.98	22.3	ND	31.5	7.98	7	0.044
Trans 1,2-Dichloroethene	1	2.14	4.66	2.52	3.37	ND	4.63	49.3	100	120
Cis 1,2-Dichloroethene	1	4.78	4.34	5.08	6.89	15.5	4.24	148	70	61
1,1,2,2-Tetrachloroethane	1	ND	ND	ND	ND	<1.00	ND	14.8	NS	0.053
Tetrachloroethene	1	7.55	1.31	0.90 J	0.64 J	2.08	0.92 J	5.02	5	1.1
Toluene	1	ND	ND	ND	<1.00	ND	ND	ND	1000	750
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND	ND	ND	ND	70	190
1,1,1-Trichloroethane	1	ND	ND	ND	<1.00	0.42 J	ND	ND	200	540
1,1,2-Trichloroethane	1	ND	ND	ND	<1.00	ND	ND	1.2	5	0.19
Trichloroethene	1	23.9	33.7	18	49.5	68.1	18.5	233	5	1.6
Vinyl Chloride	1	ND	ND	ND	<1.00	ND	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside acceptance ranges

E = Concentration exceeds the established method calibration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW-32-Y1Q2 890538-14 25-May-99	MW-32-Y1Q3 890874-1-06 26-Aug-99	MW-32-Y1Q4 991147-10 03-Nov-99	MW-32-Y2Q1 0002423-07 15-Feb-00	MW-32-Y2Q2 0005523-18 16-May-00	MW-32-Y2Q3 0008674-06 24-Aug-00	MW-32-Y2Q4 0011335-04 09-Nov-00	MW-32-Y3S1 0102556-11 20-Feb-01	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7 1999)
Conductivity (umhos)	283	224	NA	278	310	308	121	261		
Temperature	18.2	20.5	16.8	17.1	20	NP	13.3	16.8		
Turbidity (ntu)	0	>999	9.75	>999	>999	NP	NP	NP		
DL Units										
Laboratory Analyses										
TCL Volatile Organics (Method 8260B)										
Acetone	1 ug/L	ND	ND	ND	ND	ND	ND	ND	NS	6100
Benzene	1 ug/L	ND	ND	ND	ND	ND	ND	ND	5	0.32
Bromodichloromethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	ND	NS	0.17
Carbon Disulfide	1 ug/L	ND	ND	ND	ND	ND	ND	ND	NS	1000
Carbon Tetrachloride	1 ug/L	14.2	17.3	25.5	37	47.2	61.3	19.7	5	0.18
Chlorobenzene	1 ug/L	ND	ND	ND	<1.00	ND	ND	ND	100	110
Chloroform	1 ug/L	32.2	76.9	77.2	117	171	372	434	NS	0.15
Chloromethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	ND	NS	3.6
1,1-Dichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	ND	NS	800
1,2-Dichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	ND	5	0.12
1,1,1-Trichloroethane	1 ug/L	1.76	0.99 J	1.12	2	2.68	4.53	2.42	100	120
Trans 1,2-Dichloroethene	1 ug/L	16.7	4.64	5.07	6.61	5.66	8.55	9.44	70	61
Cis 1,2-Dichloroethene	1 ug/L	4.42	0.92 J	ND	<1.00	2.12	21.5	68.2	NS	0.053
1,1,2,2-Tetrachloroethane	1 ug/L	1.28	2.22	2.34	3.9	5.9	6.39	3.74	5	1.1
Tetrahydrofuran	1 ug/L	ND	ND	ND	<1.00	ND	ND	ND	1000	750
Toluene	1 ug/L	ND	ND	ND	ND	ND	ND	ND	70	190
1,2,4-Trichlorobenzene	1 ug/L	ND	ND	ND	ND	ND	ND	ND	200	540
1,1,1-Trichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	ND	5	0.19
1,1,2-Trichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	0.61 J	ND	5	1.6
Trichloroethene	1 ug/L	28.1	34.6	41.8	58.2	89.2	94.8	60.4	2	0.019
Vinyl Chloride	1 ug/L	ND	ND	ND	<1.00	ND	ND	ND		

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

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RBCs = Risk Based Contaminants

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acceptance ranges

E = Concentration exceeds the established method cali-

bration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected		MW-33-Y102 9905038-13 25-May-99 6.2	MW-33-Y103 9908741-05 26-Aug-99 7.4	MW-33-Y104 9911147-04 02-Nov-99 5.3	MW-33-Y201 0002423-05 15-Feb-00 5.8	MW-33-Y202 0005523-17 16-May-00 5.7	MW-33-Y203 0008592-06 22-Aug-00 7.6	MW-33-Y204 0011258-05 08-Nov-00 6.47	MW-33-Y3S1 0102451-11 16-Feb-01 5.2	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
pH		181	146	190	191	181	126	221	208		
Conductivity (umhos)		18.6	20	18.2	17.6	19.9	NP	17.1	17.5		
Temperature		5	>999	8.77	224	>999	NP	NP	NP		
Turbidity (ntu)											
Laboratory Analyses		DL	Units								
TCL Volatile Organics (Method 8260B)											
Acetone	1	ug/L	ND	ND	ND	ND	ND	ND	ND	NS	6100
Benzene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	5	0.32
Bromodichloromethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	NS	0.17
Carbon Disulfide	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	NS	1000
Carbon Tetrachloride	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	5	0.16
Chlorobenzene	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	100	110
Chloroform	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	NS	0.15
Chloromethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	NS	3.6
1,1-Dichloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	NS	800
1,2-Dichloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	5	0.12
1,1-Dichloroethene	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	7	0.044
Trans 1,2 Dichloroethene	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	100	120
Cis 1,2 Dichloroethene	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	70	61
1,1,2,2 Tetrachloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	NS	0.053
Tetrachloroethene	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	NS	1.1
Toluene	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	5	1
1,2,4 - Trichlorobenzene	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	1000	750
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	ND	70	190
1,1,2-Trichloroethane	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	200	540
Trichloroethene	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	5	0.19
Vinyl Chloride	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	5	1.6
	1	ug/L	ND	ND	ND	<1.00	ND	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside acceptance ranges

E = Concentration exceeds the established method calibration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW-34-Y1Q2 8905638-17 25-May-99	MW-34-Y1Q3 8908741-06 27-Aug-99	MW-34-Y1Q4 8911147-07 03-Nov-99	MW-34-Y2Q1 0002480-09 16-Feb-00	MW-34-Y2Q2 0005523-32 18-May-00	MW-34-Y2Q3 0008674-07 24-Aug-00	MW-34-Y2Q4 0011216-09 07-Nov-00	MW-34-Y3S1 0102556-09 20-Feb-01	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Top Water (October 7 1999)
	pH	pH	pH	pH	pH	pH	pH	pH		
Conductivity (umhos)	5.7	7.4	5.9	NA	5.9	7.13	NP	NP	179	
	185	148	169	NA	181.2	196	NP	NP	16.9	
Temperature	18.8	20.1	17.6	NA	22.2	NP	NP	NP		
	4	451	7.48	NA	219	NP	NP	NP		
Turbidity (ntu)	4	451	7.48	NA	219	NP	NP	NP		
	DL	DL	DL	DL	DL	DL	DL	DL		
Laboratory Analyses	Units									
	TCL Volatile Organics (Method 8260B)									
Acetone	1	ug/L	ND	ND	ND	ND	ND	ND	NS	6100
Benzene	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.32
Bromochloromethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	0.17
Carbon Disulfide	1	ug/L	ND	ND	ND	ND	ND	12	NS	1000
Carbon Tetrachloride	1	ug/L	0.51 J	ND	1.03	0.86 J	ND	0.82 J	5	0.16
Chlorobenzene	1	ug/L	ND	ND	<1.00	ND	ND	ND	100	110
Chloroform	1	ug/L	0.86 J	ND	3.49	ND	ND	4.24	NS	0.15
Chloromethane	1	ug/L	ND	ND	<1.00	ND	ND	ND	NS	3.6
1,1-Dichloroethane	1	ug/L	ND	ND	<1.00	ND	ND	ND	NS	800
1,2-Dichloroethane	1	ug/L	ND	ND	<1.00	ND	ND	ND	5	0.12
Trans 1,2-Dichloroethene	1	ug/L	ND	ND	<1.00	ND	ND	ND	7	0.044
Cis 1,2-Dichloroethene	1	ug/L	ND	ND	<1.00	ND	ND	ND	100	120
1,1,2,2-Tetrachloroethane	1	ug/L	ND	ND	<1.00	ND	ND	2.91	70	61
Tetrachloroethene	1	ug/L	ND	ND	<1.00	ND	ND	ND	NS	0.053
Toluene	1	ug/L	0.53 J	ND	<1.00	ND	ND	ND	5	1.1
1,2,4-Trichlorobenzene	1	ug/L	ND	ND	<1.00	ND	ND	ND	1000	750
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	70	190
1,1,2-Trichloroethane	1	ug/L	ND	ND	<1.00	ND	ND	ND	200	540
Trichloroethene	1	ug/L	0.84 J	ND	0.85 J	2.55	1.43	1.82	5	0.19
Vinyl Chloride	1	ug/L	ND	ND	<1.00	ND	ND	ND	5	1.6
									2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

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B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was

confirmed but less than the reported DL

J* = estimated value - quality control recovers outside

acceptance ranges

E = Concentration exceeds the established method cali-

bration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number			MW-37-Y3S1		Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs Tap Water (October 7 1999)
Laboratory & Lab Sample ID No			0102555-10			
Date Sample Collected			20-Feb-01			
pH			5.9			
			349			
			17.9			
Conductivity (umhos)			NP			
Temperature						
Turbidity (ntu)						
DL			Units			
Laboratory Analyses						
TCL Volatile Organics (Method 8260B)						
Acetone	1	ug/L	ND	NS	6100	
Benzene	1	ug/L	ND	5	0.32	
Bromodichloromethane	1	ug/L	ND	NS	0.17	
Carbon Disulfide	1	ug/L	3.41	NS	1000	
Carbon Tetrachloride	1	ug/L	ND	5	0.16	
Chlorobenzene	1	ug/L	ND	100	110	
Chloroform	1	ug/L	ND	NS	0.15	
Chloromethane	1	ug/L	ND	NS	3.6	
1,1-Dichloroethane	1	ug/L	ND	NS	800	
1,2-Dichloroethane	1	ug/L	ND	5	0.12	
1,1-Dichloroethene	1	ug/L	ND	7	0.044	
Trans 1,2-Dichloroethene	1	ug/L	ND	100	120	
Cis 1,2-Dichloroethene	1	ug/L	ND	70	61	
1,1,2,2-Tetrachloroethane	1	ug/L	ND	NS	0.053	
Tetrachloroethene	1	ug/L	ND	5	1.1	
Toluene	1	ug/L	ND	1000	750	
1,2,4- Trichlorobenzene	1	ug/L	ND	70	190	
1,1,1-Trichloroethane	1	ug/L	ND	200	540	
1,1,2-Trichloroethane	1	ug/L	ND	5	0.19	
Trichloroethene	1	ug/L	ND	5	1.6	
Vinyl Chloride	1	ug/L	ND	2	0.019	

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or equipment blank

J = Estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside acceptance ranges

E = Concentration exceeds the established method calibration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No. Date Sample Collected	MW-40-Y1Q2 8/25/98	MW-40-Y1Q3 9/8/98	MW-40-Y1Q4 11/11/98	MW-40-Y2Q1 02/24/99	MW-40-Y2Q2 05/17/99	MW-40-Y2Q3 08/23/99	MW-40-Y2Q4 11/07/99	MW-40-Y3S1 01/02/00	Maximum Contaminant Level (MCL) Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
	413 6	641 7.4	775 6.3	857 6.5	855 6.3	739 7.9	111 8.97	249 5.4		
Conductivity (umhos)	413	641	775	857	855	739	111	249		
Temperature	21.2	24.2	22.2	16.3	19	NP	16.1	17.5		
Turbidity (ntu)	51	78	9.17	8.57	30.7	NP	NP	NP		
Laboratory Analyses										
TCL Volatile Organics (Method 8260B)										
DL	Units									
Acetone	1	ug/L	ND	ND	ND	ND	ND	ND	NS	6100
Benzene	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.32
Bromodichloromethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	0.17
Carbon Disulfide	1	ug/L	ND	ND	ND	ND	ND	ND	NS	1000
Carbon Tetrachloride	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.16
Chlorobenzene	1	ug/L	0.94 J	1.06	ND	ND	ND	ND	100	110
Chloroform	1	ug/L	ND	ND	ND	ND	ND	ND	NS	0.15
Chloromethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	3.6
1,1-Dichloroethane	1	ug/L	1.23	ND	ND	ND	ND	ND	NS	800
1,2-Dichloroethane	1	ug/L	1.07	ND	ND	ND	ND	ND	5	0.12
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	7	0.044
Trans 1,2-Dichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	100	120
Cis 1,2-Dichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	70	61
1,1,2,2-Tetrachloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	0.053
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	5	1.1
Toluene	1	ug/L	ND	ND	ND	ND	ND	ND	1000	750
1,2,4-Trichlorobenzene	1	ug/L	ND	ND	ND	ND	ND	ND	70	190
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	200	540
1,1,2-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.19
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	5	1.6
Vinyl Chloride	1	ug/L	ND	ND	ND	ND	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

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NA = not available

B = Analyte detected in associated method and/or equipment blank

J = Estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside acceptance ranges

E = Concentration exceeds the established method calibration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Laboratory Analyses	Sample Identification Number		MW 42-Y3S1		MW 43-Y3S1		Maximum Contaminant Level (MCL) Primary Drinking Water Standard		USEPA Region III RBCs Tap Water (October 7 1999)	
	Laboratory & Lab Sample ID No		0102556-03		0102556-04					
	Date Sample Collected		19-Feb-01		19-Feb-01					
	Conductivity (umhos)		54		NP					
		pH	225		369					
		Temperature	17.8		18.6					
		Turbidity (ntu)	NP		NP					
		DL								
		Units								
TCL Volatile Organics (Method 8260B)										
Acetone	1	ug/L	61.8		6380		NS		6100	
Benzene	1	ug/L	ND		ND		5		0.32	
Bromodichloromethane	1	ug/L	ND		ND		NS		0.17	
Carbon Disulfide	1	ug/L	ND		6.26		NS		1000	
Carbon Tetrachloride	1	ug/L	ND		ND		5		0.16	
Chlorobenzene	1	ug/L	ND		ND		100		110	
Chloroform	1	ug/L	ND		ND		NS		0.15	
Chloromethane	1	ug/L	ND		ND		NS		3.6	
1,1-Dichloroethane	1	ug/L	ND		ND		NS		800	
1,2-Dichloroethane	1	ug/L	ND		ND		5		0.12	
1,1-Dichloroethene	1	ug/L	ND		ND		7		0.044	
Trans 1,2-Dichloroethene	1	ug/L	ND		ND		100		120	
Cis 1,2-Dichloroethene	1	ug/L	ND		ND		70		61	
1,1,2,2-Tetrachloroethane	1	ug/L	ND		9.59		NS		0.053	
Tetrachloroethene	1	ug/L	ND		ND		5		1.1	
Toluene	1	ug/L	36.8		ND		1000		750	
1,2,4-Trichlorobenzene	1	ug/L	ND		ND		70		190	
1,1,1-Trichloroethane	1	ug/L	ND		ND		200		540	
1,1,2-Trichloroethane	1	ug/L	ND		ND		5		0.19	
Trichloroethene	1	ug/L	ND		1.02		5		1.6	
Vinyl Chloride	1	ug/L	ND		ND		2		0.019	

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or equipment blank

J = Estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside acceptance ranges

E = Concentration exceeds the established method calibration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Laboratory Analyses	Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW 44-Y103 26-Aug-99	MW 44-Y104 02-Nov-99	MW 44-Y201 15-Feb-00	MW 44-Y202 16-May-00	MW 44-Y203 24-Aug-00	MW 44-Y204 08-Nov-00	MW 44-Y205 15-Feb-01	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	ISEPA Region I RBCs-Tap Water October 7, 1998
		pH	Conductivity (umhos)	Temperature	Turbidity (ntu)	DL	Units			
TCL Volatile Organics (Method 8260B)	Acetone	ND	ND	ND	ND	ND	ND	ND	NS	6100
	Benzene	ND	ND	ND	ND	ND	ND	ND	5	0.32
	Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	NS	0.17
	Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	NS	1000
	Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	5	0.16
	Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	100	110
	Chloroform	ND	ND	ND	ND	ND	ND	ND	NS	0.15
	Chloromethane	ND	ND	ND	ND	ND	ND	ND	NS	3.6
	1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	NS	800
	1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	5	0.12
	1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	7	0.044
	Trans 1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	100	120
	Cis 1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	70	61
	1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	NS	0.053
	Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	5	1.1
	Toluene	ND	ND	ND	ND	ND	ND	ND	1000	750
	1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	70	190
	1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	200	540
	1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	5	0.19
	Trichloroethene	ND	ND	ND	ND	ND	ND	ND	5	1.6
	Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was

confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside

acceptance ranges

E = Concentration exceeds the established method cali-

bration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW-51-Y1Q2 9505638-11 24-May-99	MW-51-Y1Q3 9908741-03 26-Aug-99	MW-51-Y1Q4 991147-08 03-Nov-99	MW-51-Y2Q1 0002423-03 15-Feb-00	MW-51-Y2Q2 0005523-13 16-May-00	MW-51-Y2Q3 0008674-14 24-Aug-00	MW-51-Y2Q4 0011258-01 08-Nov-00	MW-51-Y3S1 0102556-08 20-Feb-01	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
pH	4.8	7.3	5.9	5.9	5.9	7.46	6.49	5.3		
Conductivity (umhos)	186	249	256	308	290	274	113	316		
Temperature	19.3	20.6	18	16.8	20.3	NP	16.6	18.8		
Turbidity (ntu)	15	330	92	17.5	4.9	NP	NP	NP		
Laboratory Analyses	DL Units									
TCL Volatile Organics (Method 8260B)										
Acetone	1	ug/L	ND	ND	ND	ND	ND	ND	NS	6100
Benzene	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.32
Bromochloromethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	0.17
Carbon Disulfide	1	ug/L	ND	ND	ND	ND	ND	ND	NS	1000
Carbon Tetrachloride	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.16
Chlorobenzene	1	ug/L	ND	ND	ND	ND	ND	ND	100	110
Chloroform	1	ug/L	ND	ND	ND	ND	ND	ND	NS	0.15
Chloromethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	3.6
1,1-Dichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	800
1,2-Dichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.12
1,1,1-Trichloroethane	1	ug/L	16.9	8.19	1.08	8.23	57.9	15.8	7	0.044
Trans 1,2-Dichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	100	120
Cis 1,2-Dichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	70	61
1,1,2,2-Tetrachloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	0.053
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	5	1.1
Toluene	1	ug/L	0.54 J	0.83 J	ND	1.49	3.51	1.86	1000	750
1,2,4-Trichlorobenzene	1	ug/L	ND	ND	ND	ND	ND	ND	70	190
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	200	540
1,1,2-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.19
Trichloroethane	1	ug/L	4.64	2.83	0.70 J	8.33	13.2	6.09	5	1.6
Vinyl Chloride	1	ug/L	ND	ND	ND	ND	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was

confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside

acceptance ranges

E = Concentration exceeds the established method cali-

bration range but is w/in instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW-54-Y1Q2 9905638-15 25-May-99 6.4	MW-54-Y1Q3 9908741-07 26-Aug-99 7.4	MW-54-Y1Q4 9911147-11 03-Nov-99 5.7	MW-54-Y2Q1 0002423-10 05-Feb-00 5.9	MW-54-Y2Q2 0005523-03 17-May-00 5.9	MW-54-Y2Q3 0008592-07 22-Aug-00 7.6	MW-54-Y2Q4 001216-06 07-Nov-00 6.51	MW-54-Y3S1 0102451-10 15-Feb-01 5.5	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
Conductivity (umhos)	253	216	366	385	347	264	111	290		
Temperature	18.2	19.7	17.2	17.7	20.4	NP	17.5	17.1		
Turbidity (ntu)	0	149	9.93	16.6	11.8	NP	NP	NP		
Laboratory Analyses		DL Units								
TCL Volatile Organics (Method 8260B)										
Acetone	1	ug/L	ND	ND	ND	ND	ND	ND	NS	6100
Benzene	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.32
Bromodichloromethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	0.17
Carbon Disulfide	1	ug/L	ND	ND	ND	ND	ND	ND	NS	1000
Carbon Tetrachloride	1	ug/L	3.53	12.8	5.92	14.7	7.97	11.2	5	0.16
Chlorobenzene	1	ug/L	ND	ND	ND	ND	ND	ND	100	110
Chloroform	1	ug/L	5.04	5.04	2.54	12.4	13.8	14.2	NS	0.15
Chloromethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	3.6
1,1-Dichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS	800
1,2-Dichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.12
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	7	0.044
Trans 1,2-Dichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	100	120
Cis 1,2-Dichloroethene	1	ug/L	3.9	10.3	24.1	22.5	14.9	21.1	70	61
1,1,2,2-Tetrachloroethane	1	ug/L	ND	ND	40.1	23.6	4.9	37	NS	0.053
Tetrachloroethene	1	ug/L	ND	ND	0.68 J	0.94 J	0.74 J	0.80 J	5	1.1
Toluene	1	ug/L	ND	ND	ND	ND	ND	ND	1000	750
1,2,4-Trichlorobenzene	1	ug/L	ND	ND	ND	ND	ND	ND	70	190
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	200	540
1,1,2-Trichloroethane	1	ug/L	ND	ND	1.15	0.90 J	0.56 J	1.24	5	0.19
Trichloroethene	1	ug/L	81	50	30.6	43.3	28.1	28.3	5	1.6
Vinyl Chloride	1	ug/L	ND	ND	ND	ND	ND	ND	2	0.019

Only compounds detected are listed
 ug/L = micrograms per liter
 DL = Detection Limit
 TCL = Target Compound List
 BOL = Below Detection Limit
 MCL = Maximum Contaminant Level - Primary Drinking
 Water Standards
 RBCs = Risk Based Contaminants
 NS = no standard NP = not performed
 NA = not available
 B = Analyte detected in associated method and/or
 equipment blank
 J = Estimated value - presence of the compound was
 confirmed but less than the reported DL
 J* = estimated value - quality control recovers outside
 acceptance ranges
 E = Concentration exceeds the established method cali-
 bration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW-56 Y2Q1 0002480-11 16-Feb-00	MW-56 Y2Q2 0005523-01 17-May-00	MW-56 Y2Q3 0008592-05 22-Aug-00	MW-56 Y2Q4 001216-05 07-Nov-00	MW-56 Y3S1 0102556-06 19-Feb-01	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
	pH	Conductivity (umhos)	Temperature	Turbidity (ntu)	DL	Units	
	6.1	5.9	7.24	6.58	5.5		
	238	249	208	111	283		
	16.2	19.7	NP	17.9	18.1		
	NA	>999	NP	NP	NP		
Laboratory Analyses							
TCL Volatile Organics (Method 6260B)							
Acetone	1	ug/L	ND	ND	ND	NS	6100
Benzene	1	ug/L	ND	ND	ND	5	0.32
Bromodichloromethane	1	ug/L	ND	ND	ND	NS	0.17
Carbon Disulfide	1	ug/L	ND	ND	ND	NS	1000
Carbon Tetrachloride	1	ug/L	0.57 J	ND	0.71 J	5	0.16
Chlorobenzene	1	ug/L	ND	ND	ND	100	110
Chloroform	1	ug/L	38.2	39.4	ND	NS	0.15
Chloroethane	1	ug/L	ND	ND	ND	NS	3.6
1,1-Dichloroethane	1	ug/L	ND	ND	ND	NS	800
1,2-Dichloroethane	1	ug/L	ND	ND	ND	5	0.12
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	7	0.044
Trans 1,2-Dichloroethane	1	ug/L	ND	ND	ND	100	120
Cis 1,2-Dichloroethane	1	ug/L	ND	ND	ND	70	61
1,1,2,2-Tetrachloroethane	1	ug/L	ND	ND	ND	NS	0.053
1,1,2-Trichloroethane	1	ug/L	ND	ND	0.71 J	5	1.1
Toluene	1	ug/L	ND	ND	ND	1000	750
1,2,4-Trichlorobenzene	1	ug/L	ND	ND	ND	70	190
1,1,1-Trichloroethane	1	ug/L	ND	1.6	ND	200	540
1,1,2-Trichloroethane	1	ug/L	ND	ND	ND	5	0.19
Trichloroethane	1	ug/L	1.7	0.74 J	1.99	5	1.6
Vinyl Chloride	1	ug/L	ND	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

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confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside

acceptance ranges

E = Concentration exceeds the established method cali-

bration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Laboratory Analyses		Sample Identification Number		Date Sample Collected	pH	Conductivity (umhos)	Temperature	Turbidity (ntu)	USEPA Region II RBCs-Tap Water (October 7, 1999)										
		Laboratory & Lab Sample ID No							Maximum Contaminant Level (MCL) Primary Drinking Water Standard										
		DL							Units										
		Units																	
TCL Volatile Organics (Method 8260B)																			
Acetone	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	6100					
Benzene	1	ug/L	ND	<1.00	ND	ND	ND	ND	ND	ND	ND	ND	5	0.32					
Bromodichloromethane	1	ug/L	ND	<1.00	ND	ND	ND	ND	12.4	ND	ND	ND	NS	0.17					
Carbon Disulfide	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	1000					
Carbon Tetrachloride	1	ug/L	39.9	50.6	45.7	48.3	44.4	44.4	44.4	44.4	44.4	5	0.16						
Chlorobenzene	1	ug/L	ND	<1.00	ND	ND	ND	ND	ND	ND	ND	100	110						
Chloroform	1	ug/L	13.2	10.3	11.3	8.93	11.8	11.8	8.93	11.8	11.8	NS	0.15						
Chloromethane	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	3.6						
1,1-Dichloroethane	1	ug/L	ND	<1.00	ND	ND	ND	ND	ND	ND	ND	NS	800						
1,2-Dichloroethane	1	ug/L	ND	<1.00	ND	ND	ND	ND	ND	ND	ND	5	0.12						
1,1-Dichloroethene	1	ug/L	ND	<1.00	ND	ND	ND	ND	ND	ND	ND	7	0.044						
Trans 1,2-Dichloroethene	1	ug/L	1.55	1.51	1.83	1.5	1.42	1.42	1.5	1.42	1.42	100	120						
Cis 1,2-Dichloroethene	1	ug/L	ND	<1.00	0.53 J	0.41 J	0.44 J	0.44 J	0.41 J	0.44 J	0.44 J	70	61						
1,1,2,2-Tetrachloroethane	1	ug/L	ND	<1.00	ND	ND	ND	ND	ND	ND	ND	NS	0.053						
Tetrachloroethene	1	ug/L	5.38	5.1	5.86	5.07	5.01	5.01	5.07	5.01	5.01	5	1.1						
Toluene	1	ug/L	ND	<1.00	ND	ND	ND	ND	ND	ND	ND	1000	750						
1,2,4-Trichlorobenzene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	70	190						
1,1,1-Trichloroethane	1	ug/L	ND	<1.00	ND	ND	ND	ND	ND	ND	ND	200	540						
1,1,2-Trichloroethane	1	ug/L	ND	<1.00	ND	ND	ND	ND	ND	ND	ND	5	0.19						
Trichloroethene	1	ug/L	50.8	46.5	49.2	30.9	28.3	28.3	30.9	28.3	28.3	5	1.6						
Vinyl Chloride	1	ug/L	ND	<1.00	ND	ND	ND	ND	ND	ND	ND	2	0.019						

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was

confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside

acceptance ranges

E = Concentration exceeds the established method cali-

bration range but is w/in instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW-58 Y2Q1 0002480-12 16-Feb-00	MW-58 Y2Q2 0005523-02 17-May-00	MW-58 Y2Q3 0008592-04 22-Aug-00	MW-58 Y2Q4 0011216-04 08-Nov-00	MW-58 Y3S1 0102556-05 18-Feb-01	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
	pH	Conductivity (umhos)	Temperature	Turbidity (ntu)	DL	Units	
	6	6	8.1	6.7	5.4		
	222	219	178	110	223		
	17.7	20	NP	17.4	18.7		
	>999	>999	NP	NP	NP		
Laboratory Analyses							
TCL Volatile Organics (Method 8260B)							
Acetone	1	ND	ND	ND	ND	NS	6100
Benzene	1	ND	<1.00	ND	ND	5	0.32
Bromochloromethane	1	ND	<1.00	ND	ND	NS	0.17
Carbon Disulfide	1	ND	<1.00	ND	ND	NS	1000
Carbon Tetrachloride	1	ND	<1.00	0.26 J	0.43 J	5	0.16
Chlorobenzene	1	ND	<1.00	ND	ND	100	110
Chloroform	1	3.68	5.88	2.42	2.05	NS	0.15
Chloromethane	1	ND	<1.00	ND	ND	NS	3.6
1,1-Dichloroethane	1	ND	<1.00	ND	ND	NS	800
1,2-Dichloroethane	1	ND	<1.00	ND	ND	5	0.12
1,1,1-Trichloroethane	1	ND	<1.00	ND	ND	7	0.044
Trans 1,2-Dichloroethene	1	ND	<1.00	ND	ND	100	120
Cis 1,2-Dichloroethene	1	ND	<1.00	ND	ND	61	61
1,1,2,2-Tetrachloroethane	1	ND	<1.00	ND	ND	NS	0.053
Tetrachloroethene	1	ND	<1.00	0.41 J	0.40 J	5	1.1
Toluene	1	ND	<1.00	ND	ND	1000	750
1,2,4-Trichlorobenzene	1	ND	ND	ND	ND	70	190
1,1,1-Trichloroethane	1	ND	<1.00	ND	ND	200	540
1,1,2-Trichloroethane	1	ND	<1.00	ND	ND	5	0.19
Trichloroethene	1	4.36	4.22	1.44	2.47	5	1.6
Vinyl Chloride	1	ND	<1.00	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking
Water Standards

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NA = not available

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equipment blank

J = Estimated value - presence of the compound was
confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside
acceptance ranges

E = Concentration exceeds the established method cali-
bration range but is w/in instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW-67-Y2Q1 0002480-10	MW-67-Y2Q2	MW-67-Y2Q3	MW-67-Y2Q4	MW-67-Y3S1	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7 1999)
pH	15-Feb-00	NP	NP	NP	NP		
Conductivity (umhos)	6	NP	NP	NP	NP		
Temperature	189	NP	NP	NP	NP		
Turbidity (ntu)	17.7	NP	NP	NP	NP		
	0	NP	NP	NP	NP		
Laboratory Analyses							
DL Units							
TCL Volatile Organics (Method 8260B)							
Acetone	1	ug/L	NP	NP	NP	NS	6100
Benzene	1	ug/L	NP	NP	NP	5	0.32
Bromodichloromethane	1	ug/L	NP	NP	NP	NS	0.17
Carbon Disulfide	1	ug/L	NP	NP	NP	NS	1000
Carbon Tetrachloride	1	ug/L	NP	NP	NP	5	0.16
Chlorobenzene	1	ug/L	NP	NP	NP	100	110
Chloroform	1	ug/L	NP	NP	NP	NS	0.15
Chloromethane	1	ug/L	NP	NP	NP	NS	3.6
1,1-Dichloroethane	1	ug/L	NP	NP	NP	NS	800
1,2-Dichloroethane	1	ug/L	NP	NP	NP	5	0.12
Trans 1,2-Dichloroethene	1	ug/L	NP	NP	NP	7	0.044
Cis 1,2-Dichloroethene	1	ug/L	NP	NP	NP	100	120
1,1,2,2-Tetrachloroethane	1	ug/L	NP	NP	NP	70	61
Tetrachloroethene	1	ug/L	NP	NP	NP	NS	0.053
Toluene	1	ug/L	NP	NP	NP	5	1.1
1,2,4- Trichlorobenzene	1	ug/L	NP	NP	NP	1000	750
1,1,1-Trichloroethane	1	ug/L	NP	NP	NP	70	190
1,1,2-Trichloroethane	1	ug/L	NP	NP	NP	200	540
Trichloroethene	1	ug/L	NP	NP	NP	5	0.19
Vinyl Chloride	1	ug/L	NP	NP	NP	5	1.6
						2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

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bration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Laboratory Analyses		Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	pH Conductivity (umhos) Temperature Turbidity (ntu)	DL	Units	MW-68-Y202					MW-68-Y203					MW-68-Y204					MW-68-Y3S1	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region II RBCs-Tap Water October 7, 1989																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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acceptance ranges

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ibration range but is within instrument working range

TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Laboratory Analyses	Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW-69-Y2Q1 0002480-61 18-Feb-00	MW-69-Y2Q2 0005523-25 17-May-00	MW-69-Y2Q3 0008574-02 24-Aug-00	MW-69-Y2Q4 0011335-01 09-Nov-00	MW-69-Y3S1 0102451-15 14-Feb-01	Maximum Contaminant Level (MCL) - Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1996)
		pH	Conductivity (umhos)	Temperature	Turbidity (ntu)	Units		
		5.8	5.9	7.63	6.65	5.4		
		261	213	215	119	249		
		18.9	19.9		16.1	17.5		
		>999	>999		NP	NP		
TCL Volatile Organics (Method 8260B)								
Acetone	1 ug/L	ND	ND	ND	ND	ND	NS	6100
Benzene	1 ug/L	ND	<1.00	ND	ND	ND	5	0.32
Bromodichloromethane	1 ug/L	ND	<1.00	ND	ND	ND	NS	0.17
Carbon Disulfide	1 ug/L	ND	ND	ND	ND	ND	NS	1000
Carbon Tetrachloride	1 ug/L	ND	0.73 J	ND	ND	ND	5	0.16
Chlorobenzene	1 ug/L	ND	<1.00	ND	ND	ND	100	110
Chloroform	1 ug/L	ND	3.56	ND	2.12	ND	NS	0.15
Chloroethane	1 ug/L	ND	<1.00	ND	ND	ND	NS	3.6
1,1-Dichloroethane	1 ug/L	ND	<1.00	ND	ND	ND	NS	800
1,2-Dichloroethane	1 ug/L	ND	<1.00	ND	ND	ND	5	0.12
1,1,1-Trichloroethane	1 ug/L	ND	<1.00	ND	ND	ND	7	0.044
Trans 1,2-Dichloroethene	1 ug/L	2.26	19.1	0.86 J	12.3	1.41	100	120
Cis 1,2-Dichloroethene	1 ug/L	4.11	31.2	2.26	23.1	3.11	70	61
1,1,2,2-Tetrachloroethane	1 ug/L	ND	<1.00	4.56	ND	ND	NS	0.053
Tetrachloroethene	1 ug/L	1.76	4.87	0.68 J	6.39	0.95 J	5	1.1
Toluene	1 ug/L	ND	<1.00	ND	ND	ND	1000	750
1,2,4-Trichlorobenzene	1 ug/L	ND	ND	ND	ND	ND	70	190
1,1,1-Trichloroethane	1 ug/L	ND	<1.00	ND	ND	ND	200	540
1,1,2-Trichloroethane	1 ug/L	ND	<1.00	ND	ND	ND	5	0.19
Trichloroethene	1 ug/L	99.2	642	50.4	464	42.2	5	1.6
Vinyl Chloride	1 ug/L	ND	<1.00	ND	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

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TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW 75-V2Q1 0002423-08 15-Feb-00	MW 70-Top-Y2Q2 0005523-30 18-May-00	MW 70-Bottom-Y2Q2 0005523-31 18-May-00	MW 70-Y2Q3 0008674-01 24 Aug-00	MW 70-Y2Q4 0011335-10 09-Nov-00	MW 70-Y3S1 0102451-13 15-Feb-01	Maximum Contaminant Level (MCL)-Primary Drinking Water October 7, 1998 Standard
	pH 5.8	5.9	5.9	6.98	6.5	5.3	
Conductivity (umhos)	233	213	213	209	111	229	
Temperature	18.5	23.1	23.1	NP	17.8	17.1	
Turbidity (ntu)	>999	601	601	NP	NP	NP	
Laboratory Analyses							
TCL Volatile Organics (Method 8260B)							
DL	Units						
Acetone	1	ug/L	ND	ND	ND	50.4	NS
Benzene	1	ug/L	<1.00	<1.00	ND	ND	5
Bromodichloromethane	1	ug/L	<1.00	<1.00	ND	ND	NS
Carbon Disulfide	1	ug/L	ND	ND	ND	ND	NS
Carbon Tetrachloride	1	ug/L	<1.00	0.64 J	2.46	0.45 J	5
Chlorobenzene	1	ug/L	<1.00	<1.00	ND	ND	100
Chloroform	1	ug/L	4.36	5.18	9.37	1.47	NS
Chloromethane	1	ug/L	<1.00	<1.00	ND	ND	NS
1,1-Dichloroethane	1	ug/L	<1.00	<1.00	ND	ND	NS
1,2-Dichloroethane	1	ug/L	<1.00	<1.00	ND	ND	NS
1,1,1-Trichloroethane	1	ug/L	<1.00	<1.00	ND	ND	5
Trans 1,2-Dichloroethene	1	ug/L	0.61 J	<1.00	ND	ND	0.12
Cis 1,2-Dichloroethene	1	ug/L	149	12	57.3	7.65	120
1,1,2,2-Tetrachloroethane	1	ug/L	522	54.8	247	34.3	61
1,1,2,2-Tetrachloroethane	1	ug/L	4530	342	3370	482	NS
Toluene	1	ug/L	89.7	5.35	32.5	5.73	5
1,2,4-Trichlorobenzene	1	ug/L	ND	<1.00	ND	ND	1000
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	ND	750
1,1,2-Trichloroethane	1	ug/L	<1.00	<1.00	ND	ND	190
Trichloroethene	1	ug/L	2.64	3.93	15.2	1.99	540
Vinyl Chloride	1	ug/L	538	720	4040	544	5
	1	ug/L	<1.00	<1.00	1.69	0.93 J	2
				0.62 J			0.019

Only compounds detected are listed

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TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	MW-71-Y2Q1 0002423-09 15-Feb-00	MW-71-Y2Q1 0005523-28 18-May-00	MW-71-Y2Q2 0005523-28 23-Aug-00	MW-71-Y2Q3 0008634-07 09-Nov-00	MW-71-Y2Q4 0011335-02 15-Feb-01	MW-71-Y3S1 0102451-12 15-Feb-01	Maximum Contaminant Level (MCL) Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7 1999)
pH	5.9	5.9	5.7	7.04	5.3			
Conductivity (umhos)	226	203	149	121	230			
Temperature	18.1	20.2	NP	14.3	18.3			
Turbidity (ntu)	>999	>999	NP	NP	NP			
Laboratory Analyses	DL		Units					
TCL Volatile Organics (Method 8260B)								
Acetone	1	ug/L	ND	ND	ND	ND	NS	6100
Benzene	1	ug/L	<1.00	ND	ND	ND	5	0.32
Bromodichloromethane	1	ug/L	<1.00	ND	ND	ND	NS	0.17
Carbon Disulfide	1	ug/L	ND	ND	ND	1.49	NS	1000
Carbon Tetrachloride	1	ug/L	\$3.9	34	26.5	24.9	5	0.16
Chlorobenzene	1	ug/L	<1.00	ND	ND	ND	100	110
Chloroform	1	ug/L	986	1080	889*	824	NS	0.15
Chloromethane	1	ug/L	<1.00	ND	ND	ND	NS	3.6
1,1-Dichloroethane	1	ug/L	<1.00	ND	ND	ND	NS	800
1,2-Dichloroethane	1	ug/L	<1.00	ND	ND	ND	5	0.12
1,1,1-Trichloroethane	1	ug/L	4.7	3.72	2.94	1.87	7	0.044
Trans 1,2-Dichloroethene	1	ug/L	11.5	9.88	8.94	6.89	100	120
Cis 1,2-Dichloroethene	1	ug/L	97.7	161	168	66.2	70	81
1,1,2,2-Tetrachloroethane	1	ug/L	10	4.54	7.02	5.18	NS	0.053
Tetrachloroethene	1	ug/L	ND	<1.00	ND	ND	5	1.1
Toluene	1	ug/L	ND	ND	ND	ND	1000	750
1,2,4-Trichlorobenzene	1	ug/L	ND	ND	ND	ND	70	190
1,1,1-Trichloroethane	1	ug/L	ND	<1.00	ND	ND	200	540
1,1,2-Trichloroethane	1	ug/L	3.21	<1.00	4.04	1.98	5	0.19
Trichloroethene	1	ug/L	330	239	142*	77.8	5	1.6
Vinyl Chloride	1	ug/L	ND	<1.00	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

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TABLE 1
Semi-Annual Analytical Results for TCL Volatile Organics
on Sampled Monitoring Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected		MW-75-Y3S1 0102408-08		MW-76-Y3S1 0102408-05		MW-78-Y3S1 0102556-01		MW-80-Y3S1 0102556-02		MW-95-Y3S1 0102408-03		Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7 -1999)
pH	Conductivity (umhos)	pH		Conductivity (umhos)		pH		Conductivity (umhos)		pH			
		Temperature		Turbidity (ntu)		Temperature		Turbidity (ntu)		Temperature			
Laboratory Analyses		DL	Units										
TCL Volatile Organics (Method 8260B)													
Acetone	1	ug/L		ND	ND	97.9	ND	ND	ND	ND	ND	NS	6100
Benzene	1	ug/L		ND	ND	13.2	ND	ND	ND	ND	ND	5	0.32
Bromodichloromethane	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	NS	0.17
Carbon Disulfide	1	ug/L		0.77 J	ND	ND	ND	ND	ND	190	ND	NS	1000
Carbon Tetrachloride	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	5	0.16
Chlorobenzene	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	100	110
Chloroform	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	NS	0.15
Chloromethane	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	NS	3.6
1,1-Dichloroethane	1	ug/L		ND	ND	1.02	ND	ND	ND	ND	ND	NS	800
1,2-Dichloroethane	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	5	0.12
1,1,1-Trichloroethane	1	ug/L		ND	ND	30.1	ND	ND	ND	ND	ND	7	0.044
Trans 1,2-Dichloroethene	1	ug/L		6.84	ND	ND	ND	ND	ND	100	ND	100	120
Cis 1,2-Dichloroethene	1	ug/L		17.8	ND	2.52	ND	ND	ND	ND	ND	70	61
1,1,2,2-Tetrachloroethane	1	ug/L		694	ND	3.34	ND	ND	ND	ND	ND	NS	0.053
Tetrachloroethene	1	ug/L		3.98	ND	14	ND	ND	ND	ND	ND	5	1.1
Toluene	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	1000	750
1,2,4-Trichlorobenzene	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	70	190
1,1,1-Trichloroethane	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	200	540
1,1,2-Trichloroethane	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	5	0.19
Trichloroethene	1	ug/L		258	ND	9.6	ND	ND	ND	ND	ND	5	1.6
Vinyl Chloride	1	ug/L		ND	ND	ND	ND	ND	ND	ND	ND	2	0.019

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

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acceptance ranges

E = Concentration exceeds the established method cali-
bration range but is within instrument working range

TABLE 2
Semi-Annual Analytical Results for TCL Volatile Organics
on System Recovery Wells

Sample Identification Number			RW-1A-Y2Q1	RW-1A-Y2Q2	RW-1A-Y2Q3	RW-1A-Y2Q4	RW-1A-Y2Q5	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7 1999)
Laboratory & Lab Sample ID No			0002423-16	000523-20	0008634-08	0011335-06	0011335-06	NP	
Date Sample Collected			15-Feb-00	17-May-00	8/23/00	11/9/00	11/9/00	NP	
pH			5.8	5.8	7.6	7.1	NP	NP	
Conductivity (umhos)			254	262	201	119	NP	NP	
Temperature			17.4	19.4	NP	16.7	NP	NP	
Turbidity (ntu)			12.7	62.4	NP	NP	NP	NP	
DL									
Units									
Laboratory Analyses									
TCL Volatile Organics (Method 8260B)									
Acetone	20	ug/L	ND	ND	ND	ND	ND	NP	6100
2-Butanone (MEK)	20	ug/L	ND	ND	ND	ND	ND	NP	1900
Carbon Tetrachloride	1	ug/L	15.20	10.60	9.47	15.60	NP	NP	0.16
Chloroform	1	ug/L	397.00	339.00	292*	420**	NP	NP	0.15
1,1-Dichloroethane	1	ug/L	ND	<1.00	ND	ND	NP	NP	800
1,2-Dichloroethane	1	ug/L	ND	<1.00	ND	ND	NP	NP	NS
1,1,1-Trichloroethane	1	ug/L	ND	<1.00	ND	ND	NP	NP	0.12
Trans 1,2-Dichloroethene	1	ug/L	1.40	0.96 J	0.96 J	1.59	NP	NP	0.044
Cis 1,2-Dichloroethene	1	ug/L	3.63	2.49	2.75	3.29	NP	NP	120
1,1,2,2-Tetrachloroethane	1	ug/L	49.80	25.80	35.30	43.90	NP	NP	61
Tetrachloroethene	1	ug/L	3.14	2.31	2.20	2.62	NP	NP	0.053
1,1,1-Trichloroethane	1	ug/L	ND	<1.00	ND	ND	NP	NP	1.1
1,1,2-Trichloroethane	1	ug/L	1.54	0.82 J	1.08	1.39	NP	NP	540
Trichloroethene	1	ug/L	119.00	73.00	73.90	66.40	NP	NP	0.19
								NP	1.6

TABLE 2
Semi-Annual Analytical Results for TCL Volatile Organics
on System Recovery Wells

Sample Identification Number			RW-1B-Y2Q3	RW-1B-Y2Q4	RW-1B-Y3S1	RW-01-Y2Q1	RW-01-Y2Q2	RW-01-Y2Q3	RW-01-Y2Q4	RW-01-Y3S1	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)	
Laboratory & Lab Sample ID No			0008634-04	0011335-07	NP	0002480-04	0005523-21	0008634-10	0011335-05	NP			
Date Sample Collected			23-Aug-00	9-Nov-00	NP	16-Feb-00	17-May-00	23-Aug-00	09-Nov-00	NP			
pH			7.5	7.1	NP	6.1	6.1	7.5	7.2	NP			
Conductivity (umhos)			257	120	NP	358	407	291	119	NP			
Temperature			NP	16.7	NP	18.2	19.3	NP	16.3	NP			
Turbidity (ntu)			NP	NP	NP	101	138	NP	NP	NP			
DL													
Units													
Laboratory Analyses													
TCL Volatile Organics (Method 8260B)	Acetone	20	ug/L	ND	ND	NP	ND	ND	ND	ND	NP	NS	6100
	2-Butanone (MEK)	20	ug/L	ND	ND	NP	ND	ND	ND	ND	NP	NS	1900
	Carbon Tetrachloride	1	ug/L	26.10	20.10	NP	42.40	45.40	41.50	46.10	NP	5	0.16
	Chloroform	1	ug/L	49.40	37.00	NP	15.70	22.80	15.50	13.10	NP	NS	0.15
	1,1-Dichloroethane	1	ug/L	ND	ND	NP	ND	<1.00	ND	ND	NP	NS	800
	1,2-Dichloroethane	1	ug/L	ND	ND	NP	ND	<1.00	ND	ND	NP	5	0.12
	1,1-Dichloroethane	1	ug/L	ND	ND	NP	ND	<1.00	ND	ND	NP	7	0.044
	Trans 1,2-Dichloroethane	1	ug/L	1.70	1.22	NP	0.93 J	1.18	0.80 J	1.18	NP	100	120
	Cis 1,2-Dichloroethane	1	ug/L	5.57	3.66	NP	ND	<1.00	ND	ND	NP	61	70
	1,1,2,2-Tetrachloroethane	1	ug/L	ND	ND	NP	ND	<1.00	ND	ND	NP	NS	0.053
	Tetrachloroethene	1	ug/L	2.84	1.93	NP	4.66	4.28	3.99	3.77	NP	5	1.1
	1,1,1-Trichloroethane	1	ug/L	ND	ND	NP	0.95 J	<1.00	ND	ND	NP	200	540
	1,1,2-Trichloroethane	1	ug/L	0.32 J	ND	NP	ND	<1.00	ND	ND	NP	5	0.19
Trichloroethene	1	ug/L	35.70	21.10	NP	35.20	45.50	40.20	28.00	NP	5	1.6	

TABLE 2
Semi-Annual Analytical Results for TCL Volatile Organics
on System Recovery Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	RW 02-Y2Q1 0002840-02 15-Feb-00	RW-02-Y2Q2 0005523-08 17-May-00	RW-02-Y2Q3 0008534-02 23-Aug-00	RW-02-Y2Q4 0011335-09 09-Nov-00	RW-02-Y3S1 NP	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
pH	5.8	5.9	7.9	7.1	NP		
Conductivity (umhos)	296	267	268	106	NP		
Temperature	17.4	19.7	NP	16.8	NP		
Turbidity (ntu)	168	128	NP	NP	NP		
Laboratory Analyses							
	DL	Units					
TCL Volatile Organics (Method 8260B)							
Acetone	20	ug/L	ND	ND	NP	NS	6100
2-Butanone (MEK)	20	ug/L	ND	ND	NP	NS	1900
Carbon Tetrachloride	1	ug/L	15.70	16.80	NP	5	0.16
Chloroform	1	ug/L	14.20	15.40	NP	NS	0.15
1,1-Dichloroethane	1	ug/L	ND	ND	NP	NS	800
1,2-Dichloroethane	1	ug/L	ND	ND	NP	5	0.12
1,1-Dichloroethene	1	ug/L	ND	ND	NP	7	0.044
Trans 1,2-Dichloroethene	1	ug/L	1.69	1.77	NP	100	120
Cis 1,2-Dichloroethene	1	ug/L	17.40	13.60	NP	70	61
1,1,2,2-Tetrachloroethane	1	ug/L	4.04	ND	NP	NS	0.053
Tetrachloroethene	1	ug/L	1.25	1.29	NP	5	1.1
1,1,1-Trichloroethane	1	ug/L	ND	ND	NP	200	540
1,1,2-Trichloroethane	1	ug/L	0.61 J	0.51 J	NP	5	0.19
Trichloroethene	1	ug/L	21.40	20.60	NP	5	1.6

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside

acceptance ranges

E = Concentration exceeds the established method

calibration range, but is within the working range of the

instrument

TABLE 2
Semi-Annual Analytical Results for TCL Volatile Organics
on System Recovery Walls

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	RW-03-Y1Q2 9905638-01 24-May-99	RW-03-Y1Q3 9908741-15 27-Aug-99	RW-03-Y1Q4 9911028-01 01-Nov-99	RW-03-Y2Q1 0002385-01 14-Feb-00	RW-03-Y2Q2 0005523-33 18-May-00	RW-03-Y2Q3 0008674-08 24-Aug-00	RW-03-Y2Q4 0011593-08 20-Nov-00	RW-03-Y3S1	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
	pH	pH	pH	pH	pH	pH	pH	pH		
Conductivity (umhos)	231	272	313	258	NP	410	748	NP		
Temperature	18.6	19.6	18.3	16.3	NP	NP	18.7	NP		
Turbidity (ntu)	10	6	0.1	0.2	NP	NP	NP	NP		
Laboratory Analyses	Units									
	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL
TCL Volatile Organics (Method 8260B)										
Acetone	20 ug/L	ND	ND	ND	ND	ND	ND	NP	NS	6100
2-Butanone (MEK)	20 ug/L	ND	ND	ND	ND	ND	ND	NP	NS	1900
Carbon Tetrachloride	1 ug/L	13.30	10.50	13.20	16.30	13.80	16.00	NP	5	0.18
Chloroform	1 ug/L	1.36	5.66	5.24	5.51	4.77	5.36	NP	NS	0.15
1,1-Dichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	NS	800
1,2-Dichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	5	0.12
1,1-Dichloroethene	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	7	0.044
Trans 1,2-Dichloroethene	1 ug/L	3.94	2.97	3.31	7.42	4.78	7.53	NP	100	120
Cis 1,2-Dichloroethene	1 ug/L	56.00	47.00	44.00	138.00	70.80	160.00	NP	70	61
1,1,2,2-Tetrachloroethane	1 ug/L	42.50	40.80	42.30	85.50	59.60	97.50	NP	NS	0.053
Tetrachloroethene	1 ug/L	ND	0.73 J	1.01	0.73 J	0.84 J	ND	NP	5	1.1
1,1-Trichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	200	540
1,1,2-Trichloroethane	1 ug/L	2.73	1.98	1.85	3.23	2.39	ND	NP	5	0.19
Trichloroethene	1 ug/L	54.30	42.10	55.00	78.80	57.40	62.10	NP	5	1.6

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was

confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside

acceptance ranges

E = Concentration exceeds the established method

calibration range but is within the working range of the

instrument

TABLE 2
Semi-Annual Analytical Results for TCL Volatile Organics
on System Recovery Wells

Sample Identification Number Laboratory & Lab Sample ID No Data Sample Collected	RW-04-Y1Q2	RW-04-Y1Q3	RW-04-Y1Q4	RW-04-Y2Q1	RW-04-Y2Q2	RW-04-Y2Q3	RW-04-Y2Q4	RW-04-Y3S1	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
	9905638-02 24-May-99	9908740-16 27-Aug-99	9911028-02 01-Nov-99	0002385-02 14-Feb-00	0005395-07 15-May-00	0008574-15 24-Aug-00	0011583-07 20-Nov-00	0102451-01 15-Feb-01		
pH	6.0	7.3	6.1	6.0	6.0	7.3	6.2	NP		
Conductivity (umhos)	145	7	214	237	219	216	235	NP		
Temperature	19.3	20.6	18.6	17.1	22.1	NP	17	NP		
Turbidity (ntu)	5	5	0.2	0.6	0.3	NP	NP	NP		
Laboratory Analyses		Units								
TCL Volatile Organics (Method 8260B)		DL								
Acetone	20 ug/L	ND	ND	ND	ND	ND	180.00	ND	NS	6100
2-Butanone (MEK)	20 ug/L	ND	ND	ND	ND	ND	2760**	ND	NS	1900
Carbon Tetrachloride	1 ug/L	3.23	<100	6.97	4.26	5.83	ND	8.19	5	0.16
Chloroform	1 ug/L	2.3 B	<100	2.80	2.27	2.82	ND	3.60	NS	0.15
1,1-Dichloroethane	1 ug/L	ND	<100	ND	<1.00	ND	ND	ND	NS	800
1,2-Dichloroethane	1 ug/L	ND	<100	ND	<1.00	ND	ND	ND	5	0.12
1,1,1-Trichloroethane	1 ug/L	ND	<100	ND	<1.00	ND	ND	ND	7	0.044
Trans 1,2-Dichloroethene	1 ug/L	2.74	<100	2.15	2.65	4.72	3.08	5.90	100	120
Cis 1,2-Dichloroethene	1 ug/L	15.40	26.6 J	15.00	16.00	29.60	17.80	29.60	70	81
1,1,2,2-Tetrachloroethane	1 ug/L	21.90	<100	12.30	12.90	20.20	14.90	20.60	NS	0.053
Tetrachloroethene	1 ug/L	2.40	<100	2.03	1.97	5.14	ND	4.98	5	1.1
1,1,1-Trichloroethane	1 ug/L	ND	<100	ND	<1.00	ND	ND	ND	200	540
1,1,2-Trichloroethane	1 ug/L	1.50	<100	0.76 J	0.70 J	1.41	ND	ND	5	0.19
Trichloroethene	1 ug/L	294.00	360.00	252.00	316.00	438*	204.00	337.00	5	1.6

*The values shown in the previous report (Y2Q3) were 'E' qualified values. These have been changed here to reflect the values obtained upon dilution of the samples

**Original analysis was 'E' qualified. This value represents the diluted sample result.

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was

confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside

acceptance ranges

E = Concentration exceeds the established method

calibration range but is within the working range of the

instrument

TABLE 2
Semi-Annual Analytical Results for TCL Volatile Organics
on System Recovery Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	RW-05-Y1Q2 9905638-03 24-May-99	RW-05-Y1Q3 9908741-17 27-Aug-99	RW-05-Y1Q4 9911028-03 01-Nov-99	RW-05-Y2Q1 0002385-03 14-Feb-00	RW-05-Y2Q2 NP	RW-05-Y2Q3 0008674-18 24-Aug-00	RW-05-Y2Q4 0011503-05 20-Nov-00	RW-05-Y3S1 0102451-02 15-Feb-01	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
pH	5.9	7.4	6.0	5.9	NP	7.3	6.2	NP		
Conductivity (umhos)	151	190	220	220	NP	214	222	NP		
Temperature	18	19.7	17.8	16.4	NP	NP	17	NP		
Turbidity (ntu)	6	17	0.1	0.6	NP	NP	NP	NP		
Laboratory Analyses										
TCL Volatile Organics (Method 8260B)										
Acetone	20 ug/L	ND	ND	ND	ND	ND	ND	ND	NS	610
2-Butanone (MEK)	20 ug/L	ND	ND	ND	ND	ND	76.40	ND	NS	1900
Carbon Tetrachloride	1 ug/L	ND	<100	ND	NP	2.65	ND	ND	5	0.16
Chloroform	1 ug/L	ND	<100	1.36	NP	1.29	ND	1.00	NS	0.15
1,1-Dichloroethane	1 ug/L	ND	<100	ND	NP	ND	ND	ND	NS	800
1,2-Dichloroethane	1 ug/L	ND	<100	ND	NP	ND	ND	ND	5	0.12
1,1,1-Trichloroethane	1 ug/L	ND	<100	ND	NP	ND	ND	ND	7	0.044
Trans 1,2-Dichloroethene	1 ug/L	15.70	<100	12.30	NP	2.28	ND	10.10	100	120
Cis 1,2-Dichloroethene	1 ug/L	50.10	48.4 J	50.20	NP	17.90	ND	36.10	70	61
1,1,2,2-Tetrachloroethane	1 ug/L	562.00	2260.00	3120.00	NP	167.00	ND	381.00	NS	0.053
Tetrachloroethene	1 ug/L	12.90	45.1 J	10.80	NP	1.45	ND	8.19	5	1.1
1,1,1-Trichloroethane	1 ug/L	ND	<100	ND	NP	ND	ND	ND	200	540
1,1,2-Trichloroethane	1 ug/L	ND	<100	1.93	NP	0.60 J	ND	ND	5	0.19
Trichloroethene	1 ug/L	1180.00	1290.00	1170.00	NP	132.00	1.89	407.00	5	1.6

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

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Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

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equipment blank

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confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside

acceptance ranges

E = Concentration exceeds the established method

calibration range, but is within the working range of the

instrument

TABLE 2
Semi-Annual Analytical Results for TCL Volatile Organics
on System Recovery Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	RW-06-Y1Q2 9905639-04 24-May-99	RW-06-Y1Q3 990741-18 27-Aug-99	RW-06-Y1Q4 9911028-04 01-Nov-99	RW-06-Y2Q1 0002385-04 14-Feb-00	RW-06-Y2Q2 0005399-06 15-May-00	RW-06-Y2Q3 0008674-17 24-Aug-00	RW-06-Y2Q4 0011593-04 20-Nov-00	RW-06-Y3S1 NP	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1999)
pH	4.6	7.4	6.2	5.9	5.9	7.5	6.3	NP		
Conductivity (umhos)	168	208	250	268	250	251	NP	NP		
Temperature	19	20	17.8	16.6	20.8	NP	17.4	NP		
Turbidity (ntu)	6	31	0.5	0.2	0.1	NP	NP	NP		
Laboratory Analyses										
TCL Volatile Organics (Method 8260B)	DL	DL	DL	DL	DL	DL	DL	DL		
Acetone	20 ug/L	ND	ND	ND	ND	ND	ND	NP	NS	6100
2-Butanone (MEK)	20 ug/L	ND	ND	ND	ND	ND	47.90	NP	NS	1900
Carbon Tetrachloride	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	5	0.16
Chloroform	1 ug/L	3.09	2.48	3.20	2.26	1.98	2.38	NP	NS	0.15
1,1-Dichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	NS	800
1,2-Dichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	5	0.12
1,1,1-Trichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	7	0.044
Trans 1,2-Dichloroethene	1 ug/L	1.89	1.59	0.69 J	2.03	2.28	1.25	NP	100	120
Cis 1,2-Dichloroethene	1 ug/L	4.53	2.34	1.18	5.12	5.96	3.14	NP	70	61
1,1,2,2-Tetrachloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	NS	0.053
1,1,1-Trichloroethane	1 ug/L	4.93	5.60	6.48	5.52	5.90	2.18	NP	5	1.1
1,1,2-Trichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	200	540
Trichloroethene	1 ug/L	ND	ND	ND	<1.00	ND	ND	NP	5	0.19
		22.00	32.70	24.20	37.90	34.00	11.30	NP	5	1.6

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

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Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

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B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was

confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside

acceptance ranges

E = Concentration exceeds the established method

calibration range, but is within the working range of the

instrument

TABLE 2
Semi-Annual Analytical Results for TCL Volatile Organics
on System Recovery Wells

Laboratory Analyses	Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	DL	Units	RW-07-Y102 9905638-05 24-May-99	RW-07-Y103 9908741-19 27-Aug-99	RW-07-Y104 9911028-05 01-Nov-99	RW-07-Y2Q1 0002385-05 14-Feb-00	RW-07-Y2Q2 0005399-04 15-May-00	RW-07-Y2Q3 0008741-13 24-Aug-00	RW-07-Y2Q4 0011593-03 20-Nov-00	RW-07-Y3S1	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7, 1998)
	pH			5.9	7.4	5.9	5.9	5.8	7.3	6.2	NP		
	Conductivity (umhos)			102	211	250	268	257	251	NP	NP		
	Temperature			18	20	18.2	16.6	21.6	NP	16.4	NP		
	Turbidity (ntu)			3	5	0.1	0.2	0.2	NP	NP	NP		
TCL Volatile Organics (Method 8260B)													
Acetone	20	ug/L		ND	ND	ND	ND	ND	ND	ND	NP	NS	610
2-Butanone (MEK)	20	ug/L		ND	ND	ND	ND	ND	ND	ND	NP	NS	1900
Carbon Tetrachloride	1	ug/L		ND	0.54 J	ND	1.84	<1.00	ND	0.43 J	NP	5	0.18
Chloroform	1	ug/L		ND	3.39	2.28	1.27	1.59	1.59	3.08	NP	NS	0.15
1,1-Dichloroethane	1	ug/L		ND	ND	ND	ND	<1.00	ND	ND	NP	NS	800
1,2-Dichloroethane	1	ug/L		ND	ND	ND	ND	<1.00	ND	ND	NP	5	0.12
1,1-Dichloroethene	1	ug/L		ND	ND	ND	ND	<1.00	ND	ND	NP	7	0.044
Trans 1,2-Dichloroethene	1	ug/L		17.10	17.30	23.60	19.20	17.40	19.70	22.90	NP	100	120
Cis 1,2-Dichloroethene	1	ug/L		54.60	59.10	74.70	70.30	59.60	70.60	88.60	NP	70	61
1,1,2,2-Tetrachloroethane	1	ug/L		28.80	43.20	60.70	49.90	52.20	65.80	49.80	NP	NS	0.053
Tetrachloroethene	1	ug/L		7.94	9.81	12.20	9.33	7.76	10.70	9.30	NP	5	1.1
1,1,1-Trichloroethane	1	ug/L		ND	ND	ND	ND	<1.00	ND	ND	NP	200	540
1,1,2-Trichloroethane	1	ug/L		ND	0.85 J	1.08	1.03	0.95 J	1.44	1.88	NP	5	0.19
Trichloroethene	1	ug/L		89.50	94.00	145.00	102.00	97.20	98.90	101.00	NP	5	1.6

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or equipment blank

J = Estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside acceptance ranges

E = Concentration exceeds the established method calibration range but is within the working range of the instrument

TABLE 2
Semi-Annual Analytical Results for TCL Volatile Organics
on System Recovery Wells

Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	RW-08-Y1Q2	RW-08-Y1Q3	RW-08-Y1Q4	RW-08-Y2Q1	RW-08-Y2Q2	RW-08-Y2Q3	RW-08-Y2Q4	RW-08-Y3S1	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7 1999)
	9905638-06 24-May-99	9908741-20 27-Aug-99	9911028-06 01-Nov-99	0002385-05 14-Feb-00	0005399-03 15-May-00	0008674-16 24-Aug-00	0011593-02 20-Nov-00	0102451-03 15-Feb-01		
pH	5.8	7.5	6.1	5.8	6.0	7.5	6.5	NP		
Conductivity (umhos)	195	252	316	323	301	298	NP	NP		
Temperature	17.7	19.1	18.4	15.7	20.4	NP	16.3	NP		
Turbidity (ntu)	3	0	0.3	0.2	0.1	NP	NP	NP		
Laboratory Analyses										
TCL Volatile Organics (Method 8260B)										
DL	Units									
Acetone	20 ug/L	ND	ND	ND	ND	ND	ND	ND	NS	6100
2-Butanone (MEK)	20 ug/L	ND	ND	ND	ND	ND	43.40	ND	NS	1900
Carbon Tetrachloride	1 ug/L	1.30	1.11	1.03	0.89 J	0.94 J	ND	1.05	5	0.16
Chloroform	1 ug/L	14.10	10.30	10.50	8.41	8.72	6.53	11.40	NS	0.15
1,1-Dichloroethane	1 ug/L	ND	7.84	ND	<1.00	ND	ND	ND	NS	800
1,2-Dichloroethane	1 ug/L	ND	27.80	ND	<1.00	ND	ND	ND	5	0.12
1,1-Dichloroethene	1 ug/L	15.20	9.79	6.82	4.98	5.10	ND	5.65	7	0.044
Trans 1,2-Dichloroethene	1 ug/L	42.10	ND	30.80	37.60	39.70	11.90	30.50	100	120
Cis 1,2-Dichloroethene	1 ug/L	128.00	89.10	115.00	120.00	128.00	40.10	118.00	70	61
1,1,2,2-Tetrachloroethane	1 ug/L	88.00	119.00	121.00	121.00	109.00	ND	166.00	NS	0.053
Tetrachloroethene	1 ug/L	5.96	6.14	6.67	5.19	5.66	2.02	7.22	5	1.1
1,1,1-Trichloroethane	1 ug/L	ND	ND	ND	<1.00	ND	ND	ND	200	540
1,1,2-Trichloroethane	1 ug/L	1.32	1.28	1.58	1.74	1.97	ND	2.09	5	0.19
Trichloroethene	1 ug/L	273.00	173.00	190.00	268.00	190.00	56.90	105.00	5	1.6

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BOL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking

Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or

equipment blank

J = Estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside acceptance ranges

E = Concentration exceeds the established method calibration range, but is within the working range of the instrument

TABLE 2
Semi-Annual Analytical Results for TCL Volatile Organics
on System Recovery Wells

Laboratory Analyses	Sample Identification Number Laboratory & Lab Sample ID No Date Sample Collected	DL	Units	RW-09-Y1Q2	RW-09-Y1Q3	RW-09-Y1Q4	RW-09-Y2Q1	RW-09-Y2Q2	RW-09-Y2Q3	RW-09-Y2Q4	RW-09-Y3S4	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs-Tap Water (October 7 1999)
				9905538-07 24-May-99 5.9	9908741-21 27-Aug-99 7.4	9911028-06 01-Nov-99 6.0	0902385-08 14-Feb-00 5.9	0905399-01 15-May-00 6.0	0908674-11 24-Aug-00 7.6	0911593-01 20-Nov-00 6.6	0102451-04 15-Feb-01 NP		
	pH												
	Conductivity (umhos)			220	262	327	388	340	345	NP	NP		
	Temperature			17.4	19.2	18.7	15.7	20.6	NP	19.4	NP		
	Turbidity (ntu)			2	183	0.1	0.5	0.2	NP	NP	NP		
TCL Volatile Organics (Method 8260B)													
Acetone	20 ug/L			ND	ND	ND	ND	ND	ND	ND	ND	NS	6100
2 Butanone (MEK)	20 ug/L			ND	ND	ND	ND	ND	ND	131.00	ND	NS	1900
Carbon Tetrachloride	1 ug/L			1.43	1.21	1.12	0.79 J	0.90 J	1.17	ND	1.00	5	0.16
Chloroform	1 ug/L			10.20	15.40	11.80	12.50	10.80	12.50	13.30	13.70	NS	0.15
1,1-Dichloroethane	1 ug/L			1.45	1.35	1.24	1.88	1.15	1.18	1.82	1.49	NS	800
1,2-Dichloroethane	1 ug/L			ND	0.63 J	0.53 J	0.70 J	<1.00	ND	ND	ND	5	0.12
1,1-Dichloroethene	1 ug/L			49.20	45.10	44.40	52.90	35.90	45.40	52.50	48.10	7	0.044
Trans 1,2-Dichloroethene	1 ug/L			3.18	1.94	1.86	2.23	2.24	2.53	ND	1.42	100	120
Cis 1,2-Dichloroethene	1 ug/L			8.47	5.65	4.95	5.45	6.03	7.68	2.02	4.74	70	61
1,1,2,2-Tetrachloroethane	1 ug/L			1.21	1.52	ND	2.98	<1.00	2.55	ND	3.01	NS	0.053
Tetrachloroethene	1 ug/L			41.50	37.70	38.80	61.20	32.10	32.90	54.30	39.60	5	1.1
1,1,1-Trichloroethane	1 ug/L			2.01	1.67	1.73	1.56	1.40	1.25	1.92	1.39	200	540
1,1,2-Trichloroethane	1 ug/L			ND	ND	ND	ND	<1.00	ND	ND	ND	5	0.19
Trichloroethene	1 ug/L			52.00	41.10	43.30	51.40	37.70	35.50	36.30	22.40	5	1.6

Only compounds detected are listed

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or equipment blank

J = Estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside acceptance ranges

E = Concentration exceeds the established method calibration range, but is within the working range of the instrument

TABLE 3
Summary of Analytical Results for Total Effluent (through January 2001) of the Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee

Sample Identification Number	ST-EFF-01	ST-EFF-02*	ST-EFF-03	ST-EFF-04	ST-EFF-04A (Duplicate)	ST-EFF-05	ST-EFF-06	City of Memphis
Laboratory ID No	9810617-01	9810819-01	9811263-01	9811475-01	9811479-04	9811705-01	9812045-01	Industrial Wastewater
Total System Effluent Sample Description	Week 1 of System Startup Testing	Week 2 of System Startup Testing	Week 1 of System Operation (O&M)	Week 2 of System Operation (O&M)	Week 2 of System Operation (O&M)	Week 3 of System Operation (O&M)	Week 4 of System Operation (O&M)	Discharge Max Levels
Date Effluent Sample Collected	19-Oct-98	26-Oct-98	9-Nov-98	16-Nov-98	23-Nov-98	30-Nov-98		
Instantaneous Flow Rate	230 GPM/331,200 GPD	165 GPM/233,200 GPD	198 GPM/286,560 GPD	169 GPM/244,512 GPD	158 GPM/228,072 GPD	145 GPM/208,800 GPD		961,600 GPD
Totalized Flow	1,382,400 GAL	3,408,480 GAL	5,976,540 GAL	7,748,880 GAL	9,343,370 GAL	10,969,840 GAL		
LABORATORY ANALYSES								Monthly Avar / One Day Max
pH (Method 150.1)	5.6	5.9	5.8	5.6	5.9	5.6	5.8	5.5 to 10.0
TAL Metals (EPA 200 Series)								mg/L
Aluminum (Method 200.7)	ND	ND	ND	ND	ND	ND	ND	1/2
Arsenic (Method 208.2)	ND	ND	ND	ND	ND	ND	ND	0.04 / 0.1
Barium (Method 200.7)	0.104	0.107	0.109	0.118	0.117	0.112	0.124	NS
Cadmium (Method 200.7)	ND	ND	ND	ND	ND	ND	ND	0.01 / 0.02
Calcium (Method 200.7)	23	21.6	24.7	25.3	25	24.8	26.5	NS
Chromium (Method 200.7)	ND	ND	ND	ND	ND	ND	ND	0.2 / 0.4
Copper (Method 200.7)	ND	ND	ND	ND	ND	ND	ND	0.2 / 0.4
Iron (Method 200.7)	0.07	0.046	0.022	0.019	0.019	0.036	0.01	0.2 / 0.4
Lead (Method 200.7)	ND	ND	ND	ND	ND	ND	ND	0.2 / 0.4
Magnesium (Method 200.7)	11.7	11.3	12.6	13	12.8	12.5	13	10 / 20
Manganese (Method 200.7)	ND	ND	ND	ND	ND	ND	ND	0.15 / 0.3
Mercury (Method 245.1)	ND	ND	ND	ND	ND	ND	ND	NS
Nickel (Method 200.7)	ND	ND	ND	ND	ND	ND	ND	NS
Potassium (Method 200.7)	0.916	0.781	0.883	0.975	1.15	0.9	0.703	0.001 / 0.002
Sodium (Method 200.7)	27.8	28.3	27.7	27.9	28.7	26.6	26.1	0.1 / 0.3
Zinc (Method 200.7)	0.047	0.129	0.095	0.098	0.095	0.063	0.062	NS
TCL Volatile Organics (Method 8260B)								ug/L
Carbon Tetrachloride	2.9	4.3	3.06	3.27	3.38	4.07	3.22	20 / 40
Chloroform	13.6	12.9	14.9	18.1	20.9	20.6	16.4	20 / 40
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	NS
1,1-Dichloroethene	11.6	5.42	9.99	13.9	15.6	20.3	14.6	50 / 100
Cis 1,2-Dichloroethene	28.2	43.8	30	33.3	36.8	37.3	32.8	50 / 100
Trans 1,2-Dichloroethene	5.96	9.27	6.68	7.47	7.92	8.42	7.47	50 / 100
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	10 / 20
1,1,2,2-Tetrachloroethane	87.1	159	234	234	257	272	176	500 / 1000
1,1,2-Trichloroethane	25.7	22.6	28.9	30	29.7	34.4	25.6	60 / 120
Toluene	ND	ND	ND	ND	ND	ND	ND	20 / 40
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	1	ND	10 / 20
1,1,2-Trichloroethane	1.81	2.82	1.59	1.46	1.5	1.3	1.1	50 / 100
Zinc	108	226	195	225	220	217	160	400 / 800
TCL Semi-Volatile Organics (Method 8270C)								ug/L
Bis(2-ethylhexyl)phthalate	ND	23.6B	ND	ND	ND	26B	ND	10 / 20
Di-n-butyl Phthalate	91.2	2.5J	ND	ND	ND	ND	ND	30 / 60
Naphthalene	ND	ND	ND	ND	ND	ND	ND	10 / 20
Phenol	ND	ND	ND	ND	ND	ND	ND	10 / 20

NOTE: Compounds included in this table are those listed in Section D.3 and collected as part of the analytical methods conducted per Section F.1 of Industrial Wastewater Discharge Agreement.

All analyses performed by Environmental Testing & Consulting, Inc., Memphis, TN.

* = Recovery well RW-09 was not in operation at the time of sample collection.

** = Recovery well RW-08 was not in operation at the time of sample collection.

A = Recovery well RW-03 was not in operation at the time of sample collection.

NS = no standard listed in the Industrial Wastewater Discharge Agreement.

J = estimated value. presence of the compound was confirmed but less than the reported DL.

P = estimated value. quality control recoveries outside acceptance range.

ND = not detected.

B = analysis detected in associated method and/or equipment blank.

ug/L = micrograms per liter.

DL = detection limit.

GPM = gallons per minute.

91.2 = bold number indicates that value exceeds Discharge Max Levels.

A = Effluent meter zeroed out 03-Nov-99.

TABLE 3
Summary of Analytical Results for Total Effluent (through January 2001) of the Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee

Sample Identification Number		ST-EFF-07*	ST-EFF-07A* (Duplicate)	ST-EFF-08	ST-EFF-09	ST-EFF-HG-09A	ST-EFF-HG-05 (Duplicate)	ST-EFF-HG-09B	ST-EFF-HG-09C	City of Memphis Industrial Wastewater Discharge Max. Levels
Laboratory ID No	Laboratory ID No	8812764-01	8812764-02	9901688-01	9902664-01	9902702-01	9902702-02	9902756-01	9902775-01	
Total System Effluent Sample Description		Week 17 of System Operation (QAM)								
Date Effluent Sample Collected		Week 17 of System Operation (QAM)								
Instantaneous Flow Rate		23-Feb-99								
Totalized Flow		24-Feb-99								
LABORATORY ANALYSES		25-Feb-99								
pH (Method 150.1)		-								
Aluminum (Method 200.7)		-								
Arsenic (Method 206.2)		-								
Barium (Method 200.7)		-								
Cadmium (Method 200.7)		-								
Calcium (Method 200.7)		-								
Chromium (Method 200.7)		-								
Copper (Method 200.7)		-								
Iron (Method 200.7)		-								
Lead (Method 200.7)		-								
Magnesium (Method 200.7)		-								
Manganese (Method 200.7)		-								
Mercury (Method 245.1)		-								
Nickel (Method 200.7)		-								
Potassium (Method 200.7)		-								
Sodium (Method 200.7)		-								
Zinc (Method 200.7)		-								
TCL Volatile Organics (Method 8260B)		-								
Carbon Tetrachloride	1	4.50	4.72	2.32	2.53	-	-	-	-	ug/L
Chloroform	1	10.1	10.3	9.95	6.64	-	-	-	-	20 / 40
1,1-Dichloroethane	1	ND	ND	ND	ND	-	-	-	-	NS
1,1-Dichloroethene	1	4.8	5.36	13.3	19.5	-	-	-	-	50 / 100
Cis 1,2-Dichloroethene	1	43.4	46.7	34	36.2	-	-	-	-	50 / 100
Trans 1,2-Dichloroethene	1	9.78	10.4	7.85	11	-	-	-	-	50 / 100
Methylene Chloride	5	ND	ND	ND	ND	-	-	-	-	10 / 20
1,1,2,2-Tetrachloroethane	1/50/100	175	189	60.1	46.8	-	-	-	-	500 / 1000
Tetrachloroethane	1	11.8	13.4	17.9	16.5	-	-	-	-	60 / 120
Toluene	1	ND	ND	ND	ND	-	-	-	-	20 / 40
1,1,1-Trichloroethane	1	ND	ND	ND	ND	-	-	-	-	10 / 20
1,1,2-Trichloroethane	1	ND	ND	ND	ND	-	-	-	-	50 / 100
Trichloroethene	1/50/100	183	196	116	144	-	-	-	-	400 / 800
TCL Semi-Volatile Organics (Method 8270C)		-								
Bis(2-ethylhexyl)phthalate	10	11.9	11.6	ND	ND	-	-	-	-	ug/L
Di-n-butyl Phthalate	5	ND	ND	ND	ND	-	-	-	-	30 / 60
Naphthalene	2	ND	ND	ND	ND	-	-	-	-	10 / 20
Phenol	5	ND	ND	ND	ND	-	-	-	-	10 / 20

NOTE: Compounds indicated in this table are those listed in Section D.3 and detected as part of the analytical methods conducted per Section F.1 of Industrial Wastewater Discharge Agreement.

All analyses performed by Environmental Testing & Consulting, Inc., Memphis, TN

* Recovery well RW-06 was not in operation at the time of sample collection

** Recovery well RW-03 was not in operation at the time of sample collection

A = Recovery well RW-03 was not in operation at the time of sample collection

NS = no standard listed in the Industrial Wastewater Discharge Agreement

J = estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside acceptance ranges

ND = not detected

mg/L = milligrams per liter

ug/L = micrograms per liter

GPD = gallons per day

DL = detection limit

A = Effluent meter zeroed out 03-Nov-99

B = analysis detected in associated method and/or equipment blank

ug/L = micrograms per liter

GPD = gallons per day

91.2 = load number indicates that value exceeds Discharge Max. Levels

TABLE 3
Summary of Analytical Results for Total Effluent (through January 2001) of the Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee

Sample Identification Number Laboratory ID No	ST-EFF-10	ST-EFF-11	ST-INF-11 (Duplicate)	ST-EFF-12	ST-EFF-13	ST-EFF-14	ST-INF-14 (Duplicate)	City of Memphis Industrial Wastewater Discharge Max Levels
Total System Effluent Sample Description	Week 21 of System Operation (O&M)	Week 26 of System Operation (O&M)	Week 27 of System Operation (O&M)	Week 30 of System Operation (O&M)	Week 35 of System Operation (O&M)	Week 38 of System Operation (O&M)	Week 39 of System Operation (O&M)	
Date Effluent Sample Collected	26-Mar-99	27-Apr-99	27-May-99	24-May-99	30-Jun-99	21-Jul-99		
Instantaneous Flow Rate	94.3 GPM/135.782 GPD	105.3 GPM/151.632 GPD	87.9 GPM/126.576 GPD	81.3 GPM/117.072 GPD	80.9 GPM/116.496 GPD			561 600 GPD
Totalized Flow	28,964,822 GAL	32,187,280 GAL	38,220,118 GAL	40,550,662 GAL	42,647,212 GAL			Monthly Ave / One Day Max
LABORATORY ANALYSES	DL	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
pH (Method 150.1)	-	SU	5.7	6.6	6.2	6.0	5.8	5.5 to 10.0
TAL Metals (EPA 200 Series)								
Aluminum (Method 200.7)	0.06	mg/L	ND	ND	ND	ND	ND	1/2
Arsenic (Method 206.2)	0.003	mg/L	ND	ND	ND	ND	ND	0.04/0.1
Barium (Method 200.7)	0.003	mg/L	0.106	0.108	0.114	0.11	0.101	NS
Cadmium (Method 200.7)	0.005	mg/L	ND	ND	ND	ND	ND	0.01/0.02
Calcium (Method 200.7)	0.015	mg/L	22.7	23	22.8	23.1	21	NS
Chromium (Method 200.7)	0.009	mg/L	ND	ND	ND	ND	ND	0.2/0.4
Copper (Method 200.7)	0.008	mg/L	ND	ND	ND	ND	ND	0.2/0.4
Iron (Method 200.7)	0.009	mg/L	0.034	0.025	0.034	0.012	0.018	10/20
Lead (Method 200.7)	0.06	mg/L	ND	ND	ND	ND	ND	0.15/0.3
Magnesium (Method 200.7)	0.04	mg/L	11.3	11.6	11.7	11.4	10.6	NS
Manganese (Method 200.7)	0.003	mg/L	0.04	0.029	0.03	0.031	0.014	NS
Mercury (Method 245.1)	0.0002	mg/L	ND	ND	ND	ND	ND	0.001/0.002
Nickel (Method 200.7)	0.02	mg/L	ND	ND	ND	ND	ND	0.1/0.3
Potassium (Method 200.7)	0.25	mg/L	0.861	0.728	0.859	0.844	0.835	NS
Sodium (Method 200.7)	0.05	mg/L	23.8	22.9	24.1	24.2	22.8	NS
Zinc (Method 200.7)	0.01	mg/L	0.069	0.04	0.045	0.047	0.028	0.3/1.0
TCL Volatile Organics (Method 8260B)								
Carbon Tetrachloride	1	ug/L	2.17	1.47	1.61	2.25	1.46	20/40
Chloroform	1	ug/L	5.59	6.63	7.15	4.54	8.46	20/40
1,1-Dichloroethane	1	ug/L	ND	ND	ND	ND	ND	NS
1,1-Dichloroethene	1	ug/L	13.9	11.8	11.8	16.2	14.2	50/100
Cis 1,2-Dichloroethane	1	ug/L	37	37	37.2	42.8	34.1	50/100
Trans 1,2-Dichloroethane	1	ug/L	10.8	9.77	9.7	12.0	10.1	50/100
Methylene Chloride	5	ug/L	ND	ND	ND	ND	ND	10/20
1,1,2,2-Tetrachloroethane	1/50/100	ug/L	29.3	38.9	39.2	56.1	65.1	500/1000
Tetrachloroethene	1	ug/L	18.7	12.9	13.6	16.1	14.6	60/120
Toluene	1	ug/L	ND	ND	ND	ND	1	20/40
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	10/20
1,1,2-Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	NS
Trichloroethene	1/50/100	ug/L	116	116	117	150	117	400/800
TCL Semi-Volatile Organics (Method 8270C)								
Bis(2-ethylhexyl)phthalate	10	ug/L	24.4B	ND	14.1B	13.6B	ND	ND
Di-n-butyl Phthalate	5	ug/L	ND	ND	ND	ND	ND	30/60
Naphthalene	2	ug/L	ND	ND	ND	ND	ND	10/20
Phenol	5	ug/L	ND	ND	ND	ND	ND	10/20

NOTE: Compounds included in this table are those listed in Section D.3 and detected as part of the analytical methods conducted per Section F.1 of Industrial Wastewater Discharge Agreement

All analyses performed by Environmental Testing & Consulting, Inc., Memphis, TN

* = Recovery well RW-09 was not in operation at the time of sample collection

** = Recovery well RW-08 was not in operation at the time of sample collection

A = Recovery well RW-03 was not in operation at the time of sample collection

NS = no standard listed in the Industrial Wastewater Discharge Agreement

J = estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value, quality control recoveries outside acceptance ranges

ND = not detected

mg/L = milligrams per liter

DL = detection limit

GPD = gallons per day

A = Effluent meter zeroed out 03-Nov-99

B = analyte detected in associated method and/or equipment blank

ug/L = micrograms per liter

GPM = gallons per minute

9.1.2 = 1000 number indicates that value exceeds Discharge Max. Levels

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TABLE 3
Summary of Analytical Results for Total Effluent (through January 2001) of the Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee

Sample Identification Number	ST-EFF-15	ST-INF-15 (Duplicate)	ST-EFF-16	ST-EFF-17	ST-EFF-018	ST-EFF-110 (Duplicate)	ST-EFF-019	ST-EFF-117 (Duplicate)	City of Memphis
Laboratory ID No	8908593-02	9908593-01	9908614-01	9910519-01	9911451-01	9911451-02	9912495-01	9912495-02	Industrial Wastewater
Total System Effluent Sample Description	Week 43 of System Operation (O&M)	Week 43 of System Operation (O&M)	Week 47 of System Operation (O&M)	Week 51 of System Operation (O&M)	Week 55 of System Operation (O&M)	Week 55 of System Operation (O&M)	Week 59 of System Operation (O&M)	Week 59 of System Operation (O&M)	
Date Effluent Sample Collected	23-Aug-99	23-Aug-99	22-Sep-99	21-Oct-99	16-Nov-99	16-Nov-99	15-Dec-99	15-Dec-99	
Instantaneous Flow Rate	74.7 GPM / 107.576 GPD	74.7 GPM / 107.576 GPD	72.2 GPM / 104.112 GPD	72.3 GPM / 104.112 GPD	78.7 GPM / 109.728 GPD	78.7 GPM / 109.728 GPD	71.5 GPM / 103.860 GPD	71.5 GPM / 103.860 GPD	561.600 GPD
Totalized Flow	46 332.590 GAL	49 474.353 GAL	52.388 107 GAL	52.388 107 GAL	55 040.162 GAL	55 040.162 GAL	57 872.540 GAL	57 872.540 GAL	561.600 GPD
LABORATORY ANALYSES	DL	Units	57	57	57	57	59	57	Monthly Ave / One Day Max
TAL Metals (EPA 200 Series)		mg/L							mg/L
Aluminum (Method 200.7)	0.06	mg/L	ND	ND	ND	ND	ND	ND	1/2
Arsenic (Method 208.2)	0.003	mg/L	ND	ND	ND	ND	ND	ND	0.04 / 0.1
Barium (Method 200.7)	0.003	mg/L	0.099	0.099	0.1	0.101	0.099	0.097	NS
Cadmium (Method 200.7)	0.005	mg/L	ND	ND	ND	ND	ND	ND	0.01 / 0.02
Calcium (Method 200.7)	0.015	mg/L	21.1	20.6	21.1	21.3	20.1	19.8	NS
Chromium (Method 200.7)	0.009	mg/L	ND	ND	ND	ND	ND	ND	0.2 / 0.4
Copper (Method 200.7)	0.008	mg/L	ND	ND	0.011	ND	ND	ND	0.2 / 0.4
Iron (Method 200.7)	0.009	mg/L	0.093	0.018	0.025	0.034	0.019	0.015	10 / 20
Lead (Method 200.7)	0.06	mg/L	ND	ND	ND	ND	ND	ND	0.15 / 0.3
Magnesium (Method 200.7)	0.04	mg/L	10.6	10.7	10.5	10.6	10.3	10.2	NS
Manganese (Method 200.7)	0.003	mg/L	0.026	0.020	0.022	0.022	0.007	0.007	NS
Mercury (Method 245.1)	0.0002	mg/L	ND	ND	ND	ND	ND	ND	0.001 / 0.002
Nickel (Method 200.7)	0.02	mg/L	ND	ND	0.066	ND	ND	ND	0.1 / 0.3
Potassium (Method 200.7)	0.25	mg/L	0.798	0.926	1.16	0.82	0.84	0.764	NS
Sodium (Method 200.7)	0.05	mg/L	24.6	25.3	22.8	22.4	23.1	21.8	NS
Zinc (Method 200.7)	0.01	mg/L	0.033	0.028	0.07	0.055	0.047	0.045	0.3 / 1.0
TCL Volatile Organics (Method 8260B)		ug/L							ug/L
Carbon Tetrachloride	1	ug/L	1.21	1.18	2.05	1.69	1.18	0.18J	20 / 40
Chloroform	1	ug/L	9.38	9.78	9.88	7.49	8.81	6.4	20 / 40
1,1-Dichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	NS
1,1-Dichloroethene	1	ug/L	17	18	19.3	16.7	15.7	10.2	50 / 100
Cis 1,2-Dichloroethene	1	ug/L	47.1	50.2	49.4	48.9	47	32.5	50 / 100
Trans 1,2-Dichloroethene	1	ug/L	14.6	14.9	14.5	13.0	12.6	8.4	50 / 100
Methylene Chloride	5	ug/L	11.9	12.8	ND	ND	ND	ND	10 / 20
1,1,2,2-Tetrachloroethane	1/50/100	ug/L	137	131	148	118	137	144	500 / 1000
Tetrachloroethane	1	ug/L	19.8	19.8	21.8	17.8	19.1	14.2	60 / 120
Toluene	1	ug/L	ND	ND	ND	ND	ND	ND	20 / 40
1,1,1-Trichloroethane	1	ug/L	ND	ND	ND	ND	0.61J	0.43J	10 / 20
1,1,2-Trichloroethane	1	ug/L	ND	ND	ND	ND	0.85J	ND	50 / 100
Trichloroethane	1/50/100	ug/L	207	216	214	181	174	134	400 / 800
TCL Semi-Volatile Organics (Method 8270C)		ug/L							ug/L
Bis(2-ethylhexyl)phthalate	10	ug/L	ND	ND	10.6B	ND	ND	13.7B	10 / 20
Di-n-butyl Phthalate	5	ug/L	ND	ND	ND	ND	ND	ND	30 / 60
Naphthalene	2	ug/L	ND	ND	ND	ND	ND	ND	10 / 20
Phenol	5	ug/L	ND	ND	ND	ND	ND	ND	10 / 20

NOTE: Compounds included in this table are those listed in Section D.3 and detected as part of the analytical methods conducted per Section F.1 of Industrial Wastewater Discharge Agreement.

All analyses performed by Environmental Testing & Consulting, Inc. Memphis, TN

* = Recovery well RW-09 was not in operation at the time of sample collection.

A = Recovery well RW-08 was not in operation at the time of sample collection.

NS = no standard listed in the Industrial Wastewater Discharge Agreement.

J = estimated value - presence of the compound was confirmed but less than the reported DL.

* = estimated value - quality control recoveries outside acceptance ranges

ND = not detected

mg/L = milligrams per liter

DL = detection limit

GPD = gallons per day

A-Effluent meter zeroed out 03-Nov-99

B = analyte detected in associated method and/or equipment blank

ug/L = micrograms per liter

GPM = gallons per minute

§1.2 = bold number indicates that value exceeds Discharge Max. Levels

TABLE 3
Summary of Analytical Results for Total Effluent (through January 2001) of the Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee

Sample Identification Number	ST-EFF-020	ST-EFF-021	ST-EFF-121 (Duplicate)	ST-EFF-022	ST-INF-022 (Duplicate)	ST-EFF-024	ST-EFF-023	City of Memphis
Laboratory ID No.	000169-01	0002422-01	0002422-02	0003418-01	0003418-02	0005400-01	0005400-02	Industrial Wastewater
Total System Effluent Sample Description	Week 63 of System Operation (O&M)	Week 68 of System Operation (O&M)	Week 68 of System Operation (O&M)	Week 72 of System Operation (O&M)	Week 76 of System Operation (O&M)	Week 80 of System Operation (O&M)	Week 80 of System Operation (O&M)	
Date Effluent Sample Collected	10-Jan-00	15-Feb-00	15-Mar-00	15-Mar-00	14-Apr-00	16-May-00	16-May-00	
Instantaneous Flow Rate	54.9 GPM/03.456 GPD	70.6 GPM/01.864 GPD	57.1 GPM/02.224 GPD	57.1 GPM/02.224 GPD	57.1 GPM/02.224 GPD	52.1 GPM/02.024 GPD	52.1 GPM/02.024 GPD	561.600 GPD
Totalized Flow	59.949.612 GAL	62.926.034 GAL	65.383.409 GAL	65.383.409 GAL	67.775.983 GAL	70.137.871 GAL	70.137.871 GAL	Monthly Ave / One Day Max
LABORATORY ANALYSES	DL	Units	5.4	6.1	5.8	5.9	6.0	5.5 to 10.0
pH (Method 150.1)	--	SU						mg/L
TAL Metals (EPA 200 Series)								1/2
Aluminum (Method 200.7)	0.06	mg/L	ND	ND	ND	ND	ND	0.04 / 0.1
Arsenic (Method 206.2)	0.003	mg/L	ND	ND	ND	ND	ND	NS
Barium (Method 200.7)	0.003	mg/L	0.106	0.106	0.104	0.111	0.111	0.01 / 0.02
Cadmium (Method 200.7)	0.005	mg/L	ND	ND	ND	ND	ND	NS
Calcium (Method 200.7)	0.015	mg/L	21.0	21.0	21.6	21.88	21.4	0.2 / 0.4
Chromium (Method 200.7)	0.009	mg/L	ND	ND	ND	ND	ND	0.2 / 0.4
Copper (Method 200.7)	0.008	mg/L	ND	ND	ND	ND	ND	0.15 / 0.3
Iron (Method 200.7)	0.009	mg/L	0.114	0.114	0.036	0.029J*	0.032	NS
Lead (Method 200.7)	0.06	mg/L	ND	ND	ND	ND	ND	NS
Magnesium (Method 200.7)	0.04	mg/L	10.6	10.6	11.3	11.1	11.4	NS
Manganese (Method 200.7)	0.003	mg/L	ND	ND	0.025	0.015	0.019	0.001 / 0.002
Mercury (Method 245.1)	0.0002	mg/L	ND	ND	ND	ND	ND	0.1 / 0.3
Nickel (Method 200.7)	0.02	mg/L	ND	ND	ND	ND	ND	NS
Potassium (Method 200.7)	0.25	mg/L	0.752	0.816	0.874	0.809	0.881	NS
Sodium (Method 200.7)	0.05	mg/L	22.8	22.7	23.5	22.9	23.3	NS
Zinc (Method 200.7)	0.01	mg/L	0.038	0.305	0.053	0.043	0.052	0.3 / 1.0
TCL Volatile Organics (Method 8200B)								ug/L
Carbon Tetrachloride	1	ug/L	1.14	1.71	1.67	1.5	1.63	20 / 40
Chloroform	1	ug/L	8.34	6.51	6.58	8.38	7.60	20 / 40
1,1-Dichloroethane	1	ug/L	ND	ND	ND	ND	0.47J	NS
1,1-Dichloroethene	1	ug/L	ND	13.8	14.1	13.5	ND	50 / 100
Cis 1,2-Dichloroethene	1	ug/L	48	43.8	43.7	43.1	51.5	50 / 100
Trans 1,2-Dichloroethene	1	ug/L	13.4	12.3	12.0	13.4	14.9	50 / 100
Methylene Chloride	5	ug/L	ND	ND	ND	ND	ND	10 / 20
1,1,2,2-Tetrachloroethane	1/50/100	ug/L	218	177	189	51.7	54.7	500 / 1000
Tetrachloroethene	1	ug/L	17.7	14.9	15.3	18	15.2	60 / 120
Toluene	1	ug/L	ND	ND	ND	1.53J	ND	20 / 40
1,1,1-Trichloroethane	1	ug/L	ND	0.48J	0.48J	ND	ND	10 / 20
1,1,2-Trichloroethane	1	ug/L	ND	0.80J	0.75J	0.97J	0.96J	50 / 100
Trichloroethene	1/50/100	ug/L	189	177	179	121	189	400 / 800
TCL Semi-Volatile Organics (Method 8270C)								ug/L
Bis(2-ethylhexyl)phthalate	10	ug/L	ND	ND	ND	ND	ND	10 / 20
Di-n-butyl phthalate	5	ug/L	ND	ND	ND	ND	ND	30 / 60
Naphthalene	2	ug/L	ND	ND	ND	ND	ND	10 / 20
Phenol	5	ug/L	ND	ND	ND	ND	ND	10 / 20

NOTE: Compounds included in this table are those listed in Section D.3 and detected as part of the analytical method conducted per Section F.1 of Industrial Wastewater Discharge Agreement.

All analyses performed by Environmental Testing & Consulting, Inc., Memphis, TN

* = Recovery well RW-09 was not in operation at the time of sample collection

** = Recovery well RW-06 was not in operation at the time of sample collection

*** = Recovery well RW-03 was not in operation at the time of sample collection

NS = no standard listed in the Industrial Wastewater Discharge Agreement

J = estimated value - presence of the compound was confirmed but less than the reported DL

J* = estimated value - quality control recoveries outside acceptance ranges

ND = not detected

mg/L = milligrams per liter

DL = detection limit

GPD = gallons per day

An Effluent meter zeroed out 03-Nov-99

8 = analysis detected in associated method and/or equipment blank

ug/L = micrograms per liter

GPD = gallons per minute

91.2 = total number indicates that value exceeds Discharge Max. Levels

TABLE 3
Summary of Analytical Results for Total Effluent (through January 2001) of the Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee

Sample Identification Number		ST-EFF-025	ST-EFF-026	EQB-026	ST-EFF-027	ST-EFF-028	EQB-028(DUPLICATE)	ST-EFF-029	EQB-029(DUPLICATE)	City of Memphis	
Laboratory ID No.		0005715-01	0007278-01	0007278-02	0008325-01	0009443-01	0009443-02	0010490-01	0010490-02	Industrial Wastewater	
Total System Effluent Sample Description		Week 85 of System Operation (O&M)	Week 86 of System Operation (O&M)	Week 86 of System Operation (O&M)	Week 92 of System Operation (O&M)	Week 97 of System Operation (O&M)	Week 97 of System Operation (O&M)	Week 101 of System Operation (O&M)	Week 101 of System Operation (O&M)		
Date Effluent Sample Collected		23-Jun-00	13-Jul-00	13-Jul-00	11-Aug-00	19-Sep-00	19-Sep-00	18-Oct-00	18-Oct-00		
Instantaneous Flow Rate		55.09 GPM/79,330 GPD	52.78 GPM/76,003 GPD	52.78 GPM/76,003 GPD	57.22 GPM/82,396 GPD	55.95 GPM/80,568 GPD	55.95 GPM/80,568 GPD	45.14 GPM/65,002 GPD	45.14 GPM/65,002 GPD		
Totalized Flow		73,321,836 GAL	75,673,706 GALLONS	75,673,706 GALLONS	78,223,187	80,640,059 GALLONS	80,640,059 GALLONS	82,655,006 GALLONS	82,655,006 GALLONS		
LABORATORY ANALYSES		DL	Units	DL	Units	DL	Units	DL	Units	Monthly Ave / One Day Max	
pH (Method 150.1)		—	SU	7.7	8.1	5.8	6.1	6.0	6.0	5.5 to 10.0	
TAL Metals (EPA 200 Series)										mg/L	
Aluminum (Method 200.7)	0.06	ND	ND	ND	ND	ND	ND	ND	ND	1/2	
Arsenic (Method 206.2)	0.003	ND	ND	ND	ND	ND	ND	ND	ND	0.04 / 0.1	
Barium (Method 200.7)	0.003	0.109	0.104	ND	0.111	0.115	0.117	0.108	0.108	NS	
Cadmium (Method 200.7)	0.005	ND	ND	ND	ND	ND	ND	ND	ND	0.01 / 0.02	
Calcium (Method 200.7)	0.015	21.8	21.3	0.067	21.7	22.8	23.1	21.1	21.4	NS	
Chromium (Method 200.7)	0.009	ND	ND	ND	ND	ND	ND	ND	ND	0.2 / 0.4	
Copper (Method 200.7)	0.008	ND	ND	ND	ND	ND	ND	ND	ND	0.2 / 0.4	
Iron (Method 200.7)	0.009	0.094	0.029	ND	0.137	0.187	0.739	0.036	0.036	10 / 20	
Lead (Method 200.7)	0.06	ND	ND	ND	ND	ND	ND	ND	ND	0.15 / 0.3	
Magnesium (Method 200.7)	0.04	11.4	11	ND	10.8	10.9	11	10.3	10.5	NS	
Manganese (Method 200.7)	0.003	0.014	0.009	ND	0.011	0.010	0.010	ND	ND	NS	
Mercury (Method 245.1)	0.0002	ND	ND	ND	ND	ND	ND	ND	ND	0.001 / 0.002	
Nickel (Method 200.7)	0.02	ND	ND	ND	ND	0.03	0.336	ND	ND	0.1 / 0.3	
Potassium (Method 200.7)	0.25	0.829	0.836	ND	0.87	0.886	0.954	0.886	0.872	NS	
Sodium (Method 200.7)	0.05	22.0	23.7	3.2	23.8	23.4	23.4	25.4	25.4	NS	
Zinc (Method 200.7)	0.01	0.04	0.061	ND	0.045	0.118	0.084	0.094	0.074	0.3 / 1.0	
TCL Volatile Organics (Method 8260B)										ug/L	
Carbon Tetrachloride	1	1.3	1.2	ND	1.82	2.31	2.12	1.57	1.65	20 / 40	
Chloroform	1	9.41	8.92	ND	7.96	9.24	8.30	9.69	8.54	20 / 40	
1,1-Dichloroethane	1	ND	ND	ND	ND	ND	ND	ND	ND	NS	
1,1-Dichloroethene	1	16.6	15	ND	13.2	17.6	17.1	18.8	18	50 / 100	
Cis 1,2-Dichloroethene	1	52.7	54.4	ND	44.5	50	46.5	55.7	51	50 / 100	
Trans 1,2-Dichloroethene	1	18.5	15.9	ND	11.6	13.4	11.5	16.0	14.8	50 / 100	
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND	10 / 20	
1,1,2,2-Tetrachloroethane	1/50/100	59.2	52	ND	42.7	61.4	60.3	61.3	58.7	500 / 1000	
Tetrachloroethane	1	14.5	13.8	ND	13.8	22.1	22.8	15.9	15.9	60 / 120	
Toluene	1	ND	ND	ND	ND	ND	ND	ND	ND	20 / 40	
1,1,1-Trichloroethane	1	ND	ND	ND	ND	ND	ND	ND	ND	10 / 20	
1,1,2-Trichloroethane	1	0.93	0.68J	ND	0.85J	1.14	ND	ND	ND	10 / 20	
Trichloroethene	1/50/100	139	123	ND	148	152	159	101	102	50 / 100	
TCL Semi-Volatile Organics (Method 8270C)										ug/L	
Bis(2-ethylhexyl)phthalate	10	ND	ND	ND	ND	ND	ND	ND	ND	10 / 20	
Di-n-butyl phthalate	5	ND	ND	ND	ND	ND	ND	ND	ND	30 / 60	
Naphthalene	2	ND	ND	ND	ND	ND	ND	ND	ND	10 / 20	
Phenol	5	ND	ND	ND	ND	ND	ND	ND	ND	10 / 20	

TABLE 3
Summary of Analytical Results for Total Effluent (through January 2001) of the Groundwater Recovery System
Dunn Field, Memphis Depot, Tennessee

Sample Identification Number		ST-EFF-030	ST-EFF-031	EOB-031	EOB-032	City of Memphis
Laboratory ID No		001634-01	0012504-01	0012504-02	0101349-01	Industrial Wastewater
Total System Effluent Sample Description		Week 105 of System Operation (QAM)	Week 109 of System Operation (QAM)	Week 109 of System Operation (QAM)	Week 112 of System Operation (QAM)	
Date Effluent Sample Collected		21-Nov-00	20-Dec-00	20-Dec-00	16-Jan-01	
Instantaneous Flow Rate		11.1 GPM/15,968 GPD	16.27 GPM/23,435 GPD	16.27 GPM/23,435 GPD	25.45 GPM/36,848 GPD	
Totalized Flow		83,150,768 GALLONS	83,877,244 GALLONS	83,877,244 GALLONS	85,023,474 GALLONS	
LABORATORY ANALYSES		DL	Units	6.5	7.3	Monthly Ave / One Day Max
pH (Method 150.1)		--	SU	5.8	5.8	5.5 to 10.0
TAL Metals (EPA 200 Series)						mg/L
Aluminum (Method 200.7)	0.06	mg/L	ND	ND	ND	1/2
Arsenic (Method 208.2)	0.003	mg/L	ND	ND	ND	0.04 / 0.1
Barium (Method 200.7)	0.003	mg/L	ND	ND	ND	NS
Cadmium (Method 200.7)	0.005	mg/L	ND	ND	ND	0.01 / 0.02
Calcium (Method 200.7)	0.015	mg/L	20.1	23.4	22.5	NS
Chromium (Method 200.7)	0.009	mg/L	ND	ND	ND	0.2 / 0.4
Copper (Method 200.7)	0.008	mg/L	ND	ND	ND	0.2 / 0.4
Iron (Method 200.7)	0.009	mg/L	0.053	0.211	0.322	10 / 20
Lead (Method 200.7)	0.06	mg/L	ND	ND	ND	0.15 / 0.3
Magnesium (Method 200.7)	0.04	mg/L	9.87	11.5	11.8	NS
Manganese (Method 200.7)	0.003	mg/L	ND	0.009	ND	NS
Mercury (Method 245.1)	0.0002	mg/L	ND	ND	ND	0.001 / 0.002
Nickel (Method 200.7)	0.02	mg/L	0.026	ND	0.038	0.1 / 0.3
Potassium (Method 200.7)	0.25	mg/L	0.839	0.978	0.937	NS
Sodium (Method 200.7)	0.05	mg/L	23.1	21.8	23.1	NS
Zinc (Method 200.7)	0.01	mg/L	0.059	0.083	0.121	0.3 / 1.0
TCL Volatile Organics (Method 8260B)						ug/L
Carbon Tetrachloride	1	ug/L	1.82	ND	ND	20 / 40
Chloroform	1	ug/L	7.88	7.15	14.20	20 / 40
1,1-Dichloroethane	1	ug/L	ND	0.51J	ND	NS
1,1-Dichloroethene	1	ug/L	16.7	14.6	18.7	50 / 100
Cis 1,2-Dichloroethene	1	ug/L	54.8	18.2	59.2	50 / 100
Trans 1,2-Dichloroethene	1	ug/L	ND	ND	15.3	50 / 100
Methylene Chloride	5	ug/L	ND	ND	ND	10 / 20
1,1,2,2-Tetrachloroethane	1/50/100	ug/L	29.7	ND	178	500 / 1000
Tetrachloroethane	1	ug/L	18.3	20.7	26	60 / 120
Toluene	1	ug/L	ND	ND	ND	20 / 40
1,1,1-Trichloroethane	1	ug/L	ND	0.52 J	ND	10 / 20
1,1,2-Trichloroethane	1	ug/L	1.05	ND	2.19	50 / 100
Trichloroethene	1/50/100	ug/L	99.3	57.6	89	400 / 800
TCL Semi-Volatile Organics (Method 8270C)						ug/L
Bis(2-ethylhexyl)phthalate	10	ug/L	ND	ND	ND	10 / 20
Di-n-butyl Phthalate	5	ug/L	ND	ND	ND	30 / 60
Naphthalene	2	ug/L	ND	ND	ND	10 / 20
Phenol	5	ug/L	ND	ND	ND	10 / 20

TABLE 4
Semi-Annual Quality Control Samples
Year Three, First Half

Sample Identification Number		RW-9	RW-9A	Relative Percent Diff (RPD)	MW-56	MW-56A	Relative Percent Diff (RPD)	MW-68	MW-68A	Relative Percent Diff (RPD)	MW-70	MW-70A	Relative Percent Diff (RPD)	Maximum Contaminant Level (MCL)-Primary Drinking Water Standard	USEPA Region III RBCs Tap Water (October 7 1998)
Laboratory & Lab Sample ID No		0102451-04	0102451-05		0102556-06	0102556-07		0102408-08	0102408-07		0102451-13	012451-14			
Date Sample Collected		15-Feb-01	2/15/01		19-Feb-01	2/15/01		2/14/01	2/14/01		2/15/01	2/15/01			
Laboratory Analysis		DL													
TCL Volatile Organics (Method 8210B)		20	ug/L												
Acetone															
Carbon Disulfide		1	ug/L												
Carbon Tetrachloride		1	ug/L												
Chloroform		1	ug/L	13.7	15	9									
1,1-Dichloroethane		1	ug/L	1.49	1.42	5									
1,1-Dichloroethene		1	ug/L	48.1	44.1	4									
Trans 1,2-Dichloroethene		1	ug/L	1.42	1.4	1									
Cis 1,2-Dichloroethene		1	ug/L	4.74	5.29	11									
1,1,2,2-Tetrachloroethane		1	ug/L	2.9	3.01	4									
1,1,2,2-Tetrachloroethane		1	ug/L	38.6	38.4	1									
1,1,1-Trichloroethane		1	ug/L	1.39	1.42	2									
1,1,2-Trichloroethane		1	ug/L												
1,1,2-Trichloroethane		1	ug/L												
Trichloroethene		1	ug/L												
Vinyl Chloride		1	ug/L												

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking Water Standards

RBCs = Risk Based Contaminants

NS = no standard NP = not performed

NA = not available

B = Analyte detected in associated method and/or equipment blank

J = Estimated value presence of the compound was confirmed but less than the reported DL

J* = estimated value quality control recoveries outside acceptance ranges

TABLE 4
Semi-Annual Quality Control Samples
Year Three, First Half

Sample Identification Number		RE-1	RE-2	FB-1	FB-2	Trip Blank	Trip Blank	Trip Blank	Maximum	USEPA Region III RCLs-Tap Water (October 7, 1989)
Laboratory & Lab Sample ID No.		Equipment Rinse Blank	Equipment Rinse Blank	Field Blank	Field Blank				(MCL)-Primary Drinking Water Standard	
Data Sample Collected		0102451-08	0102356-13	0102451-09	0102356-12	0102451-17	0011335-12	11/8/00		
DL		2/15/01	2/20/01	2/15/01	2/20/01	2/14/01	2/15/01	11/8/00		
Laboratory Analyses										
TCL Volatile Organics (Method 8260B)										
Acetone	20	ug/L	ND	ND	ND	ND	ND	ND	5	0.16
Carbon Disulfide	1	ug/L	ND	ND	ND	ND	ND	ND	NS	0.15
Carbon Tetrachloride	1	ug/L	ND	0.85 J	ND	ND	ND	ND		
Chloroform	1	ug/L	ND	ND	ND	ND	ND	ND		
1,1 Dichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND		
1,1 Dichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	100	120
Trans 1,2-Dichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	70	61
Cis 1,2-Dichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	NS	0.053
1,1,2,2-Tetrachloroethane	1	ug/L	3.89	ND	ND	ND	ND	ND	5	1.1
1,1,1 Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND		
1,1,2 Trichloroethane	1	ug/L	ND	ND	ND	ND	ND	ND	5	0.19
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	5	1.6
Vinyl Chloride	1	ug/L	ND	ND	ND	ND	ND	ND		

ug/L = micrograms per liter

DL = Detection Limit

TCL = Target Compound List

BDL = Below Detection Limit

MCL = Maximum Contaminant Level - Primary Drinking Water Standard

RCLs = Risk Based Contaminants

NS = no standard / NP = not performed

NA = not available

B = Analyte detected in associated method and/or equipment blank

J = Estimated value - presence of the compound was confirmed but not

J' = Estimated value - quality control recoveries outside acceptance range

TABLE 5
Groundwater Levels Corresponding
to Semi-Annually Sampled Wells

Sampled Date	MW-14 GWELEV	MW-15 GWELEV	MW-30 GWELEV	MW-31 GWELEV	MW-32 GWELEV	MW-33 GWELEV	MW-32 GWELEV	MW-34 GWELEV	MW-37 GWELEV	MW-40 GWELEV	MW-42 GWELEV	MW-43 GWELEV
3-Feb-99	NA	228.80	228.85	221.80	223.90	227.48	NA	163.51	NA	184.32	NA	NA
25-May-99	NA	237.80	228.36	220.48	222.25	226.52	NA	163.14	NA	183.52	NA	NA
27-Aug-99	NA	227.31	227.66	217.17	222.54	226.17	NA	154.33	NA	178.75	NA	NA
3-Nov-99	NA	227.04	227.07	219.37	222.44	218.16	NA	154.47	NA	175.93	NA	NA
7-Feb-00	228.12	226.92	226.42	218.92	222.04	225.60	NA	160.39	NA	177.98	NA	NA
16-May-00	227.53	226.79	226.06	218.54	221.67	225.48	NA	160.50	NA	178.53	NA	NA
22-Aug-00	227.38	226.54	225.89	218.22	221.38	225.20	NA	152.61	NA	172.80	NA	NA
7-Nov-00	227.83	226.16	225.54	218.02	221.97	224.81	NA	160.98	NA	170.35	NA	NA
13-Feb-01	NS	NS	225.69	218.66	221.88	225.00	221.88	158.87	154.21	172.50	216.42	155.48

Notes:

Groundwater elevations are in feet above mean sea level (msl)

Table contains data corresponding to quarterly sampled groundwater wells only.

NA = not available.

NS = not sampled

TABLE 5
Groundwater Levels Corresponding
to Semi-Annually Sampled Wells

Sampled Date	MW-44 GWELEV	MW-51 GWELEV	MW-54 GWELEV	MW-56 GWELEV	MW-57 GWELEV	MW-58 GWELEV	MW-59 GWELEV	MW-67 GWELEV	MW-68 GWELEV	MW-69 GWELEV	MW-70 GWELEV	MW-71 GWELEV
3-Feb-99	217.62	235.32	219.23	NA	NA	NA	NA	NA	NA	NA	NA	NA
25-May-99	216.89	235.47	217.55	NA	NA	NA	NA	NA	NA	NA	NA	NA
27-Aug-99	216.16	234.17	216.91	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nov-99	215.45	233.18	216.20	NA	NA	NA	NA	NA	NA	NA	NA	NA
7-Feb-00	214.77	232.38	215.46	226.45	224.25	227.08	224.24	NA	NA	222.83	223.94	225.49
16-May-00	214.17	230.48	214.81	226.24	227.19	226.87	224.13	151.22	NA	222.82	223.71	225.24
22-Aug-00	213.62	232.02	214.36	225.98	227.02	226.72	223.87	NA	221.46	222.51	223.11	225.01
7-Nov-00	213.10	231.44	213.70	225.75	226.60	226.52	224.16	NA	222.45	223.03	223.58	225.74
13-Feb-01	213.02	231.72	213.71	225.72	226.64	226.52	NS	NA	222.68	223.73	224.25	225.14

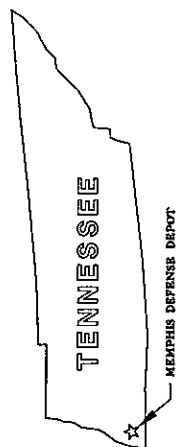
Notes

Groundwater elevations are in feet above mean sea level (msl)
Table contains data corresponding to quarterly sampled groundwater wells only
NA = not available

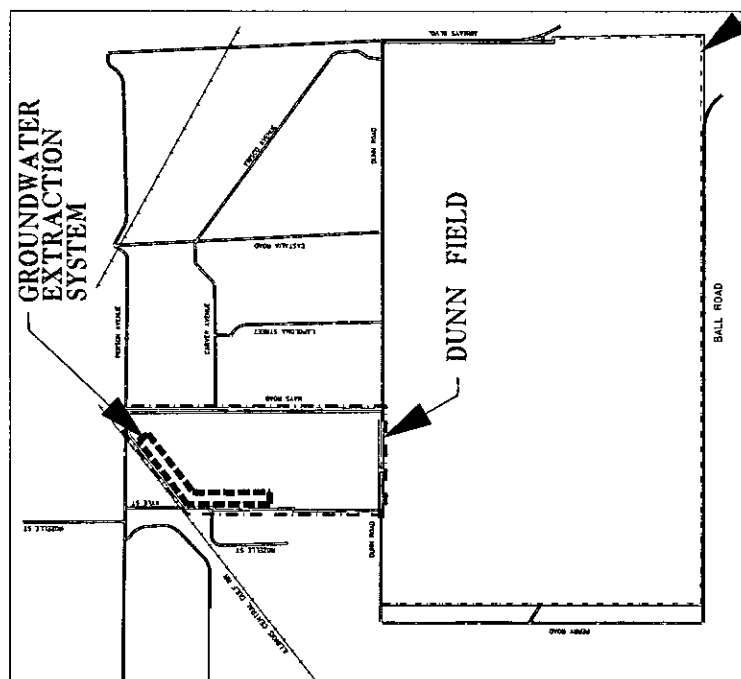
TABLE 5
Groundwater Levels Corresponding
to Semi-Annually Sampled Wells

Sampled Date	MW-76 GWELEV	MW-77 GWELEV	MW-78 GWELEV	MW-79 GWELEV	MW-80 GWELEV	MW-95 GWELEV
3-Feb-99	NA	NA	NA	NA	NA	NA
25-May-99	NA	NA	NA	NA	NA	NA
27-Aug-99	NA	NA	NA	NA	NA	NA
3-Nov-99	NA	NA	NA	NA	NA	NA
7-Feb-00	NA	NA	NA	NA	NA	NA
16-May-00	NA	NA	NA	NA	NA	NA
22-Aug-00	NA	NA	NA	NA	NA	NA
7-Nov-00	NA	NA	NA	NA	NA	NA
13-Feb-01	217.66	222.50	224.75	212.70	212.59	227.52

FIGURES



MEMPHIS DEFENSE DEPOT



DUNN FIELD

2000-0000

MEMPHIS DEFENSE DEPOT

APPROXIMATE SCALE 1" = 400'

LEGEND

GROUNDWATER EXTRACTION SYSTEM

UNION FIELD

MEMPHIS DEFENSE DEPOT

SCALE	1 = POOR
DEVELOPMENT	1. PART
POWER	5. H. 4.135
DEFINITION	5. 0.135
APPROXIMATE	5. 0.135
DATE	11. 11. 2009

CALLS	1000

M. J. M. 4000

0. DAYAM

DATE	11/11/2023
TIME	11:11

CALLS	1000

[illegible]

0. DAYAM

JE Sverdrup

A JACOBS COMPANY

A JACOBS COMPANY

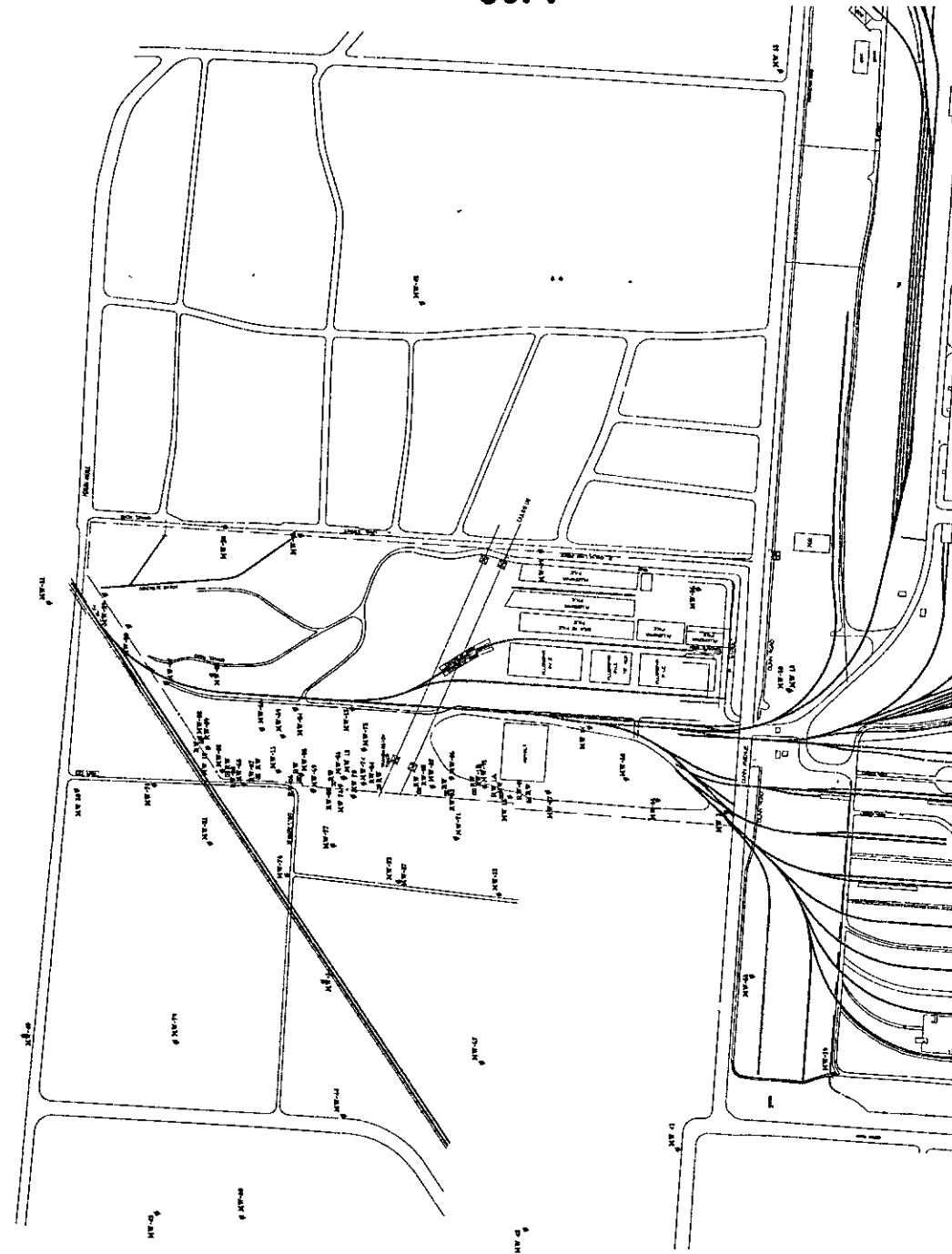
DUNN FIELD
GROUNDWATER EXTRACTION SYSTEM
MEMPHIS DEFENSE DEPOT, TENNESSEE

DUNN FIELD
CROINGWATER EXTRACTION SYSTEM

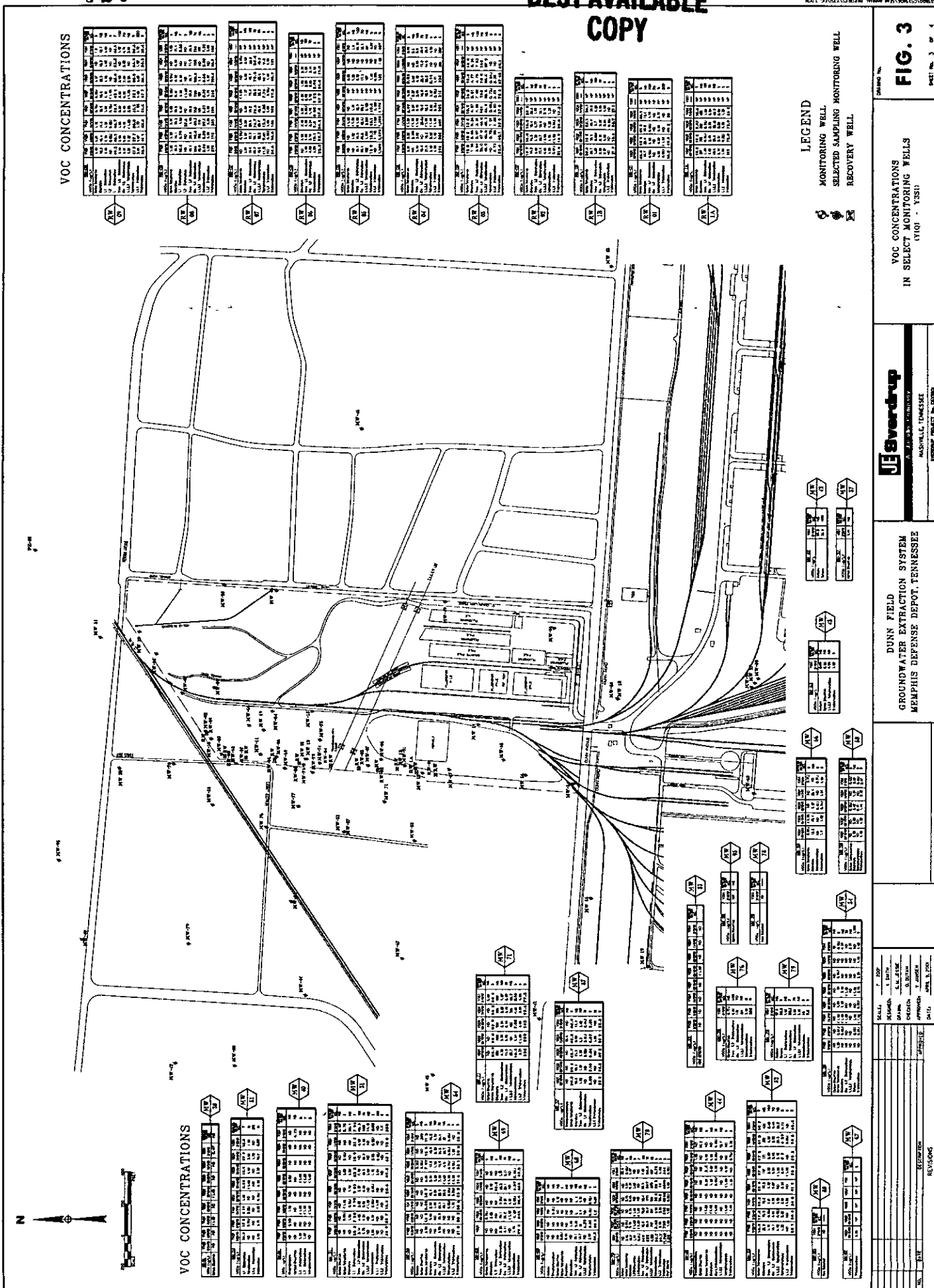
MEMPHIS DEFENSE DEPOT,
DUNN FIELD, AND THE
GROUNDWATER EXTRACTION SYSTEM

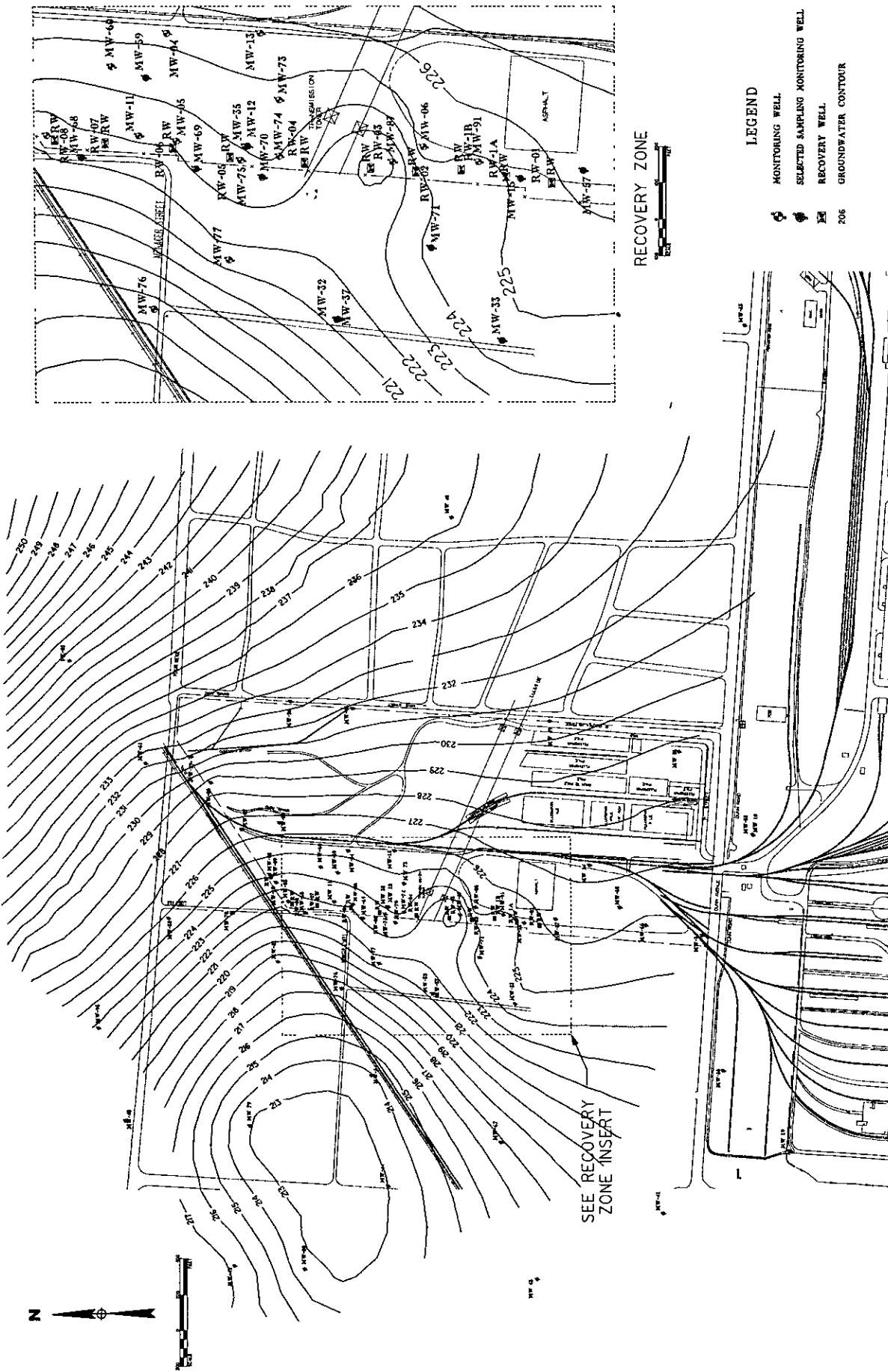
MEMPHIS DEFENSE DEPOT,

BEST AVAILABLE
COPY



 2100 E. 10TH AVE. NASHVILLE, TENNESSEE 37203 SVERDRUP PROJECT NO. 10000		DUNN FIELD GROUNDWATER EXTRACTION SYSTEM MEMPHIS DEFENSE DEPOT, TENNESSEE		SHEET NO. 3 OF 4	
GROUNDWATER MONITORING AND RECOVERY WELL LOCATIONS		FIG. 2		SHEET NO. 3 OF 4	





DUNN FIELD
GROUNDWATER EXTRACTION SYSTEM
MEMPHIS DEFENSE DEPOT, TENNESSEE

JE **Overdrip**
A DIVISION OF OVERDIP
NASHVILLE, TENNESSEE
EXTRACTION PRODUCT, INC. 000000

POTENTIOMETRIC SURFACE MAP
Y351 (MARCH 28, 2001)
OF SHALLOW AQUIFER

FIG. 4

Sheet No. 4 of 4

NO.	DATE	REVISIONS
1	10/10/00	REVISED
2	10/10/00	REVISED
3	10/10/00	REVISED
4	10/10/00	REVISED
5	10/10/00	REVISED
6	10/10/00	REVISED
7	10/10/00	REVISED
8	10/10/00	REVISED
9	10/10/00	REVISED
10	10/10/00	REVISED

026 70

APPENDIX A
GROUNDWATER MEASUREMENT DATA

Well ID	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	
TOC Elevation	292.04	292.35	301.61	304.64	289.11	296.1	292.59	304.32	288.83	299.47	301.35	
Total Depth (ft)	35.00	77.00	81.80	78.25	70.24	77.20	69.00	82.50	71.00	85.00	87.00	
Location	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
1-Nov-88	DRY	-	76.87	-	62.90	67.85	63.15	77.10	63.59	76.09	77.20	224.15
2-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
3-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
4-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
5-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
6-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
7-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
8-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
9-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
10-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
11-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
12-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
13-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
14-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
15-Nov-88	DRY	-	76.06	-	63.10	68.03	63.29	77.23	65.67	76.47	77.39	223.96
16-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
17-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
18-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
19-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
20-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
21-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
22-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
23-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
24-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
25-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
26-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
27-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
28-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
29-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
30-Nov-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
1-Dec-88	37.50	260.54	76.70	-	63.12	68.08	63.40	77.25	65.85	76.55	77.44	223.91
2-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
3-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
4-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
5-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
6-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
7-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
8-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
9-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
10-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
11-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
12-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
13-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
14-Dec-88	DRY	-	76.12	-	63.00	68.17	63.50	77.35	65.58	76.64	77.45	223.90
15-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
16-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
17-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
18-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
19-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
20-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
21-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
22-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
23-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
24-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
25-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
26-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
27-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
28-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
29-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
30-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
31-Dec-88	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
1-Jan-00	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
2-Jan-00	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
3-Jan-00	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
4-Jan-00	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
5-Jan-00	DRY	-	76.24	-	63.00	68.31	63.65	77.48	65.79	76.43	77.41	223.94
6-Jan-00	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
7-Jan-00	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
8-Jan-00	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
9-Jan-00	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM
10-Jan-00	DRY	-	76.23	-	62.86	68.31	63.69	76.46	65.84	76.60	77.43	223.92
11-Jan-00	NM		NM		NM	NM	NM	NM	NM	NM	NM	NM

[illegible]

[illegible]

[illegible]

Well ID	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
TOC Elevation	292.04	292.35	301.61	292.35	304.64	295.1	292.59	304.32	283.83	299.47	307.35
Total Depth (ft)	30	77.00	31.80	78.25	304.64	77.20	69.00	82.50	71.00	85.00	87.00
Location	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field
DATE	DTW (BTC)	DTW (BTC)	DTW (BTC)	DTW (BTC)	DTW (BTC)	DTW (BTC)	DTW (BTC)	DTW (BTC)	DTW (BTC)	DTW (BTC)	DTW (BTC)
DTW (BTC)	GW Elev	GW Elev	GW Elev	GW Elev	GW Elev	GW Elev	GW Elev	GW Elev	GW Elev	GW Elev	GW Elev
6-Jan-01											
7-Jan-01											
8-Jan-01											
9-Jan-01											
10-Jan-01											
11-Jan-01											
12-Jan-01											
13-Jan-01											
14-Jan-01											
15-Jan-01											
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28-Feb-01											
1-Mar-01											
2-Mar-01											
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10-Mar-01											
11-Mar-01											
12-Mar-01											
13-Mar-01											
14-Mar-01											
15-Mar-01											
16-Mar-01											
17-Mar-01											
18-Mar-01											

Well ID	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
TOC Elevation	292.04	292.35	301.61	304.64	289.11	295.1	292.59	304.32	288.83	299.47	261.36
Total Depth (ft)	35.00	77.00	81.50	78.25	70.24	77.20	69.00	82.50	71.00	85.00	87.00
Location	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)
10-Mar-01											
20-Mar-01											
24-Mar-01											
25-Mar-01											
26-Mar-01											
27-Mar-01											
28-Mar-01											
29-Mar-01											
30-Mar-01											
31-Mar-01											

NOTES

Year: Over OAM is a separate data set

Baseline water levels were recorded (13-Nov-08 thru 04-Nov-09)

All elevations are in feet. All depths are in feet. Below Top of Casing (BTC).

Rainfall for the 24-hr period is recorded by the National Weather Service at Memphis International Airport.

Exhibit 5-1 of the OAM Plan identifies 54 monitoring wells requiring water level measurements. The following wells have monitoring record (date the measure taken):

MW-455 gauging required as of year two OAM location unknown until 05-Jun-00

MW-457 gauging required as of year two OAM location unknown until 05-Jun-00

P2-02 gauging required as of year two OAM location unknown until 15-Jun-00

MW-457 Has obstruction since May and cannot be gauged

TOC = top of casing

DTW = depth to water

N/A = not measured

NA = not available

= This value obtained from an ADESSS only low rate (gpm * 80 %4) and does not represent the instantaneous field localized volume

A = Effluent tanking meter located on 13-Nov-08

Well ID	MW-13		MW-14		MW-15		MW-18		MW-19		MW-27		MW-28		MW-29		MW-30		MW-31		MW-32		MW-33		MW-34	
	TOC Elevations	Total Depth (ft)	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev	DTW	GW Elev
Location		Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field	MLGW Facility	MLGW Facility	MLGW Facility	Kyle	Off Site	Dunn Field	Dunn Field	Dunn Field	Dunn Field
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
24-Mar-00	NM	225.86	NM	74.07	NM	226.71	134.26	173.76	87.42	203.15	90.48	213.38	60.65	233.83	40.94	232.28	48.77	226.10	219.62	63.014	221.87	55.09	225.47	139.139	160.98	
25-Mar-00	NM		NM		NM																					
26-Mar-00	NM		NM		NM																					
27-Mar-00	NM		NM		NM																					
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12-Apr-00	NM		NM		NM																					
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28-Apr-00	NM		NM		NM																					
29-Apr-00	NM		NM		NM																					
30-Apr-00	NM		NM		NM																					
1-May-00	NM		NM		NM																					
2-May-00	NM		NM		NM																					
3-May-00	NM		NM		NM																					
4-May-00	NM		NM		NM																					
5-May-00	NM		NM		NM																					
6-May-00	NM		NM		NM																					
7-May-00	NM		NM		NM																					
8-May-00	NM		NM		NM																					
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10-May-00	NM		NM		NM																					
11-May-00	NM		NM		NM																					
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14-May-00	NM		NM		NM																					
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17-May-00	NM		NM		NM																					
18-May-00	NM		NM		NM																					
19-May-00	NM		NM		NM																					
20-May-00	NM		NM		NM																					
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23-May-00	NM		NM		NM																					
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30-May-00	NM		NM		NM																					
31-May-00	NM		NM		NM																					
1-Jun-00	NM		NM		NM																					
2-Jun-00	NM		NM		NM																					
3-Jun-00	NM		NM		NM																					
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Well ID	MW-13		MW-14		MW-15		MW-18		MW-19		MW-28		MW-29		MW-30		MW-31		MW-32		MW-33		MW-34	
	298.73		302.22		295.12		308.02		290.57		294.79		273.22		274.87		290.17		284.88		280.56		289.72	
	83.00		80.00		81.00		140.00		96.40		89.00		54.00		59.00		79.00		67.80		60.00		158.90	
Dunn Field		Dunn Field		Dunn Field		Dunn Field		Dunn Field		Dunn Field		Dunn Field		Dunn Field		MLGW Facility		MLGW Facility		Off-Site		Dunn Field		
DATE	DTW	GW	DTW	GW	DTW	GW	DTW	GW	DTW	GW	DTW	GW	DTW	GW	DTW	GW	DTW	GW	DTW	GW	DTW	GW	DTW	GW
(BTC)	(BTC)	Elev	(BTC)	Elev	(BTC)	Elev	(BTC)	Elev	(BTC)	Elev	(BTC)	Elev	(BTC)	Elev	(BTC)	Elev	(BTC)	Elev	(BTC)	Elev	(BTC)	Elev	(BTC)	Elev
4-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
5-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
6-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
7-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
8-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
9-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
10-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
11-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
12-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
13-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
14-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
15-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
16-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
17-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
18-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
19-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
20-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
21-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
22-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
23-Jun-00	74.198	225.53	74.382	227.84	68.45	226.67	173.50	173.50	87.88	202.68	211.82	233.89	40.17	233.05	48.82	226.05	218.39	71.78	83.001	221.88	225.35	55.21	141.273	158.45
24-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
25-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
26-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
27-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
28-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
29-Jun-00	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NM	
30-Jun-00	74.228	225.50	74.4	227.82	68.51	226.61	173.33	173.33	89.60	202.61	214.28	233.86	40.82	232.40	48.86	228.01	218.33	71.84	63.022	221.86	225.30	55.26	141.912	157.81
1-Jul-00																								
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5-Jul-00																								
6-Jul-00																								
7-Jul-00																								
8-Jul-00																								
9-Jul-00																								
10-Jul-00	74.24	225.49	74.40	227.82	68.51	226.61	173.02	173.02	87.68	202.69	212.87	233.83	40.87	232.35	48.87	226.00	218.30	71.87	62.95	221.93	225.29	55.27	139.72	180.00
11-Jul-00																								
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30-Jul-00																								
31-Jul-00																								
1-Aug-00																								
2-Aug-00	74.29	225.44	74.45	227.77	68.59	226.53	172.35	172.35	88.16	202.41	213.57	233.80	41.01	232.21	48.93	225.94	218.24	71.93	63.01	221.87	225.25	55.31	142.30	157.52
3-Aug-00																								
4-Aug-00																								
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Well ID	MW-35	MW-36	MW-37	MW-38	MW-40	MW-41	MW-42	MW-43	MW-44	MW-45	MW-46	MW-48	MW-51
TOC Elevation	300.52	310.24	284.89	307.44	282.45	283.81	274.87	284.09	286.07	282.81	287.36	310.49	275.24
Total Depth (ft)	80.00	209.00	182.80	155.00	95.00	67.00	59.00	173.00	224.00	98.00	72.00	90.00	85.00
Location	Dunn Field	Dunn Field	Kyle	Depot	Off-Site	Off-Site	Off-Site	Elementary School	Off-Site	Off-Site	Dunn Field	Dunn Field	Off-Site
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)
12-Jan-00	NM												
13-Jan-00	NM												
14-Jan-00	NM												
15-Jan-00	NM												
16-Jan-00	NM												
17-Jan-00	NM												
18-Jan-00	NM												
19-Jan-00	NM												
20-Jan-00	NM												
21-Jan-00	NM												
22-Jan-00	NM												
23-Jan-00	NM												
24-Jan-00	NM	156.63	128.85	173.14	177.56	218.16	219.26	155.81	214.72	236.71	232.84	231.39	232.52
25-Jan-00	NM	153.61	128.85	173.14	177.56	218.16	219.26	155.81	214.72	236.71	232.84	231.39	232.52
26-Jan-00	NM												
27-Jan-00	NM												
28-Jan-00	NM												
29-Jan-00	NM												
30-Jan-00	NM												
31-Jan-00	NM												
1-Feb-00	NM												
2-Feb-00	NM												
3-Feb-00	NM												
4-Feb-00	NM												
5-Feb-00	NM												
6-Feb-00	NM												
7-Feb-00	NM	153.80	128.76	172.75	177.98	218.21	219.12	155.40	214.77	236.81	232.79	231.49	232.38
8-Feb-00	NM	76.65	128.76	172.75	177.98	218.21	219.12	155.40	214.77	236.81	232.79	231.49	232.38
9-Feb-00	NM												
10-Feb-00	NM												
11-Feb-00	NM												
12-Feb-00	NM												
13-Feb-00	NM												
14-Feb-00	NM												
15-Feb-00	NM												
16-Feb-00	NM												
17-Feb-00	NM												
18-Feb-00	NM												
19-Feb-00	NM												
20-Feb-00	NM												
21-Feb-00	NM												
22-Feb-00	NM												
23-Feb-00	NM	76.61	127.48	173.23	178.36	218.21	219.07	157.21	214.85	236.81	232.76	231.51	232.26
24-Feb-00	NM	152.95	127.48	173.23	178.36	218.21	219.07	157.21	214.85	236.81	232.76	231.51	232.26
25-Feb-00	NM												
26-Feb-00	NM												
27-Feb-00	NM												
28-Feb-00	NM												
29-Feb-00	NM												
1-Mar-00	NM												
2-Mar-00	NM												
3-Mar-00	NM												
4-Mar-00	NM												
5-Mar-00	NM												
6-Mar-00	NM	76.70	128.80	173.54	178.69	218.15	218.77	157.30	214.47	236.50	232.53	231.17	232.20
7-Mar-00	NM	152.70	128.80	173.54	178.69	218.15	218.77	157.30	214.47	236.50	232.53	231.17	232.20
8-Mar-00	NM												
9-Mar-00	NM												
10-Mar-00	NM												
11-Mar-00	NM												
12-Mar-00	NM												
13-Mar-00	NM												
14-Mar-00	NM												
15-Mar-00	NM												
16-Mar-00	NM												
17-Mar-00	NM												
18-Mar-00	NM												
19-Mar-00	NM												
20-Mar-00	NM												
21-Mar-00	NM												
22-Mar-00	NM	76.50	130.20	173.74	178.82	218.11	218.57	156.61	210.27	236.30	232.47	231.09	232.12
23-Mar-00	NM	154.06	130.20	173.74	178.82	218.11	218.57	156.61	210.27	236.30	232.47	231.09	232.12

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Well ID	MW-53	MW-54	MW-55	MW-56	MW-57	MW-58	MW-59	MW-60
TCC Elevation	306.36	295.36	292.05	293.62	290.79	290.52	300.12	296.85
Total Depth (ft)	82.50	82.50	74.00	69.50	70.50	67.50	85.00	84.00
Location	On-Site	McGW Facility	Dapet	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
1-Nov-99	73.02	233.36	73.55	221.50	63.10	227.69	75.40	224.83
2-Nov-99	NM		NM		NM		NM	
3-Nov-99	NM		NM		NM		NM	
4-Nov-99	NM		NM		NM		NM	
5-Nov-99	NM		NM		NM		NM	
6-Nov-99	NM		NM		NM		NM	
7-Nov-99	NM		NM		NM		NM	
8-Nov-99	NM		NM		NM		NM	
9-Nov-99	NM		NM		NM		NM	
10-Nov-99	NM		NM		NM		NM	
11-Nov-99	NM		NM		NM		NM	
12-Nov-99	NM		NM		NM		NM	
13-Nov-99	NM		NM		NM		NM	
14-Nov-99	NM		NM		NM		NM	
15-Nov-99	73.34	233.04	70.70	221.35	63.25	227.54	75.57	224.65
16-Nov-99	NM		NM		NM		NM	
17-Nov-99	NM		NM		NM		NM	
18-Nov-99	NM		NM		NM		NM	
19-Nov-99	NM		NM		NM		NM	
20-Nov-99	NM		NM		NM		NM	
21-Nov-99	NM		NM		NM		NM	
22-Nov-99	NM		NM		NM		NM	
23-Nov-99	NM		NM		NM		NM	
24-Nov-99	NM		NM		NM		NM	
25-Nov-99	NM		NM		NM		NM	
26-Nov-99	NM		NM		NM		NM	
27-Nov-99	NM		NM		NM		NM	
28-Nov-99	NM		NM		NM		NM	
29-Nov-99	73.80	232.58	71.00	221.05	63.47	227.32	75.70	224.58
30-Nov-99	NM		NM		NM		NM	
1-Dec-99	NM		NM		NM		NM	
2-Dec-99	NM		NM		NM		NM	
3-Dec-99	NM		NM		NM		NM	
4-Dec-99	NM		NM		NM		NM	
5-Dec-99	NM		NM		NM		NM	
6-Dec-99	NM		NM		NM		NM	
7-Dec-99	NM		NM		NM		NM	
8-Dec-99	NM		NM		NM		NM	
9-Dec-99	NM		NM		NM		NM	
10-Dec-99	NM		NM		NM		NM	
11-Dec-99	NM		NM		NM		NM	
12-Dec-99	NM		NM		NM		NM	
13-Dec-99	NM		NM		NM		NM	
14-Dec-99	NM		NM		NM		NM	
15-Dec-99	73.47	232.91	70.88	221.17	63.44	227.35	75.70	224.55
16-Dec-99	NM		NM		NM		NM	
17-Dec-99	NM		NM		NM		NM	
18-Dec-99	NM		NM		NM		NM	
19-Dec-99	NM		NM		NM		NM	
20-Dec-99	NM		NM		NM		NM	
21-Dec-99	NM		NM		NM		NM	
22-Dec-99	NM		NM		NM		NM	
23-Dec-99	NM		NM		NM		NM	
24-Dec-99	NM		NM		NM		NM	
25-Dec-99	NM		NM		NM		NM	
26-Dec-99	NM		NM		NM		NM	
27-Dec-99	NM		NM		NM		NM	
28-Dec-99	NM		NM		NM		NM	
29-Dec-99	NM		NM		NM		NM	
30-Dec-99	NM		NM		NM		NM	
31-Dec-99	NM		NM		NM		NM	
1-Jan-00	NM		NM		NM		NM	
2-Jan-00	NM		NM		NM		NM	
3-Jan-00	NM		NM		NM		NM	
4-Jan-00	NM		NM		NM		NM	
5-Jan-00	73.81	232.57	71.07	220.96	63.56	227.23	75.75	224.44
6-Jan-00	NM		NM		NM		NM	
7-Jan-00	NM		NM		NM		NM	
8-Jan-00	NM		NM		NM		NM	
9-Jan-00	NM		NM		NM		NM	
10-Jan-00	73.27	233.11	70.88	221.17	63.14	227.65	75.77	224.43
11-Jan-00	NM		NM		NM		NM	

Well ID	MW-53	MW-54	MW-55	MW-56	MW-57	MW-58	MW-59	MW-60
TOC Elevation	306.38	292.36	292.05	293.62	290.79	290.52	300.12	296.85
Total Depth (ft)	82.50	94.50	74.00	89.50	70.50	67.50	85.00	84.00
Location	Off Site	MLGW Facility	Depot	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
12-Jan-00	NM							
13-Jan-00	NM							
14-Jan-00	NM							
15-Jan-00	NM							
16-Jan-00	NM							
17-Jan-00	NM							
18-Jan-00	NM							
19-Jan-00	NM							
20-Jan-00	NM							
21-Jan-00	NM							
22-Jan-00	NM							
23-Jan-00	NM							
24-Jan-00	73.70	232.68	71.10	220.95	63.60	227.02	63.50	227.02
25-Jan-00	NM							
26-Jan-00	NM							
27-Jan-00	NM							
28-Jan-00	NM							
29-Jan-00	NM							
30-Jan-00	NM							
31-Jan-00	NM							
1-Feb-00	NM							
2-Feb-00	NM							
3-Feb-00	NM							
4-Feb-00	NM							
5-Feb-00	NM							
6-Feb-00	NM							
7-Feb-00	73.56	232.82	71.05	221.00	63.54	227.07	63.45	227.07
8-Feb-00	NM							
9-Feb-00	NM							
10-Feb-00	NM							
11-Feb-00	NM							
12-Feb-00	NM							
13-Feb-00	NM							
14-Feb-00	NM							
15-Feb-00	NM							
16-Feb-00	NM							
17-Feb-00	NM							
18-Feb-00	NM							
19-Feb-00	NM							
20-Feb-00	NM							
21-Feb-00	NM							
22-Feb-00	NM							
23-Feb-00	73.50	232.88	71.05	221.00	63.57	227.22	63.60	227.22
24-Feb-00	NM							
25-Feb-00	NM							
26-Feb-00	NM							
27-Feb-00	NM							
28-Feb-00	NM							
29-Feb-00	NM							
1-Mar-00	NM							
2-Mar-00	NM							
3-Mar-00	NM							
4-Mar-00	NM							
5-Mar-00	NM							
6-Mar-00	73.84	232.54	71.22	220.83	63.70	227.09	63.64	226.88
7-Mar-00	NM							
8-Mar-00	NM							
9-Mar-00	NM							
10-Mar-00	NM							
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16-Mar-00	NM							
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18-Mar-00	NM							
19-Mar-00	NM							
20-Mar-00	NM							

[illegible]

Well ID	MW-53	MW-54	MW-55	MW-56	MW-57	MW-58	MW-59	MW-60
Top Elevation	305.38	295.36	292.05	293.82	290.78	249.52	300.12	286.85
Total Depth (ft)	82.50	94.50	74.00	88.50	70.50	87.50	85.00	84.00
Location	Off-Site	MLGW Facility	Depot	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
4-Jun-00	NM		NM		NM		NM	
5-Jun-00	NM		NM		NM		NM	
6-Jun-00	NM		NM		NM		NM	
7-Jun-00	NM		NM		NM		NM	
8-Jun-00	NM		NM		NM		NM	
9-Jun-00	NM		NM		NM		NM	
10-Jun-00	NM		NM		NM		NM	
11-Jun-00	NM		NM		NM		NM	
12-Jun-00	NM		NM		NM		NM	
13-Jun-00	NM		NM		NM		NM	
14-Jun-00	NM		NM		NM		NM	
15-Jun-00	NM		NM		NM		NM	
16-Jun-00	NM		NM		NM		NM	
17-Jun-00	NM		NM		NM		NM	
18-Jun-00	NM		NM		NM		NM	
19-Jun-00	NM		NM		NM		NM	
20-Jun-00	NM		NM		NM		NM	
21-Jun-00	NM		NM		NM		NM	
22-Jun-00	NM		NM		NM		NM	
23-Jun-00	73.90	232.48	70.71	221.34	67.65	225.97	76.11	224.07
24-Jun-00	NM		NM		NM		NM	
25-Jun-00	NM		NM		NM		NM	
26-Jun-00	NM		NM		NM		NM	
27-Jun-00	NM		NM		NM		NM	
28-Jun-00	NM		NM		NM		NM	
29-Jun-00	NM		NM		NM		NM	
30-Jun-00	73.97	232.41	70.72	221.33	67.68	225.94	76.21	224.01
1-Jul-00								
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3-Jul-00								
4-Jul-00								
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12-Aug-00								
13-Aug-00								
14-Aug-00								

Well ID	MW-53	MW-54	MW-55	MW-56	MW-57	MW-58	MW-59	MW-60
TOC Elevation	306.98	295.36	292.05	293.82	290.79	290.52	300.12	298.85
Total Depth (ft)	82.50	84.50	74.00	69.50	70.50	67.50	85.00	84.00
Location	Off Site	MLGW Facility	Dump Field	Dump Field	Dump Field	Dump Field	Dump Field	Dump Field
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
26-Oct-00	74.21	232.17	---	220.91	---	63.88	---	73.09
27-Oct-00	74.09	232.29	213.91	220.80	64.11	63.96	224.82	72.97
28-Oct-00	74.70	231.69	213.87	220.80	64.08	63.90	223.85	72.87
30-Oct-00	74.40	231.98	213.89	220.85	64.06	63.92	223.97	72.76
1-Nov-00	74.20	232.18	213.83	220.85	64.12	63.88	223.97	72.74
2-Nov-00	74.12	232.25	213.80	219.15	64.00	63.88	223.97	72.74
4-Nov-00	74.10	232.28	213.81	214.93	64.00	63.88	223.97	72.74
5-Nov-00	73.68	232.70	213.91	214.93	64.00	63.88	223.97	72.74
6-Nov-00	74.12	232.26	213.81	215.08	64.00	63.88	223.97	72.74
7-Nov-00	74.10	232.28	213.70	215.08	64.00	63.88	223.97	72.74
8-Nov-00	73.79	232.59	213.96	220.75	64.12	63.88	223.97	72.74
10-Nov-00	74.45	231.93	213.99	220.87	64.38	63.88	223.97	72.74
11-Nov-00	74.14	232.24	213.75	220.70	64.30	63.88	223.97	72.74
12-Nov-00	74.21	232.17	213.65	220.83	64.19	63.88	223.97	72.74
13-Nov-00								
14-Nov-00								
15-Nov-00								
16-Nov-00								
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19-Nov-00								
20-Nov-00								
21-Nov-00								
22-Nov-00								
23-Nov-00								
24-Nov-00								
25-Nov-00								
26-Nov-00	74.23	232.15	213.72	221.04	64.14	64.05	224.88	71.79
27-Nov-00	74.10	232.28	213.86	221.13	64.20	64.05	224.88	71.79
28-Nov-00	74.30	232.08	213.72	220.95	64.25	64.00	224.88	71.79
29-Nov-00	74.32	232.06	213.92	220.87	64.25	64.00	224.88	71.79
30-Nov-00	74.04	232.34	213.91	221.05	64.12	63.95	224.88	71.79
1-Dec-00	74.02	232.36	213.75	220.93	64.12	64.03	224.88	71.79
2-Dec-00	74.39	231.99	213.75	220.74	64.25	64.13	224.88	71.79
3-Dec-00								
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30-Dec-00								
31-Dec-00								
1-Jan-01								
2-Jan-01								
3-Jan-01								
4-Jan-01								
5-Jan-01								

Well ID	MW-53	MW-54	MW-55	MW-56	MW-57	MW-58	MW-59	MW-60
TOC Elevation	306.35	293.36	292.05	293.82	290.79	290.52	300.12	295.85
Total Depth (ft)	82.90	147.50	74.00	69.50	70.59	67.50	85.00	84.00
Location	Off-Site	MLGW Facility	Depot	Dunn Field	Dunn Field	Dunn Field	Dunn Field	Dunn Field
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
6-Jan-01								
7-Jan-01								
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9-Jan-01								
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4-Sep-01								

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Well ID	MW-41	MW-62	MW-63	MW-65	MW-67	MW-68	MW-69	MW-70	MW-71	MW-73	MW-74	MW-75	MW-76
TOC Elevation	293.60	304.58	263.22	278.21	291.68	291.68	305.05	294.39	300.65	303.61	302.71		
Total Depth (ft)	112.50	135.00	52.00	275.00	291.68	291.68	92.20	91.00	75.40				
Location	Dunn Field	Dunn Field	Cheverdale	Off-Site	Off-Site	Off-Site	Off-Site	Off-Site	Off-Site	Dunn Field	Dunn Field	Kyle SL	Kyle SL
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)
26-Oct-00													
27-Oct-00													
28-Oct-00													
30-Oct-00													
31-Oct-00													
1-Nov-00	94.04	199.56	105.42	198.16	17.42	245.90	84.71	222.33	81.89	223.16	89.65	224.74	
2-Nov-00	94.12	199.48	105.43	198.15	17.77	245.43	84.43	222.61	81.75	223.30	89.62	224.77	
3-Nov-00	94.15	199.45	105.43	198.14	17.82	245.38	84.35	222.69	81.69	223.36	89.61	224.78	
4-Nov-00	94.18	199.42	105.44	198.08	17.83	245.42	84.30	222.74	81.67	223.38	89.16	225.23	
5-Nov-00	94.19	199.41	105.44	198.07	17.83	245.42	84.16	222.86	81.59	223.46	89.16	225.23	
6-Nov-00	94.20	199.40	105.44	198.06	17.83	245.42	84.16	222.86	81.53	223.52	89.16	225.23	
7-Nov-00	94.21	199.39	105.44	198.05	17.83	245.42	84.16	222.86	81.46	223.59	89.16	225.23	
8-Nov-00	94.22	199.38	105.44	198.04	17.83	245.42	84.16	222.86	81.38	223.65	89.16	225.23	
9-Nov-00	94.23	199.37	105.44	198.03	17.83	245.42	84.16	222.86	81.30	223.71	89.16	225.23	
10-Nov-00	94.24	199.36	105.44	198.02	17.83	245.42	84.16	222.86	81.22	223.77	89.16	225.23	
11-Nov-00	94.25	199.35	105.44	198.01	17.83	245.42	84.16	222.86	81.14	223.83	89.16	225.23	
12-Nov-00	94.26	199.34	105.44	198.00	17.83	245.42	84.16	222.86	81.06	223.89	89.16	225.23	
13-Nov-00	94.27	199.33	105.44	197.99	17.83	245.42	84.16	222.86	80.98	223.95	89.16	225.23	
14-Nov-00	94.28	199.32	105.44	197.98	17.83	245.42	84.16	222.86	80.90	224.01	89.16	225.23	
15-Nov-00	94.29	199.31	105.44	197.97	17.83	245.42	84.16	222.86	80.82	224.07	89.16	225.23	
16-Nov-00	94.30	199.30	105.44	197.96	17.83	245.42	84.16	222.86	80.74	224.13	89.16	225.23	
17-Nov-00	94.31	199.29	105.44	197.95	17.83	245.42	84.16	222.86	80.66	224.19	89.16	225.23	
18-Nov-00	94.32	199.28	105.44	197.94	17.83	245.42	84.16	222.86	80.58	224.25	89.16	225.23	
19-Nov-00	94.33	199.27	105.44	197.93	17.83	245.42	84.16	222.86	80.50	224.31	89.16	225.23	
20-Nov-00	94.34	199.26	105.44	197.92	17.83	245.42	84.16	222.86	80.42	224.37	89.16	225.23	
21-Nov-00	94.35	199.25	105.44	197.91	17.83	245.42	84.16	222.86	80.34	224.43	89.16	225.23	
22-Nov-00	94.36	199.24	105.44	197.90	17.83	245.42	84.16	222.86	80.26	224.49	89.16	225.23	
23-Nov-00	94.37	199.23	105.44	197.89	17.83	245.42	84.16	222.86	80.18	224.55	89.16	225.23	
24-Nov-00	94.38	199.22	105.44	197.88	17.83	245.42	84.16	222.86	80.10	224.61	89.16	225.23	
25-Nov-00	94.39	199.21	105.44	197.87	17.83	245.42	84.16	222.86	80.02	224.67	89.16	225.23	
26-Nov-00	94.40	199.20	105.44	197.86	17.83	245.42	84.16	222.86	79.94	224.73	89.16	225.23	
27-Nov-00	94.41	199.19	105.44	197.85	17.83	245.42	84.16	222.86	79.86	224.79	89.16	225.23	
28-Nov-00	94.42	199.18	105.44	197.84	17.83	245.42	84.16	222.86	79.78	224.85	89.16	225.23	
29-Nov-00	94.43	199.17	105.44	197.83	17.83	245.42	84.16	222.86	79.70	224.91	89.16	225.23	
30-Nov-00	94.44	199.16	105.44	197.82	17.83	245.42	84.16	222.86	79.62	224.97	89.16	225.23	
1-Dec-00	94.45	199.15	105.44	197.81	17.83	245.42	84.16	222.86	79.54	225.03	89.16	225.23	
2-Dec-00	94.46	199.14	105.44	197.80	17.83	245.42	84.16	222.86	79.46	225.09	89.16	225.23	
3-Dec-00	94.47	199.13	105.44	197.79	17.83	245.42	84.16	222.86	79.38	225.15	89.16	225.23	
4-Dec-00	94.48	199.12	105.44	197.78	17.83	245.42	84.16	222.86	79.30	225.21	89.16	225.23	
5-Dec-00	94.49	199.11	105.44	197.77	17.83	245.42	84.16	222.86	79.22	225.27	89.16	225.23	
6-Dec-00	94.50	199.10	105.44	197.76	17.83	245.42	84.16	222.86	79.14	225.33	89.16	225.23	
7-Dec-00	94.51	199.09	105.44	197.75	17.83	245.42	84.16	222.86	79.06	225.39	89.16	225.23	
8-Dec-00	94.52	199.08	105.44	197.74	17.83	245.42	84.16	222.86	78.98	225.45	89.16	225.23	
9-Dec-00	94.53	199.07	105.44	197.73	17.83	245.42	84.16	222.86	78.90	225.51	89.16	225.23	
10-Dec-00	94.54	199.06	105.44	197.72	17.83	245.42	84.16	222.86	78.82	225.57	89.16	225.23	
11-Dec-00	94.55	199.05	105.44	197.71	17.83	245.42	84.16	222.86	78.74	225.63	89.16	225.23	
12-Dec-00	94.56	199.04	105.44	197.70	17.83	245.42	84.16	222.86	78.66	225.69	89.16	225.23	
13-Dec-00	94.57	199.03	105.44	197.69	17.83	245.42	84.16	222.86	78.58	225.75	89.16	225.23	
14-Dec-00	94.58	199.02	105.44	197.68	17.83	245.42	84.16	222.86	78.50	225.81	89.16	225.23	
15-Dec-00	94.59	199.01	105.44	197.67	17.83	245.42	84.16	222.86	78.42	225.87	89.16	225.23	
16-Dec-00	94.60	199.00	105.44	197.66	17.83	245.42	84.16	222.86	78.34	225.93	89.16	225.23	
17-Dec-00	94.61	198.99	105.44	197.65	17.83	245.42	84.16	222.86	78.26	225.99	89.16	225.23	
18-Dec-00	94.62	198.98	105.44	197.64	17.83	245.42	84.16	222.86	78.18	226.05	89.16	225.23	
19-Dec-00	94.63	198.97	105.44	197.63	17.83	245.42	84.16	222.86	78.10	226.11	89.16	225.23	
20-Dec-00	94.64	198.96	105.44	197.62	17.83	245.42	84.16	222.86	78.02	226.17	89.16	225.23	
21-Dec-00	94.65	198.95	105.44	197.61	17.83	245.42	84.16	222.86	77.94	226.23	89.16	225.23	
22-Dec-00	94.66	198.94	105.44	197.60	17.83	245.42	84.16	222.86	77.86	226.29	89.16	225.23	
23-Dec-00	94.67	198.93	105.44	197.59	17.83	245.42	84.16	222.86	77.78	226.35	89.16	225.23	
24-Dec-00	94.68	198.92	105.44	197.58	17.83	245.42	84.16	222.86	77.70	226.41	89.16	225.23	
25-Dec-00	94.69	198.91	105.44	197.57	17.83	245.42	84.16	222.86	77.62	226.47	89.16	225.23	
26-Dec-00	94.70	198.90	105.44	197.56	17.83	245.42	84.16	222.86	77.54	226.53	89.16	225.23	
27-Dec-00	94.71	198.89	105.44	197.55	17.83	245.42	84.16	222.86	77.46	226.59	89.16	225.23	
28-Dec-00	94.72	198.88	105.44	197.54	17.83	245.42	84.16	222.86	77.38	226.65	89.16	225.23	
29-Dec-00	94.73	198.87	105.44	197.53	17.83	245.42	84.16	222.86	77.30	226.71	89.16	225.23	
30-Dec-00	94.74	198.86	105.44	197.52	17.83	245.42	84.16	222.86	77.22	226.77	89.16	225.23	
31-Dec-00	94.75	198.85	105.44	197.51	17.83	245.42	84.16	222.86	77.14	226.83	89.16	225.23	
1-Jan-01	94.76	198.84	105.44	197.50	17.83	245.42	84.16	222.86	77.06	226.89	89.16	225.23	
2-Jan-01	94.77	198.83	105.44	197.49	17.83	245.42	84.16	222.86	76.98	226.95	89.16	225.23	
3-Jan-01	94.78	198.82	105.44	197.48	17.83	245.42	84.16	222.86	76.90	227.01	89.16	225.23	
4-Jan-01	94.79	198.81	105.44	197.47	17.83	245.42	84.16	222.86	76.82	227.07	89.16	225.23	
5-Jan-01	94.80	198.80	105.44	197.46	17.83	245.42	84.16	222.86	76.74	227.13	89.16	225.23	

[illegible]

[illegible]

Well ID	MW-77 304.42	MW-78 275.00	MW-79 285.03	MW-80 273.81	MW-87 294.93	MW-89	MW-90	MW-91 291.99	MW-95 259.43	P2-02 284.39
TOC Elevation										
Total Depth (ft)										
Location	Kyle Sit	Kyle Street	Regan Street	Meadowhill & Rozelle	Dunn Field	Depot	Depot	Dunn Field	Rozelle St	Off-Site
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
12-Jan-00										
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13-Mar-00										
14-Mar-00										
15-Mar-00										
16-Mar-00										

Well ID TOC Elevation Total Depth (ft)	MW-77 304.42		MW-78 275.00		MW-79 285.03		MW-80 273.81		MW-87 294.83		MW-89		MW-90		MW-91 291.99		MW-95 259.43		PZ-02 284.39 54.50 Off-Site	
	Kyle St.		Kyle Street		Regent Street		Meadowhill & Rozelle		Dunn Field		Dipcot		Dipcot		Dunn Field		Rozelle St			
	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
DATE																				
15-Aug-00																				
16-Aug-00																				
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7-Oct-00																				

Well ID	MW-77		MW-78		MW-79		MW-80		MW-87		MW-89		MW-90		MW-91		MW-95		PZ-02	
	TOC Elevation	304.42	275.00	275.00	285.03	273.81	294.93	291.99	294.43	291.99	294.43	291.99	294.43	291.99	294.43	291.99	294.43	291.99	294.43	54.50
Total Depth (ft)																				On-Site
Location	Kyle St.	Kyle Street	Regan Street	Meadowland & Rozelle	Dunn Field	Depot	Depot	Depot	Depot	Dunn Field	Depot	Depot	Depot	Dunn Field	Rozelle St.	On-Site				
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
26-Oct-00																				239.18
27-Oct-00																			45.21	239.18
28-Oct-00																			45.22	239.17
29-Oct-00																			45.30	239.09
30-Oct-00																			45.14	239.25
31-Oct-00																			45.14	239.25
1-Nov-00																			45.14	239.25
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3-Jan-01																			45.14	239.25
4-Jan-01																			45.14	239.25
5-Jan-01																			45.14	239.25

Well ID	MNH-77	MNH-78	MNH-79	MNH-80	MNH-87	MNH-88	MNH-89	MNH-91	MNH-95	P2-02
TOC Elevation	304.42	275.00	285.03	273.81	284.93			291.99	259.43	284.39
Total Depth (ft)										54.50
Location	Kyle St	Kyle Street	Ragan Street	Meadowhill & Rozella	Dunn Field	Depot	Depot	Dunn Field	Rozella St	Off-Site
DATE	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev	DTW (BTC)	GW Elev
6-Jan-01										
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18-Mar-01										

[illegible]

APPENDIX B
SEMI-ANNUAL MONITORING WELL SAMPLES
ANALYTICAL LABORATORY DATA



ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6331

Founded 1972

February 23, 2001

SVERDRUP

FEB 23 2001

RECEIVED

Mr. Kraig Smith
Sverdrup/Jacobs Eng.
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Ref: Analytical Testing
ETC Order # 0102451
Project Description Dunn Field

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and/or 40 CFR part 136.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,

Chet Scheibel
Laboratory Project Manager

rt
Attachment

SVE_MHDDMTA

Certifications

Tennessee #TN02027
Arkansas #40730
Kentucky #90047
North Carolina #415
South Carolina #84002002

Mississippi
Oklahoma #9311
Virginia #00106
Washington #C248
US Army Corps of Engineers



ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6334

Founded 1972

February 28, 2001

Mr. Kraig Smith
Sverdrup/Jacobs Eng.
3354 Perimeter Hill Drive, Suite 310
Nashville, TN 37211

REF: Memphis Depot, Dunn Field Groundwater Systems
ETC Order: 0102-451

Dear Mr. Offner

Enclosed is the EDD submission for ETC Order 0102-451. The file is named 0102-451.csv. It is in the format provided in the Laboratory Electronic Deliverable Format for CH2M HILL, version 4.00.

Please contact me at 918-968-3129, with any questions.

Sincerely,

A handwritten signature in black ink that reads 'Connie Bradberry'. The signature is written in a cursive, flowing style.

Connie Bradberry

Encl.

Environmental Testing & Consulting, Inc.
Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report. These qualifiers do not apply for TIC reports.

Q	Surrogate Recovery Outside QC Limits
J	Estimated Value. Presence of the compound was confirmed but less than the reported detection limit.
E	Concentration exceeds the established method calibration range but is within the working range of the instrument
B	Analyte detected in the associated Method Blank.
U	Reported result was unconfirmed. Refer to Case Narrative.
N	Non-Compliance Report associated with this sample or project
C	Result reported from GC/MS confirmation analysis.
M	Result reported represents a minimum value. Refer to Case Narrative.
NC	Result reported from Primary Column. Result did not confirm.
*	QC Data (percent recovery/RPD for a particular analyte was outside QC Limits)

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ANALYTICAL SUMMARY/CROSS REFERENCE TABLEClient Name Sverdrup/Jacobs Eng.
Site ID Dunn Field

ETC Order #0102451

<u>ETC Sample ID</u>	<u>Field ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Method Description</u>
010245101	RW-4	AQUEOUS	8260B	GC/MS Volatile Organics
010245102	RW-5	AQUEOUS	8260B	GC/MS Volatile Organics
010245103	RW-8	AQUEOUS	8260B	GC/MS Volatile Organics
010245104	RW-9	AQUEOUS	8260B	GC/MS Volatile Organics
010245105	RW-9A	AQUEOUS	8260B	GC/MS Volatile Organics
010245106	MW-77	AQUEOUS	8260B	GC/MS Volatile Organics
010245107	MW-44	AQUEOUS	8260B	GC/MS Volatile Organics
010245108	RB-1	AQUEOUS	8260B	GC/MS Volatile Organics
010245109	FB-1	AQUEOUS	8260B	GC/MS Volatile Organics
010245110	MW-54	AQUEOUS	8260B	GC/MS Volatile Organics
010245111	MW-33	AQUEOUS	8260B	GC/MS Volatile Organics
010245112	MW-71	AQUEOUS	8260B	GC/MS Volatile Organics
010245113	MW-70	AQUEOUS	8260B	GC/MS Volatile Organics
010245114	MW-70A	AQUEOUS	8260B	GC/MS Volatile Organics
010245115	MW-69	AQUEOUS	8260B	GC/MS Volatile Organics
010245116	MW-57	AQUEOUS	8260B	GC/MS Volatile Organics
010245117	Trip Blank	AQUEOUS	8260B	GC/MS Volatile Organics

626 124

Environmental Testing & Consulting, Inc.

**Login
Chain-of-Custody**

000003



ETC Work Order :

026 125

F:\QAQC\STOP\CDC0895.X15

Original and Yellow accompany samples to the laboratory. Pink copy for Field Crew
Original copy returned with results. Yellow copy for ETC, Inc. files.



ETC Work Order :

000005

000005

[illegible]

Original and yellow accompany samples to the laboratory. Pink copy returned with results. Yellow copy for ETC, Inc. files.

Environmental Testing & Consulting, Inc.
Cooler Receipt Form

Date Received 2/15/01 LIMS# 0102-451
Date/Time Checked In 2/15/01-16:40 Project Dunn Field
Carrier/Bill# Hand-Delivered By Rebekah Barger

1. Custody Seals?/Location-	No
2. Samples are non-radioactive?	Yes
3. Chain of Custody in plastic?	Yes
4. Temperature at receipt (ok = 4 ± 2 °C) <4°C	OK
5. Ice & Packing-box, ice	Yes
6. Chain of Custody filled out properly?	Yes
7. All containers in separate bags?	No
8. Sample containers intact?	Yes
9. Label(s) complete and in good condition?	Yes
10. Label(s) agree with Chain of Custody?	Yes
11. Correct containers used?	Yes
12. Sufficient sample?	Yes
13. VOA vials bubble-free (H ₂ O) or no head space (soil)?	Yes
14. Preservation OK? TM pH____; TRPH pH____; TOC pH____; TOX pH____; CN pH____; N/P pH____; Other pH____	Yes

Comments _____

*Validated Date and Time of Sample Receipt (VDTSR)

Environmental Testing & Consulting, Inc.

Sample Reports

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-01**
 Field ID : **RW-4**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	8.19	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	3.60	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	5.90	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	20.6	ug/L	1.00			
Tetrachloroethene	4.98	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	259E	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	29.6	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	103	74 123
S2 - Toluene-d8	91	86 112
S3 - 4-Bromofluorobenzene	82	81 115
S4 - 1,2-Dichloroethane-d4	85	80 120

626 130

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0601006

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000009

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-01**
 Field ID : **RW-4-DIL**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	50					
Acetone	ND	ug/L	1000			
Benzene	ND	ug/L	50.0			
Bromodichloromethane	ND	ug/L	50.0			
Bromoform	ND	ug/L	50.0			
Bromomethane	ND	ug/L	50.0			
2-Butanone (MEK)	ND	ug/L	1000			
Carbon Disulfide	ND	ug/L	50.0			
Carbon Tetrachloride	ND	ug/L	50.0			
Chlorobenzene	ND	ug/L	50.0			
Chlorodibromomethane	ND	ug/L	50.0			
Chloroethane	ND	ug/L	50.0			
Chloroform	ND	ug/L	50.0			
Chloromethane	ND	ug/L	50.0			
1,1-Dichloroethane	ND	ug/L	50.0			
1,2-Dichloroethane	ND	ug/L	50.0			
1,1-Dichloroethene	ND	ug/L	50.0			
trans-1,2-Dichloroethene	ND	ug/L	50.0			
1,2-Dichloropropane	ND	ug/L	50.0			
cis-1,3-Dichloropropene	ND	ug/L	50.0			
trans-1,3-Dichloropropene	ND	ug/L	50.0			
Ethylbenzene	ND	ug/L	50.0			
2-Hexanone (MBK)	ND	ug/L	250			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	250			
Methylene Chloride	280B	ug/L	250			
Styrene	ND	ug/L	50.0			
1,1,2,2-Tetrachloroethane	ND	ug/L	50.0			
Tetrachloroethene	ND	ug/L	50.0			
Toluene	ND	ug/L	50.0			
1,1,1-Trichloroethane	ND	ug/L	50.0			
1,1,2-Trichloroethane	ND	ug/L	50.0			
Trichloroethene	337	ug/L	50.0			
Vinyl Acetate	ND	ug/L	1000			
Vinyl Chloride	ND	ug/L	50.0			
Xylenes-m,p	ND	ug/L	50.0			
Xylenes-o	ND	ug/L	50.0			
cis-1,2-Dichloroethene	ND	ug/L	50.0			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	105	74 123
S2 - Toluene-d8	95	86 112
S3 - 4-Bromofluorobenzene	87	81 115
S4 - 1,2-Dichloroethane-d4	87	80 120

Data Validator  ND - Not Detected

Q - Recovery Outside QC Limits

000010

626 132

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0701008

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 50.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000011

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-02**
 Field ID : **RW-5**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	1.00	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	10.1	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	322E	ug/L	1.00			
Tetrachloroethene	6.19	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	324E	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	36.1	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	105	74 123
S2 - Toluene-d8	90	86 112
S3 - 4-Bromofluorobenzene	81	81 115
S4 - 1,2-Dichloroethane-d4	82	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000012

626 134

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-2

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0701007

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000013

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-02**
 Field ID : **RW-5-DIL**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	50					
Acetone	ND	ug/L	1000			
Benzene	ND	ug/L	50.0			
Bromodichloromethane	ND	ug/L	50.0			
Bromoform	ND	ug/L	50.0			
Bromomethane	ND	ug/L	50.0			
2-Butanone (MEK)	ND	ug/L	1000			
Carbon Disulfide	ND	ug/L	50.0			
Carbon Tetrachloride	ND	ug/L	50.0			
Chlorobenzene	ND	ug/L	50.0			
Chlorodibromomethane	ND	ug/L	50.0			
Chloroethane	ND	ug/L	50.0			
Chloroform	ND	ug/L	50.0			
Chloromethane	ND	ug/L	50.0			
1,1-Dichloroethane	ND	ug/L	50.0			
1,2-Dichloroethane	ND	ug/L	50.0			
1,1-Dichloroethene	ND	ug/L	50.0			
trans-1,2-Dichloroethene	ND	ug/L	50.0			
1,2-Dichloropropane	ND	ug/L	50.0			
cis-1,3-Dichloropropene	ND	ug/L	50.0			
trans-1,3-Dichloropropene	ND	ug/L	50.0			
Ethylbenzene	ND	ug/L	50.0			
2-Hexanone (MBK)	ND	ug/L	250			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	250			
Methylene Chloride	ND	ug/L	250			
Styrene	ND	ug/L	50.0			
1,1,2,2-Tetrachloroethane	381	ug/L	50.0			
Tetrachloroethene	ND	ug/L	50.0			
Toluene	ND	ug/L	50.0			
1,1,1-Trichloroethane	ND	ug/L	50.0			
1,1,2-Trichloroethane	ND	ug/L	50.0			
Trichloroethene	407	ug/L	50.0			
Vinyl Acetate	ND	ug/L	1000			
Vinyl Chloride	ND	ug/L	50.0			
Xylenes-m,p	ND	ug/L	50.0			
Xylenes-o	ND	ug/L	50.0			
cis-1,2-Dichloroethene	ND	ug/L	50.0			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	110	74 123
S2 - Toluene-d8	94	86 112
S3 - 4-Bromofluorobenzene	87	81 115
S4 - 1,2-Dichloroethane-d4	93	80 120

626 136

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-2

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0801009

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 50.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000015

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 137

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
ETC Order Number **0102451**

ETC Lab ID **0102451-03**
Field ID : **RW-8**

Matrix : **AQUEOUS**
Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	1.05	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	11.4	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	5.65	ug/L	1.00			
trans-1,2-Dichloroethene	30.5	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	166	ug/L	1.00			
Tetrachloroethene	7.22	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	2.09	ug/L	1.00			
Trichloroethene	105	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	118	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	107	74 123
S2 - Toluene-d8	94	86 112
S3 - 4-Bromofluorobenzene	86	81 115
S4 - 1,2-Dichloroethane-d4	90	80 120

626 138

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-3

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0501006

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000017

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 139

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive, .
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
ETC Order Number **0102451**

ETC Lab ID **0102451-04**
Field ID : **RW-9**

Matrix : **AQUEOUS**
Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	1.00	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	13.7	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	1.49	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	46.1	ug/L	1.00			
trans-1,2-Dichloroethene	1.42	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	3.01	ug/L	1.00			
Tetrachloroethene	38.6	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	1.39	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	22.4	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	4.74	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	101	74 123
S2 - Toluene-d8	91	86 112
S3 - 4-Bromofluorobenzene	84	81 115
S4 - 1,2-Dichloroethane-d4	84	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000018

626 140

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-4

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0901009

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000019

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-05**
 Field ID : **RW-9A**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	1.03	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	15.0	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	1.42	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	44.1	ug/L	1.00			
trans-1,2-Dichloroethene	1.40	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	2.90	ug/L	1.00			
Tetrachloroethene	38.4	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	1.42	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	22.4	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	5.29	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	107	74 123
S2 - Toluene-d8	90	86 112
S3 - 4-Bromofluorobenzene	84	81 115
S4 - 1,2-Dichloroethane-d4	85	80 120

626 142

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-5

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1001010

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000021

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-06**
 Field ID : **MW-77**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	1.94	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	10.6	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	90.8	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	2,010E	ug/L	1.00			
Tetrachloroethene	49.4	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	16.1	ug/L	1.00			
Trichloroethene	102E	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	1.38	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	358E	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	104	74 123
S2 - Toluene-d8	89	86 112
S3 - 4-Bromofluorobenzene	80 Q	81 115
S4 - 1,2-Dichloroethane-d4	83	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000022

626 144

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-6

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1101011

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000023

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 145

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
ETC Order Number **0102451**

ETC Lab ID **0102451-06**
Field ID : **MW-77-DIL**

Matrix : **AQUEOUS**
Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	200					
Acetone	ND	ug/L	4000			
Benzene	ND	ug/L	200			
Bromodichloromethane	ND	ug/L	200			
Bromoform	ND	ug/L	200			
Bromomethane	ND	ug/L	200			
2-Butanone (MEK)	ND	ug/L	4000			
Carbon Disulfide	ND	ug/L	200			
Carbon Tetrachloride	ND	ug/L	200			
Chlorobenzene	ND	ug/L	200			
Chlorodibromomethane	ND	ug/L	200			
Chloroethane	ND	ug/L	200			
Chloroform	ND	ug/L	200			
Chloromethane	ND	ug/L	200			
1,1-Dichloroethane	ND	ug/L	200			
1,2-Dichloroethane	ND	ug/L	200			
1,1-Dichloroethene	ND	ug/L	200			
trans-1,2-Dichloroethene	ND	ug/L	200			
1,2-Dichloropropane	ND	ug/L	200			
cis-1,3-Dichloropropene	ND	ug/L	200			
trans-1,3-Dichloropropene	ND	ug/L	200			
Ethylbenzene	ND	ug/L	200			
2-Hexanone (MBK)	ND	ug/L	1000			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1000			
Methylene Chloride	ND	ug/L	1000			
Styrene	ND	ug/L	200			
1,1,2,2-Tetrachloroethane	11,800	ug/L	200			
Tetrachloroethene	ND	ug/L	200			
Toluene	ND	ug/L	200			
1,1,1-Trichloroethane	ND	ug/L	200			
1,1,2-Trichloroethane	ND	ug/L	200			
Trichloroethene	4,540	ug/L	200			
Vinyl Acetate	ND	ug/L	4000			
Vinyl Chloride	ND	ug/L	200			
Xylenes-m,p	ND	ug/L	200			
Xylenes-o	ND	ug/L	200			
cis-1,2-Dichloroethene	437	ug/L	200			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	112	74 123
S2 - Toluene-d8	92	86 112
S3 - 4-Bromofluorobenzene	86	81 115
S4 - 1,2-Dichloroethane-d4	93	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000024

G26 146

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-6

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1301014

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 200.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000025

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-07**
 Field ID : **MW-44**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	94.2	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	12.7	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	3.76	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	0.40J	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	104	74 123
S2 - Toluene-d8	96	86 112
S3 - 4-Bromofluorobenzene	86	81 115
S4 - 1,2-Dichloroethane-d4	90	80 120

626 148

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-7

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0601007

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000027

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-08**
 Field ID : **RB-1**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	3.99	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	108	74 123
S2 - Toluene-d8	90	86 112
S3 - 4-Bromofluorobenzene	83	81 115
S4 - 1,2-Dichloroethane-d4	84	80 120

626 150

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-8

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1301013

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000029

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 151

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
ETC Order Number **0102451**

ETC Lab ID **0102451-09**
Field ID : **FB-1**

Matrix : **AQUEOUS**
Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	0.65J	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	108	74 123
S2 - Toluene-d8	92	86 112
S3 - 4-Bromofluorobenzene	83	81 115
S4 - 1,2-Dichloroethane-d4	84	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000030

026 152

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-9

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1401014

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000031

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-10**
 Field ID : **MW-54**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	250E	ug/L	1.00			
Carbon Tetrachloride	11.2	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	14.2	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	1.79	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	37.0	ug/L	1.00			
Tetrachloroethene	0.80J	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	28.3	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	21.1	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	106	74 123
S2 - Toluene-d8	92	86 112
S3 - 4-Bromofluorobenzene	83	81 115
S4 - 1,2-Dichloroethane-d4	85	80 120

626 154

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-10

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1501015

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000033

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

026 155

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
ETC Order Number **0102451**

ETC Lab ID **0102451-10**
Field ID : **MW-54-DIL**

Matrix : **AQUEOUS**
Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	50					
Acetone	ND	ug/L	1000			
Benzene	ND	ug/L	50.0			
Bromodichloromethane	ND	ug/L	50.0			
Bromoform	ND	ug/L	50.0			
Bromomethane	ND	ug/L	50.0			
2-Butanone (MEK)	ND	ug/L	1000			
Carbon Disulfide	249	ug/L	50.0			
Carbon Tetrachloride	ND	ug/L	50.0			
Chlorobenzene	ND	ug/L	50.0			
Chlorodibromomethane	ND	ug/L	50.0			
Chloroethane	ND	ug/L	50.0			
Chloroform	ND	ug/L	50.0			
Chloromethane	ND	ug/L	50.0			
1,1-Dichloroethane	ND	ug/L	50.0			
1,2-Dichloroethane	ND	ug/L	50.0			
1,1-Dichloroethene	ND	ug/L	50.0			
trans-1,2-Dichloroethene	ND	ug/L	50.0			
1,2-Dichloropropane	ND	ug/L	50.0			
cis-1,3-Dichloropropene	ND	ug/L	50.0			
trans-1,3-Dichloropropene	ND	ug/L	50.0			
Ethylbenzene	ND	ug/L	50.0			
2-Hexanone (MBK)	ND	ug/L	250			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	250			
Methylene Chloride	ND	ug/L	250			
Styrene	ND	ug/L	50.0			
1,1,2,2-Tetrachloroethane	ND	ug/L	50.0			
Tetrachloroethene	ND	ug/L	50.0			
Toluene	ND	ug/L	50.0			
1,1,1-Trichloroethane	ND	ug/L	50.0			
1,1,2-Trichloroethane	ND	ug/L	50.0			
Trichloroethene	ND	ug/L	50.0			
Vinyl Acetate	ND	ug/L	1000			
Vinyl Chloride	ND	ug/L	50.0			
Xylenes-m,p	ND	ug/L	50.0			
Xylenes-o	ND	ug/L	50.0			
cis-1,2-Dichloroethene	ND	ug/L	50.0			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	107	74 123
S2 - Toluene-d8	94	86 112
S3 - 4-Bromofluorobenzene	88	81 115
S4 - 1,2-Dichloroethane-d4	90	80 120

Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000034

626 156

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-10

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0901010

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 50.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000035

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-11**
 Field ID : **MW-33**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	111	74 123
S2 - Toluene-d8	90	86 112
S3 - 4-Bromofluorobenzene	83	81 115
S4 - 1,2-Dichloroethane-d4	87	80 120

626 158

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-11

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1601016

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000037

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-12**
 Field ID : **MW-71**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	1.49	ug/L	1.00			
Carbon Tetrachloride	24.9	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	508E	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	1.87	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	66.2	ug/L	1.00			
Tetrachloroethene	5.16	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	1.98	ug/L	1.00			
Trichloroethene	77.8	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	6.89	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	102	74 123
S2 - Toluene-d8	91	86 112
S3 - 4-Bromofluorobenzene	83	81 115
S4 - 1,2-Dichloroethane-d4	86	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000038

626 160

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-12

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1701017

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000039

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-12**
 Field ID : **MW-71-DIL**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	100					
Acetone	ND	ug/L	2000			
Benzene	ND	ug/L	100			
Bromodichloromethane	ND	ug/L	100			
Bromoform	ND	ug/L	100			
Bromomethane	ND	ug/L	100			
2-Butanone (MEK)	ND	ug/L	2000			
Carbon Disulfide	ND	ug/L	100			
Carbon Tetrachloride	ND	ug/L	100			
Chlorobenzene	ND	ug/L	100			
Chlorodibromomethane	ND	ug/L	100			
Chloroethane	ND	ug/L	100			
Chloroform	624	ug/L	100			
Chloromethane	ND	ug/L	100			
1,1-Dichloroethane	ND	ug/L	100			
1,2-Dichloroethane	ND	ug/L	100			
1,1-Dichloroethene	ND	ug/L	100			
trans-1,2-Dichloroethene	ND	ug/L	100			
1,2-Dichloropropane	ND	ug/L	100			
cis-1,3-Dichloropropene	ND	ug/L	100			
trans-1,3-Dichloropropene	ND	ug/L	100			
Ethylbenzene	ND	ug/L	100			
2-Hexanone (MBK)	ND	ug/L	500			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	500			
Methylene Chloride	ND	ug/L	500			
Styrene	ND	ug/L	100			
1,1,2,2-Tetrachloroethane	ND	ug/L	100			
Tetrachloroethene	ND	ug/L	100			
Toluene	ND	ug/L	100			
1,1,1-Trichloroethane	ND	ug/L	100			
1,1,2-Trichloroethane	ND	ug/L	100			
Trichloroethene	ND	ug/L	100			
Vinyl Acetate	ND	ug/L	2000			
Vinyl Chloride	ND	ug/L	100			
Xylenes-m,p	ND	ug/L	100			
Xylenes-o	ND	ug/L	100			
cis-1,2-Dichloroethene	ND	ug/L	100			
Surrogate Standard	% Recovery		QC Limits			
S1 - Dibromofluoromethane	106		74	123		
S2 - Toluene-d8	94		86	112		
S3 - 4-Bromofluorobenzene	88		81	115		
S4 - 1,2-Dichloroethane-d4	91		80	120		

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000040

626 162

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-12

Lab Name: ETC, INC.

Contract:

Lab Code: /

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1001011

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 100.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000041

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 163

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-13**
 Field ID : **MW-70**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	50.4	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	0.45J	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	1.47	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	7.65	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	373E	ug/L	1.00			
Tetrachloroethene	5.73	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	1.99	ug/L	1.00			
Trichloroethene	389E	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	0.93J	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	34.3	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	111	74 123
S2 - Toluene-d8	89	86 112
S3 - 4-Bromofluorobenzene	82	81 115
S4 - 1,2-Dichloroethane-d4	87	80 120

Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000042

626 164

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-13

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1801018

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000043

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

026 165

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
ETC Order Number **0102451**

ETC Lab ID **0102451-13**
Field ID : **MW-70-DIL**

Matrix : **AQUEOUS**
Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	100					
Acetone	ND	ug/L	2000			
Benzene	ND	ug/L	100			
Bromodichloromethane	ND	ug/L	100			
Bromoform	ND	ug/L	100			
Bromomethane	ND	ug/L	100			
2-Butanone (MEK)	ND	ug/L	2000			
Carbon Disulfide	ND	ug/L	100			
Carbon Tetrachloride	ND	ug/L	100			
Chlorobenzene	ND	ug/L	100			
Chlorodibromomethane	ND	ug/L	100			
Chloroethane	ND	ug/L	100			
Chloroform	ND	ug/L	100			
Chloromethane	ND	ug/L	100			
1,1-Dichloroethane	ND	ug/L	100			
1,2-Dichloroethane	ND	ug/L	100			
1,1-Dichloroethene	ND	ug/L	100			
trans-1,2-Dichloroethene	ND	ug/L	100			
1,2-Dichloropropane	ND	ug/L	100			
cis-1,3-Dichloropropene	ND	ug/L	100			
trans-1,3-Dichloropropene	ND	ug/L	100			
Ethylbenzene	ND	ug/L	100			
2-Hexanone (MBK)	ND	ug/L	500			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	500			
Methylene Chloride	ND	ug/L	500			
Styrene	ND	ug/L	100			
1,1,2,2-Tetrachloroethane	482	ug/L	100			
Tetrachloroethene	ND	ug/L	100			
Toluene	ND	ug/L	100			
1,1,1-Trichloroethane	ND	ug/L	100			
1,1,2-Trichloroethane	ND	ug/L	100			
Trichloroethene	544	ug/L	100			
Vinyl Acetate	ND	ug/L	2000			
Vinyl Chloride	ND	ug/L	100			
Xylenes-m,p	ND	ug/L	100			
Xylenes-o	ND	ug/L	100			
cis-1,2-Dichloroethene	ND	ug/L	100			

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	108	74	123
S2 - Toluene-d8	96	86	112
S3 - 4-Bromofluorobenzene	87	81	115
S4 - 1,2-Dichloroethane-d4	91	80	120

Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000044

626 166

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-13

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1101012

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 100.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000045

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 167

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
ETC Order Number **0102451**

ETC Lab ID **0102451-14**
Field ID : **MW-70A**

Matrix : **AQUEOUS**
Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	90.4	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	0.42J	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	1.44	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	8.47	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	376E	ug/L	1.00			
Tetrachloroethene	5.84	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	2.07	ug/L	1.00			
Trichloroethene	410E	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	38.8	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	112	74 123
S2 - Toluene-d8	89	86 112
S3 - 4-Bromofluorobenzene	83	81 115
S4 - 1,2-Dichloroethane-d4	89	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000046

626 168

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-14

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1901019

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000047

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 169

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
ETC Order Number **0102451**

ETC Lab ID **0102451-14**
Field ID : **MW-70A-DIL**

Matrix : **AQUEOUS**
Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	200					
Acetone	ND	ug/L	4000			
Benzene	ND	ug/L	200			
Bromodichloromethane	ND	ug/L	200			
Bromoform	ND	ug/L	200			
Bromomethane	ND	ug/L	200			
2-Butanone (MEK)	ND	ug/L	4000			
Carbon Disulfide	ND	ug/L	200			
Carbon Tetrachloride	ND	ug/L	200			
Chlorobenzene	ND	ug/L	200			
Chlorodibromomethane	ND	ug/L	200			
Chloroethane	ND	ug/L	200			
Chloroform	ND	ug/L	200			
Chloromethane	ND	ug/L	200			
1,1-Dichloroethane	ND	ug/L	200			
1,2-Dichloroethane	ND	ug/L	200			
1,1-Dichloroethene	ND	ug/L	200			
trans-1,2-Dichloroethene	ND	ug/L	200			
1,2-Dichloropropane	ND	ug/L	200			
cis-1,3-Dichloropropene	ND	ug/L	200			
trans-1,3-Dichloropropene	ND	ug/L	200			
Ethylbenzene	ND	ug/L	200			
2-Hexanone (MBK)	ND	ug/L	1000			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1000			
Methylene Chloride	ND	ug/L	1000			
Styrene	ND	ug/L	200			
1,1,2,2-Tetrachloroethane	448	ug/L	200			
Tetrachloroethene	ND	ug/L	200			
Toluene	ND	ug/L	200			
1,1,1-Trichloroethane	ND	ug/L	200			
1,1,2-Trichloroethane	ND	ug/L	200			
Trichloroethene	497	ug/L	200			
Vinyl Acetate	ND	ug/L	4000			
Vinyl Chloride	ND	ug/L	200			
Xylenes-m,p	ND	ug/L	200			
Xylenes-o	ND	ug/L	200			
cis-1,2-Dichloroethene	ND	ug/L	200			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	110	74 123
S2 - Toluene-d8	93	86 112
S3 - 4-Bromofluorobenzene	87	81 115
S4 - 1,2-Dichloroethane-d4	92	80 120

Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000048

626 170

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-14

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1201013

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 200.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000049

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 171

Client Name Sverdrup/Jacobs Eng.
 Memphis Depot, Dunn Field
 3354 Perimeter Hill Drive,
 Suite 310
 Nashville, TN 37211

Site ID Dunn Field

FID #

Date Arrived 02/15/01
 ETC Order Number 0102451

ETC Lab ID 0102451-15
 Field ID : MW-69

Matrix : AQUEOUS
 Sample Date : 02/15/01

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	1.41	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	0.95J	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	42.2	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	3.11	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	109	74 123
S2 - Toluene-d8	90	86 112
S3 - 4-Bromofluorobenzene	87	81 115
S4 - 1,2-Dichloroethane-d4	99	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000050

626 172

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-15

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1501016

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000051

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
 ETC Order Number **0102451**

ETC Lab ID **0102451-16**
 Field ID : **MW-57**

Matrix : **AQUEOUS**
 Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/19/01	EM	8260B 5030B
QC Batch	V402191					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	44.4	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	11.8	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	1.42	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	5.01	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	28.3	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	0.44	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	109	74 123
S2 - Toluene-d8	93	86 112
S3 - 4-Bromofluorobenzene	88	81 115
S4 - 1,2-Dichloroethane-d4	95	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000052

626 174

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-16

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1701018

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-GCMS-TIC

000053

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 175

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/15/01**
ETC Order Number **0102451**

ETC Lab ID • **0102451-17**
Field ID : **Trip Blank**

Matrix : **AQUEOUS**
Sample Date : **02/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V402161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	5.20B	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	107	74 123
S2 - Toluene-d8	91	86 112
S3 - 4-Bromofluorobenzene	81	81 115
S4 - 1,2-Dichloroethane-d4	81	80 120

Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000054

626 176

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-451-17

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0501005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				
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FORM I VOA-GCMS-TIC

000055

Environmental Testing & Consulting, Inc.

**Quality Control Reports
Level III
GC/MS Volatiles**

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Eng
Project Name Dunn Field
ETC Order# 0102-451

SAMPLE PRESERVATION (Verified at time of analysis)

All aqueous samples preserved to pH < 2 and maintained at 4 degrees C until analysis.

METHOD

Preparation: SW-846 5030B
Analysis: SW-846 8260B

HOLDING TIMES

Sample Analysis All samples analyzed within 14 days of collection.

QUALITY CONTROL

<u>QC Batch</u>	<u>Form 4 Summary</u>
V402161	V4021611LB
V402191	V4021911LB

System Monitoring Compounds FORM 2

Surrogate recoveries within QC limits, except as listed below.

Surrogate Bromofluorobenzene was flagged for low recovery in sample 0102-451-01MS/MSD (RW-4) and 0102-451-07 MS/MSD (MW-44). These low recoveries do not affect the recovery data.

Surrogate Bromofluorobenzene was flagged for slightly low recovery (1%) in sample 0102-451-06 (MW-77). This slightly low recovery does not affect the data.

Method Blank FORM 4

V4021611LB
V4021911LB

Target Analytes were not detected in the Method Blanks, except as listed below.

V4021611LB

Methylene Chloride was detected in the Method Blank at a concentration of 2.76J ug/L. Sample concentration less than 10 times the Method Blank value (27.6 ug/L) should be attributed to Lab contamination. This analyte was detected in sample 0102-451-17 (Trip Blank) at 5.20 ug/L.

Trans-1,3-Dichloropropene was detected at a concentration of 4.69 ug/L. This analyte was not identified in associated project samples. There is no effect on the data.

V4021911LB

Methylene Chloride was detected in the Method Blank at a concentration of 4.83J ug/L. Sample concentration less than 10 times the Method Blank value and a dilution thereof (2415 ug/L) should be attributed to Lab contamination. This analyte was detected in sample 0102-451-01DIL (RW-4) at 280 ug/L. This analyte was not detected in the undiluted sample.

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Eng.
 Project Name Dunn Field
 ETC Order# 0102-451

QUALITY CONTROL

Laboratory Control Sample FORM 3

V4021611LCS

V4021911LCS

All acceptance criteria met, except as listed below.

V4021611LCS

Cis-1,3-Dichloropropene and three non-target analytes were flagged outside control limits in the LCS. This analyte was not detected in the associated project samples.

V4021911LCS

Four non-target analytes were flagged outside control limits in the LCS. There is no effect on the data.

Matrix Spike / Matrix Spike Dup. FORM 3

Batch V402161

0102-451-01 RPD

All analytes within QC limits.

RW-4

Spike Recovery

All analytes within QC limits, except as listed below

Benzene was flagged for a slightly high recovery in the MS/MSD. Trichloroethene was flagged for a low recovery in the in the MS/MSD due t the amount in sample compared to spike concentration.

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup. FORM 3

Batch V402191

0102-451-07 RPD

All analytes within QC limits.

MW-44

Spike Recovery

All analytes within QC limits, except as listed below.

1,1-Dichloroethene was flagged for high recovery in the MS/MSD. Benzene was flagged for slightly high recovery in the MSD. MS recovery was within control limits.

Refer to Laboratory Control Sample(s) for system verification.

CALIBRATION

BFB Daily 12-Hour Tune

All criteria met. FORM 5

Initial Calibration

All criteria met. FORM 6

Calibration Verification

All criteria met. FORM 7, Responses >30% do not affect the data.

Volatile Internal Standard Area and RT FORM 8

Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits

626 180

ENVIRONMENTAL TESTING AND CONSULTING, INC.

CASE NARRATIVE

GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Eng.
Project Name Dunn Field
ETC Order# 0102-451

SAMPLE ANALYSIS

Instrumentation HP 5890 Series II GC, 5971MSD
Dilutions Required Dilutions were performed on seven samples to bring Target Analyte(s) within calibration range as shown on the Sample Report Forms.

CC
Project Manager

000059

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

	CLIENT SAMPLE NO.	SMC1 (DCE) #	SMC2 (DFM) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
	=====	=====	=====	=====	=====	=====
01	V4021611LB	81	111	90	81	0
02	0102-451-17	81	107	91	81	0
03	0102-451-1	85	103	91	82	0
04	0102-451-2	82	105	90	81	0
05	0102-451-4	84	101	91	84	0
06	0102-451-5	85	107	90	84	0
07	0102-451-6	83	104	89	80*	1
08	0102-451-8	84	108	90	83	0
09	0102-451-9	84	108	92	83	0
10	0102-451-10	85	106	92	83	0
11	0102-451-11	87	111	90	83	0
12	0102-451-12	86	102	91	83	0
13	0102-451-13	87	111	89	82	0
14	0102-451-14	89	112	89	83	0
15	V4021611LCS	90	101	89	97	0
16	0102-451-1MS	92	103	88	71*	1
17	0102-451-1MS	91	104	87	74*	1
18	V4021911LB	81	104	95	86	0
19	0102-451-3	90	107	94	86	0
20	0102-451-7	90	103	96	86	0
21	0102-451-1	87	105	95	87	0
22	0102-451-2	93	110	94	87	0
23	0102-451-10	90	107	94	88	0
24	0102-451-12	91	106	94	88	0
25	0102-451-13	91	108	96	87	0
26	0102-451-14	92	110	93	87	0
27	0102-451-6	93	112	92	86	0
28	0102-451-15	99	109	90	87	0
29	0102-451-16	95	109	93	88	0
30	V4021911LCS	98	97	93	95	0

QC LIMITS

SMC1 (DCE) = 1,2-Dichloroethane-d4 (80-120)
 SMC2 (DFM) = Dibromofluoromethane (74-123)
 SMC3 (TOL) = Toluene-d8 (86-112)
 OTHER(BFB) = Bromofluorobenzene (81-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

626 182

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

	CLIENT SAMPLE NO.	SMC1 (DCE) #	SMC2 (DFM) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
	=====	=====	=====	=====	=====	=====
01	0102-451-7MS	96	101	91	75*	1
02	0102-451-7MS	96	103	91	71*	1
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QC LIMITS

SMC1 (DCE) = 1,2-Dichloroethane-d4 (80-120)
 SMC2 (DFM) = Dibromofluoromethane (74-123)
 SMC3 (TOL) = Toluene-d8 (86-112)
 OTHER (BFB) = Bromofluorobenzene (81-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V4021611LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Lab File ID: 0402004

Lab Prep Batch: V402161

Date Analyzed: 02/16/01

Time Analyzed: 1329

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC4

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	0102-451-17	V402161	0501005	1400
02	0102-451-1	V402161	0601006	1431
03	0102-451-2	V402161	0701007	1502
04	0102-451-4	V402161	0901009	1605
05	0102-451-5	V402161	1001010	1636
06	0102-451-6	V402161	1101011	1707
07	0102-451-8	V402161	1301013	1809
08	0102-451-9	V402161	1401014	1840
09	0102-451-10	V402161	1501015	1911
10	0102-451-11	V402161	1601016	1942
11	0102-451-12	V402161	1701017	2013
12	0102-451-13	V402161	1801018	2044
13	0102-451-14	V402161	1901019	2115
14	V4021611LCS	V402161	2001020	2146
15	0102-451-1MS	V402161	2101021	2217
16	0102-451-1MS	V402161	2201022	2248
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COMMENTS:

626 184

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

Lab Name: ETC, INC.

Contract:

V4021611LB

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Prep Batch: V402161

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0402004

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
67-64-1	Acetone	20.00	U
75-05-8	Acetonitrile	20.00	U
107-02-8	Acrolein	20.00	U
107-13-1	Acrylonitrile	20.00	U
107-05-1	Allyl chloride	1.00	U
71-43-2	Benzene	1.00	U
108-86-1	Bromobenzene	1.00	U
74-97-5	Bromochloromethane	1.00	U
75-27-4	Bromodichloromethane	1.00	U
75-25-2	Bromoform	1.00	U
78-93-3	2-Butanone	20.00	U
74-83-9	Bromomethane	1.00	U
104-51-8	n-Butylbenzene	1.00	U
135-98-8	sec-Butylbenzene	1.00	U
98-06-6	tert-Butylbenzene	1.00	U
75-15-0	Carbon Disulfide	1.00	U
56-23-5	Carbon Tetrachloride	1.00	U
108-90-7	Chlorobenzene	1.00	U
124-48-1	Chlorodibromomethane	1.00	U
75-00-3	Chloroethane	1.00	U
110-75-0	2-Chloroethyl vinyl ether	20.00	U
67-66-3	Chloroform	1.00	U
74-87-3	Chloromethane	1.00	U
126-99-8	Chloroprene	1.00	U
95-49-8	2-Chlorotoluene	1.00	U
106-43-4	4-Chlorotoluene	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane	1.00	U
106-93-4	1,2-Dibromoethane	1.00	U
74-95-3	Dibromomethane	1.00	U
95-50-1	1,2-Dichlorobenzene	1.00	U
541-73-1	1,3-Dichlorobenzene	1.00	U
106-46-7	1,4-Dichlorobenzene	1.00	U
110-57-6	trans-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000063

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4021611LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Prep Batch: V402161

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0402004

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

1868-53-7-----	Dichlorodifluoromethane	1.00	U
75-34-3-----	1,1-Dichloroethane	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
156-59-4-----	cis-1,2-Dichloroethene	1.00	U
156-60-5-----	trans-1,2-Dichloroethene	1.00	U
78-87-5-----	1,2-Dichloropropane	1.00	U
142-28-9-----	1,3-Dichloropropane	1.00	U
590-20-7-----	2,2-Dichloropropane	1.00	U
563-58-6-----	1,1-Dichloropropene	1.00	U
10061-01-5-----	cis-1,3-Dichloropropene	1.00	U
10061-02-6-----	trans-1,3-Dichloropropene	4.69	
108-20-3-----	Di isopropyl ether	5.00	U
123-91-1-----	1,4-Dioxane	100.0	U
141-78-6-----	Ethyl Acetate	5.00	U
100-41-4-----	Ethylbenzene	1.00	U
97-63-2-----	Ethyl methacrylate	1.00	U
110-00-9-----	Furan	1.00	U
87-63-3-----	Hexachlorobutadiene	1.00	U
110-54-3-----	Hexane	1.00	U
591-78-6-----	2-Hexanone	5.00	U
74-88-4-----	Iodomethane	1.00	U
78-83-1-----	Isobutyl Alcohol	100.0	U
98-82-8-----	Isopropylbenzene	1.00	U
99-87-6-----	4-Isopropyltoluene	1.00	U
126-98-7-----	Methacrylonitrile	10.00	U
75-09-2-----	Methylene Chloride	2.76	J
80-62-6-----	Methyl methacrylate	1.00	U
108-10-1-----	4-Methyl-2-Pentanone	5.00	U
1634-04-4-----	Methyl-tertbutyl-Ether	5.00	U
91-20-3-----	Naphthalene	1.00	U
76-01-7-----	Pentachloroethane	1.00	U
107-12-0-----	Propionitrile	10.00	U

FORM I VOA-GCMS

000064

626 186

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4021611LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Prep Batch: V402161

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0402004

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

109-60-4-----	n-Propyl Acetate	1.00	U
103-65-1-----	n-Propylbenzene	1.00	U
100-42-5-----	Styrene	1.00	U
630-20-6-----	1,1,1,2-Tetrachloroethane	1.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1.00	U
127-18-4-----	Tetrachloroethene	1.00	U
109-99-9-----	Tetrahydrofuran	1.00	U
87-61-6-----	1,2,3-Trichlorobenzene	1.00	U
108-88-3-----	Toluene	1.00	U
71-55-6-----	1,1,1-Trichloroethane	1.00	U
79-00-5-----	1,1,2-Trichloroethane	1.00	U
76-13-1-----	1,1,2-trichloro-1,2,2-triflu	1.00	U
79-01-6-----	Trichloroethene	1.00	U
75-69-4-----	Trichlorofluoromethane	1.00	U
96-18-4-----	1,2,3-Trichloropropane	1.00	U
120-82-1-----	1,2,4-Trichlorobenzene	1.00	U
95-63-6-----	1,2,4-Trimethylbenzene	1.00	U
108-67-8-----	1,3,5-Trimethylbenzene	1.00	U
108-05-4-----	Vinyl Acetate	20.00	U
75-01-4-----	Vinyl Chloride	1.00	U
1330-20-7-----	Xylene-mp	1.00	U
95-47-6-----	Xylene-o	1.00	U
1476-11-5-----	cis-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000065

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V4021611LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0402004

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-GCMS-TIC

000066

626 188

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402161

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix Spike - Sample No.: V4021611LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Acetone	100.0		65.92	66	59-151
Acetonitrile	1000		892.8	89	57-143
Acrolein	100.0		37.42	37*	59-134
Acrylonitrile	100.0		78.39	78	60-146
Allyl chloride	100.0		98.08	98	74-120
Benzene	100.0		123.4	123	72-124
Bromobenzene	100.0		97.82	98	77-120
Bromochloromethane	100.0		113.1	113	74-120
Bromodichloromethane	100.0		75.52	76	68-119
Bromoform	100.0		74.32	74	66-136
2-Butanone	100.0		88.67	89	55-151
Bromomethane	100.0		100.8	101	40-134
n-Butylbenzene	100.0		108.9	109	69-129
sec-Butylbenzene	100.0		96.91	97	72-127
tert-Butylbenzene	100.0		98.26	98	73-126
Carbon Disulfide	100.0		85.11	85	60-133
Carbon Tetrachloride	100.0		91.60	92	64-123
Chlorobenzene	100.0		103.9	104	77-112
Chlorodibromomethane	100.0		74.03	74	72-118
Chloroethane	100.0		107.9	108	64-142
2-Chloroethyl vinyl eth	100.0		5.42	5*	22-165
Chloroform	100.0		107.5	108	70-115
Chloromethane	100.0		102.2	102	58-139
Chloroprene	100.0		100.1	100	73-118
2-Chlorotoluene	100.0		80.56	80	65-132
4-Chlorotoluene	100.0		101.3	101	67-127
1,2-Dibromo-3-chloropro	100.0		71.88	72	56-134
1,2-Dibromoethane	100.0		78.55	78	74-118

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402161

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix Spike - Sample No.: V4021611LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dibromomethane	100.0		78.97	79	75-114
1,2-Dichlorobenzene	100.0		111.7	112	80-113
1,3-Dichlorobenzene	100.0		117.3	117	77-119
1,4-Dichlorobenzene	100.0		110.7	111	78-116
trans-1,4-Dichloro-2-bu	100.0		78.64	79	62-138
Dichlorodifluoromethane	100.0		105.6	106	48-145
1,1-Dichloroethane	100.0		103.4	103	76-118
1,2-Dichloroethane	100.0		81.88	82	62-124
1,1-Dichloroethene	100.0		106.1	106	69-121
cis-1,2-Dichloroethene	100.0		110.5	110	76-114
trans-1,2-Dichloroethen	100.0		103.2	103	72-121
1,2-Dichloropropane	100.0		83.56	84	64-133
1,3-Dichloropropane	100.0		80.49	80	68-128
2,2-Dichloropropane	100.0		98.90	99	67-132
1,1-Dichloropropene	100.0		116.4	116	76-117
cis-1,3-Dichloropropene	100.0		75.02	75*	77-120
trans-1,3-Dichloroprope	100.0		82.58	82	73-124
Di isopropyl ether	100.0		105.0	105	62-160
1,4-Dioxane	2000		1571	78	56-131
Ethyl Acetate	100.0		93.45	93	52-151
Ethylbenzene	100.0		89.26	89	77-111
Ethyl methacrylate	200.0		163.7	82	57-140
Furan	100.0		140.3	140*	52-124
Hexachlorobutadiene	100.0		90.68	91	69-137
Hexane	100.0		116.2	116	70-130
2-Hexanone	100.0		70.36	70	53-144
Iodomethane	100.0		88.06	88	51-153
Isobutyl Alcohol	2000		1835	92	60-134

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

* Values outside of QC limits

COMMENTS:

Lab Name: ETC, INC.

Lab Prep Batch: V402161

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix Spike - Sample No.: V4021611LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Isopropylbenzene	100.0		93.58	94	74-125
4-Isopropyltoluene	100.0		92.17	92	72-127
Methacrylonitrile	1000		924.2	92	70-125
Methylene Chloride	100.0		105.6	106	76-115
Methyl methacrylate	200.0		123.6	62	57-147
4-Methyl-2-Pentanone	100.0		74.03	74	42-144
Methyl-tertbutyl-Ether	100.0		74.96	75	62-122
Naphthalene	100.0		95.28	95	53-124
Pentachloroethane	100.0		107.4	107	78-126
Propionitrile	1000		830.3	83	58-139
n-Propyl Acetate	100.0		104.7	105	88-170
n-Propylbenzene	100.0		91.53	92	75-125
Styrene	100.0		97.56	98	77-117
1,1,1,2-Tetrachloroetha	100.0		81.53	82	79-113
1,1,2,2-Tetrachloroetha	100.0		103.6	104	67-126
Tetrachloroethene	100.0		90.98	91	77-115
Tetrahydrofuran	100.0		97.84	98	76-181
1,2,3-Trichlorobenzene	100.0		101.6	102	62-132
Toluene	100.0		89.30	89	77-115
1,1,1-Trichloroethane	100.0		95.54	96	63-122
1,1,2-Trichloroethane	100.0		86.99	87	69-117
1,1,2-trichloro-1,2,2-t	100.0		105.0	105	70-130
Trichloroethene	100.0		78.69	79	75-113
Trichlorofluoromethane	100.0		83.62	84	55-130
1,2,3-Trichloropropane	100.0		76.71	77	62-130
1,2,4-Trichlorobenzene	100.0		103.3	103	68-132
1,2,4-Trimethylbenzene	100.0		83.45	83	69-126
1,3,5-Trimethylbenzene	100.0		110.8	111	69-128

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402161

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix Spike - Sample No.: V4021611LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Vinyl Acetate	100.0		101.8	102	28-146
Vinyl Chloride	100.0		102.4	102	65-134
Xylene-mp	200.0		192.0	96	77-115
Xylene-o	100.0		98.92	99	77-115
cis-1,4-Dichloro-2-bute	100.0		77.54	78	70-130

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 4 out of 89 outside limits

COMMENTS:

626 192

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V402161

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix Spike - Sample No.: 0102-451-1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Benzene	100.0	0.000	124.9	125*	72-124
Chlorobenzene	100.0	0.000	95.48	95	77-112
1,1-Dichloroethene	100.0	0.000	115.5	116	69-121
Toluene	100.0	0.000	87.63	88	77-115
Trichloroethene	100.0	259.2	299.3	40*	75-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Benzene	100.0	130.2	130*	4	20	72-124
Chlorobenzene	100.0	101.1	101	6	20	77-112
1,1-Dichloroethene	100.0	119.8	120	3	20	69-121
Toluene	100.0	87.22	87	1	20	77-115
Trichloroethene	100.0	297.6	38*	5	20	75-113

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 4 out of 10 outside limits

COMMENTS:

FORM III VOA-GCMS

000071

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V4021911LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Lab File ID: 0401005

Lab Prep Batch: V402191

Date Analyzed: 02/19/01

Time Analyzed: 1322

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC4

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	0102-451-3	V402191	0501006	1356
02	0102-451-7	V402191	0601007	1427
03	0102-451-1	V402191	0701008	1459
04	0102-451-2	V402191	0801009	1530
05	0102-451-10	V402191	0901010	1603
06	0102-451-12	V402191	1001011	1634
07	0102-451-13	V402191	1101012	1706
08	0102-451-14	V402191	1201013	1737
09	0102-451-6	V402191	1301014	1808
10	0102-451-15	V402191	1501016	1911
11	0102-451-16	V402191	1701018	2013
12	V4021911LCS	V402191	1901020	2115
13	0102-451-7MS	V402191	2001021	2147
14	0102-451-7MS	V402191	2101022	2218
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COMMENTS:

626 194

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4021911LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Prep Batch: V402191

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0401005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

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

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
67-64-1-----	Acetone	20.00	U
75-05-8-----	Acetonitrile	20.00	U
107-02-8-----	Acrolein	20.00	U
107-13-1-----	Acrylonitrile	20.00	U
107-05-1-----	Allyl chloride	1.00	U
71-43-2-----	Benzene	1.00	U
108-86-1-----	Bromobenzene	1.00	U
74-97-5-----	Bromochloromethane	1.00	U
75-27-4-----	Bromodichloromethane	1.00	U
75-25-2-----	Bromoform	1.00	U
78-93-3-----	2-Butanone	20.00	U
74-83-9-----	Bromomethane	1.00	U
104-51-8-----	n-Butylbenzene	1.00	U
135-98-8-----	sec-Butylbenzene	1.00	U
98-06-6-----	tert-Butylbenzene	1.00	U
75-15-0-----	Carbon Disulfide	1.00	U
56-23-5-----	Carbon Tetrachloride	1.00	U
108-90-7-----	Chlorobenzene	1.00	U
124-48-1-----	Chlorodibromomethane	1.00	U
75-00-3-----	Chloroethane	1.00	U
110-75-0-----	2-Chloroethyl vinyl ether	20.00	U
67-66-3-----	Chloroform	1.00	U
74-87-3-----	Chloromethane	1.00	U
126-99-8-----	Chloroprene	1.00	U
95-49-8-----	2-Chlorotoluene	1.00	U
106-43-4-----	4-Chlorotoluene	1.00	U
96-12-8-----	1,2-Dibromo-3-chloropropane	1.00	U
106-93-4-----	1,2-Dibromoethane	1.00	U
74-95-3-----	Dibromomethane	1.00	U
95-50-1-----	1,2-Dichlorobenzene	1.00	U
541-73-1-----	1,3-Dichlorobenzene	1.00	U
106-46-7-----	1,4-Dichlorobenzene	1.00	U
110-57-6-----	trans-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000073

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4021911LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Prep Batch: V402191

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0401005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1868-53-7-----	Dichlorodifluoromethane	1.00	U
75-34-3-----	1,1-Dichloroethane	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
156-59-4-----	cis-1,2-Dichloroethene	1.00	U
156-60-5-----	trans-1,2-Dichloroethene	1.00	U
78-87-5-----	1,2-Dichloropropane	1.00	U
142-28-9-----	1,3-Dichloropropane	1.00	U
590-20-7-----	2,2-Dichloropropane	1.00	U
563-58-6-----	1,1-Dichloropropene	1.00	U
10061-01-5-----	cis-1,3-Dichloropropene	1.00	U
10061-02-6-----	trans-1,3-Dichloropropene	1.00	U
108-20-3-----	Di isopropyl ether	5.00	U
123-91-1-----	1,4-Dioxane	100.0	U
141-78-6-----	Ethyl Acetate	5.00	U
100-41-4-----	Ethylbenzene	1.00	U
97-63-2-----	Ethyl methacrylate	1.00	U
110-00-9-----	Furan	1.00	U
87-63-3-----	Hexachlorobutadiene	1.00	U
110-54-3-----	Hexane	1.00	U
591-78-6-----	2-Hexanone	5.00	U
74-88-4-----	Iodomethane	1.00	U
78-83-1-----	Isobutyl Alcohol	100.0	U
98-82-8-----	Isopropylbenzene	1.00	U
99-87-6-----	4-Isopropyltoluene	1.00	U
126-98-7-----	Methacrylonitrile	10.00	U
75-09-2-----	Methylene Chloride	4.83	J
80-62-6-----	Methyl methacrylate	1.00	U
108-10-1-----	4-Methyl-2-Pentanone	5.00	U
1634-04-4-----	Methyl-tertbutyl-Ether	5.00	U
91-20-3-----	Naphthalene	1.00	U
76-01-7-----	Pentachloroethane	1.00	U
107-12-0-----	Propionitrile	10.00	U

FORM I VOA-GCMS

000074

626 196

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4021911LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Prep Batch: V402191

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0401005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

109-60-4-----	n-Propyl Acetate	1.00	U
103-65-1-----	n-Propylbenzene	1.00	U
100-42-5-----	Styrene	1.00	U
630-20-6-----	1,1,1,2-Tetrachloroethane	1.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1.00	U
127-18-4-----	Tetrachloroethene	1.00	U
109-99-9-----	Tetrahydrofuran	1.00	U
87-61-6-----	1,2,3-Trichlorobenzene	1.00	U
108-88-3-----	Toluene	1.00	U
71-55-6-----	1,1,1-Trichloroethane	1.00	U
79-00-5-----	1,1,2-Trichloroethane	1.00	U
76-13-1-----	1,1,2-trichloro-1,2,2-triflu	1.00	U
79-01-6-----	Trichloroethene	1.00	U
75-69-4-----	Trichlorofluoromethane	1.00	U
96-18-4-----	1,2,3-Trichloropropane	1.00	U
120-82-1-----	1,2,4-Trichlorobenzene	1.00	U
95-63-6-----	1,2,4-Trimethylbenzene	1.00	U
108-67-8-----	1,3,5-Trimethylbenzene	1.00	U
108-05-4-----	Vinyl Acetate	20.00	U
75-01-4-----	Vinyl Chloride	1.00	U
1330-20-7-----	Xylene-mp	1.00	U
95-47-6-----	Xylene-o	1.00	U
1476-11-5-----	cis-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000075

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V4021911LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0401005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/19/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

626 198

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402191

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix Spike - Sample No.: V4021911LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Acetone	100.0		73.87	74	59-151
Acetonitrile	1000		946.6	95	57-143
Acrolein	100.0		42.74	43*	59-134
Acrylonitrile	100.0		79.62	80	60-146
Allyl chloride	100.0		112.4	112	74-120
Benzene	100.0		120.0	120	72-124
Bromobenzene	100.0		88.24	88	77-120
Bromochloromethane	100.0		99.09	99	74-120
Bromodichloromethane	100.0		81.08	81	68-119
Bromoform	100.0		68.82	69	66-136
2-Butanone	100.0		84.73	85	55-151
Bromomethane	100.0		120.7	121	40-134
n-Butylbenzene	100.0		109.1	109	69-129
sec-Butylbenzene	100.0		88.08	88	72-127
tert-Butylbenzene	100.0		88.23	88	73-126
Carbon Disulfide	100.0		113.7	114	60-133
Carbon Tetrachloride	100.0		95.93	96	64-123
Chlorobenzene	100.0		90.70	91	77-112
Chlorodibromomethane	100.0		79.71	80	72-118
Chloroethane	100.0		130.2	130	64-142
2-Chloroethyl vinyl eth	100.0		85.56	86	22-165
Chloroform	100.0		106.4	106	70-115
Chloromethane	100.0		125.0	125	58-139
Chloroprene	100.0		103.6	104	73-118
2-Chlorotoluene	100.0		76.16	76	65-132
4-Chlorotoluene	100.0		89.50	90	67-127
1,2-Dibromo-3-chloropro	100.0		74.92	75	56-134
1,2-Dibromoethane	100.0		81.88	82	74-118

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402191

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix Spike - Sample No.: V4021911LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Dibromomethane	100.0		76.06	76	75-114
1,2-Dichlorobenzene	100.0		107.8	108	80-113
1,3-Dichlorobenzene	100.0		107.4	107	77-119
1,4-Dichlorobenzene	100.0		112.6	113	78-116
trans-1,4-Dichloro-2-bu	100.0		77.54	78	62-138
Dichlorodifluoromethane	100.0		116.6	117	48-145
1,1-Dichloroethane	100.0		108.2	108	76-118
1,2-Dichloroethane	100.0		100.1	100	62-124
1,1-Dichloroethene	100.0		115.7	116	69-121
cis-1,2-Dichloroethene	100.0		107.3	107	76-114
trans-1,2-Dichloroethen	100.0		110.1	110	72-121
1,2-Dichloropropane	100.0		85.41	85	64-133
1,3-Dichloropropane	100.0		84.76	85	68-128
2,2-Dichloropropane	100.0		103.6	104	67-132
1,1-Dichloropropene	100.0		115.6	116	76-117
cis-1,3-Dichloropropene	100.0		82.90	83	77-120
trans-1,3-Dichloroprope	100.0		85.56	86	73-124
Di isopropyl ether	100.0		103.0	103	62-160
1,4-Dioxane	2000		1563	78	56-131
Ethyl Acetate	100.0		89.27	89	52-151
Ethylbenzene	100.0		79.31	79	77-111
Ethyl methacrylate	200.0		171.7	86	57-140
Furan	100.0		163.4	163*	52-124
Hexachlorobutadiene	100.0		91.67	92	69-137
Hexane	100.0		114.8	115	70-130
2-Hexanone	100.0		76.24	76	53-144
Iodomethane	100.0		93.58	94	51-153
Isobutyl Alcohol	2000		1750	88	60-134

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402191

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix Spike - Sample No.: V4021911LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Isopropylbenzene	100.0		83.12	83	74-125
4-Isopropyltoluene	100.0		83.94	84	72-127
Methacrylonitrile	1000		885.3	88	70-125
Methylene Chloride	100.0		111.6	112	76-115
Methyl methacrylate	200.0		127.7	64	57-147
4-Methyl-2-Pentanone	100.0		77.89	78	42-144
Methyl-tertbutyl-Ether	100.0		83.81	84	62-122
Naphthalene	100.0		91.41	91	53-124
Pentachloroethane	100.0		127.5	128*	78-126
Propionitrile	1000		845.2	84	58-139
n-Propyl Acetate	100.0		111.0	111	88-170
n-Propylbenzene	100.0		83.64	84	75-125
Styrene	100.0		85.52	86	77-117
1,1,1,2-Tetrachloroetha	100.0		76.58	76*	79-113
1,1,2,2-Tetrachloroetha	100.0		100.8	101	67-126
Tetrachloroethene	100.0		82.08	82	77-115
Tetrahydrofuran	100.0		93.74	94	76-181
1,2,3-Trichlorobenzene	100.0		98.98	99	62-132
Toluene	100.0		89.08	89	77-115
1,1,1-Trichloroethane	100.0		98.77	99	63-122
1,1,2-Trichloroethane	100.0		89.56	90	69-117
1,1,2-trichloro-1,2,2-t	100.0		117.6	118	70-130
Trichloroethene	100.0		81.25	81	75-113
Trichlorofluoromethane	100.0		102.1	102	55-130
1,2,3-Trichloropropane	100.0		72.63	73	62-130
1,2,4-Trichlorobenzene	100.0		102.2	102	68-132
1,2,4-Trimethylbenzene	100.0		76.43	76	69-126
1,3,5-Trimethylbenzene	100.0		100.4	100	69-128

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402191

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix Spike - Sample No.: V4021911LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Vinyl Acetate	100.0		80.36	80	28-146
Vinyl Chloride	100.0		125.2	125	65-134
Xylene-mp	200.0		169.0	84	77-115
Xylene-o	100.0		87.35	87	77-115
cis-1,4-Dichloro-2-bute	100.0		73.42	73	70-130

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 4 out of 89 outside limits

COMMENTS:

Lab Name: ETC, INC.

Lab Prep Batch: V402191

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-451

Matrix Spike - Sample No.: 0102-451-7

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Benzene	100.0	0.000	124.4	124	72-124
Chlorobenzene	100.0	0.000	95.30	95	77-112
1,1-Dichloroethene	100.0	0.000	126.8	127*	69-121
Toluene	100.0	0.000	93.56	94	77-115
Trichloroethene	100.0	3.76	85.11	81	75-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS	
=====	=====	=====	=====	=====	=====	=====
Benzene	100.0	128.0	128*	3	20	72-124
Chlorobenzene	100.0	96.17	96	1	20	77-112
1,1-Dichloroethene	100.0	134.2	134*	5	20	69-121
Toluene	100.0	91.36	91	3	20	77-115
Trichloroethene	100.0	82.46	79	2	20	75-113

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 3 out of 10 outside limits

COMMENTS:



ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6331
Founded 1972

March 1, 2001

Mr. Kraig Smith
Sverdrup/Jacobs Eng.
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

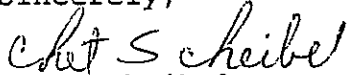
Ref: Analytical Testing
ETC Order # 0102408
Project Description Dunn Field

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and/or 40 CFR part 136.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,


Chet Scheibel
Laboratory Project Manager

rt
Attachment

SVE_MHDDMTA

Certifications

Tennessee	#TN02027	Mississippi	
Arkansas	#40730	Oklahoma	#9311
Kentucky	#90047	Virginia	#00106
North Carolina	#415	Washington	#C248
South Carolina	#84002002	US Army Corps of Engineers	

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ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6334

Founded 1972

March 6, 2001

Mr. Kraig Smith
Sverdrup/Jacobs Eng.
3354 Perimeter Hill Drive, Suite 310
Nashville, TN 37211

REF: Memphis Depot, Dunn Field Groundwater Systems
ETC Order. 0102-408

Dear Mr. Offner:

Enclosed is the EDD submission for ETC Order 0102-408. The file is named 0102-408.csv. It is in the format provided in the Laboratory Electronic Deliverable Format for CH2M HILL, version 4.00.

Please contact me at 918-968-3129, with any questions.

Sincerely,

A handwritten signature in black ink that reads 'Connie Bradberry'. The signature is written in a cursive, flowing style.

Connie Bradberry

Encl.

Environmental Testing & Consulting, Inc.
Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report. These qualifiers do not apply for TIC reports.

Q	Surrogate Recovery Outside QC Limits
J	Estimated Value. Presence of the compound was confirmed but less than the reported detection limit.
E	Concentration exceeds the established method calibration range but is within the working range of the instrument.
B	Analyte detected in the associated Method Blank.
U	Reported result was unconfirmed Refer to Case Narrative.
N	Non-Compliance Report associated with this sample or project.
C	Result reported from GC/MS confirmation analysis.
M	Result reported represents a minimum value. Refer to Case Narrative.
NC	Result reported from Primary Column Result did not confirm.
*	QC Data (percent recovery/RPD for a particular analyte was outside QC Limits)

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ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ANALYTICAL SUMMARY/CROSS REFERENCE TABLEClient Name Sverdrup/Jacobs Eng.
Site ID Dunn Field

ETC Order #0102408

<u>ETC Sample ID</u>	<u>Field ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Method Description</u>
010240801	MW-30	AQUEOUS	8260B	GC/MS Volatile Organics
010240802	MW-31	AQUEOUS	8260B	GC/MS Volatile Organics
010240803	MW-95	AQUEOUS	8260B	GC/MS Volatile Organics
010240804	MW-40	AQUEOUS	8260B	GC/MS Volatile Organics
010240805	MW-78	AQUEOUS	8260B	GC/MS Volatile Organics
010240806	MW-68	AQUEOUS	8260B	GC/MS Volatile Organics
010240807	MW-68A	AQUEOUS	8260B	GC/MS Volatile Organics
010240808	MW-76	AQUEOUS	8260B	GC/MS Volatile Organics
010240809	Trip Blank	AQUEOUS	8260B	GC/MS Volatile Organics

Environmental Testing & Consulting, Inc.

Login
Chain-of-Custody



Environmental Testing & Consulting, Inc.
2924 Walnut Grove Rd.
Memphis, TN 38111
(901)327-2750 FAX (901)327-6334

CHAIN OF CUSTODY RECORD

ETC Work Order: 0102408

Company Name <u>JACOBS</u>		Phone #: <u>615 331 9232</u>		Fax Results <u>RUSH</u>		Analysis Requested (Note special detection limits or methods)															
Project/Site <u>Dunn Field</u>		Fax #: <u>615 833 8328</u>		Ice																	
Project #		FID #:		PO #:																	
Project Manager/Contact <u>Virgil Jansen/Kraig Smith</u>		Matrix		1 Wastewater		4 Sludge		5 Oil/Solvent		6 Other											
# of cont.	Sample ID/Number	Depth	Sample Date	Sample Time	Matrix	Type	Grab/Comp														
3	MW-30		2-13-01	1130	GW	GRAB		VOC													
3	MW-31		2-14-01	0905	GW			X													
3	MW-95		2-14-01	1335	GW			X													
3	MW-40		2-14-01	1300	GW			X													
3	MW-69		2-14-01	FS	GW			X													
3	MW-78		2-14-01	1400	GW			X													
3	MW-68		2-14-01	1430	GW			X													
3	MW-68A		2-14-01	1430	GW			X													
3	MW-76		2-14-01	1500	GW			X													
3	Trip Blank		2-14-01	1500	W			X													
Sampled By <u>Kraig Smith</u>		Method of Shipment <u>Hand Delivered</u>		Blank/Cooler Temp <u>24°C</u>		Remarks															
RELINQUISHED BY (sign)		DATE		TIME		RECEIVED BY (sign)		TIME		DATE		TIME		Sample Delivery Group ID							
RELINQUISHED BY (sign)		DATE		TIME		RECEIVED BY (sign)		TIME		DATE		TIME									
RELINQUISHED BY (sign) <u>Kraig Smith</u>		DATE <u>2/14/01</u>		TIME <u>1445</u>		RECEIVED BY (sign) <u>Baron</u>		TIME <u>1500</u>		DATE <u>2/14/01</u>		TIME <u>1640</u>									

Distribution
Original and Yellow accompany samples to the laboratory. Pink copy for Field Crew.
Original copy returned with results. Yellow copy for ETC, Inc. files.

Environmental Testing & Consulting, Inc.
Cooler Receipt Form

Date Received 2/14/01 LIMS# 0102-408
Date/Time Checked In 2/14/01-16:40 Project Dunn Field
Carrier/Bill# Hand-Delivered By Rebekah Barger

1. Custody Seals?/Location-	No
2. Samples are non-radioactive?	Yes
3. Chain of Custody in plastic?	Yes
4. Temperature at receipt (ok = 4 ± 2 °C) <4°C	OK
5. Ice & Packing-ice, box, bubble wrap	Yes
6. Chain of Custody filled out properly?	Yes
7. All containers in separate bags?	No
8. Sample containers intact?	Yes
9. Label(s) complete and in good condition?	Yes
10. Label(s) agree with Chain of Custody?	Yes
11. Correct containers used?	Yes
12. Sufficient sample?	Yes
13. VOA vials bubble-free (H ₂ O) or no head space (soil)?	Yes
14. Preservation OK? TM pH____; TRPH pH____; TOC pH____; TOX pH____; CN pH____; N/P pH____; Other pH____	Yes

Comments _____

*Validated Date and Time of Sample Receipt (VDTSR)

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Environmental Testing & Consulting, Inc.

Sample Reports

000006

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
 ETC Order Number **0102408**

ETC Lab ID **0102408-01**
 Field ID : **MW-30**

Matrix : **AQUEOUS**
 Sample Date : **02/13/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V102161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	6.47	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	107	74 123
S2 - Toluene-d8	102	86 112
S3 - 4-Bromofluorobenzene	98	81 115
S4 - 1,2-Dichloroethane-d4	98	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000007

626 212

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0801010

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
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14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-GCMS-TIC

000008

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
 ETC Order Number **0102408**

ETC Lab ID **0102408-02**
 Field ID : **MW-31**

Matrix : **AQUEOUS**
 Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V102161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	8.97	ug/L	1.00			
Carbon Tetrachloride	2.76	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	25.1	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	7.98	ug/L	1.00			
trans-1,2-Dichloroethene	49.3	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	14.8	ug/L	1.00			
Tetrachloroethene	5.02	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	1.20	ug/L	1.00			
Trichloroethene	241E	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	148	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	111	74 123
S2 - Toluene-d8	95	86 112
S3 - 4-Bromofluorobenzene	96	81 115
S4 - 1,2-Dichloroethane-d4	101	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000009

626 214

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-2

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0901011

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
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30.				

FORM I VOA-GCMS-TIC

000010

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
 ETC Order Number **0102408**

ETC Lab ID **0102408-02**
 Field ID : **MW-31-DIL**

Matrix : **AQUEOUS**
 Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/20/01	EM	8260B 5030B
QC Batch	V102201					
Dilution Factor	50					
Acetone	ND	ug/L	1000			
Benzene	ND	ug/L	50.0			
Bromodichloromethane	ND	ug/L	50.0			
Bromoform	ND	ug/L	50.0			
Bromomethane	ND	ug/L	50.0			
2-Butanone (MEK)	ND	ug/L	1000			
Carbon Disulfide	ND	ug/L	50.0			
Carbon Tetrachloride	ND	ug/L	50.0			
Chlorobenzene	ND	ug/L	50.0			
Chlorodibromomethane	ND	ug/L	50.0			
Chloroethane	ND	ug/L	50.0			
Chloroform	ND	ug/L	50.0			
Chloromethane	ND	ug/L	50.0			
1,1-Dichloroethane	ND	ug/L	50.0			
1,2-Dichloroethane	ND	ug/L	50.0			
1,1-Dichloroethene	ND	ug/L	50.0			
trans-1,2-Dichloroethene	ND	ug/L	50.0			
1,2-Dichloropropane	ND	ug/L	50.0			
cis-1,3-Dichloropropene	ND	ug/L	50.0			
trans-1,3-Dichloropropene	ND	ug/L	50.0			
Ethylbenzene	ND	ug/L	50.0			
2-Hexanone (MBK)	ND	ug/L	250			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	250			
Methylene Chloride	ND	ug/L	250			
Styrene	ND	ug/L	50.0			
1,1,2,2-Tetrachloroethane	ND	ug/L	50.0			
Tetrachloroethene	ND	ug/L	50.0			
Toluene	ND	ug/L	50.0			
1,1,1-Trichloroethane	ND	ug/L	50.0			
1,1,2-Trichloroethane	ND	ug/L	50.0			
Trichloroethene	233	ug/L	50.0			
Vinyl Acetate	ND	ug/L	1000			
Vinyl Chloride	ND	ug/L	50.0			
Xylenes-m,p	ND	ug/L	50.0			
Xylenes-o	ND	ug/L	50.0			
cis-1,2-Dichloroethene	139	ug/L	50.0			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	96	74 123
S2 - Toluene-d8	95	86 112
S3 - 4-Bromofluorobenzene	98	81 115
S4 - 1,2-Dichloroethane-d4	96	80 120

Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000011

626 216

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-2

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0901011

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/20/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 50.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000012

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
 ETC Order Number **0102408**

ETC Lab ID **0102408-03**
 Field ID : **MW-95**

Matrix : **AQUEOUS**
 Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V102161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	214E	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	112	74 123
S2 - Toluene-d8	104	86 112
S3 - 4-Bromofluorobenzene	99	81 115
S4 - 1,2-Dichloroethane-d4	112	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000013

626 218

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-3

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1001012

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000014

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
 ETC Order Number **0102408**

ETC Lab ID **0102408-03**
 Field ID : **MW-95-DIL**

Matrix : **AQUEOUS**
 Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/23/01	EM	8260B 5030B
QC Batch	V402222					
Dilution Factor	50					
Acetone	ND	ug/L	1000			
Benzene	ND	ug/L	50.0			
Bromodichloromethane	ND	ug/L	50.0			
Bromoform	ND	ug/L	50.0			
Bromomethane	ND	ug/L	50.0			
2-Butanone (MEK)	ND	ug/L	1000			
Carbon Disulfide	190	ug/L	50.0			
Carbon Tetrachloride	ND	ug/L	50.0			
Chlorobenzene	ND	ug/L	50.0			
Chlorodibromomethane	ND	ug/L	50.0			
Chloroethane	ND	ug/L	50.0			
Chloroform	ND	ug/L	50.0			
Chloromethane	ND	ug/L	50.0			
1,1-Dichloroethane	ND	ug/L	50.0			
1,2-Dichloroethane	ND	ug/L	50.0			
1,1-Dichloroethene	ND	ug/L	50.0			
trans-1,2-Dichloroethene	ND	ug/L	50.0			
1,2-Dichloropropane	ND	ug/L	50.0			
cis-1,3-Dichloropropene	ND	ug/L	50.0			
trans-1,3-Dichloropropene	ND	ug/L	50.0			
Ethylbenzene	ND	ug/L	50.0			
2-Hexanone (MBK)	ND	ug/L	250			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	250			
Methylene Chloride	ND	ug/L	250			
Styrene	ND	ug/L	50.0			
1,1,2,2-Tetrachloroethane	ND	ug/L	50.0			
Tetrachloroethene	ND	ug/L	50.0			
Toluene	ND	ug/L	50.0			
1,1,1-Trichloroethane	ND	ug/L	50.0			
1,1,2-Trichloroethane	ND	ug/L	50.0			
Trichloroethene	ND	ug/L	50.0			
Vinyl Acetate	ND	ug/L	1000			
Vinyl Chloride	ND	ug/L	50.0			
Xylenes-m,p	ND	ug/L	50.0			
Xylenes-o	ND	ug/L	50.0			
cis-1,2-Dichloroethene	ND	ug/L	50.0			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	112	74 123
S2 - Toluene-d8	90	86 112
S3 - 4-Bromofluorobenzene	86	81 115
S4 - 1,2-Dichloroethane-d4	93	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000015

626 220

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-3

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 2101022

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/23/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 50.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000016

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
 ETC Order Number **0102408**

ETC Lab ID **0102408-04**
 Field ID : **MW-40**

Matrix : **AQUEOUS**
 Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/22/01	EM	8260B 5030B
QC Batch	V402222					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	4.73	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	112	74 123
S2 - Toluene-d8	93	86 112
S3 - 4-Bromofluorobenzene	87	81 115
S4 - 1,2-Dichloroethane-d4	92	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000017

626 222

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-4

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1501016

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000018

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 223

Client Name Sverdrup/Jacobs Eng.
 Memphis Depot, Dunn Field
 3354 Perimeter Hill Drive,
 Suite 310
 Nashville, TN 37211

Site ID Dunn Field

FID #

Date Arrived 02/14/01
 ETC Order Number 0102408

ETC Lab ID 0102408-05
 Field ID : MW-78

Matrix : AQUEOUS
 Sample Date : 02/14/01

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V102161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	115	74	123
S2 - Toluene-d8	99	86	112
S3 - 4-Bromofluorobenzene	102	81	115
S4 - 1,2-Dichloroethane-d4	108	80	120

Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000019

626 224

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-5

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1201014

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000020

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
 ETC Order Number **0102408**

ETC Lab ID **0102408-06**
 Field ID : **MW-68**

Matrix : **AQUEOUS**
 Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V102161					
Dilution Factor	1					
Acetone	696E	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	1.73	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	4.14	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	0.92J	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	9.67	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	4.38	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	112	74 123
S2 - Toluene-d8	102	86 112
S3 - 4-Bromofluorobenzene	93	81 115
S4 - 1,2-Dichloroethane-d4	103	80 120

CS
 Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000021

026 226

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-6

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1301015

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000022

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 227

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
ETC Order Number **0102408**

ETC Lab ID **0102408-06**
Field ID : **MW-68-DIL**

Matrix : **AQUEOUS**
Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/20/01	EM	8260B 5030B
QC Batch	V102201					
Dilution Factor	20					
Acetone	789	ug/L	400			
Benzene	ND	ug/L	20.0			
Bromodichloromethane	ND	ug/L	20.0			
Bromoform	ND	ug/L	20.0			
Bromomethane	ND	ug/L	20.0			
2-Butanone (MEK)	ND	ug/L	400			
Carbon Disulfide	ND	ug/L	20.0			
Carbon Tetrachloride	ND	ug/L	20.0			
Chlorobenzene	ND	ug/L	20.0			
Chlorodibromomethane	ND	ug/L	20.0			
Chloroethane	ND	ug/L	20.0			
Chloroform	ND	ug/L	20.0			
Chloromethane	ND	ug/L	20.0			
1,1-Dichloroethane	ND	ug/L	20.0			
1,2-Dichloroethane	ND	ug/L	20.0			
1,1-Dichloroethene	ND	ug/L	20.0			
trans-1,2-Dichloroethene	ND	ug/L	20.0			
1,2-Dichloropropane	ND	ug/L	20.0			
cis-1,3-Dichloropropene	ND	ug/L	20.0			
trans-1,3-Dichloropropene	ND	ug/L	20.0			
Ethylbenzene	ND	ug/L	20.0			
2-Hexanone (MBK)	ND	ug/L	100			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100			
Methylene Chloride	ND	ug/L	100			
Styrene	ND	ug/L	20.0			
1,1,2,2-Tetrachloroethane	ND	ug/L	20.0			
Tetrachloroethene	ND	ug/L	20.0			
Toluene	ND	ug/L	20.0			
1,1,1-Trichloroethane	ND	ug/L	20.0			
1,1,2-Trichloroethane	ND	ug/L	20.0			
Trichloroethene	ND	ug/L	20.0			
Vinyl Acetate	ND	ug/L	400			
Vinyl Chloride	ND	ug/L	20.0			
Xylenes-m,p	ND	ug/L	20.0			
Xylenes-o	ND	ug/L	20.0			
cis-1,2-Dichloroethene	ND	ug/L	20.0			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	107	74 123
S2 - Toluene-d8	99	86 112
S3 - 4-Bromofluorobenzene	106	81 115
S4 - 1,2-Dichloroethane-d4	100	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000023

626 228

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-6

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0701009

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/20/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 20.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1. _____				
2. _____				
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FORM I VOA-GCMS-TIC

000024

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 229

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
ETC Order Number **0102408**

ETC Lab ID **0102408-07**
Field ID : **MW-68A**

Matrix : **AQUEOUS**
Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V102161					
Dilution Factor	1					
Acetone	502E	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	10.2	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	3.94	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	1.37	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	10.8	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	4.06	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	106	74 123
S2 - Toluene-d8	99	86 112
S3 - 4-Bromofluorobenzene	92	81 115
S4 - 1,2-Dichloroethane-d4	101	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000025

626 230

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-7

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1401016

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000026

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 231

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
ETC Order Number **0102408**

ETC Lab ID **0102408-07**
Field ID : **MW-68A-DIL**

Matrix : **AQUEOUS**
Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/20/01	EM	8260B 5030B
QC Batch	V102201					
Dilution Factor	20					
Acetone	936	ug/L	400			
Benzene	ND	ug/L	20.0			
Bromodichloromethane	ND	ug/L	20.0			
Bromoform	ND	ug/L	20.0			
Bromomethane	ND	ug/L	20.0			
2-Butanone (MEK)	ND	ug/L	400			
Carbon Disulfide	ND	ug/L	20.0			
Carbon Tetrachloride	ND	ug/L	20.0			
Chlorobenzene	ND	ug/L	20.0			
Chlorodibromomethane	ND	ug/L	20.0			
Chloroethane	ND	ug/L	20.0			
Chloroform	ND	ug/L	20.0			
Chloromethane	ND	ug/L	20.0			
1,1-Dichloroethane	ND	ug/L	20.0			
1,2-Dichloroethane	ND	ug/L	20.0			
1,1-Dichloroethene	ND	ug/L	20.0			
trans-1,2-Dichloroethene	ND	ug/L	20.0			
1,2-Dichloropropane	ND	ug/L	20.0			
cis-1,3-Dichloropropene	ND	ug/L	20.0			
trans-1,3-Dichloropropene	ND	ug/L	20.0			
Ethylbenzene	ND	ug/L	20.0			
2-Hexanone (MBK)	ND	ug/L	100			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100			
Methylene Chloride	ND	ug/L	100			
Styrene	ND	ug/L	20.0			
1,1,2,2-Tetrachloroethane	ND	ug/L	20.0			
Tetrachloroethene	ND	ug/L	20.0			
Toluene	ND	ug/L	20.0			
1,1,1-Trichloroethane	ND	ug/L	20.0			
1,1,2-Trichloroethane	ND	ug/L	20.0			
Trichloroethene	ND	ug/L	20.0			
Vinyl Acetate	ND	ug/L	400			
Vinyl Chloride	ND	ug/L	20.0			
Xylenes-m,p	ND	ug/L	20.0			
Xylenes-o	ND	ug/L	20.0			
cis-1,2-Dichloroethene	ND	ug/L	20.0			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	107	74 123
S2 - Toluene-d8	100	86 112
S3 - 4-Bromofluorobenzene	101	81 115
S4 - 1,2-Dichloroethane-d4	104	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000027

626 232

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-7

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0801010

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/20/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 20.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000028

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 233

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
 ETC Order Number **0102408**

ETC Lab ID **0102408-08**
 Field ID : **MW-76**

Matrix : **AQUEOUS**
 Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V102161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	0.77I	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	6.84	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	515E	ug/L	1.00			
Tetrachloroethene	3.98	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	276E	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	17.8	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	112	74 123
S2 - Toluene-d8	105	86 112
S3 - 4-Bromofluorobenzene	95	81 115
S4 - 1,2-Dichloroethane-d4	110	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000029

626 234

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-8

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1501017

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000030

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

626 235

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
ETC Order Number **0102408**

ETC Lab ID **0102408-08**
Field ID : **MW-76-DIL**

Matrix : **AQUEOUS**
Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/20/01	EM	8260B 5030B
QC Batch	V102201					
Dilution Factor	100					
Acetone	ND	ug/L	2000			
Benzene	ND	ug/L	100			
Bromodichloromethane	ND	ug/L	100			
Bromoform	ND	ug/L	100			
Bromomethane	ND	ug/L	100			
2-Butanone (MEK)	ND	ug/L	2000			
Carbon Disulfide	ND	ug/L	100			
Carbon Tetrachloride	ND	ug/L	100			
Chlorobenzene	ND	ug/L	100			
Chlorodibromomethane	ND	ug/L	100			
Chloroethane	ND	ug/L	100			
Chloroform	ND	ug/L	100			
Chloromethane	ND	ug/L	100			
1,1-Dichloroethane	ND	ug/L	100			
1,2-Dichloroethane	ND	ug/L	100			
1,1-Dichloroethene	ND	ug/L	100			
trans-1,2-Dichloroethene	ND	ug/L	100			
1,2-Dichloropropane	ND	ug/L	100			
cis-1,3-Dichloropropene	ND	ug/L	100			
trans-1,3-Dichloropropene	ND	ug/L	100			
Ethylbenzene	ND	ug/L	100			
2-Hexanone (MBK)	ND	ug/L	500			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	500			
Methylene Chloride	ND	ug/L	500			
Styrene	ND	ug/L	100			
1,1,2,2-Tetrachloroethane	694	ug/L	100			
Tetrachloroethene	ND	ug/L	100			
Toluene	ND	ug/L	100			
1,1,1-Trichloroethane	ND	ug/L	100			
1,1,2-Trichloroethane	ND	ug/L	100			
Trichloroethene	258	ug/L	100			
Vinyl Acetate	ND	ug/L	2000			
Vinyl Chloride	ND	ug/L	100			
Xylenes-m,p	ND	ug/L	100			
Xylenes-o	ND	ug/L	100			
cis-1,2-Dichloroethene	ND	ug/L	100			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	106	74 123
S2 - Toluene-d8	98	86 112
S3 - 4-Bromofluorobenzene	97	81 115
S4 - 1,2-Dichloroethane-d4	107	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000031

626 236

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-8

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1101013

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/20/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 100.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000032

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**

FID #

Date Arrived **02/14/01**
 ETC Order Number **0102408**

ETC Lab ID **0102408-09**
 Field ID : **Trip Blank**

Matrix : **AQUEOUS**
 Sample Date : **02/14/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/16/01	EM	8260B 5030B
QC Batch	V102161					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	106	74 123
S2 - Toluene-d8	96	86 112
S3 - 4-Bromofluorobenzene	111	81 115
S4 - 1,2-Dichloroethane-d4	103	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000033

626 238

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-408-9

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0701009

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
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FORM I VOA-GCMS-TIC

000034

Environmental Testing & Consulting, Inc.

**Quality Control Reports
Level III
GC/MS Volatiles**

626 240

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Eng.
Project Name Dunn Field
ETC Order# 0102-408

SAMPLE PRESERVATION (Verified at time of analysis)

All aqueous samples preserved to pH < 2 and maintained at 4 degrees C until analysis.

METHOD

Preparation: SW-846 5030B
Analysis: SW-846 8260B

HOLDING TIMES

Sample Analysis All samples analyzed within 14 days of collection.

QUALITY CONTROL

QC Batch	Form 4 Summary
V102161	V1021611LB
V102201	V1022011LB
V402222	V4022221LB

System Monitoring Compounds FORM 2

Surrogate recoveries within QC limits, except as listed below.

Surrogate Bromofluorobenzene was flagged for slightly high recovery in V1021611LB.

Surrogates 1,2-Dichloroethane-d4, Toluene-d8, and Bromofluorobenzene were flagged for low recovery in V1021611LCS.

Method Blank FORM 4

V1021611LB
V1022011LB
V4022221LB

Target Analytes were not detected in the Method Blanks, except as listed below.

V4022221LB

Methylene Chloride was detected in the Method Blank at a concentration of 4.76J ug/L. This analyte was not identified in associated project samples. There is no effect on the data.

Laboratory Control Sample FORM 3

V1021611LCS
V1022011LCS
V4022221LCS

All acceptance criteria met, except as listed below.

V1021611LCS

One non-target analyte was flagged outside control limits in the LCS.

000036

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Eng.
 Project Name Dunn Field
 ETC Order# 0102-408

QUALITY CONTROL

V1022011LCS

Two non-target analytes were flagged outside control limits in the LCS.

V4022221LCS

One non-target analyte was flagged outside control limits in the LCS.

Matrix Spike / Matrix Spike Dup. FORM 3

Batch V102161

0102-408-07	RPD	All analytes within QC limits, except as listed below.
MW-68A	Spike Recovery	All analytes within QC limits, except as listed below.

Toluene was flagged for high recovery in the MS/MSD. Chlorobenzene and Trichloroethene were flagged for high recovery in the MS. MSD recoveries were within control limits.

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup. FORM 3

Batch V102201

0102-408-05	RPD	All analytes within QC limits, except as listed below.
MW-78	Spike Recovery	All analytes within QC limits, except as listed below.

Chlorobenzene was flagged for slightly low recovery (1%) in the MS. MSD recovery was within control limits. Toluene and Trichloroethene were flagged for low recovery in the MSD. MS recoveries were within control limits.

RPDs for 4 of 5 analytes were flagged for high recovery due to variances in the MS/MSD recoveries.

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup. FORM 3

Batch V402222

0102-461-02

Sample spiked for this QC Batch was not from this project.

Refer to Laboratory Control Sample(s) for system verification.

CALIBRATION

BFB Daily 12-Hour Tune	All criteria met. FORM 5
Initial Calibration	All criteria met. FORM 6
Calibration Verification	All criteria met. FORM 7 Responses >30% affecting data listed below.

626 242

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Eng.
Project Name Dunn Field
ETC Order# 0102-408

CALIBRATION

Calibration Verification (CV): Date 02/16/01 Time: 1052

Analyte	%Diff(20% Max)	Response
Bromofluorobenzene	-33.4	Low (Surrogate)

Samples affected by this CV include V1021611LB, V1021611LCS, 0102-408-07MS/MSD, 0102-408-01 through 0102-408-03, 0102-408-05 through 0102-09. Low response indicates that reported levels for this surrogate may be biased low.

Volatile Internal Standard Area and RT FORM 8

Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

SAMPLE ANALYSIS

Instrumentation HP 5890 Series II GC, 5971MSD
Dilutions Required Dilutions were performed on four samples to bring Target Analyte(s) within calibration range as shown on the Sample Report Forms.

OTHER

Sample 0102-461-02MSD was analyzed outside the 12-hour tune time.

C S
Project Manager

000038

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

626,243

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

	CLIENT SAMPLE NO.	SMC1 (DCE) #	SMC2 (DFM) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	V1021611LCS	72*	91	80*	66*	3
02	V1021611LB	118	101	108	119*	1
03	0102-408-9	103	106	96	111	0
04	0102-408-1	98	107	102	98	0
05	0102-408-2	101	111	95	96	0
06	0102-408-3	112	112	104	99	0
07	0102-408-5	108	115	99	102	0
08	0102-408-6	103	112	102	93	0
09	0102-408-7	101	106	99	92	0
10	0102-408-8	110	112	105	95	0
11	0102-408-7MS	94	105	106	87	0
12	0102-408-7MS	90	106	104	90	0
13	V1022011LCS	84	104	102	84	0
14	V1022011LB	92	109	99	103	0
15	0102-408-5	114	92	108	107	0
16	0102-408-6	100	107	99	106	0
17	0102-408-7	104	107	100	101	0
18	0102-408-2	96	96	95	98	0
19	0102-408-8	107	106	98	97	0
20	0102-408-5MS	97	107	107	92	0
21	0102-408-5MS	104	107	108	89	0
22	V4022221LCS	92	100	92	82	0
23	V4022221LB	83	106	94	84	0
24	0102-408-4	92	112	93	87	0
25	0102-408-3	93	112	90	86	0
26						
27						
28						
29						
30						

QC LIMITS

SMC1 (DCE) = 1,2-Dichloroethane-d4 (80-120)
 SMC2 (DFM) = Dibromofluoromethane (74-123)
 SMC3 (TOL) = Toluene-d8 (86-112)
 OTHER (BFB) = Bromofluorobenzene (81-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

626 244

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V1021611LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Lab File ID: 0302005

Lab Prep Batch: V102161

Date Analyzed: 02/16/01

Time Analyzed: 1301

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V1021611LCS	V102161	0201002LCS	1052
02	0102-408-9	V102161	0701009	1529
03	0102-408-1	V102161	0801010	1557
04	0102-408-2	V102161	0901011	1625
05	0102-408-3	V102161	1001012	1654
06	0102-408-5	V102161	1201014	1750
07	0102-408-6	V102161	1301015	1818
08	0102-408-7	V102161	1401016	1846
09	0102-408-8	V102161	1501017	1914
10	0102-408-7MS	V102161	1901021	2107
11	0102-408-7MS	V102161	2001022	2135
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COMMENTS:

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V1021611LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Prep Batch: V102161

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

67-64-1-----	Acetone	20.00	U
75-05-8-----	Acetonitrile	20.00	U
107-02-8-----	Acrolein	20.00	U
107-13-1-----	Acrylonitrile	20.00	U
107-05-1-----	Allyl chloride	1.00	U
71-43-2-----	Benzene	1.00	U
108-86-1-----	Bromobenzene	1.00	U
74-97-5-----	Bromochloromethane	1.00	U
75-27-4-----	Bromodichloromethane	1.00	U
75-25-2-----	Bromoform	1.00	U
78-93-3-----	2-Butanone	20.00	U
74-83-9-----	Bromomethane	1.00	U
104-51-8-----	n-Butylbenzene	1.00	U
135-98-8-----	sec-Butylbenzene	1.00	U
98-06-6-----	tert-Butylbenzene	1.00	U
75-15-0-----	Carbon Disulfide	1.00	U
56-23-5-----	Carbon Tetrachloride	1.00	U
108-90-7-----	Chlorobenzene	1.00	U
124-48-1-----	Chlorodibromomethane	1.00	U
75-00-3-----	Chloroethane	1.00	U
110-75-0-----	2-Chloroethyl vinyl ether	20.00	U
67-66-3-----	Chloroform	1.00	U
74-87-3-----	Chloromethane	1.00	U
126-99-8-----	Chloroprene	1.00	U
95-49-8-----	2-Chlorotoluene	1.00	U
106-43-4-----	4-Chlorotoluene	1.00	U
96-12-8-----	1,2-Dibromo-3-chloropropane	1.00	U
106-93-4-----	1,2-Dibromoethane	1.00	U
74-95-3-----	Dibromomethane	1.00	U
95-50-1-----	1,2-Dichlorobenzene	1.00	U
541-73-1-----	1,3-Dichlorobenzene	1.00	U
106-46-7-----	1,4-Dichlorobenzene	1.00	U
110-57-6-----	trans-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000041

626 246

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V1021611LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Prep Batch: V102161

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1868-53-7-----	Dichlorodifluoromethane	1.00	U
75-34-3-----	1,1-Dichloroethane	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
156-59-4-----	cis-1,2-Dichloroethene	1.00	U
156-60-5-----	trans-1,2-Dichloroethene	1.00	U
78-87-5-----	1,2-Dichloropropane	1.00	U
142-28-9-----	1,3-Dichloropropane	1.00	U
590-20-7-----	2,2-Dichloropropane	1.00	U
563-58-6-----	1,1-Dichloropropene	1.00	U
10061-01-5-----	cis-1,3-Dichloropropene	1.00	U
10061-02-6-----	trans-1,3-Dichloropropene	1.00	U
108-20-3-----	Di isopropyl ether	5.00	U
123-91-1-----	1,4-Dioxane	100.0	U
141-78-6-----	Ethyl Acetate	5.00	U
100-41-4-----	Ethylbenzene	1.00	U
97-63-2-----	Ethyl methacrylate	1.00	U
110-00-9-----	Furan	1.00	U
87-63-3-----	Hexachlorobutadiene	1.00	U
110-54-3-----	Hexane	1.00	U
591-78-6-----	2-Hexanone	5.00	U
74-88-4-----	Iodomethane	1.00	U
78-83-1-----	Isobutyl Alcohol	100.0	U
98-82-8-----	Isopropylbenzene	1.00	U
99-87-6-----	4-Isopropyltoluene	1.00	U
126-98-7-----	Methacrylonitrile	10.00	U
75-09-2-----	Methylene Chloride	5.00	U
80-62-6-----	Methyl methacrylate	1.00	U
108-10-1-----	4-Methyl-2-Pentanone	5.00	U
1634-04-4-----	Methyl-tertbutyl-Ether	5.00	U
91-20-3-----	Naphthalene	1.00	U
76-01-7-----	Pentachloroethane	1.00	U
107-12-0-----	Propionitrile	10.00	U

FORM I VOA-GCMS

000042

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V1021611LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Prep Batch: V102161

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

109-60-4-----	n-Propyl Acetate	1.00	U
103-65-1-----	n-Propylbenzene	1.00	U
100-42-5-----	Styrene	1.00	U
630-20-6-----	1,1,1,2-Tetrachloroethane	1.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1.00	U
127-18-4-----	Tetrachloroethene	1.00	U
109-99-9-----	Tetrahydrofuran	1.00	U
87-61-6-----	1,2,3-Trichlorobenzene	1.00	U
108-88-3-----	Toluene	1.00	U
71-55-6-----	1,1,1-Trichloroethane	1.00	U
79-00-5-----	1,1,2-Trichloroethane	1.00	U
76-13-1-----	1,1,2-trichloro-1,2,2-triflu	1.00	U
79-01-6-----	Trichloroethene	1.00	U
75-69-4-----	Trichlorofluoromethane	1.00	U
96-18-4-----	1,2,3-Trichloropropane	1.00	U
120-82-1-----	1,2,4-Trichlorobenzene	1.00	U
95-63-6-----	1,2,4-Trimethylbenzene	1.00	U
108-67-8-----	1,3,5-Trimethylbenzene	1.00	U
108-05-4-----	Vinyl Acetate	20.00	U
75-01-4-----	Vinyl Chloride	1.00	U
1330-20-7-----	Xylene-mp	1.00	U
95-47-6-----	Xylene-o	1.00	U
1476-11-5-----	cis-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

626 248

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V1021611LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/16/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
12. _____	_____	_____	_____	_____
13. _____	_____	_____	_____	_____
14. _____	_____	_____	_____	_____
15. _____	_____	_____	_____	_____
16. _____	_____	_____	_____	_____
17. _____	_____	_____	_____	_____
18. _____	_____	_____	_____	_____
19. _____	_____	_____	_____	_____
20. _____	_____	_____	_____	_____
21. _____	_____	_____	_____	_____
22. _____	_____	_____	_____	_____
23. _____	_____	_____	_____	_____
24. _____	_____	_____	_____	_____
25. _____	_____	_____	_____	_____
26. _____	_____	_____	_____	_____
27. _____	_____	_____	_____	_____
28. _____	_____	_____	_____	_____
29. _____	_____	_____	_____	_____
30. _____	_____	_____	_____	_____

FORM I VOA-GCMS-TIC

000044

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V102161

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V1021611LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Acetone	100.0		101.9	102	59-151
Acetonitrile	1000		1234	123	57-143
Acrolein	100.0		71.40	71	59-134
Acrylonitrile	100.0		107.7	108	60-146
Allyl chloride	100.0		92.84	93	74-120
Benzene	100.0		73.61	74	72-124
Bromobenzene	100.0		87.54	88	77-120
Bromochloromethane	100.0		91.10	91	74-120
Bromodichloromethane	100.0		95.27	95	68-119
Bromoform	100.0		101.8	102	66-136
2-Butanone	100.0		98.13	98	55-151
Bromomethane	100.0		91.56	92	40-134
n-Butylbenzene	100.0		91.57	92	69-129
sec-Butylbenzene	100.0		90.08	90	72-127
tert-Butylbenzene	100.0		86.80	87	73-126
Carbon Disulfide	100.0		82.37	82	60-133
Carbon Tetrachloride	100.0		81.57	82	64-123
Chlorobenzene	100.0		79.75	80	77-112
Chlorodibromomethane	100.0		105.4	105	72-118
Chloroethane	100.0		132.1	132	64-142
2-Chloroethyl vinyl eth	100.0		106.5	106	22-165
Chloroform	100.0		91.47	91	70-115
Chloromethane	100.0		122.2	122	58-139
Chloroprene	100.0		82.79	83	73-118
2-Chlorotoluene	100.0		89.29	89	65-132
4-Chlorotoluene	100.0		84.66	85	67-127
1,2-Dibromo-3-chloropro	100.0		95.21	95	56-134
1,2-Dibromoethane	100.0		109.1	109	74-118

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

* Values outside of QC limits

COMMENTS:

626 250

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V102161

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V1021611LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dibromomethane	100.0		104.2	104	75-114
1,2-Dichlorobenzene	100.0		86.19	86	80-113
1,3-Dichlorobenzene	100.0		83.78	84	77-119
1,4-Dichlorobenzene	100.0		78.04	78	78-116
trans-1,4-Dichloro-2-bu	100.0		99.38	99	62-138
Dichlorodifluoromethane	100.0		133.7	134	48-145
1,1-Dichloroethane	100.0		99.03	99	76-118
1,2-Dichloroethane	100.0		90.17	90	62-124
1,1-Dichloroethene	100.0		92.41	92	69-121
cis-1,2-Dichloroethene	100.0		86.93	87	76-114
trans-1,2-Dichloroethen	100.0		87.52	88	72-121
1,2-Dichloropropane	100.0		93.67	94	64-133
1,3-Dichloropropane	100.0		106.8	107	68-128
2,2-Dichloropropane	100.0		90.64	91	67-132
1,1-Dichloropropene	100.0		76.66	77	76-117
cis-1,3-Dichloropropene	100.0		107.2	107	77-120
trans-1,3-Dichloroprope	100.0		97.94	98	73-124
Di isopropyl ether	100.0		83.02	83	62-160
1,4-Dioxane	2000		1612	81	56-131
Ethyl Acetate	100.0		93.96	94	52-151
Ethylbenzene	100.0		85.81	86	77-111
Ethyl methacrylate	200.0		210.8	105	57-140
Furan	100.0		158.5	158*	52-124
Hexachlorobutadiene	100.0		103.8	104	69-137
Hexane	100.0		88.54	88	70-130
2-Hexanone	100.0		115.2	115	53-144
Iodomethane	100.0		78.67	79	51-153
Isobutyl Alcohol	2000		2094	105	60-134

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V102161

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V1021611LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Isopropylbenzene	100.0		90.77	91	74-125
4-Isopropyltoluene	100.0		92.11	92	72-127
Methacrylonitrile	1000		969.7	97	70-125
Methylene Chloride	100.0		107.2	107	76-115
Methyl methacrylate	200.0		202.0	101	57-147
4-Methyl-2-Pentanone	100.0		104.7	105	42-144
Methyl-tertbutyl-Ether	100.0		79.25	79	62-122
Naphthalene	100.0		87.14	87	53-124
Pentachloroethane	100.0		105.7	106	78-126
Propionitrile	1000		1130	113	58-139
n-Propyl Acetate	100.0		154.3	154	88-170
n-Propylbenzene	100.0		90.83	91	75-125
Styrene	100.0		87.65	88	77-117
1,1,1,2-Tetrachloroetha	100.0		85.04	85	79-113
1,1,2,2-Tetrachloroetha	100.0		87.18	87	67-126
Tetrachloroethene	100.0		90.00	90	77-115
Tetrahydrofuran	100.0		83.83	84	76-181
1,2,3-Trichlorobenzene	100.0		96.11	96	62-132
Toluene	100.0		96.46	96	77-115
1,1,1-Trichloroethane	100.0		77.92	78	63-122
1,1,2-Trichloroethane	100.0		101.9	102	69-117
1,1,2-trichloro-1,2,2-t	100.0		78.35	78	70-130
Trichloroethene	100.0		92.92	93	75-113
Trichlorofluoromethane	100.0		107.2	107	55-130
1,2,3-Trichloropropane	100.0		94.42	94	62-130
1,2,4-Trichlorobenzene	100.0		94.34	94	68-132
1,2,4-Trimethylbenzene	100.0		87.85	88	69-126
1,3,5-Trimethylbenzene	100.0		89.62	90	69-128

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

* Values outside of QC limits

COMMENTS:

628 252

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V102161

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V1021611LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Vinyl Acetate	100.0		64.24	64	28-146
Vinyl Chloride	100.0		132.8	133	65-134
Xylene-mp	200.0		162.3	81	77-115
Xylene-o	100.0		81.48	81	77-115
cis-1,4-Dichloro-2-bute	100.0		107.7	108	70-130

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 89 outside limits

COMMENTS:

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V102161

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: 0102-408-7

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Benzene	100.0	0.000	107.6	108	72-124
Chlorobenzene	100.0	0.000	123.0	123*	77-112
1,1-Dichloroethene	100.0	0.000	116.8	117	69-121
Toluene	100.0	0.000	147.2	147*	77-115
Trichloroethene	100.0	10.84	147.6	137*	75-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Benzene	100.0	93.17	93	15	20	72-124
Chlorobenzene	100.0	108.6	109	12	20	77-112
1,1-Dichloroethene	100.0	92.98	93	23*	20	69-121
Toluene	100.0	117.0	117*	23*	20	77-115
Trichloroethene	100.0	124.1	113	19	20	75-113

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

* Values outside of QC limits

RPD: 2 out of 5 outside limits

Spike Recovery: 4 out of 10 outside limits

COMMENTS:

626 254

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V1022011LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Lab File ID: 0302005

Lab Prep Batch: V102201

Date Analyzed: 02/20/01

Time Analyzed: 1628

GC Column: ID: 2 (nm)

Heated Purge: (Y/N) Y

Instrument ID: VOC1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V1022011LCS	V102201	0202003LCS	1514
02	0102-408-5	V102201	0501007	1725
03	0102-408-6	V102201	0701009	1821
04	0102-408-7	V102201	0801010	1849
05	0102-408-2	V102201	0901011	1917
06	0102-408-8	V102201	1101013	2013
07	0102-408-5MS	V102201	1802020	2330
08	0102-408-5MS	V102201	1901021	2358
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COMMENTS:

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V1022011LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Prep Batch: V102201

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/20/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

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

CAS NO. COMPOUND Q

67-64-1-----	Acetone	20.00	U
75-05-8-----	Acetonitrile	20.00	U
107-02-8-----	Acrolein	20.00	U
107-13-1-----	Acrylonitrile	20.00	U
107-05-1-----	Allyl chloride	1.00	U
71-43-2-----	Benzene	1.00	U
108-86-1-----	Bromobenzene	1.00	U
74-97-5-----	Bromochloromethane	1.00	U
75-27-4-----	Bromodichloromethane	1.00	U
75-25-2-----	Bromoform	1.00	U
78-93-3-----	2-Butanone	20.00	U
74-83-9-----	Bromomethane	1.00	U
104-51-8-----	n-Butylbenzene	1.00	U
135-98-8-----	sec-Butylbenzene	1.00	U
98-06-6-----	tert-Butylbenzene	1.00	U
75-15-0-----	Carbon Disulfide	1.00	U
56-23-5-----	Carbon Tetrachloride	1.00	U
108-90-7-----	Chlorobenzene	1.00	U
124-48-1-----	Chlorodibromomethane	1.00	U
75-00-3-----	Chloroethane	1.00	U
110-75-0-----	2-Chloroethyl vinyl ether	20.00	U
67-66-3-----	Chloroform	1.00	U
74-87-3-----	Chloromethane	1.00	U
126-99-8-----	Chloroprene	1.00	U
95-49-8-----	2-Chlorotoluene	1.00	U
106-43-4-----	4-Chlorotoluene	1.00	U
96-12-8-----	1,2-Dibromo-3-chloropropane	1.00	U
106-93-4-----	1,2-Dibromoethane	1.00	U
74-95-3-----	Dibromomethane	1.00	U
95-50-1-----	1,2-Dichlorobenzene	1.00	U
541-73-1-----	1,3-Dichlorobenzene	1.00	U
106-46-7-----	1,4-Dichlorobenzene	1.00	U
110-57-6-----	trans-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000051

626 256

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V1022011LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Prep Batch: V102201

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/20/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

1868-53-7-----	Dichlorodifluoromethane	1.00	U
75-34-3-----	1,1-Dichloroethane	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
156-59-4-----	cis-1,2-Dichloroethene	1.00	U
156-60-5-----	trans-1,2-Dichloroethene	1.00	U
78-87-5-----	1,2-Dichloropropane	1.00	U
142-28-9-----	1,3-Dichloropropane	1.00	U
590-20-7-----	2,2-Dichloropropane	1.00	U
563-58-6-----	1,1-Dichloropropene	1.00	U
10061-01-5-----	cis-1,3-Dichloropropene	1.00	U
10061-02-6-----	trans-1,3-Dichloropropene	1.00	U
108-20-3-----	Di isopropyl ether	5.00	U
123-91-1-----	1,4-Dioxane	100.0	U
141-78-6-----	Ethyl Acetate	5.00	U
100-41-4-----	Ethylbenzene	1.00	U
97-63-2-----	Ethyl methacrylate	1.00	U
110-00-9-----	Furan	1.00	U
87-63-3-----	Hexachlorobutadiene	1.00	U
110-54-3-----	Hexane	1.00	U
591-78-6-----	2-Hexanone	5.00	U
74-88-4-----	Iodomethane	1.00	U
78-83-1-----	Isobutyl Alcohol	100.0	U
98-82-8-----	Isopropylbenzene	1.00	U
99-87-6-----	4-Isopropyltoluene	1.00	U
126-98-7-----	Methacrylonitrile	10.00	U
75-09-2-----	Methylene Chloride	5.00	U
80-62-6-----	Methyl methacrylate	1.00	U
108-10-1-----	4-Methyl-2-Pentanone	5.00	U
1634-04-4-----	Methyl-tertbutyl-Ether	5.00	U
91-20-3-----	Naphthalene	1.00	U
76-01-7-----	Pentachloroethane	1.00	U
107-12-0-----	Propionitrile	10.00	U

FORM I VOA-GCMS

000052

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V1022011LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Prep Batch: V102201

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/20/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

109-60-4-----	n-Propyl Acetate	1.00	U
103-65-1-----	n-Propylbenzene	1.00	U
100-42-5-----	Styrene	1.00	U
630-20-6-----	1,1,1,2-Tetrachloroethane	1.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1.00	U
127-18-4-----	Tetrachloroethene	1.00	U
109-99-9-----	Tetrahydrofuran	1.00	U
87-61-6-----	1,2,3-Trichlorobenzene	1.00	U
108-88-3-----	Toluene	1.00	U
71-55-6-----	1,1,1-Trichloroethane	1.00	U
79-00-5-----	1,1,2-Trichloroethane	1.00	U
76-13-1-----	1,1,2-trichloro-1,2,2-triflu	1.00	U
79-01-6-----	Trichloroethene	1.00	U
75-69-4-----	Trichlorofluoromethane	1.00	U
96-18-4-----	1,2,3-Trichloropropane	1.00	U
120-82-1-----	1,2,4-Trichlorobenzene	1.00	U
95-63-6-----	1,2,4-Trimethylbenzene	1.00	U
108-67-8-----	1,3,5-Trimethylbenzene	1.00	U
108-05-4-----	Vinyl Acetate	20.00	U
75-01-4-----	Vinyl Chloride	1.00	U
1330-20-7-----	Xylene-mp	1.00	U
95-47-6-----	Xylene-o	1.00	U
1476-11-5-----	cis-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000053

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

626 258

Lab Name: ETC, INC.

Contract:

V1022011LB

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/20/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-GCMS-TIC

000054

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V102201

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V1022011LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0		101.0	101	59-151
Acetonitrile	1000		1148	115	57-143
Acrolein	100.0		75.46	75	59-134
Acrylonitrile	100.0		99.38	99	60-146
Allyl chloride	100.0		85.78	86	74-120
Benzene	100.0		74.85	75	72-124
Bromobenzene	100.0		93.50	94	77-120
Bromochloromethane	100.0		91.19	91	74-120
Bromodichloromethane	100.0		100.1	100	68-119
Bromoform	100.0		107.5	108	66-136
2-Butanone	100.0		102.9	103	55-151
Bromomethane	100.0		96.62	97	40-134
n-Butylbenzene	100.0		107.2	107	69-129
sec-Butylbenzene	100.0		99.27	99	72-127
tert-Butylbenzene	100.0		94.58	94	73-126
Carbon Disulfide	100.0		62.00	62	60-133
Carbon Tetrachloride	100.0		79.55	80	64-123
Chlorobenzene	100.0		82.86	83	77-112
Chlorodibromomethane	100.0		109.1	109	72-118
Chloroethane	100.0		103.9	104	64-142
2-Chloroethyl vinyl eth	100.0		2.02	2*	22-165
Chloroform	100.0		88.37	88	70-115
Chloromethane	100.0		100.5	100	58-139
Chloroprene	100.0		74.82	75	73-118
2-Chlorotoluene	100.0		103.0	103	65-132
4-Chlorotoluene	100.0		93.72	94	67-127
1,2-Dibromo-3-chloropro	100.0		103.3	103	56-134
1,2-Dibromoethane	100.0		114.5	114	74-118

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

* Values outside of QC limits

COMMENTS:

626 260

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V102201

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V1022011LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dibromomethane	100.0		104.4	104	75-114
1,2-Dichlorobenzene	100.0		100.4	100	80-113
1,3-Dichlorobenzene	100.0		100.6	101	77-119
1,4-Dichlorobenzene	100.0		98.61	99	78-116
trans-1,4-Dichloro-2-bu	100.0		102.1	102	62-138
Dichlorodifluoromethane	100.0		59.49	59	48-145
1,1-Dichloroethane	100.0		91.24	91	76-118
1,2-Dichloroethane	100.0		91.90	92	62-124
1,1-Dichloroethene	100.0		76.47	76	69-121
cis-1,2-Dichloroethene	100.0		84.70	85	76-114
trans-1,2-Dichloroethen	100.0		81.07	81	72-121
1,2-Dichloropropane	100.0		89.70	90	64-133
1,3-Dichloropropane	100.0		105.4	105	68-128
2,2-Dichloropropane	100.0		91.42	91	67-132
1,1-Dichloropropene	100.0		77.84	78	76-117
cis-1,3-Dichloropropene	100.0		108.2	108	77-120
trans-1,3-Dichloroprope	100.0		98.48	98	73-124
Di isopropyl ether	100.0		83.90	84	62-160
1,4-Dioxane	2000		2185	109	56-131
Ethyl Acetate	100.0		92.22	92	52-151
Ethylbenzene	100.0		90.10	90	77-111
Ethyl methacrylate	200.0		210.3	105	57-140
Furan	100.0		136.2	136*	52-124
Hexachlorobutadiene	100.0		126.5	126	69-137
Hexane	100.0		85.72	86	70-130
2-Hexanone	100.0		112.0	112	53-144
Iodomethane	100.0		94.70	95	51-153
Isobutyl Alcohol	2000		1956	98	60-134

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V102201

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V1022011LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Isopropylbenzene	100.0		94.39	94	74-125
4-Isopropyltoluene	100.0		97.20	97	72-127
Methacrylonitrile	1000		940.2	94	70-125
Methylene Chloride	100.0		103.1	103	76-115
Methyl methacrylate	200.0		210.8	105	57-147
4-Methyl-2-Pentanone	100.0		107.3	107	42-144
Methyl-tertbutyl-Ether	100.0		87.54	88	62-122
Naphthalene	100.0		102.3	102	53-124
Pentachloroethane	100.0		120.8	121	78-126
Propionitrile	1000		1141	114	58-139
n-Propyl Acetate	100.0		139.4	139	88-170
n-Propylbenzene	100.0		96.30	96	75-125
Styrene	100.0		93.20	93	77-117
1,1,1,2-Tetrachloroetha	100.0		94.42	94	79-113
1,1,2,2-Tetrachloroetha	100.0		101.2	101	67-126
Tetrachloroethene	100.0		95.26	95	77-115
Tetrahydrofuran	100.0		90.96	91	76-181
1,2,3-Trichlorobenzene	100.0		115.7	116	62-132
Toluene	100.0		93.61	94	77-115
1,1,1-Trichloroethane	100.0		80.65	81	63-122
1,1,2-Trichloroethane	100.0		102.6	103	69-117
1,1,2-trichloro-1,2,2-t	100.0		77.06	77	70-130
Trichloroethene	100.0		91.06	91	75-113
Trichlorofluoromethane	100.0		82.41	82	55-130
1,2,3-Trichloropropane	100.0		104.3	104	62-130
1,2,4-Trichlorobenzene	100.0		117.4	117	68-132
1,2,4-Trimethylbenzene	100.0		93.83	94	69-126
1,3,5-Trimethylbenzene	100.0		95.70	96	69-128

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

* Values outside of QC limits

COMMENTS:

626 262

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V102201

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V1022011LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Vinyl Acetate	100.0		58.38	58	28-146
Vinyl Chloride	100.0		87.24	87	65-134
Xylene-mp	200.0		172.5	86	77-115
Xylene-o	100.0		89.02	89	77-115
cis-1,4-Dichloro-2-bute	100.0		104.5	104	70-130

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 2 out of 89 outside limits

COMMENTS:

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V102201

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: 0102-408-5

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Benzene	100.0	0.000	80.65	81	72-124
Chlorobenzene	100.0	0.000	75.61	76*	77-112
1,1-Dichloroethene	100.0	0.000	85.18	85	69-121
Toluene	100.0	0.000	95.18	95	77-115
Trichloroethene	100.0	0.000	102.1	102	75-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Benzene	100.0	103.1	103	24*	20	72-124
Chlorobenzene	100.0	101.7	102	29*	20	77-112
1,1-Dichloroethene	100.0	110.6	111	26*	20	69-121
Toluene	100.0	119.0	119*	22*	20	77-115
Trichloroethene	100.0	125.4	125*	20	20	75-113

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

* Values outside of QC limits

RPD: 4 out of 5 outside limits

Spike Recovery: 3 out of 10 outside limits

COMMENTS:

626 264

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V4022221LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Lab File ID: 0301003

Lab Prep Batch: V402222

Date Analyzed: 02/22/01

Time Analyzed: 1621

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC4

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V4022221LCS	V402222	0202003LCS	1539
02	0102-408-4	V402222	1501016	2252
03	0102-461-2	V402222	1701018	2354
04	0102-408-3	V402222	2101022	0158
05	0102-461-2MS	V402222	2201023	0229
06	0102-461-2MS	V402222	2301024	0301
07				
08				
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COMMENTS:

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4022221LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Prep Batch: V402222

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

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

CAS NO.	COMPOUND	Q
67-64-1-----	Acetone	20.00 U
75-05-8-----	Acetonitrile	20.00 U
107-02-8-----	Acrolein	20.00 U
107-13-1-----	Acrylonitrile	20.00 U
107-05-1-----	Allyl chloride	1.00 U
71-43-2-----	Benzene	1.00 U
108-86-1-----	Bromobenzene	1.00 U
74-97-5-----	Bromochloromethane	1.00 U
75-27-4-----	Bromodichloromethane	1.00 U
75-25-2-----	Bromoform	1.00 U
78-93-3-----	2-Butanone	20.00 U
74-83-9-----	Bromomethane	1.00 U
104-51-8-----	n-Butylbenzene	1.00 U
135-98-8-----	sec-Butylbenzene	1.00 U
98-06-6-----	tert-Butylbenzene	1.00 U
75-15-0-----	Carbon Disulfide	1.00 U
56-23-5-----	Carbon Tetrachloride	1.00 U
108-90-7-----	Chlorobenzene	1.00 U
124-48-1-----	Chlorodibromomethane	1.00 U
75-00-3-----	Chloroethane	1.00 U
110-75-0-----	2-Chloroethyl vinyl ether	20.00 U
67-66-3-----	Chloroform	1.00 U
74-87-3-----	Chloromethane	1.00 U
126-99-8-----	Chloroprene	1.00 U
95-49-8-----	2-Chlorotoluene	1.00 U
106-43-4-----	4-Chlorotoluene	1.00 U
96-12-8-----	1,2-Dibromo-3-chloropropane	1.00 U
106-93-4-----	1,2-Dibromoethane	1.00 U
74-95-3-----	Dibromomethane	1.00 U
95-50-1-----	1,2-Dichlorobenzene	1.00 U
541-73-1-----	1,3-Dichlorobenzene	1.00 U
106-46-7-----	1,4-Dichlorobenzene	1.00 U
110-57-6-----	trans-1,4-Dichloro-2-butene	1.00 U

FORM I VOA-GCMS

626 266

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4022221LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Prep Batch: V402222

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1868-53-7-----	Dichlorodifluoromethane	1.00	U
75-34-3-----	1,1-Dichloroethane	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
156-59-4-----	cis-1,2-Dichloroethene	1.00	U
156-60-5-----	trans-1,2-Dichloroethene	1.00	U
78-87-5-----	1,2-Dichloropropane	1.00	U
142-28-9-----	1,3-Dichloropropane	1.00	U
590-20-7-----	2,2-Dichloropropane	1.00	U
563-58-6-----	1,1-Dichloropropene	1.00	U
10061-01-5-----	cis-1,3-Dichloropropene	1.00	U
10061-02-6-----	trans-1,3-Dichloropropene	1.00	U
108-20-3-----	Di isopropyl ether	5.00	U
123-91-1-----	1,4-Dioxane	100.0	U
141-78-6-----	Ethyl Acetate	5.00	U
100-41-4-----	Ethylbenzene	1.00	U
97-63-2-----	Ethyl methacrylate	1.00	U
110-00-9-----	Furan	1.00	U
87-63-3-----	Hexachlorobutadiene	1.00	U
110-54-3-----	Hexane	1.00	U
591-78-6-----	2-Hexanone	5.00	U
74-88-4-----	Iodomethane	1.00	U
78-83-1-----	Isobutyl Alcohol	100.0	U
98-82-8-----	Isopropylbenzene	1.00	U
99-87-6-----	4-Isopropyltoluene	1.00	U
126-98-7-----	Methacrylonitrile	10.00	U
75-09-2-----	Methylene Chloride	4.76	J
80-62-6-----	Methyl methacrylate	1.00	U
108-10-1-----	4-Methyl-2-Pentanone	5.00	U
1634-04-4-----	Methyl-tertbutyl-Ether	5.00	U
91-20-3-----	Naphthalene	1.00	U
76-01-7-----	Pentachloroethane	1.00	U
107-12-0-----	Propionitrile	10.00	U

FORM I VOA-GCMS

000062

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4022221LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Prep Batch: V402222

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

109-60-4-----	n-Propyl Acetate	1.00	U
103-65-1-----	n-Propylbenzene	1.00	U
100-42-5-----	Styrene	1.00	U
630-20-6-----	1,1,1,2-Tetrachloroethane	1.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1.00	U
127-18-4-----	Tetrachloroethene	1.00	U
109-99-9-----	Tetrahydrofuran	1.00	U
87-61-6-----	1,2,3-Trichlorobenzene	1.00	U
108-88-3-----	Toluene	1.00	U
71-55-6-----	1,1,1-Trichloroethane	1.00	U
79-00-5-----	1,1,2-Trichloroethane	1.00	U
76-13-1-----	1,1,2-trichloro-1,2,2-triflu	1.00	U
79-01-6-----	Trichloroethene	1.00	U
75-69-4-----	Trichlorofluoromethane	1.00	U
96-18-4-----	1,2,3-Trichloropropane	1.00	U
120-82-1-----	1,2,4-Trichlorobenzene	1.00	U
95-63-6-----	1,2,4-Trimethylbenzene	1.00	U
108-67-8-----	1,3,5-Trimethylbenzene	1.00	U
108-05-4-----	Vinyl Acetate	20.00	U
75-01-4-----	Vinyl Chloride	1.00	U
1330-20-7-----	Xylene-mp	1.00	U
95-47-6-----	Xylene-o	1.00	U
1476-11-5-----	cis-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

626 268

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V4022221LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000064

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402222

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V4022221LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0		85.19	85	59-151
Acetonitrile	1000		1113	111	57-143
Acrolein	100.0		67.26	67	59-134
Acrylonitrile	100.0		101.3	101	60-146
Allyl chloride	100.0		103.9	104	74-120
Benzene	100.0		120.2	120	72-124
Bromobenzene	100.0		98.27	98	77-120
Bromochloromethane	100.0		117.8	118	74-120
Bromodichloromethane	100.0		72.72	73	68-119
Bromoform	100.0		77.82	78	66-136
2-Butanone	100.0		107.1	107	55-151
Bromomethane	100.0		115.6	116	40-134
n-Butylbenzene	100.0		105.3	105	69-129
sec-Butylbenzene	100.0		95.57	96	72-127
tert-Butylbenzene	100.0		94.28	94	73-126
Carbon Disulfide	100.0		101.9	102	60-133
Carbon Tetrachloride	100.0		88.85	89	64-123
Chlorobenzene	100.0		101.3	101	77-112
Chlorodibromomethane	100.0		74.40	74	72-118
Chloroethane	100.0		114.3	114	64-142
2-Chloroethyl vinyl eth	100.0		97.38	97	22-165
Chloroform	100.0		103.1	103	70-115
Chloromethane	100.0		102.9	103	58-139
Chloroprene	100.0		99.26	99	73-118
2-Chlorotoluene	100.0		76.53	76	65-132
4-Chlorotoluene	100.0		102.3	102	67-127
1,2-Dibromo-3-chloropro	100.0		75.20	75	56-134
1,2-Dibromoethane	100.0		79.68	80	74-118

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

* Values outside of QC limits

COMMENTS:

626 270

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402222

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V4022221LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dibromomethane	100.0		82.43	82	75-114
1,2-Dichlorobenzene	100.0		104.8	105	80-113
1,3-Dichlorobenzene	100.0		113.3	113	77-119
1,4-Dichlorobenzene	100.0		108.7	109	78-116
trans-1,4-Dichloro-2-bu	100.0		94.06	94	62-138
Dichlorodifluoromethane	100.0		84.32	84	48-145
1,1-Dichloroethane	100.0		104.0	104	76-118
1,2-Dichloroethane	100.0		89.74	90	62-124
1,1-Dichloroethene	100.0		114.2	114	69-121
cis-1,2-Dichloroethene	100.0		112.6	113	76-114
trans-1,2-Dichloroethen	100.0		110.3	110	72-121
1,2-Dichloropropane	100.0		84.55	84	64-133
1,3-Dichloropropane	100.0		81.35	81	68-128
2,2-Dichloropropane	100.0		105.8	106	67-132
1,1-Dichloropropene	100.0		113.5	114	76-117
cis-1,3-Dichloropropene	100.0		77.38	77	77-120
trans-1,3-Dichloroprope	100.0		79.08	79	73-124
Di isopropyl ether	100.0		109.4	109	62-160
1,4-Dioxane	2000		1722	86	56-131
Ethyl Acetate	100.0		112.2	112	52-151
Ethylbenzene	100.0		88.16	88	77-111
Ethyl methacrylate	200.0		178.9	89	57-140
Furan	100.0		140.2	140*	52-124
Hexachlorobutadiene	100.0		91.14	91	69-137
Hexane	100.0		118.9	119	70-130
2-Hexanone	100.0		87.28	87	53-144
Iodomethane	100.0		124.8	125	51-153
Isobutyl Alcohol	2000		2424	121	60-134

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402222

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V4022221LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Isopropylbenzene	100.0		92.07	92	74-125
4-Isopropyltoluene	100.0		93.65	94	72-127
Methacrylonitrile	1000		1031	103	70-125
Methylene Chloride	100.0		109.4	109	76-115
Methyl methacrylate	200.0		142.8	71	57-147
4-Methyl-2-Pentanone	100.0		85.83	86	42-144
Methyl-tertbutyl-Ether	100.0		84.53	84	62-122
Naphthalene	100.0		105.3	105	53-124
Pentachloroethane	100.0		125.0	125	78-126
Propionitrile	1000		1050	105	58-139
n-Propyl Acetate	100.0		126.0	126	88-170
n-Propylbenzene	100.0		93.90	94	75-125
Styrene	100.0		97.28	97	77-117
1,1,1,2-Tetrachloroetha	100.0		79.37	79	79-113
1,1,2,2-Tetrachloroetha	100.0		98.74	99	67-126
Tetrachloroethene	100.0		79.08	79	77-115
Tetrahydrofuran	100.0		112.2	112	76-181
1,2,3-Trichlorobenzene	100.0		115.3	115	62-132
Toluene	100.0		87.52	88	77-115
1,1,1-Trichloroethane	100.0		91.38	91	63-122
1,1,2-Trichloroethane	100.0		87.87	88	69-117
1,1,2-trichloro-1,2,2-t	100.0		97.06	97	70-130
Trichloroethene	100.0		76.77	77	75-113
Trichlorofluoromethane	100.0		82.39	82	55-130
1,2,3-Trichloropropane	100.0		83.80	84	62-130
1,2,4-Trichlorobenzene	100.0		117.1	117	68-132
1,2,4-Trimethylbenzene	100.0		103.1	103	69-126
1,3,5-Trimethylbenzene	100.0		109.0	109	69-128

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

* Values outside of QC limits

COMMENTS:

626 272

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402222

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: V4022221LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Vinyl Acetate	100.0		112.4	112	28-146
Vinyl Chloride	100.0		109.0	109	65-134
Xylene-mp	200.0		195.7	98	77-115
Xylene-o	100.0		96.99	97	77-115
cis-1,4-Dichloro-2-bute	100.0		84.70	85	70-130

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 89 outside limits

COMMENTS:

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V402222

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-408

Matrix Spike - Sample No.: 0102-461-2

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Benzene	100.0	0.000	121.3	121	72-124
Chlorobenzene	100.0	0.000	87.46	87	77-112
1,1-Dichloroethene	100.0	0.000	103.5	104	69-121
Toluene	100.0	0.000	83.92	84	77-115
Trichloroethene	100.0	0.000	78.46	78	75-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Benzene	100.0	125.8	126*	4	20	72-124
Chlorobenzene	100.0	99.38	99	13	20	77-112
1,1-Dichloroethene	100.0	112.6	113	8	20	69-121
Toluene	100.0	92.68	93	10	20	77-115
Trichloroethene	100.0	81.44	81	4	20	75-113

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 1 out of 10 outside limits

COMMENTS:

626 274



ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6331
Founded 1972

February 28, 2001

Mr. Kraig Smith
Sverdrup/Jacobs Eng.
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Ref: Analytical Testing
ETC Order # 0102556
Project Description Dunn Field
Memphis Depot

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and/or 40 CFR part 136.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Chet Scheibel', is written over the printed name.

Chet Scheibel
Laboratory Project Manager

rt
Attachment

SVE_MHDDMTA

Certifications

Tennessee #TN02027
Arkansas #40730
Kentucky #90047
North Carolina #415
South Carolina #84002002

Mississippi
Oklahoma #9311
Virginia #00106
Washington #C248
US Army Corps of Engineers

Environmental Testing & Consulting, Inc.
Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report. These qualifiers do not apply for TIC reports.

Q	Surrogate Recovery Outside QC Limits
J	Estimated Value. Presence of the compound was confirmed but less than the reported detection limit.
E	Concentration exceeds the established method calibration range but is within the working range of the instrument.
B	Analyte detected in the associated Method Blank.
U	Reported result was unconfirmed. Refer to Case Narrative.
N	Non-Compliance Report associated with this sample or project
C	Result reported from GC/MS confirmation analysis.
M	Result reported represents a minimum value. Refer to Case Narrative.
NC	Result reported from Primary Column. Result did not confirm.
*	QC Data (percent recovery/RPD for a particular analyte was outside QC Limits)

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

626 276

Client Name Sverdrup/Jacobs Eng.
Site ID Dunn Field
Memphis Depot

ETC Order #0102556

<u>ETC</u> <u>Sample ID</u>	<u>Field</u> <u>ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Method Description</u>
010255601	MW-79	AQUEOUS	8260B	GC/MS Volatile Organics
010255602	MW-80	AQUEOUS	8260B	GC/MS Volatile Organics
010255603	MW-42	AQUEOUS	8260B	GC/MS Volatile Organics
010255604	MW-43	AQUEOUS	8260B	GC/MS Volatile Organics
010255605	MW-58	AQUEOUS	8260B	GC/MS Volatile Organics
010255606	MW-56	AQUEOUS	8260B	GC/MS Volatile Organics
010255607	MW-56A	AQUEOUS	8260B	GC/MS Volatile Organics
010255608	MW-51	AQUEOUS	8260B	GC/MS Volatile Organics
010255609	MW-34	AQUEOUS	8260B	GC/MS Volatile Organics
010255610	MW-37	AQUEOUS	8260B	GC/MS Volatile Organics
010255611	MW-32	AQUEOUS	8260B	GC/MS Volatile Organics
010255612	FB-2	AQUEOUS	8260B	GC/MS Volatile Organics
010255613	RB-2	AQUEOUS	8260B	GC/MS Volatile Organics
010255614	Trip Blank	AQUEOUS	8260B	GC/MS Volatile Organics

Environmental Testing & Consulting, Inc.

Login
Chain-of-Custody



Environmental Testing & Consulting, Inc.
2924 Walnut Grove Rd.
Memphis, TN 38111
(901)327-2750 FAX (901)327-6334

CHAIN OF CUSTODY RECORD

ETC Work Order: 0102556

Company Name <u>Jacobs Engineering</u>		Phone #: <u>615 331-9232</u>		Fax Results ☒ RUSH		Analysis Requested (Note special detection limits or methods)										
Project/Site <u>Dunn Field/Memphis Dept</u>		Fax #: <u>615 573-8328</u>		Ice												
Project #		FID #:														
		PO #:														
Matrix		1 Wastewater		4 Sludge												
		2 Aqueous		5 Oil/Solvent												
		3 Soil/Sediment		6 Other												
# of cont.	Sample ID/Number	Depth	Sample Date	Sample Time	Matrix	Type Grab/Comp	Comments									
3	MW-79		2-14-11	1145	6.0	6.0	100s									
1	MW-80			1200			X									
1	MW-42			1245			X									
1	MW-43			1400			X									
1	MW-58			1415			X									
1	MW-56			1430			X									
1	MW-56A			1430			X									
1	MW-51			1530			X									
1	MW-34		2-20-11	0900												
1	MW-37			1010												
1	MW-32			1030												
Sampled By <u>Steve Smith</u>		Method of Shipment <u>Hand Delivered</u>		Blank/Cooler Temp <u>24°C</u>		Remarks										
RELINQUISHED BY (sign)		DATE		TIME		RECEIVED BY (sign)		DATE		TIME		Sample Delivery Group ID				
RELINQUISHED BY (sign)		DATE		TIME		RECEIVED BY (sign)		DATE		TIME						
RELINQUISHED BY (sign) <u>Steve Smith</u>		DATE 2/20/11		TIME 1530		RECEIVED BY (sign) <u>Steve Smith</u>		DATE 2/20/11		TIME 1530						

Distribution:

Original and Yellow accompany samples to the laboratory. Pink copy for Field Crew.

Original copy returned with results. Yellow copy for ETC, Inc. files.



ETC Work Order : 002536

Company Name		Phone # : 615 331 7232		Fax Results		Analysis Requested											
Project/Site		Fax # : 615 333 8328		RUSH		(Note special detection limits or methods)											
Project #		FID # :		Ice													
Project Manager/Contact		PO # :															
Dunn Field/Memphis Depot <td colspan="2">Matrix <td colspan="2"> <td colspan="10"></td> </td></td>		Matrix <td colspan="2"> <td colspan="10"></td> </td>		<td colspan="10"></td>													
Project Manager/Contact <td colspan="2">1 Wastewater <td colspan="2">4 Sludge <td colspan="10"></td> </td></td>		1 Wastewater <td colspan="2">4 Sludge <td colspan="10"></td> </td>		4 Sludge <td colspan="10"></td>													
Virgil Jansen/Kraig Smith <td colspan="2">2 Aqueous <td colspan="2">5 Oil/Solvent <td colspan="10"></td> </td></td>		2 Aqueous <td colspan="2">5 Oil/Solvent <td colspan="10"></td> </td>		5 Oil/Solvent <td colspan="10"></td>													
<td colspan="2">3 Soil/Sediment <td colspan="2">6 Other <td colspan="10"></td> </td></td>		3 Soil/Sediment <td colspan="2">6 Other <td colspan="10"></td> </td>		6 Other <td colspan="10"></td>													
# of cont	Sample ID/ Number	Depth	Sample Date	Sample Time	Matrix	Type Grab/Comp											
3	FB-2		2/25/91	1030	Water	CRAB											
1	RB-2		1	1030	1	1											
1	Trip Blank		1	---	1	1											
Sampled By		Method of Shipment		Blank/Cooler Temp		Remarks											
Virgil Jansen		Hand Delivered		24°C													
RELINQUISHED BY (sign)		DATE		TIME		RECEIVED BY (sign)		DATE		TIME		Sample Delivery Group ID					
RELINQUISHED BY (sign)		DATE		TIME		RECEIVED BY (sign)		DATE		TIME							
RELINQUISHED BY (sign)		DATE		TIME		RECEIVED BY (sign)		DATE		TIME							

Original and Yellow accompany samples to the laboratory. Pink copy
 Original copy returned with results. Yellow copy for ETC, Inc. files

Environmental Testing & Consulting, Inc.
Cooler Receipt Form

Date Received 2/20/01 LIMS# 0102-556
Date/Time Checked In 2/20/01-15:30 Project Dunn Field
Carrier/Bill# Hand-Delivered Memphis Depot
By Rebekah Barger

1. Custody Seals?/Location-	No
2. Samples are non-radioactive?	Yes
3. Chain of Custody in plastic?	Yes
4. Temperature at receipt (ok = 4 ± 2 °C) <4°C	OK
5. Ice & Packing-box, ice, bags, bubble wrap	Yes
6. Chain of Custody filled out properly?	Yes
7. All containers in separate bags?	No
8. Sample containers intact?	Yes
9. Label(s) complete and in good condition?	Yes
10. Label(s) agree with Chain of Custody?	Yes
11. Correct containers used?	Yes
12. Sufficient sample?	Yes
13. VOA vials bubble-free (H ₂ O) or no head space (soil)?	Yes
14. Preservation OK? TM pH____; TRPH pH____; TOC pH____; TOX pH____; CN pH____; N/P pH____; Other pH____	Yes

Comments _____

*Validated Date and Time of Sample Receipt (VDTSR)

Environmental Testing & Consulting, Inc.

Sample Reports

626 282

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-01**
 Field ID : **MW-79**

Matrix : **AQUEOUS**
 Sample Date : **02/19/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	97.9	ug/L	20.0			
Benzene	13.2	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	1.02	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	30.1	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	3.34	ug/L	1.00			
Tetrachloroethene	14.0	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	9.60	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	2.52	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	107	74 123
S2 - Toluene-d8	92	86 112
S3 - 4-Bromofluorobenzene	82	81 115
S4 - 1,2-Dichloroethane-d4	80	80 120

Data Validator CS ND - Not Detected

Q - Recovery Outside QC Limits

000008

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0501007

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000009

626 234

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-02**
 Field ID : **MW-80**

Matrix : **AQUEOUS**
 Sample Date : **02/19/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	106	74 - 123
S2 - Toluene-d8	93	86 - 112
S3 - 4-Bromofluorobenzene	84	81 - 115
S4 - 1,2-Dichloroethane-d4	81	80 - 120

CS
 Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000010

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-2

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0601008

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-GCMS-TIC

000011

626 '236

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-03**
 Field ID : **MW-42**

Matrix : **AQUEOUS**
 Sample Date : **02/19/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/22/01	EM	8260B 5030B
QC Batch	V402222					
Dilution Factor	1					
Acetone	61.8	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	36.8	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	114	74 123
S2 - Toluene-d8	91	86 112
S3 - 4-Bromofluorobenzene	90	81 115
S4 - 1,2-Dichloroethane-d4	95	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000012

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-3

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1601017

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-GCMS-TIC

000013

626 288

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-04**
 Field ID : **MW-43**

Matrix : **AQUEOUS**
 Sample Date : **02/19/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	5,450E	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	6.26	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	9.59	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	1.02	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			
Surrogate Standard	% Recovery		QC Limits			
S1 - Dibromofluoromethane	109		74 123			
S2 - Toluene-d8	91		86 112			
S3 - 4-Bromofluorobenzene	84		81 115			
S4 - 1,2-Dichloroethane-d4	85		80 120			

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000014

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-4

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0801010

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 67-63-0	ISOPROPYL ALCOHOL	5.60	150.4	NJ
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FORM I VOA-GCMS-TIC

626 290

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-04**
 Field ID : **MW-43-DIL**

Matrix : **AQUEOUS**
 Sample Date : **02/19/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/23/01	EM	8260B 5030B
QC Batch	V402222					
Dilution Factor	100					
Acetone	6,360	ug/L	2000			
Benzene	ND	ug/L	100			
Bromodichloromethane	ND	ug/L	100			
Bromoform	ND	ug/L	100			
Bromomethane	ND	ug/L	100			
2-Butanone (MEK)	ND	ug/L	2000			
Carbon Disulfide	ND	ug/L	100			
Carbon Tetrachloride	ND	ug/L	100			
Chlorobenzene	ND	ug/L	100			
Chlorodibromomethane	ND	ug/L	100			
Chloroethane	ND	ug/L	100			
Chloroform	ND	ug/L	100			
Chloromethane	ND	ug/L	100			
1,1-Dichloroethane	ND	ug/L	100			
1,2-Dichloroethane	ND	ug/L	100			
1,1-Dichloroethene	ND	ug/L	100			
trans-1,2-Dichloroethene	ND	ug/L	100			
1,2-Dichloropropane	ND	ug/L	100			
cis-1,3-Dichloropropene	ND	ug/L	100			
trans-1,3-Dichloropropene	ND	ug/L	100			
Ethylbenzene	ND	ug/L	100			
2-Hexanone (MBK)	ND	ug/L	500			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	500			
Methylene Chloride	ND	ug/L	500			
Styrene	ND	ug/L	100			
1,1,2,2-Tetrachloroethane	ND	ug/L	100			
Tetrachloroethene	ND	ug/L	100			
Toluene	ND	ug/L	100			
1,1,1-Trichloroethane	ND	ug/L	100			
1,1,2-Trichloroethane	ND	ug/L	100			
Trichloroethene	ND	ug/L	100			
Vinyl Acetate	ND	ug/L	2000			
Vinyl Chloride	ND	ug/L	100			
Xylenes-m,p	ND	ug/L	100			
Xylenes-o	ND	ug/L	100			
cis-1,2-Dichloroethene	ND	ug/L	100			
Surrogate Standard	% Recovery		QC Limits			
S1 - Dibromofluoromethane	112		74	123		
S2 - Toluene-d8	92		86	112		
S3 - 4-Bromofluorobenzene	89		81	115		
S4 - 1,2-Dichloroethane-d4	92		80	120		

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000016

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-4

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 2001021

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/23/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 100.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000017

626 292

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-05**
 Field ID : **MW-58**

Matrix : **AQUEOUS**
 Sample Date : **02/19/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromotorm	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	0.43J	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	2.05	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	0.40J	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	2.47	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	109	74 123
S2 - Toluene-d8	93	86 112
S3 - 4-Bromofluorobenzene	85	81 115
S4 - 1,2-Dichloroethane-d4	84	80 120

C S

Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000018

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-5

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0901011

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

626 294

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-06**
 Field ID : **MW-56**

Matrix : **AQUEOUS**
 Sample Date : **02/19/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	0.71J	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	59.4	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	0.71J	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	1.99	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	105	74 123
S2 - Toluene-d8	93	86 112
S3 - 4-Bromofluorobenzene	85	81 115
S4 - 1,2-Dichloroethane-d4	82	80 120

Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000020

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-6

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1001012

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-70-3	BENZENE, 1,3,5-TRICHLORO-	13.87	23.50	NJ
2. 95-94-3	BENZENE, 1,2,4,5-TETRACHLORO	16.90	20.31	NJ
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FORM I VOA-GCMS-TIC

000021

626 296

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-07**
 Field ID : **MW-56A**

Matrix : **AQUEOUS**
 Sample Date : **02/19/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	0.71J	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	61.4	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	2.01	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	106	74 123
S2 - Toluene-d8	93	86 112
S3 - 4-Bromofluorobenzene	84	81 115
S4 - 1,2-Dichloroethane-d4	86	80 120

Data Validator CS ND - Not Detected

Q - Recovery Outside QC Limits

000022

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-7

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1101013

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-70-3	BENZENE, 1,3,5-TRICHLORO-	13.87	23.60	NJ
2. 95-94-3	BENZENE, 1,2,4,5-TETRACHLORO	16.90	18.94	NJ
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FORM I VOA-GCMS-TIC

000023

626 298

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-08**
 Field ID : **MW-51**

Matrix : **AQUEOUS**
 Sample Date : **02/19/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	15.8	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	1.86	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	6.09	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	109	74 123
S2 - Toluene-d8	93	86 112
S3 - 4-Bromofluorobenzene	84	81 115
S4 - 1,2-Dichloroethane-d4	85	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000024

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-8

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1201014

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
12. _____	_____	_____	_____	_____
13. _____	_____	_____	_____	_____
14. _____	_____	_____	_____	_____
15. _____	_____	_____	_____	_____
16. _____	_____	_____	_____	_____
17. _____	_____	_____	_____	_____
18. _____	_____	_____	_____	_____
19. _____	_____	_____	_____	_____
20. _____	_____	_____	_____	_____
21. _____	_____	_____	_____	_____
22. _____	_____	_____	_____	_____
23. _____	_____	_____	_____	_____
24. _____	_____	_____	_____	_____
25. _____	_____	_____	_____	_____
26. _____	_____	_____	_____	_____
27. _____	_____	_____	_____	_____
28. _____	_____	_____	_____	_____
29. _____	_____	_____	_____	_____
30. _____	_____	_____	_____	_____

FORM I VOA-GCMS-TIC

000025

626 300

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name Sverdrup/Jacobs Eng.
 Memphis Depot, Dunn Field
 3354 Perimeter Hill Drive,
 Suite 310
 Nashville, TN 37211

Site ID Dunn Field
 Memphis Depot
 FID #

Date Arrived 02/20/01
 ETC Order Number 0102556

ETC Lab ID 0102556-09
 Field ID : MW-34

Matrix : AQUEOUS
 Sample Date : 02/20/01

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	12.0	ug/L	1.00			
Carbon Tetrachloride	0.82J	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	4.24	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	2.91	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	1.62	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	110	74 123
S2 - Toluene-d8	94	86 112
S3 - 4-Bromofluorobenzene	86	81 115
S4 - 1,2-Dichloroethane-d4	88	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000026

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-9

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1301015

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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FORM I VOA-GCMS-TIC

000027

626 302

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-10**
 Field ID : **MW-37**

Matrix : **AQUEOUS**
 Sample Date : **02/20/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	3.41	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	112	74 123
S2 - Toluene-d8	94	86 112
S3 - 4-Bromofluorobenzene	84	81 115
S4 - 1,2-Dichloroethane-d4	88	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000028

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-10

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1401016

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000029

626 304

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-11**
 Field ID : **MW-32**

Matrix : **AQUEOUS**
 Sample Date : **02/20/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	19.7	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	341E	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	2.42	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	68.2	ug/L	1.00			
Tetrachloroethene	3.74	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	60.4	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	9.44	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	103	74 123
S2 - Toluene-d8	93	86 112
S3 - 4-Bromofluorobenzene	85	81 115
S4 - 1,2-Dichloroethane-d4	87	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000030

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.:

0102-556-11

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1501017

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

626 306

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-11**
 Field ID : **MW-32-DIL**

Matrix : **AQUEOUS**
 Sample Date : **02/20/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/23/01	EM	8260B 5030B
QC Batch	V402222					
Dilution Factor	50					
Acetone	ND	ug/L	1000			
Benzene	ND	ug/L	50.0			
Bromodichloromethane	ND	ug/L	50.0			
Bromoform	ND	ug/L	50.0			
Bromomethane	ND	ug/L	50.0			
2-Butanone (MEK)	ND	ug/L	1000			
Carbon Disulfide	ND	ug/L	50.0			
Carbon Tetrachloride	ND	ug/L	50.0			
Chlorobenzene	ND	ug/L	50.0			
Chlorodibromomethane	ND	ug/L	50.0			
Chloroethane	ND	ug/L	50.0			
Chloroform	434	ug/L	50.0			
Chloromethane	ND	ug/L	50.0			
1,1-Dichloroethane	ND	ug/L	50.0			
1,2-Dichloroethane	ND	ug/L	50.0			
1,1-Dichloroethene	ND	ug/L	50.0			
trans-1,2-Dichloroethene	ND	ug/L	50.0			
1,2-Dichloropropane	ND	ug/L	50.0			
cis-1,3-Dichloropropene	ND	ug/L	50.0			
trans-1,3-Dichloropropene	ND	ug/L	50.0			
Ethylbenzene	ND	ug/L	50.0			
2-Hexanone (MBK)	ND	ug/L	250			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	250			
Methylene Chloride	ND	ug/L	250			
Styrene	ND	ug/L	50.0			
1,1,2,2-Tetrachloroethane	ND	ug/L	50.0			
Tetrachloroethene	ND	ug/L	50.0			
Toluene	ND	ug/L	50.0			
1,1,1-Trichloroethane	ND	ug/L	50.0			
1,1,2-Trichloroethane	ND	ug/L	50.0			
Trichloroethene	71.9	ug/L	50.0			
Vinyl Acetate	ND	ug/L	1000			
Vinyl Chloride	ND	ug/L	50.0			
Xylenes-m,p	ND	ug/L	50.0			
Xylenes-o	ND	ug/L	50.0			
cis-1,2-Dichloroethene	ND	ug/L	50.0			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	112	74 123
S2 - Toluene-d8	91	86 112
S3 - 4-Bromofluorobenzene	87	81 115
S4 - 1,2-Dichloroethane-d4	93	80 120

Data Validator ND - Not Detected

Q - Recovery Outside QC Limits

000032

626 307

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-11

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1901020

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/23/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 50.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000033

626 308

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-12**
 Field ID : **FB-2**

Matrix : **AQUEOUS**
 Sample Date : **02/20/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	109	74 123
S2 - Toluene-d8	93	86 112
S3 - 4-Bromofluorobenzene	84	81 115
S4 - 1,2-Dichloroethane-d4	88	80 120

Data Validator CS ND - Not Detected

Q - Recovery Outside QC Limits

000034

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0102-556-12

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1601018

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-GCMS-TIC

000035

626 310

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-13**
 Field ID : **RB-2**

Matrix : **AQUEOUS**
 Sample Date : **02/20/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/21/01	EM	8260B 5030B
QC Batch	V402211					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	111	74 123
S2 - Toluene-d8	92	86 112
S3 - 4-Bromofluorobenzene	85	81 115
S4 - 1,2-Dichloroethane-d4	88	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000036

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.:

0102-556-13

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1701019

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-GCMS-TIC

000037

626 312

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Depot, Dunn Field
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Dunn Field**
Memphis Depot
 FID #

Date Arrived **02/20/01**
 ETC Order Number **0102556**

ETC Lab ID **0102556-14**
 Field ID : **Trip Blank**

Matrix : **AQUEOUS**
 Sample Date : **02/20/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				02/22/01	EM	8260B 5030B
QC Batch	V402222					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	112	74 123
S2 - Toluene-d8	93	86 112
S3 - 4-Bromofluorobenzene	88	81 115
S4 - 1,2-Dichloroethane-d4	91	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000038

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO. .

0102-556-14

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 1301014

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-GCMS-TIC

000039

626 314

Environmental Testing & Consulting, Inc.

**Quality Control Reports
Level III
GC/MS Volatiles**

000040

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Eng.
Project Name Dunn Field
ETC Order# 0102-556

SAMPLE PRESERVATION (Verified at time of analysis)

All aqueous samples preserved to pH < 2 and maintained at 4 degrees C until analysis.

METHOD

Preparation: SW-846 5030B
Analysis: SW-846 8260B

HOLDING TIMES

Sample Analysis All samples analyzed within 14 days of collection.

QUALITY CONTROL

<u>QC Batch</u>	<u>Form 4 Summary</u>
V402211	V402211LB
V402221	V402221LB

System Monitoring Compounds FORM 2

Surrogate recoveries within QC limits, except as listed below.

Surrogate Bromofluorobenzene was flagged for low recovery in sample 0102-556-03MS/MSD (MW-42). These low recoveries do not affect the recovery data.

Surrogate Dibromofluoromethane was flagged for slightly high recovery in V4022112LCS. This slightly high recovery does not affect the recovery data.

Method Blank FORM 4

V4022111LB
V4022211LB

Target Analytes were not detected in the Method Blanks, except as listed below.

V4022111LB

Methylene Chloride was detected in the Method Blank at a concentration of 2.38J ug/L. This analyte was not identified in associated project samples. There is no effect on the data.

V4022211LB

Methylene Chloride was detected in the Method Blank at a concentration of 4.76J ug/L. This analyte was not identified in associated project samples. There is no effect on the data.

Laboratory Control Sample FORM 3

V4022111LCS
V4022211LCS

All acceptance criteria met, except as listed below.

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Eng.
Project Name Dunn Field
ETC Order# 0102-556

QUALITY CONTROL

V4022211LCS/V4022112LCS

Bromochloromethane and two non-target analytes were flagged outside control limits in the LCS. Bromochloromethane was not detected in the associated project samples. There is no effect on the data.

V4022211LCS

One non-target analyte was flagged outside control limits in the LCS. There is no effect on the data.

Matrix Spike / Matrix Spike Dup. FORM 3

Batch V402211

0102-556-03	RPD	All analytes within QC limits.
MW-42	Spike Recovery	All analytes within QC limits, except as listed below.

Toluene and Trichloroethene were flagged for low recovery in the MSD. MS recoveries were within control limits.

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup. FORM 3

Batch V402221

0102-461-02

Sample spiked for this QC Batch was not from this project. There is no effect on the data.

Refer to Laboratory Control Sample(s) for system verification.

CALIBRATION

BFB Daily 12-Hour Tune	All criteria met. FORM 5
Initial Calibration	All criteria met. FORM 6
Calibration Verification	All criteria met. FORM 7, Response >30% was non-target analyte.

Volatile Internal Standard Area and RT FORM 8

Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

SAMPLE ANALYSIS

Instrumentation	HP 5890 Series II GC, 5971MSD
Dilutions Required	Dilutions were performed on two samples to bring Target Analyte(s) within calibration range as shown on the Sample Report Forms

OTHER

Sample 0102-461-02MSD was analyzed outside the 12-hour tune time. There is no effect on the data.

CS

Project Manager

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

	CLIENT SAMPLE NO.	SMC1 (DCE) #	SMC2 (DFM) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	V4022111LCS	81	98	90	90	0
02	V4022111LB	81	111	90	81	0
03	0102-556-1	80	107	92	82	0
04	0102-556-2	81	106	93	84	0
05	0102-556-4	85	109	91	84	0
06	0102-556-5	84	109	93	85	0
07	0102-556-6	82	105	93	85	0
08	0102-556-7	86	106	93	84	0
09	0102-556-8	85	109	93	84	0
10	0102-556-9	88	110	94	86	0
11	0102-556-10	88	112	94	84	0
12	0102-556-11	87	103	93	85	0
13	0102-556-12	88	109	93	84	0
14	0102-556-13	88	111	92	85	0
15	V4022112LCS	111	129*	93	86	1
16	0102-556-3MS	89	100	90	78*	1
17	0102-556-3MS	90	101	91	76*	1
18	V4022221LCS	92	100	92	82	0
19	V4022221LB	83	106	94	84	0
20	0102-556-14	91	112	93	88	0
21	0102-556-3	95	114	91	90	0
22	0102-556-11	93	112	91	87	0
23	0102-556-4	92	112	92	89	0
24						
25						
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QC LIMITS

SMC1 (DCE) = 1,2-Dichloroethane-d4 (80-120)
 SMC2 (DFM) = Dibromofluoromethane (74-123)
 SMC3 (TOL) = Toluene-d8 (86-112)
 OTHER (BFB) = Bromofluorobenzene (81-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

626 318

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V4022111LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Lab File ID: 0302005

Lab Prep Batch: V402211

Date Analyzed: 02/21/01

Time Analyzed: 1453

GC Column:

ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC4

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
	=====	=====	=====	=====
01	V4022111LCS	V402211	0201003LCS	1313
02	0102-556-1	V402211	0501007	1555
03	0102-556-2	V402211	0601008	1626
04	0102-556-4	V402211	0801010	1729
05	0102-556-5	V402211	0901011	1800
06	0102-556-6	V402211	1001012	1831
07	0102-556-7	V402211	1101013	1902
08	0102-556-8	V402211	1201014	1933
09	0102-556-9	V402211	1301015	2004
10	0102-556-10	V402211	1401016	2036
11	0102-556-11	V402211	1501017	2107
12	0102-556-12	V402211	1601018	2138
13	0102-556-13	V402211	1701019	2209
14	V4022112LCS	V402211	2001022	2342
15	0102-556-3MS	V402211	2101023	0013
16	0102-556-3MS	V402211	2201024	0044
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COMMENTS:

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4022111LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Prep Batch: V402211

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

67-64-1-----	Acetone	20.00	U
75-05-8-----	Acetonitrile	20.00	U
107-02-8-----	Acrolein	20.00	U
107-13-1-----	Acrylonitrile	20.00	U
107-05-1-----	Allyl chloride	1.00	U
71-43-2-----	Benzene	1.00	U
108-86-1-----	Bromobenzene	1.00	U
74-97-5-----	Bromochloromethane	1.00	U
75-27-4-----	Bromodichloromethane	1.00	U
75-25-2-----	Bromoform	1.00	U
78-93-3-----	2-Butanone	20.00	U
74-83-9-----	Bromomethane	1.00	U
104-51-8-----	n-Butylbenzene	1.00	U
135-98-8-----	sec-Butylbenzene	1.00	U
98-06-6-----	tert-Butylbenzene	1.00	U
75-15-0-----	Carbon Disulfide	1.00	U
56-23-5-----	Carbon Tetrachloride	1.00	U
108-90-7-----	Chlorobenzene	1.00	U
124-48-1-----	Chlorodibromomethane	1.00	U
75-00-3-----	Chloroethane	1.00	U
110-75-0-----	2-Chloroethyl vinyl ether	20.00	U
67-66-3-----	Chloroform	1.00	U
74-87-3-----	Chloromethane	1.00	U
126-99-8-----	Chloroprene	1.00	U
95-49-8-----	2-Chlorotoluene	1.00	U
106-43-4-----	4-Chlorotoluene	1.00	U
96-12-8-----	1,2-Dibromo-3-chloropropane	1.00	U
106-93-4-----	1,2-Dibromoethane	1.00	U
74-95-3-----	Dibromomethane	1.00	U
95-50-1-----	1,2-Dichlorobenzene	1.00	U
541-73-1-----	1,3-Dichlorobenzene	1.00	U
106-46-7-----	1,4-Dichlorobenzene	1.00	U
110-57-6-----	trans-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000045

626 320

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4022111LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Prep Batch: V402211

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

1868-53-7-----	Dichlorodifluoromethane	1.00	U
75-34-3-----	1,1-Dichloroethane	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
156-59-4-----	cis-1,2-Dichloroethene	1.00	U
156-60-5-----	trans-1,2-Dichloroethene	1.00	U
78-87-5-----	1,2-Dichloropropane	1.00	U
142-28-9-----	1,3-Dichloropropane	1.00	U
590-20-7-----	2,2-Dichloropropane	1.00	U
563-58-6-----	1,1-Dichloropropene	1.00	U
10061-01-5-----	cis-1,3-Dichloropropene	1.00	U
10061-02-6-----	trans-1,3-Dichloropropene	1.00	U
108-20-3-----	Di isopropyl ether	5.00	U
123-91-1-----	1,4-Dioxane	100.0	U
141-78-6-----	Ethyl Acetate	5.00	U
100-41-4-----	Ethylbenzene	1.00	U
97-63-2-----	Ethyl methacrylate	1.00	U
110-00-9-----	Furan	1.00	U
87-63-3-----	Hexachlorobutadiene	1.00	U
110-54-3-----	Hexane	1.00	U
591-78-6-----	2-Hexanone	5.00	U
74-88-4-----	Iodomethane	1.00	U
78-83-1-----	Isobutyl Alcohol	100.0	U
98-82-8-----	Isopropylbenzene	1.00	U
99-87-6-----	4-Isopropyltoluene	1.00	U
126-98-7-----	Methacrylonitrile	10.00	U
75-09-2-----	Methylene Chloride	2.38	J
80-62-6-----	Methyl methacrylate	1.00	U
108-10-1-----	4-Methyl-2-Pentanone	5.00	U
1634-04-4-----	Methyl-tertbutyl-Ether	5.00	U
91-20-3-----	Naphthalene	1.00	U
76-01-7-----	Pentachloroethane	1.00	U
107-12-0-----	Propionitrile	10.00	U

FORM I VOA-GCMS

000046

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.:

V4022111LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Prep Batch: V402211

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

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

CAS NO. COMPOUND Q

109-60-4-----	n-Propyl Acetate	1.00	U
103-65-1-----	n-Propylbenzene	1.00	U
100-42-5-----	Styrene	1.00	U
630-20-6-----	1,1,1,2-Tetrachloroethane	1.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1.00	U
127-18-4-----	Tetrachloroethene	1.00	U
109-99-9-----	Tetrahydrofuran	1.00	U
87-61-6-----	1,2,3-Trichlorobenzene	1.00	U
108-88-3-----	Toluene	1.00	U
71-55-6-----	1,1,1-Trichloroethane	1.00	U
79-00-5-----	1,1,2-Trichloroethane	1.00	U
76-13-1-----	1,1,2-trichloro-1,2,2-triflu	1.00	U
79-01-6-----	Trichloroethene	1.00	U
75-69-4-----	Trichlorofluoromethane	1.00	U
96-18-4-----	1,2,3-Trichloropropane	1.00	U
120-82-1-----	1,2,4-Trichlorobenzene	1.00	U
95-63-6-----	1,2,4-Trimethylbenzene	1.00	U
108-67-8-----	1,3,5-Trimethylbenzene	1.00	U
108-05-4-----	Vinyl Acetate	20.00	U
75-01-4-----	Vinyl Chloride	1.00	U
1330-20-7-----	Xylene-mp	1.00	U
95-47-6-----	Xylene-o	1.00	U
1476-11-5-----	cis-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000047

626 322

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V4022111LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/21/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				
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FORM I VOA-GCMS-TIC

000048

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402211

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: V4022111LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
1,1-Dichloroethane	100.0		113.4	113	76-118
trans-1,3-Dichloroprope	100.0		82.70	83	73-124
Ethylbenzene	100.0		91.55	92	77-111
Isopropylbenzene	100.0		93.21	93	74-125
Methylene Chloride	100.0		113.8	114	76-115
n-Propylbenzene	100.0		93.74	94	75-125
1,1,1,2-Tetrachloroetha	100.0		80.76	81	79-113
Toluene	100.0		96.97	97	77-115
Xylene-mp	200.0		208.7	104	77-115

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 9 outside limits

COMMENTS: _____

626 324

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402211

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: V4022112LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0		89.98	90	59-151
Acetonitrile	1000		930.5	93	57-143
Acrolein	100.0		82.35	82	59-134
Acrylonitrile	100.0		104.8	105	60-146
Allyl chloride	100.0		117.2	117	74-120
Benzene	100.0		117.7	118	72-124
Bromobenzene	100.0		87.50	88	77-120
Bromochloromethane	100.0		124.1	124*	74-120
Bromodichloromethane	100.0		84.11	84	68-119
Bromoform	100.0		71.77	72	66-136
2-Butanone	100.0		116.1	116	55-151
Bromomethane	100.0		113.8	114	40-134
n-Butylbenzene	100.0		78.42	78	69-129
sec-Butylbenzene	100.0		81.27	81	72-127
tert-Butylbenzene	100.0		80.92	81	73-126
Carbon Disulfide	100.0		112.3	112	60-133
Carbon Tetrachloride	100.0		90.64	91	64-123
Chlorobenzene	100.0		82.90	83	77-112
Chlorodibromomethane	100.0		75.74	76	72-118
Chloroethane	100.0		122.2	122	64-142
2-Chloroethyl vinyl eth	100.0		62.74	63	22-165
Chloroform	100.0		113.5	114	70-115
Chloromethane	100.0		134.0	134	58-139
Chloroprene	100.0		97.78	98	73-118
2-Chlorotoluene	100.0		66.37	66	65-132
4-Chlorotoluene	100.0		88.44	88	67-127
1,2-Dibromo-3-chloropro	100.0		66.57	66	56-134
1,2-Dibromoethane	100.0		85.18	85	74-118

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

626 325

Lab Name: ETC, INC.

Lab Prep Batch: V402211

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: V4022112LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dibromomethane	100.0		90.12	90	75-114
1,2-Dichlorobenzene	100.0		90.38	90	80-113
1,3-Dichlorobenzene	100.0		86.32	86	77-119
1,4-Dichlorobenzene	100.0		84.73	85	78-116
trans-1,4-Dichloro-2-bu	100.0		76.74	77	62-138
Dichlorodifluoromethane	100.0		110.5	110	48-145
1,1-Dichloroethane	100.0		122.9	123*	76-118
1,2-Dichloroethane	100.0		103.1	103	62-124
1,1-Dichloroethene	100.0		108.5	108	69-121
cis-1,2-Dichloroethene	100.0		111.4	111	76-114
trans-1,2-Dichloroethen	100.0		110.6	111	72-121
1,2-Dichloropropane	100.0		95.14	95	64-133
1,3-Dichloropropane	100.0		90.59	90	68-128
2,2-Dichloropropane	100.0		106.2	106	67-132
1,1-Dichloropropene	100.0		105.2	105	76-117
cis-1,3-Dichloropropene	100.0		82.10	82	77-120
trans-1,3-Dichloroprope	100.0		71.81	72*	73-124
Di isopropyl ether	100.0		119.7	120	62-160
1,4-Dioxane	2000		2200	110	56-131
Ethyl Acetate	100.0		109.9	110	52-151
Ethylbenzene	100.0		68.65	69*	77-111
Ethyl methacrylate	200.0		169.0	84	57-140
Furan	100.0		145.7	146*	52-124
Hexachlorobutadiene	100.0		71.56	72	69-137
Hexane	100.0		116.8	117	70-130
2-Hexanone	100.0		73.27	73	53-144
Iodomethane	100.0		104.2	104	51-153
Isobutyl Alcohol	2000		2010	100	60-134

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

* Values outside of QC limits

COMMENTS:

626 326

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402211

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: V4022112LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Isopropylbenzene	100.0		73.94	74	74-125
4-Isopropyltoluene	100.0		80.93	81	72-127
Methacrylonitrile	1000		1233	123	70-125
Methylene Chloride	100.0		116.0	116*	76-115
Methyl methacrylate	200.0		138.5	69	57-147
4-Methyl-2-Pentanone	100.0		73.47	73	42-144
Methyl-tertbutyl-Ether	100.0		109.5	110	62-122
Naphthalene	100.0		85.18	85	53-124
Pentachloroethane	100.0		63.05	63*	78-126
Propionitrile	1000		1253	125	58-139
n-Propyl Acetate	100.0		117.1	117	88-170
n-Propylbenzene	100.0		73.90	74*	75-125
Styrene	100.0		81.27	81	77-117
1,1,1,2-Tetrachloroetha	100.0		64.81	65*	79-113
1,1,2,2-Tetrachloroetha	100.0		86.34	86	67-126
Tetrachloroethene	100.0		77.20	77	77-115
Tetrahydrofuran	100.0		110.9	111	76-181
1,2,3-Trichlorobenzene	100.0		88.33	88	62-132
Toluene	100.0		75.83	76*	77-115
1,1,1-Trichloroethane	100.0		94.75	95	63-122
1,1,2-Trichloroethane	100.0		95.12	95	69-117
1,1,2-trichloro-1,2,2-t	100.0		121.0	121	70-130
Trichloroethene	100.0		78.90	79	75-113
Trichlorofluoromethane	100.0		91.00	91	55-130
1,2,3-Trichloropropane	100.0		82.35	82	62-130
1,2,4-Trichlorobenzene	100.0		84.41	84	68-132
1,2,4-Trimethylbenzene	100.0		83.01	83	69-126
1,3,5-Trimethylbenzene	100.0		92.92	93	69-128

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402211

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: V4022112LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Vinyl Acetate	100.0		114.7	115	28-146
Vinyl Chloride	100.0		114.7	115	65-134
Xylene-mp	200.0		153.4	77	77-115
Xylene-o	100.0		82.23	82	77-115
cis-1,4-Dichloro-2-bute	100.0		83.24	83	70-130

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 10 out of 89 outside limits

COMMENTS: _____

626 328

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V402211

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: 0102-556-3

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Benzene	100.0	0.000	119.3	119	72-124
Chlorobenzene	100.0	0.000	96.82	97	77-112
1,1-Dichloroethene	100.0	0.000	108.7	109	69-121
Toluene	100.0	34.90	114.4	80	77-115
Trichloroethene	100.0	0.000	76.61	77	75-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS	
=====	=====	=====	=====	=====	RPD	REC.
Benzene	100.0	114.9	115	3	20	72-124
Chlorobenzene	100.0	93.50	94	3	20	77-112
1,1-Dichloroethene	100.0	106.8	107	2	20	69-121
Toluene	100.0	109.2	74*	8	20	77-115
Trichloroethene	100.0	72.86	73*	5	20	75-113

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 2 out of 10 outside limits

COMMENTS:

FORM III VOA-GCMS

000054

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V4022221LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Lab File ID: 0301003

Lab Prep Batch: V402222

Date Analyzed: 02/22/01

Time Analyzed: 1621

GC Column:

ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC4

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
	=====	=====	=====	=====
01	V4022221LCS	V402222	0202003LCS	1539
02	0102-556-14	V402222	1301014	2150
03	0102-556-3	V402222	1601017	2323
04	0102-461-2	V402222	1701018	2354
05	0102-556-11	V402222	1901020	0056
06	0102-556-4	V402222	2001021	0127
07	0102-461-2MS	V402222	2201023	0229
08	0102-461-2MS	V402222	2301024	0301
09				
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COMMENTS:

626 330

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4022221LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Prep Batch: V402222

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/L
			Q
67-64-1-----	Acetone	20.00	U
75-05-8-----	Acetonitrile	20.00	U
107-02-8-----	Acrolein	20.00	U
107-13-1-----	Acrylonitrile	20.00	U
107-05-1-----	Allyl chloride	1.00	U
71-43-2-----	Benzene	1.00	U
108-86-1-----	Bromobenzene	1.00	U
74-97-5-----	Bromochloromethane	1.00	U
75-27-4-----	Bromodichloromethane	1.00	U
75-25-2-----	Bromoform	1.00	U
78-93-3-----	2-Butanone	20.00	U
74-83-9-----	Bromomethane	1.00	U
104-51-8-----	n-Butylbenzene	1.00	U
135-98-8-----	sec-Butylbenzene	1.00	U
98-06-6-----	tert-Butylbenzene	1.00	U
75-15-0-----	Carbon Disulfide	1.00	U
56-23-5-----	Carbon Tetrachloride	1.00	U
108-90-7-----	Chlorobenzene	1.00	U
124-48-1-----	Chlorodibromomethane	1.00	U
75-00-3-----	Chloroethane	1.00	U
110-75-0-----	2-Chloroethyl vinyl ether	20.00	U
67-66-3-----	Chloroform	1.00	U
74-87-3-----	Chloromethane	1.00	U
126-99-8-----	Chloroprene	1.00	U
95-49-8-----	2-Chlorotoluene	1.00	U
106-43-4-----	4-Chlorotoluene	1.00	U
96-12-8-----	1,2-Dibromo-3-chloropropane	1.00	U
106-93-4-----	1,2-Dibromoethane	1.00	U
74-95-3-----	Dibromomethane	1.00	U
95-50-1-----	1,2-Dichlorobenzene	1.00	U
541-73-1-----	1,3-Dichlorobenzene	1.00	U
106-46-7-----	1,4-Dichlorobenzene	1.00	U
110-57-6-----	trans-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000056

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4022221LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Prep Batch: V402222

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1868-53-7-----	Dichlorodifluoromethane	1.00	U
75-34-3-----	1,1-Dichloroethane	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
156-59-4-----	cis-1,2-Dichloroethene	1.00	U
156-60-5-----	trans-1,2-Dichloroethene	1.00	U
78-87-5-----	1,2-Dichloropropane	1.00	U
142-28-9-----	1,3-Dichloropropane	1.00	U
590-20-7-----	2,2-Dichloropropane	1.00	U
563-58-6-----	1,1-Dichloropropene	1.00	U
10061-01-5-----	cis-1,3-Dichloropropene	1.00	U
10061-02-6-----	trans-1,3-Dichloropropene	1.00	U
108-20-3-----	Di isopropyl ether	5.00	U
123-91-1-----	1,4-Dioxane	100.0	U
141-78-6-----	Ethyl Acetate	5.00	U
100-41-4-----	Ethylbenzene	1.00	U
97-63-2-----	Ethyl methacrylate	1.00	U
110-00-9-----	Furan	1.00	U
87-63-3-----	Hexachlorobutadiene	1.00	U
110-54-3-----	Hexane	1.00	U
591-78-6-----	2-Hexanone	5.00	U
74-88-4-----	Iodomethane	1.00	U
78-83-1-----	Isobutyl Alcohol	100.0	U
98-82-8-----	Isopropylbenzene	1.00	U
99-87-6-----	4-Isopropyltoluene	1.00	U
126-98-7-----	Methacrylonitrile	10.00	U
75-09-2-----	Methylene Chloride	4.76	J
80-62-6-----	Methyl methacrylate	1.00	U
108-10-1-----	4-Methyl-2-Pentanone	5.00	U
1634-04-4-----	Methyl-tertbutyl-Ether	5.00	U
91-20-3-----	Naphthalene	1.00	U
76-01-7-----	Pentachloroethane	1.00	U
107-12-0-----	Propionitrile	10.00	U

FORM I VOA-GCMS

000057

626 332

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V4022221LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Prep Batch: V402222

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

109-60-4-----	n-Propyl Acetate	1.00	U
103-65-1-----	n-Propylbenzene	1.00	U
100-42-5-----	Styrene	1.00	U
630-20-6-----	1,1,1,2-Tetrachloroethane	1.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1.00	U
127-18-4-----	Tetrachloroethene	1.00	U
109-99-9-----	Tetrahydrofuran	1.00	U
87-61-6-----	1,2,3-Trichlorobenzene	1.00	U
108-88-3-----	Toluene	1.00	U
71-55-6-----	1,1,1-Trichloroethane	1.00	U
79-00-5-----	1,1,2-Trichloroethane	1.00	U
76-13-1-----	1,1,2-trichloro-1,2,2-triflu	1.00	U
79-01-6-----	Trichloroethene	1.00	U
75-69-4-----	Trichlorofluoromethane	1.00	U
96-18-4-----	1,2,3-Trichloropropane	1.00	U
120-82-1-----	1,2,4-Trichlorobenzene	1.00	U
95-63-6-----	1,2,4-Trimethylbenzene	1.00	U
108-67-8-----	1,3,5-Trimethylbenzene	1.00	U
108-05-4-----	Vinyl Acetate	20.00	U
75-01-4-----	Vinyl Chloride	1.00	U
1330-20-7-----	Xylene-mp	1.00	U
95-47-6-----	Xylene-o	1.00	U
1476-11-5-----	cis-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000058

626 333

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V4022221LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 02/22/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000059

626 334

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402222

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: V4022221LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0		85.19	85	59-151
Acetonitrile	1000		1113	111	57-143
Acrolein	100.0		67.26	67	59-134
Acrylonitrile	100.0		101.3	101	60-146
Allyl chloride	100.0		103.9	104	74-120
Benzene	100.0		120.2	120	72-124
Bromobenzene	100.0		98.27	98	77-120
Bromochloromethane	100.0		117.8	118	74-120
Bromodichloromethane	100.0		72.72	73	68-119
Bromoform	100.0		77.82	78	66-136
2-Butanone	100.0		107.1	107	55-151
Bromomethane	100.0		115.6	116	40-134
n-Butylbenzene	100.0		105.3	105	69-129
sec-Butylbenzene	100.0		95.57	96	72-127
tert-Butylbenzene	100.0		94.28	94	73-126
Carbon Disulfide	100.0		101.9	102	60-133
Carbon Tetrachloride	100.0		88.85	89	64-123
Chlorobenzene	100.0		101.3	101	77-112
Chlorodibromomethane	100.0		74.40	74	72-118
Chloroethane	100.0		114.3	114	64-142
2-Chloroethyl vinyl eth	100.0		97.38	97	22-165
Chloroform	100.0		103.1	103	70-115
Chloromethane	100.0		102.9	103	58-139
Chloroprene	100.0		99.26	99	73-118
2-Chlorotoluene	100.0		76.53	76	65-132
4-Chlorotoluene	100.0		102.3	102	67-127
1,2-Dibromo-3-chloropro	100.0		75.20	75	56-134
1,2-Dibromoethane	100.0		79.68	80	74-118

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

626 335

Lab Name: ETC, INC.

Lab Prep Batch: V402222

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: V4022221LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dibromomethane	100.0		82.43	82	75-114
1,2-Dichlorobenzene	100.0		104.8	105	80-113
1,3-Dichlorobenzene	100.0		113.3	113	77-119
1,4-Dichlorobenzene	100.0		108.7	109	78-116
trans-1,4-Dichloro-2-bu	100.0		94.06	94	62-138
Dichlorodifluoromethane	100.0		84.32	84	48-145
1,1-Dichloroethane	100.0		104.0	104	76-118
1,2-Dichloroethane	100.0		89.74	90	62-124
1,1-Dichloroethene	100.0		114.2	114	69-121
cis-1,2-Dichloroethene	100.0		112.6	113	76-114
trans-1,2-Dichloroethen	100.0		110.3	110	72-121
1,2-Dichloropropane	100.0		84.55	84	64-133
1,3-Dichloropropane	100.0		81.35	81	68-128
2,2-Dichloropropane	100.0		105.8	106	67-132
1,1-Dichloropropene	100.0		113.5	114	76-117
cis-1,3-Dichloropropene	100.0		77.38	77	77-120
trans-1,3-Dichloroprope	100.0		79.08	79	73-124
Di isopropyl ether	100.0		109.4	109	62-160
1,4-Dioxane	2000		1722	86	56-131
Ethyl Acetate	100.0		112.2	112	52-151
Ethylbenzene	100.0		88.16	88	77-111
Ethyl methacrylate	200.0		178.9	89	57-140
Furan	100.0		140.2	140*	52-124
Hexachlorobutadiene	100.0		91.14	91	69-137
Hexane	100.0		118.9	119	70-130
2-Hexanone	100.0		87.28	87	53-144
Iodomethane	100.0		124.8	125	51-153
Isobutyl Alcohol	2000		2424	121	60-134

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

* Values outside of QC limits

COMMENTS:

626 336

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V402222

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: V4022221LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Isopropylbenzene	100.0		92.07	92	74-125
4-Isopropyltoluene	100.0		93.65	94	72-127
Methacrylonitrile	1000		1031	103	70-125
Methylene Chloride	100.0		109.4	109	76-115
Methyl methacrylate	200.0		142.8	71	57-147
4-Methyl-2-Pentanone	100.0		85.83	86	42-144
Methyl-tertbutyl-Ether	100.0		84.53	84	62-122
Naphthalene	100.0		105.3	105	53-124
Pentachloroethane	100.0		125.0	125	78-126
Propionitrile	1000		1050	105	58-139
n-Propyl Acetate	100.0		126.0	126	88-170
n-Propylbenzene	100.0		93.90	94	75-125
Styrene	100.0		97.28	97	77-117
1,1,1,2-Tetrachloroetha	100.0		79.37	79	79-113
1,1,2,2-Tetrachloroetha	100.0		98.74	99	67-126
Tetrachloroethene	100.0		79.08	79	77-115
Tetrahydrofuran	100.0		112.2	112	76-181
1,2,3-Trichlorobenzene	100.0		115.3	115	62-132
Toluene	100.0		87.52	88	77-115
1,1,1-Trichloroethane	100.0		91.38	91	63-122
1,1,2-Trichloroethane	100.0		87.87	88	69-117
1,1,2-trichloro-1,2,2-t	100.0		97.06	97	70-130
Trichloroethene	100.0		76.77	77	75-113
Trichlorofluoromethane	100.0		82.39	82	55-130
1,2,3-Trichloropropane	100.0		83.80	84	62-130
1,2,4-Trichlorobenzene	100.0		117.1	117	68-132
1,2,4-Trimethylbenzene	100.0		103.1	103	69-126
1,3,5-Trimethylbenzene	100.0		109.0	109	69-128

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

626 337

Lab Name: ETC, INC.

Lab Prep Batch: V402222

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: V4022221LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Vinyl Acetate	100.0		112.4	112	28-146
Vinyl Chloride	100.0		109.0	109	65-134
Xylene-mp	200.0		195.7	98	77-115
Xylene-o	100.0		96.99	97	77-115
cis-1,4-Dichloro-2-bute	100.0		84.70	85	70-130

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 89 outside limits

COMMENTS:

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V402222

Lab Code:

Case No.:

SAS No.:

SDG No.: 0102-556

Matrix Spike - Sample No.: 0102-461-2

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Benzene	100.0	0.000	121.3	121	72-124
Chlorobenzene	100.0	0.000	87.46	87	77-112
1,1-Dichloroethene	100.0	0.000	103.5	104	69-121
Toluene	100.0	0.000	83.92	84	77-115
Trichloroethene	100.0	0.000	78.46	78	75-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
Benzene	100.0	125.8	126*	4	20 72-124
Chlorobenzene	100.0	99.38	99	13	20 77-112
1,1-Dichloroethene	100.0	112.6	113	8	20 69-121
Toluene	100.0	92.68	93	10	20 77-115
Trichloroethene	100.0	81.44	81	4	20 75-113

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 1 out of 10 outside limits

COMMENTS:

APPENDIX C
QUARTERLY EFFLUENT SAMPLES
ANALYTICAL LABORATORY DATA

626 340



ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6334
Founded 1972

January 24, 2001

Mr. Kraig Smith
Sverdrup/Jacobs Eng.
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Ref: Analytical Testing
ETC Order # 0101349
Project Description Memphis Defense Depot
Dunn Field

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and/or 40 CFR part 136.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads 'Chet Scheibel'.

Chet Scheibel
Laboratory Project Manager

rt
Attachment

SVE_MHDDMT

Certifications

Tennessee #TN02027
Arkansas #40730
Kentucky #90047
North Carolina #415
South Carolina #84002002

Mississippi
Oklahoma #9311
Virginia #00106
Washington #C248
US Army Corps of Engineers

Environmental Testing & Consulting, Inc.
Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report. These qualifiers do not apply for TIC reports.

Q	Surrogate Recovery Outside QC Limits
J	Estimated Value. Presence of the compound was confirmed but less than the reported detection limit.
E	Concentration exceeds the established method calibration range but is within the working range of the instrument.
B	Analyte detected in the associated Method Blank.
U	Reported result was unconfirmed. Refer to Case Narrative.
N	Non-Compliance Report associated with this sample or project.
C	Result reported from GC/MS confirmation analysis.
M	Result reported represents a minimum value. Refer to Case Narrative.
NC	Result reported from Primary Column. Result did not confirm.
*	QC Data (percent recovery/RPD for a particular analyte was outside QC Limits)

626 342

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ANALYTICAL SUMMARY/CROSS REFERENCE TABLE

Client Name Sverdrup/Jacobs Eng.
 Site ID Memphis Defense Depot
 Dunn Field

ETC Order #0101349

<u>ETC</u> <u>Sample ID</u>	<u>Field</u> <u>ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Method Description</u>
010134901	ST-EFF-032	AQUEOUS	150.1	pH
010134901	ST-EFF-032	AQUEOUS	200.7	Silver
010134901	ST-EFF-032	AQUEOUS	200.7	Aluminum
010134901	ST-EFF-032	AQUEOUS	200.7	Arsenic
010134901	ST-EFF-032	AQUEOUS	200.7	Barium
010134901	ST-EFF-032	AQUEOUS	200.7	Beryllium
010134901	ST-EFF-032	AQUEOUS	200.7	Calcium
010134901	ST-EFF-032	AQUEOUS	200.7	Cadmium
010134901	ST-EFF-032	AQUEOUS	200.7	Cobalt
010134901	ST-EFF-032	AQUEOUS	200.7	Chromium
010134901	ST-EFF-032	AQUEOUS	200.7	Copper
010134901	ST-EFF-032	AQUEOUS	200.7	Iron
010134901	ST-EFF-032	AQUEOUS	245.1	Mercury
010134901	ST-EFF-032	AQUEOUS	200.7	Potassium
010134901	ST-EFF-032	AQUEOUS	200.7	Magnesium
010134901	ST-EFF-032	AQUEOUS	200.7	Manganese
010134901	ST-EFF-032	AQUEOUS	200.7	Sodium
010134901	ST-EFF-032	AQUEOUS	200.7	Nickel
010134901	ST-EFF-032	AQUEOUS	200.7	Lead
010134901	ST-EFF-032	AQUEOUS	200.7	Antimony
010134901	ST-EFF-032	AQUEOUS	200.7	Selenium
010134901	ST-EFF-032	AQUEOUS	200.7	Thallium
010134901	ST-EFF-032	AQUEOUS	200.7	Vanadium
010134901	ST-EFF-032	AQUEOUS	200.7	Zinc
010134901	ST-EFF-032	AQUEOUS	8260B	GC/MS Volatile Organics
010134901	ST-EFF-032	AQUEOUS	8270C	GC/MS Base/Neutral & Acid
010134902	Trip Blank	AQUEOUS	8260B	GC/MS Volatile Organics

75 11/8/06

Environmental Testing & Consulting, Inc.

Login
Chain-of-Custody



ETC Work Order :

00369

(901)327-2750 FAX (901)327-6334

[illegible]

Distribution : Original and Yellow accompany samples to the laboratory. Pink copy
Original copy returned with results. Yellow copy for ETC, Inc. files.

Environmental Testing & Consulting, Inc.
Cooler Receipt Form

Date Received 1/16/01 LIMS# 0101-349
 Date/Time Checked In 1/16/01-14:58 Project Mphs. Defense
 Carrier/Bill# Hand-Delivered Depot-Dunn Field
 By Rebekah Barger

1. Custody Seals?/Location-	No
2. Samples are non-radioactive?	Yes
3. Chain of Custody in plastic?	Yes
4. Temperature at receipt (ok = 4 ± 2 °C) < 40C	OK
5. Ice & Packing-bags, ice, bubble wrap	Yes
6. Chain of Custody filled out properly?	No
7. All containers in separate bags?	No
8. Sample containers intact?	Yes
9. Label(s) complete and in good condition?	Yes
10. Label(s) agree with Chain of Custody?	Yes
11. Correct containers used?	Yes
12. Sufficient sample?	Yes
13. VOA vials bubble-free (H ₂ O) or no head space (soil)?	Yes
14. Preservation OK? TM pH____; TRPH pH____; TOC pH____; TOX pH____; CN pH____; N/P pH____; Other pH____	Yes

Comments _____

*Validated Date and Time of Sample Receipt (VDTSR)

626 346

Environmental Testing & Consulting, Inc.

Sample Reports

000006

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
 Memphis Defense Depot
 3354 Perimeter Hill Drive,
 Suite 310
 Nashville, TN 37211

Site ID **Memphis Defense Depot**
 Dunn Field

Date Arrived **01/16/01**
ETC Order Number **0101349**

ETC Lab ID : **0101349-01**
Field ID : **ST-EFF-032**

Matrix : **AQUEOUS**
Sample Date : **01/16/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	BY	METHOD	QC BATCH
pH	5.8	SU		01/16/01	RB	150.1	PH011600

CS
Data Validator

ND - Not Detected

000007

626 348

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Defense Depot
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Memphis Defense Depot**
Dunn Field

Date Arrived **01/16/01**
ETC Order Number **0101349**

ETC Lab ID : **0101349-01**
Field ID : **ST-EFF-032**

Matrix : **AQUEOUS**
Sample Date : **01/16/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE PREPARED	BY	METHOD
Mercury Digestion Batch	V7-AQ-87			01/22/01	01/22/01	JF	245.1
Metals Digestion Batch	V24-AQ-19			01/17/01	01/17/01	NR	3030K
Silver	<0.009	mg/L	0.009	01/18/01		SH	200.7
Aluminum	<0.060	mg/L	0.060	01/18/01		SH	200.7
Arsenic	<0.003	mg/L	0.003	01/18/01		SH	200.7
Barium	0.119	mg/L	0.003	01/18/01		SH	200.7
Beryllium	<0.002	mg/L	0.002	01/18/01		SH	200.7
Calcium	22.5	mg/L	0.015	01/18/01		SH	200.7
Cadmium	<0.005	mg/L	0.005	01/18/01		SH	200.7
Cobalt	<0.009	mg/L	0.009	01/18/01		SH	200.7
Chromium	<0.009	mg/L	0.009	01/18/01		SH	200.7
Copper	<0.008	mg/L	0.008	01/18/01		SH	200.7
Iron	0.322	mg/L	0.009	01/18/01		SH	200.7
Mercury	<0.0002	mg/L	0.0002	01/22/01		JF	245.1
Potassium	0.937	mg/L	0.250	01/18/01		SH	200.7
Magnesium	11.8	mg/L	0.040	01/18/01		SH	200.7
Manganese	<0.003	mg/L	0.003	01/18/01		SH	200.7
Sodium	23.1	mg/L	0.050	01/18/01		SH	200.7
Nickel	0.038	mg/L	0.020	01/18/01		SH	200.7
Lead	<0.060	mg/L	0.060	01/18/01		SH	200.7
Antimony	<0.040	mg/L	0.040	01/18/01		SH	200.7
Selenium	<0.100	mg/L	0.100	01/18/01		SH	200.7
Thallium	<0.065	mg/L	0.065	01/18/01		SH	200.7
Vanadium	<0.010	mg/L	0.010	01/18/01		SH	200.7
Zinc	0.121	mg/L	0.010	01/18/01		SH	200.7

CS
Data Validator

ND - Not Detected

000008

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Defense Depot
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Memphis Defense Depot**
Dunn Field
 FID #

Date Arrived **01/16/01**
 ETC Order Number **0101349**

ETC Lab ID **0101349-01**
 Field ID : **ST-EFF-032**

Matrix : **AQUEOUS**
 Sample Date : **01/16/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				01/17/01	LS	8260B 5030B
QC Batch	V101171					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	1.42	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	14.2	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	18.7	ug/L	1.00			
trans-1,2-Dichloroethene	15.3	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	178	ug/L	1.00			
Tetrachloroethene	26.0	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	2.19	ug/L	1.00			
Trichloroethene	89.0	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	59.2	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	119	74 123
S2 - Toluene-d8	105	86 112
S3 - 4-Bromofluorobenzene	109	81 115
S4 - 1,2-Dichloroethane-d4	119	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000009

626 350

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0101-349-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0801010

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 01/17/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
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16.				
17.				
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19.				
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25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-GCMS-TIC

000010

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Defense Depot
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Memphis Defense Depot**
Dunn Field
 FID #

Date Arrived **01/16/01**
 ETC Order Number **0101349**

ETC Lab ID **0101349-02**
 Field ID : **Trip Blank**

Matrix : **AQUEOUS**
 Sample Date : **01/15/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Volatile Organics				01/17/01	LS	8260B 5030B
QC Batch	V101171					
Dilution Factor	1					
Acetone	ND	ug/L	20.0			
Benzene	ND	ug/L	1.00			
Bromodichloromethane	ND	ug/L	1.00			
Bromoform	ND	ug/L	1.00			
Bromomethane	ND	ug/L	1.00			
2-Butanone (MEK)	ND	ug/L	20.0			
Carbon Disulfide	ND	ug/L	1.00			
Carbon Tetrachloride	ND	ug/L	1.00			
Chlorobenzene	ND	ug/L	1.00			
Chlorodibromomethane	ND	ug/L	1.00			
Chloroethane	ND	ug/L	1.00			
Chloroform	ND	ug/L	1.00			
Chloromethane	ND	ug/L	1.00			
1,1-Dichloroethane	ND	ug/L	1.00			
1,2-Dichloroethane	ND	ug/L	1.00			
1,1-Dichloroethene	ND	ug/L	1.00			
trans-1,2-Dichloroethene	ND	ug/L	1.00			
1,2-Dichloropropane	ND	ug/L	1.00			
cis-1,3-Dichloropropene	ND	ug/L	1.00			
trans-1,3-Dichloropropene	ND	ug/L	1.00			
Ethylbenzene	ND	ug/L	1.00			
2-Hexanone (MBK)	ND	ug/L	5.00			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00			
Methylene Chloride	ND	ug/L	5.00			
Styrene	ND	ug/L	1.00			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00			
Tetrachloroethene	ND	ug/L	1.00			
Toluene	ND	ug/L	1.00			
1,1,1-Trichloroethane	ND	ug/L	1.00			
1,1,2-Trichloroethane	ND	ug/L	1.00			
Trichloroethene	ND	ug/L	1.00			
Vinyl Acetate	ND	ug/L	20.0			
Vinyl Chloride	ND	ug/L	1.00			
Xylenes-m,p	ND	ug/L	1.00			
Xylenes-o	ND	ug/L	1.00			
cis-1,2-Dichloroethene	ND	ug/L	1.00			

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	123	74 123
S2 - Toluene-d8	102	86 112
S3 - 4-Bromofluorobenzene	94	81 115
S4 - 1,2-Dichloroethane-d4	124 Q	80 120

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000011

626 352

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0101-349-2

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0701009

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 01/17/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
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28.				
29.				
30.				

FORM I VOA-GCMS-TIC

000012

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Defense Depot
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Memphis Defense Depot**
Dunn Field
 FID #

Date Arrived **01/16/01**
 ETC Order Number **0101349**

ETC Lab ID **0101349-01**
 Field ID : **ST-EFF-032**

Matrix . **AQUEOUS**
 Sample Date : **01/16/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Base/Neutral & Acid				01/19/01	01/18/01	PF 8270C 3510C
QC Batch	P06043					
Dilution Factor	1					
Acenaphthene	ND	ug/L	2.00			
Acenaphthylene	ND	ug/L	2.00			
Anthracene	ND	ug/L	2.00			
Benzo(a)anthracene	ND	ug/L	2.00			
Benzo(b)fluoranthene	ND	ug/L	2.00			
Benzo(k)fluoranthene	ND	ug/L	2.00			
Benzo(g,h,i)perylene	ND	ug/L	2.00			
Benzo(a)pyrene	ND	ug/L	2.00			
Benzoic Acid	ND	ug/L	50.0			
Benzyl Alcohol	ND	ug/L	10.0			
Bis(2-chloroethoxy)methane	ND	ug/L	5.00			
Bis(2-chloroethyl)ether	ND	ug/L	5.00			
Bis(2-chloroisopropyl)ether	ND	ug/L	5.00			
Bis(2-ethylhexyl)phthalate	ND	ug/L	10.0			
4-Bromophenyl phenyl ether	ND	ug/L	5.00			
Butyl benzyl phthalate	ND	ug/L	5.00			
4-Chloroaniline	ND	ug/L	5.00			
2-Chloronaphthalene	ND	ug/L	5.00			
4-Chloro-3-methylphenol	ND	ug/L	5.00			
2-Chlorophenol	ND	ug/L	5.00			
4-Chlorophenyl phenyl ether	ND	ug/L	5.00			
Chrysene	ND	ug/L	2.00			
Dibenzo(a,h)anthracene	ND	ug/L	2.00			
Dibenzofuran	ND	ug/L	5.00			
Di-n-butyl phthalate	ND	ug/L	5.00			
3,3'-Dichlorobenzidine	ND	ug/L	10.0			
2,4-Dichlorophenol	ND	ug/L	5.00			
Diethyl phthalate	ND	ug/L	5.00			
2,4-Dimethylphenol	ND	ug/L	5.00			
Dimethyl phthalate	ND	ug/L	5.00			
4,6-Dinitro-2-methylphenol	ND	ug/L	10.0			
2,4-Dinitrophenol	ND	ug/L	50.0			
2,4-Dinitrotoluene	ND	ug/L	5.00			
2,6-Dinitrotoluene	ND	ug/L	5.00			
Di-n-octyl phthalate	ND	ug/L	5.00			
Fluoranthene	ND	ug/L	2.00			
Fluorene	ND	ug/L	2.00			
Hexachlorobenzene	ND	ug/L	5.00			
Hexachlorobutadiene	ND	ug/L	5.00			
Hexachlorocyclopentadiene	ND	ug/L	5.00			
Hexachloroethane	ND	ug/L	5.00			
Indeno(1,2,3-cd)pyrene	ND	ug/L	2.00			
Isophorone	ND	ug/L	5.00			
2-Methylnaphthalene	ND	ug/L	2.00			
2-Methylphenol (o-cresol)	ND	ug/L	5.00			

65
 Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000013

626 354

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

Client Name **Sverdrup/Jacobs Eng.**
Memphis Defense Depot
3354 Perimeter Hill Drive,
Suite 310
Nashville, TN 37211

Site ID **Memphis Defense Depot**
Dunn Field
 FID #

Date Arrived **01/16/01**
 ETC Order Number **0101349**

ETC Lab ID **0101349-01**
 Field ID : **ST-EFF-032**

Matrix : **AQUEOUS**
 Sample Date : **01/16/01**

TEST	RESULT	UNITS	DETECTION LIMIT	DATE ANALYZED	DATE EXTRACTED BY	METHOD
GC/MS Base/Neutral & Acid				01/19/01	01/18/01	PF 8270C 3510C
4-Methylphenol (p-cresol)	ND	ug/L	5.00			
Naphthalene	ND	ug/L	2.00			
Nitrobenzene	ND	ug/L	5.00			
2-Nitroaniline	ND	ug/L	5.00			
3-Nitroaniline	ND	ug/L	10.0			
4-Nitroaniline	ND	ug/L	5.00			
2-Nitrophenol	ND	ug/L	5.00			
4-Nitrophenol	ND	ug/L	5.00			
N-Nitrosodiphenylamine	ND	ug/L	5.00			
N-Nitrosodipropylamine	ND	ug/L	5.00			
Pentachlorophenol	ND	ug/L	10.0			
Phenanthrene	ND	ug/L	2.00			
Phenol	ND	ug/L	5.00			
Pyrene	ND	ug/L	2.00			
2,4,5-Trichlorophenol	ND	ug/L	5.00			
2,4,6-Trichlorophenol	ND	ug/L	5.00			
Surrogate Standard	% Recovery		QC Limits			
S1 - Nitrobenzene-d5	64		29	110		
S2 - 2-Fluorobiphenyl	69		38	107		
S3 - 4-Terphenyl-d14	103		33	122		
S4 - Phenol-d6	31		7	58		
S5 - 2,4,6-Tribromophenol	101		16	138		
S6 - 2-Fluorophenol	50		8	88		

Data Validator

ND - Not Detected

Q - Recovery Outside QC Limits

000014

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

0101-349-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 990.0 (g/mL) ML

Lab File ID: 0601007

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 01/19/01

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
12. _____	_____	_____	_____	_____
13. _____	_____	_____	_____	_____
14. _____	_____	_____	_____	_____
15. _____	_____	_____	_____	_____
16. _____	_____	_____	_____	_____
17. _____	_____	_____	_____	_____
18. _____	_____	_____	_____	_____
19. _____	_____	_____	_____	_____
20. _____	_____	_____	_____	_____
21. _____	_____	_____	_____	_____
22. _____	_____	_____	_____	_____
23. _____	_____	_____	_____	_____
24. _____	_____	_____	_____	_____
25. _____	_____	_____	_____	_____
26. _____	_____	_____	_____	_____
27. _____	_____	_____	_____	_____
28. _____	_____	_____	_____	_____
29. _____	_____	_____	_____	_____
30. _____	_____	_____	_____	_____

FORM I BNA-GCMS-TIC

000015

626 356

Environmental Testing & Consulting, Inc.

**Quality Control Reports
Level III
Metals (ICP/GFAA/CV)**

000016

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
METALS - AQUEOUS

Client Name Sverdrup/Jacobs Engineering
 Project Name Memphis Depot
 ETC Order # 0101-349

PRESERVATION

All aqueous samples preserved to pH < 2.

HOLDING TIMES

QC Batch(s) for this order	ICP Metals	V24-AQ-19
	Mercury	V7-AQ-87

Sample Preparation/Analysis	All samples digested/ analyzed within holding time.
Mercury Preparation/Analysis	All samples analyzed within 28 days of collection.

METHOD

Preparation: CAWW/SM 245.1/3030K
 Analysis: CAWW 200.7/245.1

CALIBRATION

Initial Calibration	All criteria met.
Continuing Calibration	All criteria met.

SAMPLE ANALYSIS

Instrumentation.	Thermo Jarrell Ash Enviro-I ICP CETAC M-6000A Mercury Analyzer
Dilutions Required	No dilutions required.

QUALITY CONTROL

0101-349.MQCBLANK

Method Blank

V24-AQ-19BLK	ICP Metals
V7-AQ-87BLK	Mercury

No analytes were detected in the method blank.

0101-349.MQCLCS

Laboratory Control Sample(s)

V24-AQ-19LCS	ICP Metals
V7-AQ-87LCS	Mercury

All acceptance criteria met.

0101-349.MQCMSMSD

Matrix Spike / Matrix Spike Dup - ICP Metals

0101-349-01	RPD	All analytes within QC limits.
ST-EFF-032	Spike Recovery	All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

626 358

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
METALS - AQUEOUS

Client Name Sverdrup/Jacobs Engineering
Project Name Memphis Depot
ETC Order # 0101-349

QUALITY CONTROL

Matrix Spike / Matrix Spike Dup - Hg

0101-349-01	RPD	All analytes within QC limits.
ST-EFF-032	Spike Recovery	All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Dilution Test Dilution result must agree within 10% of original result when sample is diluted by a factor of 5.
Post Digestion Spike Recovery must be +/-25% of expected value for ICP.



Project Manager

000018

FORM 3A
WATER METHOD BLANK
METALS

Lab Name: Environmental Testing and Consulting, Inc

Laboratory ID ICP/GFAA Metals
Laboratory ID Mercury

V24-AQ-19 BLK
V7-AQ-87 BLK

QC Batch
V24-AQ-19
V7-AQ-87

Date Sample Prepared

01/17/01 ICP/GFAA Metals
01/22/01 Mercury

Metals	Concentration mg/L	Detection Limit mg/L	Date Analyzed	Method
Silver	ND	0.009	01/18/01	200.7
Aluminum	ND	0.060	01/18/01	200.7
Arsenic	ND	0.003	01/18/01	200.7
Barium	ND	0.003	01/18/01	200.7
Beryllium	ND	0.002	01/18/01	200.7
Calcium	ND	0.015	01/18/01	200.7
Cadmium	ND	0.005	01/18/01	200.7
Cobalt	ND	0.009	01/18/01	200.7
Chromium	ND	0.009	01/18/01	200.7
Copper	ND	0.008	01/18/01	200.7
Iron	ND	0.009	01/18/01	200.7
Potassium	ND	0.250	01/18/01	200.7
Magnesium	ND	0.040	01/18/01	200.7
Manganese	ND	0.003	01/18/01	200.7
Sodium	ND	0.050	01/18/01	200.7
Nickel	ND	0.020	01/18/01	200.7
Lead	ND	0.060	01/18/01	200.7
Antimony	ND	0.040	01/18/01	200.7
Selenium	ND	0.100	01/18/01	200.7
Thallium	ND	0.065	01/18/01	200.7
Vanadium	ND	0.010	01/18/01	200.7
Zinc	ND	0.010	01/18/01	200.7
Mercury	ND	0.0002	01/22/01	245.1

ND - Not Detected

Reviewed by CS

0101-349.mqc BLANK
000019

626 300

FORM 7
WATER LABORATORY CONTROL SAMPLE
METALS

Lab Name: Environmental Testing and Consulting, Inc

-Laboratory Control ID

ICP/GFAA Metals V24-AQ-19 LCS
Mercury V7-AQ-87 LCS

QC Batch
V24-AQ-19
V7-AQ-87

Date Prepared

ICP/GFAA Metals 01/17/01
Mercury 01/22/01

Metals	Spike Added mg/L	Found mg/L	% R	#	QC Limits	
Silver	0.250	0.264	106		80	120
Aluminum	2.50	2.60	104		80	120
Arsenic	0.100	0.102	102		80	120
Barium	2.50	2.76	110		80	120
Beryllium	0.250	0.267	107		80	120
Calcium	5.00	5.09	102		80	120
Cadmium	0.020	0.021	105		80	120
Cobalt	1.25	1.31	105		80	120
Chromium	0.500	0.533	107		80	120
Copper	0.500	0.539	108		80	120
Iron	2.50	2.70	108	*	80	120
Potassium	5.00	5.49	110		80	120
Magnesium	5.00	4.91	98		80	120
Manganese	0.250	0.271	108		80	120
Sodium	5.00	5.05	101		80	120
Nickel	1.25	1.32	106		80	120
Lead	0.100	0.106	106		80	120
Antimony	0.200	0.212	106		80	120
Selenium	0.100	0.107	107		80	120
Thallium	0.100	0.109	109		80	120
Vanadium	1.25	1.35	108		80	120
Zinc	0.250	0.268	107		80	120
Mercury	0.0050	0.0056	112		85	115

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

Reviewed by CS

0101-349.mqc LCS

000020

FORM 6
WATER MATRIX SPIKE / MATRIX SPIKE DUPLICATE
METALS

Lab Name: Environmental Testing and Consulting, Inc

Laboratory ID MS ICP/GFAA Metals	0101-349-01	QC Batch V24-AQ-19
Laboratory ID MS Mercury	0101-349-01	V7-AQ-87
Date Sample Prepared	01/17/01	ICP/GFAA Metals
	01/22/01	Mercury

Metals	SPIKE Added mg/L	SAMPLE Conc mg/L	MS Conc mg/L	RPD < 20% #	MS % Rec #	QC Limits	
Silver	0.250	ND	0.255	3	102	75	125
Aluminum	2.50	ND	2.61	3	104	75	125
Arsenic	0.100	ND	0.104	0	104	75	125
Barium	2.50	0.119	2.87	1	110	75	125
Beryllium	0.250	ND	0.270	1	108	75	125
Calcium	5.00	22.5	27.7	1	104	75	125
Cadmium	0.020	ND	0.021	5	105	75	125
Cobalt	1.25	ND	1.31	2	105	75	125
Chromium	0.500	ND	0.531	1	106	75	125
Copper	0.500	ND	0.543	1	109	75	125
Iron	2.50	0.322	3.06	1	110	75	125
Potassium	5.00	0.937	6.44	1	110	75	125
Magnesium	5.00	11.8	16.8	1	100	75	125
Manganese	0.250	ND	0.272	1	109	75	125
Sodium	5.00	23.1	28.8	1	114	75	125
Nickel	1.25	0.038	1.35	1	105	75	125
Lead	0.100	ND	0.112	0	112	75	125
Antimony	0.200	ND	0.211	0	106	75	125
Selenium	0.100	ND	0.107	1	107	75	125
Thallium	0.100	ND	0.108	1	108	75	125
Vanadium	1.25	ND	1.34	1	107	75	125
Zinc	0.250	0.121	0.388	2	107	75	125
Mercury	0.0050	ND	0.0055	0	110	80	120

ND - Not Detected

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

Reviewed by CS

0101-349.mqc MSMSD

000021

626 362

FORM 6
WATER MATRIX SPIKE / MATRIX SPIKE DUPLICATE
METALS

Lab Name: Environmental Testing and Consulting, Inc

Laboratory ID MS ICP/GFAA Metals	0101-349-01	QC Batch V24-AQ-19
Laboratory ID MS Mercury	0101-349-01	V7-AQ-87
Date Sample Prepared	01/17/01	ICP/GFAA Metals
	01/22/01	Mercury

Metals	SPIKE Added mg/L	SAMPLE Conc mg/L	MSD Conc mg/L		MSD % Rec	#	QC Limits	
Silver	0.250	ND	0.264		106		75	125
Aluminum	2.50	ND	2.68		107		75	125
Arsenic	0.100	ND	0.104		104		75	125
Barium	2.50	0.119	2.89		111		75	125
Beryllium	0.250	ND	0.272		109		75	125
Calcium	5.00	22.5	27.9		108		75	125
Cadmium	0.020	ND	0.022		110		75	125
Cobalt	1.25	ND	1.33		106		75	125
Chromium	0.500	ND	0.537		107		75	125
Copper	0.500	ND	0.550		110		75	125
Iron	2.50	0.322	3.08		110		75	125
Potassium	5.00	0.937	6.49		111		75	125
Magnesium	5.00	11.8	16.9		102		75	125
Manganese	0.250	ND	0.275		110		75	125
Sodium	5.00	23.1	29.0		118		75	125
Nickel	1.25	0.038	1.37		107		75	125
Lead	0.100	ND	0.112		112		75	125
Antimony	0.200	ND	0.212		106		75	125
Selenium	0.100	ND	0.106		106		75	125
Thallium	0.100	ND	0.109		109		75	125
Vanadium	1.25	ND	1.35		108		75	125
Zinc	0.250	0.121	0.395		110		75	125
Mercury	0.0050	ND	0.0055		110		80	120

ND - Not Detected

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

Reviewed by CS

0101-349.mqc MSMSD

000022

Environmental Testing & Consulting, Inc.

**Quality Control Reports
Level III
GC/MS Volatiles**

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Engineering
Project Name Memphis Depot

ETC Order # 0101-349

SAMPLE PRESERVATION (Verified at time of analysis)

All aqueous samples preserved to pH < 2.

METHOD

Preparation: SW-846 5030B
Analysis: SW-846 8260B

HOLDING TIMES

Sample Analysis All samples analyzed within 14 days of collection.

QUALITY CONTROL

QC Batch Form 4 Summary
V101171 V1011711LB

System Monitoring Compounds FORM 2

Surrogate recoveries within QC limits, except as listed below.

Surrogate 1,2-Dichloroethane-d4 was flagged for slightly high recovery in sample 0101-349-02 (Trip Blank). This slightly high recovery does not affect the data.

Method Blank FORM 4

V1011711LB

Target Analytes were not detected in the Method Blank.

Laboratory Control Sample FORM 3

V1011711LCS

All acceptance criteria met, except as listed below.

Two non-target analytes were flagged for high recovery in the LCS. There is no effect on the data.

Matrix Spike / Matrix Spike Dup FORM 3

Batch V101171

0101-349-01	RPD	All analytes within QC limits.
ST-EFF-032	Spike Recovery	All analytes within QC limits, except as listed below.

Chlorobenzene and Toluene were flagged for high recovery in the MS/MSD. Sample results may be biased high.

Refer to Laboratory Control Sample(s) for system verification

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Engineering
Project Name Memphis Depot

ETC Order # 0101-349

CALIBRATION

BFB Daily 12-Hour Tune	All criteria met. FORM 5
Initial Calibration	All criteria met. FORM 6
Calibration Verification	All criteria met. FORM 7

Volatile Internal Standard Area and RT FORM 8

Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

SAMPLE ANALYSIS

Instrumentation	HP 5890 Series II GC, 5971MSD
Dilutions Required	No dilutions required.

CS

Project Manager

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

	CLIENT SAMPLE NO.	SMC1 (DCE) #	SMC2 (DFM) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	V1011711LCS	103	113	104	100	0
02	V1011711LB	111	116	104	106	0
03	0101-349-2	124*	123/25	102	94	2
04	0101-349-1	119	119	105	109	0
05	0101-349-1MS	98	106	104	98	0
06	0101-349-1MS	107	115	108	100	0
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30						

QC LIMITS

SMC1 (DCE) = 1,2-Dichloroethane-d4 (80-120)
 SMC2 (DFM) = Dibromofluoromethane (74-123)
 SMC3 (TOL) = Toluene-d8 (86-112)
 OTHER (BFB) = Bromofluorobenzene (81-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V1011711LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Lab File ID: 0302005

Lab Prep Batch: V101171

Date Analyzed: 01/17/01

Time Analyzed: 1358

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V1011711LCS	V101171	0201003LCS	1229
02	0101-349-2	V101171	0701009	1551
03	0101-349-1	V101171	0801010	1620
04	0101-349-1MS	V101171	1901021	2130
05	0101-349-1MS	V101171	2001022	2158
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COMMENTS:

626 368

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V1011711LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Prep Batch: V101171

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 01/17/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
67-64-1-----	Acetone	20.00	U
75-05-8-----	Acetonitrile	20.00	U
107-02-8-----	Acrolein	20.00	U
107-13-1-----	Acrylonitrile	20.00	U
107-05-1-----	Allyl chloride	1.00	U
71-43-2-----	Benzene	1.00	U
108-86-1-----	Bromobenzene	1.00	U
74-97-5-----	Bromochloromethane	1.00	U
75-27-4-----	Bromodichloromethane	1.00	U
75-25-2-----	Bromoform	1.00	U
78-93-3-----	2-Butanone	20.00	U
74-83-9-----	Bromomethane	1.00	U
104-51-8-----	n-Butylbenzene	1.00	U
135-98-8-----	sec-Butylbenzene	1.00	U
98-06-6-----	tert-Butylbenzene	1.00	U
75-15-0-----	Carbon Disulfide	1.00	U
56-23-5-----	Carbon Tetrachloride	1.00	U
108-90-7-----	Chlorobenzene	1.00	U
124-48-1-----	Chlorodibromomethane	1.00	U
75-00-3-----	Chloroethane	1.00	U
110-75-0-----	2-Chloroethyl vinyl ether	20.00	U
67-66-3-----	Chloroform	1.00	U
74-87-3-----	Chloromethane	1.00	U
126-99-8-----	Chloroprene	1.00	U
95-49-8-----	2-Chlorotoluene	1.00	U
106-43-4-----	4-Chlorotoluene	1.00	U
96-12-8-----	1,2-Dibromo-3-chloropropane	1.00	U
106-93-4-----	1,2-Dibromoethane	1.00	U
74-95-3-----	Dibromomethane	1.00	U
95-50-1-----	1,2-Dichlorobenzene	1.00	U
541-73-1-----	1,3-Dichlorobenzene	1.00	U
106-46-7-----	1,4-Dichlorobenzene	1.00	U
110-57-6-----	trans-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000028

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V1011711LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Prep Batch: V101171

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 01/17/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

1868-53-7-----	Dichlorodifluoromethane	1.00	U
75-34-3-----	1,1-Dichloroethane	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
156-59-4-----	cis-1,2-Dichloroethene	1.00	U
156-60-5-----	trans-1,2-Dichloroethene	1.00	U
78-87-5-----	1,2-Dichloropropane	1.00	U
142-28-9-----	1,3-Dichloropropane	1.00	U
590-20-7-----	2,2-Dichloropropane	1.00	U
563-58-6-----	1,1-Dichloropropene	1.00	U
10061-01-5-----	cis-1,3-Dichloropropene	1.00	U
10061-02-6-----	trans-1,3-Dichloropropene	1.00	U
108-20-3-----	Di isopropyl ether	5.00	U
123-91-1-----	1,4-Dioxane	100.0	U
141-78-6-----	Ethyl Acetate	5.00	U
100-41-4-----	Ethylbenzene	1.00	U
97-63-2-----	Ethyl methacrylate	1.00	U
110-00-9-----	Furan	1.00	U
87-63-3-----	Hexachlorobutadiene	1.00	U
110-54-3-----	Hexane	1.00	U
591-78-6-----	2-Hexanone	5.00	U
74-88-4-----	Iodomethane	1.00	U
78-83-1-----	Isobutyl Alcohol	100.0	U
98-82-8-----	Isopropylbenzene	1.00	U
99-87-6-----	4-Isopropyltoluene	1.00	U
126-98-7-----	Methacrylonitrile	10.00	U
75-09-2-----	Methylene Chloride	5.00	U
80-62-6-----	Methyl methacrylate	1.00	U
108-10-1-----	4-Methyl-2-Pentanone	5.00	U
1634-04-4-----	Methyl-tertbutyl-Ether	5.00	U
91-20-3-----	Naphthalene	1.00	U
76-01-7-----	Pentachloroethane	1.00	U
107-12-0-----	Propionitrile	10.00	U

FORM I VOA-GCMS

625 370

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V1011711LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Prep Batch: V101171

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 01/17/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

109-60-4-----	n-Propyl Acetate	1.00	U
103-65-1-----	n-Propylbenzene	1.00	U
100-42-5-----	Styrene	1.00	U
630-20-6-----	1,1,1,2-Tetrachloroethane	1.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1.00	U
127-18-4-----	Tetrachloroethene	1.00	U
109-99-9-----	Tetrahydrofuran	1.00	U
87-61-6-----	1,2,3-Trichlorobenzene	1.00	U
108-88-3-----	Toluene	1.00	U
71-55-6-----	1,1,1-Trichloroethane	1.00	U
79-00-5-----	1,1,2-Trichloroethane	1.00	U
76-13-1-----	1,1,2-trichloro-1,2,2-triflu	1.00	U
79-01-6-----	Trichloroethene	1.00	U
75-69-4-----	Trichlorofluoromethane	1.00	U
96-18-4-----	1,2,3-Trichloropropane	1.00	U
120-82-1-----	1,2,4-Trichlorobenzene	1.00	U
95-63-6-----	1,2,4-Trimethylbenzene	1.00	U
108-67-8-----	1,3,5-Trimethylbenzene	1.00	U
108-05-4-----	Vinyl Acetate	20.00	U
75-01-4-----	Vinyl Chloride	1.00	U
1330-20-7-----	Xylene-mp	1.00	U
95-47-6-----	Xylene-o	1.00	U
1476-11-5-----	cis-1,4-Dichloro-2-butene	1.00	U

FORM I VOA-GCMS

000030

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

V1011711LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 01/17/01

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000031

626 372

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V101171

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: V1011711LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0		81.56	82	59-151
Acetonitrile	1000		974.9	97	57-143
Acrolein	100.0		95.44	95	59-134
Acrylonitrile	100.0		91.32	91	60-146
Allyl chloride	100.0		90.43	90	74-120
Benzene	100.0		86.56	86	72-124
Bromobenzene	100.0		101.4	101	77-120
Bromochloromethane	100.0		87.85	88	74-120
Bromodichloromethane	100.0		95.33	95	68-119
Bromoform	100.0		115.1	115	66-136
2-Butanone	100.0		98.69	99	55-151
Bromomethane	100.0		107.4	107	40-134
n-Butylbenzene	100.0		111.3	111	69-129
sec-Butylbenzene	100.0		97.86	98	72-127
tert-Butylbenzene	100.0		96.68	97	73-126
Carbon Disulfide	100.0		85.91	86	60-133
Carbon Tetrachloride	100.0		90.68	91	64-123
Chlorobenzene	100.0		98.04	98	77-112
Chlorodibromomethane	100.0		98.90	99	72-118
Chloroethane	100.0		101.0	101	64-142
2-Chloroethyl vinyl eth	100.0		95.00	95	22-165
Chloroform	100.0		88.14	88	70-115
Chloromethane	100.0		121.7	122	58-139
Chloroprene	100.0		86.53	86	73-118
2-Chlorotoluene	100.0		99.32	99	65-132
4-Chlorotoluene	100.0		102.0	102	67-127
1,2-Dibromo-3-chloropro	100.0		105.8	106	56-134
1,2-Dibromoethane	100.0		97.58	98	74-118

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V101171

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: V101171LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Dibromomethane	100.0		103.3	103	75-114
1,2-Dichlorobenzene	100.0		101.1	101	80-113
1,3-Dichlorobenzene	100.0		110.0	110	77-119
1,4-Dichlorobenzene	100.0		110.6	111	78-116
trans-1,4-Dichloro-2-bu	100.0		113.2	113	62-138
Dichlorodifluoromethane	100.0		115.7	116	48-145
1,1-Dichloroethane	100.0		93.05	93	76-118
1,2-Dichloroethane	100.0		95.46	95	62-124
1,1-Dichloroethene	100.0		90.35	90	69-121
cis-1,2-Dichloroethene	100.0		89.68	90	76-114
trans-1,2-Dichloroethen	100.0		94.56	94	72-121
1,2-Dichloropropane	100.0		93.14	93	64-133
1,3-Dichloropropane	100.0		101.8	102	68-128
2,2-Dichloropropane	100.0		91.34	91	67-132
1,1-Dichloropropene	100.0		90.12	90	76-117
cis-1,3-Dichloropropene	100.0		102.3	102	77-120
trans-1,3-Dichloropropene	100.0		99.12	99	73-124
Di isopropyl ether	100.0		86.54	86	62-160
1,4-Dioxane	2000		1912	96	56-131
Ethyl Acetate	100.0		98.33	98	52-151
Ethylbenzene	100.0		99.90	100	77-111
Ethyl methacrylate	200.0		194.3	97	57-140
Furan	100.0		149.6	150*	52-124
Hexachlorobutadiene	100.0		116.7	117	69-137
Hexane	100.0		108.6	109	70-130
2-Hexanone	100.0		99.82	100	53-144
Iodomethane	100.0		95.56	96	51-153
Isobutyl Alcohol	2000		1880	94	60-134

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

* Values outside of QC limits

COMMENTS:

626 374

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V101171

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: V1011711LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Isopropylbenzene	100.0		97.61	98	74-125
4-Isopropyltoluene	100.0		102.9	103	72-127
Methacrylonitrile	1000		895.4	90	70-125
Methylene Chloride	100.0		101.6	102	76-115
Methyl methacrylate	200.0		201.9	101	57-147
4-Methyl-2-Pentanone	100.0		102.8	103	42-144
Methyl-tertbutyl-Ether	100.0		92.48	92	62-122
Naphthalene	100.0		105.4	105	53-124
Pentachloroethane	100.0		128.6	129*	78-126
Propionitrile	1000		892.5	89	58-139
n-Propyl Acetate	100.0		149.6	150	88-170
n-Propylbenzene	100.0		104.5	104	75-125
Styrene	100.0		101.9	102	77-117
1,1,1,2-Tetrachloroetha	100.0		106.5	106	79-113
1,1,2,2-Tetrachloroetha	100.0		110.4	110	67-126
Tetrachloroethene	100.0		92.79	93	77-115
Tetrahydrofuran	100.0		89.11	89	76-181
1,2,3-Trichlorobenzene	100.0		112.5	112	62-132
Toluene	100.0		97.19	97	77-115
1,1,1-Trichloroethane	100.0		94.21	94	63-122
1,1,2-Trichloroethane	100.0		94.14	94	69-117
1,1,2-trichloro-1,2,2-t	100.0		95.66	96	70-130
Trichloroethene	100.0		98.41	98	75-113
Trichlorofluoromethane	100.0		90.77	91	55-130
1,2,3-Trichloropropane	100.0		108.5	108	62-130
1,2,4-Trichlorobenzene	100.0		116.1	116	68-132
1,2,4-Trimethylbenzene	100.0		103.8	104	69-126
1,3,5-Trimethylbenzene	100.0		101.0	101	69-128

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V101171

Lab Code: Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: V1011711LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Vinyl Acetate	100.0		96.55	96	28-146
Vinyl Chloride	100.0		102.0	102	65-134
Xylene-mp	200.0		186.2	93	77-115
Xylene-o	100.0		97.01	97	77-115
cis-1,4-Dichloro-2-bute	100.0		117.6	118	70-130

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 2 out of 89 outside limits

COMMENTS:

626 376

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V101171

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: 0101-349-1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Benzene	100.0	0.000	100.6	101	72-124
Chlorobenzene	100.0	0.000	117.5	118*	77-112
1,1-Dichloroethene	100.0	18.67	107.8	89	69-121
Toluene	100.0	0.000	116.5	116*	77-115
Trichloroethene	100.0	88.97	179.3	90	75-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Benzene	100.0	106.4	106	5	20	72-124
Chlorobenzene	100.0	119.8	120*	2	20	77-112
1,1-Dichloroethene	100.0	116.8	98	10	20	69-121
Toluene	100.0	120.8	121*	4	20	77-115
Trichloroethene	100.0	188.5	100	10	20	75-113

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 4 out of 10 outside limits

COMMENTS:

Environmental Testing & Consulting, Inc.

**Quality Control Reports
Level III
GC/MS Semi-Volatiles**

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Engineering
Project Name Memphis Depot

ETC Order # 0101-349

SAMPLE PRESERVATION

All aqueous samples maintained at 4 degrees C until analysis.

HOLDING TIMES

Sample Extraction All aqueous samples extracted within 7 days.
Sample Analysis All samples analyzed within 40 days of extraction.

METHOD

Preparation: SW-846 3510C
Analysis: SW-846 8270C

QUALITY CONTROL

QC Batch Form 4 Summary
P06043 P06043LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Method Blank FORM 4
P06043LB

Target analytes were not detected in the Method Blank.

Laboratory Control Sample FORM 3
P06043LCS/LCSD

All acceptance criteria met, except as listed below.

One non-target analyte was flagged for low recovery in the LCS. There is no effect on the data.

RPDs for 2-Chloronaphthalene and four non-target analytes were flagged for high recovery due to variances in the LCS/LCSD recoveries.

Matrix Spike / Matrix Spike Dup FORM 3
Batch P06043

0101-349-01	RPD	All analytes within QC limits.
ST-EFF-032	Spike Recovery	All analytes within QC limits, except as listed below.

4-Nitrophenol and Phenol were flagged for low recovery in the MS/MSD. Analytes were not detected in the associated project samples.

Refer to Laboratory Control Sample(s) for system verification.

ENVIRONMENTAL TESTING AND CONSULTING, INC.
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - AQUEOUS

Client Name Sverdrup/Jacobs Engineering
Project Name Memphis Depot

ETC Order # 0101-349

CALIBRATION

DFTPP Daily 12-Hour Tune	All criteria met. FORM 5
Initial Calibration	All criteria met. FORM 6
Calibration Verification	All criteria met. FORM 7

Semi-Volatile Internal Standard Area and RT FORM 8

Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

SAMPLE ANALYSIS

Instrumentation	HP 5890 Series II GC, 5971MSD
Dilutions Required	No dilutions required.



Project Manager

626 380

FORM 2
WATER BNA-GCMS SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

	CLIENT SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (TBP) #	S6 (2FP) #	S7 #	S8 #	TOT OUT
01	P06043LB	71	66	115	32	101	53			0
02	P06043LCS	81	82	108	33	119	55			0
03	P06043LCSD	80	80	100	33	120	55			0
04	0101-349-1	64	69	103	31	101	50			0
05	0101-349-1MS	76	72	114	32	104	52			0
06	0101-349-1MS	71	76	102	31	106	50			0
07										
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30										

QC LIMITS

S1 (NBZ) = Nitrobenzene-d5 (29-110)
 S2 (FBP) = 2-Fluorobiphenyl (38-107)
 S3 (TPH) = Terphenyl-d14 (33-122)
 S4 (PHL) = Phenol-d6 (7- 58)
 S5 (TBP) = 2,4,6-Tribromophenol (16-138)
 S6 (2FP) = 2-Fluorophenol (8- 88)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

P06043LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Lab File ID: 0301004

Lab Prep Batch: P06043

Instrument ID: BNA2

Date Extracted:

Matrix: (soil/water) WATER

Date Analyzed: 01/19/01

Level: (low/med) LOW

Time Analyzed: 1352

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	TIME ANALYZED	LAB FILE ID	DATE ANALYZED
01	P06043LCS	1423	0401005	01/19/01
02	P06043LCSD	1455	0501006	01/19/01
03	0101-349-1	1526	0601007	01/19/01
04	0101-349-1MS	2256	2101022	01/19/01
05	0101-349-1MS	2326	2201023	01/19/01
06				
07				
08				
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COMMENTS:

626 382

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P06043LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Prep Batch: P06043

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0301004

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 01/19/01

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

83-32-9-----	Acenaphthene	2.00	U
208-96-8-----	Acenaphthylene	2.00	U
98-86-2-----	Acetophenone	5.00	U
62-53-3-----	Aniline	5.00	U
120-12-7-----	Anthracene	2.00	U
92-87-5-----	Benzidine	20.00	U
56-55-3-----	Benz(a)Anthracene	2.00	U
205-99-2-----	Benzo(b)fluoranthene	2.00	U
207-08-9-----	Benzo(k)fluoranthene	2.00	U
191-24-2-----	Benzo(ghi)perylene	2.00	U
50-32-8-----	Benzo(a)pyrene	2.00	U
65-85-0-----	Benzoic acid	50.00	U
100-51-6-----	Benzyl alcohol	5.00	U
111-91-1-----	Bis(2-chloroethoxy)methane	5.00	U
111-44-4-----	Bis(2-chloroethyl) ether	5.00	U
108-60-1-----	Bis(2-chloroisopropyl) ether	5.00	U
117-81-7-----	Bis(2-ethylhexyl)phthalate	5.00	U
101-55-3-----	4-Bromophenyl phenyl ether	5.00	U
85-68-7-----	Butyl benzyl phthalate	5.00	U
86-74-8-----	Carbazole	2.00	U
106-47-8-----	4-Chloroaniline	5.00	U
510-15-6-----	Chlorobenzilate	5.00	U
59-50-7-----	4-Chloro-3-methylphenol	5.00	U
91-58-7-----	2-Chloronaphthalene	2.00	U
95-57-8-----	2-Chlorophenol	5.00	U
7005-72-3-----	4-Chlorophenyl phenyl ether	5.00	U
218-01-9-----	Chrysene	2.00	U
53-70-3-----	Dibenz(a,h)anthracene	2.00	U
132-64-9-----	Dibenzofuran	5.00	U
84-74-2-----	Di-n-butyl phthalate	5.00	U
95-50-1-----	1,2-Dichlorobenzene	5.00	U
541-73-1-----	1,3-Dichlorobenzene	5.00	U
106-46-7-----	1,4-Dichlorobenzene	5.00	U

FORM I BNA-GCMS

000042

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P06043LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Prep Batch: P06043

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0301004

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 01/19/01

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

91-94-1-----	3,3'-Dichlorobenzidine	10.00	U
120-83-2-----	2,4-Dichlorophenol	5.00	U
87-65-0-----	2,6-Dichlorophenol	5.00	U
84-66-2-----	Diethyl phthalate	5.00	U
119-93-7-----	3,3-Dimethylbenzidine	10.00	U
105-67-9-----	2,4-Dimethylphenol	5.00	U
131-11-3-----	Dimethyl phthalate	5.00	U
534-52-1-----	4,6-Dinitro-2-methylphenol	10.00	U
51-28-5-----	2,4-Dinitrophenol	20.00	U
121-14-2-----	2,4-Dinitrotoluene	5.00	U
606-20-2-----	2,6-Dinitrotoluene	5.00	U
122-39-4-----	N-Nitrosodiphenylamine/Diphenylamine	5.00	U
117-84-0-----	Di-n-octyl phthalate	5.00	U
62-50-0-----	Ethyl methanesulfonate	5.00	U
206-44-0-----	Fluoranthene	2.00	U
86-73-7-----	Fluorene	2.00	U
118-74-1-----	Hexachlorobenzene	5.00	U
87-68-3-----	Hexachlorobutadiene	5.00	U
77-47-4-----	Hexachlorocyclopentadiene	5.00	U
67-72-1-----	Hexachloroethane	5.00	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	2.00	U
78-59-1-----	Isophorone	5.00	U
66-27-3-----	Methyl methanesulfonate	5.00	U
91-57-6-----	2-Methylnaphthalene	2.00	U
95-48-7-----	2-Methylphenol	5.00	U
108-39-4-----	3&4-Methylphenol	5.00	U
91-20-3-----	Naphthalene	2.00	U
88-74-4-----	2-Nitroaniline	10.00	U
99-09-2-----	3-Nitroaniline	10.00	U
100-01-6-----	4-Nitroaniline	10.00	U
98-95-3-----	Nitrobenzene	5.00	U
88-75-5-----	2-Nitrophenol	10.00	U
100-02-7-----	4-Nitrophenol	5.00	U

FORM I BNA-GCMS

626 334

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P06043LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Prep Batch: P06043

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0301004

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 01/19/01

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

924-16-3-----	N-Nitrosodibutylamine	5.00	U
55-18-5-----	N-Nitrosodiethylamine	5.00	U
129-00-0-----	N-Nitrosodimethylamine	5.00	U
621-64-7-----	N-Nitrosodi-n-propylamine	5.00	U
82-68-8-----	Pentachloronitrobenzene	10.00	U
87-86-5-----	Pentachlorophenol	5.00	U
62-44-2-----	Phenacetin	5.00	U
85-01-8-----	Phenanthrene	2.00	U
108-95-2-----	Phenol	5.00	U
129-00-0-----	Pyrene	2.00	U
110-86-1-----	Pyridine	5.00	U
95-94-3-----	1,2,4,5-Tetrachlorobenzene	5.00	U
58-90-2-----	2,3,4,6-Tetrachlorophenol	5.00	U
120-82-1-----	1,2,4-Trichlorobenzene	5.00	U
95-95-4-----	2,4,5-Trichlorophenol	5.00	U
88-06-2-----	2,4,6-Trichlorophenol	5.00	U
103-33-3-----	1,2-Dphenylhydrazine/Azobenzen	5.00	U

FORM I BNA-GCMS

000044

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

P06043LB

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0301004

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 01/19/01

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I BNA-GCMS-TIC

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P06043

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: P06043LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Acenaphthene	50.00		33.71	67	38-117
Acenaphthylene	50.00		34.74	69	37-114
Acetophenone	50.00		35.44	71	32-108
Aniline	50.00		36.68	73	16-133
Anthracene	50.00		36.32	73	34-128
Benzidine	50.00		7.49	15*	22-176
Benz (a) Anthracene	50.00		42.28	84	36-127
Benzo (b) fluoranthene	50.00		36.89	74	36-131
Benzo (k) fluoranthene	50.00		36.92	74	32-132
Benzo (ghi) perylene	50.00		42.93	86	26-123
Benzo (a) pyrene	50.00		34.74	69	34-131
Benzoic acid	50.00		13.14	26	11- 58
Benzyl alcohol	50.00		38.67	77	20-109
Bis (2-chloroethoxy) meth	50.00		38.44	77	20-126
Bis (2-chloroethyl) ether	50.00		38.07	76	16-122
Bis (2-chloroisopropyl) e	50.00		39.90	80	28-108
Bis (2-ethylhexyl) phthal	50.00		53.87	108	21-162
4-Bromophenyl phenyl et	50.00		39.87	80	31-124
Butyl benzyl phthalate	50.00		52.07	104	33-142
Carbazole	50.00		39.65	79	20-147
4-Chloroaniline	50.00		39.30	79	24-127
Chlorobenzilate	50.00		51.75	104	35-118
4-Chloro-3-methylphenol	50.00		38.86	78	35-117
2-Chloronaphthalene	50.00		41.26	82	29-137
2-Chlorophenol	50.00		40.70	81	27-102
4-Chlorophenyl phenyl e	50.00		34.26	68	39-110
Chrysene	50.00		44.79	90	30-124
Dibenz (a, h) anthracene	50.00		43.26	86	27-124

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P06043

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: P06043LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dibenzofuran	50.00		34.76	70	40-108
Di-n-butyl phthalate	50.00		43.80	88	19-158
1,2-Dichlorobenzene	50.00		31.61	63	26-100
1,3-Dichlorobenzene	50.00		37.45	75	21-102
1,4-Dichlorobenzene	50.00		32.79	66	24- 99
3,3'-Dichlorobenzidine	50.00		35.82	72	6-192
2,4-Dichlorophenol	50.00		35.81	72	32-110
2,6-Dichlorophenol	50.00		39.00	78	31-112
Diethyl phthalate	50.00		34.12	68	36-130
3,3-Dimethylbenzidine	50.00		33.99	68	6-192
2,4-Dimethyphenol	50.00		35.73	71	34-105
Dimethyl phthalate	50.00		36.53	73	34-123
4,6-Dinitro-2-methylphe	50.00		44.14	88	27-128
2,4-Dinitrophenol	50.00		24.97	50	10-132
2,4-Dinitrotoluene	50.00		38.97	78	24-147
2,6-Dinitrotoluene	50.00		36.65	73	36-125
N-NitrsdiphylAm/Dipheny	100.0		93.32	93	35-116
Di-n-octyl phthalate	50.00		43.90	88	29-136
Ethyl methanesulfonate	50.00		44.78	90	20-121
Fluoranthene	50.00		24.26	48	28-127
Fluorene	50.00		33.13	66	41-116
Hexachlorobenzene	50.00		45.52	91	18-136
Hexachlorobutadiene	50.00		34.15	68	22-109
Hexachlorocyclopentadie	50.00		25.07	50	10-102
Hexachloroethane	50.00		36.49	73	16-107
Indeno(1,2,3-cd)pyrene	50.00		53.42	107	22-126
Isophorone	50.00		37.12	74	31-116
Methyl methanesulfonate	50.00		32.25	64	15- 82

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P06043

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: P06043LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
2-Methylnaphthalene	50.00		34.70	69	34-108
2-Methylphenol	50.00		36.91	74	22- 97
3&4-Methylphenol	50.00		32.92	66	21- 96
Naphthalene	50.00		34.15	68	33-108
2-Nitroaniline	50.00		39.53	79	32-127
3-Nitroaniline	50.00		38.65	77	28-142
4-Nitroaniline	50.00		36.97	74	23-139
Nitrobenzene	50.00		36.97	74	27-117
2-Nitrophenol	50.00		37.76	76	25-114
4-Nitrophenol	50.00		31.03	62	1- 76
N-Nitrosodibutylamine	50.00		38.57	77	31-126
N-Nitrosodiethylamine	50.00		38.12	76	28-107
N-Nitrosodimethylamine	50.00		24.53	49	14- 84
N-Nitrosodi-n-propylami	50.00		37.85	76	29-114
Pentachloronitrobenzene	50.00		49.53	99	34-135
Pentachlorophenol	50.00		35.68	71	17-142
Phenacetin	50.00		57.84	116	29-141
Phenanthrene	50.00		33.83	68	40-120
Phenol	50.00		19.31	39	11- 55
Pyrene	50.00		46.19	92	20-154
Pyridine	50.00		12.98	26	10- 71
1,2,4,5-Tetrachlorobenz	50.00		38.22	76	28-110
2,3,4,6-Tetrachlorophen	50.00		39.85	80	28-118
1,2,4-Trichlorobenzene	50.00		33.79	68	23-106
2,4,5-Trichlorophenol	50.00		41.79	84	26-118
2,4,6-Trichlorophenol	50.00		38.72	77	26-115
1,2-Dphnylhydrzine/Azob	50.00		54.13	108	45-135

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

626 389

Lab Name: ETC, INC.!

Lab Prep Batch: P06043

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: P06043LCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Acenaphthene	50.00	34.66	69	3	20	38-117
Acenaphthylene	50.00	35.56	71	3	20	37-114
Acetophenone	50.00	36.44	73	3	20	32-108
Aniline	50.00	43.82	88	19	20	16-133
Anthracene	50.00	38.00	76	4	20	34-128
Benzidine	50.00	52.22	104	150*	20	22-176
Benz(a)Anthracene	50.00	44.02	88	5	20	36-127
Benzo(b)fluoranthene	50.00	39.58	79	6	20	36-131
Benzo(k)fluoranthene	50.00	37.54	75	1	20	32-132
Benzo(ghi)perylene	50.00	48.55	97	12	20	26-123
Benzo(a)pyrene	50.00	38.44	77	11	20	34-131
Benzoic acid	50.00	13.38	27	4	20	11- 58
Benzyl alcohol	50.00	41.95	84	9	20	20-109
Bis(2-chloroethoxy)meth	50.00	37.96	76	1	20	20-126
Bis(2-chloroethyl)ether	50.00	38.35	77	1	20	16-122
Bis(2-chloroisopropyl)e	50.00	40.23	80	0	20	28-108
Bis(2-ethylhexyl)phthal	50.00	53.90	108	0	20	21-162
4-Bromophenyl phenyl et	50.00	42.26	84	5	20	31-124
Butyl benzyl phthalate	50.00	51.39	103	1	20	33-142
Carbazole	50.00	42.18	84	6	20	20-147
4-Chloroaniline	50.00	40.70	81	2	20	24-127
Chlorobenzilate	50.00	49.57	99	5	20	35-118
4-Chloro-3-methylphenol	50.00	41.83	84	7	20	35-117
2-Chloronaphthalene	50.00	50.34	101	21*	20	29-137
2-Chlorophenol	50.00	41.80	84	4	20	27-102
4-Chlorophenyl phenyl e	50.00	35.92	72	6	20	39-110
Chrysene	50.00	44.33	89	1	20	30-124
Dibenz(a,h)anthracene	50.00	49.75	100	15	20	27-124

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

* Values outside of QC limits

COMMENTS:

626 390

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P06043

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: P06043LCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Dibenzofuran	50.00	35.82	72	3	20	40-108
Di-n-butyl phthalate	50.00	47.09	94	6	20	19-158
1,2-Dichlorobenzene	50.00	32.18	64	2	20	26-100
1,3-Dichlorobenzene	50.00	38.92	78	4	20	21-102
1,4-Dichlorobenzene	50.00	34.58	69	4	20	24- 99
3,3'-Dichlorobenzidine	50.00	43.26	86	18	20	6-192
2,4-Dichlorophenol	50.00	36.35	73	1	20	32-110
2,6-Dichlorophenol	50.00	38.21	76	2	20	31-112
Diethyl phthalate	50.00	36.12	72	6	20	36-130
3,3-Dimethylbenzidine	50.00	76.28	152	76*	20	6-192
2,4-Dimethylphenol	50.00	34.61	69	3	20	34-105
Dimethyl phthalate	50.00	37.21	74	1	20	34-123
4,6-Dinitro-2-methylphe	50.00	50.16	100	13	20	27-128
2,4-Dinitrophenol	50.00	28.29	56	11	20	10-132
2,4-Dinitrotoluene	50.00	41.25	82	5	20	24-147
2,6-Dinitrotoluene	50.00	37.62	75	3	20	36-125
N-NitrsdiphylAm/Dipheny	100.0	97.75	98	5	20	35-116
Di-n-octyl phthalate	50.00	50.34	101	14	20	29-136
Ethyl methanesulfonate	50.00	45.80	92	2	20	20-121
Fluoranthene	50.00	26.20	52	8	20	28-127
Fluorene	50.00	33.08	66	0	20	41-116
Hexachlorobenzene	50.00	46.30	93	2	20	18-136
Hexachlorobutadiene	50.00	34.16	68	0	20	22-109
Hexachlorocyclopentadie	50.00	24.21	48	4	20	10-102
Hexachloroethane	50.00	37.08	74	1	20	16-107
Indeno(1,2,3-cd)pyrene	50.00	51.02	102	5	20	22-126
Isophorone	50.00	38.13	76	3	20	31-116
Methyl methanesulfonate	50.00	32.30	65	2	20	15- 82

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

* Values outside of QC limits

COMMENTS:

FORM 3
WATER BNA-GCMS LAB CONTROL SAMPLE

626 391

Lab Name: ETC, INC.

Lab Prep Batch: P06043

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: P06043LCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
2-Methylnaphthalene	50.00	36.26	72	4	20	34-108
2-Methylphenol	50.00	38.43	77	4	20	22- 97
3&4-Methylphenol	50.00	35.23	70	6	20	21- 96
Naphthalene	50.00	35.07	70	3	20	33-108
2-Nitroaniline	50.00	39.45	79	0	20	32-127
3-Nitroaniline	50.00	38.10	76	1	20	28-142
4-Nitroaniline	50.00	38.23	76	3	20	23-139
Nitrobenzene	50.00	38.14	76	3	20	27-117
2-Nitrophenol	50.00	39.02	78	2	20	25-114
4-Nitrophenol	50.00	32.25	64	3	20	1- 76
N-Nitrosodibutylamine	50.00	40.78	82	6	20	31-126
N-Nitrosodiethylamine	50.00	38.61	77	1	20	28-107
N-Nitrosodimethylamine	50.00	33.32	67	31*	20	14- 84
N-Nitrosodi-n-propylami	50.00	39.50	79	4	20	29-114
Pentachloronitrobenzene	50.00	51.57	103	4	20	34-135
Pentachlorophenol	50.00	39.25	78	9	20	17-142
Phenacetin	50.00	59.72	119	2	20	29-141
Phenanthrene	50.00	34.40	69	1	20	40-120
Phenol	50.00	20.38	41	5	20	11- 55
Pyrene	50.00	42.65	85	8	20	20-154
Pyridine	50.00	23.14	46	56*	20	10- 71
1,2,4,5-Tetrachlorobenz	50.00	38.24	76	0	20	28-110
2,3,4,6-Tetrachlorophen	50.00	41.09	82	2	20	28-118
1,2,4-Trichlorobenzene	50.00	34.62	69	1	20	23-106
2,4,5-Trichlorophenol	50.00	43.03	86	2	20	26-118
2,4,6-Trichlorophenol	50.00	39.96	80	4	20	26-115
1,2-Dphnylhydrazine/Azob	50.00	57.71	115	6	20	45-135

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

* Values outside of QC limits

RPD: 5 out of 83 outside limits

Spike Recovery: 1 out of 166 outside limits

COMMENTS:

626 392

FORM 3
WATER BNA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P06043

Lab Code:

Case No.:

SAS No.:

SDG No.: 0101-349

Matrix Spike - Sample No.: 0101-349-1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Acenaphthene	101.0	0.000	62.36	62	45- 99
4-Chloro-3-methylphenol	161.6	0.000	143.8	89	35-113
2-Chlorophenol	161.6	0.000	137.5	85	38-100
1,4-Dichlorobenzene	101.0	0.000	50.09	50	40- 90
2,4-Dinitrotoluene	101.0	0.000	82.18	81	34-110
4-Nitrophenol	161.6	0.000	10.16	6*	9- 92
Pentachlorophenol	161.6	0.000	134.9	83	28-124
Phenol	161.6	0.000	54.14	34*	37-103
Pyrene	101.0	0.000	87.95	87	60-127
1,2,4-Trichlorobenzene	101.0	0.000	57.00	56	45- 94

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Acenaphthene	101.0	64.94	64	3	20	45- 99
4-Chloro-3-methylphenol	161.6	128.1	79	12	20	35-113
2-Chlorophenol	161.6	135.7	84	1	20	38-100
1,4-Dichlorobenzene	101.0	50.89	50	0	20	40- 90
2,4-Dinitrotoluene	101.0	83.76	83	2	20	34-110
4-Nitrophenol	161.6	9.61	6*	0	20	9- 92
Pentachlorophenol	161.6	140.1	87	5	20	28-124
Phenol	161.6	48.76	30*	12	20	37-103
Pyrene	101.0	76.14	75	15	20	60-127
1,2,4-Trichlorobenzene	101.0	54.02	53	6	20	45- 94

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

* Values outside of QC limits

RPD: 0 out of 10 outside limits

Spike Recovery: 4 out of 20 outside limits

COMMENTS:

FORM III BNA-GCMS

000052

APPENDIX C
QUARTERLY EFFLUENT SAMPLES
ANALYTICAL LABORATORY DATA

APPENDIX D

DATA EVALUATION OF SEMI-ANNUAL GROUNDWATER AND QUARTERLY EFFLUENT SAMPLES

1.0 PURPOSE

This Technical Memorandum (Memorandum) presents an evaluation of the quality of the analytical chemistry data generated in support of the referenced project. The purpose of the evaluation is to document the quality of the reported data and any limitations to the use of the data. Data use limitations are conveyed to data users through the text of this Memorandum and the application of qualifiers to project data as a result of this evaluation. The data users are urged to review the findings of this evaluation and associated data qualifications before using the data for decision-making.

1.1 STATEMENT OF DATA QUALITY AND DATA USE LIMITATIONS

QA/QC results associated with this data indicate that the data meet definitive data standards and are of known quality and are acceptable for their intended uses with the qualifiers applied. No results were found to be unusable due to QC deficiencies. QC data demonstrated that the QA mechanisms were effective in ensuring measurement data reliability within expected limits of sampling and analytical error. Sample data, as qualified, are considered representative of actual site conditions at the time sampled.

1.1.1 Summary of Qualifiers Applied to Data During This Evaluation

Table 1.1.1 presents a summary of qualifiers applied to sample data as a result of this review. Section 1.2 presents qualifier definitions. Sample data may also have qualifiers applied by the laboratory. Definitions of qualifiers applied by the laboratory are included on page 1 of each laboratory data package (LDP).

1.1.2 Additional Data Use Concerns

An additional concern with respect to the use of this data is the detection of carbon disulfide (CS₂) in a number of project samples. Twelve samples were found with varying levels of CS₂ ranging from the reporting limit to 250 ug/L. This analyte had not previously been detected at the site per Kraig Smith, Jacobs Project Manager. Since this constituent had not previously been detected, it is hypothesized that it may be an artifact and not the result of site contamination. The wide-spread and erratic occurrence of its detection in this data set seemed to support this theory. CS₂ is also the only constituent to generate a field duplicate QC non-conformance further suggesting erratic and artificial presence. However, careful evaluation of applicable data collection procedures including sampling, sample handling and shipping, and laboratory operations did not reveal any other source of the constituent.

1.1.3 Actions Required Prior to Data Use

1. Start with sample data as supplied and qualified by the laboratory.
2. Replace laboratory "E" flagged data with concentrations from appropriate secondary dilutions. See section 2.4.2 for guidance on this action. Do not use other data from the secondary dilutions.
3. Add data review qualifiers summarized on Table 1.1.1 to sample data. If any result was qualified by the laboratory, replace the laboratory qualifier with the review qualifier.

1.2 DATA QUALIFIER DEFINITIONS

The following definitions describe the data qualifiers that may have been assigned to results during this review. Data qualifier definitions are based on those included in the *Functional Guidelines*.

- U The analyte was analyzed for, but was not detected above the laboratory Reporting Limit (RL).
- J The analyte was positively identified; however, the associated numerical value is an estimate of the concentration of the analyte in the sample.
- UJ The analyte was not detected above the RL. However, the RL is an estimate and may or may not represent the actual RL necessary to accurately and precisely measure the analyte in the sample
- R The sample results are rejected and are therefore unusable due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

1.3 DATA QUALITY OBJECTIVES

Analytical support for this project requires the collection of definitive data. Definitive data is defined in "*Data Quality Objectives Process for Superfund*," EPA540-R-93-071, U.S EPA Office of Emergency and Remedial Response, September 1993 as follows:

"Definitive data are generated using rigorous analytical methods, such as approved EPA reference methods. Data are analyte-specific, with confirmation of analyte identity and concentration. Methods produce tangible raw data (e.g., chromatograms, spectra, digital values) in the form of paper printouts or computer-generated electronic files. Data may be generated at the site or at an off-site location, as long as the QA/QC requirements are satisfied. For the data to be definitive, either analytical or total measurement error must be determined."

Specific data quality criteria and procedures to achieve the desired level of quality are documented in the approved Quality Assurance Project Plan (QAPP). Key elements of the quality program relating to this evaluation include:

- Use of an approved, USACE validated laboratory
- Use of a sampling program designed to meet the project objectives
- Use of appropriate analytical methods
- Evaluation of reported QA/QC to verify compliance with data quality objectives.

1.3.1 Analytical Laboratory

The analytical laboratory employed on this project was evaluated by the USACE Hazardous, Toxic and Radioactive Waste Center of Expertise (HTRW-CX) and holds a current letter of validation from HTRW-CX to perform sample analyses in support of the USACE HTRW Program. This validation confirms their ability to produce reliable and defensible data. In addition, the laboratory used was approved by USACE to provide the required project specific analyses. USACE approval of the laboratory is documented in the approved QAPP. The laboratory used was:

Environmental Testing & Consulting, Inc. (ETC)
Contact: Mr. John F. Nevels, Project Manager
2924 Walnut Grove Road
Memphis, TN 38111
Phone: (901) 327-2750
Fax: (901) 327-6334

1.3.2 Sampling Program Design/Project Samples

The sampling program was designed to collect samples representative of site conditions at the time sampled and to generate data of sufficient quality and quantity to make the intended decisions. The basis for selecting the sampling locations, sample collection procedures, frequency and type of samples collected, and the analytical parameters for each sample was documented in the approved project Work Plans.

Project samples included in this evaluation consisted of groundwater and associated field QC samples collected in February of 2001 and distributed to the laboratory for chemical analysis of volatile organic compounds (VOCs). The laboratory reported the results of the analyses in three LDPs each designated by an order number. LDPs included in this evaluation included:

1. ETC Order # 0102451, dated February 23, 2001
2. ETC Order # 0102556, dated February 28, 2001
3. ETC Order # 0102408, dated March 1, 2001

Listing of specific project samples contained in the LDPs, and therefore contained in this evaluation, along with a cross reference of sample field Id numbers to laboratory Id

numbers is included on “Analytical Summary/Cross Reference Table” beginning on page 2 of each LDP.

1.3.3 Analytical Methods

In order to obtain definitive data and promote data comparability, the laboratory was required to perform testing within the guidelines of standardized, EPA methods included in the following approved protocol:

- “*Test Methods for Evaluating Solid Waste*,” SW-846, 3rd Edition, Update III, U.S. EPA, November 1986, (SW-846).

Specific analytical methods used in the analysis of the project samples included:

- 8260B – VOCs by Gas Chromatography/Mass Spectrometry (GC/MS)

1.3.4 Data Evaluation Procedure

The quality of this data has been evaluated following procedures consistent with those included in the approved QAPP. The procedures are based on “*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*,” EPA-540/R-94-012, February 1994 and “*USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*,” EPA-540/R-94-013, February 1994 (*Functional Guidelines*). Data evaluations were also based on the QC requirements of the analytical methods, project DQOs, and informed professional judgment of the evaluator. Data evaluation was performed by qualified Jacobs personnel, experienced in the evaluation of analytical data quality.

The following data quality issues were addressed in this evaluation:

- Review of chain-of-custody and sample receipt forms to evaluate sample receipt data, damaged sample containers, etc.
- Review of laboratory testing methods, detection limits, holding times, data qualifiers, etc.
- Review of field QC blank data to detect contamination from outside sources.
- Review of field QC duplicates to evaluate data reproducibility.
- Review of laboratory QC including laboratory blanks, spike recovery, and duplicates.
- Verification of calibrations as summarized by the laboratory within their Case Narratives.
- Qualify unusable data as rejected and attach appropriate qualifiers to usable data.
- Data evaluation findings presented in terms of the PARCC data quality parameters.

Data quality parameters precision, accuracy, representativeness, comparability, and completeness (PARCC) were evaluated as follows:

- Accuracy - by evaluation of surrogate (SUR), Laboratory Control Sample (LCS), and Matrix Spike/Matrix Spike Duplicate (MS/MSD) percent recoveries (%R).
- Precision - by evaluation of MS/MSD, laboratory duplicate, and field duplicate relative percent differences (RPD).
- Representativeness - by evaluation of sample receipt records, technical holding times, and blank sample results (field and laboratory).
- Comparability - by evaluation of laboratory detection limits, reporting units, and the overall performance of the chosen methods.
- Completeness - by comparing the number of valid measurements obtained to the number of measurements planned for these samples.

Field QC Duplicate Sample Evaluation Procedure

Field QC duplicate samples were collected and analyzed in association with each analytical method at a frequency of approximately 10 percent of the primary samples. Typically, no data qualification is required based solely on nonconforming QC duplicate results unless an individual nonconformance is deemed to be extreme or the data evaluation revealed negative trends. Data qualification, if deemed necessary, may be limited to individual sample results or may include entire data sets. Since no published EPA procedure exists for evaluation of field duplicate results, the following overview is included to document the procedure and criteria used in this report.

Duplicate results for solid sample matrices that differ by more than a factor of three ($RPD > 100$) and liquid sample matrices that differ by more than a factor of two ($RPD > 67$) were considered to be in 'disagreement'. In the special case where one or both sample results were less than five times the laboratory RL, a difference of $\pm$ three times the RL was used as the evaluation criteria for solids, and $\pm$ two times the RL was used for liquids. Data found out of control were examined to determine if the disagreements were extreme, isolated occurrences, or if negative trends existed.

Duplicate samples found in disagreement do not necessarily indicate an error has been made or inappropriate procedures used. Factors including the natural variability of the sample matrix, high or low analyte concentrations, or the presence of compounds that interfere with analysis can contribute to duplicate disagreement. Negative trends may indicate systematic errors made in sampling, handling, or analytical procedures; or may indicate the selection of an inappropriate protocol. If negative trends or extreme non-conformances exist, associated data were evaluated carefully to determine their validity. Data severely affected by duplicate sample results, if any, are reported with qualifiers and/or notations as to data usability.

2.0 DATA QUALITY NARRATIVES

Specific findings of this evaluation are discussed in data quality narratives in terms of PARCC data quality parameters. The discussions present a compilation of laboratory QC results found outside project acceptance criteria and provide an assessment of the potential impact those results had on the analytical data. The bulk of the QC results were in control and, therefore, were not summarized in these discussions.

Project sample analyses were grouped into QC batches as defined in SW-846. The laboratory analyzed QC samples associated with each batch. Data qualification, when necessary, is often based on non-conforming batch QC results. Thus, specific findings of this evaluation may be discussed in terms of analytical batches.

2.1 ACCURACY

In general, project accuracy indicators (SUR, LCS, and MS/MSD %Rs) were found to be in control. Some exceptions were noted and were summarized within the respective laboratory case narrative. Each exception was evaluated to determine if it had any impact on data use or required data qualification. No exceptions were found that affected data use or required action based on the following rationale:

- The majority of %R non-conformances were marginal and thus had no impact on results. In each case, analytical control was demonstrated by other QC results.
- Some non-conformances were found above criteria indicating a potential high bias, however, the affected analytes were not detected in associated samples.
- Some MS/MSD %R non-conformances were due to high analyte concentrations in the unspiked sample matrix. In each case, analytical control was demonstrated by other QC results.
- Some MS/MSD %R non-conformances were found in VOC sample analyses. For organic sample analyses, no action is taken based solely on MS/MSD results as long as the non-conformance is not extreme and is not indicative of a negative trend. The referenced non-conformances were neither extreme nor indicative of a trend.
- Some SUR %Rs were found beyond criteria in laboratory QC samples. These non-conformances do not impact project samples unless they indicate negative trends in analytical performance. No negative trends were found.

2.2 PRECISION

2.2.1 FIELD QC DUPLICATE SAMPLE PRECISION

In general, project precision indicators for field QC duplicate samples were found to be in control. One exception was noted and was evaluated to determine if it had any impact on data use or required data qualification. The finding is discussed below.

- Carbon disulfide in the QC pair MW-68/ MW-68A (lab sample Id 0102408-07 / 08) was found with an RPD = 142. This was the only non-conformance out of four QC duplicate samples collected and therefore is not indicative of a trend. However, carbon disulfide has not been detected at this site in a number of previous sampling events and, based on historical data, is believed to be an outside contaminant from a unidentified source (not an actual constituent in the sample). The erratic presence of this analyte in this QC pair supports this hypothesis.

2.2.2 Laboratory Internal QC Sample Precision

In general, project precision indicators for laboratory internal QC samples (MS/MSD and laboratory duplicate RPD) were found to be in control. Some exceptions were noted and were summarized within the respective laboratory case narrative. Each exception was evaluated to determine if it had any impact on data use or required data qualification. No exceptions were found that affected data use or required action based on the following rationale:

- The majority of RPD non-conformances were marginal and thus had no impact on results. In each case, analytical control was demonstrated by other QC results.
- Some RPD non-conformances were found indicating a potential for imprecise quantitation, however, the affected analytes were not detected in associated samples.
- Some MS/MSD RPD non-conformances were found in VOC sample analyses. For organic sample analyses, no action is taken based solely on MS/MSD results as long as the non-conformance is not extreme and is not indicative of a negative trend. The referenced non-conformances were neither extreme nor indicative of a trend.

2.3 REPRESENTATIVENESS

2.3.1 Sample Custody/Handling Documentation Review

The project samples were received at the laboratory adequately preserved, chilled within the required range of 4 ± 2 degrees Celsius, in good condition, and with required custody documentation in order.

2.3.2 Sample Holding Time Review

QC data indicated requirements for holding times were met for each sample analysis.

2.3.3 Blank Sample Results Review

QC data indicated requirements for blank sample results were met for each analytical method, with the exceptions noted below.

Specific Findings:

1. A few target analytes were detected in laboratory method blank (MB) samples at levels below five times the levels found in associated project samples (ten times below for common laboratory contaminants). An apparent exception was a detection of methylene chloride in a diluted sample run in LDP 0102451, however, this analyte was not detected in the original sample analysis and shall be reported as a non-detect from the original analysis. Therefore no action was taken based on these findings.
2. Methylene chloride = 5.2 ug/L was detected in the trip blank (TB) sample included in LDP 0102451. No associated results were found at levels below ten times the level found in the TB, thus there was no impact on project data.
3. Carbon disulfide = 0.65J was detected in the field blank (FB) sample included in LDP 0102451. One result was found at a level less than five times this result and was qualified "U" for undetected. Table 1.1.1 includes a summary of all project data that required qualification as a result of this review.
4. 1,1,2,2-Tetrachloroethane = 3.99J was detected in the rinse blank (RB) sample included in LDP 0102451. Three results were found at a level less than five times this result and were qualified "U" for undetected. Table 1.1.1 includes a summary of all project data that required qualification as a result of this review.

2.4 COMPARABILITY

Comparability was assessed by evaluation of laboratory detection limits, reporting units, and the overall performance of the chosen methods. Project data comparability was found to be acceptable.

2.4.1 Laboratory Detection Limits

Although comparability was acceptable, analyte concentrations found below the RL but above the method detection limit (MDL) were qualified as estimated "J" by the laboratory. These data were qualified in compliance with USACE reporting protocol and were not flagged due to quality non-conformances.

2.4.2 Data Reporting Guidelines For "E" Flagged Concentrations

The laboratory reported some concentrations flagged with an "E" to indicate that the flagged concentration is beyond the linear range of the instrument. Affected samples were re-analyzed at a secondary dilution designed to bring the "E" concentrations into the appropriate range. The laboratory reported complete sets of results for the initial and diluted sample analyses. In these cases, it is necessary to report the concentration for each compound from the initial analysis (lowest dilution) that was not flagged with "E". In other words, use all results from initial analyses, except those qualified "E". Replace the "E" concentrations with results from the next lowest dilution not flagged with an "E" for that compound.

Occurrences of "E" flagged data do not indicate quality non-conformances if the LDP includes appropriately diluted sample analyses (secondary dilutions) for each "E" flagged concentration. Laboratory "E" flagged concentrations in the evaluated data were accompanied by appropriate secondary dilution analyses

2.5 COMPLETENESS

Completeness was found to be 100% for all evaluated data.

TECHNICAL MEMORANDUM TABLES

TABLE 1.1.1
SUMMARY OF REVIEW QUALIFIERS APPLIED TO SAMPLE DATA

SAMPLE ID NUMBER		METHOD	PARAMETER	UNITS	RESULT	REVIEW QUALIFIER	REVIEW COMMENTS
FIELD ID	LAB ID						
MW-71	0102451-12	8260	Carbon Disulfide	ug/L	1.49	U	See Section 2 3 3
RW-9	0102451-04	8260	1,1,2,2-Tetrachloroethane	ug/L	3.01	U	See Section 2 3 3
RW-9A	0102451-05	8260	1,1,2,2-Tetrachloroethane	ug/L	2 90	U	See Section 2 3 3
MW-44	0102451-07	8260	1,1,2,2-Tetrachloroethane	ug/L	12 7	U	See Section 2 3 3

TABLE 2.2.1
FIELD QC DUPLICATE SAMPLE PRECISION NON-CONFORMANCES

SAMPLE ID NUMBER (laboratory Id number)		PARAMETER	CONCENTRATION (ug/L)		RPD	ACTION CODE
PRIMARY	DUPLICATE		PRIMARY	DUPLICATE		
MW-68 (0102408-07)	MW-68A (0102408-08)	Carbon disulfide	1 73	10.2	142	NA

Action Codes:

NA

No action required based solely on this finding, however, data users

APPENDIX E

GROUNDWATER INTERPOLATION EXPLANATION

Groundwater Interpolation of March 29, 2001 Data – Memphis DDMT

by US ERDC at Waterways Experiment Station, Earl V. Edris, Jr.

Groundwater elevation data was collected for the Dunn Field area of Memphis DDMT on March 29, 2001. The groundwater elevations are presented in Table 1. Included in Table 1 are the groundwater elevations for August 30, 2000, November 7, 2000, and January 10, 2001 readings. The March 29 readings occurred during the time when the recovery wells were not all functioning. The recovery wells, which were operational, were RW-9, RW-8, RW-6, and RW-4. Recovery wells RW-2, RW-1B, and RW-1A were fluctuating considerably on an hourly basis. Monitoring well MW-84 was installed next to MW-36, which is screened in a lower aquifer. The water elevation measured for MW-84 is used in this interpolation at the location of MW-36. The ground surface elevation for MW-36 was used as the surface elevation for MW-84. All wells listed in Table 1 contain a groundwater elevation for March 29, 2001. A -999 values indicates that the reading for one of the other dates was not taken.

One interpolation was performed for the March 29 data set. Monitoring wells MW-02 and MW-05 are dry and not included in Table 1. There were no readings for monitoring wells MW-10, MW-27, MW-63, MW-67 and recovery wells RW-01, RW-01A, RW-01B, RW-02, RW-03, RW-05, and RW-07. The mesh to which the elevations were interpolated was modified to represent the area where the fluvial clay exists in the Dunn field area as defined by the cross sections developed by CH2MHill. Because of this change, the following monitoring wells were outside the interpolation mesh: MW-40, MW-41, MW-43, MW-19, MW-55, MW-62, MW-89, and MW-90. Monitoring wells MW-37, MW-34, MW-18, MW-38, MW-36 and MW-37 are not located in the fluvial aquifer and therefore are not included in the interpolation.

The interpolation used the ordinary kriging technique to interpolate from spatial data points to a more regular spaced mesh or grid. A mesh that represents the aerial extent of the fluvial clay was used so that resolution can be varied within the interpolation domain. For the mesh, refine points with 30 foot resolution were created at the extraction wells. A series of arcs around the recovery well area was established with a resolution of 100 foot. The outside arc had a resolution of 250 feet. Figures 1 and 2 show the mesh resolution. The ordinary kriging interpolation technique is based on the assumption that the water level elevation varies in a continuous manner and that locations near data points have a certain degree of spatial correlation. Points that are widely separated are statistically independent. This technique uses a variogram to relate the variance of the spatial data points and to develop a relationship that describes this variance. The two variograms used for the interpolations are shown in Figure 3. The variogram parameters used for these interpolations are the same parameters that were used for the previous quarterly interpolation.

A number of figures were prepared for the interpolation data set. Figures 4 through 6 present the March 29 data set without the "deep" wells and wells outside the mesh area. These figures show a fairly uniform water elevation around Dunn Field that dips considerably to the south. Figures 7 through 9 presents the interpolated results of this data set. In the immediate area of the recovery wells, the cone of influence can be seen for those wells that were operational.

Table 1. Groundwater Elevations

Well ID	EASTING	NORTHING	Top of Casing Elevation	Groundwater Elevation March 29, 2001	Groundwater Elevation January 10, 2001	Groundwater Elevation November 7, 2000	Groundwater Elevation August 30, 2000
MW-03	802100.69	281596.25	292.35	222.01	222.86	223.04	221.15
MW-04	802369.19	281278.87	301.61	225.21	225.77	224.93	224.82
MW-06	802069.13	280604.17	289.11	225.78	225.88	225.50	225.59
MW-07	802481.70	281839.88	295.10	226.46	226.81	226.20	226.10
MW-08	802727.91	282001.04	292.59	228.34	228.41	228.02	215.52
MW-09	802516.42	281641.18	304.32	226.61	226.85	226.32	226.14
MW-10	802201.26	281662.55	288.83	-999	224.00	223.97	222.52
MW-11	802099.00	281353.10	299.47	223.20	224.14	223.14	222.57
MW-12	802071.22	281067.19	301.35	224.10	224.61	223.89	223.54
MW-13	802369.21	281033.56	299.73	225.70	225.97	225.33	225.31
MW-14	802288.95	280003.37	302.22	227.25	227.12	227.83	228.35
MW-15	801985.36	280348.88	295.12	225.17	226.30	226.16	226.79
MW-18	802448.08	279136.41	308.02	175.42	172.02	175.64	171.19
MW-19	800782.26	278945.87	290.57	201.40	201.31	201.70	202.27
MW-28	803154.48	281568.58	294.79	233.42	233.34	233.43	233.76
MW-29	802863.96	282104.92	273.22	232.22	231.80	231.82	232.12
MW-30	802013.96	282229.19	274.87	225.85	226.08	225.54	225.86
MW-31	801783.90	281651.53	290.17	218.40	219.10	218.02	218.20
MW-32	801615.51	280834.37	284.88	221.28	222.05	221.97	221.93
MW-33	801561.30	280398.10	280.56	224.75	225.04	224.81	225.2
MW-34	801917.96	279411.21	299.72	160.40	156.50	160.98	159.46
MW-35	802070.44	281072.31	300.52	224.12	224.65	223.92	223.57
MW-36	802887.01	279531.02	310.24	157.60	151.57	149.79	142.05
MW-37	801616.58	280831.22	284.89	156.85	150.71	157.79	153.68
MW-38	802450.43	279141.38	307.44	172.39	169.53	168.41	169.67
MW-40	800948.23	282460.42	262.45	173.91	170.32	170.35	172.33
MW-41	800457.21	279621.65	283.81	217.56	217.54	217.65	217.75
MW-42	800182.40	281883.92	274.87	217.24	217.21	217.87	217.95
MW-43	800111.73	280284.33	284.99	157.18	152.11	149.47	146.24
MW-44	800601.09	281073.71	269.07	212.91	213.00	213.10	213.66
MW-45	804125.99	280728.08	292.81	236.23	235.84	235.99	236.48

Well ID	EASTING	NORTHING	Top of Casing Elevation	Groundwater Elevation March 29, 2001	Groundwater Elevation January 10, 2001	Groundwater Elevation November 7, 2000	Groundwater Elevation August 30, 2000
MW-46	803115.96	281256.81	287.56	231.78	231.82	231.80	232.14
MW-49	803051.31	280211.84	310.49	230.52	230.48	230.53	230.87
MW-51	802828.62	282345.86	275.24	232.05	231.60	231.44	231.97
MW-53	805136.05	279176.66	306.38	232.33	232.06	232.26	232.49
MW-54	801183.32	281160.10	295.36	213.61	213.72	213.70	214.32
MW-55	801204.62	279301.05	292.05	220.95	220.60	220.75	221.22
MW-56	801971.55	279708.26	293.62	225.74	225.62	225.75	226.16
MW-57	802006.19	280184.05	290.79	226.48	226.53	226.60	226.99
MW-58	802066.44	279845.07	290.52	226.52	226.37	226.52	226.78
MW-59	802252.00	281333.67	300.12	224.36	225.07	224.16	223.90
MW-60	802282.05	281424.39	296.85	224.47	225.16	224.36	224.01
MW-61	802347.35	281585.68	294.04	224.87	225.47	-999	-999
MW-62	801858.16	278289.89	293.60	199.59	199.43	200.64	199.53
MW-63	803585.83	278192.29	304.58	-999	197.50	197.99	198.98
MW-65	803887.68	283529.72	263.22	256.32	248.75	245.99	247.27
MW-68	802040.04	281500.76	291.68	222.21	223.13	222.45	221.47
MW-69	802011.49	281202.55	307.04	223.12	224.00	223.03	222.57
MW-70	801988.49	281029.60	305.05	223.75	224.35	223.58	223.18
MW-71	801804.71	280584.68	294.39	224.32	225.03	225.74	224.99
MW-73	802144.95	280989.42	300.65	224.55	225.33	-999	-999
MW-74	802044.29	280991.20	303.68	224.08	224.72	-999	-999
MW-75	802051.10	281080.10	303.61	223.87	224.46	-999	-999
MW-76	801642.76	281311.98	302.71	217.40	217.58	-999	-999
MW-77	801815.29	281142.96	304.42	222.02	222.48	-999	-999
MW-78	802065.28	282051.71	275.00	224.71	224.98	-999	-999
MW-79	800899.03	281794.22	285.03	212.57	212.65	-999	-999
MW-80	800199.07	281417.56	273.81	212.38	212.53	-999	-999
MW-84	802887.01	279531.02	311.20	228.70	-999	-999	-999
MW-87	802038.55	280696.36	294.93	221.23	225.47	-999	-999
MW-89	802555.25	278286.97	291.99	184.98	183.55	-999	-999
MW-90	802539.51	278283.60	259.43	185.02	183.90	-999	-999
MW-91	802014.43	280474.97	291.99	224.52	225.99	-999	-999
MW-95	801850.21	282707.50	259.43	228.37	227.40	-999	-999
PZ-02	803373.00	282748.00	284.39	241.20	239.22	239.00	239.96

Well ID	EASTING	NORTHING	Top of Casing Elevation	Groundwater Elevation March 29, 2001	Groundwater Elevation January 10, 2001	Groundwater Elevation November 7, 2000	Groundwater Elevation August 30, 2000
RW-01	801973.88	280267.14	296.57	-999	-999	226.42	226.80
RW-01A	801990.08	280386.26	296.83	-999	-999	225.99	226.26
RW-01B	802009.37	280504.87	290.48	-999	-999	225.62	225.90
RW-02	802003.32	280624.56	290.93	-999	-999	225.13	225.19
RW-03	802012.69	280743.76	299.40	-999	-999	224.85	222.27
RW-04	802027.11	280918.07	305.22	223.32	224.88	224.35	220.97
RW-05	802041.97	281113.38	307.25	-999	-999	223.85	221.16
RW-06	802067.17	281264.22	304.67	222.95	224.12	223.17	219.72
RW-07	802079.19	281442.21	297.53	-999	223.68	222.95	220.61
RW-08	802088.53	281574.72	293.09	222.78	220.64	222.81	217.74
RW-09	802232.41	281688.06	290.79	224.02	222.48	224.34	218.73

gwinterpolaion-mar29-a.gpr

Mesh Used For Interpolation

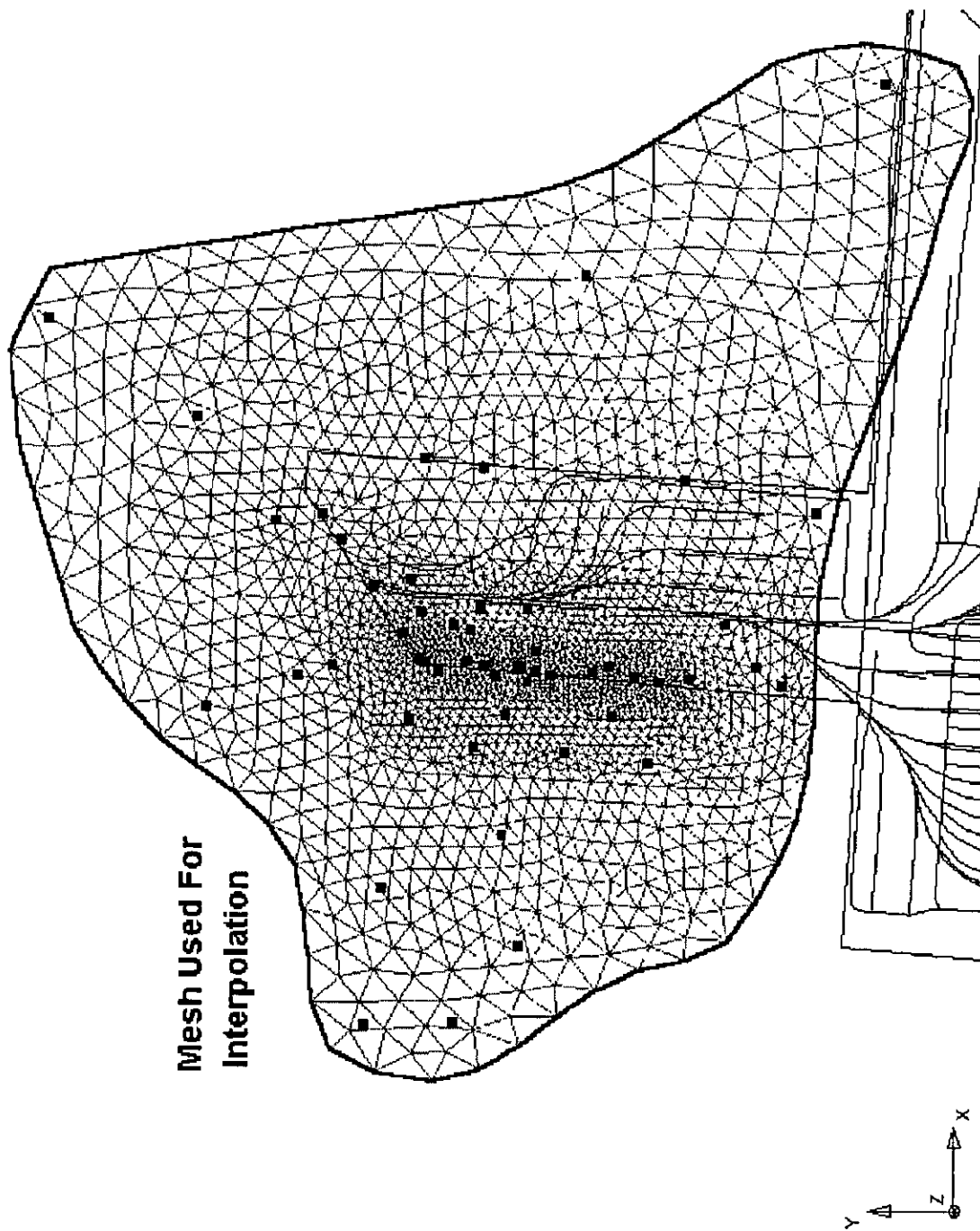


Figure 1. Mesh used for interpolation.

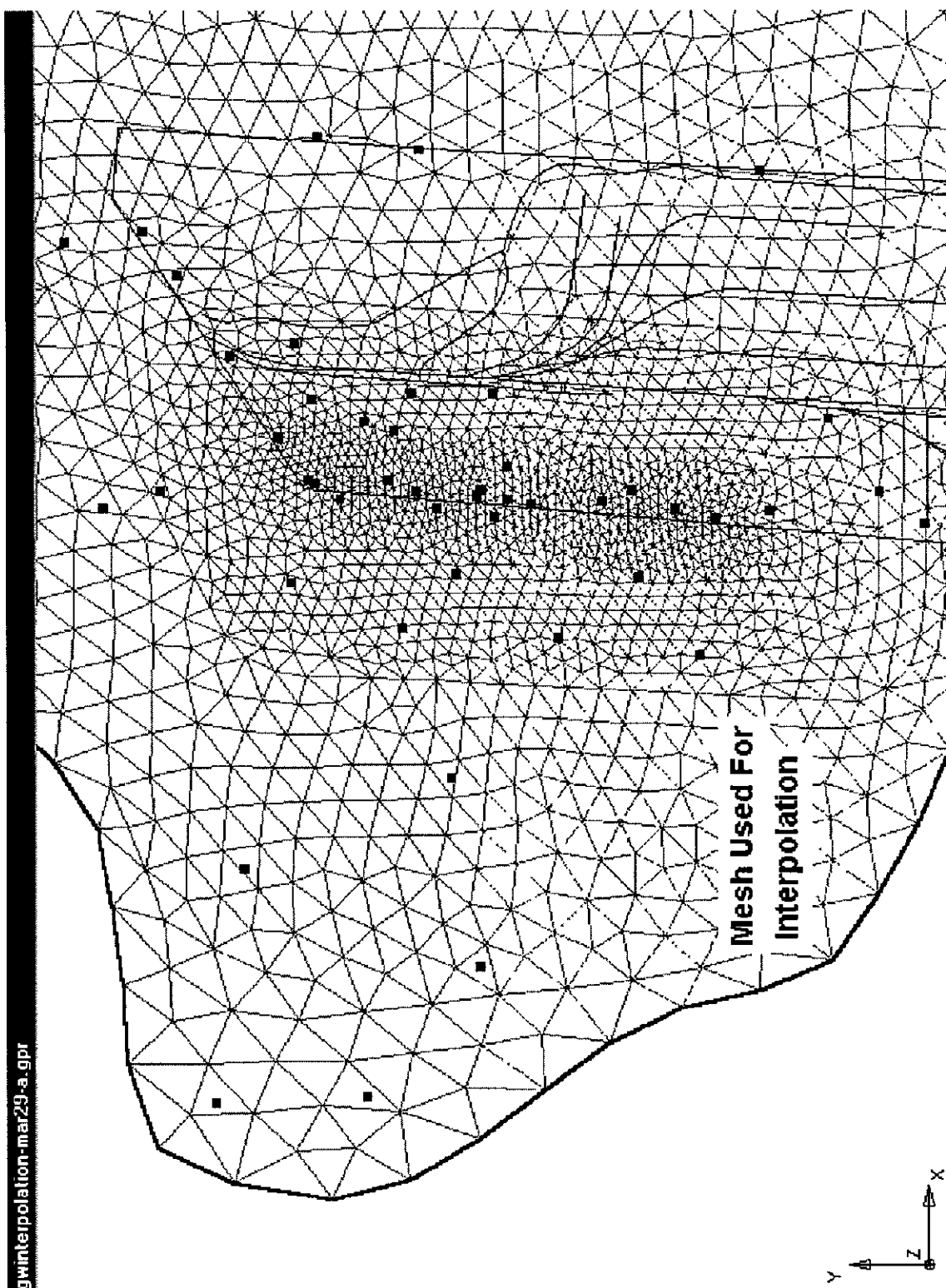


Figure 2. Zoomed area around recovery wells of mesh.

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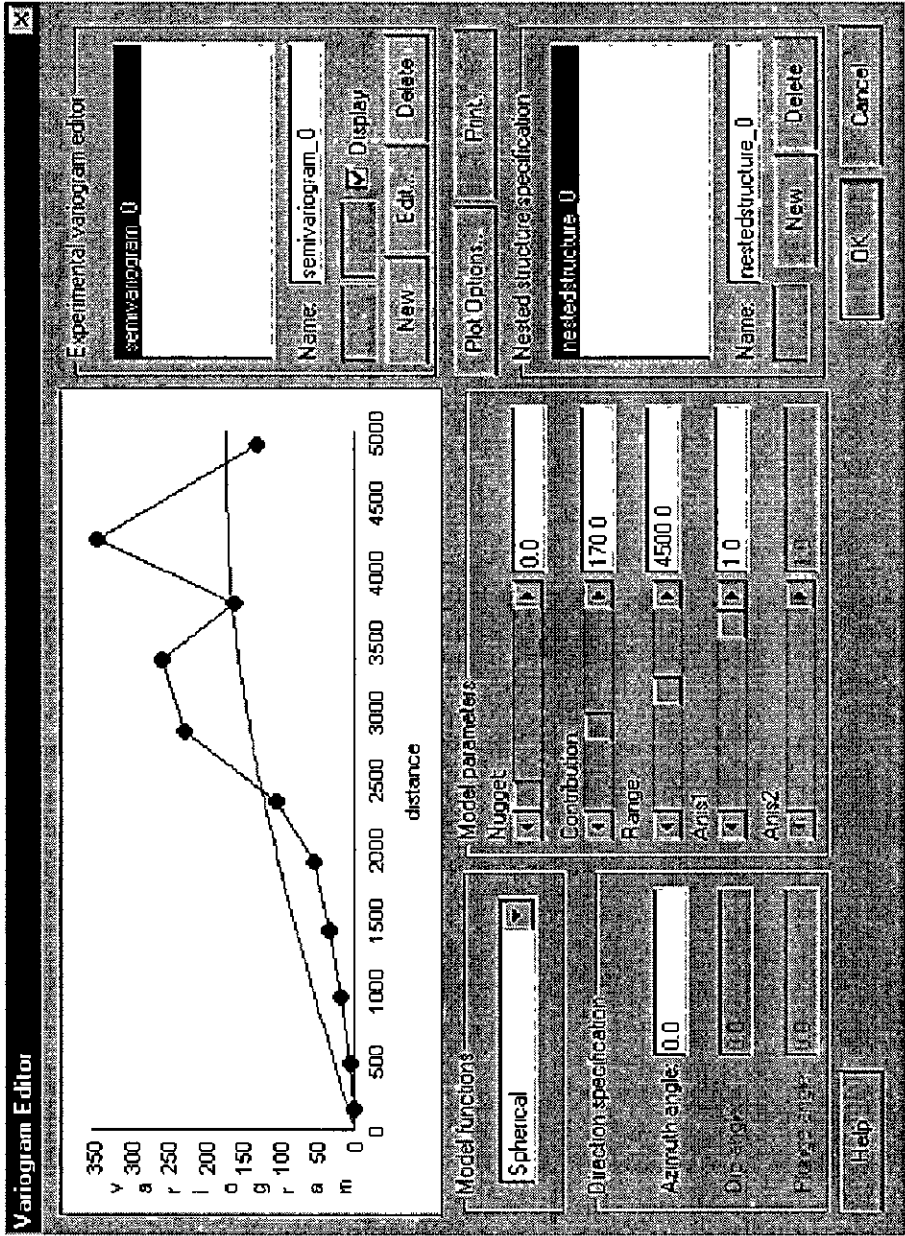


Figure 3. Variogram used for interpolation.

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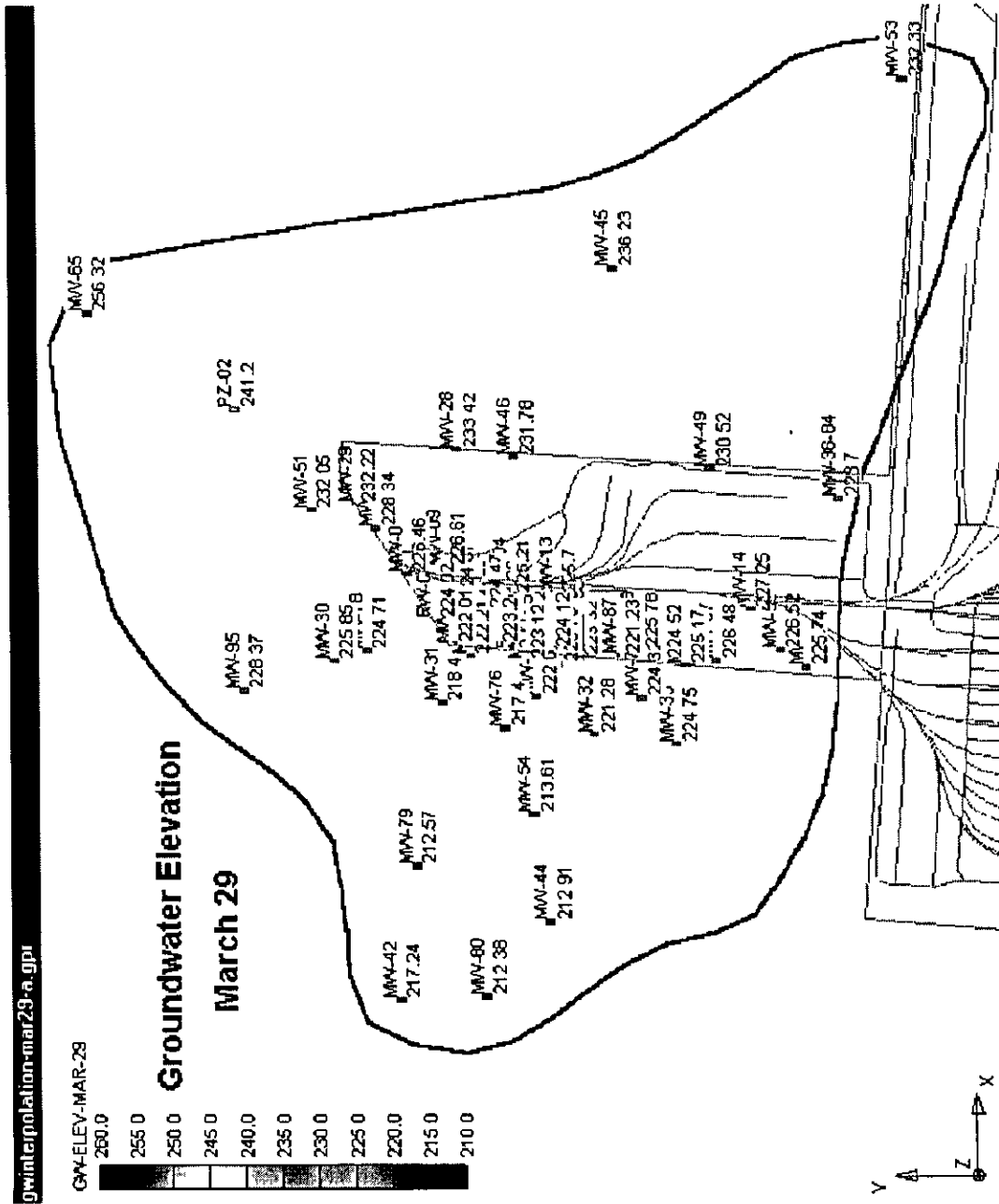


Figure 4. March 29, 2001 groundwater elevation data.

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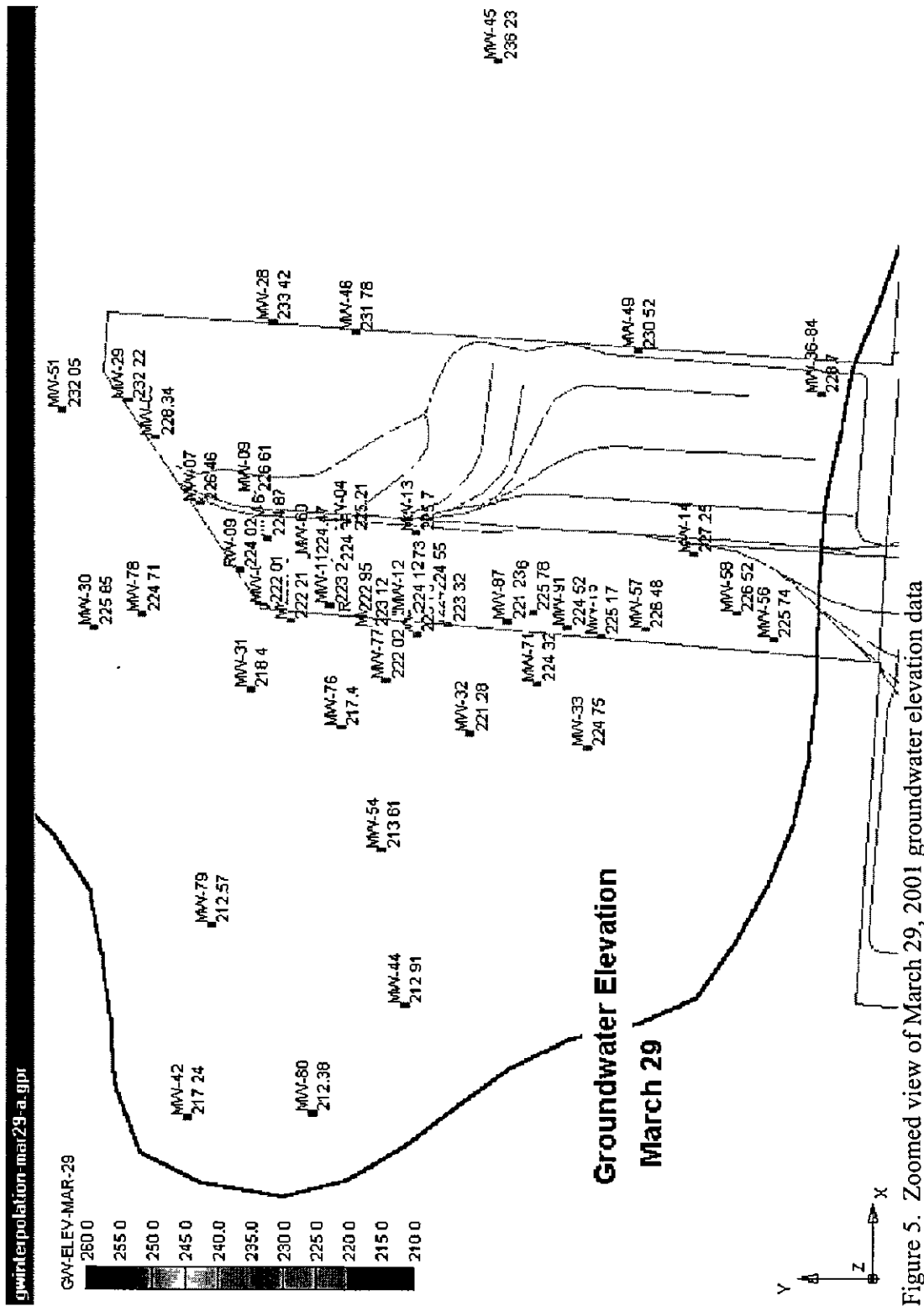


Figure 5. Zoomed view of March 29, 2001 groundwater elevation data

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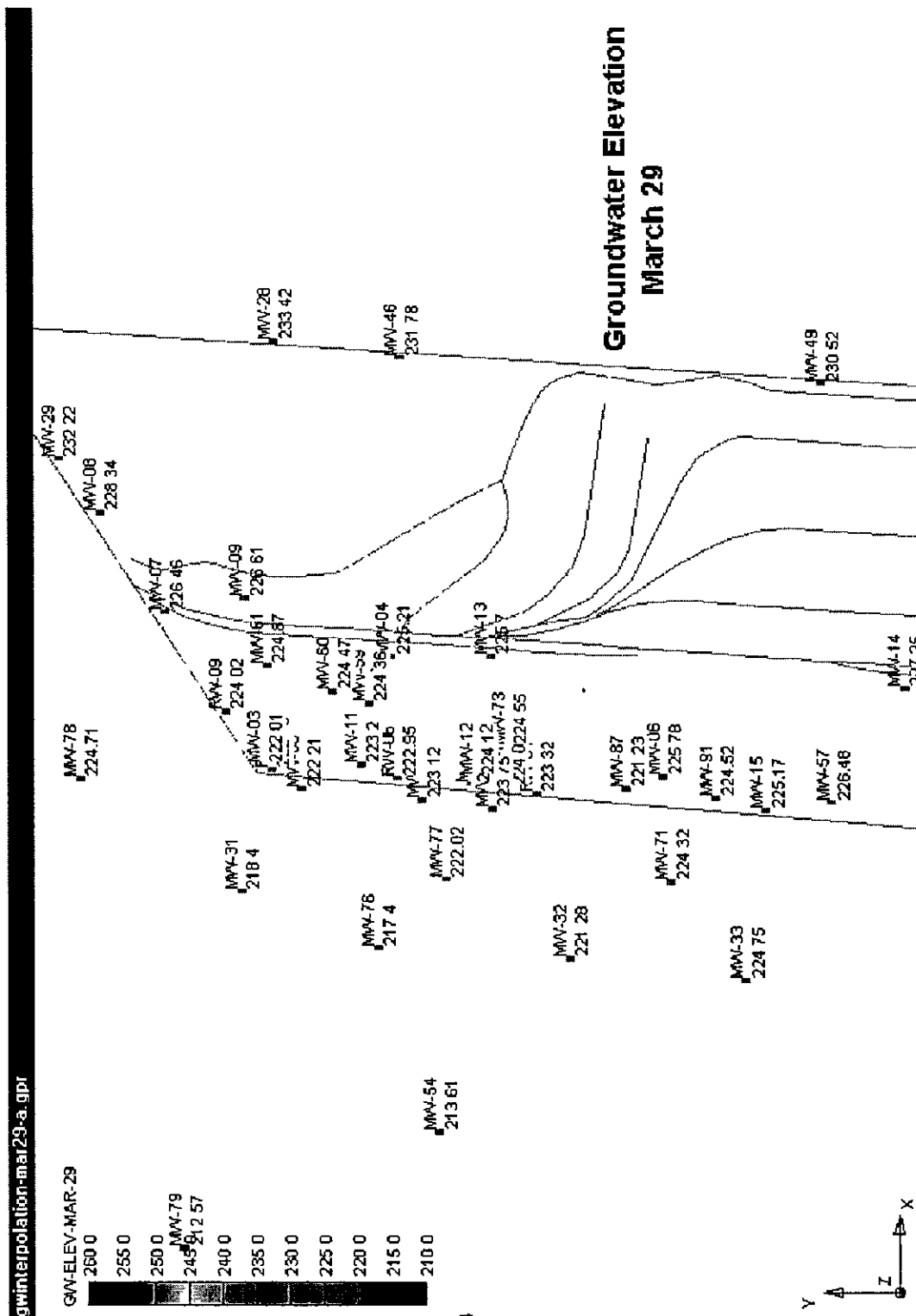


Figure 6. March 29, 2001 groundwater elevation data in the area around recovery wells.

File: Groundwater Interpolation of March29.doc

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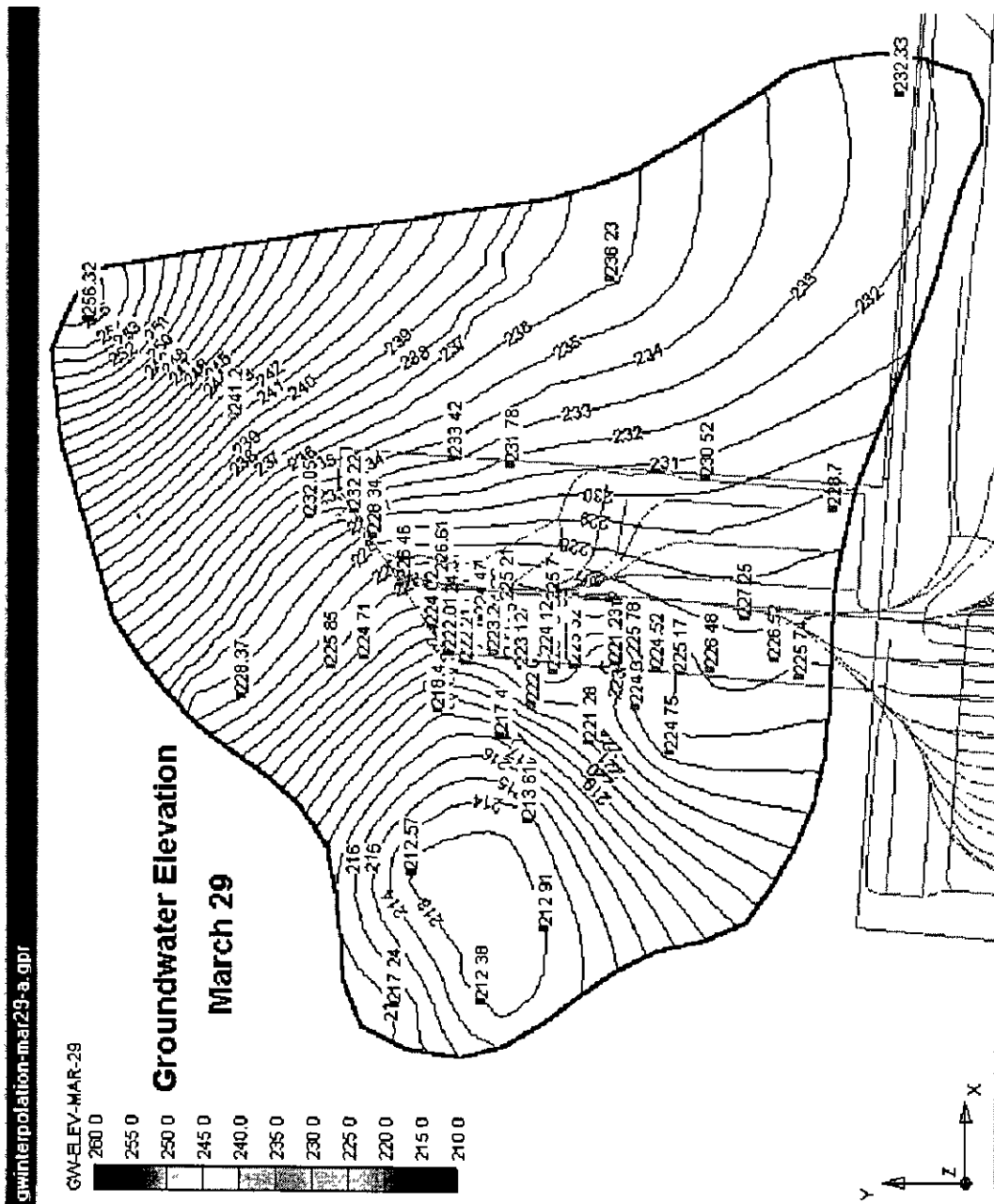


Figure 7. Interpolated one-foot contours of March 29, 2001 groundwater elevation.

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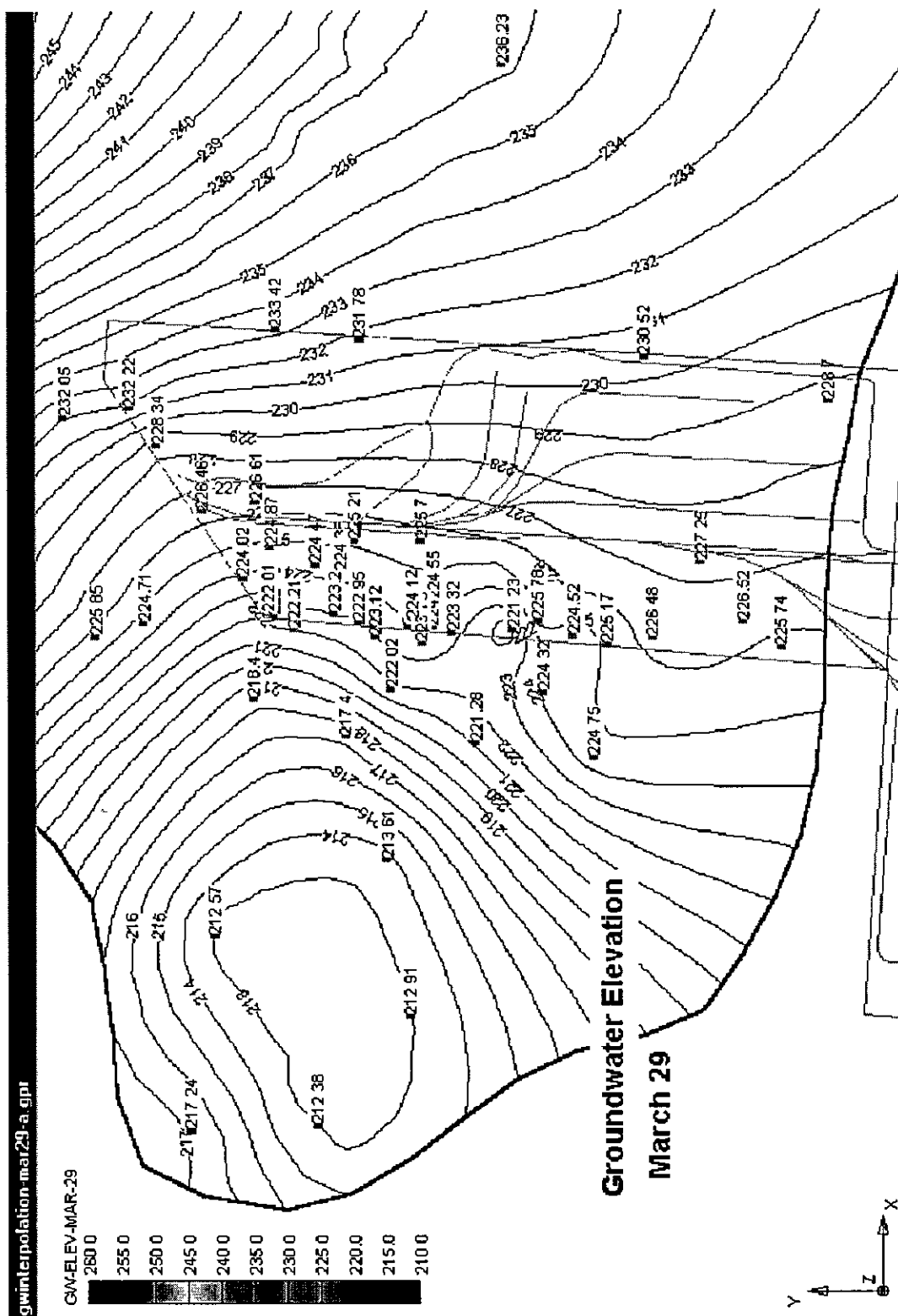


Figure 8. Zoomed view of interpolated one-foot contour of the groundwater elevations for March 29, 2001.

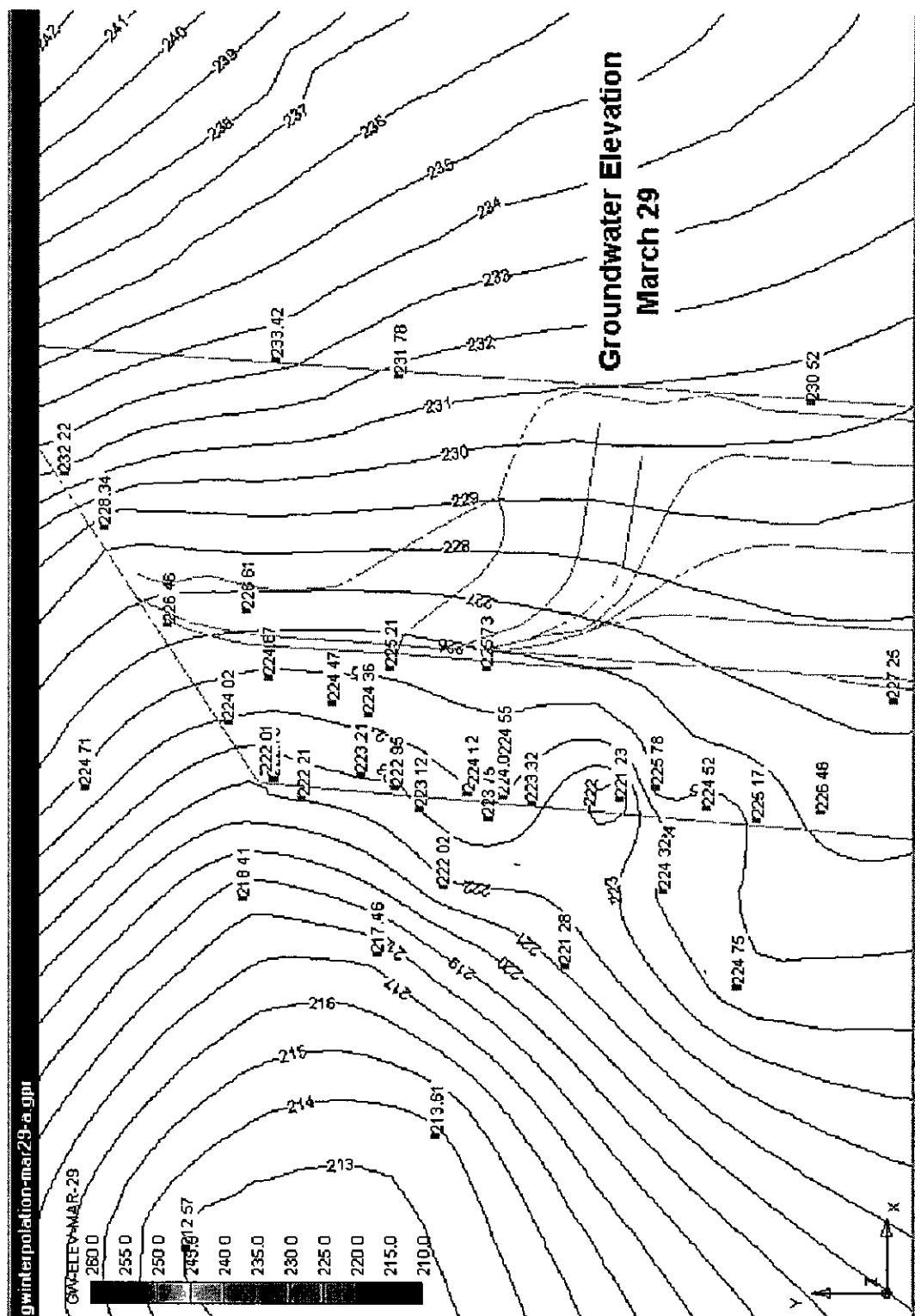


Figure 9. Interpolated one-foot contours of the area around the recovery wells for March 29, 2001.

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